



Welcome to

YAHARA LAKES 101
LAKE SCIENCE CAFÉ

sponsored by



The human side of real estate.

THE
EDGEWATER



NELSON
INSTITUTE FOR
Environmental Studies
UNIVERSITY OF WISCONSIN-MADISON

THE EVJUE
FOUNDATION

ISTHMUS



LakeForecast.org: All Eyes on Lake Water Quality

James Tye, CLA

Jordan Barrette, MIOsoft

Katie Nicholas, CLA



Thank You!

Lake Forecasting Stewards

Allen Arntsen, Claire and Ava
David Schroder
Dick Pearson
George Benton
Harmon & Nell Ray
Jacob Stampen
Jan Van Vleck
Joan Kirkhuff
John Tye
Kathy Carl
Jill Ball
Ken Walz
Kitty Brussock
Laura Graham
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Mark Jung
Mike Horn
Parker Waller
Robert Gilbert
Tom Smith
Sasha Kerlow

Monitors

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Alec McCann
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Bowen Prince
Caitlin Soley
Carla & Glen Schubert
Carol Gillen
Carolyn Betz
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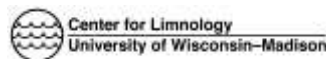
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City of Monona
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Public Health Madison & Dane County
UW-Madison Center for Limnology
UW-Madison Morgridge Center
Wisconsin DNR
Wisconsin State Laboratory of Hygiene

CLA Intern

Justin Chenevert



What's our purpose?

- Fill monitoring gap
- Minimize risk
- Increase awareness
- Status of our lakes



Perception vs. Reality

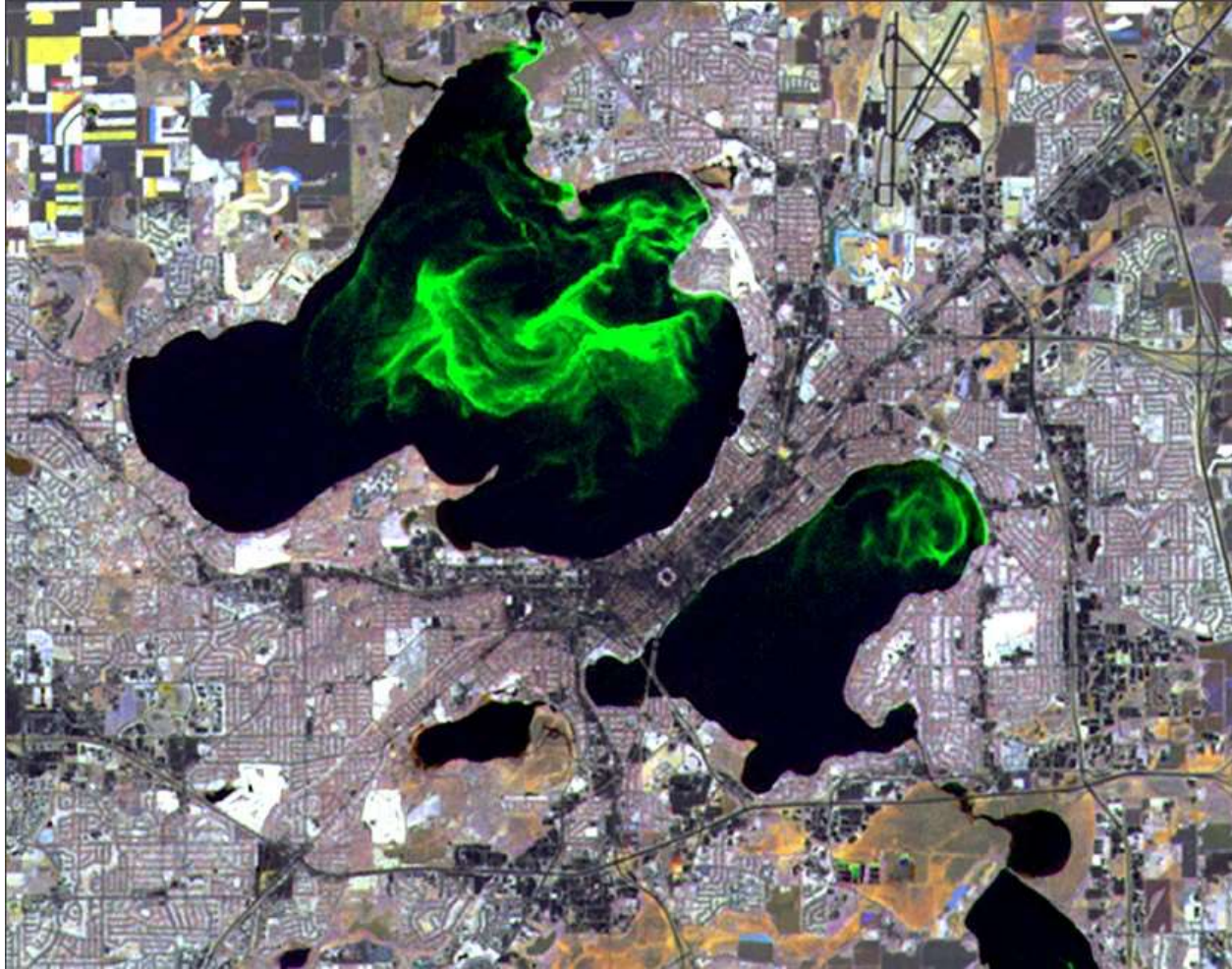
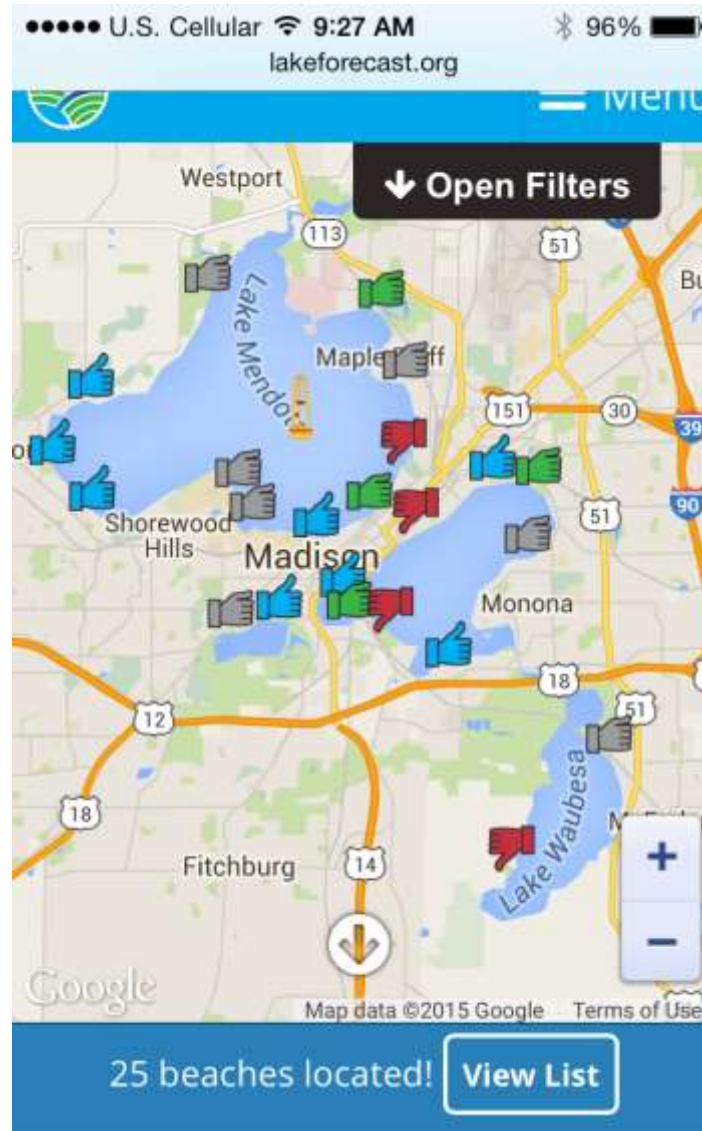


