

An aerial photograph of a large, dark blue lake, likely Lake Winnebago, surrounded by green and brownish land. A white grid is overlaid on the entire image. The text 'Lake Winnebago' is written in large, blue, outlined letters at the top.

# Lake Winnebago

## Regulation Meeting

October 24, 2007

# Agenda

- **Basin Overview**
- **Maintenance and Repair Work**
- **Precipitation and Weather Conditions**
- **2006-2007 Water Level Explanation**
- **2007-2008 Water Level Strategy**
- **Questions**

# **Fox-Wolf River Basin**

## **Drainage Area**

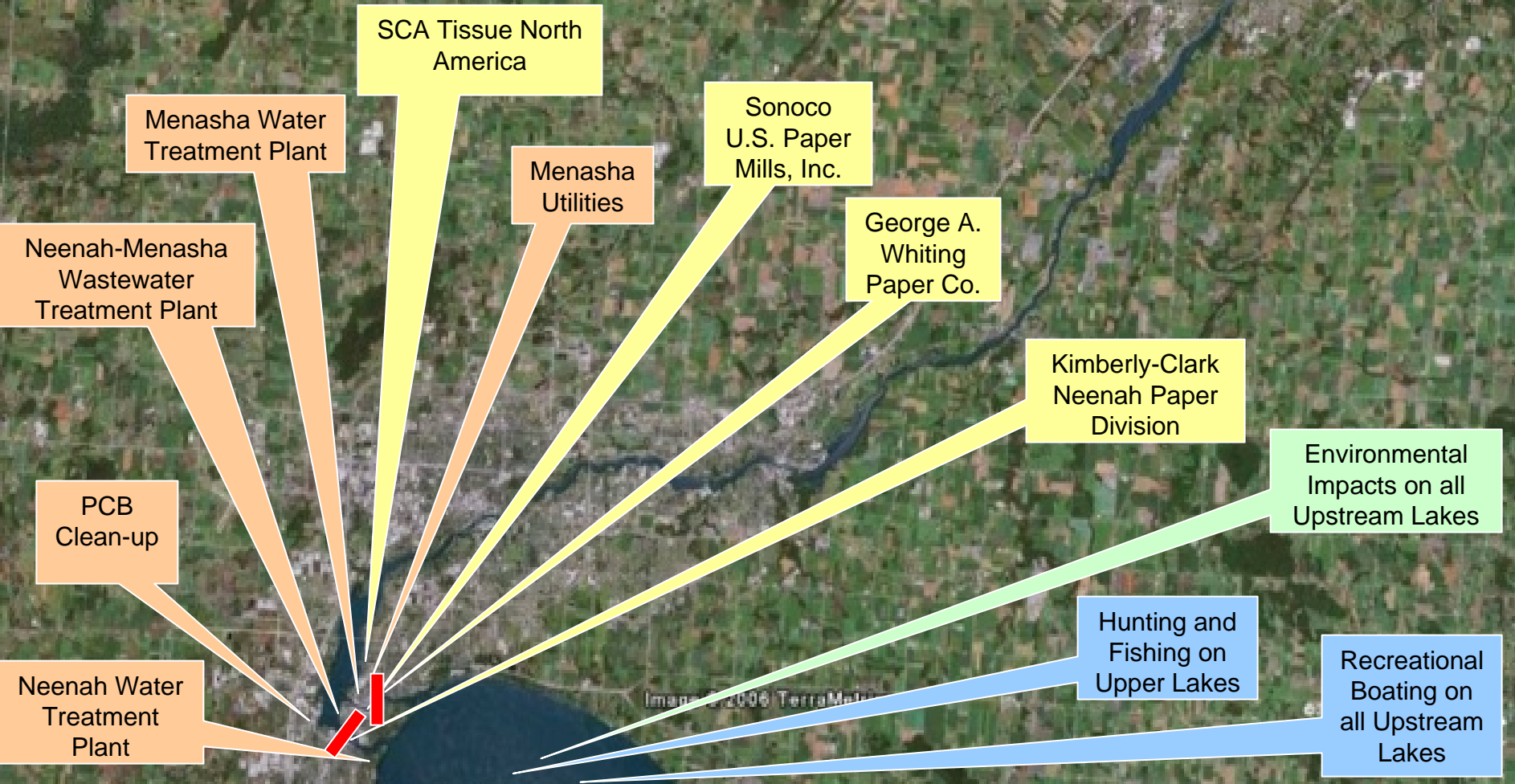
Basin = 6430 SQMI

Lake = 206 SQMI



# Major Stakeholders of the Fox River

## Neenah Dam and Menasha Dam



# Major Stakeholders of the Fox River

## Upper and Lower Appleton Dams

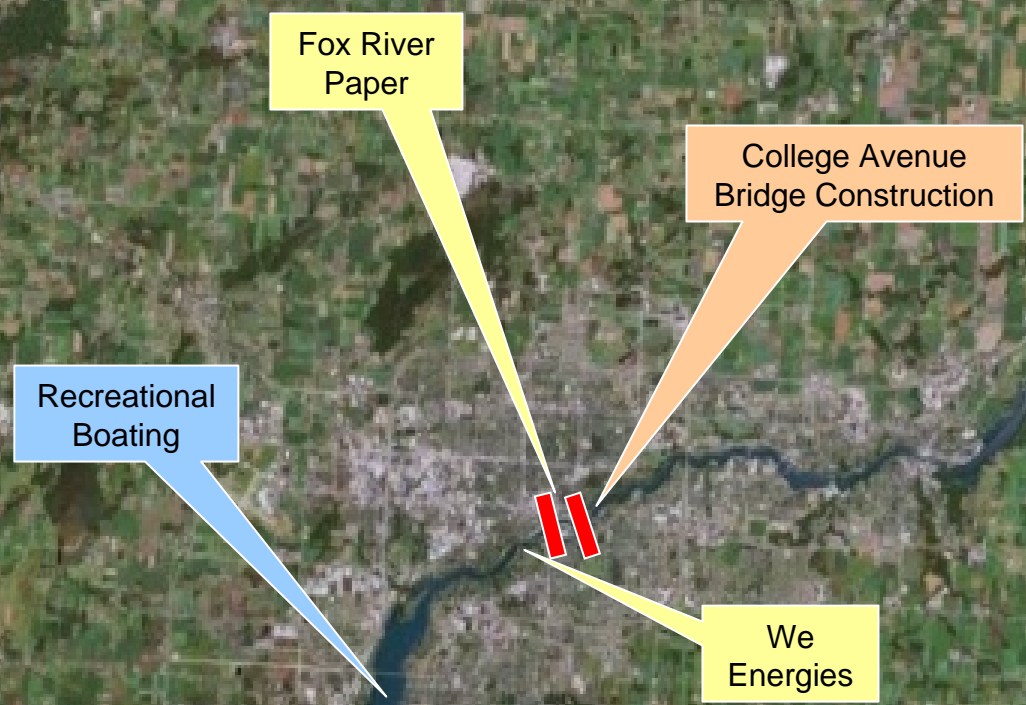


Image © 2006 TerraMetrics

Google

# Major Stakeholders of the Fox River

Cedars Dam

Stora Enso  
North America

Appleton  
Wastewater  
Treatment Plant

Image © 2006 TerraMetrics

Google

# Major Stakeholders of the Fox River

Little Chute Dam



Kaukana Utilities

Image © 2006 TerraMetrics

Google

Pointer 44°21'03.43" N 88°16'41.63" W elev 717 ft

Streaming 100%

Eye alt 30.81 mi

# Major Stakeholders of the Fox River

## Kaukauna Dam

Heart of the Valley Sewerage Commission.

