

MARINER REPORT (MAREP) PROGRAM

The National Weather Service (NWS) has established a nationwide MAREP Program to help improve marine warnings and forecasts. As a part of this cooperative effort, mariners forward observational reports of sea and wind conditions to NWS marine forecasters. If you would like to participate or learn more about this volunteer program, please call your nearest NWS office or the Great Lakes Port Meteorological Officer (PMO).

PMO Chicago - 815-834-0600 ext 269



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service
**MARINE WEATHER SERVICE CHART
GREAT LAKES**
NOT TO BE USED FOR NAVIGATION

EXPLANATION OF ADVISORIES/WARNINGS

SMALL CRAFT ADVISORY: Issued to alert mariners to sustained (more than two hours) weather or sea conditions, either present or forecast, that might be hazardous to small boats. The threshold conditions for the Small Craft Advisory are usually based on 25 knots of wind or hazardous wave conditions. Decision as to the degree of hazard will be left to the boat operator, based on experience and the size and type of boat. USCG defines small craft as 64 ft or less in length.

GALE WARNING: Issued to indicate winds within the range of 34 to 47 knots are either present or forecast for the area.

STORM WARNING: Issued to indicate winds within the range of 48 to 63 knots are either present or forecast for the area.

HURRICANE FORCE WIND WARNING: Issued to indicate winds of 64 knots or more are either present or forecast for the area.

SPECIAL MARINE WARNING: Issued whenever a severe local storm, waterspout, or strong wind of brief duration is imminent and is not covered by existing warnings or advisories.

NATIONAL WEATHER SERVICE TELEPHONE NUMBERS

Information on Great Lakes marine forecasts, warnings, and advisories can be obtained by calling the following NWS offices:

| NWS Office | Telephone | Office Hours/Local Time |
|------------------|--|-------------------------|
| Buffalo, NY | 716-565-0204 | 8:00am-5:00pm Mon-Fri |
| | 716-565-0802* | 24 hours |
| Cleveland, OH | 216-265-2370 | 8:30am-4:30pm Mon-Fri |
| | Recorded forecast only at other times. | |
| Detroit, MI | 248-620-9804 | 8:00am-4:00pm Mon-Fri |
| | Recorded forecast only at other times. | |
| Gaylord, MI | 989-732-6242 | 24 hours |
| Grand Rapids, MI | 616-949-4253* | 24 hours |
| | 616-956-7180 | 8:00am-4:30pm Mon-Fri |
| Chicago, IL | 815-834-0675* | 24 hours |
| | 815-834-1435 | 8:00am-8:00pm Mon-Fri |
| Milwaukee, WI | 414-744-8000* | 24 hours |
| Green Bay, WI | 920-494-2363 | 8:00am-4:00pm Mon-Fri |
| Marquette, MI | 906-475-5212* | 24 hours |
| | 24 hour recording with ring-through | |
| Duluth, MN | 218-729-6697 | 24 hours |
| | 24 hour recording with ring-through | |

* Recorded forecast only.

NOAA WEATHER RADIO/WEATHER RADIO CANADA

NOAA Weather Radio/Weather Radio Canada broadcasts can usually be received 20-40 miles from the transmitting antenna site, depending on terrain and the quality of the receiver used. Where transmitting antennas are on high ground, the range is somewhat greater, reaching 60 miles or more. The VHF-FM frequencies used for these broadcasts require narrow-band FM receivers. The NWS recommends receivers have a sensitivity of one microvolt or less and a quieting factor of 20 decibels. Some receivers are equipped with a warning alert device that can be turned on by means of a tone or digital signal controlled by the NWS office concerned. Frequencies used include:

| US and Canada | Canada Only |
|---------------------|--------------------|
| CH WX 1 162.550 MHz | CH 21B 161.650 MHz |
| CH WX 2 162.400 MHz | CH 83B 161.775 MHz |
| CH WX 3 162.475 MHz | |
| CH WX 4 162.525 MHz | |
| CH WX 5 162.450 MHz | |
| CH WX 6 162.500 MHz | |
| CH WX 7 162.425 MHz | |

