



NOAA's Center for Operational Oceanographic Products and Services Update of Services in the Great Lakes

Richard Edwing, Director
NOAA/NOS/CO-OPS

Lake Carriers' Association
Annual Meeting
February 14
Cleveland, Ohio

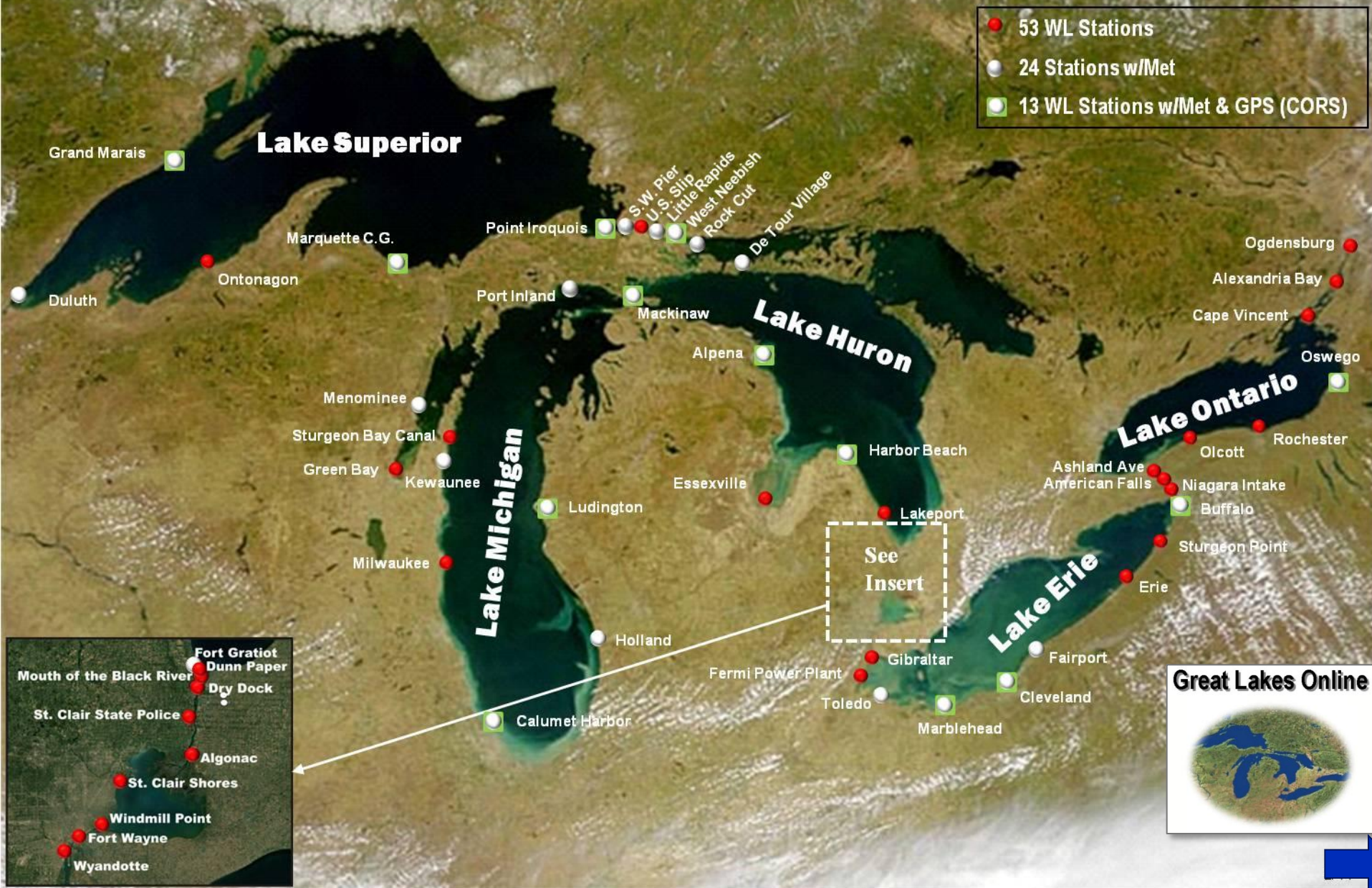
Overview of Services in the Great Lakes

Information that Moves America

- NWLON
- Currents
- PORTS®
- Model forecasts



U.S. Great Lakes Water Level Station Network



Low Water Condition

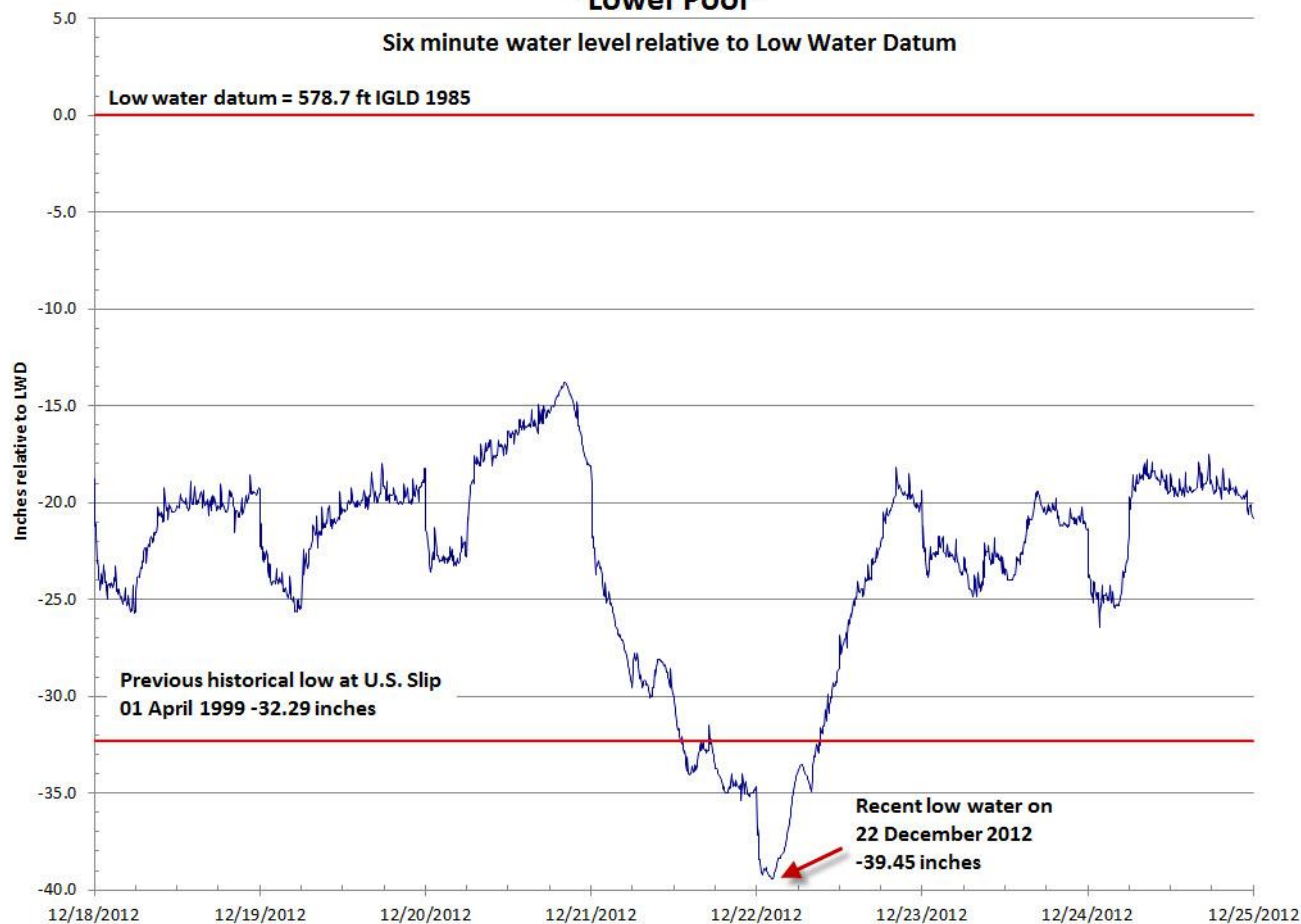
9099090 Grand Marais, MN
9099064 Duluth, MN
9099044 Ontonagon, MI
9099018 Marquette C.G., MI
9099004 Point Iroquois, MI
9087096 Port Inland, MI
9087088 Menominee, MI
9087079 Green Bay, WI
9087072 Sturgeon Bay Canal, WI
9087068 Kewaunee, WI
9087057 Milwaukee, WI
9087044 Calumet Harbor, IL
9087031 Holland, MI
9087023 Ludington, MI
9076070 S.W. Pier, MI
9076060 U.S. Slip, MI
9076033 Little Rapids, MI
9076027 West Neebish Island, MI
9076024 Rock Cut, MI
9075099 De Tour Village, MI
9075080 Mackinaw City, MI
9075065 Alpena, MI
9075035 Essexville, MI
9075014 Harbor Beach, MI
9075002 Lakeport, MI
9014098 Fort Gratiot, MI
9014096 Dunn Paper, MI
9014090 Mouth of the Black River, MI
9014087 Dry Dock, MI

Great Lakes Online



Web site owner: Center for Operational Oceanographic Products and Services
NOTICE: The phone number for voice access to all Great Lakes stations information is:
301-713-9596

9076060 U.S. Slip, St. Marys River MI "Lower Pool"



Great Lakes Water Level Dashboard

To feet Toggle Fullscreen Contacts About ?

☒ Superior ☒ Michigan-Huron ☐ St. Clair ☒ Erie ☒ Ontario

Surface water elevation (meters: IGLD 85)