Thilmany Papers Kaukauna

Kaukauna Utilities



# Major Stakeholders of the Fox River

## Rapid Croche Dam



Kaukauna  
Utilities

Image © 2006 TerraMetrics

Google

Pointer: 44°21'03.43" N 88°16'41.63" W elev 717 ft

Streaming 100%

Eye alt 30.81 mi

# Major Stakeholders of the Fox River

## Little Kaukauna Dam

Bass Spawning

Duck Hunting

Wrightstown Wastewater Treatment Plant

Water Board Warriors

Recreational Boating

# Major Stakeholders of the Fox River

## DePere Dam

Thilmany  
Papers  
DePere

Highway  
Bridge  
Construction

Sturgeon  
Spawning

Recreational  
Boating

Image © 2006 TerraMetrics

Google

Pointer 44°21'03.43" N 88°16'41.63" W elev 717 ft

Streaming 100%

Eye alt 30.81 mi

# Major Stakeholders of the Fox River

## Federally Operated Dams

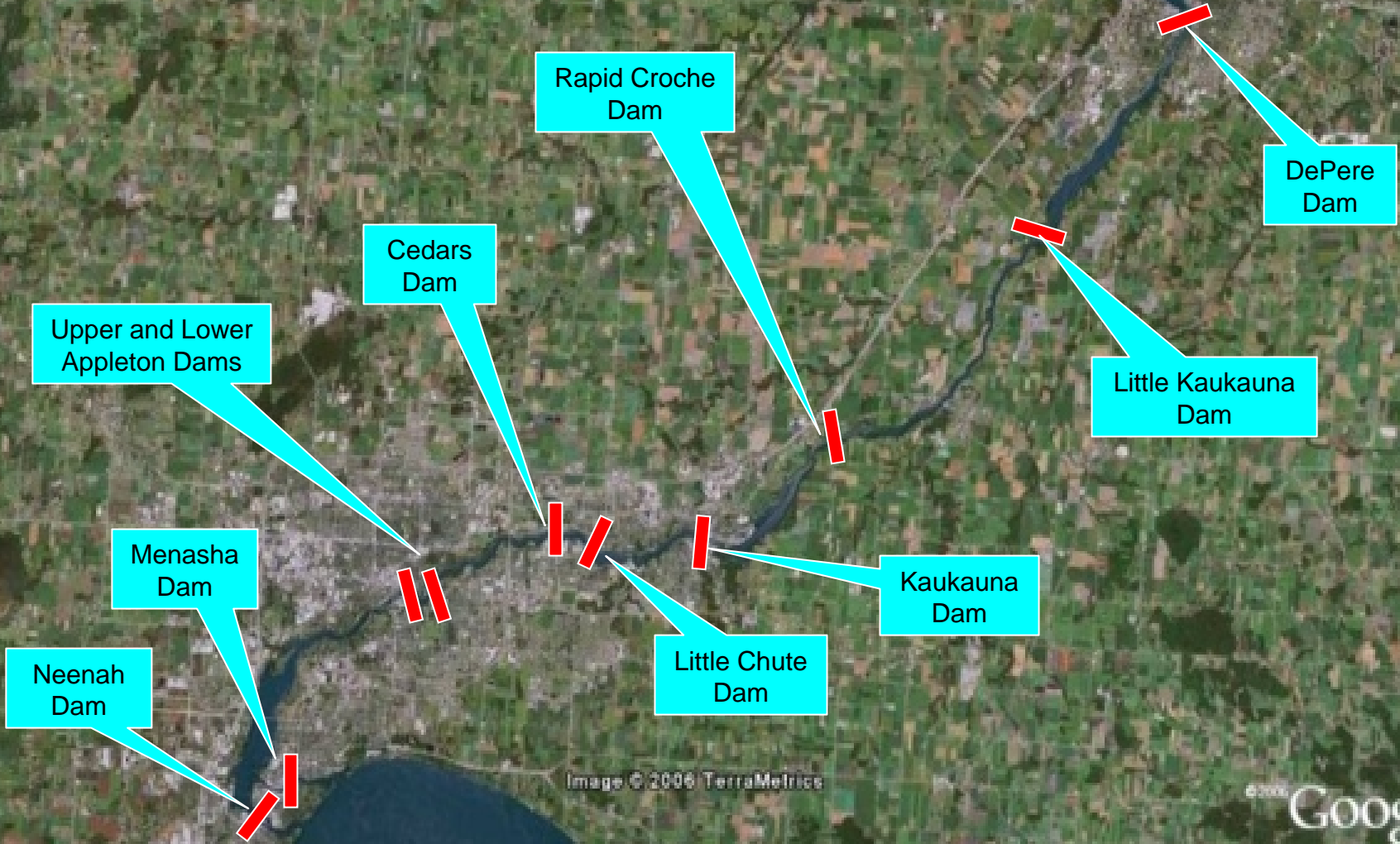


Image © 2006 TerraMetrics

Google

# Maintenance / Repair Work

- Appleton Weir
- Kaukauna Dike Repair
- Clearing/Grubbing
- DePere Trunnion Repairs
- Appleton Upper, Buoy Ball/Cable
- Down River Gage Upgrades

