

PART 5

Environment Canada Marine and Ice Warning and Forecast Programs

Background

The Meteorological Service of Canada (MSC) of Environment Canada and the regional Meteorological Service Branch offices of Environment Canada operate Canada's weather service. MSC offices offer a broad range of products and services that are designed to help mariners make informed decisions on how weather will affect them. The Canadian Coast Guard (CCG) plays an important role in disseminating forecasts and warnings and in collecting and relaying weather information from volunteer observers and ships.

The constant stream of data coming from volunteer observers, ships, weather buoys, automatic stations, and lighthouses is supplemented by satellite imagery, weather radar and a full set of numerical weather products adapted for marine operations.

Marine Warning Program

Warnings of extreme weather events that pose a threat to life and property at sea such as strong winds, rough seas, storm surges, squall lines and severe thunderstorms, and freezing spray shall be issued for the offshore economic zone including the St. Lawrence Seaway.

Major inland waters are defined as having significant marine activity and where time to reach shore is comparable to the marine weather warning lead time. The criteria for the issuance of weather warnings are based on national guidance, but determined regionally based on appropriate climatology and the character of the regional marine community.

Table 1: National marine warnings

	Warning Types	Warning Criteria
1	Strong wind warning	winds between 20-33 knots
2	Gale wind warning:	winds between 34-47 knots
3	Storm force wind warning:	winds between 48-63 knots
4	Hurricane force wind warning:	winds 64 knots or greater
5	Freezing spray	Ice accretion rate of 0.7 cm/hr
6	Squall line warning	Gust 34 knots or more associated with convective activity or line of thunderstorms
7	Special marine warning	Other conditions deemed dangerous to navigation.
8	Ice Warnings	Warnings of ice hazards will consist of the ice/no-ice boundary and advice on unexpected and hazards within the ice pack .

Warnings 1, 2, 3, 4, 5 and 8 are highlighted in the body of the regular forecast using the keywords “**IN EFFECT**”. Warnings 6 and 7 above are conveyed through special messages (WH) that get top priority on the Canadian Coast Guard communication systems.

Marine Forecast program

Marine forecasts are issued for the offshore economic zone including the St. Lawrence Seaway and major inland waters. The forecast program includes the following: synopsis, weather (warning when appropriate, wind, visibility and precipitation, freezing spray and air temperature as appropriate), extended wind forecast (3 to 5 day forecast), seastate and ice bulletin. Forecast for localized areas are not considered a basic level of service. A specialized coded forecast (See Table 3, **MAFOR**) and a NAVTEX compatible format bulletin are also provided on a regular basis. Forecasts for up to 48 hours in advance are normally provided on a regularly scheduled basis twice per day as part of a continuous program.

Marine forecast are written to describe the weather for the marine area overall and may not pinpoint local conditions that can occur due to factors such as coastal effects or irregular wind regimes associated with, as example, thunderstorms.

Table 2: MAFOR DECODE TABLE

MAFOR YYG ₁ G ₁ (NAME OF LAKE OR SEAWAY) 1GDF _M W ₁										
KEYWORD (Indicating marine forecast)	DAY OF MONTH (UTC)	TIME (UTC) FORECAST PERIOD BEGINS	SOLIDUS	NAME OF LAKE OR SEAWAY	GROUP ID	FORECAST PERIOD	WIND DIRECTION	WIND SPEED	FORECAST WEATHER	SIGNIFICANT WAVE HEIGHT IN FEET
	YY	G ₁ G ₁				G	D	F _M	W ₁	
MAFOR	06	12	(/)	ERIE	1	6	8	3	0	WAVES 5 TO 10 FEET

G- FORECAST PERIOD

0 - Conditions at beginning of forecast period

1 - Valid for 3 hours

2 - Valid for 6 hours

3 - Valid for 9 hours

4 - Valid for 12 hours

5 - Valid for 18 hours

6 - Valid for 24 hours

7 - Valid for 48 hours

8 - Valid for 72 hours

9 - Occasionally

D- WIND DIRECTION

0 - Calm

1 - Northeast

2 - East

3 - Southeast

4 - South

5 - Southwest

6 - West

7 - Northwest

8 - North

9 - Variable

F_M - WIND SPEED, Beaufort number

0 - 0 to 10 knots	0-3
1 - 11 to 16 knots	4
2 - 17 to 21 knots	5
3 - 22 to 27 knots	6
4 - 28 to 33 knots	7
5 - 34 to 40 knots	8
6 - 41 to 47 knots	9
7 - 48 to 55 knots	10
8 - 56 to 63 knots	11
9 - 64 knots and above	12

W₁ - FORECAST WEATHER

0 - Moderate of good visibility, more than 3 nautical miles

1 - Risk of accumulation of ice on superstructures

2 - Strong risk of accumulation of ice on superstructure

3 - mist (visibility 5/8 to 3 nm)

4 - Fog (visibility less than 5/8 nm).

5 - Drizzle

6 - Rain

7 - Snow, or rain and snow

8 - Squally weather with or without showers

9 - Thunderstorms

Ice Forecast

For sea ice, useful forecast time scales are generally much longer. Basic forecasts for the general sea-ice conditions include weekly, monthly and seasonal time frames.

Monitoring the Forecast

Forecasts are monitored, and amended as necessary, to reflect unexpected or changing weather conditions according to criteria based on the following principles:

1. when safety or security is at risk,
2. when inconvenience to the marine community will be extensive or,
3. when the product could adversely affect the credibility of the program.

Marine Forecast and Ice Areas

Marine forecasts and ice bulletins are issued for marine and ice areas as outlined in the regional maps. The sizes and boundaries of these areas are determined regionally based on the following considerations:

1. marine traffic density,
2. the ability to forecast to the proposed resolution,
3. the degree to which, climatologically, the marine weather is at variance, and
4. the ability to distribute the information effectively to the marine community.

Current Conditions

Current weather data is available to Canadians for their local area. The frequency and quality of the data will be consistent with the standards established by the World Meteorological Organization (WMO). The data may include as appropriate:

Current temperature, wind speed and direction, atmospheric pressure, sky condition, precipitation type, restrictions to visibility, sea state.

General information on current sea-ice will be provided to the marine community once a week to provide an adequate planning tool for those considering entering ice encumbered waters.

Emergency Response

Meteorological support is provided during emergencies and includes the provision of meteorological information and forecasts. In the case of a pollution event, Environment Canada adheres to the “polluter pay” policy for the provision of all services. Where agreements are in place, Environment Canada will make its distribution systems available to transmit vital information during emergency situations.

Delivery of Marine Warning and Forecast Services

Delivery of marine warning and forecast services to Canadians is primarily by mass communication in order to reach the greatest population base through technology available to most Canadians. The following principles apply, regardless of the specific available technologies:

- a. WEB access. All forecast and warning information will be found at the following address:

http://www.weatheroffice.ec.gc.ca/canada_e.html

- b. Basic services to Canadians shall be delivered primarily by mass distribution in partnership with media, relying on current and developing technologies in radio, television, newspaper, and the Internet. These distribution mechanisms represent the primary methods by which most Canadians receive and will receive their weather information, now and in the future.

- c. Marine and Environmental Advisories, Watches and Warnings are distributed through various mechanisms including partnerships with national and regional media distributors and local emergency measures organizations.

The Voluntary Observing Ship (VOS) Program

The VOS program is organized for the purpose of obtaining weather and ice, and oceanographic observations from moving ships. An international program under the World Meteorological Organization (WMO) auspices, the VOS has near 8,000 vessels participating from 60 nations. It is part of the WMO Global Observing System of the World Weather Watch. Canada has near 235 vessels participating. It closely follows WMO guidelines for VOS programs. The Canadian program is supported by full-time Port Meteorological Officers (PMO). The national program office in Toronto manages the program and oversees PMO activities. The office also maintains a VOS Program Computerized Data Management System to record PMO ship visits, vessel mailing addresses, vessel equipment inventories and other information about vessels reports. Any vessel willing to take and transmit observations in marine areas where Environment Canada prepares weather forecasts (see the regional annexes) can join the program. The importance of ship reports cannot be overstated. Without your participation in VOS, there would be vast marine areas without data, making marine forecasting nearly impossible for these areas. We thank ship officers for their fine work, dedication, and commitment.





Check out the SEAS program with your local Port Meteorological Officer. In the SEAS program, observations are sent via INMARSAT C and the cost of transmission is absorbed by a consortium of countries interested in timely reports from the seas of the world.

The WMO establishes the ships synoptic code, and procedures and standards for the collection and dissemination of information worldwide. The WMO also maintains information about countries and vessels participating in the program.

Port Meteorological Officers (PMOs)

PMOs spend most of their time visiting ships in support of the VOS program. This is to encourage vessels to report weather and ice, to instruct observers about procedures and the use of code; to supply observing forms, handbooks (free of charge!); to calibrate equipment; and, in some cases, to install, on loan, meteorological or oceanographic instrumentation.

If a PMO visits your ship, remember to ask questions about observing and coding, and reporting weather and ice. Keep the PMO informed of your mailing address. Discuss forecast, warnings, facsimile products, especially if you have specific problems. The PMO will contact the appropriate party for investigation.

 Great Lakes	Atlantic - Maritimes	Atlantic - Newfoundland
Tony Hilton, superintendent Rick Shukster, Buoy Specialist Roland Kleer, PMO Shawn Linvington, technician Environment Canada, MSC 100 East Port Blvd HAMILTON ON L8H 7S4 Tel: 905-312-0900 Fax: 905-312-0730 E-mail: Rick.Shukster@ec.gc.ca	Randy Sheppard, PMO Environment Canada, MSC 45 Alderney Drive, 16th floor DARTMOUTH NS B2Y 2N6 Tel: 902-426-6703 Cell: 902-456-6927 Fax: 902-426-1595	Jack Cossar, PMO Environment Canada, MSC 6 Bruce St. MT. PEARL NL A1N 4T3 Tel: 709-772-4798 Cell: 709-682-3134 Fax: 709-772-2593
 St-Lawrence - Québec	 Pacific	 Great Slave Lake / Western Arctic
Erich Gola Environnement Canada, SMC Canada Place Bonaventure, Portail Nord-Est 800 de la Gauchetière ouest, Suite 810 MONTRÉAL QC H5A 1L9 Tel: 514-283-1644 Fax: 514-496-1867 E-mail: erich.gola@ec.gc.ca	Mike Riley, PMO Environment Canada, MSC 140 13160 Vanier Place RICHMOND BC V6V 2J2 Tel: 604-664-9136 Fax: 604-664-4094 Email: mike.riley@ec.gc.ca	Ben Lemon Environment Canada, MSC M.J. Greenwood Centre 9345 - 49 Street EDMONTON AB T6B 2L8 Tel: 780-495-6442
Manitoba Lakes / Lake Athabaska Barry Funk Monitoring and Systems Environment Canada, MSC Suite 150 123 Main Street WINNIPEG MB R3C 4W2 Tel: 204-984-2018		

Buoys program

In order to complement the observational network, Environment Canada operates a network of buoys across the country. This data becomes part of the collection of weather reports sent to the distribution network and is used to improve marine forecasting. The location, WMO identifiers and names of the Environment Canada buoys are given in the regional annexes.

Mariners are requested to use caution when approaching buoys as mooring chains are normally not detectable from a ship and can be damaged or even cut if there is contact, what will make the buoy loose and cause a costly recovery of the platform. Please keep the Regional PMO's informed of any incidents involving buoys.

Buoy Locations: buoy positions are described in each specific regional annex.

MAREP (MARine REporting Program)

MAREP gives mariners the opportunity to informally report their local weather conditions and to receive up-to-date weather forecasts and warnings. MAREP stations are generally operated on a semi-volunteer basis by a member of the marine community who is concerned about marine safety. The stations operators are in regular contact with the Marine Weather Forecaster of the area.

Since the program is informal, the individuals at the stations do not provide a 24 hour service, but are likely available during day-time and early evening hours.



SUGGESTIONS / COMMENTS / COMMENTAIRES

Help us to serve you: Make us aware of your comments regarding the Environment Canada Marine and Ice services	Aidez-nous à mieux vous servir : Faites-nous parvenir vos commentaires concernant le programme de prévisions maritimes d'Environnement Canada
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Officer/Officier :		Return to / Envoyer à: National Marine Services manager Gestionnaire des services maritimes nationaux IMSB, 3 floor/étage 373 Sussex, OTTAWA ON K1A 0H3 Canada Fax: 613-996-4218 E-Mail/courriel: Normand.Michaud@ec.gc.ca
Ship/navire :		
Position Latitude :		
Longitude :		
Date:		

Sujet / Détails:

NORTHERN CANADA

Includes: Western and Eastern Arctic, Central and Western Hudson Bay & Major Inland Lakes of Manitoba, Northern Saskatchewan and Northwest Territories.