Superior

Michigan-Huron

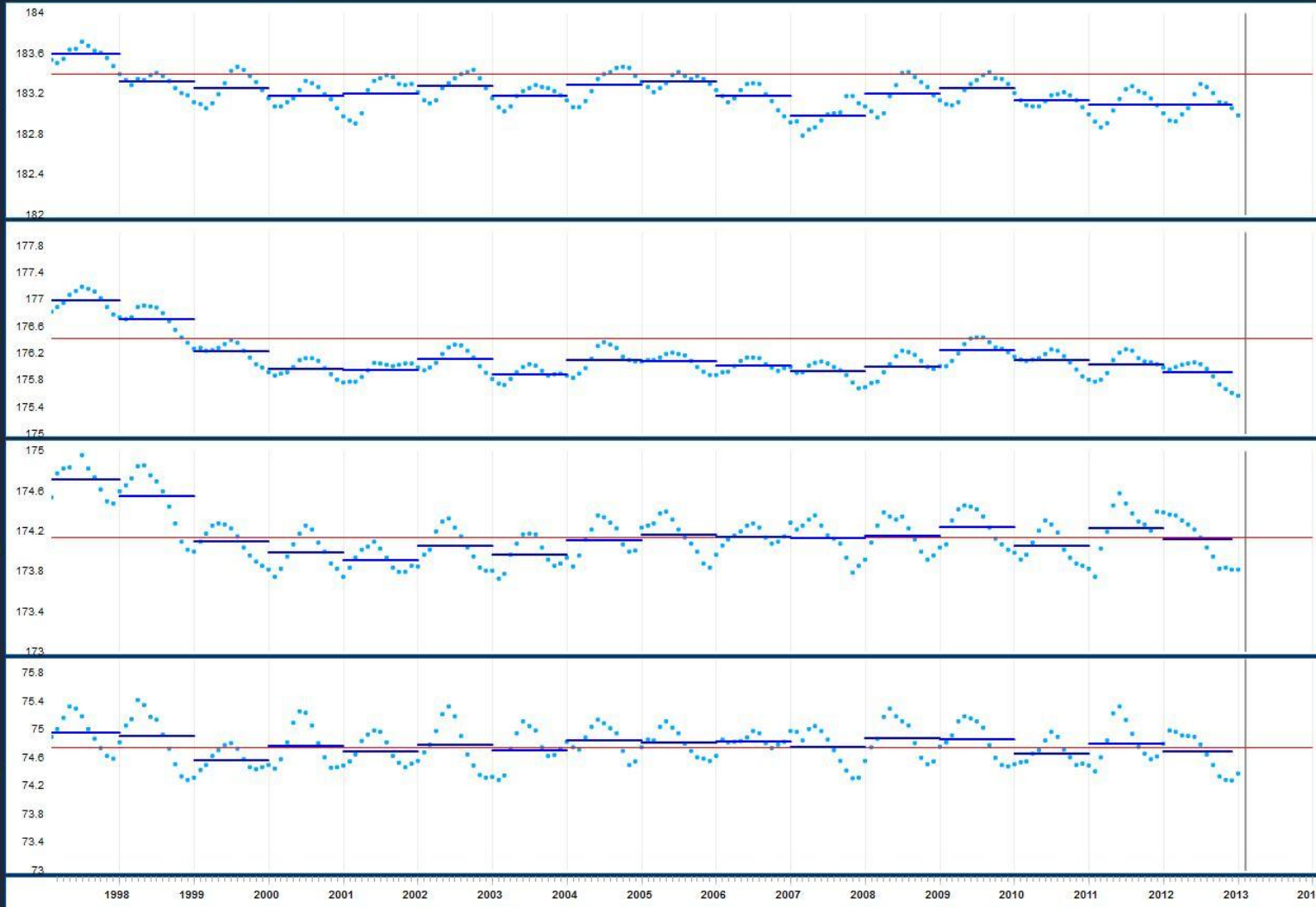
Erie

Ontario

Zoom Pan

Timespan

Equalize vertical scale



Legend and Menu

Observations

- ☒ Lakewide monthly average (1918-Present)
- ☐ 1860-1917 adjusted monthly average: Superior, Erie
- ☐ Master gauge monthly average (1860-Present)
- ☒ Lakewide annual average (1918-Present)
- ☒ Average for period of record (1918-Present)
- ☐ Month's average (1918-2011)
- ☐ Month's record high (1918-2011)
- ☐ Month's record low (1918-2011)
- ☐ Quinn, Sellinger (1990) M-H 1819-1859

Info on surface water elevation data

Monthly Level Forecasts

Forecasts (Multi-Decadal)