# Clearing and Grubbing Operations



# Appleton Buoy Ball Cable



# Lake Winnebago Controls

Little Lake Butte Des Morts

Menasha

Menasha Dam  
6 Tainter Gates

N Commercial St

Theda Clark  
Medical  
Center

Doty Park

Lake Winnebago

114

Neenah

Neenah Dam  
9 Needle Gates  
5 Tainter Gates

Wisconsin Ave

Riverside  
Park

S Park



# Menasha Dam

Spillway

Tainter Gates

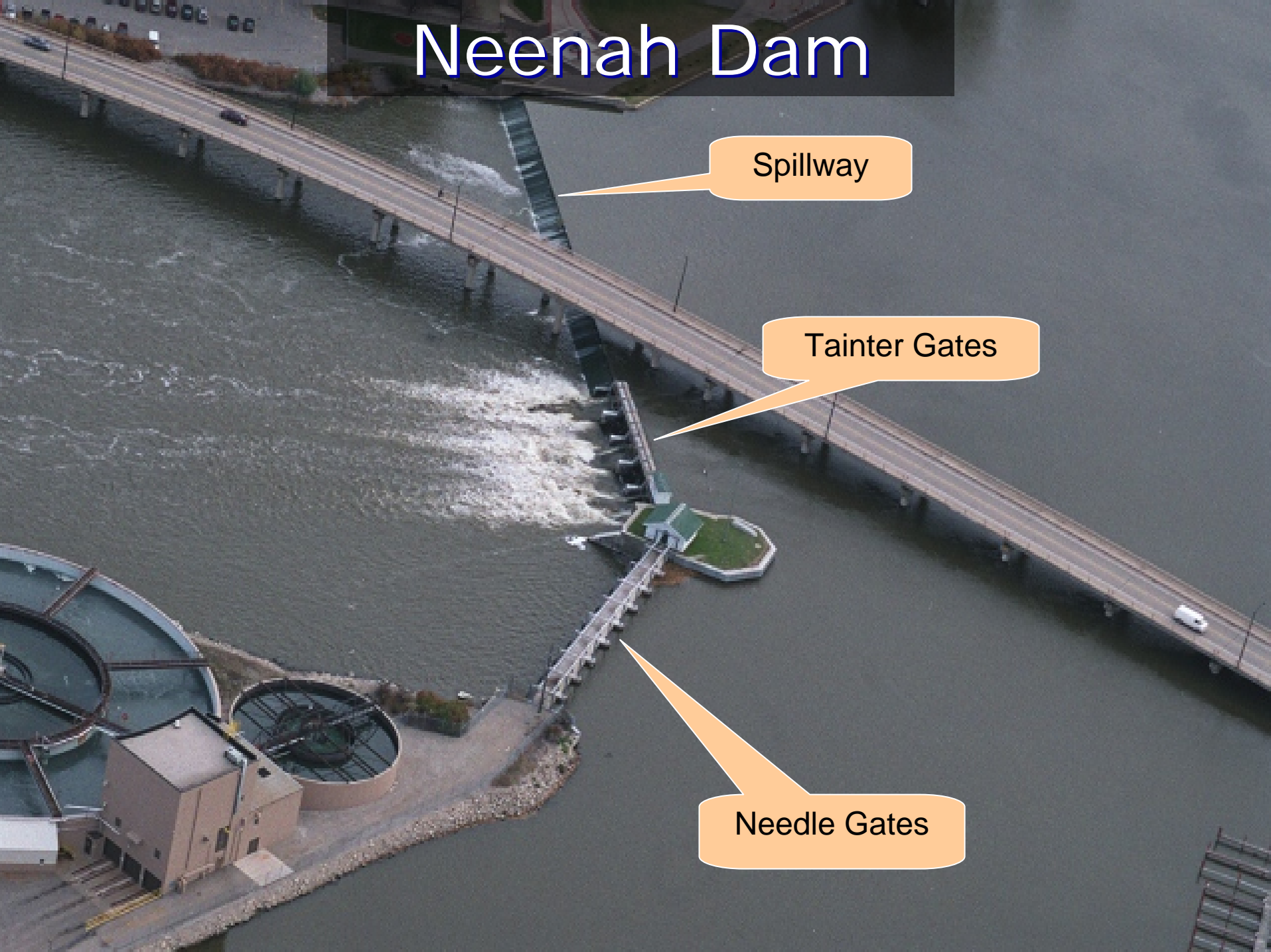


# Neenah Dam

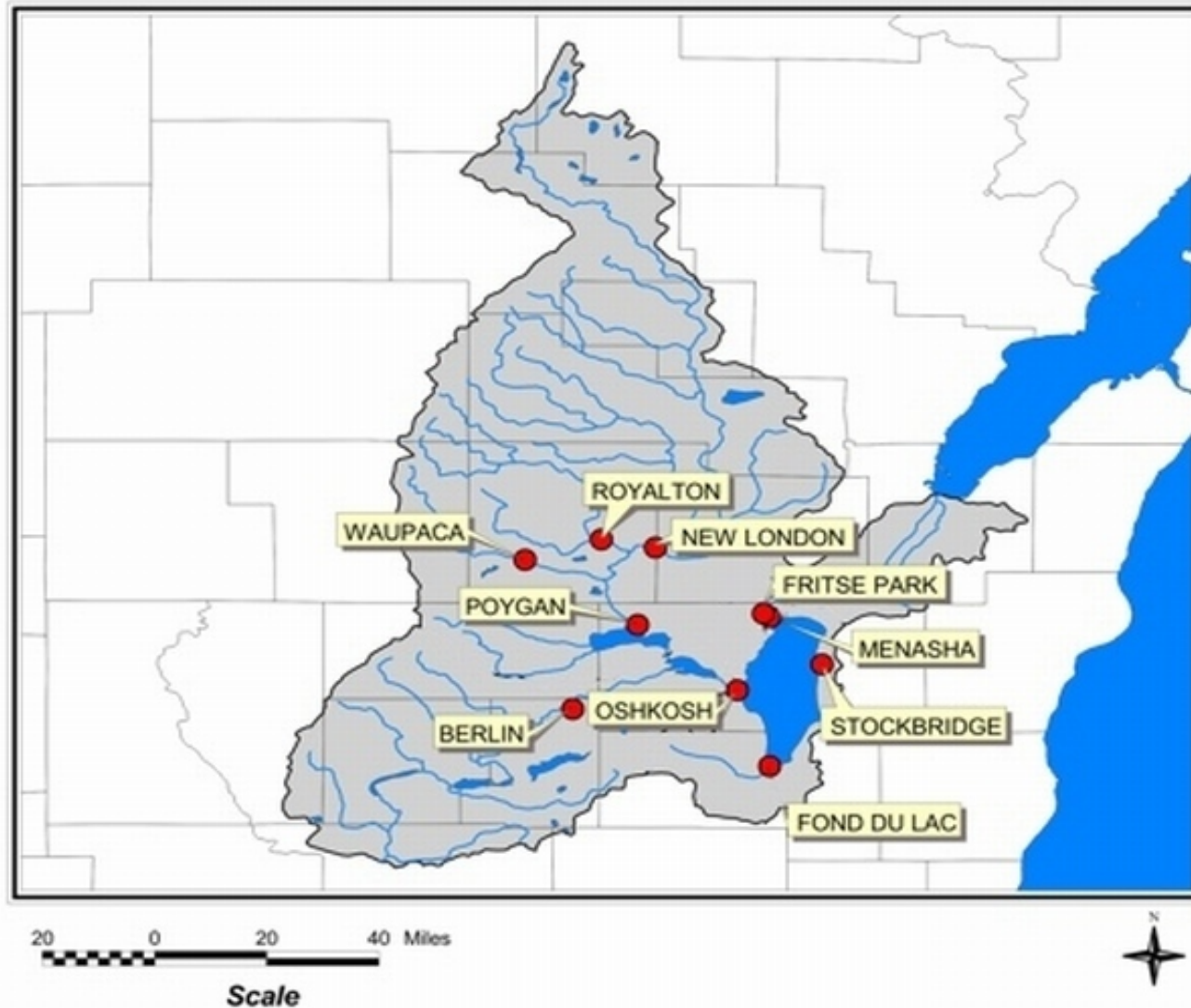
Spillway

Tainter Gates

Needle Gates



# Water level and Precipitation Data Collection Sites



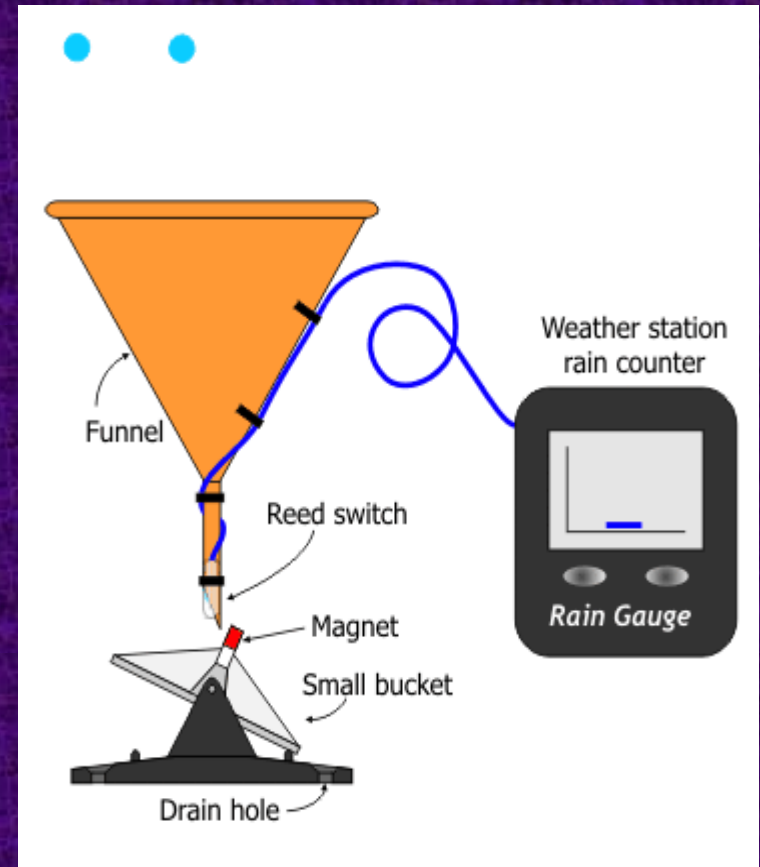
# Data Collection Platform



# Tipping Bucket



**Precip  
Gage**



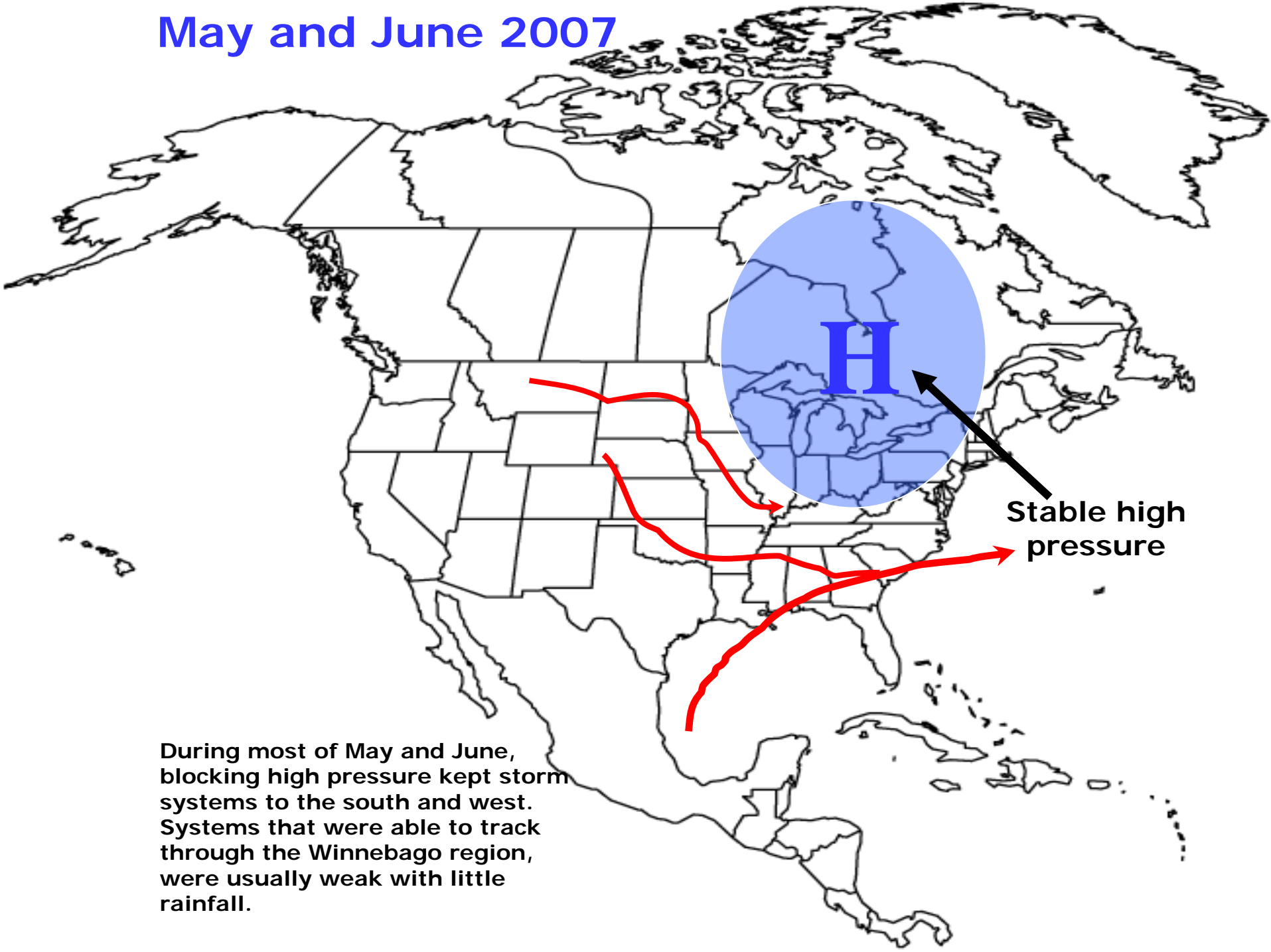
Source: <http://www.weatherhut.com/>

# Ott Pluvio Rain Gage



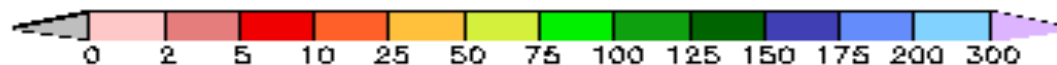
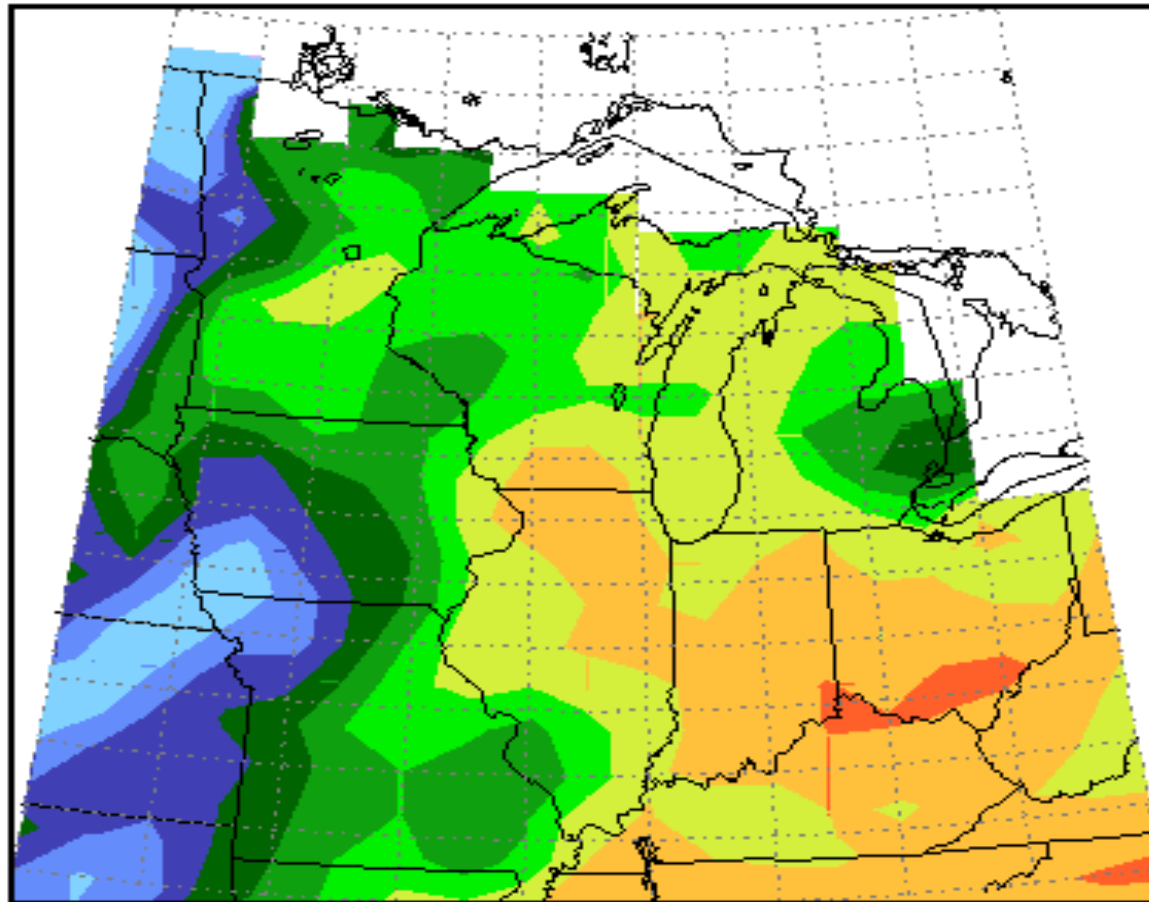
- Next generation of rain gages
- Measures rain, snow, and hail