Marine Weather Forecast Program

The Prairie and Arctic Storm Prediction Centre, Environment Canada, Edmonton, provides marine forecasts in support of Arctic marine activity during the summer into fall open water season. The forecast area encompasses Lake Athabasca, Great Slave Lake, the Mackenzie River, the waterways of the western and high Arctic, Baffin Bay and Davis Strait, Foxe Basin, Hudson Strait and Ungava Bay, and central and western Hudson Bay. Quebec Region does marine weather forecasts for eastern Hudson Bay and James Bay. **Note that sea state forecasts are not produced for the Arctic areas.**

The Storm Prediction Centre, Environment Canada, Winnipeg, provides marine forecasts for Lake Winnipeg (north and south basins), Lake Manitoba, and Lake Winnipegosis during the open water season in support of pleasure and commercial activities. The forecast program for the Manitoba lakes continues through the winter months as a public rather than a marine forecast in aid of commercial ice fishing. Minimum and maximum temperatures along with wind chill are forecast.

Marine Weather Warnings: (refer to Table 1, page 5-1)

Note the following regional particularities:

	Warning Types	Comments
1	Strong wind warning	Applies to Manitoba Lakes, Lake Athabasca, Great Slave Lake and Mackenzie River

Weather and ice messages:

Ship weather and ice reports in the international meteorological code, made at the standard synoptic hours of 0000, 0600, 1200 and 1800 UTC are solicited from ships of all nationalities which have been recruited by their own national weather service, or other weather services, to make weather and ice reports on a regular basis. These reports should be transmitted directly to the circuit using Inmarsat. Alternately, the observation should be passed to the nearest Marine Communications and Traffic Services Centre, irrespective of the ship's position. Reports made close to, or even within sight of land, are as important as reports made offshore, due to the greater variability of weather conditions in proximity to a coastline. Such reports 'contribute' to knowledge of Arctic weather from both a real-time operational perspective and from a climate perspective.

The **Prairie Storm Prediction Centre** also welcomes weather, sea, and ice observations from the lakes. Real-time observations, and those up to a few hours after the event, are most valuable. Pass observations to 1-800-66STORM (1-800-667-8676).

Facsimile package available: Analyses and prognostics

Weather analysis and weather prognostic charts covering Arctic and Hudson Bay waters are prepared at the Arctic Weather Centre. MCTS Iqaluit and MCTS Inuvik transmit selected charts on facsimile. Please note the MCTS Centres access these charts from a web site at the Canadian Ice Service (CIS). Arctic Weather prepared charts are available directly to subscribers of the Canadian Ice Services Web site.

Buoys – the following buoys are usually in place during the open water season

WMO #	Location / Information	LAT Deg/min	LONG Deg/min
45140	Lake Winnipeg South Basin (moored buoy)	50 48 N	096 44 W
45141	Great Slave (moored buoy - 25 nm northeast of Hay River)	61 11 N	115 19 W
45144	Lake Winnipeg North Basin (moored buoy)	53 15 N	098 15 W
45145	Lake Winnipeg between North and South Basins	51 24 N	096 42 W
45150	Great Slave (moored buoy - immediate west of Inner Whaleback Rocks)	61 55 N	113 45 W
45158	Hudson Bay SW	59 00 N	094 00 W

The **Great Slave Lake** buoys are deployed in early July and retrieved in late September or early October. The buoys provide hourly wind and temperature data and include surface water temperature and wave data.

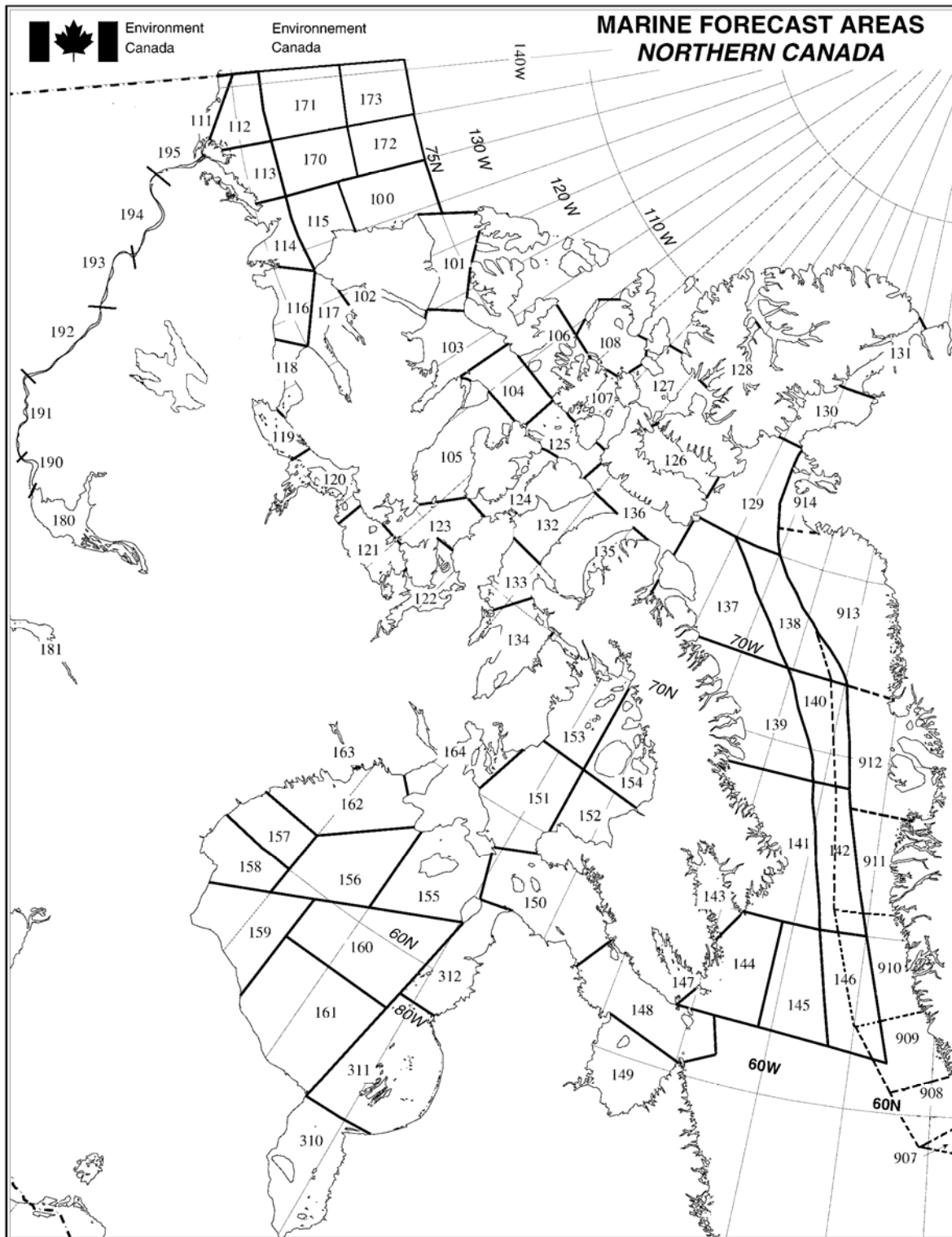
The **Lake Winnipeg** South Basin buoys are deployed annually May or June, and retrieved in October. The buoys provide hourly wind and temperature data and include surface water temperature data. The buoys also provide wave data.

The Hudson Bay buoy is deployed annually mid to late July and retrieved late September or early October. The buoy provides hourly wind and temperature data and includes surface water temperature data. The buoy also provides wave data.

Weatheradio Canada

Stations	CALL SIGN	Frequency (MHz)	Power	Location
Iqaluit	CIQA	93.3 FM		Iqaluit
Inuvik	VBU996	162.400	53.7 Watts ERP	Hidden Lake
Yellowknife	VBC200	162.400	150 Watts ERP	Yellowknife Seismic Station
Winnipeg	XLM538	162.550		
Riverton	XLF471	162.400		
Long Point	VCI386	162.550		

Winnipeg, Riverton and Long Point provide **continuous** broadcast of marine weather forecasts and warnings for the Manitoba Lakes, and of marine weather observations when available.



Marine Forecasts Eastern and Western Arctic Waters.

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

NUMBER	AREA NAME	AVAILABILITY PERIOD	NAVTEX	RADIOTELEPHONY - ALL TIMES UTC
100	Prince Alfred	Shipping season	N/a	Inuvik: on request
101	McClure	Shipping season	N/a	Inuvik: on request
102	Prince of Wales	Shipping season	N/a	Inuvik: on request
103	Melville	Shipping season	N/a	Iqaluit: on request
104	Rae	Shipping season	N/a	Iqaluit: on request
105	McClintock	Shipping season	N/a	Iqaluit: on request
106	Byam	Shipping season	N/a	Iqaluit: on request
107	Queens	Shipping season	N/a	Iqaluit: on request
108	Maclean	Shipping season	N/a	Iqaluit: on request
109	-	-	-	-
110	-	-	-	-
111	Yukon Coast	July 01 - Sept. 30	N/a	Inuvik: 0235, 1435, Inuvik Weatheradio
112	Mackenzie	July 01 – Oct 10	N/a	Inuvik: 0235, 1435, Inuvik Weatheradio
113	Tuktoyaktuk	July 01 – Oct 10	N/a	Inuvik: 0235, 1435, Inuvik Weatheradio
114	Baillie	July 15 - Sept. 30	N/a	Inuvik: 0235, 1435
115	Banks	Shipping season	N/a	Inuvik: 0235, 1435
116	Amundsen	July 15 - Sept. 30	N/a	Inuvik: 0235, 1435
117	Holman	Shipping season	N/a	Inuvik: on request
118	Dolphin	July 15 - Sept. 30	N/a	Inuvik: 0235, 1435
119	Coronation	July 15 - Sept. 30	N/a	Inuvik: 0235, 1435
120	Dease	July 15 - Sept. 30	N/a	Inuvik: 0235, 1435
121	Maud	Shipping season	N/a	Inuvik: 0235, 1435
122	St Roch	Shipping season	N/a	Inuvik or Iqaluit: on request
123	Larsen	Shipping season	N/a	Inuvik or Iqaluit: on request
124	Peel	Shipping season	N/a	Inuvik or Iqaluit: on request
125	Barrow	July 01 - Oct. 31	N/a	Iqaluit: 1240 & 2310
126	Jones	Shipping season	N/a	Iqaluit: on request
127	Norwegian Bay	Shipping season	N/a	Iqaluit: on request
128	Eureka	Shipping season	N/a	Iqaluit: on request
129	Clarence	Shipping season	N/a	Iqaluit: on request
130	Kane	Shipping season	N/a	Iqaluit: on request
131	Robeson	Shipping season	N/a	Iqaluit: on request
132	Regent	Shipping season	N/a	Iqaluit: on request
133	Boothia	Shipping season	N/a	Iqaluit: on request
134	Committee	Shipping season	N/a	Iqaluit: on request
135	Admiralty	Shipping season	N/a	Iqaluit: 1240 & 2310
136	Lancaster	July 01 - Oct. 31	N/a	Iqaluit: 1240 & 2310
137	West Baffin	July 01 - Oct. 31	N/a	Iqaluit: 1240 & 2310, on request at: 1340, 2235

Marine Forecasts Eastern and Western Arctic Waters.

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

NUMBER	AREA NAME	AVAILABILITY PERIOD	NAVTEX	RADIOTELEPHONY - ALL TIMES UTC
138	East Baffin	July-August	N/a	Iqaluit: 1240 & 2310, on request at: 1340, 2235
139	West Clyde	July 01 - Oct. 31	N/a	Iqaluit: 1340, 2235
140	East Clyde	July-August	N/a	Iqaluit: 1340, 2235
141	West Davis	July 01 - Oct. 31	N/a	Iqaluit: 1340, 2235
142	East Davis	July 01 - Oct. 31	N/a	Iqaluit: 1340, 2235
143	Cumberland	July 01 - Oct. 31	N/a	Iqaluit: on request at: 1340, 2235
144	West Brevoort	July 01 - Oct. 31	Iqaluit (1)	Iqaluit: 1340, 2235
145	Central Brevoort	July 01 - Oct. 31	Iqaluit (1)	Iqaluit: 1340, 2235
146	East Brevoort	July 01 - Oct. 31	N/a	Iqaluit: 1340, 2235
147	Frobisher Bay	July 01 - Oct. 31	Iqaluit (1)	Iqaluit: 1340, 2235
148	Resolution	July 01 - Oct. 31	Iqaluit (1)	Iqaluit: 1340, 2235
149	Ungava	July 01 - Oct. 31	Iqaluit (1)	Iqaluit: 1340, 2235
150	Nottingham	July 01 - Oct. 31	Iqaluit (1)	Iqaluit: 0110, 1320 on request at: 1340, 2235
151	West Foxe	Shipping season	N/a	Iqaluit: on request at: 0110 & 1320
152	East Foxe	Shipping season	N/a	Iqaluit: on request at: 0110 & 1320
153	Igloolik	Shipping season	N/a	Iqaluit: on request at: 0110 & 1320
154	Prince Charles	Shipping season	N/a	Iqaluit: on request at: 0110 & 1320
155	Coats	Shipping season	N/a	Iqaluit: 0110 & 1320
☉156	Central	Shipping season	N/a	Iqaluit: 0110 & 1320 Thunder Bay (Churchill) : 0040 & 1410
157	Arviat	July 01 - Oct. 15	N/a	Thunder Bay (Churchill): 0040 & 1410
158	Churchill	July 01 - Oct. 15	N/a	Thunder Bay (Churchill): 0040 & 1410
☉159	York	Shipping season	N/a	Iqaluit: on request at: 0110 & 1320 Thunder Bay (Churchill) : 0040 & 1410
☉160	South-Central Hudson	Shipping season	N/a	Iqaluit: on request at: 0110 & 1320 Thunder Bay (Churchill) on request : 0040 & 1410
☉161	South Hudson	Shipping season	N/a	Iqaluit: on request at: 0110 & 1320 Thunder Bay (Churchill) on request : 0040 & 1410
162	Rankin	July 01 - Oct. 15	N/a	Iqaluit: 0110 & 1320 Thunder Bay (Churchill): 0040 & 1410
163	Baker	July 01 - Sept. 30	N/a	Iqaluit: 0110 & 1320 on request Thunder Bay (Churchill): 0040 & 1410
☉164	Roes Welcome	Shipping season	N/a	Iqaluit: 0110 & 1320 on request
☉310	James Bay	Navigation season	N/a	Iqaluit: 0110 & 1320 on request
311	Belcher	Navigation season	N/a	Iqaluit: 0110 & 1320
312	Povungnituk	Navigation season	N/a	Iqaluit: 0110 & 1320
(1). NAVTEX broadcasts out of Iqaluit.				English: 0310, 0710, 1510, 1910 on 518 kHz. French: 0300, 0700, 1500, 1900 on 490 kHz.