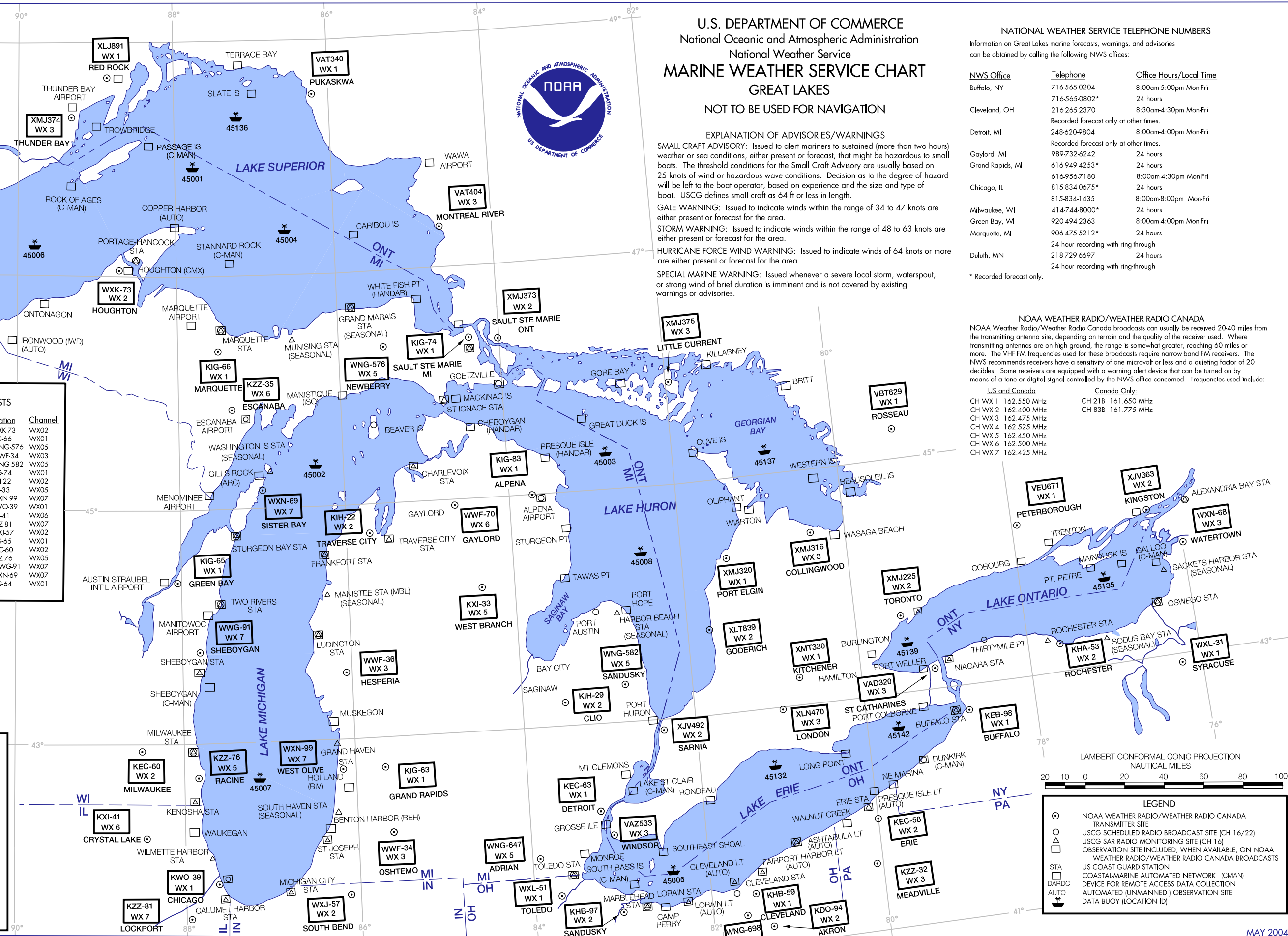
| NOAA WEATHER RADIO BROADCASTS VHF-FM CONTINUOUS WEATHER BROADCASTS | | | | | |
|---|---------|---------|----------------------|---------|---------|
| City | Station | Channel | City | Station | Channel |
| Buffalo, NY | KEB-98 | WX01 | Houghton, MI | WXK-73 | WX02 |
| Rochester, NY | KHA-53 | WX02 | Marquette, MI | KIG-66 | WX01 |
| Syracuse, NY | WXL-31 | WX01 | Newberry, MI | WNG-576 | WX05 |
| Watertown, NY | WXN-68 | WX03 | Oshkosh, WI | WWF-34 | WX03 |
| Erie, PA | KEC-58 | WX02 | Sandusky, MI | WNG-582 | WX05 |
| Meadville, PA | KZZ-32 | WX03 | Sault Ste. Marie, MI | KIG-74 | WX01 |
| Akron, OH | KDO-94 | WX02 | Traverse City, MI | KIH-22 | WX02 |
| Cleveland, OH | KHB-59 | WX01 | West Branch, MI | KXI-33 | WX05 |
| Grafton, OH | WNG-698 | WX06 | West Olive, MI | WXN-99 | WX07 |
| (future) | | | Chicago, IL | KWO-39 | WX01 |
| Sandusky, OH | KHB-97 | WX02 | Crystal Lake, IL | KXI-41 | WX06 |
| Toledo, OH | WXL-51 | WX01 | Lockport, IL | KZZ-81 | WX07 |
| Adrian, MI | WNG-647 | WX05 | South Bend, IN | WXL-51 | WX02 |
| Alpena, MI | KIG-83 | WX01 | Green Bay, WI | KIG-65 | WX01 |
| Clio, MI | KIH-29 | WX02 | Milwaukee, WI | KEC-60 | WX02 |
| Detroit, MI | KEC-63 | WX01 | Racine, WI | KZZ-76 | WX05 |
| Escanaba, MI | KZZ-35 | WX06 | Sheboygan, WI | WWG-91 | WX07 |
| Gaylord, MI | WWF-70 | WX06 | Sister Bay, WI | WXN-69 | WX07 |
| Grand Rapids, MI | KIG-63 | WX01 | Duluth, MN | KIG-64 | WX01 |
| Hesperia, MI | WWF-36 | WX03 | | | |