- Fewer maintenance problems related to insects, leaves, and bird droppings

# May and June 2007



During most of May and June, blocking high pressure kept storm systems to the south and west. Systems that were able to track through the Winnebago region, were usually weak with little rainfall.

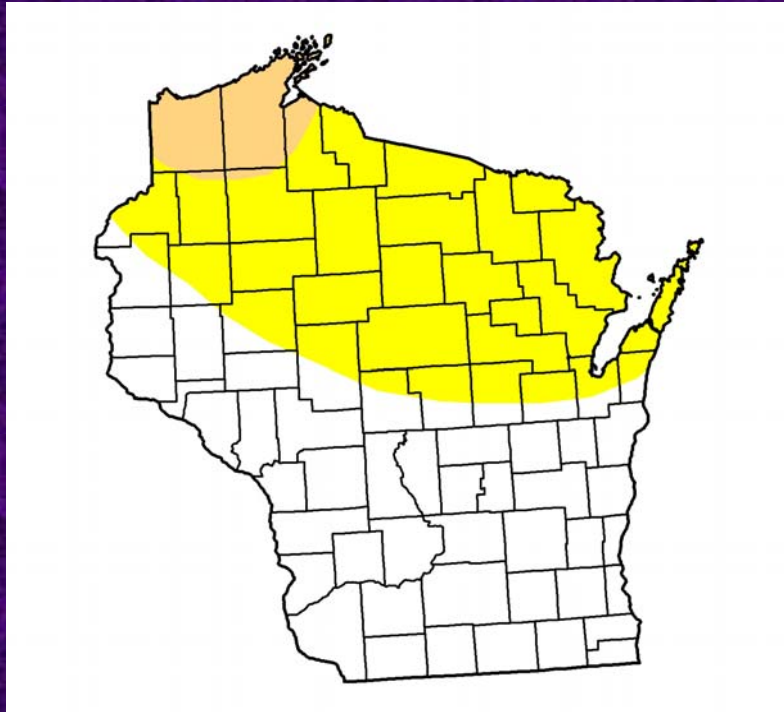
**Total Precipitation Percent of Mean  
May 1, 2007 to May 31, 2007**



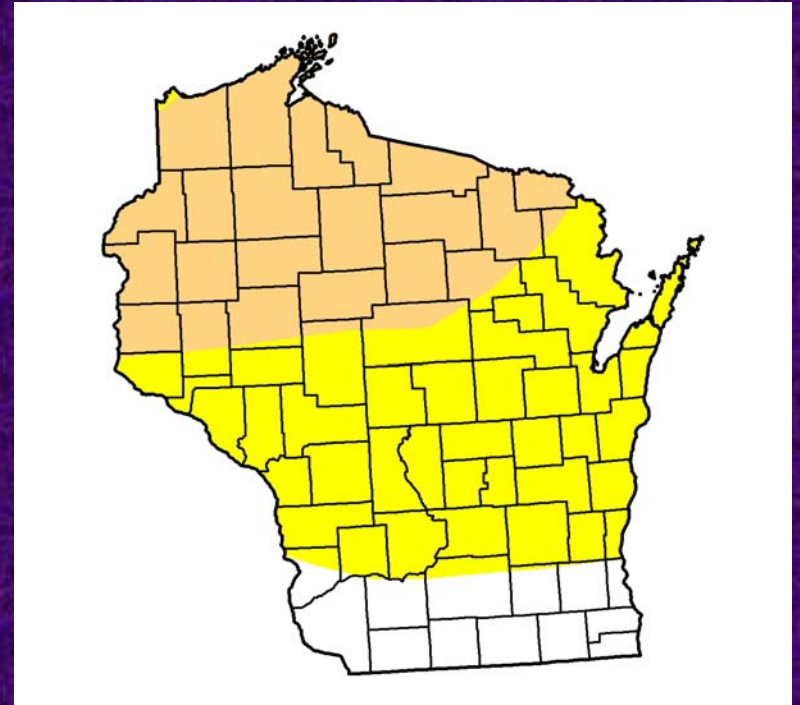
**Midwestern Regional Climate Center  
Illinois State Water Survey  
Champaign, Illinois**



## April 24, 2007 Wisconsin Drought Monitor



## June 26, 2007 Wisconsin Drought Monitor

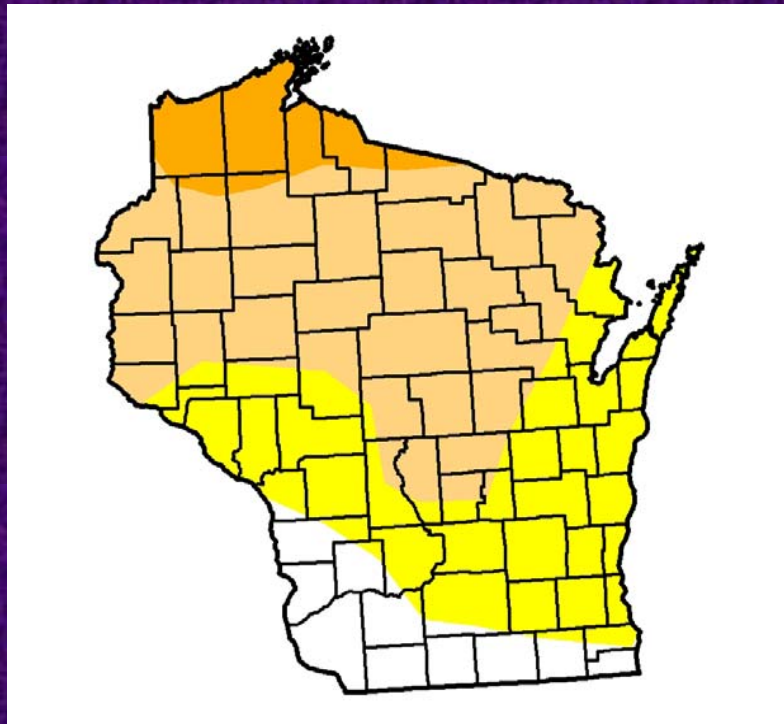


### Intensity:

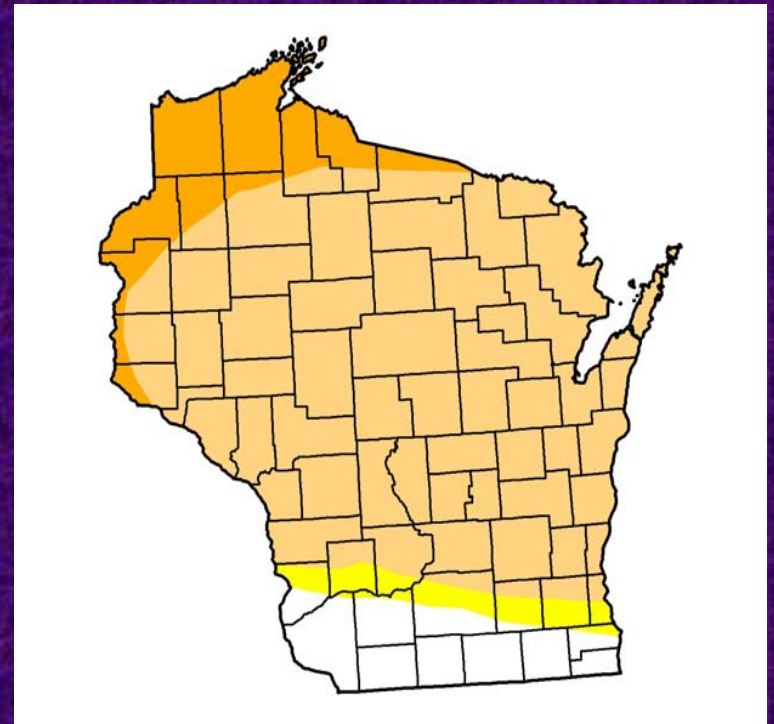


**Abnormally Dry Conditions in the Lake Winnebago Basin are noted in late April and extend through June.**

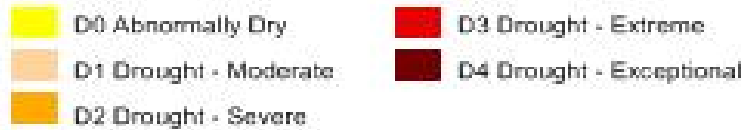
## July 10, 2007 Wisconsin Drought Monitor