Marine Forecasts Areas for Research and Development.

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

NUMBER	AREA NAME	AVAILABILITY PERIOD	NAVTEX	RADIOTELEPHONY
170	NorthTuktoyaktuk	July 01 - Oct. 31	N/A	Inuvik: on request
171	North Mackenzie	July 01 - Oct. 31	N/A	Inuvik: on request
172	West Prince Alfred	July 01 - Oct. 31	N/A	Inuvik: on request
173	Northwest Beaufort	July 01 - Oct. 31	N/A	Inuvik: on request

Marine Forecasts for Major Inland waters, Western & Central Canada.

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

NUMBER	AREA NAME	AVAILABILITY PERIOD	RADIOTELEPHONY
180	Great Slave Lake	June 15 - October 31	Inuvik: 0115, 1315 Yellowknife Weatheradio
181	Lake Athabasca	Open water season	Inuvik: 0115, 1315 Yellowknife Weatheradio
☉182	Lake Manitoba	Open water season	Winnipeg, Riverton & Long Point Weatheradio
☉183	Lake Winnipeg South Basin	Open water season	Thunder Bay: 0140, 0840, 1240, 1640, 2140 Winnipeg, Riverton & Long Point Weatheradio
☉184	Lake Winnipeg North Basin	Open water season	Thunder Bay: 0140, 0840, 1240, 1640, 2140 Winnipeg, Riverton & Long Point Weatheradio
☉185	Lake Winnipegosis	Open water season	Winnipeg, Riverton & Long Point Weatheradio
190	Wrigley Harbour (mile 0) to Axe Point (mile 91)	June 01 - Oct. 20	Inuvik: 0115, 1315
191	Axe Point (mile 91) to Camsel Bend (mile 290)	June 01 - Oct. 20	Inuvik: 0115, 1315
192	Camsel Bend (mile 290) to Tulita (mile 512)	June 01 - Oct. 20	Inuvik: 0115, 1315
193	Tulita (mile 512) to Fort Good Hope (mile 684)	June 01 - Oct. 20	Inuvik: 0115, 1315
194	Fort Good Hope (mile 684) to Point Separation (mile 913)	June 01 - Oct. 20	Inuvik: 0115, 1315
195	Point Separation (mile 913) to Kittigazuit Bay (mile 1081)	June 01 - Oct. 20	Inuvik: 0115, 1315

Danish Marine Forecasts for Baffin Bay Waters

NUMBER	AREA NAME	PERIOD	AVAILABLE VIA:
907	Nunap Isuata Kitaa	Year round	Danish Meteorological Institute, Copenhagen Tel: (45) 39 15 7500
908	Nuuarsuit	Year round	Danish Meteorological Institute, Copenhagen Tel: (45) 39 15 7500
909	Narsalik	Year round	Danish Meteorological Institute, Copenhagen Tel: (45) 39 15 7500
910	Meqqitsoq	Year round	Danish Meteorological Institute, Copenhagen Tel: (45) 39 15 7500
911	Attu	Year round	Danish Meteorological Institute, Copenhagen Tel: (45) 39 15 7500
912	Uiffaq	Year round	Danish Meteorological Institute, Copenhagen Tel: (45) 39 15 7500
913	Qimusseriarsuaq	Year round	Danish Meteorological Institute, Copenhagen Tel: (45) 39 15 7500
914	Kiatak	Year round	Danish Meteorological Institute, Copenhagen Tel: (45) 39 15 7500

Marine Weather Observations - manned stations

WEATHER REPORTS (SEE NOTE 2) FOR:	BROADCAST STATIONS
Aklavik	Inuvik Weatheradio 05:00 to 23:00 Local Standard Time
Fort MacPherson	Inuvik Weatheradio 05:00 to 23:00 Local Standard Time
Fort Reliance	Yellowknife Weatheradio 05:00 to 23:00 Local Standard Time
Fort Resolution	Yellowknife Weatheradio 05:00 to 23:00 Local Standard Time
Hay River	Yellowknife Weatheradio 05:00 to 23:00 Local Standard Time
Inuvik	Inuvik Weatheradio 05:00 to 23:00 Local Standard Time
☛ Lake Winnipeg: Gimli	Thunder Bay Ch26, Ch19 at 0140, 0840, 1240, 1640, 2140
☛ Lake Winnipeg: Grand Rapids	Thunder Bay Ch26, Ch19 at 0140, 0840, 1240, 1640, 2140
☛ Lake Winnipeg: George Island	Thunder Bay Ch26, Ch19 at 0140, 0840, 1240, 1640, 2140
☛ Lake Winnipeg: Norway House	Thunder Bay Ch26, Ch19 at 0140, 0840, 1240, 1640, 2140
☛ Lake Winnipeg: Berens River	Thunder Bay Ch26, Ch19 at 0140, 0840, 1240, 1640, 2140
☛ Lake Winnipeg: Victoria Beach	Thunder Bay Ch26, Ch19 at 0140, 0840, 1240, 1640, 2140
Norman Wells	Inuvik Weatheradio 05:00 to 23:00 Local Standard Time
Sachs Harbour	Inuvik Weatheradio 05:00 to 23:00 Local Standard Time
Tuktoyaktuk	Inuvik Weatheradio 05:00 to 23:00 Local Standard Time
Yellowknife	Yellowknife Weatheradio 05:00 to 23:00 Local Standard Time

Marine Weather Observations – Automatic stations

Weather Reports (See note 2) for:	Broadcast Stations
Inner Whale Back Island automatic station	Yellowknife Weatheradio 05:00 to 23:00 Local Standard Time

Marine Weather Observations – Buoy reports

Weather Reports (See note 2) for:	Broadcast Stations
Great Slave Lake Buoy 45141	Inuvik: 0115 Yellowknife Weatheradio 05:00 to 23:00 Local Standard Time
Great Slave Lake Buoy 45150	Inuvik: 0115 Yellowknife Weatheradio 05:00 to 23:00 Local Standard Time
Lake Winnipeg Buoy 45140 (South Basin)	Winnipeg, Riverton & Long Point Weatheradio
Lake Winnipeg Buoy 45144 (North Basin)	Winnipeg, Riverton & Long Point Weatheradio

(2) When available. Full broadcasts from staffed stations. Temperature and winds from automatic stations and buoys.

MARITIMES, NEWFOUNDLAND AND LABRADOR

Marine Weather Forecast Program

The program provides marine weather, sea state and wave height information for the waters around the Maritimes, Newfoundland and Labrador out to approximately 250 nm and the waters of the Gulf of St. Lawrence, and for other specific bodies of water. The Atlantic Storm Prediction Centre also maintains a Wave Analysis and forecasting program which provides analysis and forecast wave charts for the north Atlantic for DND; these charts are subsequently rebroadcast by FLEET on RadioFax.

a) The regular program

The regular program covers the waterways mentioned above, plus detailed forecasts for Halifax Harbour and this is in effect year round.

The program provides a full 24 hour, 7 days a week weather watch, warning and amendment service. Regular forecasts and synopsis are issued 4 times a day at 03:00, 10:00, 15:30 and 20:00 for the waters around Nova Scotia and Newfoundland waters and at 04:00, 09:30, 16:00 and 21:30 for the Labrador waters. Each contains detailed forecast for the period up until midnight the following day issue. An outlook for the following 3 days is produced at 04:00 and 16:00 for the Maritimes, at 05:00 and 16:30 for Newfoundland and Labrador.

Wave height forecasts are issued twice a day at 05:00 and 17:00 for the waters around Nova Scotia and at 06:00 and 18:00 for both Newfoundland and Labrador waters. Sea State forecasts cover the following **30** hours.

b) The recreational program

The recreational program covers the waters of Bras d'Or Lakes in Cape Breton during the summer season (May 01 to October 31). Recreational forecasts are issued 3 times a day at 03:00, 10:00, 15:30. Each issue contains detailed forecast for the period up until midnight the following day with an outlook for the following (3rd) day.

Marine Weather Warnings:

(refer to Table 1, page 5-1). Note the following regional particularities:

	Warning Types	Comments
1	Strong wind warning	Applies to Maritimes only They are mentioned in the synopsis and in Halifax Harbour and Bras d'Or Lakes forecasts only Issued between April 15 and November 15.
8	Ice warning	Ice warnings, as issued by the Ice Branch, are mentioned in the Marine Synopsis

Weather Bulletins

Observations on the Marine Line and Weatheradio are updated hourly and include a series of coastal stations extending around the coast of Newfoundland and Labrador and from the coast of Maine around the Maritimes and into the Gulf of St. Lawrence, as well as offshore buoys.

Canadian Hurricane Centre

Canadian Hurricane Centre is collocated with the Atlantic Storm Prediction Centre. It becomes operational when the effects of a Tropical storm enters or threatens to enter our response zone within 48-72 hrs. (Distant Tropical storm information is mentioned in Marine Synopsis if the storm is north of 30 deg N and west of 40 deg W.) When operational the Canadian Hurricane Centre issues 6 hourly bulletins which include information statements for Public and Media and Prognostic messages for AEB and CFWS. Bulletins are issued at 3 hourly intervals when the storm threatens land.

Moored Buoys: Positions North-West Atlantic Ocean

WMO#	Name	LAT	LONG
44137	East Scotia Slope	42.28 N	062.00 W
44138	SW Grand Banks	44.26 N	053.62 W
44139	Banquereau	44.27 N	057.09 W
44140	Tail of the Bank	43.75 N	051.75 W
44141	Laurentian Fan	43.00 N	058.00 W
44142	La Have bank	42.50 N	064.02 W
44251	Nickerson Bank	46.44 N	053.39 W
44255	NE Burgeo Bank	47.28 N	057.35 W
44258	Halifax Harbour Approaches	44.50 N	063.40 W