Photo: UW SSEC and Wisconsin View

LakeForecast.org



Timeline of Release

- Save Our Lakes Community Breakfast
- Four TV News Stories
- Press
- Blog & Social Media Posts





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Forecast
.org



Jordan Barrette
Chief Operating Officer
MIOsoft

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[@jordanbarrette](#)

[@MIOsoft](#)



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.org

- **Who is MIOsoft?**
- **Why LakeForecast.org?**
- **What data sources do we use?**
- **What data did we collect this year?**
- **What's in the future?**



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MIO soft®?



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Why LakeForecast.org?
It's about the data!



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Center for Limnology

University of Wisconsin





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Data Collection This Year

- **Buoy Data**
- **Beach Closure Data**
- **Volunteer Observations**
- **Site Usage**



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Buoy Data

- **1 Buoy**
- **Record Every 30 Seconds**
- **Over 4 Million Values**
- **Wind, Temps, Chlorophyll, Dissolved Oxygen, etc.**



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Beach Closure Data

- **Change In Status**
- **232 Changes Recorded**
- **Spring Harbor Beach (20)**
- **Most Changes Happen in July**

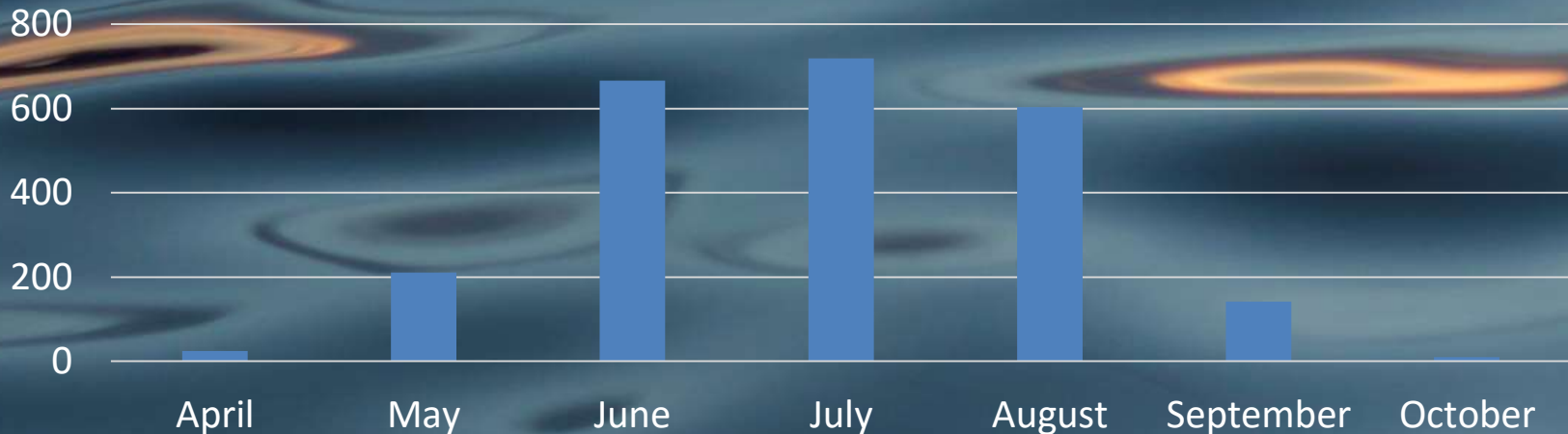


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Volunteer Observations

- **Over 2,300 Collections**
- **Over 25,000 Values**

Collections By Month

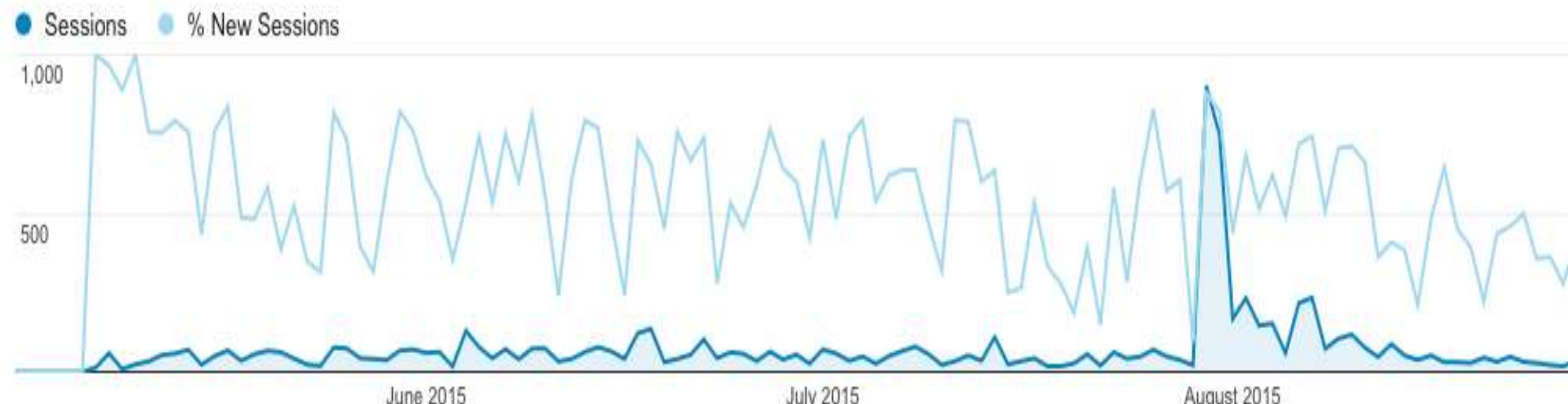




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Public Usage

- **9,309 sessions**
 - **5,848 new visitors**
- **47,953 pageviews**





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What's in the future?

