



U.S. Army Corps of Engineers  
Detroit District  
<http://www.lre.usace.army.mil>

# Current Water Levels and Forecasts

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# The Great Lakes Basin

14,000 miles of shoreline  
95,000 square miles of water  
200,000 square miles of land  
8 States & 2 Provinces

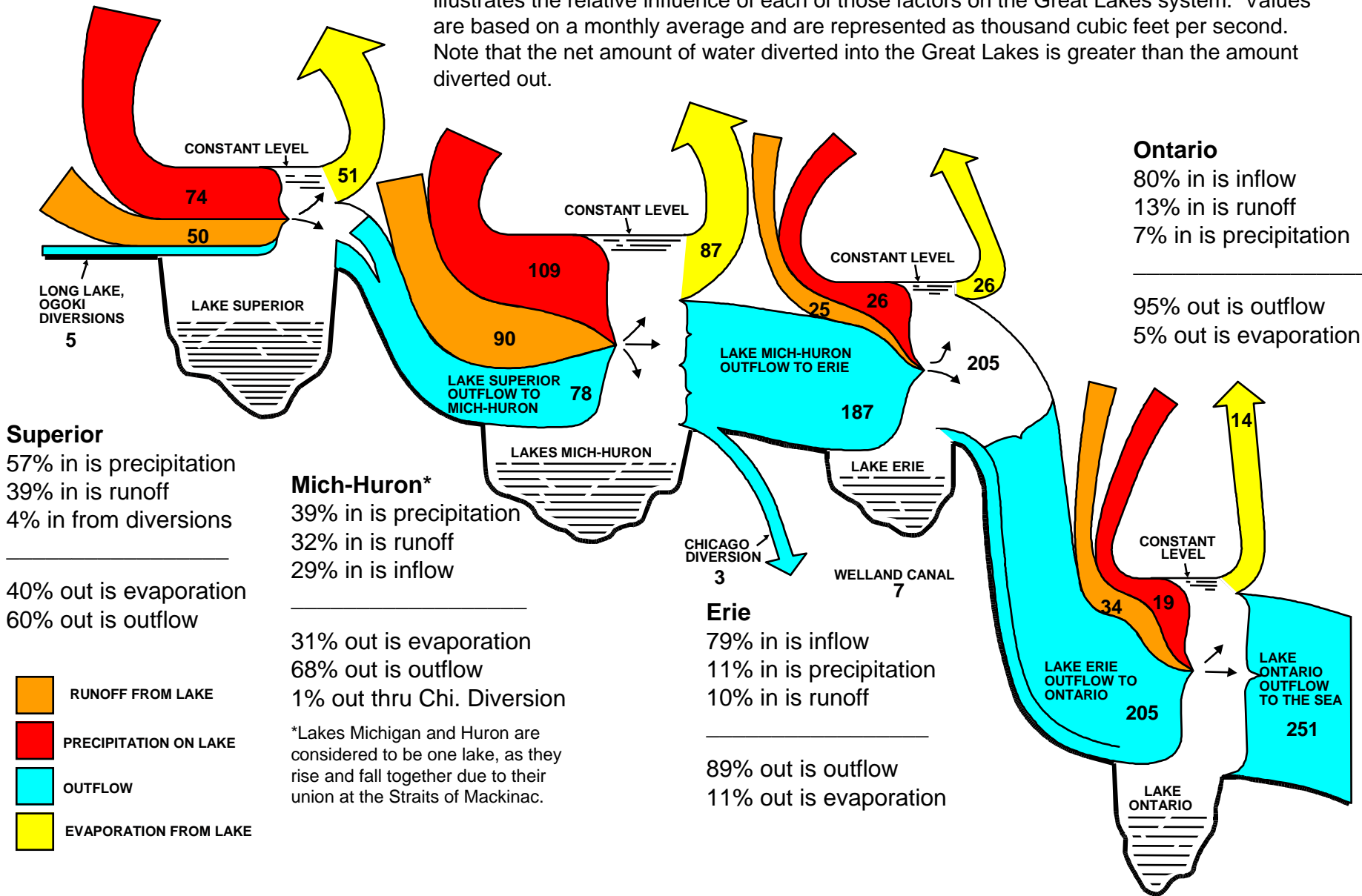


# What Influences Water Level?

- Natural factors
  - precipitation, runoff, evaporation
  - wind, pressure and crustal movement
- Man made changes to the system
  - diversions, dredging, regulation

# Hydrologic Components

Flow from upstream lakes, evaporation and precipitation influence lake levels. This graph illustrates the relative influence of each of those factors on the Great Lakes system. Values are based on a monthly average and are represented as thousand cubic feet per second. Note that the net amount of water diverted into the Great Lakes is greater than the amount diverted out.