Paleological Reconstructions

Return Series to Default Colors

Dark Background

1997

2013

Thu Feb 7 2013 08:49:21 AM



U.S. Great Lakes Currents Demonstration Project

▲ Current Meter Stations

Lake Superior

Lake Huron

Lake Ontario

Lake Michigan

St. Clair River ▲

Maumee River ▲

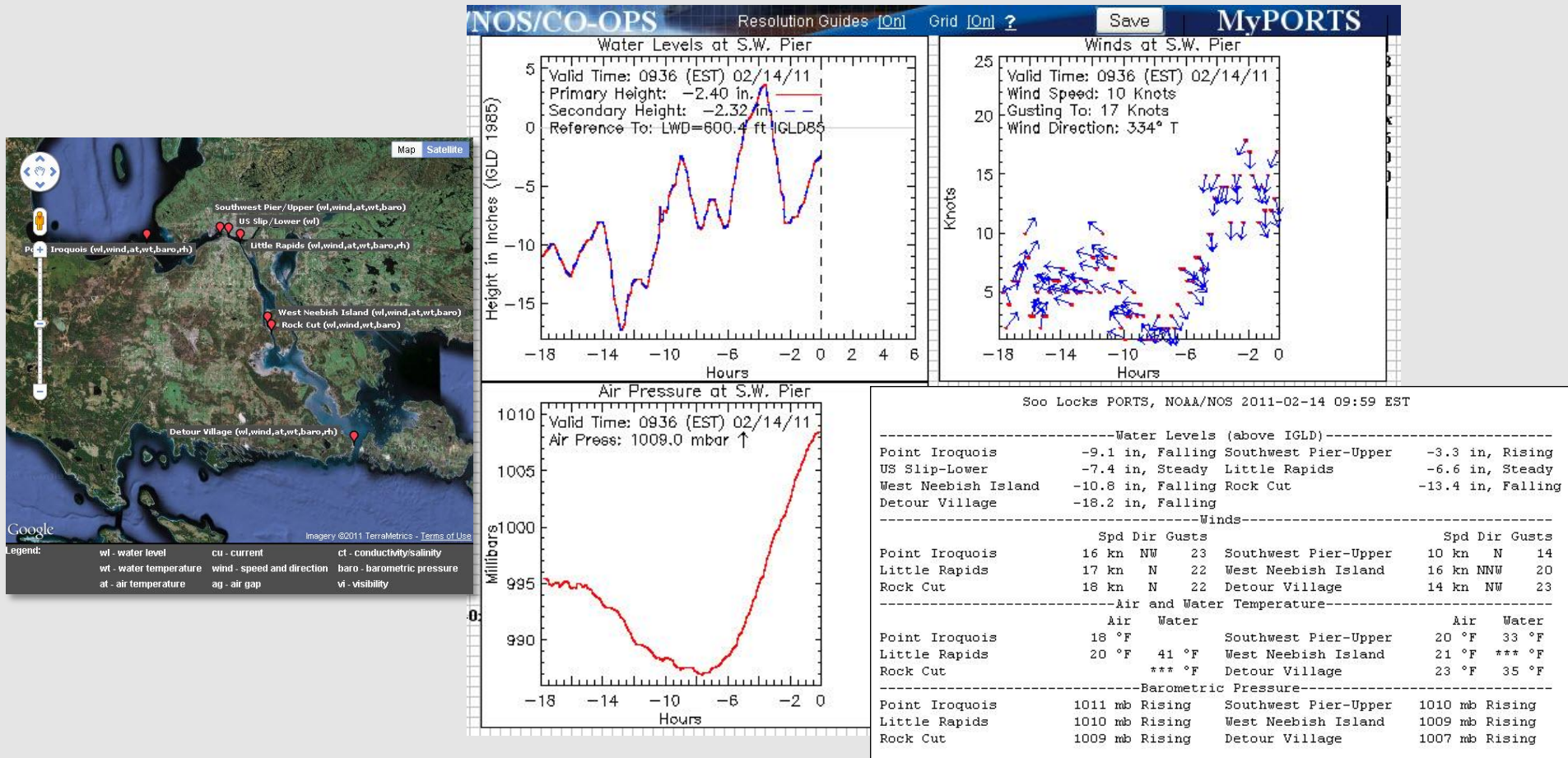
Lake Erie

Cuyahoga River ▲



Soo Locks PORTS[®]

Physical Oceanographic Real-Time Systems



<http://tidesandcurrents.noaa.gov/ports/index.shtml?port=sl>

NOAA's CENTER for OPERATIONAL OCEANOGRAPHIC PRODUCTS and SERVICES



Great Lakes Operational Forecast System

LSOFS = Lake Superior Operational Forecast System
LMOFS = Lake Michigan Operational Forecast System
LHOFS = Lake Huron Operational Forecast System
LEOFS = Lake Erie Operational Forecast System
LOOFS = Lake Ontario Operational Forecast System

Lake Superior

LSOFS

LMOFS

Lake Michigan

Lake Huron

LHOFS

LOOFS
Lake Ontario

LEOFS

Lake Erie



CO-OPS Budget

Year	Amount
2011	\$29,441,000
2012 (<i>President's Request</i>)	\$28,979,000
2012 (<i>Enacted</i>)	\$27,530,000
2013 (<i>President's Request</i>)	\$29,055,000
2014 (<i>President's Request</i>)	?

Great Lakes Impacts

- No FY12 annual inspections of Great Lakes NWLON
- No maintenance of current meters in the Great Lakes
- No maintenance of met sensors

Questions

For More Information, Contact:

