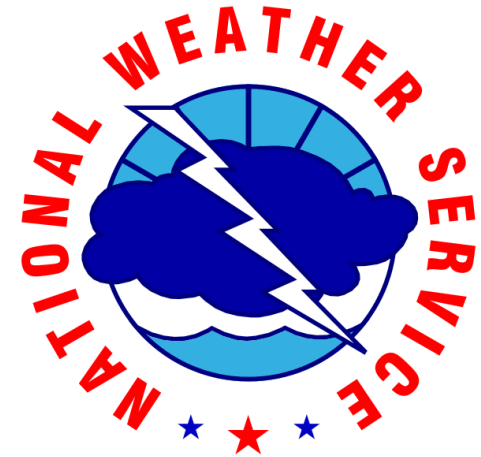


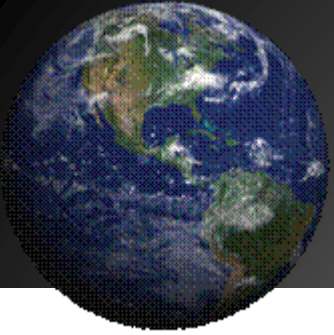
National Weather Service

Voluntary Observing Ship (VOS) Program



Ron Williams

Port Meteorological Officer (PMO)

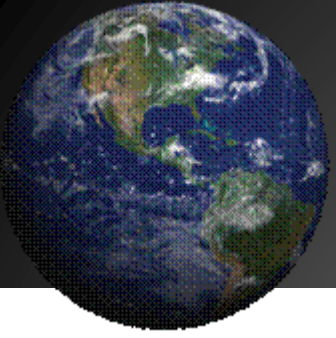


VOS Program

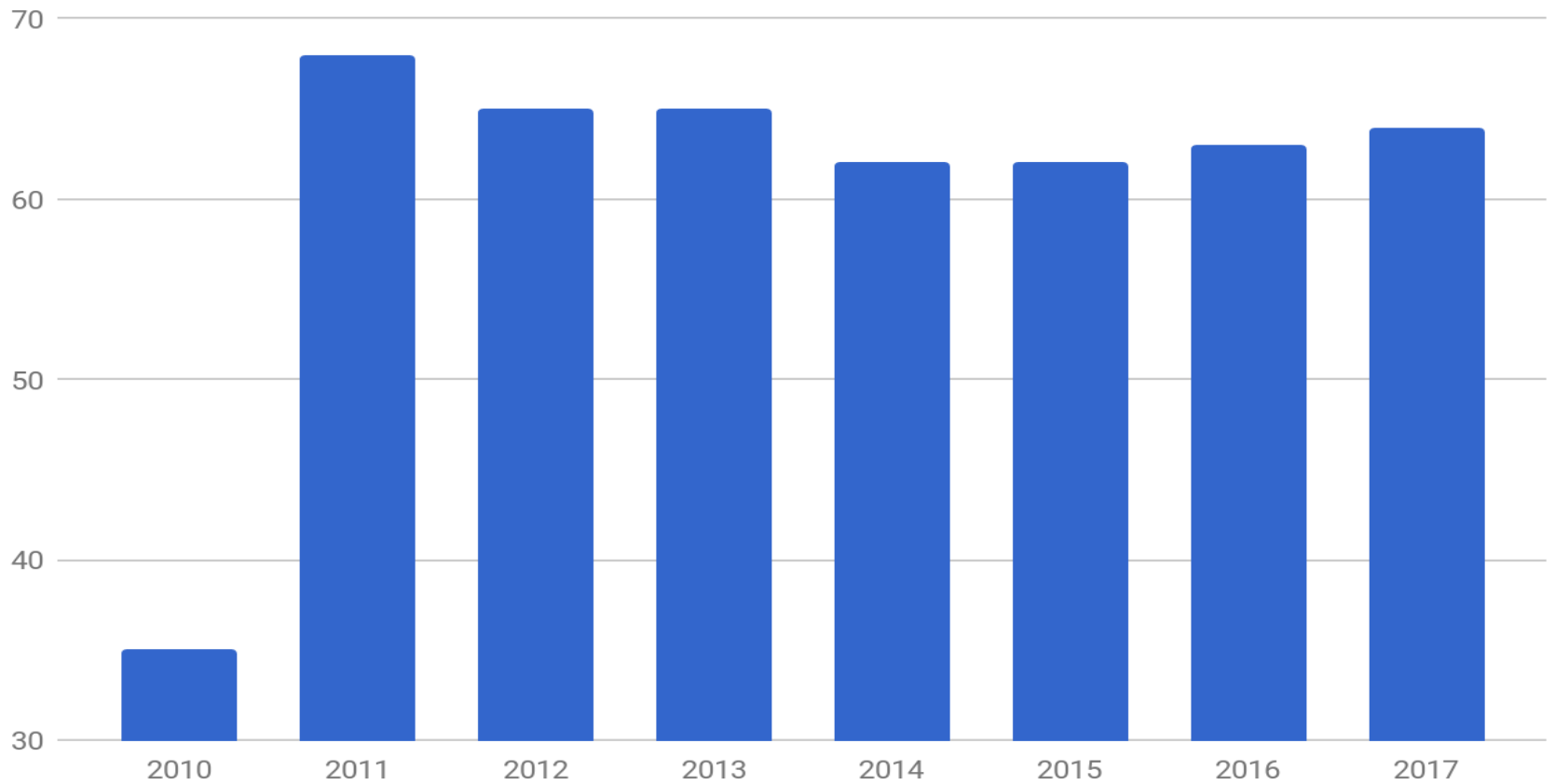


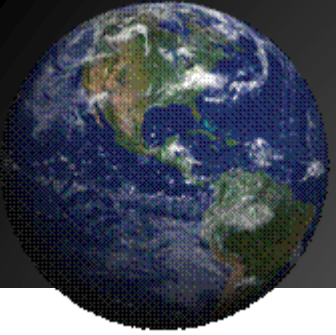