- More data sources
- Community-sourced data
- Deeper analytics

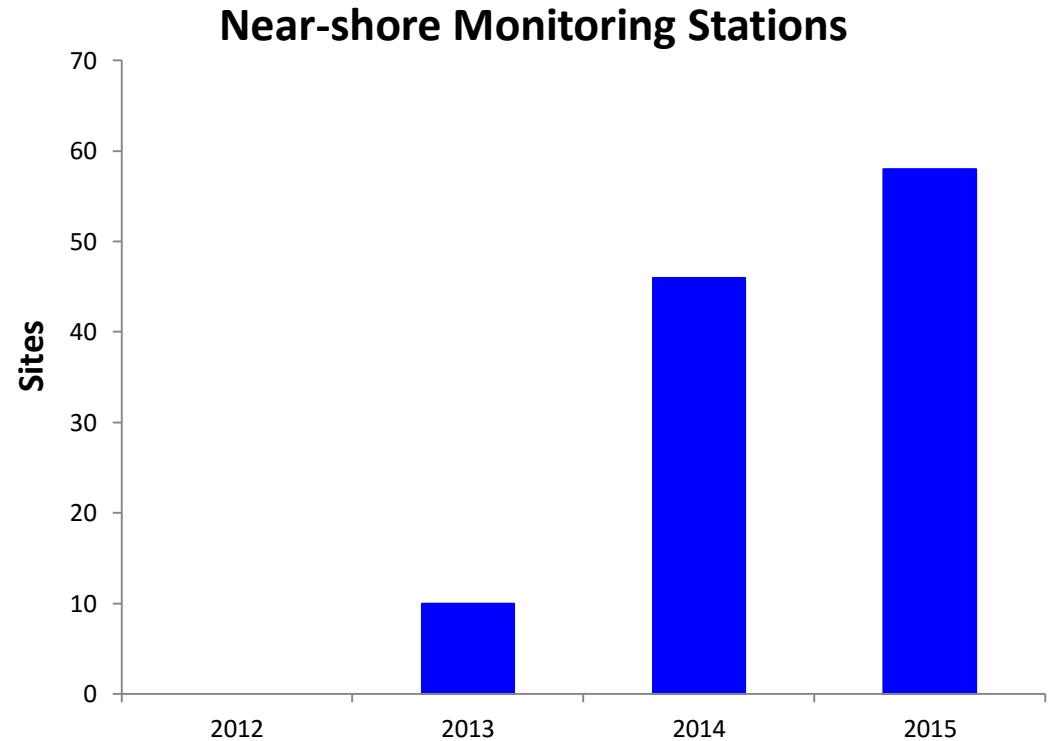
New in 2015

- More sites
- New data sources
- New funding sources
- Targeted sampling
- Algae ID training