Darren Wright, *Maritime Services
Program Manager*

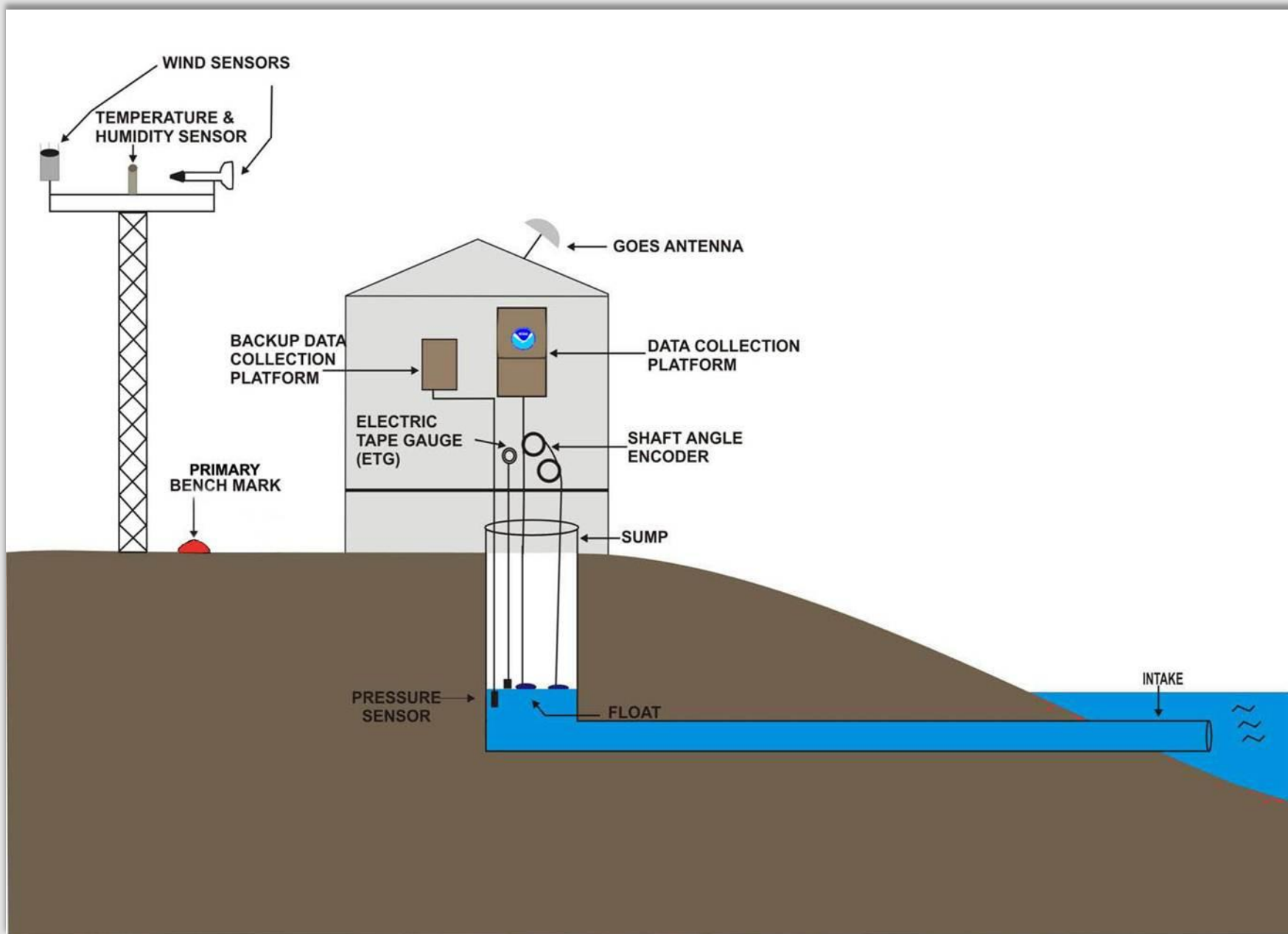
Darren.Wright@noaa.gov

301-713-2981 x193



Links

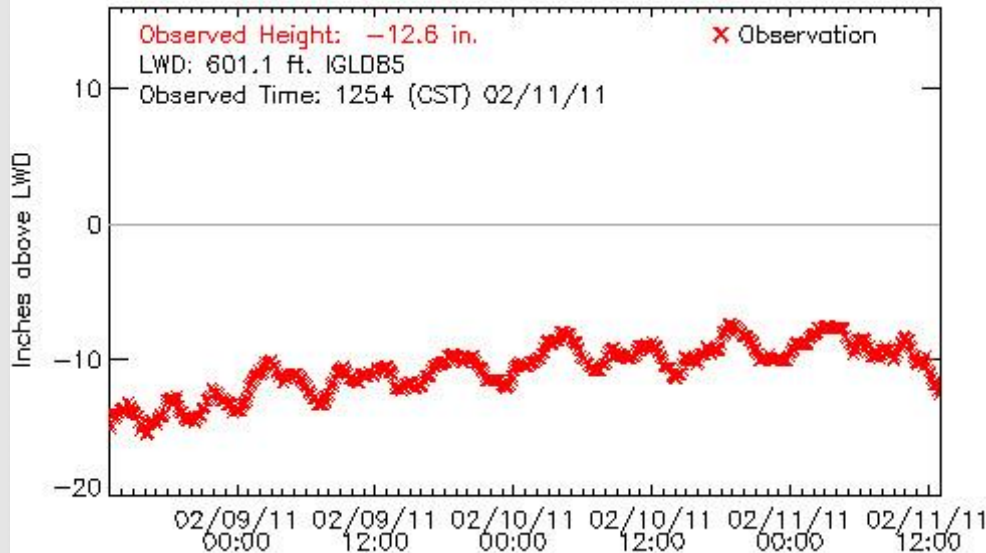
- CO-OPS Website:
<http://tidesandcurrents.noaa.gov/index.shtml>
- Great Lakes Online:
<http://glakesonline.nos.noaa.gov/>
- Soo Locks PORTS:
<http://tidesandcurrents.noaa.gov/ports/index.shtml?port=sl>
- GLOFS:
<http://tidesandcurrents.noaa.gov/ofs/glofs.html>



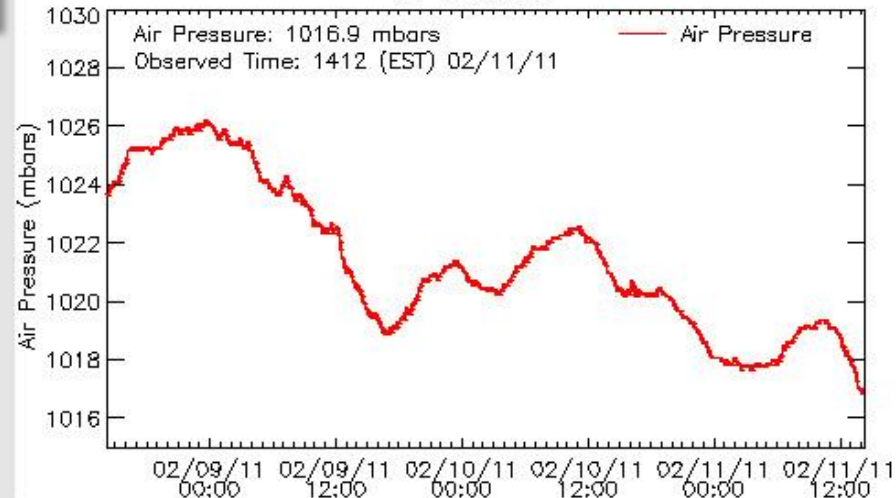
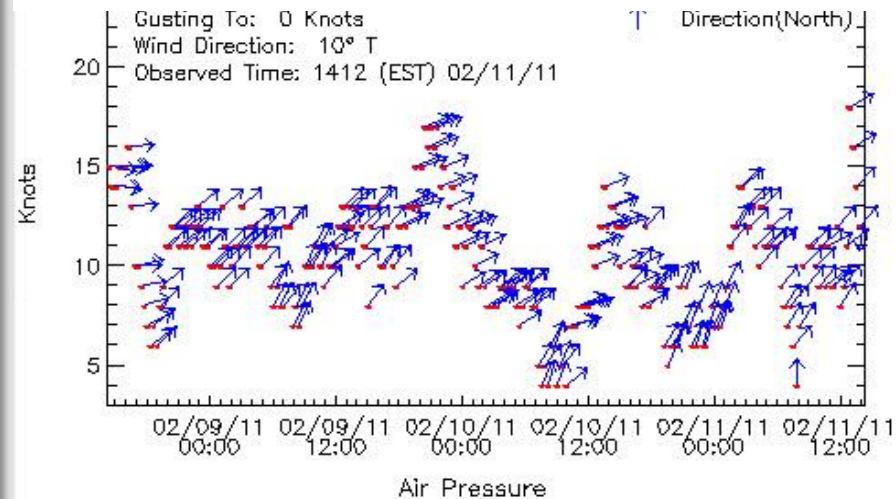
Great Lakes Online