Successful program over the past few years with getting real-time weather data from vessels to utilize for the issuance of accurate weather forecasts.





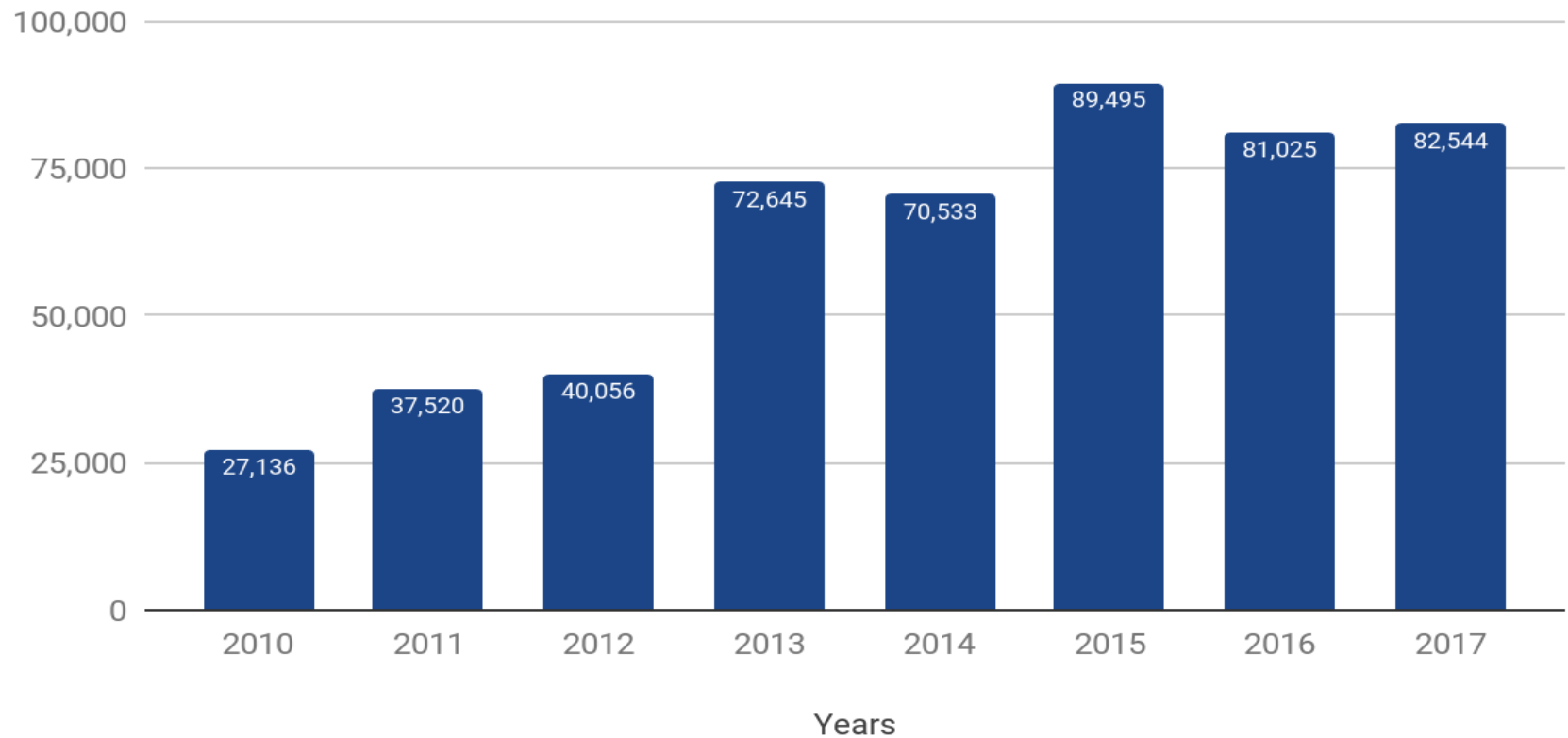
2017 Great Lakes VOS Reporting Ships

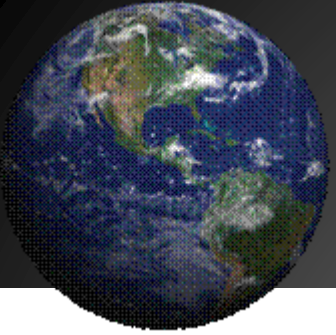




Great Lakes Submitted Observations

Observations Submitted





Importance of Ship Obs

SHIP OBSERVATIONS ARE AN IMPORTANT INGREDIENT FOR NUMERICAL FORECAST MODELS

They provide:

Ground Truth

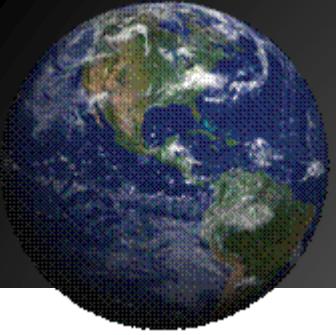
Verify Satellite data (adjustments are made based on ship observations)

Verify Buoy data / Winds and Waves

Verify Model data output

We go to great lengths to **UTILIZE** every reported element.





Marine Weather Forecasting



How does the forecaster use the observation?

- Looks for observations that tell the Meteorologist his current forecast is accurate / inaccurate.
- Looks for observations containing information about the location of fronts, dense fog or other hazards important to the Marine community.

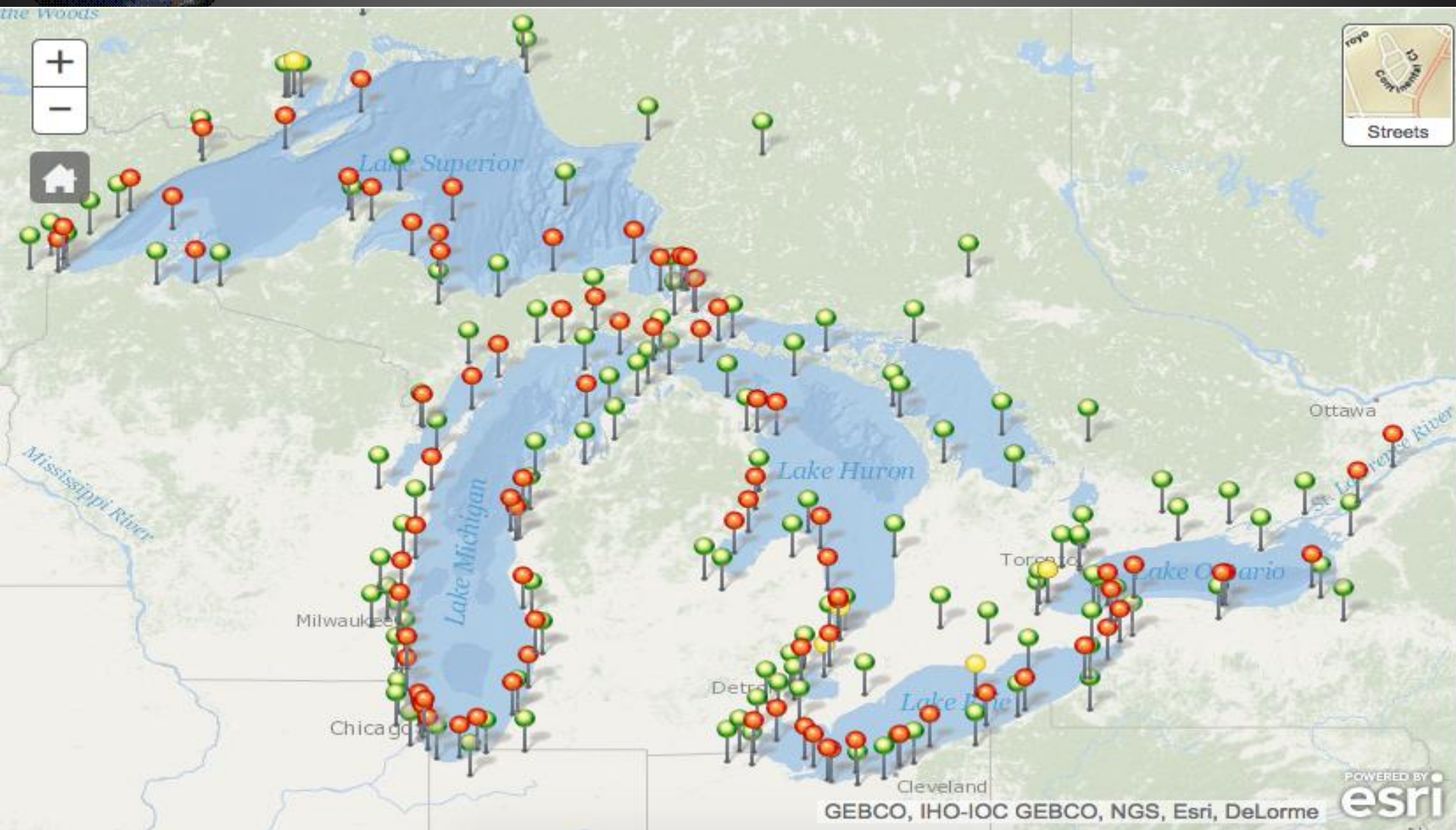


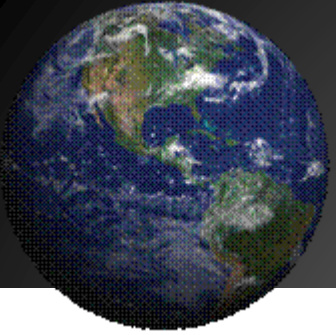
How the Mariner can help?