# Great Lakes Water Level Forecasting

- Forecasting for 55 years
- Monthly, Weekly and Bi-Weekly
- The monthly uses statistical models to forecast supply...the others are based on the Monthly
- Best supply scenario is routed through system
- Net Basin Supply → water levels

# Forecast Users

- Navigation
- A/E Firms
- Recreational Boaters
- Marine Construction
- Riparians
- Hydropower
- Environmental Groups
- Government Agencies

# Net Basin Supply

- Net amount of water added to or taken from a lake as a result of summing various factors in the hydrologic cycle
- Inflow, outflow (connecting channels) and the ubiquitous change in storage
- $NBS = \Delta S + \text{Outflow} - \text{Inflow}$

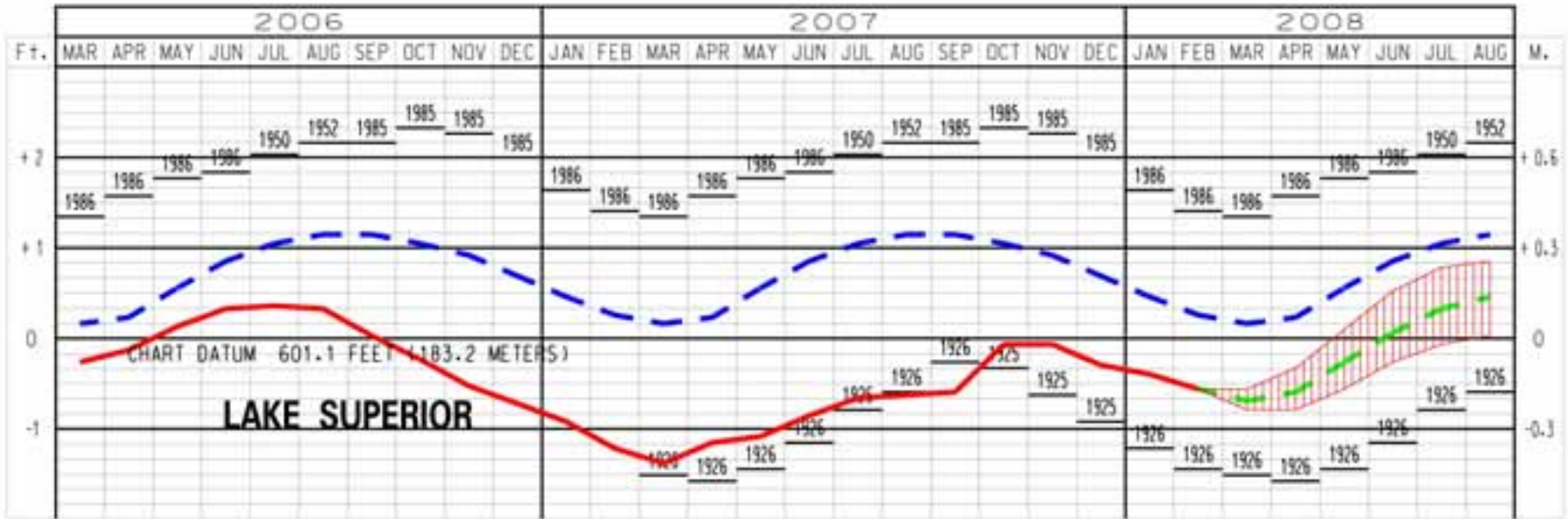
# Current Levels (feet/inches)

	March 17	+/- Avg	+/- 2007
Superior	600.3	-11	+7
Michigan-Huron	576.7	-21	-5
St. Clair	573.8	-1	-5
Erie	571.8	+8	0
Ontario	245.6	+8	+1

# March Precipitation Totals (thru Mar 17)

- Superior – 37% of average
- Michigan-Huron – 57% of average
- St. Clair – 93% of average
- Erie – 121% of average
- Ontario – 139% of average