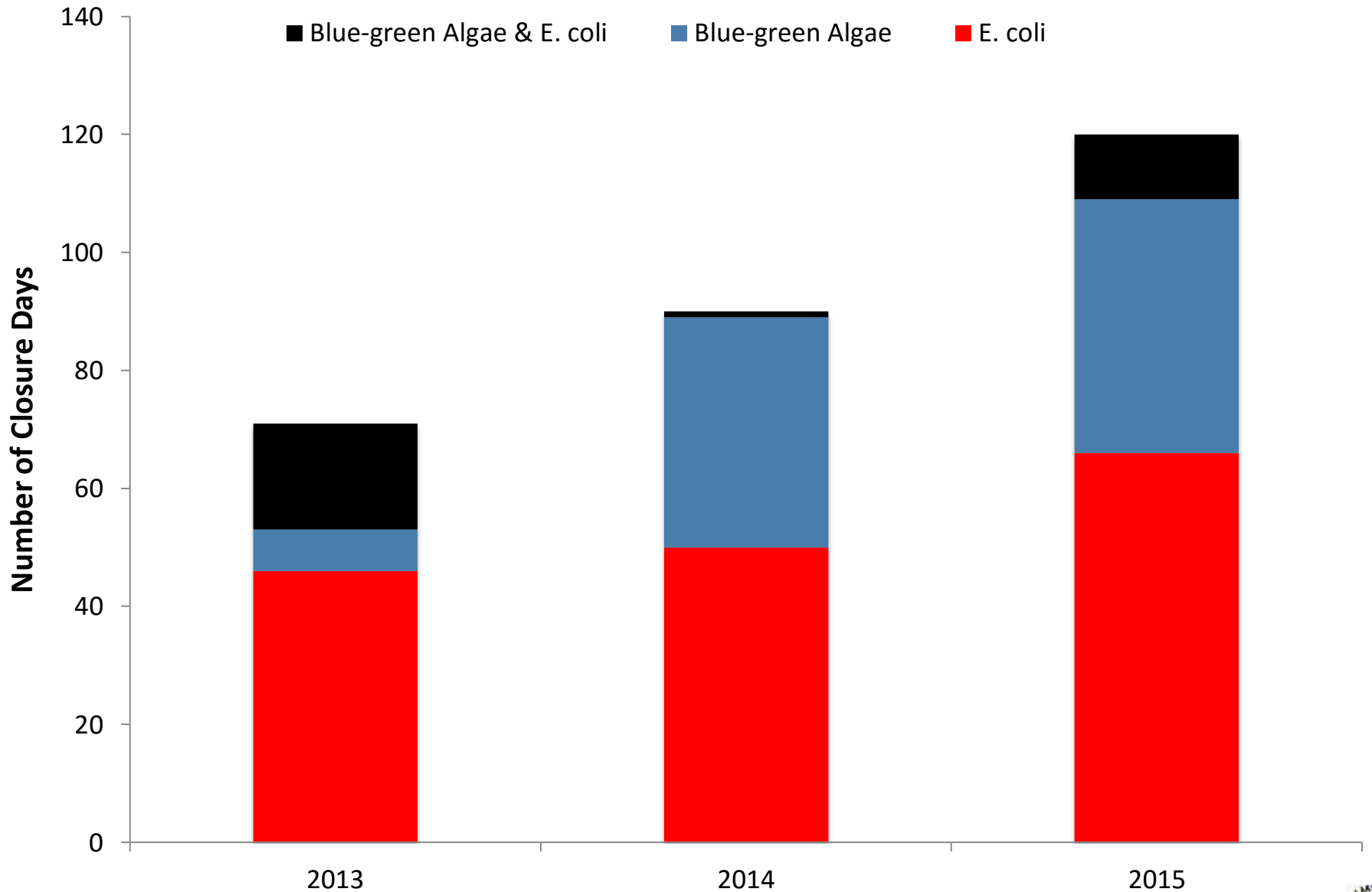


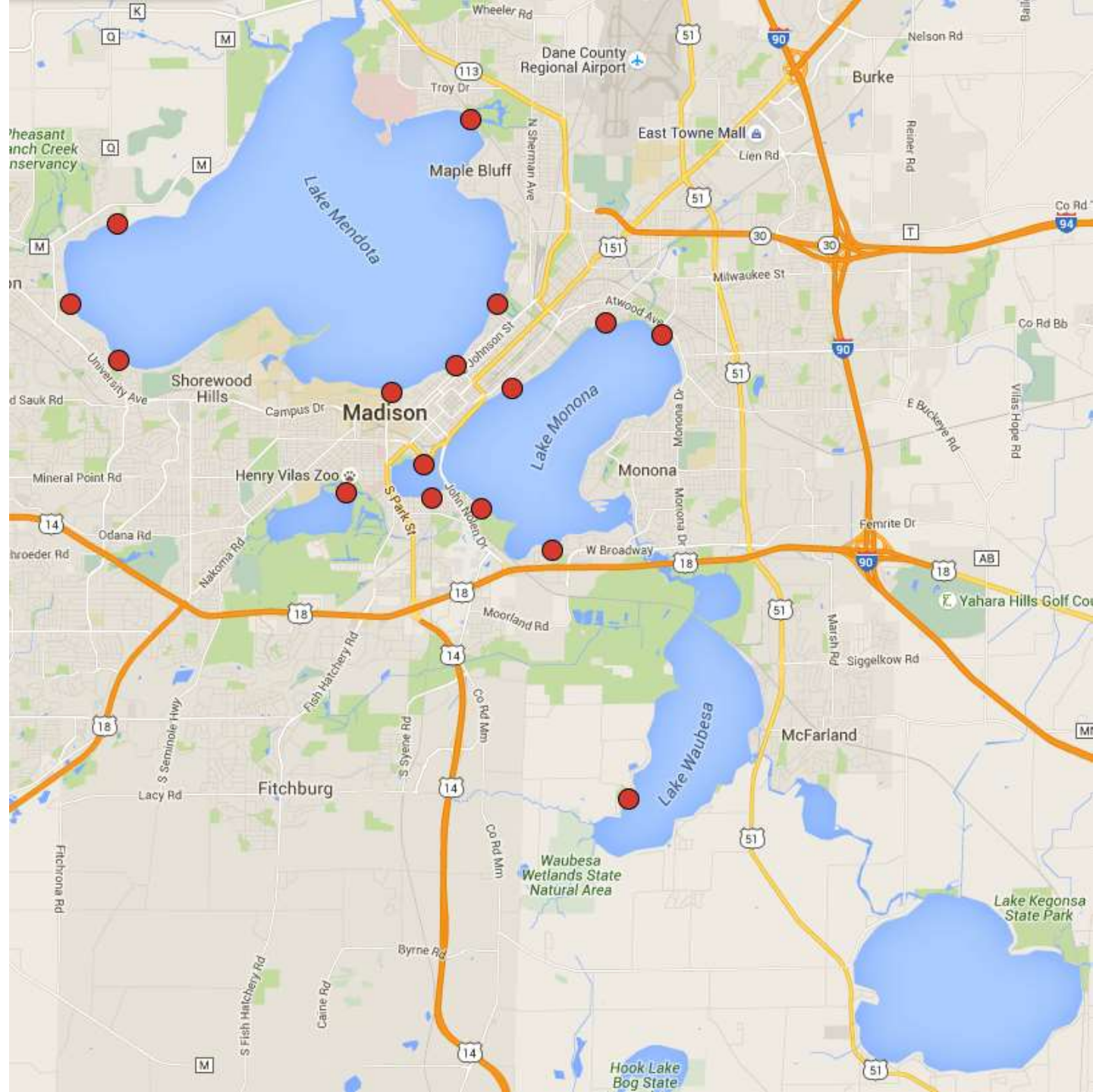
Program Impact

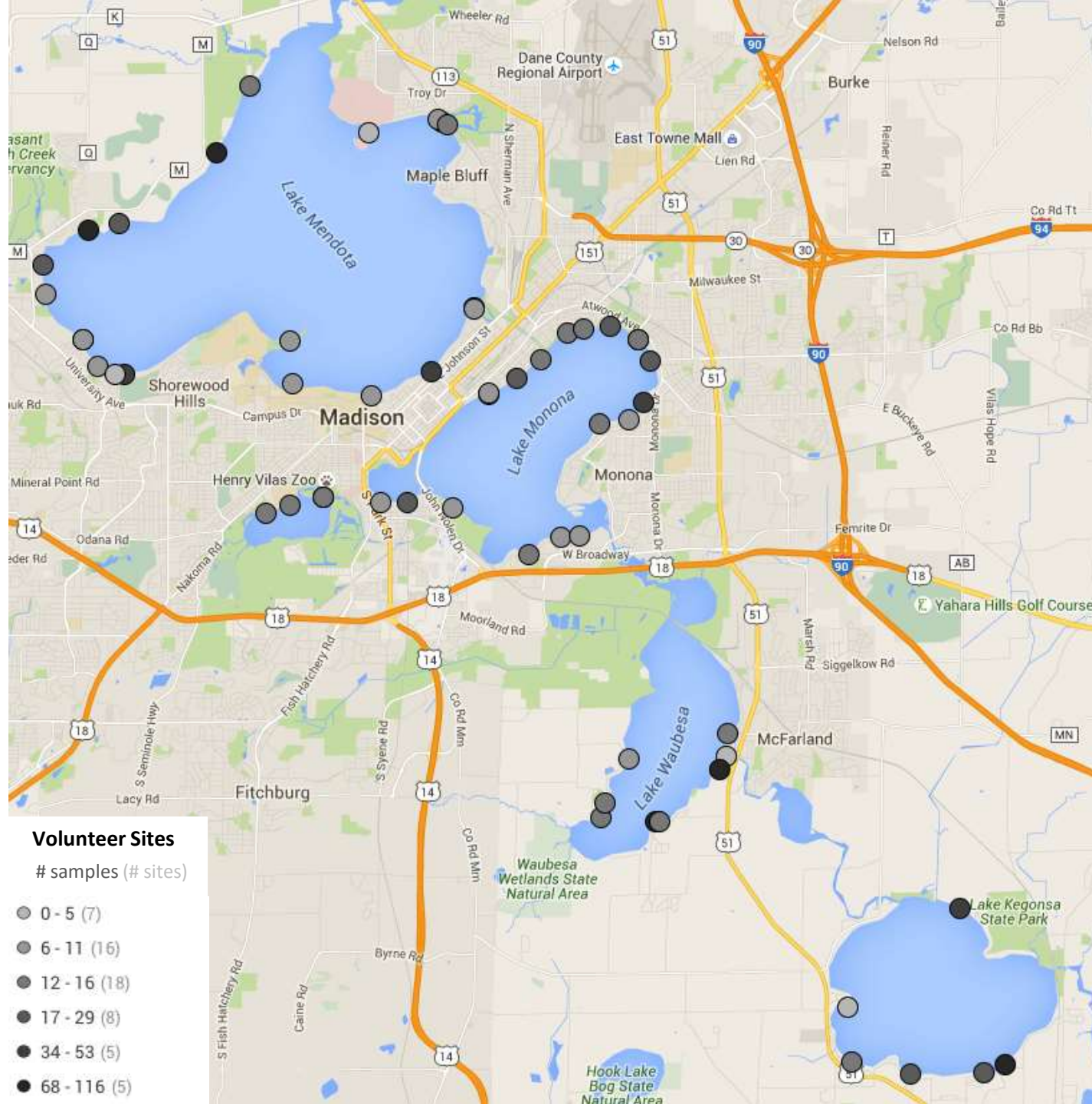
- 58 stations
- 1,376 samples
 - 118 *E. coli* samples
- Contest winner



Beach Closure Days







Volunteer Sites

samples (# sites)

- 0 - 5 (7)
- 6 - 11 (16)
- 12 - 16 (18)
- 17 - 29 (8)
- 34 - 53 (5)
- 68 - 116 (5)