- Take and transmit weather observations



Open Water Data Gaps

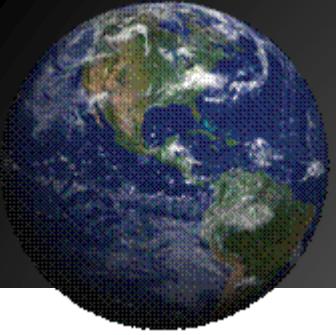




Marine Weather Forecasting

Why we need weather reports?

- Ground truth of conditions. Often we have no clue there are 50 mph gusts / 10 ft waves.
- Limited Open water data. Buoys only reflect so much data.
- Safety of other ships.
- Drives the forecast with your data. Forecast often only as good as what you report to us.
- Many of our forecast models for waves are often low in areas. We end up hand editing many areas reflecting your wave reports.



Marine Weather Forecasting

WFO Marquette (Lake Superior) [906-475-6205](tel:906-475-6205)

WFO Chicago (Lake Michigan) [815-834-0600](tel:815-834-0600) ext 627

WFO Detroit (Lake Huron) [248-625-4249](tel:248-625-4249)

WFO Cleveland (Lake Erie) [216-265-2374](tel:216-265-2374)





Weather Reporting Webpage

www.weather.gov/dmawds



NATIONAL WEATHER SERVICE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



Ship Observation Entry Form

Welcome to the Voluntary Observing Ship data entry page. Thank you for taking the time to submit your observation. The data you enter here plays a major important role in producing accurate weather and wave forecasts. Your observation is included in the computer models that create weather and wind forecasts. The more initial data in the model, the better the forecast; especially over the data sparse open waters of the Great Lakes.

If you need to make a correction to your observation, click on the back button after you transmitted your observation and make the final correction and retransmit your observation.

Your ship's radio callsign (which is also your login ID here) must be registered with DMAWDS in order to send an observation.

Note: Any element in red denotes mandatory observed entry.

What is the radio call sign (ID) of your ship? (NOTE: USE LETTERS AND NUMBERS ONLY. NO SPACES.)

What is your DMAWDS password?

Day of the month in UTC: 08 ▾

Actual Time of Observation to the Nearest Whole Hour in UTC: 20 ▾

What is the latitude in tenths of a degree (example: 42.8)?

What is the longitude in tenths of a degree (example: 82.1)?

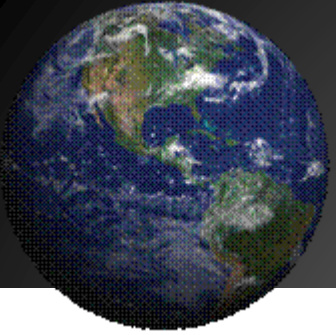
Enter the wind speed to the nearest knot (example: 12)?

Enter the wind direction in degrees (example: 90, 270):

Enter the wave height in feet (example: 6, 12)?



National Weather Service

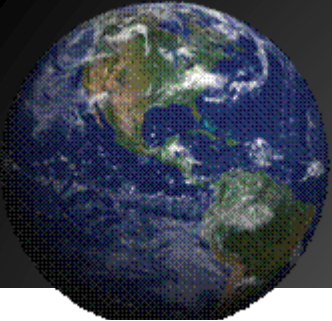


Weather Reporting Webpage

www.weather.gov/dmawds

- *Winds and Waves* most essential for our forecasts.
- Short on time? Submit to us your position with winds and waves.
- Fill out as much of the form as possible to give us the best representation of conditions you are experiencing.
- When to report? We can take an observation whenever you can report, up to one an hour. Synoptic times for models at 0000, 0600, 1200, 1800 UTC.