Low Water Levels at Duluth, MN



Winds and Air Pressure at Cleveland, OH



Great Lakes Online



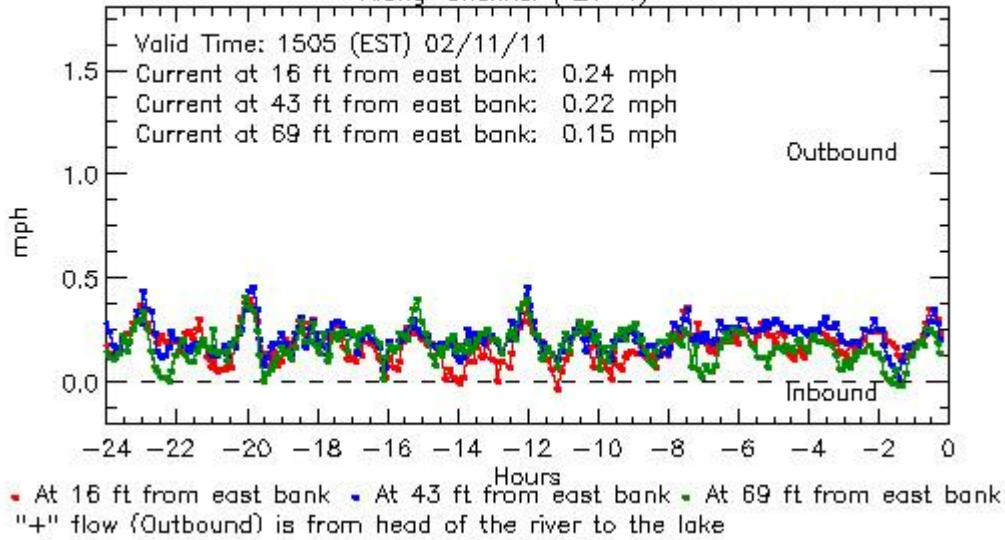
<http://glakesonline.nos.noaa.gov/>



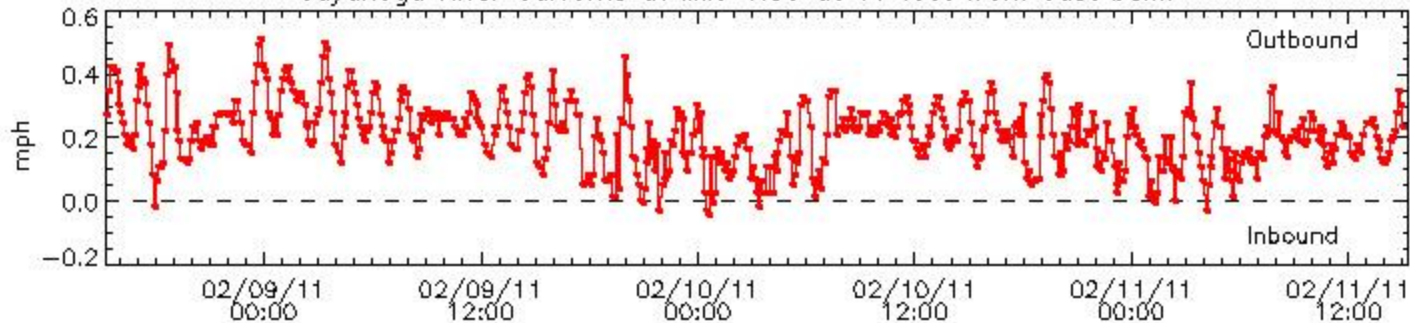
Great Lakes Currents

Cuyahoga River, OH

Currents at Center Street Swing Bridge (Cuyahoga River)
Along-Channel { 21° T }