Sunday, June 14, 2015



Wednesday, June 17, 2015



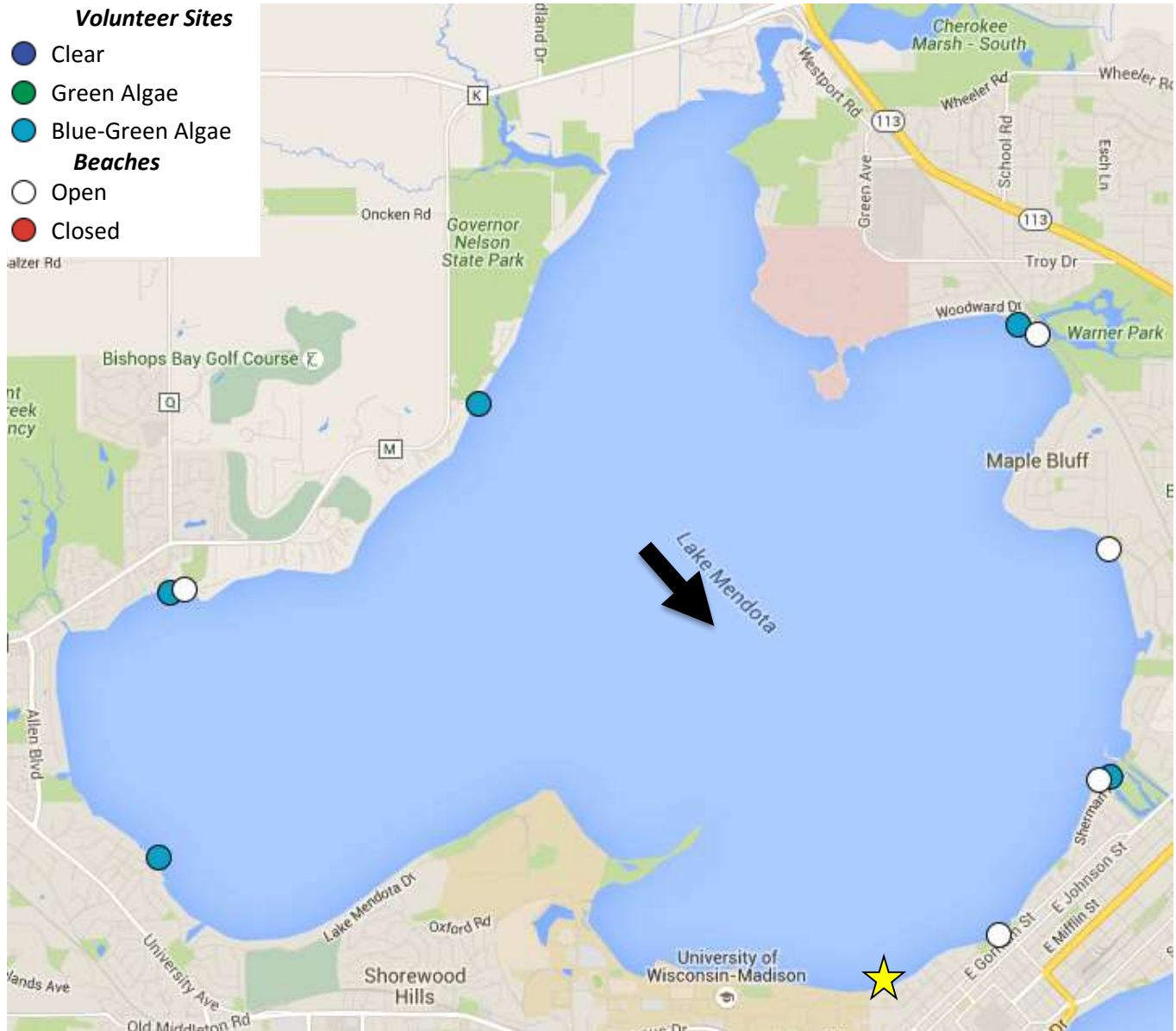
The water is so clear
you can see the sand.