GLERL Coastwatch

<https://coastwatch.glerl.noaa.gov/marobs/marobs.html>

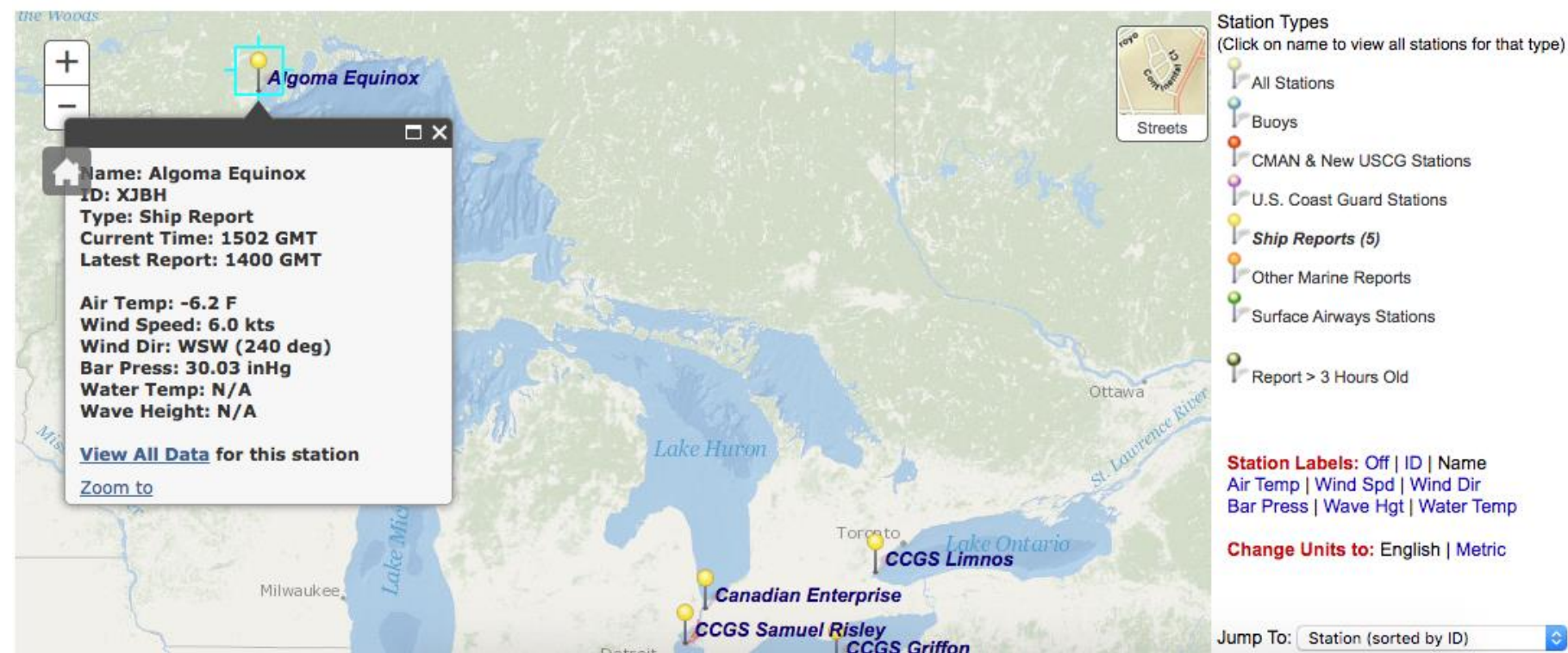
Realtime Great Lakes Weather Data and Marine Observations

Ship Reports

Station Labels = Name

Click on marker to view data for that station

Zoom To : or **Hold Down Shift Key for Drag Zoom**



National Weather Service



Enhanced Data Display

<http://preview.weather.gov/edd/>

NWS Enhanced Data Display v4.5.11
A Product of the Charleston, WV Weather Ready Nation Pilot Project

Experimental

Marine Travel Hazard Forecast

Prototype***

How to use:

Hold down the shift key while left-clicking and dragging - release the mouse button before releasing the shift key. [Video Demo](#)

+ Click and Drag

Depart on: Feb 5, 2018 9:00 AM

Vessel Speed: 12 KT MPH

Saved Routes: Click to Select

Options

Icon Display: Icon Only

Forecast Sample Density: - 0 +

☒ Allow Multiple Routes?

mi.
ys 8 hr.

[Disclaimer](#)