## LAKE SUPERIOR WATER LEVELS - MARCH 2008

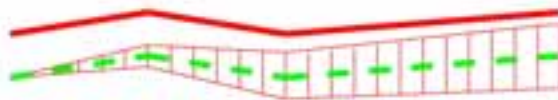


### LEGEND

LAKE LEVELS

RECORDED

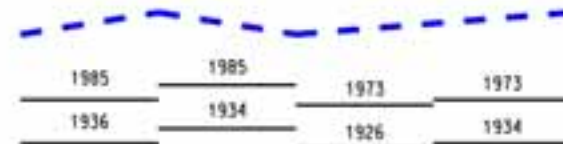
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AVERAGE \*\*

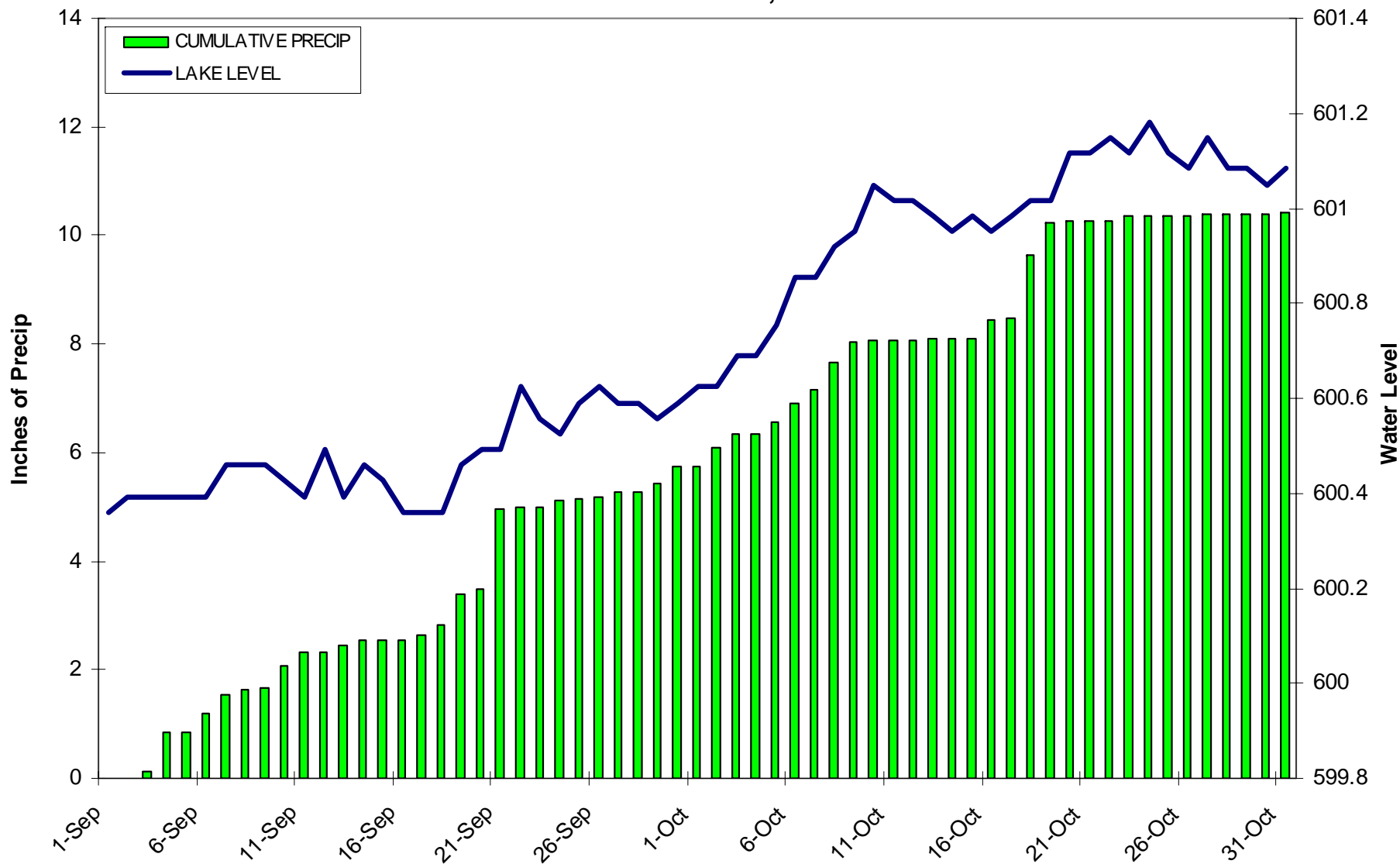
MAXIMUM \*\*

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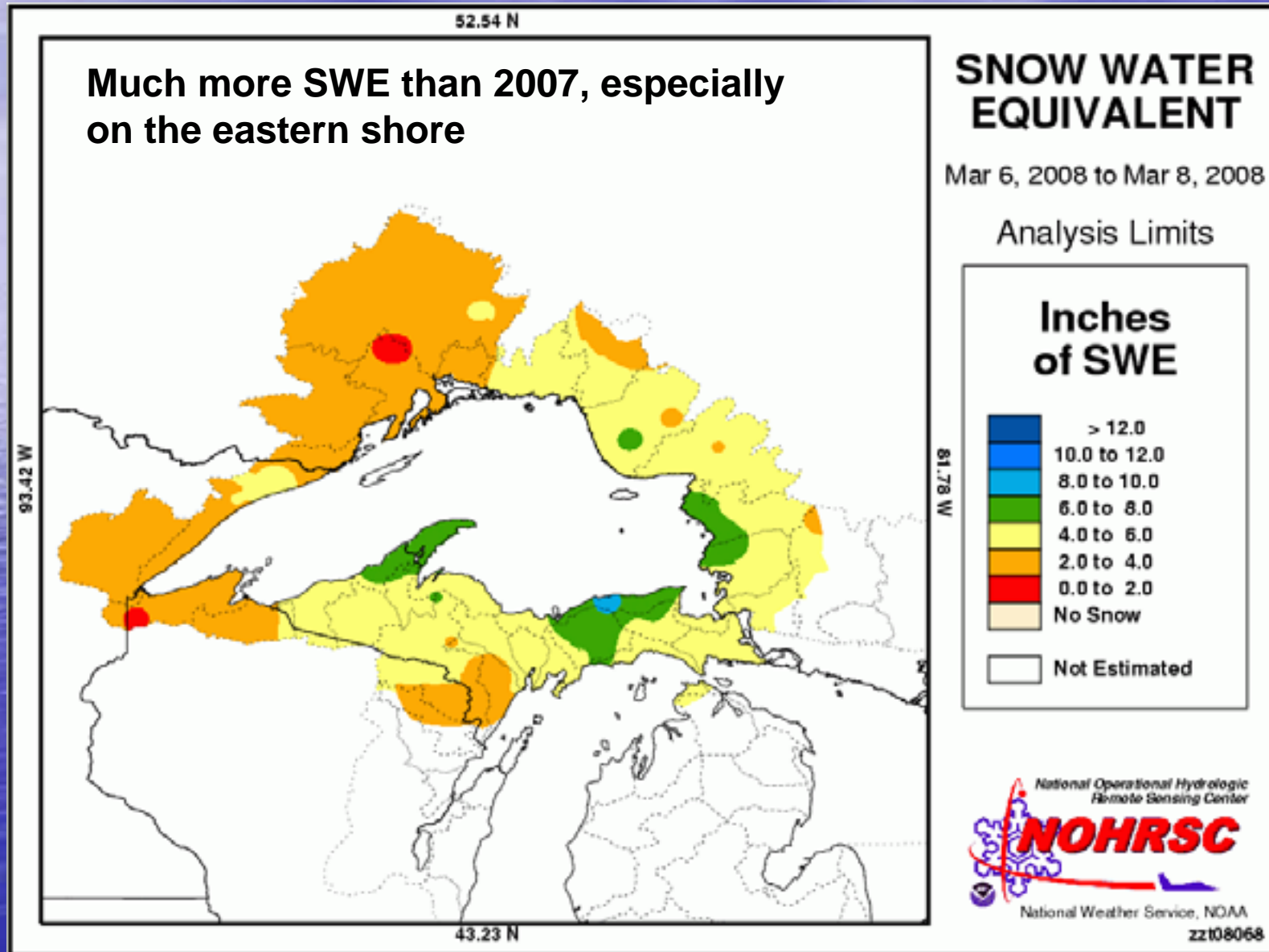