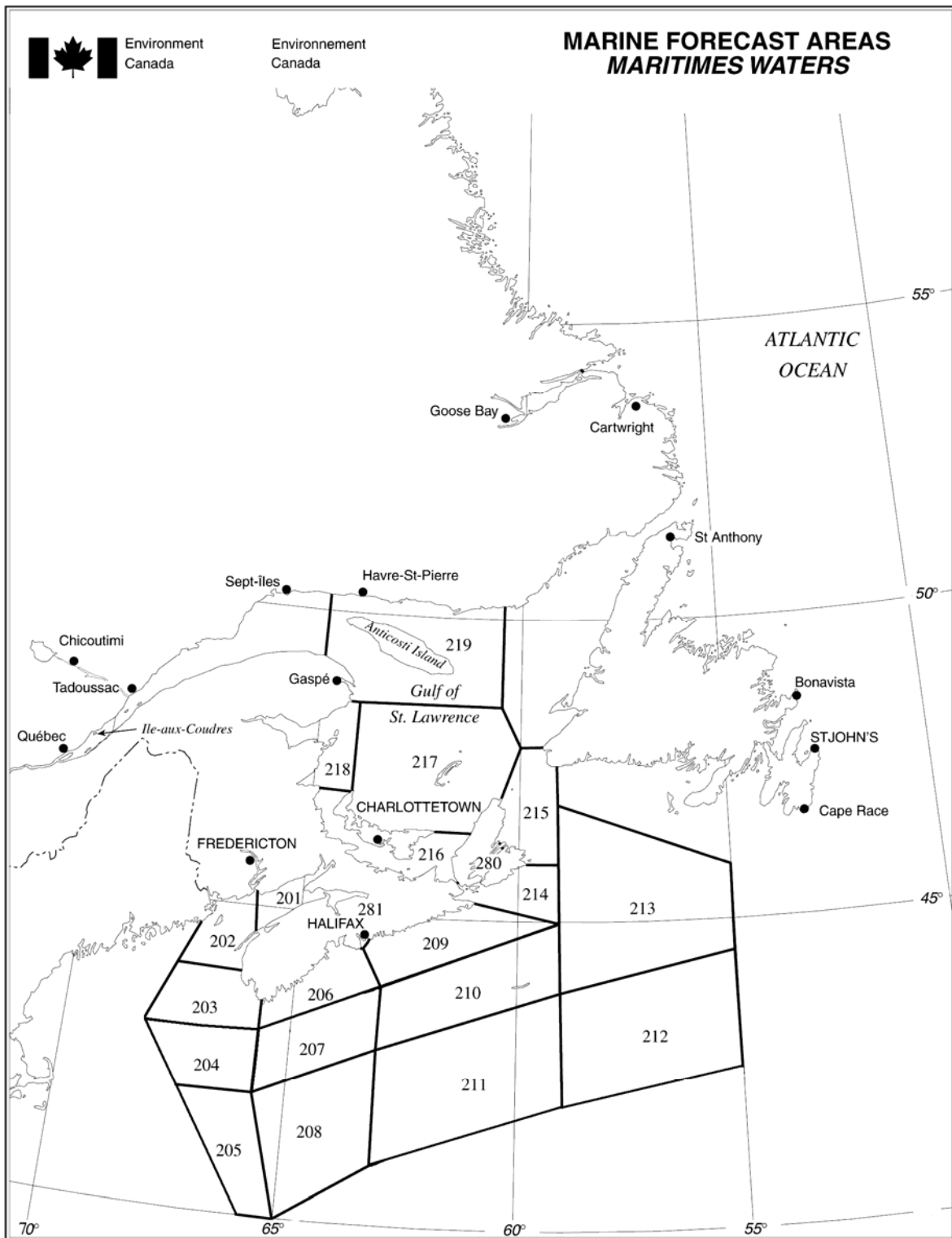
Weatheradio Canada

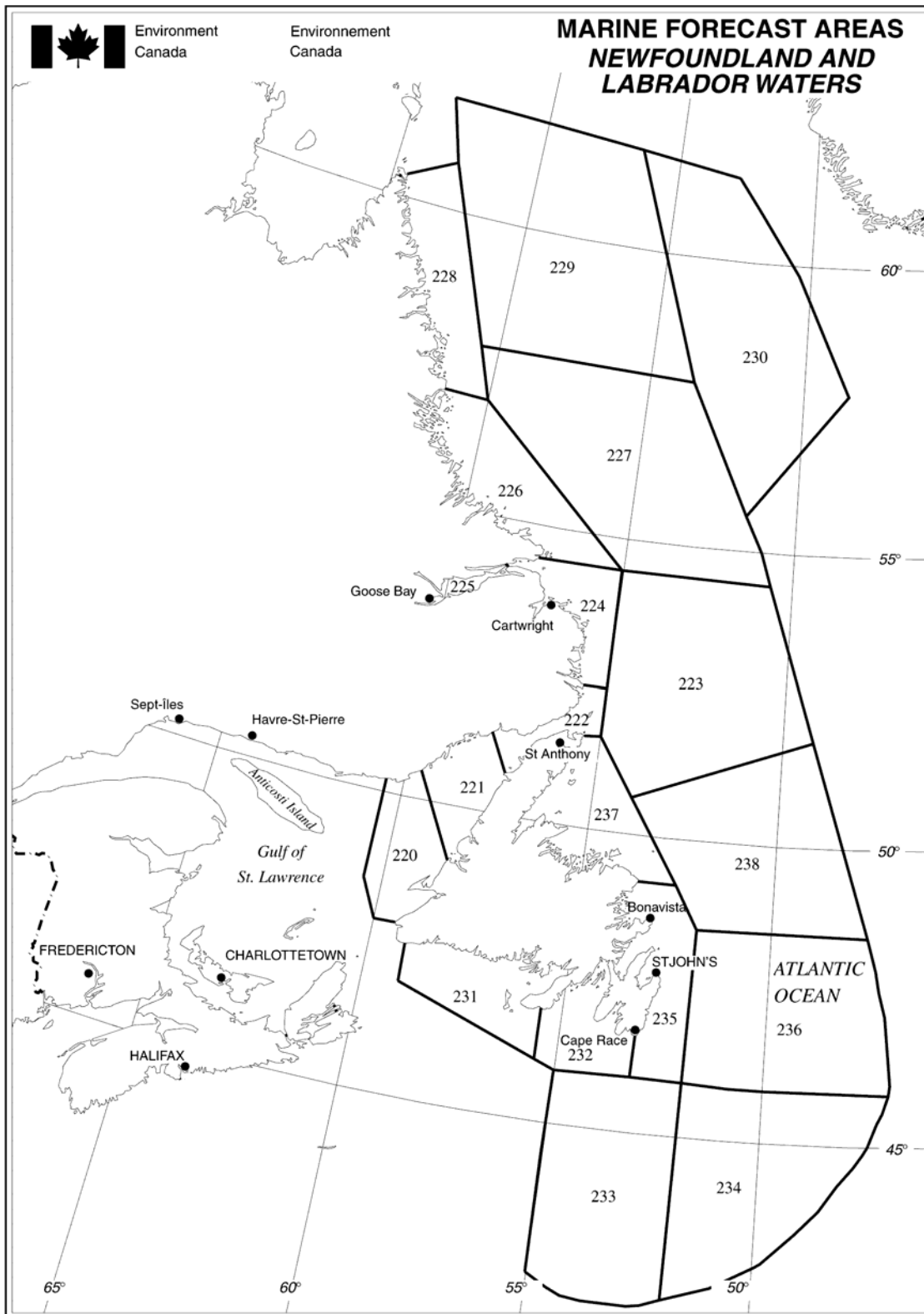
There are 3 main stations in Atlantic Canada.

Stations	CALL SIGN	Repeaters
Gander	XLM 616	15
Moncton	XLM 466	8
Halifax	XLK 473	14

Frequencies in use: 162.400 MHz, 162.475MHz, 162.550 MHz.

Broadcasts can be received over most coastal areas of New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and southern Labrador. Broadcasts include **warnings**, marine weather **forecasts**, **synopses**, **sea state** forecasts, **ice** conditions. Hourly updated observations from coastal stations and offshore buoys are all incorporated in the broadcast.





NAVTEX and Marine Forecasts - Maritime Waters.

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.
(year round products unless noted)

AREA	AREA NAME	NAVTEX	SYNOPSIS, FORECASTS, SEA STATE AND WARNINGS
201	Fundy	Saint John: (E) 0720, 1120, 1920, 2320 (F) 0735, 1135, 1935, 2335	Saint John: 0140, 1040, 1640, 2040, CMB (B) Weatheradio
202	Grand Manan		
203	Lurcher	same as for 201 and 202	Saint John: 0140, 1040, 1640, 2040, CMB (B) Halifax: 0240, 0810, 1540, 2010, CMB Weatheradio
204	Brown's Bank		
205	George's Bank		
206	South Western Shore		
207	Lahave Bank		
208	West Scotian Slope		
209	Eastern Shore	Sydney: (E) 0640, 1040, 1840, <u>2240</u> (1) (F) 0655, 1055, 1855, <u>2255</u> (1)	Sydney: 0040, 0740, 1440, 1940, CMB (B) Halifax: 0240, 0810, 1540, 2010, CMB Weatheradio
210	Sable	same as for area 209	Halifax: 0240, 0810, 1540, 2010, CMB Weatheradio
211	East Scotian Slope		
212	Laurentian Fan		
213	Banquereau	same as for area 209	Halifax: 0240, 0810, 1540, 2010, CMB Sydney: 0040, 0740, 1440, 1940, CMB (B) Placentia: 0048, 0737, 1607, 2137, CMB Weatheradio
214	Fourchu	same as for area 209	Halifax: 0240, 0810, 1540, 2010, CMB Sydney: 0040, 0740, 1440, 1940, CMB (B) Weatheradio
215	Cabot Strait	Sydney: (E) 0640, 1040, 1840, <u>2240</u> (1) (F) 0655, 1055, 1855, <u>2255</u> (1) Rivière-au-Renard: (E) <u>0020 (1)</u> , 0820, 1220, 2020 (F) <u>0035 (1)</u> , 0835, 1235, 2035	Sydney: 0040, 0740, 1440, 1940, CMB (B) Port aux Basques: 0207, 0807, 1507, 2107, CMB (B) Placentia: 0048, 0737, 1607, 2137, CMB Rivière-au-Renard (B): 0437, 0847, 1407, 2317, CMB Weatheradio
216	Northumberland Strait	same as for area 215	Sydney: 0040, 0740, 1440, 1940, CMB (B) Rivière-au-Renard (B): 0437, 0847, 1407, 2317, CMB Weatheradio
217	Gulf-Magdalen	same as for area 215	Sydney: 0040, 0740, 1440, 1940, CMB (B) Port aux Basques: 0207, 0807, 1507, 2107, CMB (B) Rivière-au-Renard (B): 0437, 0847, 1407, 2317, CMB Weatheradio
218	Chaleur-Miscou	same as for area 215	Sydney: 0040, 0740, 1440, 1940, CMB (B) Rivière-au-Renard (B): 0437, 0847, 1407, 2317, CMB Weatheradio
219	Anticosti	same as for area 215	Port aux Basques: 0207, 0807, 1507, 2107, CMB (B) Rivière-au-Renard (B): 0437, 0847, 1407, 2317, CMB Weatheradio Les Escoumins: CMB (B)
280	Bras d'Or Lakes	n/a	Weatheradio (2)
281	Halifax Harbour & Approaches	n/a	Halifax: 0240, 0810, 1540, 2010, CMB Weatheradio

(E): English (F): French (B): Both English and French

S: Summer

W: Winter

(1): Marine forecasts and ice information during ice season only.

NAVTEX and Marine Forecasts - Newfoundland and Labrador Waters.

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

(year round products unless noted)

AREA	AREA NAME	NAVTEX (1)	SYNOPSIS, FORECASTS, SEA STATE AND WARNINGS
220 221	Gulf Port-Au-Port Northeast Gulf	Rivière-au-Renard: (E) 0020 (1) , 0820,1220, 2020 (F) 0035 (1) , 0835,1235, 2035 Sydney: (E) 0640, 1040, 1840, 2240 (1) (F) 0655, 1055, 1855, 2255 (1)	St-Anthony: 0107, 0907, 1337, 1937 CMB Port aux Basques: 0207, 0807, 1507, 2107, CMB (B) Rivière-au-Renard (B): 0437, 0847, 1407, 2317, CMB Weatheradio
222	Belle Isle	Labrador: 0350, 0750, 1550, 1950 0910, 2110 (July-Oct.) Rivière-au-Renard: (E) 0020 (1) , 0820,1220, 2020 (F) 0035 (1) , 0835,1235, 2035	Labrador: 0137, 1007, 1437, 2037, CMB St-Anthony: 0107, 0907, 1337, 1937 CMB Port aux Basques: 0207, 0807, 1507, 2107, CMB (B) Weatheradio
223	Belle Isle Bank	Labrador: 0350, 0750, 1550, 1950 0910, 2110 (July-Oct.)	Labrador: 0137, 1007, 1437, 2037, CMB St-Anthony: 0107, 0907, 1337, 1937 CMB Weatheradio
224	South Labrador coast	Labrador: 0350, 0750, 1550, 1950 0910, 2110 (July-Oct.)	Labrador: 0137, 1007, 1437, 2037, CMB St-Anthony: 0107, 0907, 1337, 1937 CMB
225	Lake Melville	Same as 224	Labrador: 0137, 1007, 1437, 2037, CMB
226	Mid Labrador Coast	Same as 224	Labrador: 0137, 1007, 1437, 2037, CMB St-Anthony: 0107, 0907, 1337, 1937 CMB
227	South Labrador Sea	Same as 224	Labrador: 0137, 1007, 1437, 2037, CMB St-Anthony: 0107, 0907, 1337, 1937 CMB
228 229 230	North Labrador Coast Northwest Labrador Sea East Labrador Sea	Labrador: 0350, 0750, 1550, 1950 0910, 2110 (July-Oct.)	Iqaluit: 1340, 2235 Labrador: 0137, 1007, 1437, 2037
231	Southwest Coast	Sydney: (E) 0640, 1040, 1840, 2240 (1) (F) 0655, 1055, 1855, 2255 (1)	Placentia: 0048, 0737, 1607, 2137, CMB Sydney: 0040, 0740, 1440, 1940, CMB (B) Port aux Basques: 0207, 0807, 1507, 2107, CMB (B) Weatheradio
232	South Coast	St John's: 0220, 0620 (S), 1020 (W), 1420, 1820 (S), 2220 (W) Sydney: (E) 0640, 1040, 1840, 2240 (1) (F) 0655, 1055, 1855, 2255 (1)	Placentia: 0048, 0737, 1607, 2137, CMB St John's: 0007, 0837, 1637, 2207, CMB Sydney 0040, 0740, 1440, 1940, CMB (B) Weatheradio
233 234	Southwestern Grand Banks Southeastern Grand Banks	St John's: 0220, 0620 (S), 1020 (W), 1420, 1820 (S), 2220 (W)	Placentia: 0048, 0737, 1607, 2137, CMB St John's: 0007, 0837, 1637, 2207, CMB Weatheradio
235	East Coast	St John's: 0220, 0620 (S), 1020 (W), 1420, 1820 (S), 2220 (W)	Placentia: 0048, 0737, 1607, 2137, CMB St John's: 0007, 0837, 1637, 2207, CMB St-Anthony: 0107, 0907, 1337, 1937 CMB Weatheradio
236	Northern Grand Banks	St John's: 0220, 0620 (S), 1020 (W), 1420, 1820 (S), 2220 (W)	Placentia: 0048, 0737, 1607, 2137, CMB St John's: 0007, 0837, 1637, 2207, CMB Weatheradio
237 238	Northeast Coast Funk Island Bank	St John's: 0220, 0620 (S), 1020 (W), 1420, 1820 (S), 2220 (W)	St John's: 0007, 0837, 1637, 2207, CMB St-Anthony: 0107, 0907, 1337, 1937 CMB Weatheradio

(E): English

(F): French

(B): Both English and French

S: Summer

W: Winter

(1): Marine forecasts and ice information during ice season only.