## August 07, 2007 Wisconsin Drought Monitor

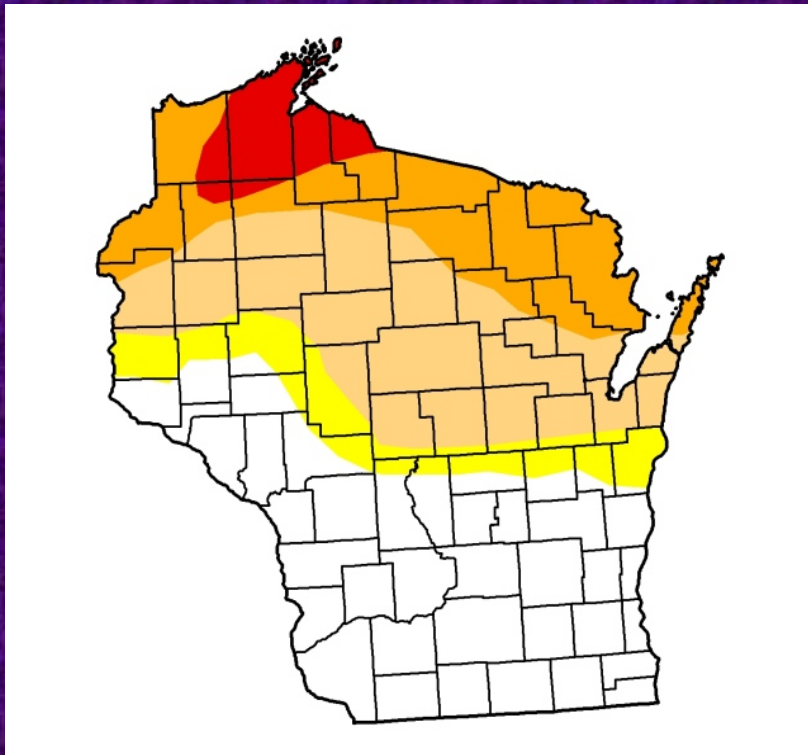


### Intensity:

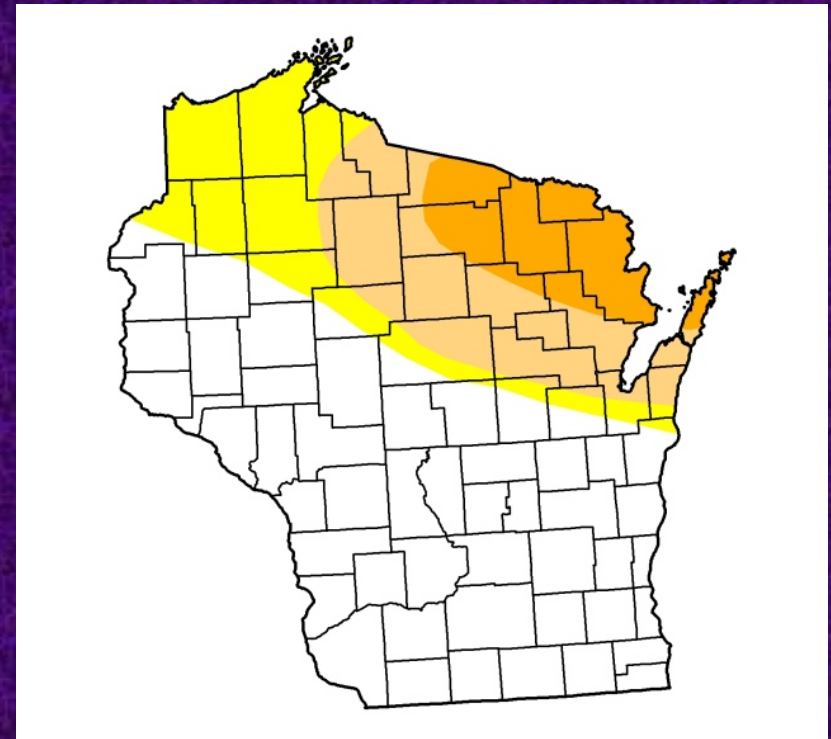


**Moderate Drought first occurs in early July  
and affects most of WI by early August.**

## August 28, 2007 Wisconsin Drought Monitor



## October 09, 2007 Wisconsin Drought Monitor



### Intensity:



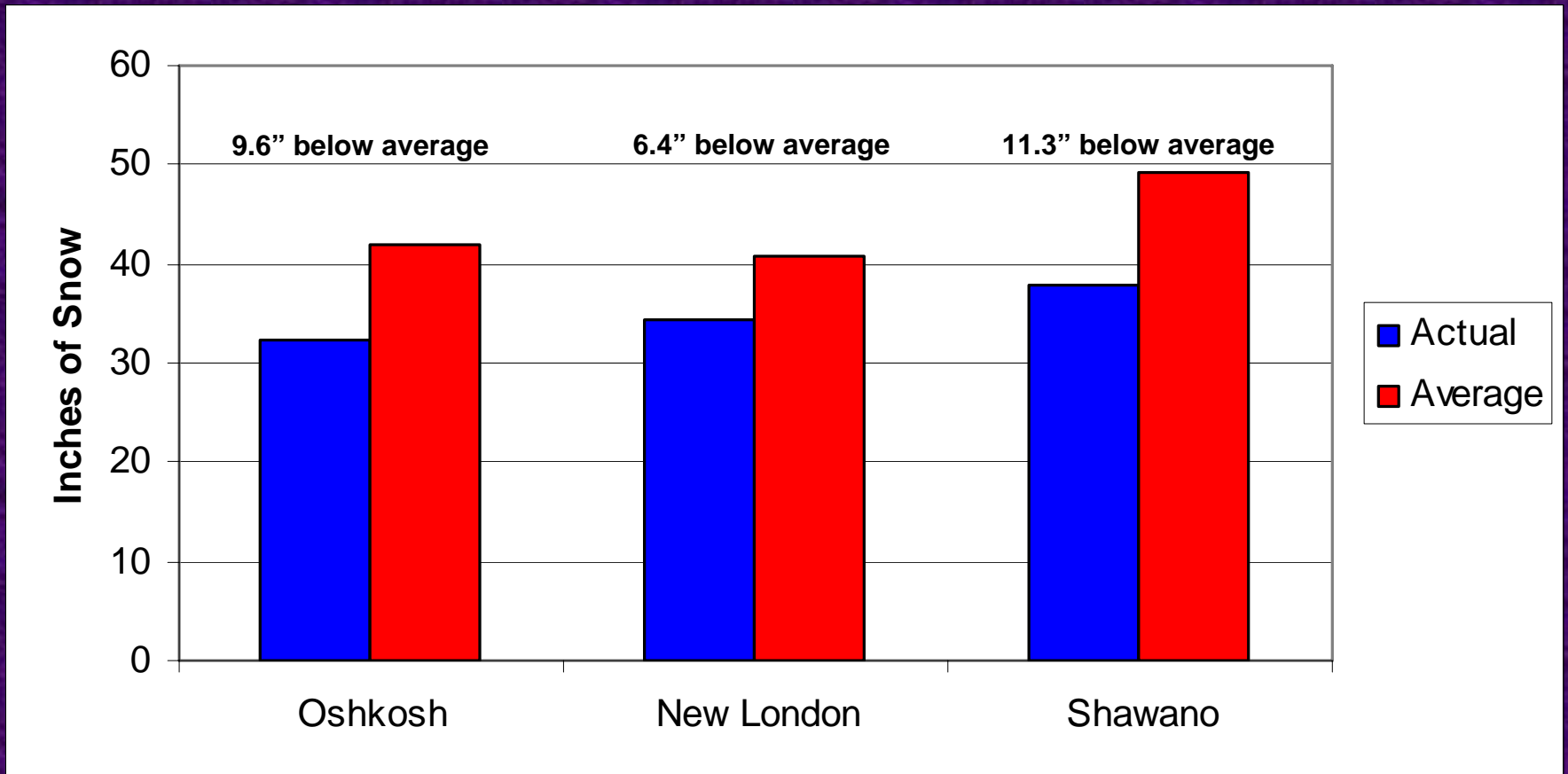
Even after heavy rain in late August, Drought conditions persist.

# Snowfall

- Really no significant snowfall until mid Jan
- Largest snowpack at Green Bay was 14" on Feb 26
- Snow was mostly gone by Mar 15
- 60% of the Dec, Jan and Feb snow fall occurred between Feb 24 and 28.