The VHF-FM radio stations, locations shown on the map, are managed by the National Weather Service. Broadcasts are updated every 1 to 6 hours and amended as required; contents vary, but in general, contain the following information:

1. Forecasts for the U.S. portion of nearby land areas.
2. Marine forecasts, advisories, and warnings for appropriate lake and nearshore areas.
3. Weather observations from select NWS offices, Coast Guard stations, cooperative marine locations, and automated observation sites.
4. Detailed short term forecasts that relay radar information.
5. Local weather observations and forecasts.
6. Special bulletins and summaries concerning severe weather.

NOTE: All stations broadcast continuously, 24 hours a day.

| WEATHER RADIO CANADA STATIONS | | |
|--|---------|---------|
| Dedicated to providing continuous VHF-FM weather information | | |
| City | Station | Channel |
| Kingston | XJV363 | WX02 |
| Peterborough | VEU671 | WX01 |
| Toronto | XMJ225 | WX02 |
| St. Catharines | VAD320 | WX03 |
| Kitchener | XMT330 | WX01 |
| London | XLN470 | WX03 |
| Windsor | VAZ533 | WX03 |
| Sarnia | XJV492 | WX02 |
| Goderich | XLT839 | WX02 |
| Port Elgin | XMJ320 | WX01 |
| Collingwood | XJM316 | WX03 |
| Rosseau | VB629 | WX01 |
| Little Current | XMJ375 | WX03 |
| Sault Ste. Marie | XMJ373 | WX02 |
| Montreal River | VAT404 | WX03 |
| Pukaskwa | VAT340 | WX01 |
| Red Rock | XLJ891 | WX01 |
| Thunder Bay | XMJ374 | WX03 |



| LEGEND | |
|--------|--|
| ⊙ | NOAA WEATHER RADIO/WEATHER RADIO CANADA TRANSMITTER SITE |
| ○ | USCG SCHEDULED RADIO BROADCAST SITE (CH 16/22) |
| △ | USCG SAR RADIO MONITORING SITE (CH 16) |
| □ | OBSERVATION SITE INCLUDED, WHEN AVAILABLE, ON NOAA WEATHER RADIO/WEATHER RADIO CANADA BROADCASTS |
| STA | US COAST GUARD STATION |
| □ | COAST-MARINE AUTOMATED NETWORK (CMAN) |
| □ | DEVICE FOR REMOTE ACCESS DATA COLLECTION |
| □ | AUTOMATED (UNMANNED) OBSERVATION SITE |
| □ | DATA BUOY (LOCATION ID) |