Marine Weather Observations - Maritimes, Newfoundland and Labrador

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

Stations		Broadcast Stations (2)
1	Goose Bay	Labrador on CMB
2	Cartwright	
3	Makkovik	
4	Hopedale	
5	Nain	
6	Mary's Harbour	
7	Cape Race	Placentia on CMB
8	Argentia	
9	St. Pierre	
10	Marticot	
11	Sagona	
12	St Lawrence	
13	Pointe-des-Monts	Rivière-au-Renard on request
14	Sept-Iles	
15	Ile du Perroquet	
16	Pointe Heath (Anticosti)	
17	Port Menier	
18	Cape d'Espoir	
19	Rivière-au-Renard	
20	Miscou	
21	Natashquan	
22	Chevery	
23	Cap Whittle	
24	St. Anthony Airport	St Anthony on CMB
25	Englee	
26	LaScie	
27	Blanc Sablon	
28	Mary's Harbour	
29	Twillingate	
30	Pool's Island	
31	St Anthony's Harbour	
32	Burgeo	Port aux Basques on CMB
33	Port aux Basques	
34	St. Paul Island	
35	Stephenville	
36	Daniels's Harbour	
37	Ferolle Pt.	
38	Blanc Sablon	
39	Pool's Island	St John's on CMB
40	Bonavista	
41	Grates Cove	
42	St John's	
43	Cape Race	
44	Argentia	

Observations will be broadcast when available only.

Hourly updated observations from coastal stations and offshore buoys may also be available on **Weatheradio**

QUEBEC REGION

Marine Weather Forecast Program

The program provides weather information for the St. Lawrence waterway, the Saguenay river as well as James Bay and eastern Hudson Bay. The program also provides information for other specific lakes or navigable waterways.

a) The regular program

Area of coverage St. Lawrence waterway between Cornwall* Ont. and Anticosti Island (65°W), and the Saguenay waterway between Chicoutimi and Tadoussac. (see map areas 301-309).

Time coverage: Year round **St. Lawrence seaway portion (Cornwall to Montréal) in open season only.*

The program provides a **full 24 hour, 7 days a week weather watch, warning and amendment service**. Regular forecast are issued twice a day at 03:30 and 15:30 eastern time. Each issue of the forecasts contains a synopsis, a detailed forecast, and extended forecast and a **MAFOR** for each area.

Wave height forecasts are issued twice a day at 05:00 and 17:00 for marine areas 301, 302, 303 and 305.

b) The northern program

Area of coverage: James Bay and eastern Hudson Bay. (See map areas 310-311-312)

Time coverage: Navigation season (July - November).

The northern program provides a **full 24 hour, 7 days a week weather watch, warning and amendment service** during the navigation season. Forecasts are issued twice a day at 06:00 and **18:00** eastern time.

Wave height forecasts are issued twice a day at 07:30 and 19:30 for marine areas 310, 311 and 312.

Marine Weather Warnings: (refer to Table 1, page 5-1)

Note the following regional particularities with respect to the **regular** programs:

	Warning Types	Comments
1	Strong wind warning	Issued between April and October only. Southern program only.

The ice warnings issued by CIS are incorporated into the regular forecasts and broadcast on WeatherRadio.

c) The recreational program

Area of coverage: Various lakes and navigable waterways. (See map areas **380 to 386**).

Time coverage: Summer months (May - October).

The recreational (pleasure boaters) program provides a **full 24 hour, 7 days a week** squall line service during the summer months (refer to Table 1, page 5-1)

Weather Bulletins

Environment Canada operates a network of coastal and insular weather observing stations as well as one weather buoy. Hourly weather reports from these stations are available continuously on Environment Canada Weatheradio (see Weatheradio) and on request from the Canadian Coast Guard MCTS Centres (refer to Marine Weather Observations).

Buoys Positions St. Lawrence River

In order to complement its network of coastal and insular weather observing stations, Environment Canada operates one weather buoy on the St-Lawrence. Mariners are requested to use caution when approaching the buoy as mooring chains are normally not detectable from a ship and can be damaged or even cut if there is contact.

WMO#	Name	LAT	LONG
45138	Mont Louis	49.54 N	65.77 W

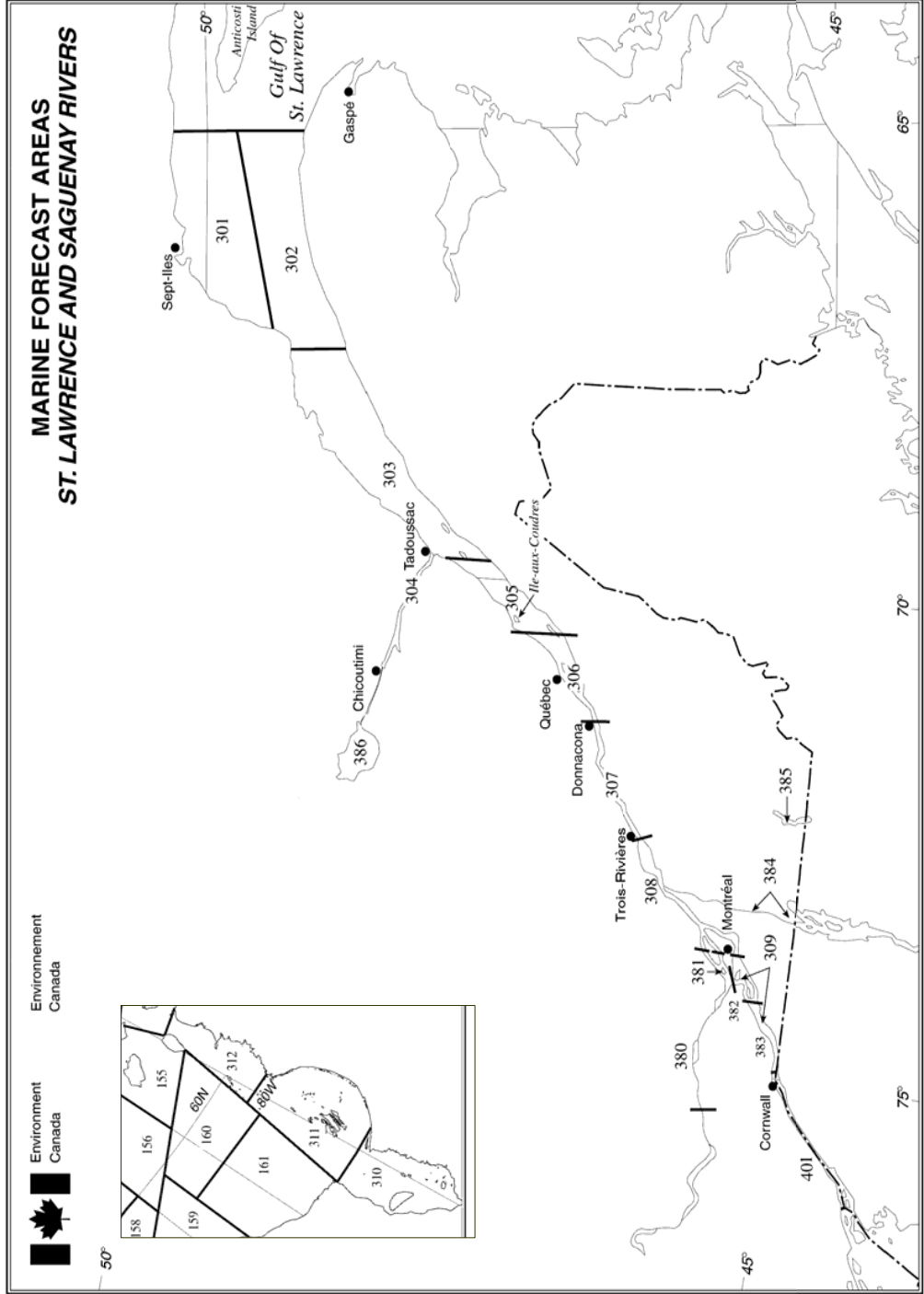
Weatheradio Canada

Weatheradio is a public service designed to make weather information available over VHF-FM continuously. Weatheradio is dedicated to transmitting up to the minute weather reports and forecasts directly to all users including the marine community. The table below lists all the Weatheradio stations under the responsibility of Environment Canada - Québec region broadcasting marine forecasts and weather reports. Below is a table showing the Weatheradio stations and frequencies:



Stations	Frequency (Mhz)	Stations	Frequency (Mhz)
Montréal	162.550	Prevert	162.475
Trois-Rivières	162.400	Rivière-au-Renard	162.475
Québec	162.550	Gaspe (Pudding Stone)*	162.550
Baie St-Paul	162.400	Carleton *	162.500
Grand-Fonds	162.475	Mingan *	162.400
Mont Valin	162.550	Kegashka *	162.475
Rimouski	162.550	Harrington Harbour *	162.550
St-Cléophas	162.400	Blanc-Sablon *	162.400
Sept-Iles (Pointe Noire)	162.550	Magdalen Islands *	162.550

*Although located in the Québec region, these stations do also broadcast marine forecasts from Environment Canada Atlantic region as indicated in the Maritimes, Newfoundland, Labrador chapter.



NAVTEX and Marine Forecasts – St. Lawrence and Saguenay Rivers

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

(year round products unless noted)

Area	Area Name	NAVTEX	Synopsis, Forecasts, and Warnings
301	Pointe-des-Monts to Anticosti - northern half	Rivière-au-Renard: (E): 0020 (1), 0820 1220, 2020 (F): 0035 (1), 0835 1235, 2035	Les Escoumins: CMB Rivière-au-Renard: 0437 0847 1407 2317 CMB (B) Weatheradio
302	Pointe-des-Monts to Anticosti - southern half	Same as for area 301	Les Escoumins: CMB Rivière-au-Renard: 0437 0847 1407 2317 CMB (B)
303	Tadoussac to Pointe-des-Monts	Same as for area 301	Les Escoumins: CMB Rivière-au-Renard: 0437 0847 1407 2317 CMB (B) Québec: CMB (MAFOR) Weatheradio
304	Chicoutimi to Tadoussac	Same as for area 301	Rivière-au-Renard: 0437 0847 1407 2317 (B) Québec: CMB (MAFOR) Weatheradio
305	Île-aux-Coudres to Tadoussac	n/a	Québec: CMB (MAFOR) Weatheradio
306	Donnacona to Île-aux-Coudres	n/a	Québec: CMB (MAFOR) Prescott CMB (F) (MAFOR) Weatheradio
307	Trois-Rivières to Donnacona	n/a	Québec: CMB (MAFOR) Prescott CMB (F) (MAFOR) Weatheradio
308	Montréal to Trois-Rivières	n/a	Québec: CMB (MAFOR) Montréal: CMB (MAFOR) Prescott CMB (F) (MAFOR) Weatheradio
309	Cornwall to Montréal (Seaway season)	n/a	Montréal: CMB (MAFOR) Prescott CMB (F) (MAFOR) Weatheradio
380	Carillon to Île Pétrie	n/a	Montréal on request
381	Lake Des Deux Montagnes	n/a	Montréal: CMB , Weatheradio
382	Lake St-Louis	n/a	Montréal: CMB , Weatheradio
383	Lake St-François	n/a	Montréal: CMB , Weatheradio
384	Richelieu river and Lake Champlain	n/a	Weatheradio
385	Lake Memphremagog	n/a	Weatheradio
386	Lake St-Jean	n/a	Weatheradio

(E): English **(F):** French **(B):** Both English and French

(1): Marine forecasts and ice information during ice season only.

Marine Weather Observations – St. Lawrence and Saguenay Rivers

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

Stations	Broadcast Stations
Baie-Comeau	Les Escoumins: on request
Cap Rouge	Québec: on request
Cap-chat	Les Escoumins: on request
Dorval Airport	Montréal: on request, May - October
Île aux Grues	Québec: on request
Île Bicquette	Les Escoumins: on request
Île Bicquette	Québec: on request
Île Charron	Montréal: on request, May - October
Île d'Orléans (St François)	Québec: on request
Île Rouge	Les Escoumins: on request
Île Rouge	Québec: on request
Île St-Quentin	Québec: on request
Lauzon	Québec: on request
Mont-Joli	Les Escoumins: on request
Pointe Claveau	Québec: on request
Pointe-des-Monts	Les Escoumins, Rivière-au-Renard: on request
Port Alfred	Les Escoumins: on request
Rivière-au-Renard	Rivière-au-Renard: on request
Sept-Îles	Rivière-au-Renard: on request
St.-Hubert Airport	Montréal: on request, May - October

Reports are broadcast when available.