\*\* Average, Maximum and Minimum for period 1918-2006

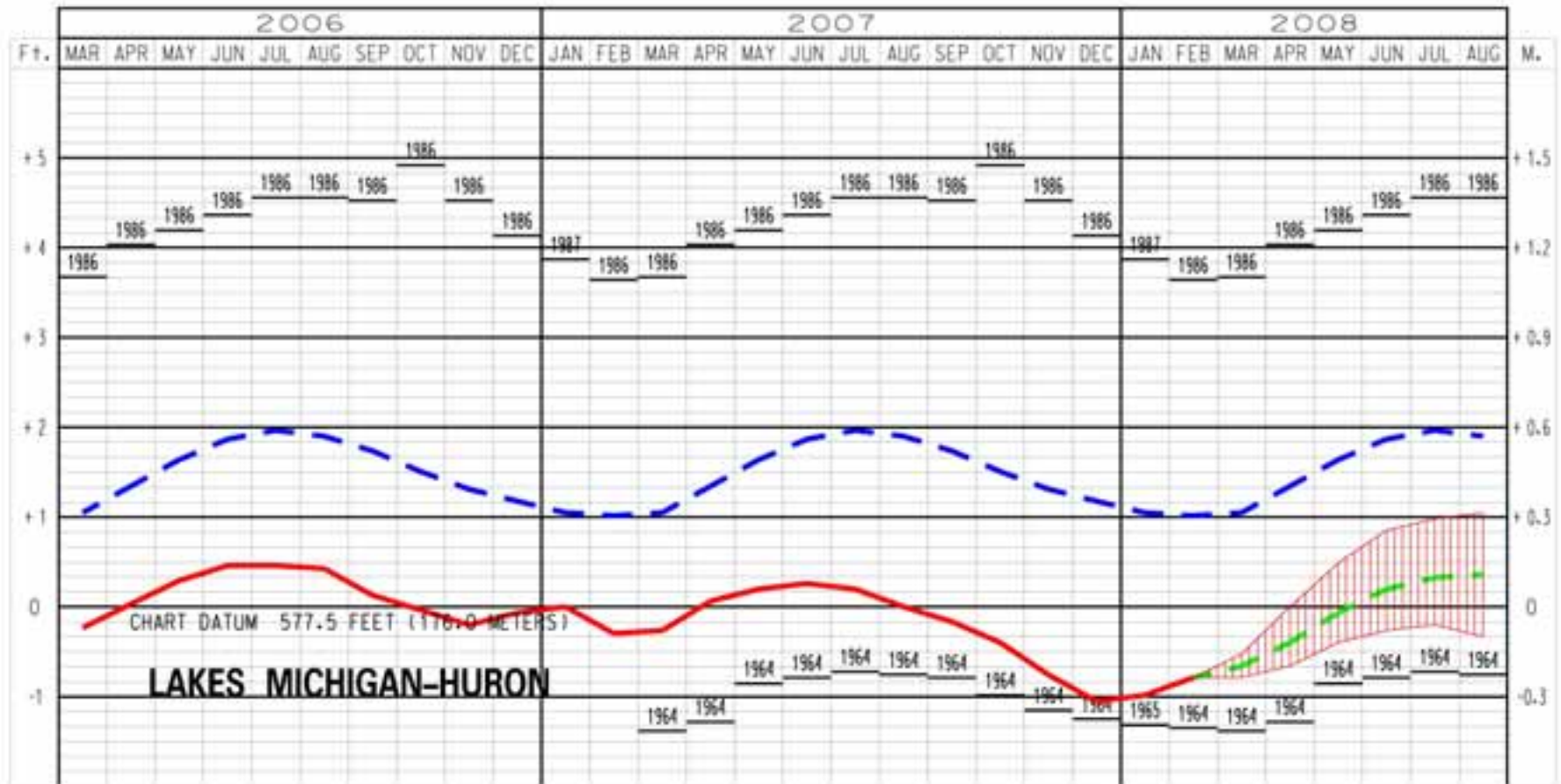
### Lake Superior Water Level and Precip SEP 1 – OCT 31, 2007