CANADIAN COAST GUARD MARINE COMMUNICATIONS AND TRAFFIC CONTROL CENTRES

Marine Communications and Traffic Services (MCTS) Centres provide continuous marine broadcasts for the Great Lakes region using Marine VHF channels 21B and 83B. A French language broadcast is available for the St. Lawrence River region on channels 23B and 28B. The continuous marine broadcast will be supplemented by live broadcasts of important weather information on receipt with initial call-up on channel 16.

161.650 MHz (ch 21B)
161.775 MHz (ch 83B)

NOAA WEATHER RADIO
SPECIFIC AREA MESSAGE ENCODER (SAME)

The Federal Communications Comission (FCC) has approved the special SAME code to delineate marine areas. Mariners with NOAA Weather Radio receivers equipped with SAME should check out:

<http://www.nws.noaa.gov/om/marine/wxradio.htm>
for information on how to program their receivers.

For a listing of marine area and zone codes for SAME, go to:
<http://www.nws.noaa.gov/geodata/catalog/wsom/html/marinewreas.htm>
and click the Emergency Alert System (EAS) link.

DIAL - A - BUOY

Dial-A-Buoy gives mariners an easy way to obtain reports via a cell-phone. Dial-A-Buoy provides wind and wave measurements taken within the last hour at National Data Buoy Center (NDBC) buoy and Coastal Marine Automated Network (C-MAN) stations. The stations are operated by NDBC, part of the National Weather Service, are located in the Atlantic, Pacific, Gulf of Mexico, and the Great Lakes. The Dial-A-Buoy service has been expanded to include stations owned and operated by other organizations including the United Kingdom Met Office and Environment Canada. To access Dial-A-Buoy, dial (228) 688-1948 using any touch-tone or cell-phone. For internet users, more information is at: <http://seaboard.ndbc.noaa.gov/dial.shtml>

INTERNET ADDRESSES

National Weather Service
<http://www.nws.noaa.gov>

National Weather Service - MSC Charts
<http://www.nws.noaa.gov/om/marine/pub.htm>

National Weather Service - Marine Dissemination
<http://www.nws.noaa.gov/om/marine/home.htm>

National Data Buoy Center
<http://seaboard.ndbc.noaa.gov>

U.S. Coast Guard Navigation Center
<http://www.navcen.uscg.gov>

NATIONAL WEATHER SERVICE RADIOFAX AND TEXT FORCASTS
AVAILABLE VIA E-MAIL (FTPMAIL)

National Weather Service radiofax charts and text forecasts are available via E-mail. The FTPMAIL server is intended to allow Internet access for mariners and other users who do not have direct access to the World Wide Web but who are equipped with an e-mail system. Turnaround time is generally in under 1 hour, however, performance may vary widely and receipt cannot be guaranteed. To get started in using the NWS FTPMAIL service, follow these simple directions to the FTPMAIL "help" file (11 bytes).

Address: ftpmail@weather.noaa.gov
Subject: (not required)
Body: help

Direct any questions to 301-713-1677, extension 128,
or 301-713-0882, extension 122.