GREAT LAKES INCLUDING ST. LAWRENCE RIVER TO CORNWALL

Marine Weather Forecast Program

The program provides marine weather information for the waterway between Cornwall and Thunder Bay, and for other specific lakes or navigable waterways.

a) The marine weather forecast program

The program covers the waterway between Cornwall and Thunder Bay and is in effect **year round** except for the St. Lawrence Seaway portion where the service is offered during the open season only. The marine areas include: Lake Superior, Whitefish Bay, Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie, and Lake Ontario. Note that the marine forecast applies to the entire lake or specific body of water.

The program provides a **full 24 hour, 7 days a week weather watch, warning and amendment service**. Synopsis, **regular** forecast and wave height forecasts are issued 3 times a day at 03:00, 10:30 and 18:30 Eastern Time. Each issue of the regular forecast contains a detailed marine weather forecast for the period extending up to the end of the following day. Extended forecasts (3 to 5 day) are issued twice a day at 03:00 and 18:30. In addition, each regular or amended issue of the plain language marine weather forecast bulletin for the Great Lakes and the St. Lawrence Seaway from Kingston to Cornwall includes a specially coded MARine FORecast or **MAFOR** covering the forecast period. Special **NAVTEX** bulletins containing compressed marine forecasts for the Great Lakes (excluding the Seaway but including Lake Michigan) are also issued 8 times a day.

b) The marine warning and advisory programs

Marine Weather Warnings: (refer to Table 1, page 5-1): Note the following regional particularities with respect to the **regular** program:

	Warning Types	Comments
1	Strong wind warning	Issued May-Oct. and applies to Canadian waters only
7	Special marine warnings	<p>High Water level: Surge that is expected to exceed a critical level for more than 1 hour, or Wind/wave event that exceeds the critical level for more than 6 hours</p> <p>Small Craft thunderstorm advisory*: Probability of thunderstorm is 40% or greater. Issued May-Oct. and applies to Canadian waters only.</p> <p>Waterspout advisory* : whenever occurrence of waterspouts or cold air funnels are likely.</p>

*: Advisories are communicated to mariners by means of a special warning statement within the body of the regular or revised marine forecast.

c) The recreational boating forecast program

The recreational program covers specific lakes or navigable waterways other than the Great Lakes and the St. Lawrence Seaway and is in effect during the summer season (May-October). Each issue of the forecast contains a detailed forecast for the next 24 hour. **Recreational forecasts** are issued 3 times a day at 05:00, 11:30 and 17:30 Eastern Time for Lake Simcoe, Lake Nipissing, Lake of the Woods, the North Channel and Lake Nipigon.

d) The recreational boating warning program

(refer to Table 1, page 5-1): note the following regional particularities:

	Warning Types	Comments
1	Strong wind warning	In addition to the inland lakes, a strong wind warning program is maintained for North Channel.
5	Freezing Spray	<i>N/a for this program</i>
7	Special marine warnings	<p>Small Craft thunderstorm advisory*: Probability of thunderstorm is 40% or greater. Issued May-Oct.</p> <p>Waterspout advisory* : whenever occurrence of waterspouts or cold air funnels are likely.</p> <p>High water level : <i>N/a for this program</i></p>

*: Advisories are communicated to mariners by means of a special warning statement within the body of the regular or revised marine forecast.

e) The severe weather watch and warning program

A **thunderstorm** is considered to be **severe** when it produces one or more of the following:

- wind gusts to 90 km/h (49 knots) or more
- hail of two centimeters (cm) in diameter or larger
- rainfall of 50 mm or more within one hour or 75 mm or more within three hours
- tornado

A separate **Severe Thunderstorm Watch** will be issued for any marine area across Ontario whenever conditions indicate the likely development of thunderstorms, some of which may be severe. The **leadtime** is normally two to six hours.

A separate **Severe Thunderstorm Warning** will be issued for a marine area across Ontario only when severe thunderstorms are occurring or are about to occur. The **leadtime** is normally 15 minutes to two hours.

A separate **Tornado Watch** will be issued for any marine area across Ontario whenever severe thunderstorms are expected to develop and there is a possibility that one or more may spawn tornadoes.

A separate **Tornado Warning** will be issued for a marine area across Ontario only when a tornado has been reported or when the weather service forecasts that a tornado is likely to form.

Confirmation of the status or ending of these messages will be highlighted in the regular or a revised marine or recreational boating forecast by means of a special warning statement, e.g., "Tornado Watch in Effect".

Weather Bulletins: LAWEB (Great Lakes weather bulletin)

LAWEB consists of weather reports as received from Canadian Lighthouses, automated weather stations, U.S. and Canadian weather buoys and weather offices located adjacent to the Great Lakes as observed at: 0000, 0300, 0600, 0900, 1200, 1500, 1800, 2100 UTC. When available, these reports are carried as part of the appropriate Continuous Marine Broadcast for three hours after the time of observation. MCTS will broadcast these reports for the locations indicated in the centre listing. More information on transmission of LAWEB can be found in the Broadcast of Marine Forecasts section.

Facsimile package available

The package is available by fax via Prescott MCTS Centre and consists of:

- marine forecast for the Great Lakes and St. Lawrence River (eastward to Cornwall only).
- marine weather warnings
- charts of marine observations issued 4 times a day at: 0200, 0800, 1400, 2000 UTC
- 12 hr prognostic chart issued twice a day at 1:00 a.m. & 1:00 p.m. local
- Ice charts and reports – reference Part 5 Canadian Ice Services section

The facsimile package may be polled by calling (613) 925-0666 and operating the POLL function on your facsimile machine. Mariners are cautioned that information may not be the latest issue.

Buoys

In order to complement his observational network, Environment Canada operates a network of buoys around the Great Lakes. This data becomes part of the collection of weather reports sent through LAWEB and is used to improve marine forecasting. Mariners are requested to use caution when approaching buoys as mooring chains are normally not detectable from a ship and can be damaged or even cut if there is contact, what will make the buoy loose and cause a costly recovery of the platform.

Cdn. Buoys	Lake	Centre
45132	Central Erie	42°28.3"N 81°12.9"W
45135	East Ontario	43°47.4"N 76°52.4"W

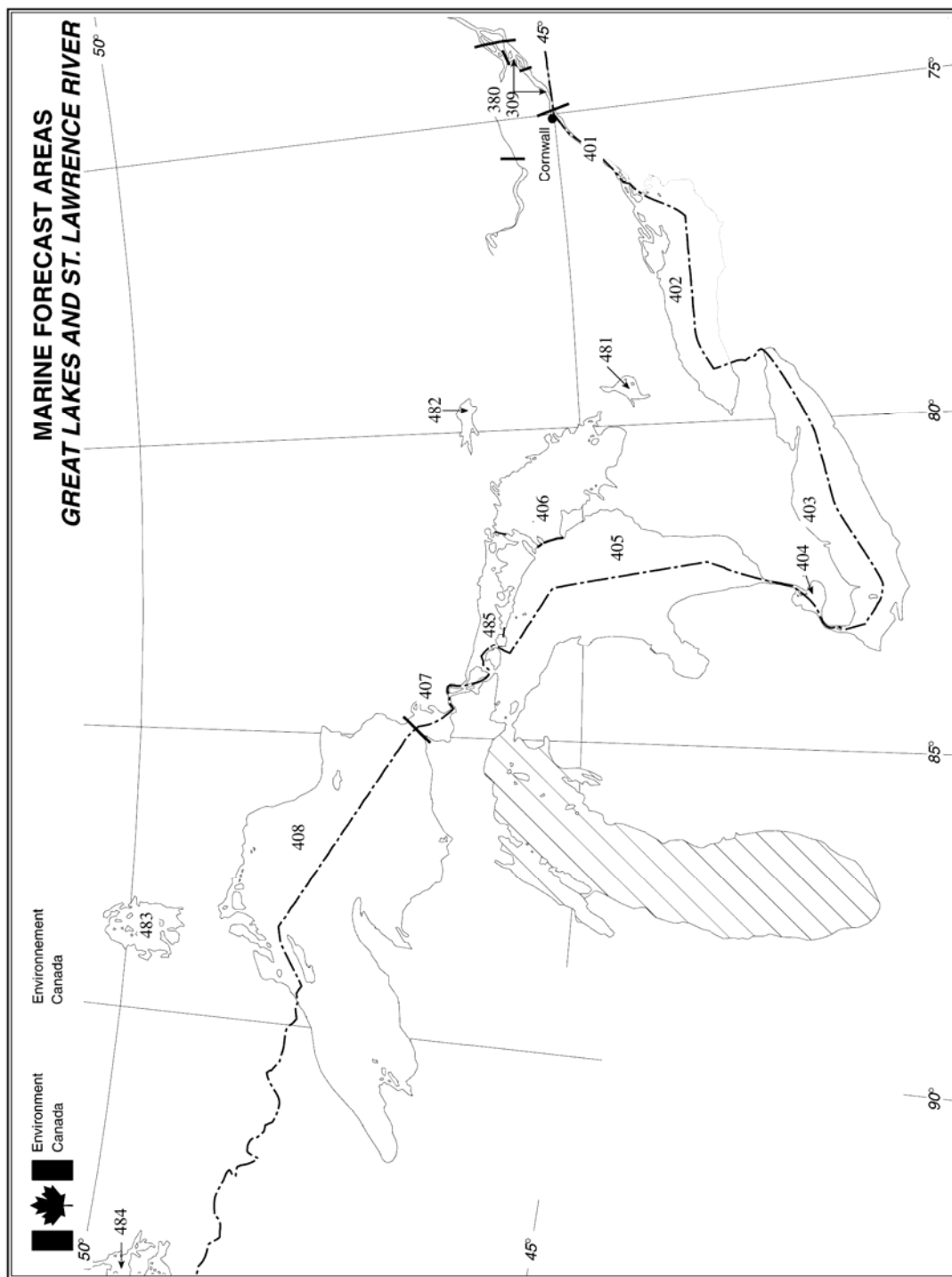
Cdn. Buoys	Lake	Centre	
45136	N. Superior	48°32.3"N	86°56.8"W
45137	N. Georgian B.	45°32.6"N	81°00.9"W
45139	West Ontario	43°25.6"N	79°22.9"W
45142	East Erie	42°44.2"N	79°17.4"W
45143	S. Georgian B	44°55.1"N	80°37.7"W
45146	Triaxys	N/a	
45147	St. Clair	42°25.8"N	82°41.0"W
45148	L. of the Woods	49°38.3"N	94°33.5"W
45149	SE. Huron	43°32.5"N	82°04.5"W
45151	L. Simcoe	44°30"N	79°22"W
45152	L. Nipissing	46°14"N	79°43"W
45153	Wave test	43°25.4"N	79°21.9"W
45154	North Channel	46°03N	82°38W
45159	Grimsby	43°13.7"N	79°28.3"W
45160	16 Mile Creek	43°25.4"N	79°37.7"W

U.S. buoys	Lake	Centre	
45001	C. Superior	48°00'00"N	87°36'00"W
45002	Michigan N.	45°18'00"N	86°18'00"W
45003	N. Huron	45°18'00"N	82°48'00"W
45004	E. Superior	47°12'00"N	86°30'00"W
45005	W. Erie	41°42'00"N	82°30'00"W
45006	W. Superior	47°18'00"N	90°00'00"W
45007	Michigan S.	42°43'00"N	87°06'00"W
45008	S. Huron	44°18'00"N	82°24'00"W

Weatheradio Canada

A very comprehensive network of stations is covering the Great Lakes area. Frequencies in use are: **162.400 MHz, 162.475 MHz, and 162.550 MHz**. Broadcasts include Public and Marine Forecasts, select warnings, watches and advisories. Hourly updated observations from coastal stations and offshore buoys are all incorporated in the broadcast.

Note: **Weatheradio Canada** alerts users to selected warnings of severe weather automatically, provided receivers are equipped with suitable alert devices they will emit a loud continuous tone and/or flashing light when a warning is issued.