Cuyahoga River Currents at Mile 1.39 at 16 feet from east bank



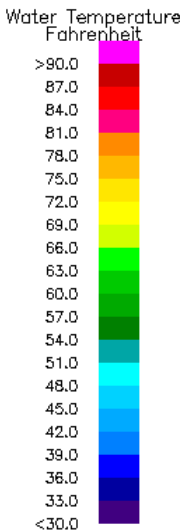
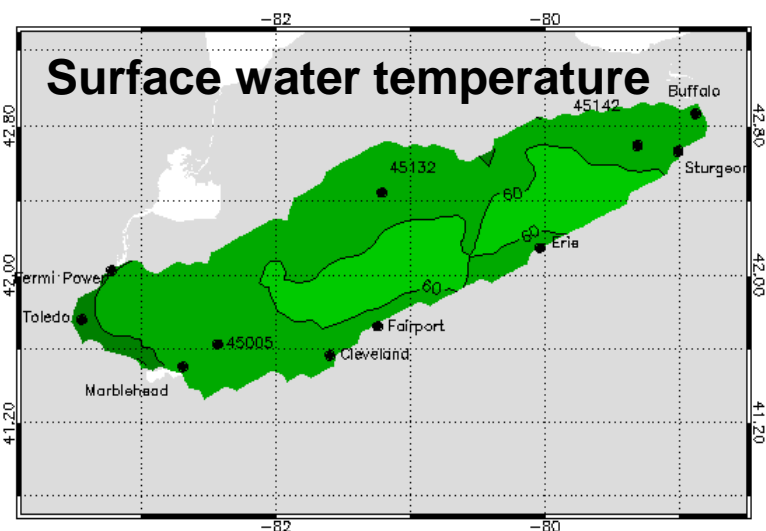
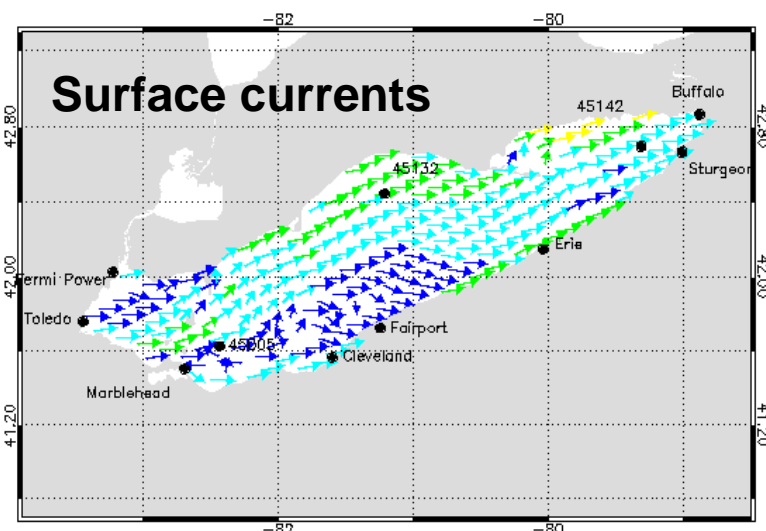
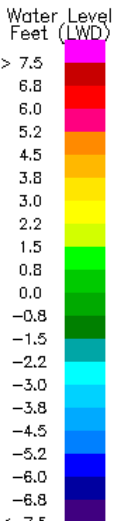
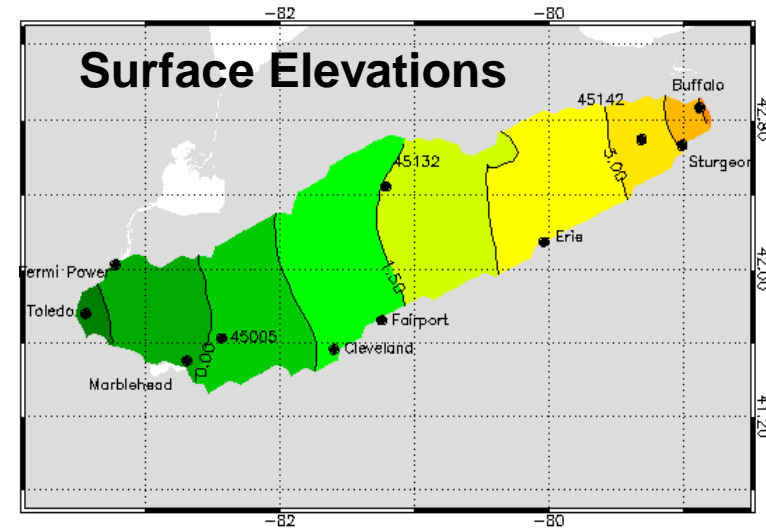
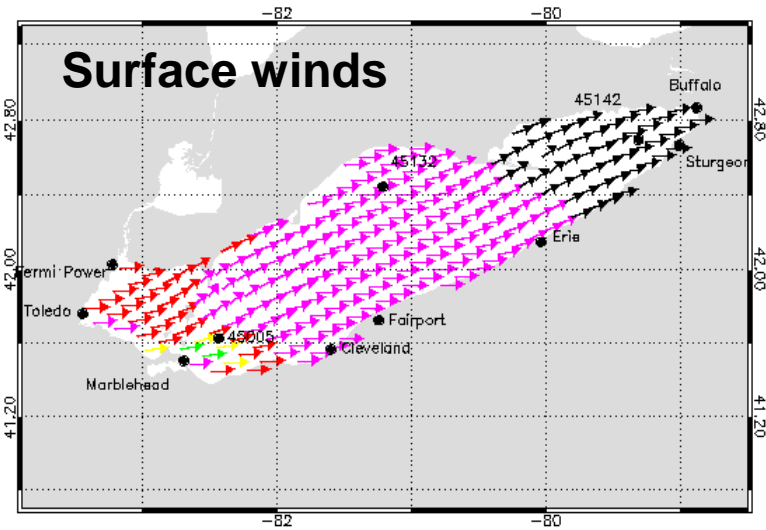
<http://glakesonline.nos.noaa.gov/moncurrent.html>