# LAKE WINNEBAGO BASIN

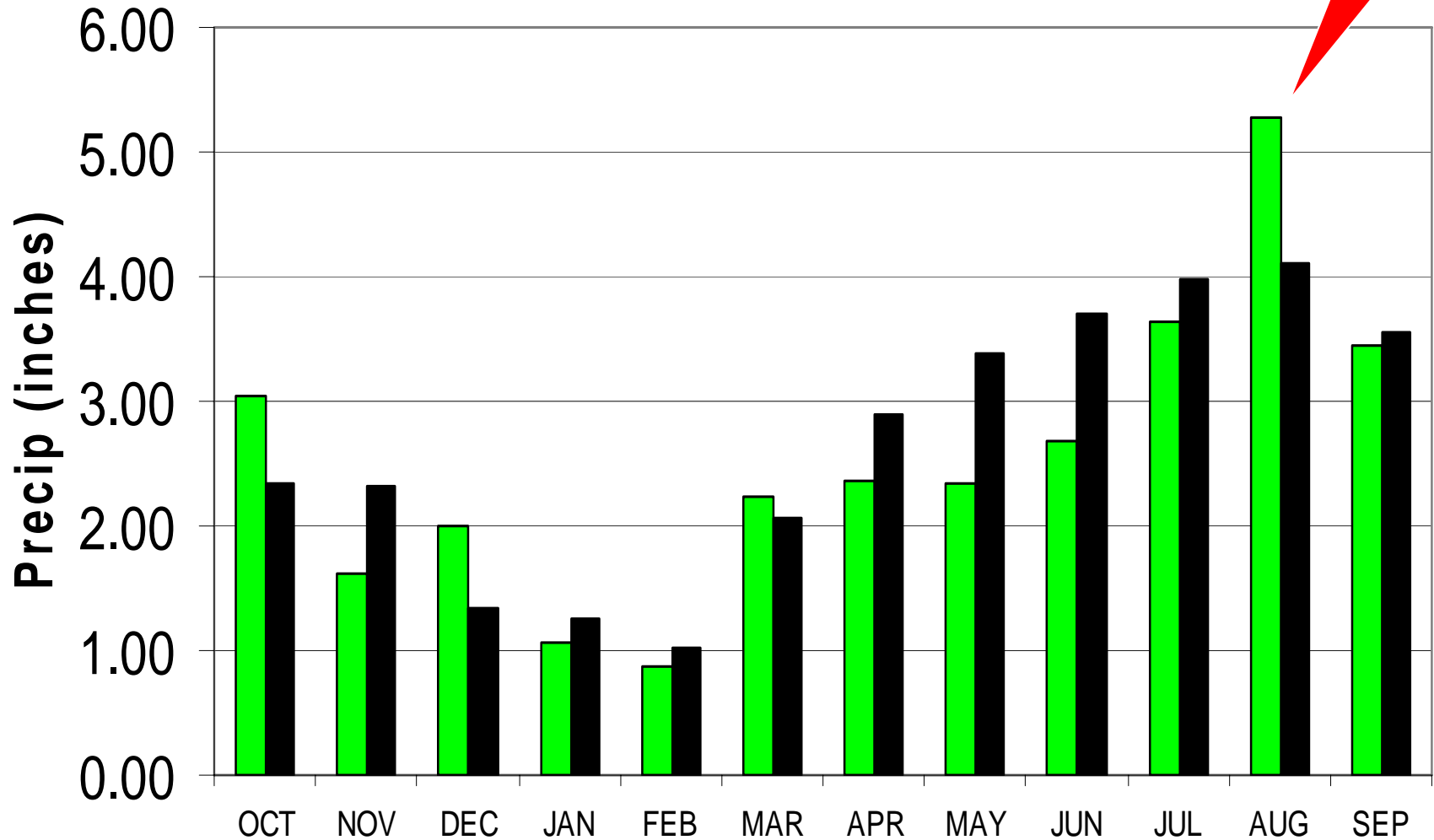
## SEASONAL SNOWFALL



July 06 – June 07

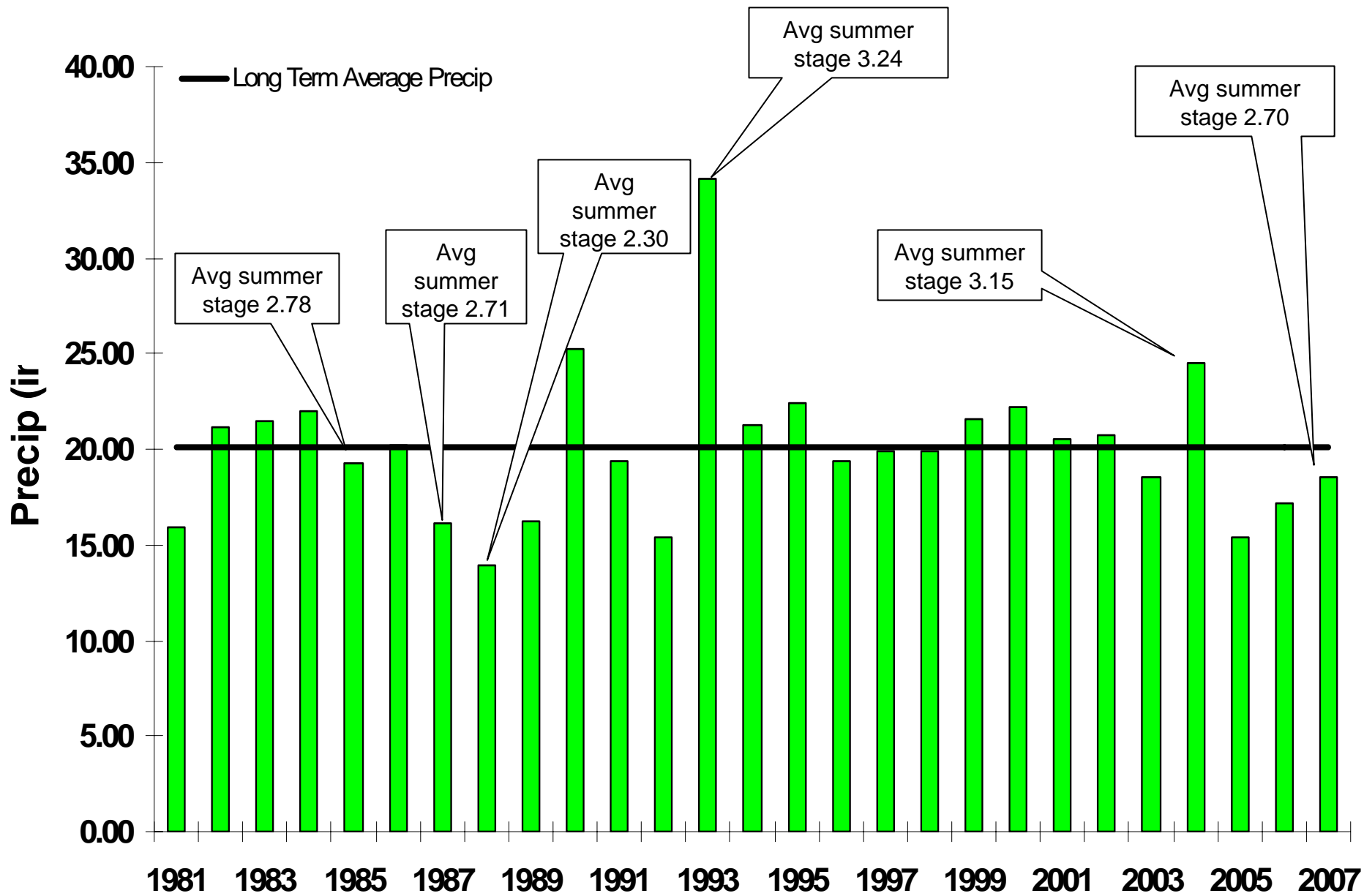
# 2006-2007 Lake Winnebago Basin-Wide Precipitation