# 2008 Snow Water Equivalent



## LAKES MICHIGAN-HURON WATER LEVELS - MARCH 2008



### LEGEND

LAKE LEVELS

RECORDED

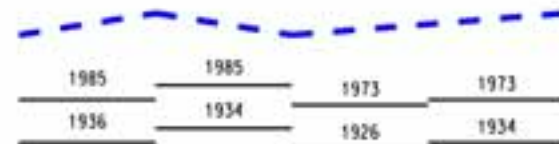
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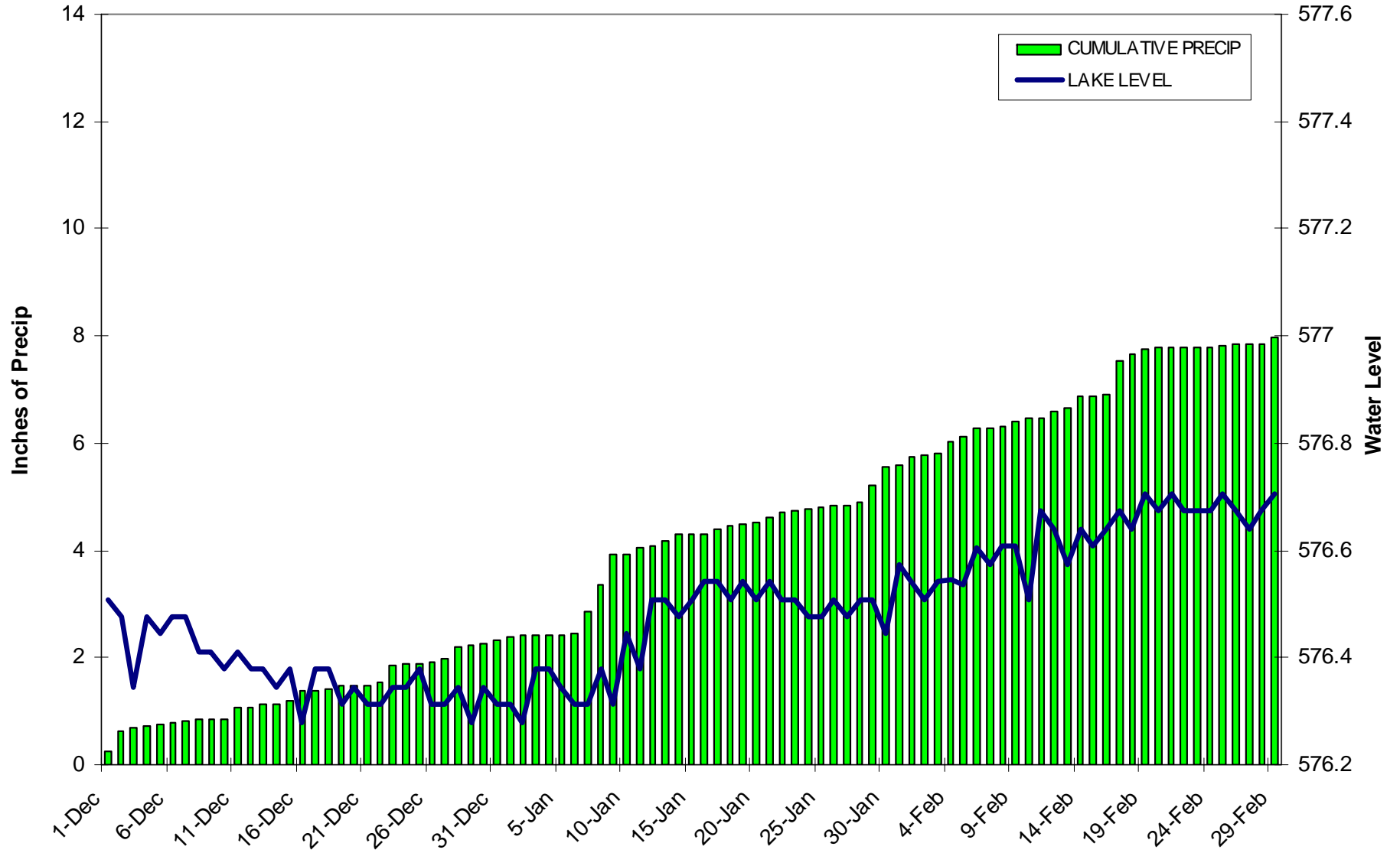
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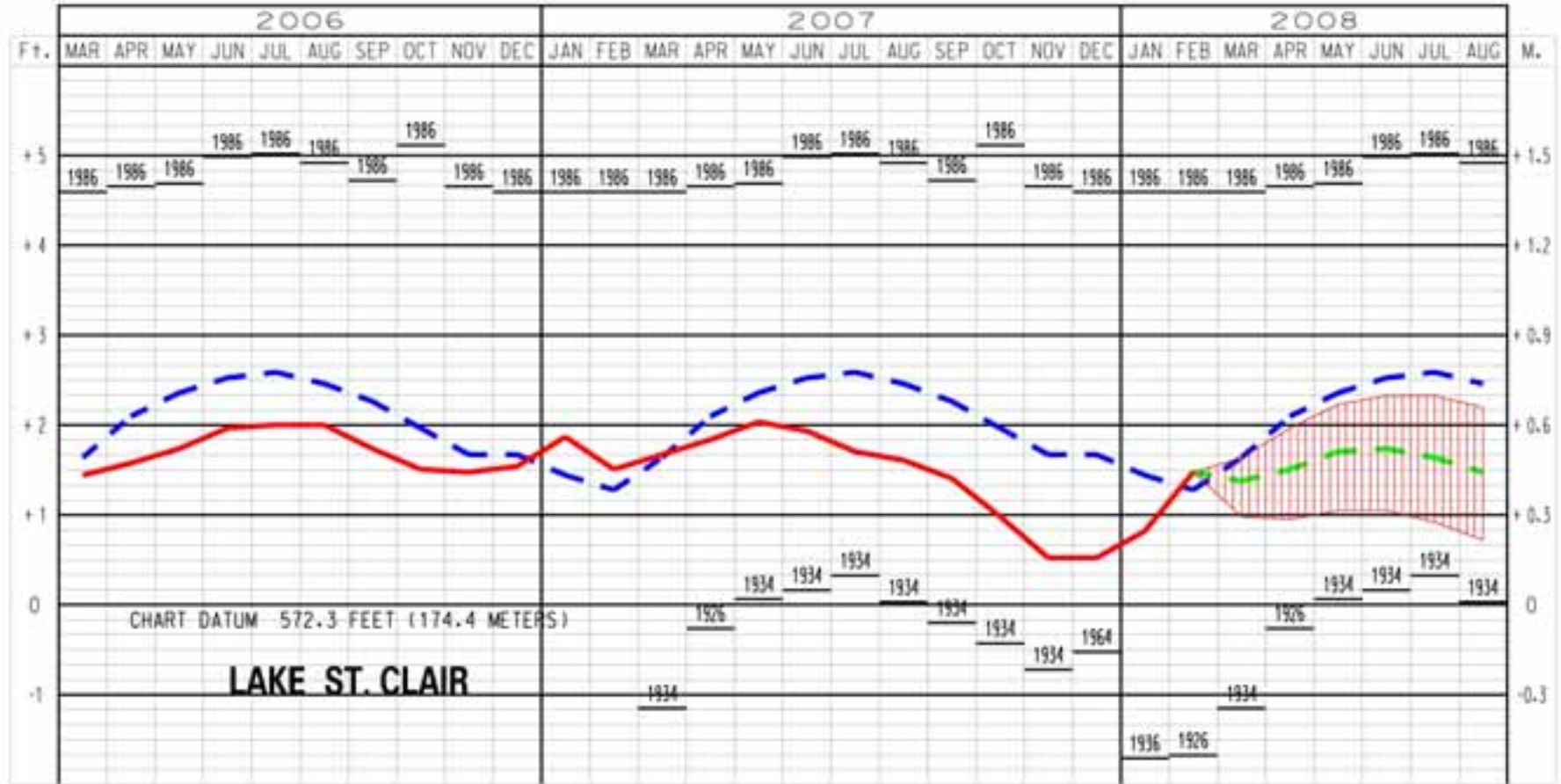