NAVTEX and Marine Forecasts – St. Lawrence and Great Lakes Waters

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

(year round products unless noted)

Area	Area Name	NAVTEX (times UTC)	Synopsis, Forecasts and Warnings
401	Kingston to Cornwall	n/a	Prescott CMB EAST (MAFOR)
402	Lake Ontario	Prescott: 0510, 0910, 1710, 2110	Prescott CMB WEST (MAFOR) Prescott CMB EAST (MAFOR)
403	Lake Erie	Prescott: 0510, 0910, 1710, 2110	Prescott CMB WEST (MAFOR) Sarnia CMB NORTH (MAFOR) Sarnia CMB SOUTH (MAFOR)
404	Lake St Clair	Prescott: 0510, 0910, 1710, 2110	Sarnia CMB NORTH (MAFOR) Sarnia CMB SOUTH (MAFOR)
405	Lake Huron	Prescott: 0510, 0910, 1710, 2110	Sarnia CMB NORTH (MAFOR) Sarnia CMB SOUTH (MAFOR) Thunder Bay CMB WEST (MAFOR) Thunder Bay CMB EAST (MAFOR)
406	Georgian Bay	Thunder Bay: 0230, 1030, 1430, 2230 Prescott: 0510, 0910, 1710, 2110	Prescott CMB Ch21B (MAFOR) Thunder Bay CMB WEST (MAFOR) Thunder Bay CMB EAST (MAFOR)
407	Whitefish Bay	Thunder Bay: 0230, 1030, 1430, 2230	Thunder Bay CMB WEST (MAFOR)
408	Lake Superior		Thunder Bay CMB EAST (MAFOR)
481	Lake Simcoe	n/a	ECN: May 01 – Oct 31
482	Lake Nipissing	n/a	ECN: May 15 – Oct 31
483	Lake Nipigon	n/a	ECN: May 15 – Oct 31
484	Lake of the Woods	n/a	ECN: May 15 – Oct 31
485	North Channel	n/a	ECN: May 15 – Oct 31 Thunder Bay CMB EAST

309	Cornwall to Montréal	n/a	Montréal on CMB (MAFOR) Prescott CMB (F) (MAFOR)
380	Carillon to Ile Petrie	n/a	ECN: On request (1)

☉ 183	Lake Winnipeg South Basin	n/a	Thunder Bay: 0140,0840,1240,1640,2140 May 15 to October 31.
☉ 184	Lake Winnipeg North Basin	n/a	Thunder Bay: 0140,0840,1240,1640,2140 May 15 to October 31.

Abbreviation: ECN: Environment Canada Network

Marine Weather Observations - St. Lawrence River and Great Lakes

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

Weather Reports (1) for:	Broadcast Stations
Barrie	Prescott CMB (Orillia)
Lake Simcoe ODAS buoy	Prescott CMB (Orillia)
Lagoon City	Prescott CMB (Orillia)
Kingston	Prescott CMB (French)
Alexandria Bay	Prescott CMB (French)
Massena	Prescott CMB (French)
Superior Shoals	Prescott CMB (French)
Grenadier Islands	Prescott CMB (French)
Montréal	Prescott CMB (French)
Reports from Kingston to Montréal	Prescott CMB (French)
Reports from Long Point to Port Colborne	Prescott CMB WEST

Marine Weather Observations - St. Lawrence River and Great Lakes

All broadcast from MCTS Centres except for Environment Canada Weatheradio or private stations.

Weather Reports (1) for:	Broadcast Stations
Reports from Port Weller to Kingston	Prescott CMB WEST
Reports from Great Duck Island to Windsor	Sarnia CMB NORTH
Reports from Sarnia to Port Colborne	Sarnia CMB SOUTH
Reports from Duluth (Lake Superior) to Detour Reef (Lake Huron)	Thunder Bay CMB WEST
Reports from Sault Ste Marie to Sarnia and Georgian Bay	Thunder Bay CMB EAST

(1). Reports are broadcast when available. Reports at sea, like buoys or ships, are also broadcast when available.

(2) Dutkewych Point, Lake Simcoe is a private Radiobeacon and is subject to interruption without notice. It is operational during navigation season only. Broadcast content: air temperature, water temperature, barometrical pressure, wind speed, gusts and direction, wind chill factor.

Location: 44 20'14"N 79 31'58"W

Range: 10 nautical miles

Frequency: 300 kHz

Times: hour: +00, +15, +30, +45

Characteristics: .---- .-..
(1) (L)

CANADIAN ICE SERVICE (CIS)

Marine Ice Forecast Program

Compared to marine weather programs, time scales for ice forecasts are relatively longer. Useful time scales for ice forecast are weekly, monthly and seasonal. At present, the program provides 30 day ice forecast (text) mainly as a planning tool for operators. Specific forecasts for specific areas and specific time scales may be available through requests but they will be cost recovered.

As part of its support to Canadian Coast Guard and shipping, CIS does produce NAVTEX bulletins. These bulletins are created on a daily basis for the southern waters (Newfoundland, Gulf of St. Lawrence and the Great Lakes) and are sent to MCTS Centres where they are broadcast. The bulletin depicts the current ice edge and the ice conditions for the specific areas as well as ice warnings when issued.

Marine Ice Warnings Program

Ice hazard bulletins are produced daily. The intent is to advise users of any ice warning conditions that are in effect or that could develop within the next 24 hours. The bulletins also provide a point by point description of the ice edge.

Ice Warning Criteria

Warning Name	Warning criteria	Lead time
1. Ice pressure warning	Strong ice pressure in coastal areas and channels where shipping is active.	36 hours
2. Closing of leads warning	Rapid closing of coastal leads is expected to occur.	36 hours
3. Special Ice warnings	When an area has cleared of ice for a significant period of time then first-year ice or old ice moves into the area, then a warning is necessary.	36 hours
	When a port or narrow shipping channel is normally open or has been open for a significant amount of time and is expected to become blocked or jammed by ice, then a warning is necessary.	36 hours
	When ice intrudes into areas not normally affected by ice during the season or at times when ice is not normally expected. Climatologically, not normal would mean less than 34% occurrence.	36 hours
	Any amount of Old Ice greater than a trace when not normally expected in active shipping areas	36 hours
	Any unusual and significant ice event that will present an extreme hazard to navigation, and is not covered by other ice warning categories, can be issued as a special ice warning.	36 hours

Ice Reports, Ice Observations

Ice reports from ships or other airborne platform are normally handled through MCTS Centres who make them available for broadcast. These reports are all assimilated in the daily ice charts produced by CIS.

Ice Charts Available

Current ice conditions charts are also produced on a daily basis. The area covered by the chart is season dependent and the charts are normally broadcast at times specified in tables below.

Once a week, CIS produces Regional ice charts. These charts are intended to be used as a planning tool rather than a tactical support tool and are available to users on the CIS website at <http://ice-glaces.ec.gc.ca> and through commercial communication lines. They are not broadcast through MCTS Centres.

Ice Beacons

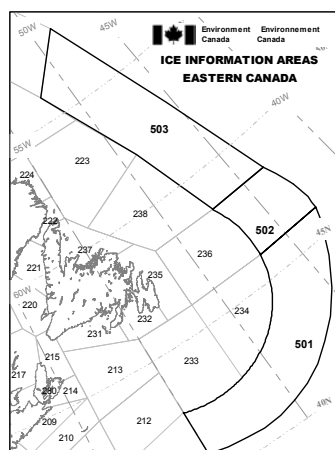
In order to better track the ice drift or to verify ice models, CIS deploys between 4 to 8 ice beacons (locators) yearly. These devices do drift with the ice and are relatively small, so they are very hard to detect from a ship platform. The deployment is done in the Beaufort sea polar pack (1 beacon), in Baffin Bay (1 to 3 beacons), off the East Coast of Labrador or Newfoundland (1 to 3) and in the Gulf of St Lawrence (2 to 4).

Weatheradio Canada

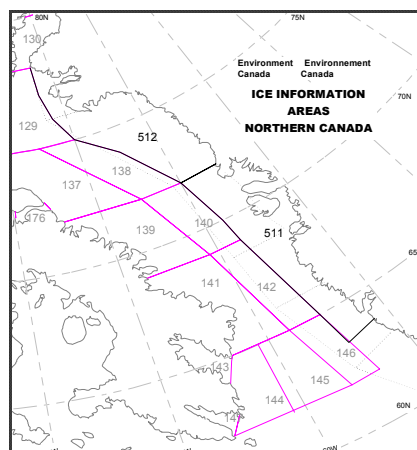
Ice bulletins are not directly put on Weatheradio. Rather, the regions do capture the ice bulletins from the Environment Canada communication network and check if there is an ice warning in effect. If there is one, the warning will normally be added to the regular marine synopsis which is normally broadcast via the Weatheradio network.

Ice areas

Areas for which ice bulletins apply are the same as the areas for which marine forecasts apply. In addition to these, ice bulletins will cover lake Michigan, 3 areas along the East Coast (501 to 502), and two more off the Greenland Coast (511-512).



- 501 Tail of the Bank
- 502 Flemish
- 503 Southeast Labrador Sea
- 511 Greenland Central
- 512 Greenland North



Ice bulletins - Seasonal products unless noted. All broadcast from MCTS Centres.

Region		NAVTEX	Other Ice Bulletins or Reports
Beaufort sea	S	n/a	Inuvik – 0235, 1435 Ice information on request
Western Arctic waterway	S	n/a	Inuvik – 0235, 1435 Ice information on request
Eastern Arctic routes	S	Iqaluit: 1110(F), 1120(E) 2310(F), 2320(E)	Iqaluit: 1705 ice boundary
Baffin Bay /Davis Strait	S	Iqaluit: 1110(F), 1120(E) 2310(F), 2320(E)	Iqaluit: 1705 ice boundary
En Route to Churchill	S	Iqaluit: 1110(F), 1120(E) 2310(F), 2320(E)	Iqaluit: 1705 ice boundary Iqaluit: 0110 (ice bulletin via Corral Harbour) Thunder Bay: 0040, 1520
Foxe	S	n/a	Iqaluit – 1705 ice boundary
Outer Labrador coast	W	Labrador: 2350	Iqaluit: 1705 ice boundary Labrador: 0137, 1007, 1437, 2037, CMB
Labrador coast	W	Labrador: 2350	Iqaluit: 1705 ice boundary St Anthony: 0107, 0907, 1907, CMB - (L) Labrador: 0137, 1007, 1437, 2037, CMB
Outer East Newfoundland Waters	W	St John's: 1820, Limit of all known ice at 2220Z.	St Anthony: 0107, 0907, 1907, CMB - (L)

Ice bulletins - Seasonal products unless noted. All broadcast from MCTS Centres.

Region		NAVTEX	Other Ice Bulletins or Reports
Strait of Belle Isle and Approaches (2)	W	St John's: 1820, Limit of all known ice at 2220Z	St Anthony: 0107, 0907, 1907, CMB - (L)
Northern Peninsula	W	St John's: 1820, Limit of all known ice at 2220Z	St Anthony: 0107, 0907, 1907, CMB - (L) St John's: 0007, 0837, 1637, 2207, CMB
Coastal route north of Cape Freels to Botwood	W	St John's: 1820, Limit of all known ice at 2220Z	St Anthony: 0107, 0907, 1907, CMB - (L) St John's: 0007, 0837, 1637, 2207, CMB
Coastal route south of Cape Freels	W	St John's: 1820, Limit of all known ice at 2220Z	St Anthony: 0107, 0907, 1907, CMB - (L) Placentia: 0737, 2137, CMB St John's: 0007, 0837, 1637, 2207, CMB
Approaches to St John's	W	St John's: 1820, Limit of all known ice at 2220Z	St Anthony: 0107, 0907, 1907, CMB - (L) Placentia: 0737, 2137, CMB St John's: 0007, 0837, 1637, 2207, CMB
South Coast	W	St John's: 1820, Limit of all known ice at 2220Z	Port aux Basques (B): 0807, 1837, CMB Placentia: 0737, 2137, CMB
Approaches to Sydney	W	Sydney: 2240 (E), 2255 (F)	Sydney CMB Port aux Basques (B): 0807, 1837, CMB
Approaches to Chedabucto Bay	W	Sydney: 2240 (E), 2255 (F)	
Eastern shores	W	Sydney: 2240 (E), 2255 (F)	
Northumberland Strait and New Brunswick coast	W	Sydney: 2240 (E), 2255 (F)	Sydney CMB
Chaleurs Bay & Approaches	W	Sydney: 2240 (E), 2255 (F) Rivière-au-Renard (1) 0020 (E), 0035 (F)	Rivière-au-Renard (B): 0937, 1737, CMB. Ice reports
Enroute to Bay of Islands	W	Sydney: 2240 (E), 2255 (F)	Port aux Basques (B): 0807, 1837, CMB
Northeast Gulf	W	Sydney: 2240 (E), 2255 (F)	Port aux Basques (B): 0807, 1837, CMB Rivière-au-Renard (B): CMB. Ice reports
Approaches to St Lawrence river ports	W	Sydney: 2240 (E), 2255 (F) Rivière-au-Renard (1) 0020 (E), 0035 (F)	Rivière-au-Renard (B): 0937, 1737, CMB. Ice reports
Les Escoumins to 66W	W	Rivière-au-Renard (1) 0020 (E), 0035 (F)	Rivière-au-Renard (B): 0937, 1737, CMB. Ice reports Quebec CMB - Ice information Les Escoumins on CMB
Montréal to Trois-Rivières Trois-Rivières to Les Escoumins	W	n/a	Montréal CMB - Ice reports Quebec, Les Escoumins CMB - Ice conditions
St Lawrence Seaway	W	n/a	Montréal CMB – Ice reports
Lake Ontario	W	Prescott: 0110, 1310	Prescott CMB West and East - Ice hazard bulletin
Lake Erie east of 80 20W Lake Erie west of 80 20W incl L. St Clair	W	Prescott: 0110, 1310 n/a	Prescott CMB West and East - Ice hazard bulletin Sarnia CMB North and South - Ice hazard bulletin
Lake Huron Georgian Bay	W W	Thunder Bay: 0630, 1830 Prescott: 0110, 1310	Sarnia: CMB North and South, ice hazard bulletin Thunder Bay: CMB West and East, ice hazard bulletin Prescott: CMB (E) (Orillia) Sarnia CMB North and South - Ice hazard bulletin Thunder Bay: CMB West and East, ice hazard bulletin
Lake Superior & Whitefish Bay	W	Thunder Bay: 0630, 1830 Prescott: 0110, 1310	Thunder Bay: CMB West and East, ice hazard bulletin

(E): English **(F):** French **(B):** Both English and French **S:** Summer **W:** Winter **(L):** Limit of icebergs
(1): Recommended route ice conditions during ice season only.
Iqaluit: NAVTEX are broadcast on 490F1B in French, 518F1B in English

Ice charts

Following is a list of the ice charts available for broadcast. The charts are produced as support to Canadian Coast Guard operations and their production depends on **request from CCG**. All charts **available** can be transmitted or re-transmitted on request.