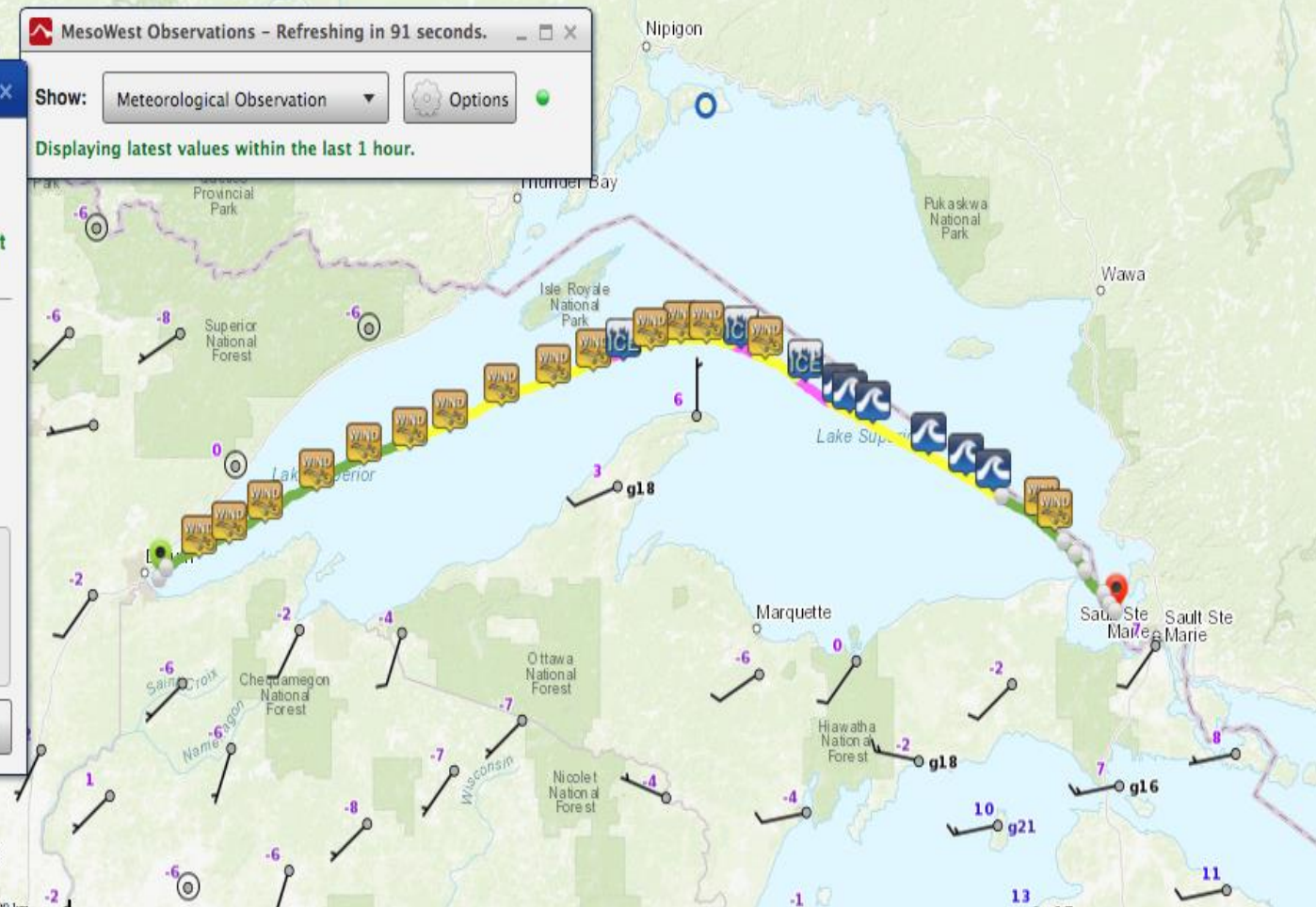
More Layers

Quick Links

MesoWest Observations - Refreshing in 91 seconds.

Show: Meteorological Observation Options

Displaying latest values within the last 1 hour.





Updated Prog Maps

www.weather.gov/dmawds



NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



Digital Marine Weather Dissemination System Products Menu

Text Products:		
Full Text Products	Selected Warnings	Synopses (All Lakes)
US Lake Forecasts	Open Lake Forecast, LS	Open Lake Forecast, LM
Open Lake Forecast, LH	Open Lake Forecast, LE	Open Lake Forecast, LO
US MAFORS	All Nearshore Forecasts	Nearshore Forecast, LS
Nearshore Forecast, LM	Nearshore Forecast, LH	Nearshore Forecast, LE
Nearshore Forecast, LO	Latest LAWEB	Ice Forecast

Graphics Products:	
Hourly LAWEB West	Hourly LAWEB East
Surface Conditions	Ship Obs/Wave reports
12-Hour Forecast Conditions	24-Hour Forecast Conditions
36-Hour Forecast Conditions	48-Hour Forecast Conditions
GLERL Nowcast Winds - Lake Superior	GLERL Nowcast Winds - Lake Michigan
GLERL Nowcast Winds - Lake Huron	GLERL Nowcast Winds - Lake Erie
GLERL Nowcast Winds - Lake Ontario	GLERL Forecast Winds - 12 Hour
GLERL Forecast Winds - 24 Hour	GLERL Forecast Winds - 36 Hour
GLERL Forecast Winds - 48 Hour	Nowcast Waves - All Lakes
GLERL Forecast Waves - 12 Hour	GLERL Forecast Waves - 18 Hour
GLERL Forecast Waves - 24 Hour	GLERL Forecast Waves - 30 Hour
GLERL Forecast Waves - 36 Hour	GLERL Forecast Waves - 42 Hour
GLERL Forecast Waves - 48 Hour	



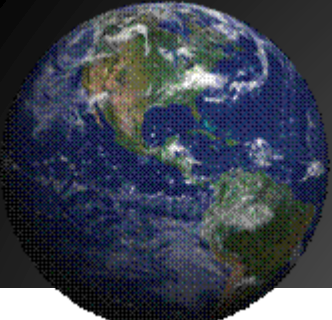
US Dept of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
1325 East West Highway
Silver Spring, MD 20910