\*\* Averages, Maximum and Minimum for period 1918-2006

### Lake Michigan-Huron Water Level and Precip DEC 1, 2007 – FEB 29, 2008



# LAKE ST. CLAIR WATER LEVELS - MARCH 2008



## LEGEND

LAKE LEVELS

RECORDED

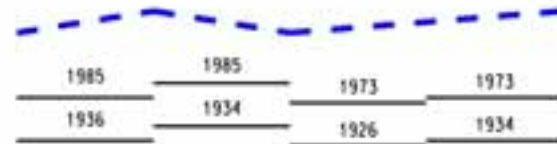
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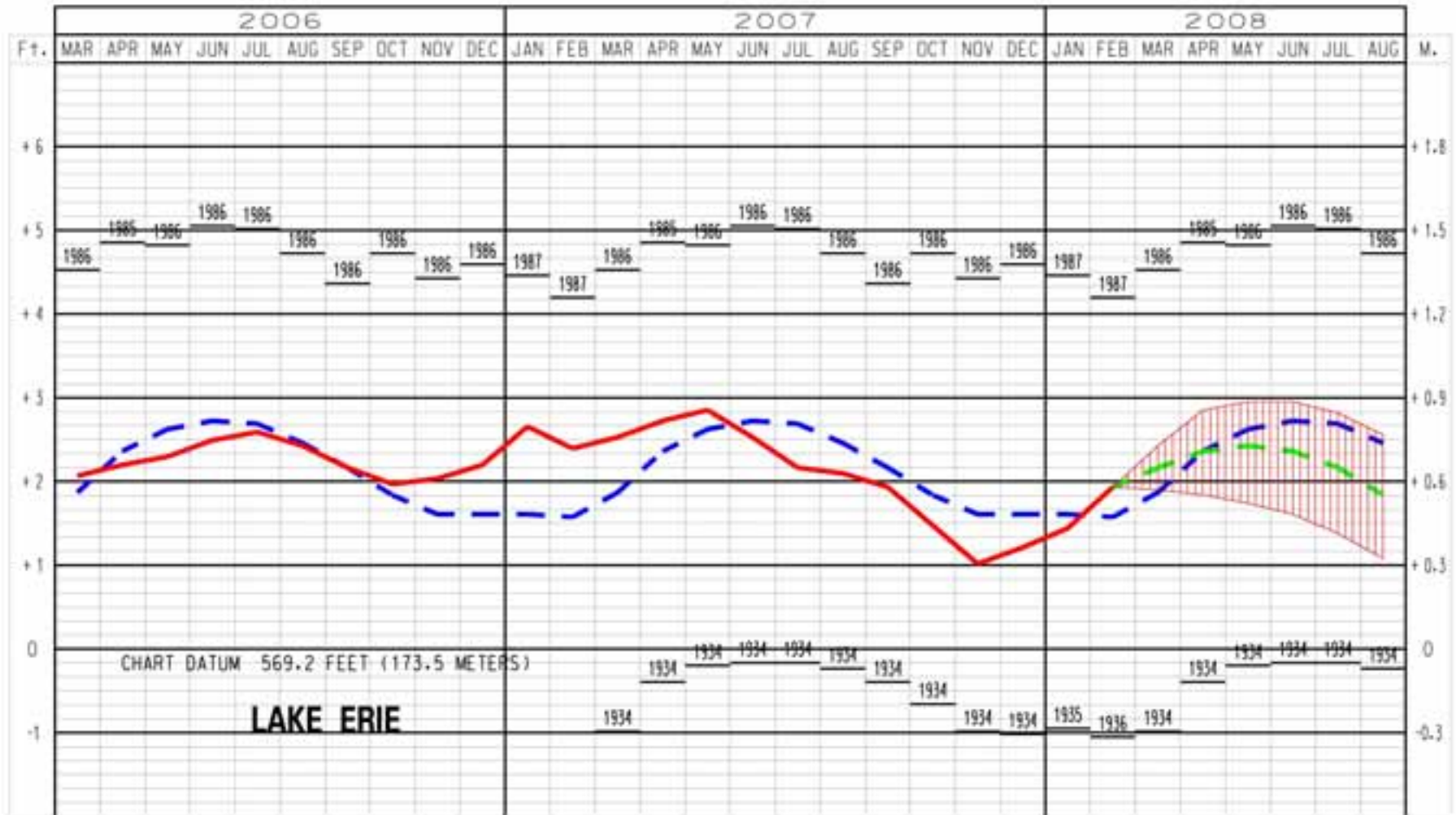
MAXIMUM \*\*

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\*\* Average, Maximum and Minimum for period 1918-2006

# LAKE ERIE WATER LEVELS - MARCH 2008

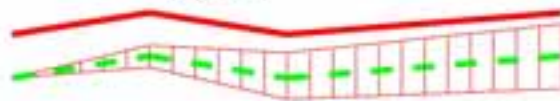


## LEGEND

LAKE LEVELS

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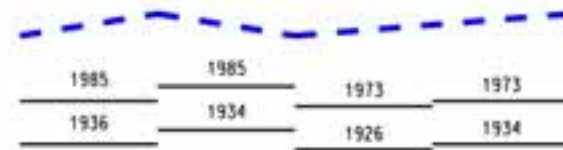
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AVERAGE \*\*

MAXIMUM \*\*

MINIMUM \*\*




\*\* Average, Maximum and Minimum for period 1918-2006





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Questions/Comments?

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