Ice Chart (when available)	Season	Broadcast site	Time (UTC)
Bering Strait	S	MCTS Inuvik	0200, 1630
Alaskan Coast	S	MCTS Inuvik	0200, 1630
Amundsen Gulf	S	MCTS Inuvik	0200, 1630
McClure Strait	S	MCTS Inuvik	0200, 1630
McClure Strait	S	MCTS Iqaluit (Resolute)	0010, 0700
Queen Maud	S	MCTS Iqaluit (Resolute)	0010, 0700
Queen Maud	S	MCTS Inuvik	0200, 1630
Foxe Basin	S	MCTS Iqaluit	0500, 2125
Northern Hudson Bay	S	MCTS Iqaluit	0500, 2125
Hudson Strait	S	MCTS Iqaluit	0500, 2125
Southern Hudson Bay	S	MCTS Iqaluit	0500, 2125
Baffin Bay	S	MCTS Iqaluit (Resolute) MCTS Iqaluit	0010, 0700 0500, 2125
Davis Strait	S	MCTS Iqaluit	0500, 2125
Approaches to Resolute	S	MCTS Iqaluit (Resolute)	0010, 0700
Resolute - Byam	S	MCTS Iqaluit (Resolute)	0010, 0700
Eureka Sound	S	MCTS Iqaluit (Resolute)	0010, 0700
Parry Channel	S	MCTS Iqaluit (Resolute)	0010, 0700
Labrador Coast	W S	CFH MCTS Iqaluit	0001 0500, 2125
East or Southeast Newfoundland Waters	W W	CFH MCTS Sydney	2222 2331, 1142
Gulf of St. Lawrence	W W	CFH MCTS Sydney	2301 2200, 1121
Iceberg limit		MCTS Sydney	1741

For correct reception of this broadcast on WMO standard facsimile recorders requiring 2300Hz for White and 1500 Hz for Black, 1800 Hz centre frequency, radio receivers should be tuned in the **UPPER SIDEBAND MODE** or **USB**: add **1.6 to 1.8** to the indicated frequencies.

Atlantic Fleet Broadcasts (CFH): Broadcasts Intended for North Atlantic waters North of 35N and West of 35W. Facsimile transmission commences with a 30 second break followed by a 30 second signal.

NAME	Call Sign	Modulation	Index of Cooperation	Power	Frequencies (kHz)	Drum speed
MCTS Iqaluit	VFF	J3C (FM)	576	5 KW	3251.1, 7708.1 (USB)	120 RPM
MCTS Inuvik	VFA	J3C (FM)	576	1 KW	8456.0, 8457.8 (USB)	120 RPM
Halifax	CFH	J3C (FM)	576	6 KW	4271, 6496.4, 10536, 13510	120 RPM
				10 KW	122.5	
MCTS Sydney	VCO	J3C (FM)	576	5 KW	4416, 6915.1	120 RPM

Facsimile Broadcast

Upon authorized request from Canadian Coast Guard, C-GCFR can transmit observed conditions via satellite fax. Vessels requesting should make request through Canadian Coast Guard.

THE CANADIAN FORCES FLEET METEOROLOGICAL AND OCEANOGRAPHIC CENTRE (METOC) BROADCAST ATLANTIC

The Canadian Forces Fleet Meteorological and Oceanographic Centre (MetOc) Broadcast Atlantic broadcasts text and chart information. The broadcast is maintained to serve and fulfill the requirements of the Canadian Navy. The area in which the broadcast is intended to be received is North Atlantic waters north of 35°N and west of 35°W.

a) Radioteletype

NAME	Call Sign	Frequencies (kHz)	Power	Broadcast Times	Class of Transmission
Halifax (2)	CFH	4271, 6496.4, 10536, 13510	6 KW	0000 – 2400	
		122.5	10 KW	0000 – 2400	100 WPM

Text based information is broadcast during those times when meteorological charts are not being transmitted. Selected bulletins are placed into a transmission queue. Once they have been received in the queue, they are assigned a priority. Once a bulletin is broadcast it is removed from the queue. The priority for a particular bulletin is reduced after each hour it remains in the queue. Each bulletin is also coded as to the length of time in hours it remains in the queue. If a particular bulletin is not broadcast during its allotted time, it is removed from the queue.

The following is a description of each type of bulletin that is inserted into the queue for broadcast.

Weather Warnings (WH/WW) have the highest priority and are put into the queue as they are received. They are broadcast as soon as possible after the chart mode is completed.

Marine Forecasts (FQ) are issued four times per day by the Maritimes Weather Centre (CWHX) according to the following table:

Header	Area	Type	Header	Area	Type
FQCN10	Maritimes	Synopsis.	FQCN33	Maritimes west	NAVTEX
FQCN11	Newfoundland	Synopsis.	FQCN34	Maritimes north & east	NAVTEX
FQCN12	Labrador	Synopsis.	FQCN35	Newfoundland west	NAVTEX
FQCN13	Maritimes	Regular.	FQCN36	Newfoundland east	NAVTEX
FQCN15	Newfoundland	Regular.	FQCN37	Labrador	NAVTEX
FQCN17	Labrador	Regular.	FQCN53	Maritimes	Extended
FQCN18	Halifax Harbour	Regular.	FQCN55	Newfoundland	Extended
FQCN19	Bras d'Or Lake	Regular.	FQCN57	Labrador	Extended
FQCN23	Maritimes	Wave			
FQCN25	Newfoundland	Wave			
FQCN27	Labrador	Wave			

High Seas Forecasts are issued four times per day and are put into the queue as they are received. The area of coverage is the Atlantic Ocean from 7N to 67N west of 35W.

Ship Reports (SM) are observations at each synoptic hour, 00, 06, 12 and 18 UTC. These reports are put into the queue when available.

Buoy Reports are from selected locations in the waters adjacent to Atlantic Canada.

Terminal Forecasts (FT) are issued four times per day within a half an hour of the synoptic hour, 00, 06, 12 and 18 UTC. Every hour surface observations and forecasts for selected aerodromes are broadcast.

Ice Information (FI - Ice Hazard bulletins and FE - Thirty day Ice forecast) for the Gulf of St. Lawrence, the East coast of Canada and the Eastern Arctic is broadcast according to season and availability. When available, Ice Hazards bulletins are broadcast after 15 UTC and Thirty day Ice forecasts are broadcast after 18 UTC.

PIREPS (UA) are reports from aircraft pilots and are put into the queue as received.

Upper Air Reports (UM, UG) are reports from radiosonde balloons. These are scheduled to be broadcast after 00 and 12 UTC.

Tropical Cyclone Discussions (WO) are bulletins that describe tropical weather that is expected to affect Canadian waters. These discussions are put into the queue when available.

The following list contains the buoys that are included in the Buoy Report groups. Every six hours reports from the available stations are collected and broadcast.

BUOYNS	44258 / 44139 / 44141 / 44137 / 44144 / 44011 / 44142
BUOYNF	44145 / 44251 / 44138 / 44255 / 44140
BUOYNE	44005 / 44008 / 44007 / 44013 / 44025

The following list contains the land stations that are included in the Terminal Forecast groups. For most stations both a METAR and TAF are broadcast.

TAFNS	CYAW XMI CYZX CYHZ CWSA CYQI CYQY
TAFNF	CYQX CYYT LFVP CYJT CYDF
TAFNB	CYSJ CYFC CYQM CYYG CYGR
TAFUS1	KNHZ KBOS KACK KGON JFK KDOV KADW KNHK KNGU KECG
TAFUS2	KMQI KNKT KMYR KNBC KNIP KCOF KHST TXKF TJNR TJSJ

In addition to the preceding tables and list, the following summarizes when particular bulletins are scheduled to be broadcast. All time UTC.

Hour 00	FPCN20/22 CWHX	Hour 08	FPCN22/20 CYQX	Hour 16	
Hour 01	FPCN22/20 CYQX	Hour 09	Buoy Reports Public Forecast	Hour 17	High Seas Forecast
Hour 02		Hour 10		Hour 18	
Hour 03	Buoy Reports	Hour 11	High Seas Forecast	Hour 19	FPCN20/22 CWHX
Hour 04		Hour 12		Hour 20	FPCN22/20 CYQX Public Forecast
Hour 05		Hour 13		Hour 21	Buoy Reports
Hour 06	High Seas Forecast	Hour 14	FPCN20/22 CWHX	Hour 22	
Hour 07	FPCN20/22 CWHX	Hour 15	FPCN22/20 CYQX Buoy Reports	Hour 23	High Seas Forecast

b) Radio Facsimile

NAME	Call Sign	Frequencies (kHz)	Power	Broadcast Times	Drum Speed	Index of Cooperation
Halifax	CFH	4271, 6496.4, 10536, 13510	6 KW	0000 – 2400	120 RPM	576
		122.5	10 KW	0000 – 2400		

Chart based information is broadcast at the beginning of each hour. As chart transmission commences for a particular hour there is a 30 second break followed by a 30 second phasing signal. During a chart transmission period there will be one or two charts broadcast. The schedule of charts broadcast follows. At the conclusion of chart transmission, bulletin transmission begins and continues until the end of the current hour.



Notes:

Frequency 122.5 kHz is continuous except for maintenance 1200 to 1600 UTC on second Thursday of each Month

Frequency 4271 kHz...2200 to 1000 UTC

Frequency 6496.4 kHz is continuous

Frequency 10536 kHz is continuous

Frequency 13510 kHz...1000 to 2200 UTC

The following is a description of the scheduled times for broadcast of particular charts.

Time	Chart Description	Area	Time	Chart Description	Area
0001	Ice Chart #1 (see note): Latest	-----	1201	Day 3 Surface Prognosis: 1200Z	G
			1222	Day 4 Surface Prognosis: 1200Z	G
0101	Satellite picture: infrared	-----	1301	Day 5 Surface Prognosis: 1200Z	G
0201	12Z Significant Weather Depiction: 1200Z	A	1401	00Z Significant Weather Depiction: 0000Z	A
0301	500 mb Analysis: 0000Z	B	1501	500 mb Analysis: 1200Z	B
0322	00Z Surface Analysis: 0000Z	F	1522	12Z Surface Analysis: 1200Z	F
0401	500 mb 36 hour Prognosis: 1200Z	H	1601	850 mb Analysis: 1200Z	B
0422	24hr Isobaric Prognosis: 0000Z	G	1622	500 mb 36 hour Prognosis: 0000Z	H
0501	850 mb Forecast Winds: 18/00Z	C	1701	24hr Isobaric Prognosis: 1200Z	G
0601	36hr Isobaric Prognosis: 1200Z	G	1801	36hr Isobaric Prognosis: 0000Z	G
			1822	850 mb Forecast Winds: 06/12Z	C
0701	18Z Significant Weather Depiction: 1800Z	A	1901	06Z Significant Weather Depiction: 0600Z	A
0801	24/36hr Significant Wave Prognosis: 0000Z/1200Z	I	2001	24/36hr Significant Wave Prognosis: 1200Z/0000Z	I
0901	06Z Surface Analysis: 0600Z	F	2101	18Z Surface Analysis 1800Z	F
1001	NS SST Mon, NS OFA Wed/Sat NF SST Tue/Fri, NF OFA Sun/Thu	E D	2201	NS SST Tue/Thu/Fri, NS OFA Sun NF SST Wed/Sat, NF OFA Mon	E D
1022	Satellite picture: infrared	-----	2222	Ice Chart #2 (see note): Latest	-----
1101	CFH Broadcast Schedule: Latest		2301	Ice Chart #3 (see note): Latest	-----



The following is a description of the area of coverage for particular charts.

Area	Geographic Area	Area	Geographic Area	Area	Geographic Area
A	56N 87W 56N 24W 34N 38W 34N 73W	D	60N 68W 60N 33W 43N 33W 43N 68W	G	52N 98W 56N 24W 30N 39W 28N 78W
B	76N 16W 30N 20 W 23N 110W 8N 69W	E	50N 75W 50N 48W 34N 48W 34N 75W	H	30N 107W 15N 67W 34N 24W 79N 60W
C	52N 80W 65N 15W 30N 60W 34N 17W	F	52N 98W 58N 24W 30N 39W 28N 78W	I	54N 100W 58N 22W 30N 39W 28N 78W

NOTES:

This schedule of chart and text transmission is subject to short notice change according to the requirements of the Canadian Forces.

The geographic area of coverage for the ice charts varies according to season. The following are the typical areas to be broadcast: Gulf of St. Lawrence, East Newfoundland waters, Labrador Coast, Hudson Strait, Davis Strait and Baffin Bay. The Canadian Ice Service prepares all ice charts.