OTHER MARINE WEATHER SERVICES CHARTS AVAILABLE

| | | | |
|-------|-------------------------------------|-----------|--|
| MSC-1 | Eastport, ME to Montauk Point, NY | MSC-8 | Mexican Border to Point Conception, CA |
| MSC-2 | Montauk Point, NY to Manasquan, NJ | MSC-9 | Point Conception, CA to Point St. George, CA |
| MSC-3 | Manasquan, NJ to Cape Hatteras, NC | MSC-10 | Point St. George, CA to Canadian Border |
| MSC-4 | Cape Hatteras, NC to Savannah, GA | MSC-11/12 | Great Lakes |
| MSC-5 | Savannah, GA to Apalachicola, FL | MSC-13 | Hawaiian Waters |
| MSC-6 | Apalachicola, FL to Morgan City, LA | MSC-14 | Puerto Rico and Virgin Islands |
| MSC-7 | Morgan City, LA to Brownsville, TX | MSC-15 | Alaskan Waters |
| | | MSC-16 | Guam and the Northern Mariana Islands |

Copies of these charts are available for \$1.25 each from:

FAA/National Aeronautical Charting Office
Distribution Division, AVN-530
6303 Ivy Lane, Suite 400
Greenbelt, MD 20770
Telephone: (301) 436-8301
(800) 638-8972 toll free, U.S. only
(301) 436-6829 FAX
E-mail: 9-AMC-chartsales@faa.gov
<http://chartmaker.ncd.noaa.gov>
or your local chartagent
<http://chartmaker.ncd.noaa.gov/nsd/states.html>

All of these charts can be viewed on the internet at:
<http://www.nws.noaa.gov/om/marine/pub.htm>

CURRENT AREAS OF MARINE FORECAST RESPONSIBILITY FOR NWS GREAT LAKES OFFICES

Nearshore zones go out five nautical miles from the coast. Warnings are issued for areas out to mid lake.