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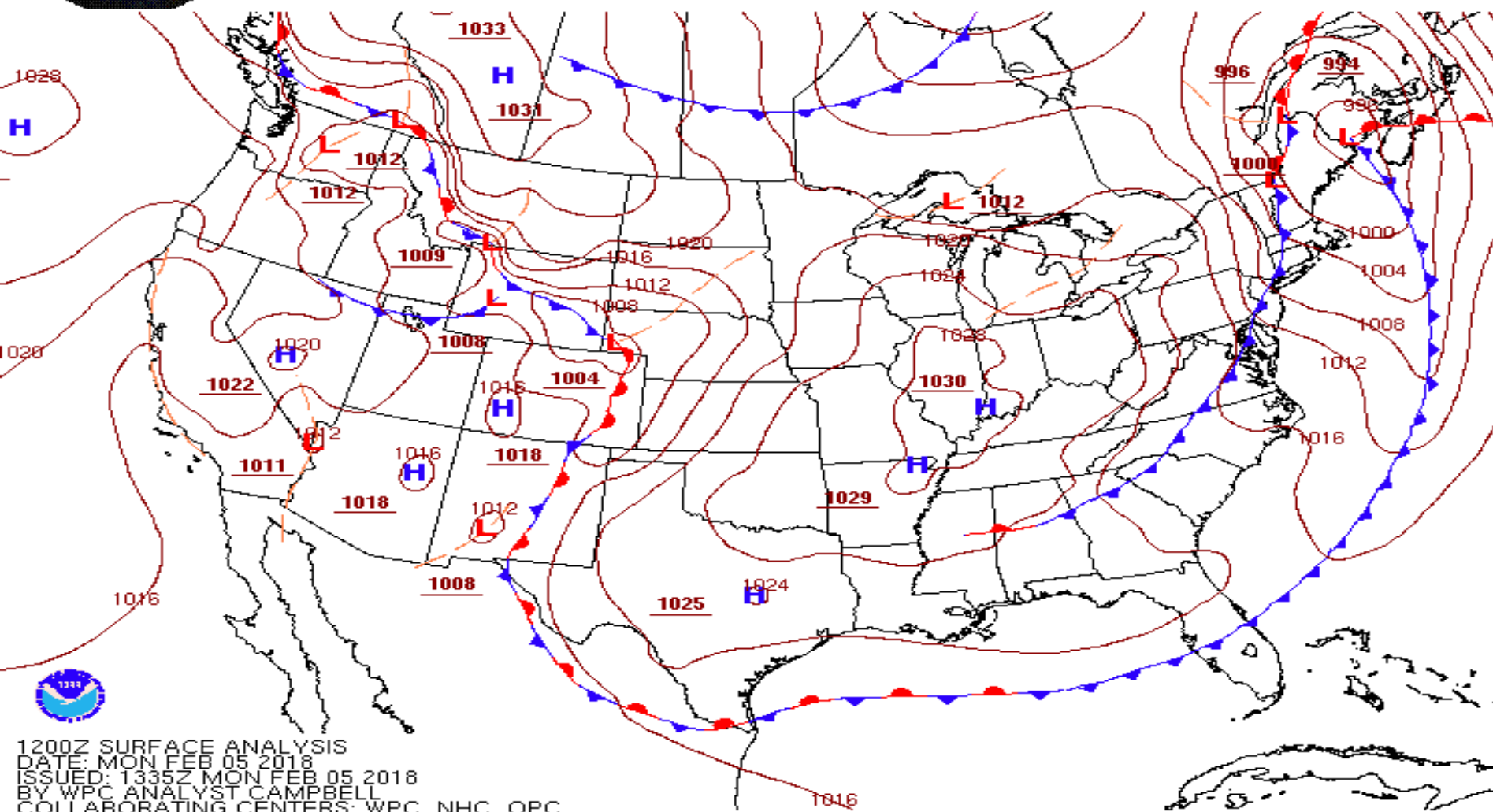