■ ACTUAL  
■ AVERAGE

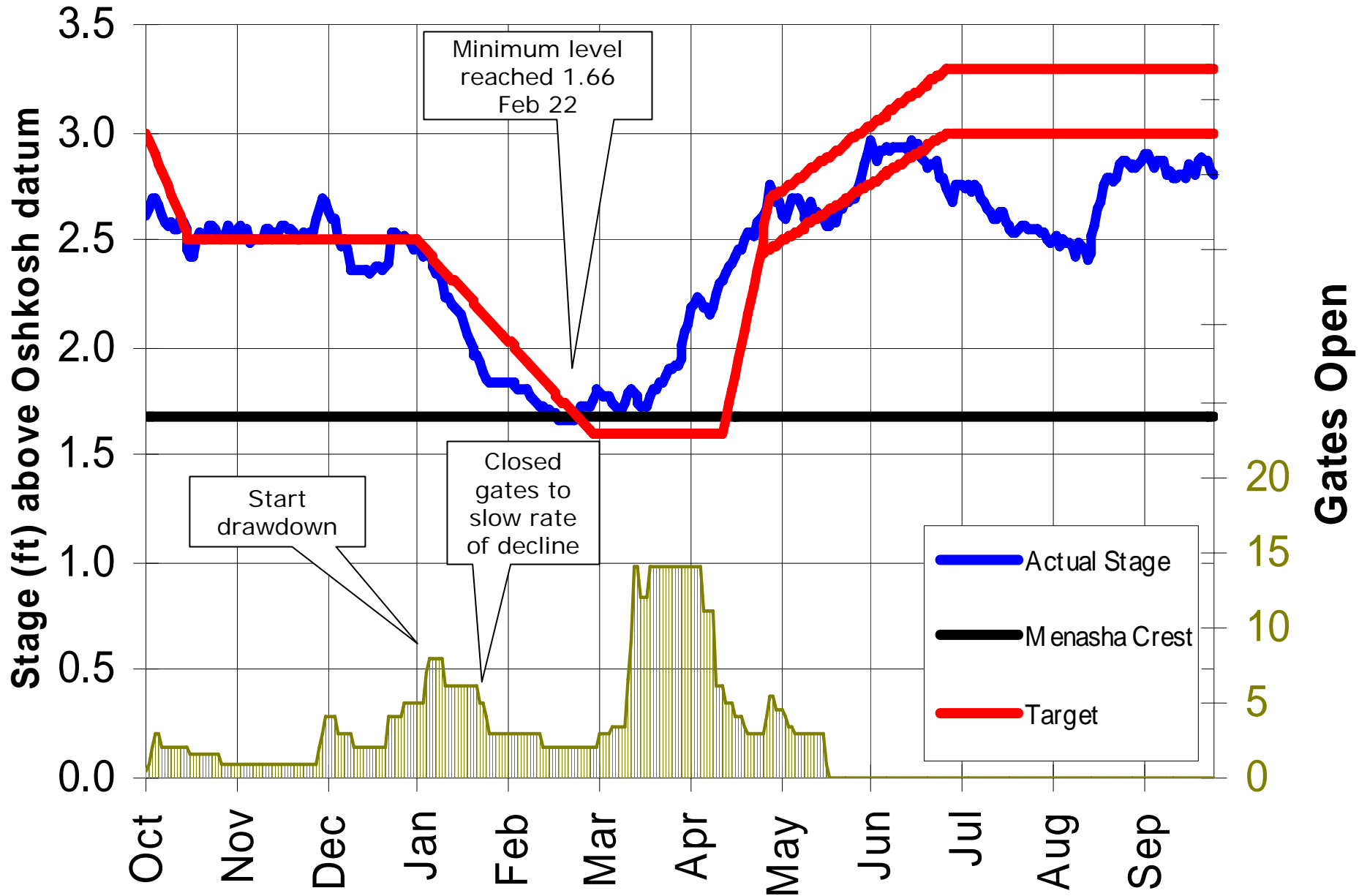


95% of Aug  
precip fell  
after Aug 19

# Spring and Summer Precipitation March - August 2007

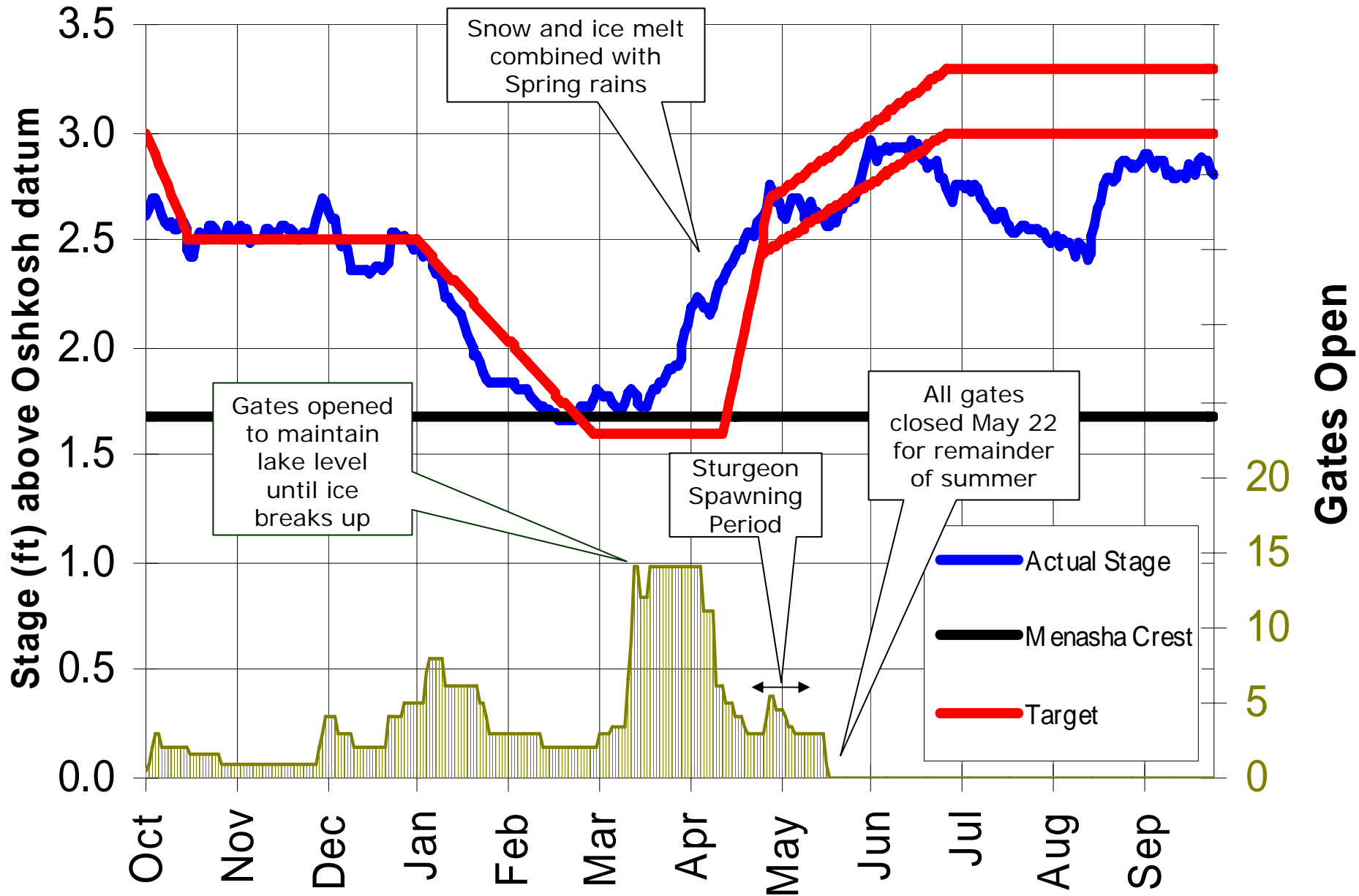


# 2006-2007 Stage with # of Open Gates

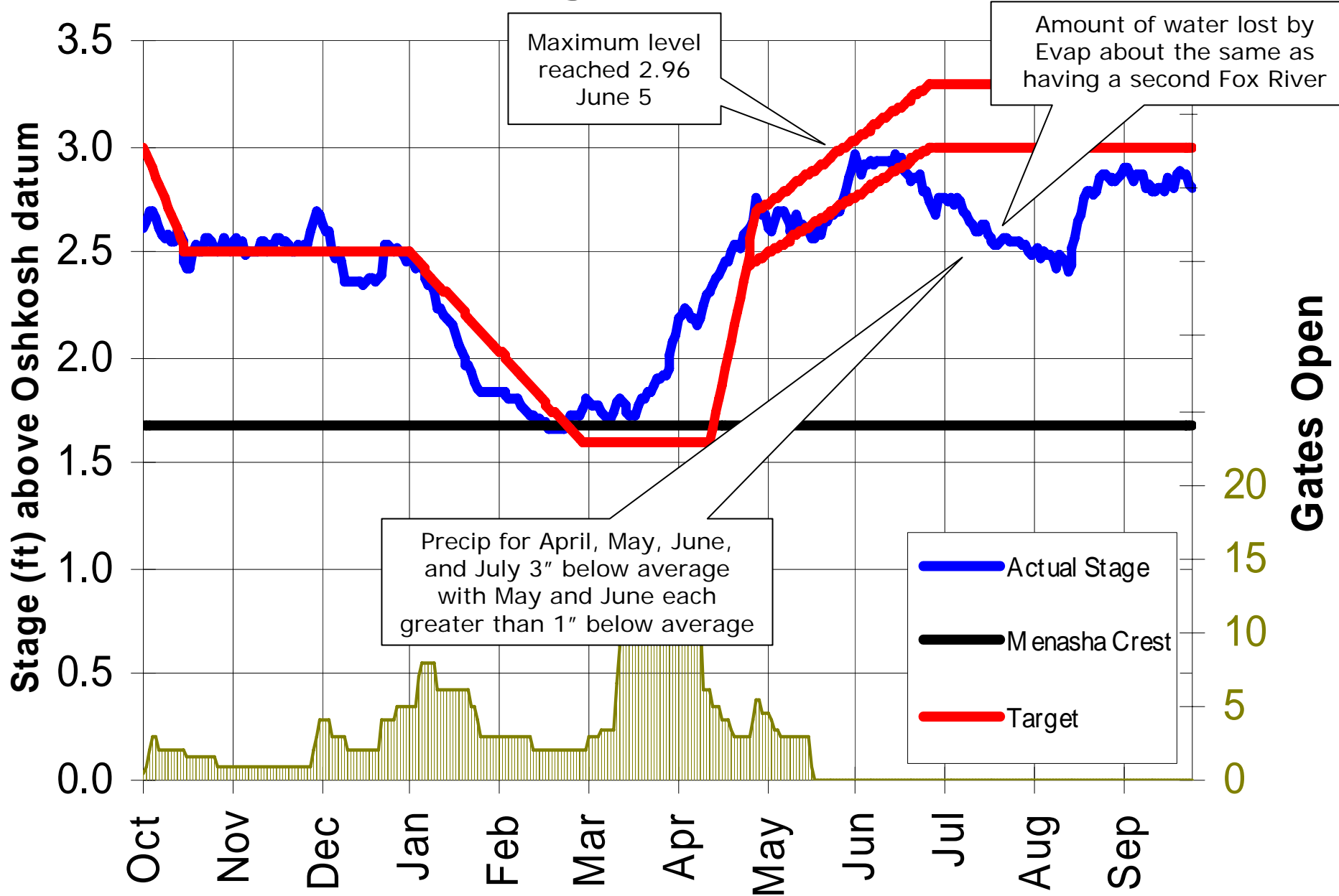




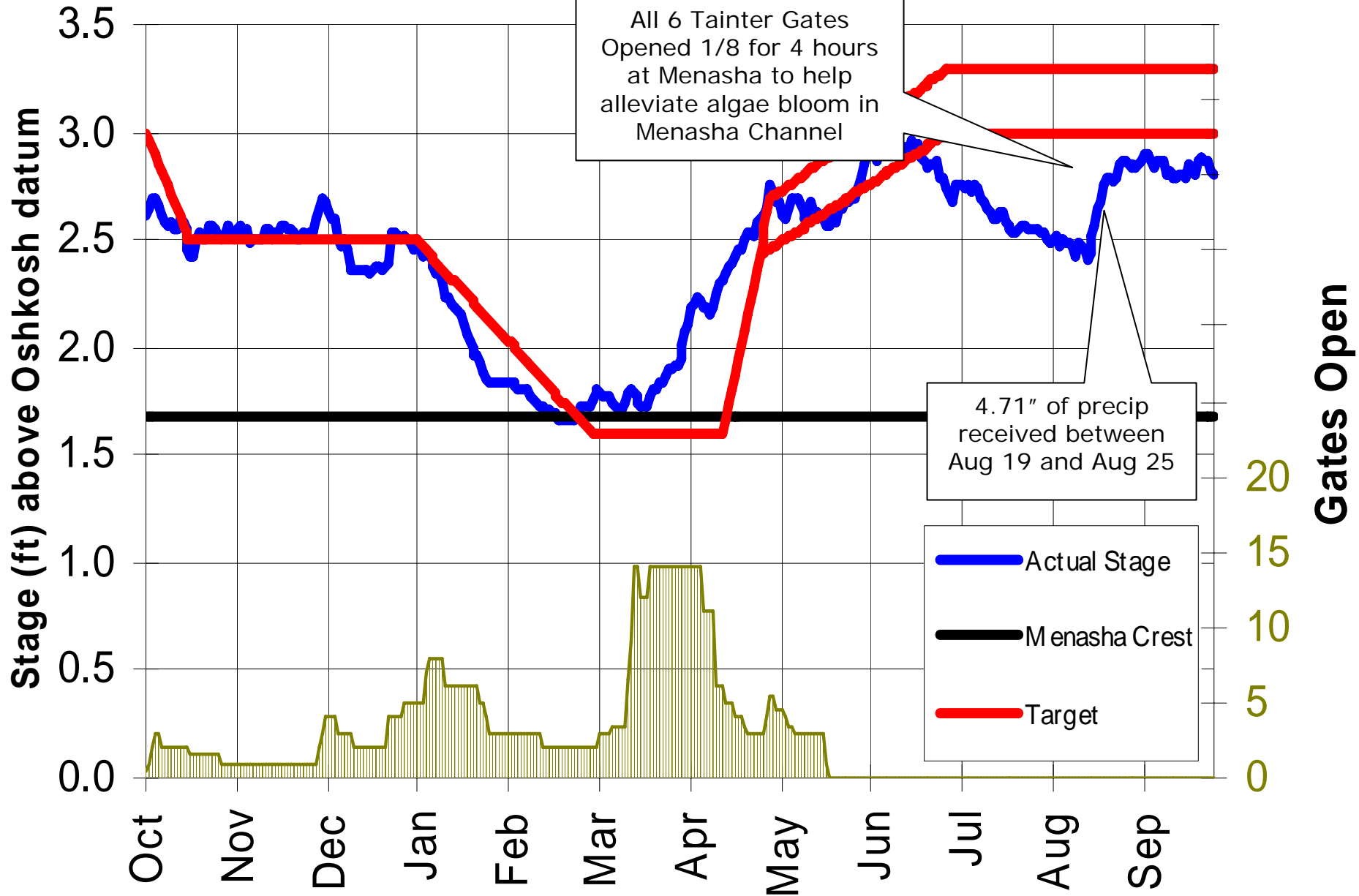
# 2006-2007 Stage with # of Open Gates



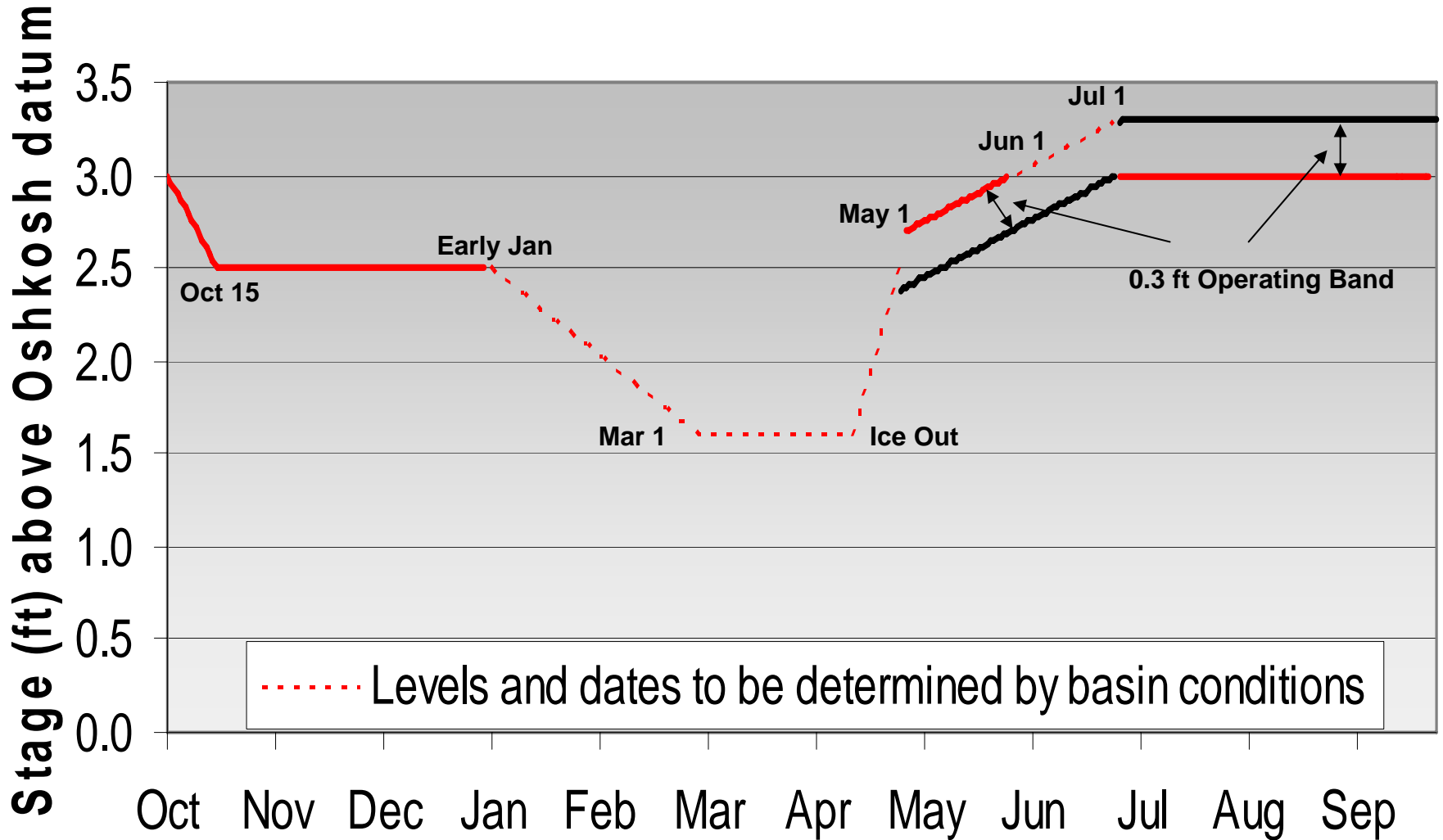
# 2006-2007 Stage with # of Open Gates



# 2006-2007 Stage with # of Open Gates



# Proposed 2007-2008 Target Water Levels




<http://www.lre.usace.army.mil/greatlakes/hh/lakewinnebago/>


USACE - Detroit District - Lake Winnebago - Microsoft Internet Explorer

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Address <http://www.lre.usace.army.mil/greatlakes/hh/lakewinnebago/> Go Links

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**Important Notices**

- **Current Conditions**
- U.S. Drought Monitor, Wisconsin
- **2007 Regulation Meeting Presentation**
  
- **2007 Regulation Meeting Notice**
- Spring Refill Meeting (3April2007) Minutes
- Winter 2006-2007 Drawdown Conference Call Minutes
- 2006 Regulation Meeting Minutes

**Water Levels and Flows:**

Detroit Home  
Hydraulics and Hydrology  
Great Lakes Water Levels  
Outflows  
Coastal Processes  
Lake Winnebago

- Today's Hourly Data
- Yesterday's Hourly Data
- Monthly Summary
- Two Month Plots

Internet

# Questions