| NWS Office | Official Area of Responsibility | Warning and Forecast Headings |
|---------------------|--|--|
| WFO Duluth MN | Lake Superior - US-Canadian border to WI/MI border | Grand Portage to Grand Marais MN Grand Marais to Taconite Harbor MN Taconite Harbor to Silver Bay Harbor MN Silver Bay Harbor to Two Harbors MN Two Harbors to Duluth MN Duluth MN to Port Wing WI Port Wing to Sand Island WI Sand Island to Bayfield WI Chequamegon Bay-Bayfield to Oak Point WI Oak Point to Saxon Harbor WI |
| WFO Marquette MI | Lake Superior - WI/MI border to Whitefish Point MI | Saxon Harbor WI to Ontonagon MI Ontonagon to Upper Entrance of Portage Canal MI Upper Entrance of Portage Canal to Manitou Island MI Manitou Island to Lower Entrance Light to Portage Lake Keweenaw Bay and Huron Bay, from Lower Entrance Light to Portage Lake to Huron Islands MI Huron Islands to Marquette MI Marquette to Munising MI Munising to Grand Marais MI Grand Marais to Whitefish Pt. MI Lake Superior MAFOR Lake Superior Open Lake (U.S. Portion) Seul Choix Pt. to Pt. Detour MI Bay of Green Bay north of line from Cedar River to Rock Island Passage |
| WFO Gaylord MI | Lake Superior - Whitefish Bay (U.S.) St. Mary's River and Potagannissing Bay Lake Michigan- Mackinac Bridge to Schoolcraft/Mackinac county line and Mackinac Bridge to Manistee/Mason MI county line Lake Huron - Mackinac Bridge to False Detour Channel and Mackinac Bridge to Iosco/Arenac county line | Whitefish Bay (U.S. Portion), Whitefish Pt. to Pt. Iroquois MI St. Marys River, Pt. Iroquois to Eastern Patagannissing Bay Mackinac Bridge to Seul Choix Pt. MI Mackinac Bridge to Norwood Grand Traverse Bay, Norwood to Grand Traverse Lt MI Grand Traverse Lt. to Sleeping Bear Pt. MI Sleeping Bear Pt. to Manistee MI Straits of Mackinac St Ignace to False Detour Channel Presque Island Lt. to Sturgeon Pt Sturgeon Pt. to Alabaster MI |
| WFO Detroit MI | Lake Huron Lake Huron - Iosco/Arenac MI county line to Port Huron St. Clair River Lake St. Clair Detroit River Lake Erie - Detroit River to MI/OH border | Lake Huron Open Lake (U.S. Portion) Lake Huron MAFOR Saginaw Bay Port Austin to Harbor Beach MI Harbor Beach to Port Sanilac MI Port Sanilac to Port Huron MI St. Clair River Lake St. Clair (U.S. Portion) Detroit River Detroit River Lt. to North Cape MI |
| WFO Green Bay WI | Lake Michigan-Rock Island Passage to Manitowoc/ Sheboygan WI county line including southern three-quarters of Bay of Green Bay | Bay of Green Bay south of a line from Cedar River MI to Rock Island Passage and north of a line from Marinette WI to Fish Creek WI Bay of Green Bay south of a line from Marinette WI to Fish Creek WI Lake Michigan from Rock Island Passage to Sturgeon Bay WI Lake Michigan from Sturgeon Bay WI to Two Rivers WI Lake Michigan from Two Rivers WI to Sheboygan WI |
| WFO Milwaukee WI | Lake Michigan - Manitowoc/Sheboygan WI county line to IL/WI border | Sheboygan to Port Washington WI Port Washington to North Pt. Lt. WI North Pt. Lt. to Wind Pt. WI Wind Pt. to Winthrop Harbor IL |
| WFO Chicago IL | Lake Michigan - IL/WI border to MI/IN border | Lake Michigan Open Lake Lake Michigan MAFOR Winthrop Harbor to Wilmette Harbor IL Wilmette Harbor to Northerly Island IL Northerly Island IL to Calumet Harbor IL Calumet Harbor IL to Gary IN Gary to Burns Harbor IN Burns Harbor to Michigan City IN Michigan City IN to New Buffalo MI |
| WFO Grand Rapids MI | Lake Michigan - MI/IN border to Manistee/ Mason MI county line | New Buffalo to St Joseph St Joseph to South Haven South Haven to Holland Holland to Grand Haven Grand Haven to Whitehall Whitehall to Pentwater Pentwater to Manistee |
| WFO Cleveland OH | Lake Erie Lake Erie - MI/OH border to NY/PA border | Lake Erie Open Lake (U.S. Portion) Lake Erie MAFOR Maumee Bay to Reno Beach OH Reno Beach to The Islands OH The Islands to Vermilion OH Vermilion to Avon Point OH Avon Point to Willowick OH Willowick to Geneva-on-the Lake OH Geneva-on-the Lake to Conneaut OH Conneaut OH to Ripley NY |
| WFO Buffalo NY | Lake Erie - NY/PA border to Buffalo Harbor Buffalo Harbor and Niagara River Lake Ontario Lake Ontario - U.S./Canadian border near Niagara River to U.S./ Canadian border at St. Lawrence River St. Lawrence River - Lake Ontario to St. Regis | Ripley to Dunkirk NY Dunkirk to Buffalo NY Buffalo Harbor and the Upper Niagara River Lake Ontario Open Lake (U.S. Portion) Lake Ontario MAFOR Niagara River to Hamlin Beach NY Hamlin Beach NY to Sodus Bay NY Sodus Bay to Mexico Bay NY Mexico Bay NY to the St. Lawrence River St. Lawrence River above Ogdensburg NY St. Lawrence River from Ogdensburg to St. Regis NY |

WEATHER SERVICE FOR GREAT LAKES SHIPPING
DECODE FOR LAKE AND SEAWAY MARINE FORECASTS (MAFOR)

| MAFOR YYG1G1 (Name of Lake) 1GDFmW1 | | | | | | | | | | |
|---|-----------------|--|---------|------------------------------|---|--------------------|-------------------|---------------|---------------------|--|
| Keyword (Indicating Marine Forecast) | Day of Month | Time UTC Forecast Period Begins | Solidus | Name of Lake or Seaway | @ | Forecast Period | Wind Direction | Wind Speed | Forecast Weather | Height of Waves in Feet at End of Message for Each Lake for the Entire Period |
| | YY | G1G1 | | | | G | D | Fm | W1 | |
| MAFOR | 06 | 10 | / | Superior* | 1 | 6 | 8 | 3 | 0 | Waves 5 to 10 Feet |