National Weather Service



Updated Prog Maps

www.weather.gov/dmawds

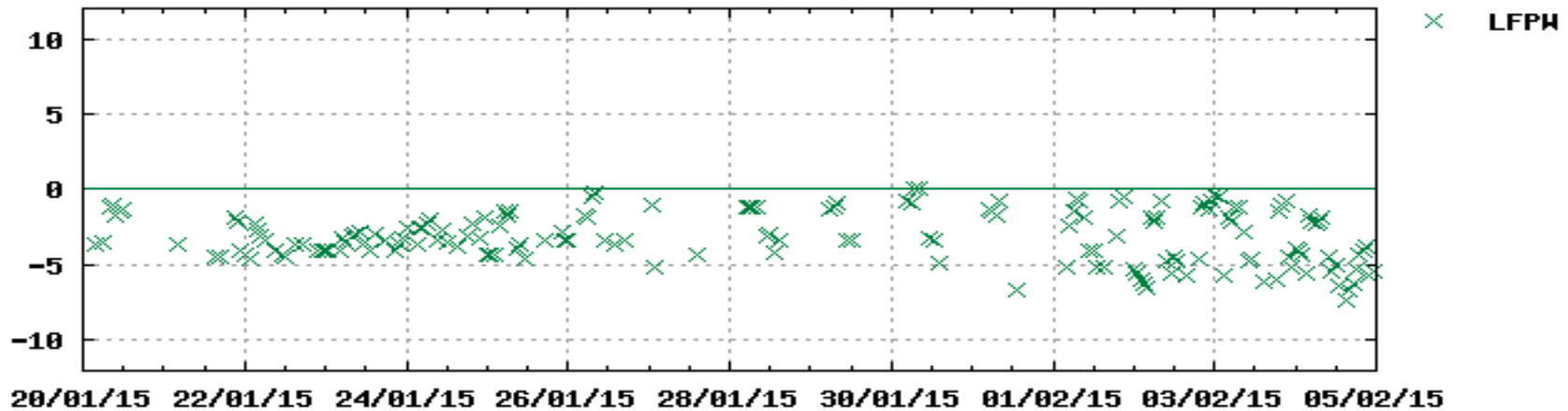




Observation Quality Control

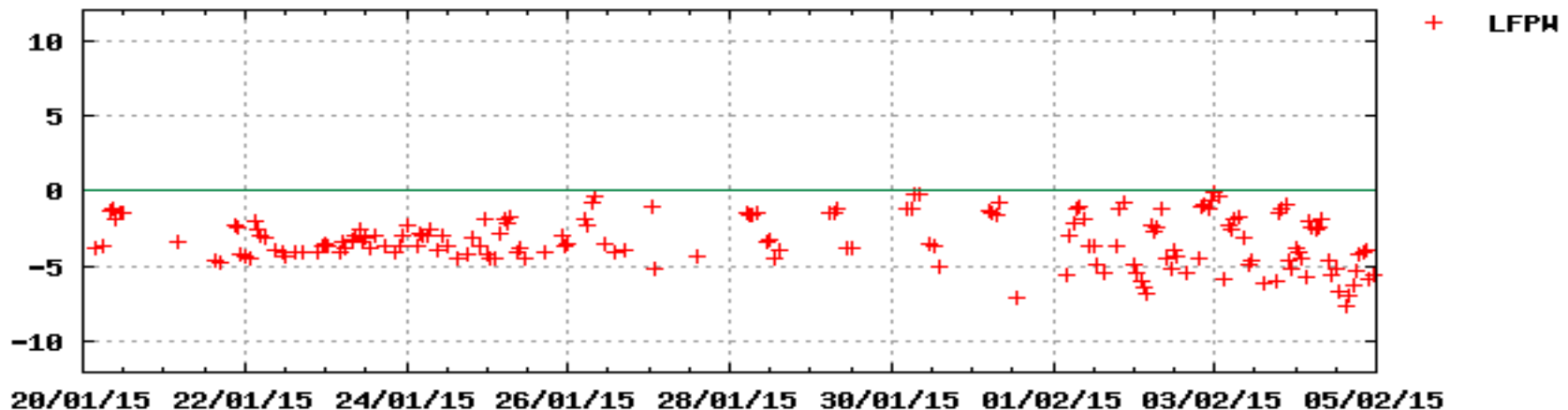
Meteo-France

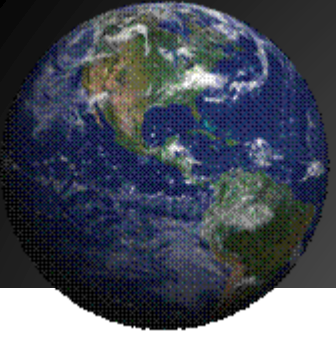
Station WMO PHE0 - Air Pressure differences in hPa



ECMWF

Station WMO PHE0 - Air Pressure differences in hPa

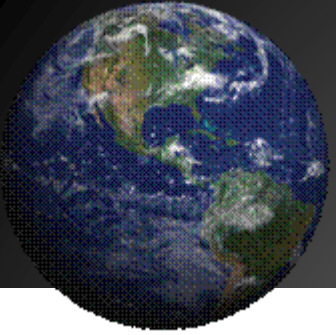




Weather Equipment

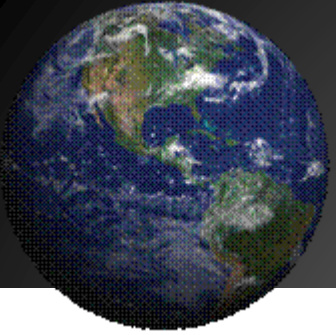
- Digital and aneroid barometers available for broken or ship issued original equip.
- NWS F420 wind units are dated, but accurate devices to serve as back-up. No longer supported as of 2018. Wind bottles can be purchased Electro Inc.
- Nimbus/MMTS temperature standard still operational. If not working, contact me.





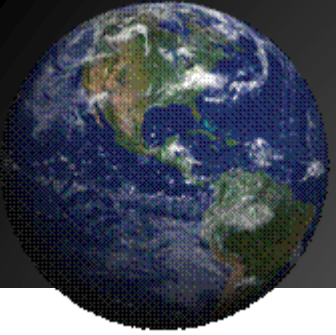
Weather Equipment

- Barometer, Aneroid (Fischer) - Available
- Mintaka Duo Precision Barometer - 10 deployed on Great Lakes
- Mintaka Star Precision Barometer w/WiFi - testing phase 2018
- ProStat PHT-771 Digital Psychrometer - testing 2017
- Extech RH-300 Digital Psychrometer - 5 deployed
- MMTS Max/Min Thermometer Display Unit - numerous on Great Lakes will deploy 5 additional on Tugs 2018
- MMTS Thermometer with Shelter Assembly - above
- Hygrometer Set Zeal P2505 - not a solution for the Great Lakes
- Instrument Shelter - As needed on Canadian ships with Zeal Hygro sets and Stephenson Screens



How do I become active in VOS?

- Contact PMO Ron Williams
- Will assess your weather equipment for accuracy
- Assign login/password for online entry
- PMO will adjust barometer and visit ship to train observers
- 20 observations per month to stay active in VOS



PMO CONTACT INFORMATION

Ron Williams
National Weather Service
Port Meteorological Officer Great Lakes
ronald.williams@noaa.gov
907-831-1504

Questions?