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Model Forecast Guidance

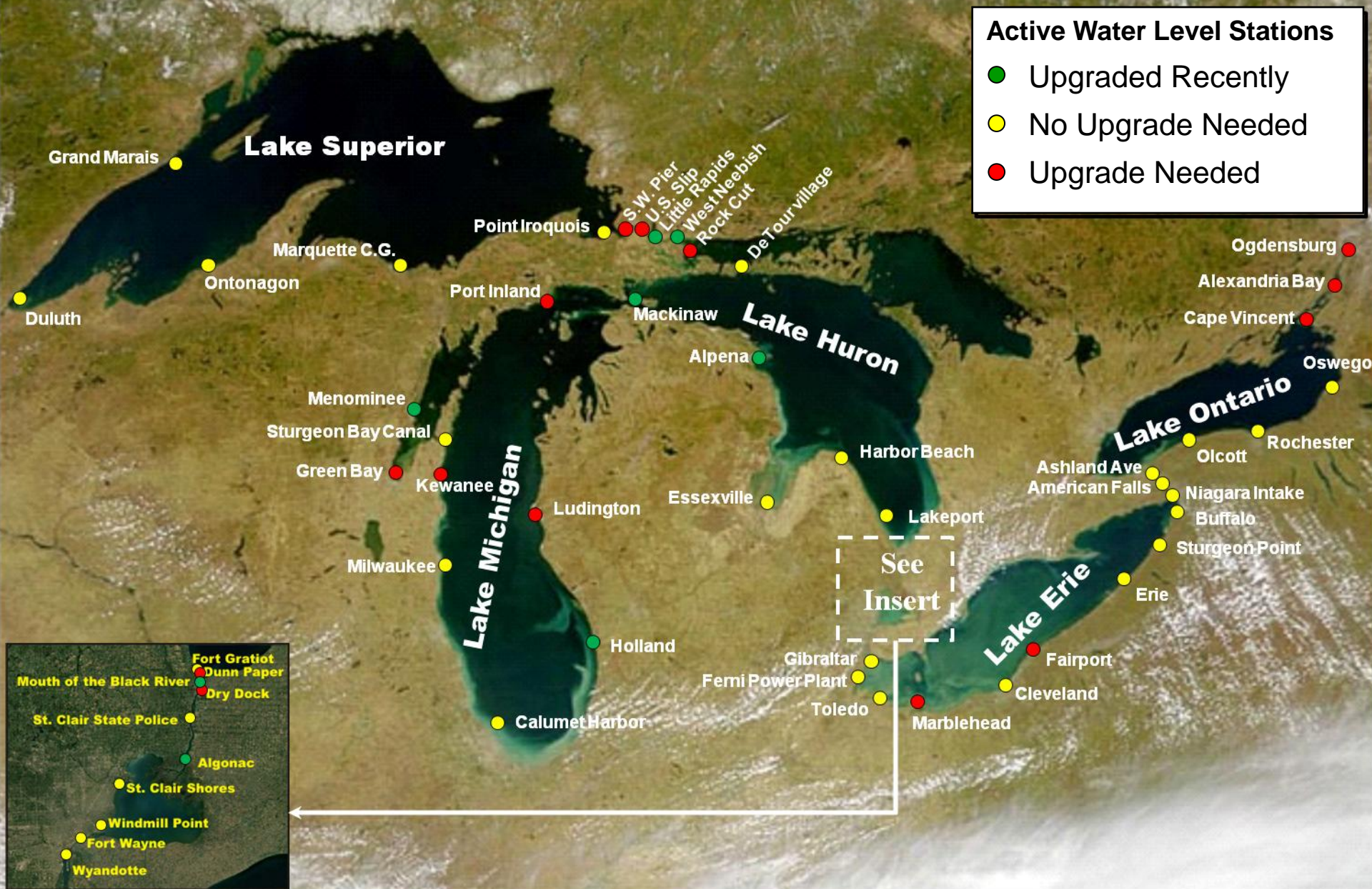
Lake Erie Operating Forecast System



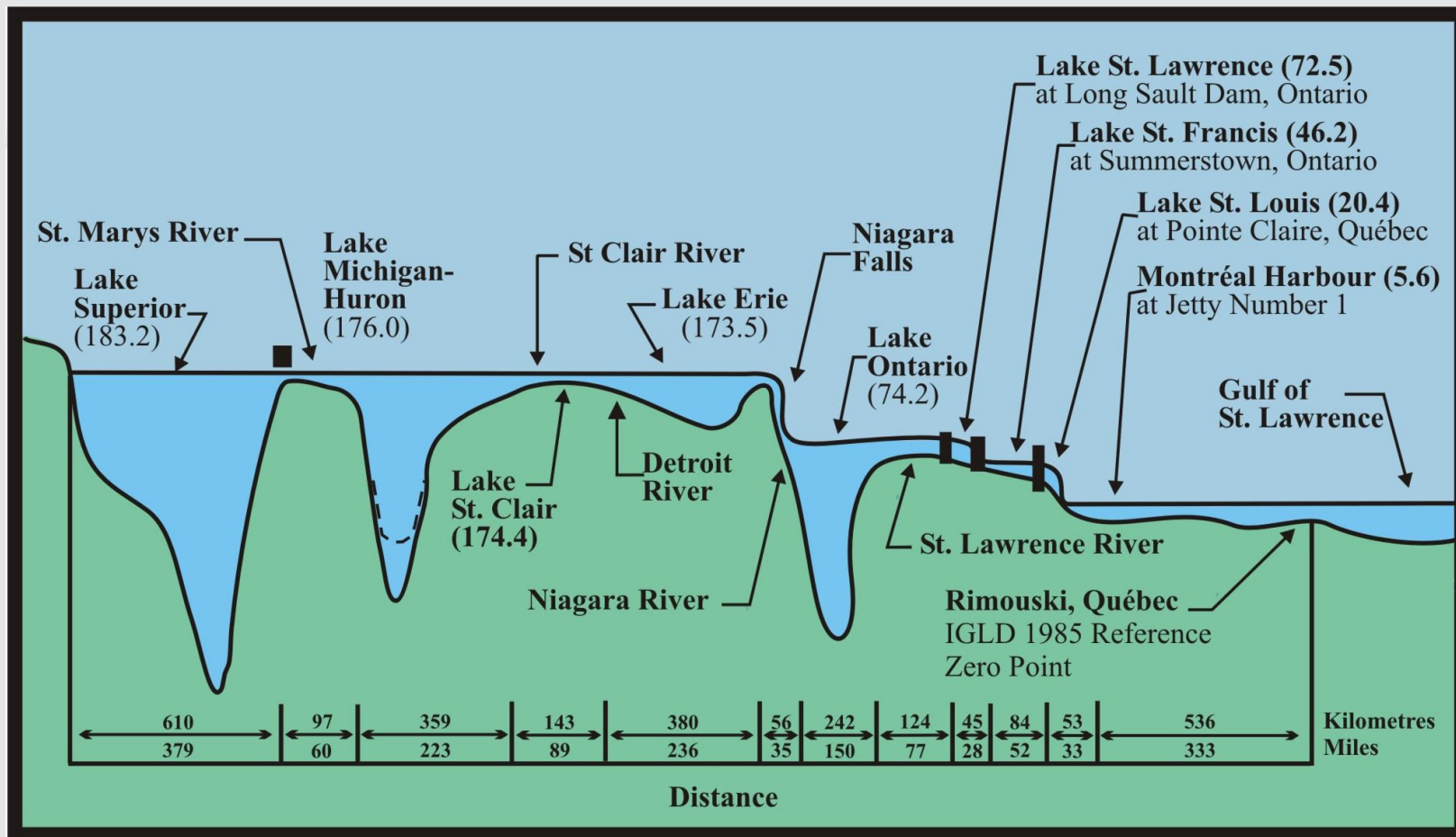
Valid at 0900 (EDT) 10/28/10

Valid at 0900 (EDT) 10/28/10

U.S. Great Lakes Water Level Station Network



International Great Lakes Datum Update



- IGLD 55 replaced USLS 1935 and CGVD 28
- IGLD 85 updated IGLD 55 due to isostatic rebound
- IGLD to be updated again in 2015 (2020?)