| G - Forecast Period | D - Direction | Fm - Wind Speed | W1 - Forecast Weather |
|--|--|--|---|
| 0 - Conditions at the beginning of the 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 9 - Occasional | 0 - Calm 1 - Northeast 2 - East 3 - Southeast 4 - South 5 - Southwest 6 - West 7 - Northwest 8 - North 9 - Variable | 0 - 0 to 10 knots 1 - 11 to 16 knots 2 - 17 to 21 knots 3 - 22 to 27 knots 4 - 28 to 33 knots 5 - 34 to 40 knots 6 - 41 to 47 knots 7 - 48 to 55 knots 8 - 56 to 63 knots 9 - over 63 knots | 0 - Moderate or Good Visibility, more than 3 nautical miles 1 - Risk of accumulation of ice on superstructure (Temp 23 to 32 degrees F.) 2 - Strong risk, accumulation of ice on superstructure (temp below 23 degrees F.) 3 - Mist (visibility 5/8 to 3 nautical miles) 4 - Fog (visibility less than 5/8 nautical mile) 5 - Drizzle 6 - Rain 7 - Snow or Rain and snow 8 - Squally weather with or without showers 9 - Thunderstorms |

*Statement in plain language of Gale or Storm warnings, if any, will follow name of lake or seaway. Time of warnings are in Eastern Standard Time (EST). Small Craft Advisories are not included in MAFOR broadcasts.

The forecast 1GDFmW1 may be repeated as many times as necessary to describe the changes in wind and weather expected in a given area during the 24-hour forecast period. The forecast 1GDFmW1 in which G=1-8, refers to the forecast weather commencing at the time given in the group YYG1G1/ and continuing through the period indicated by G. Subsequent 1GDFmW1 (G=1-8) indicate the period of time that the described weather is forecast to persist, commencing at the end of the period specified in the preceding group 1GDFmW1 (G=1-8). Any forecast 1GDFmW1 (G=1-8) may be followed by 1GDFmW1 (G=1-9); in such cases, G=9 indicates a phenomenon forecast to occur occasionally in the forecast period. On occasion, plain language words are used to describe weather conditions not easily described by the code tables; times are stated in EST.

Wave forecast indicates the expected wave heights at the downwind end or side of the lake; this being the area where the wave height buildup is greatest. Times in EST. Wave heights are usually specified as a range for the 24-hour period, but significant changes (generally variations of more than 5 feet) will be stated. The MAFOR code is not an exact duplicate of the plain language forecast issued for each lake which should be checked for more detail. When daylight savings time is observed, forecasts begin at 03z, 09z, 15z, and 21z. When standard time is observed, forecasts begin at 04z, 10z, 16z, and 22z. These times are equivalent to 5:00 a.m. & p.m. and 11:00 a.m. & p.m. year around.

GREAT LAKES U.S. COAST GUARD WEATHER BROADCAST
VHF VOICE WEATHER BROADCAST CH16/22A

GROUP

BROADCAST TIMES (ALL TIMES IN UTC)

| | |
|---------------------|---|
| Sault Ste. Marie | 0005, 1205 |
| Transmitter Sites: | North Superior, MN; Duluth, MN; Bayfield, WI; Beaver Island, MI; Goetzville, MI; Sault Ste. Marie, MI; Grand Marais, MI; Marquette, MI; Houghton, MI; Munising, MI; Calumet, MI |
| Milwaukee | 0255, 1455 |
| Transmitter Sites: | Sturgeon Bay, WI; Manitowoc, WI; Milwaukee, WI; Chicago, IL; Kenosha, WI; Escanaba, MI |
| Grand Haven | 0235, 1435 |
| Transmitter Sites: | Holland, MI; Ludington, MI; Frankfort, MI. |
| Detroit | 0135, 1335 |
| Transmitter Sites: | Cleveland, OH; Marblehead, OH; Toledo, OH; Belle Isle, MI; Port Huron, MI; Port Austin, MI; Alpena, MI. |
| Buffalo | 0255, 1455 |
| Transmitter Sites: | Ashtabula, OH; Dunkirk, NY; Lewiston, NY; Thirtymile Point, NY; Rochester, NY; Oswego, NY; |
| Alexandria Bay, NY. | |