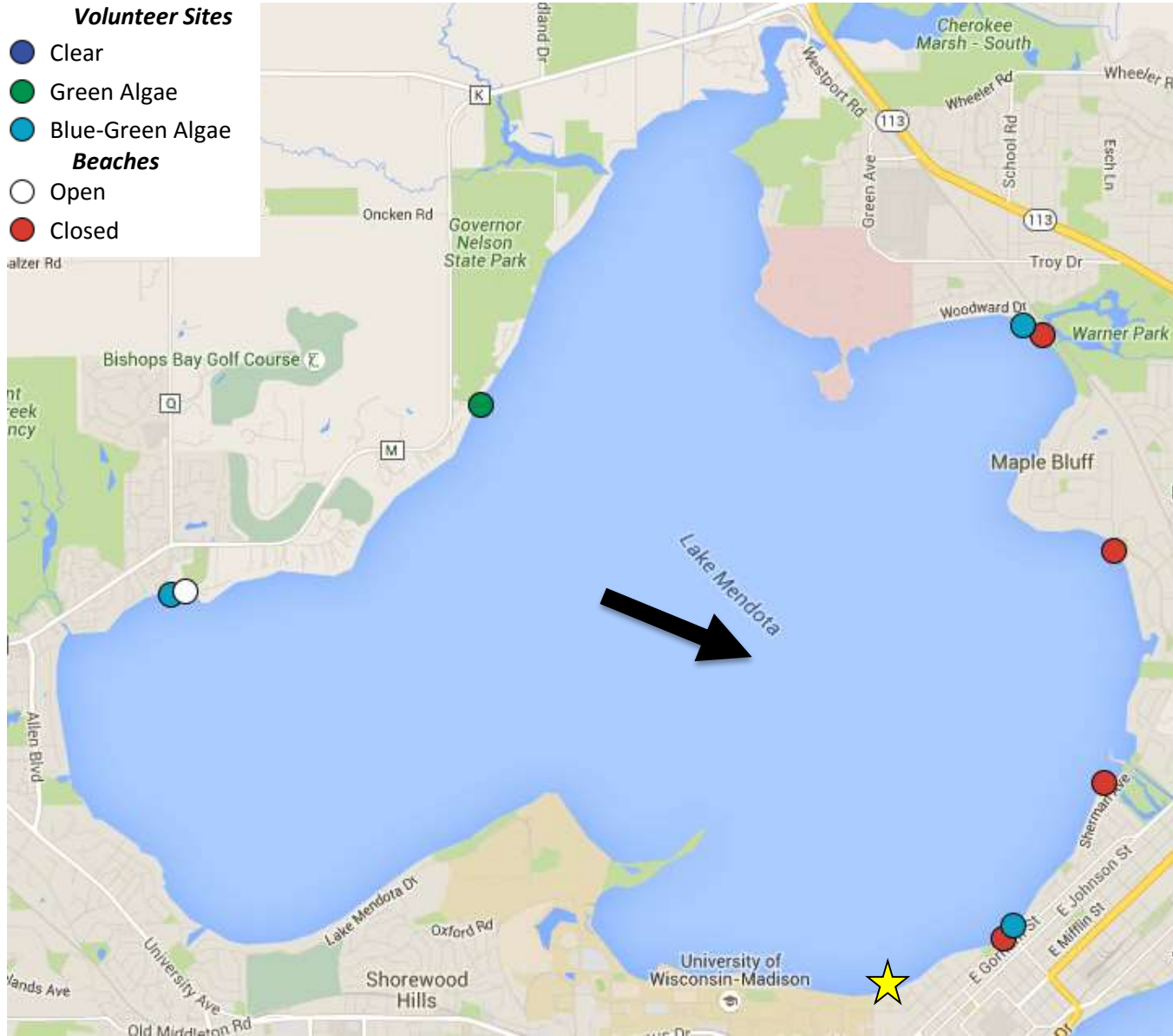
Photo credit: Scott Resnick



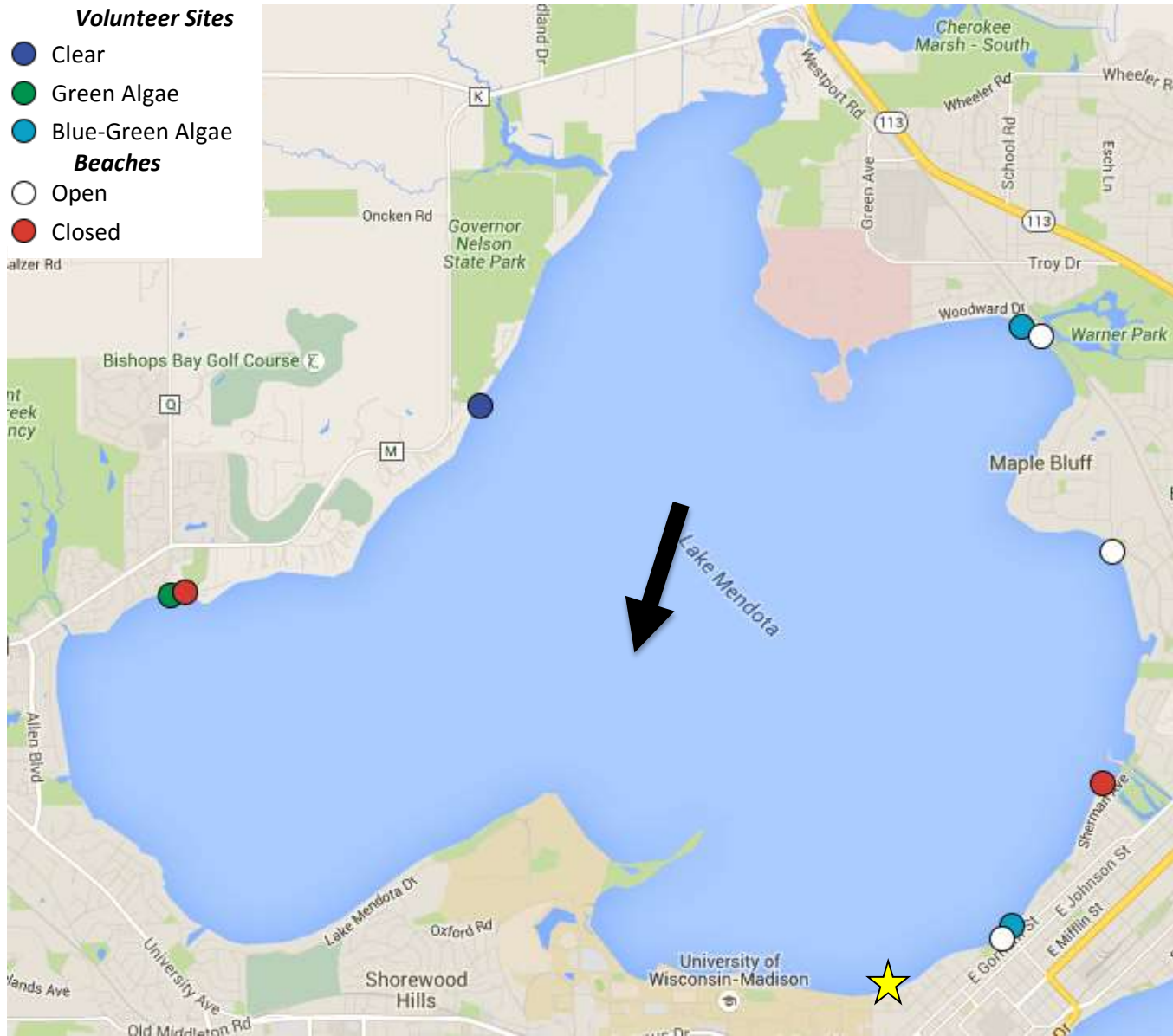
June 14, 2015



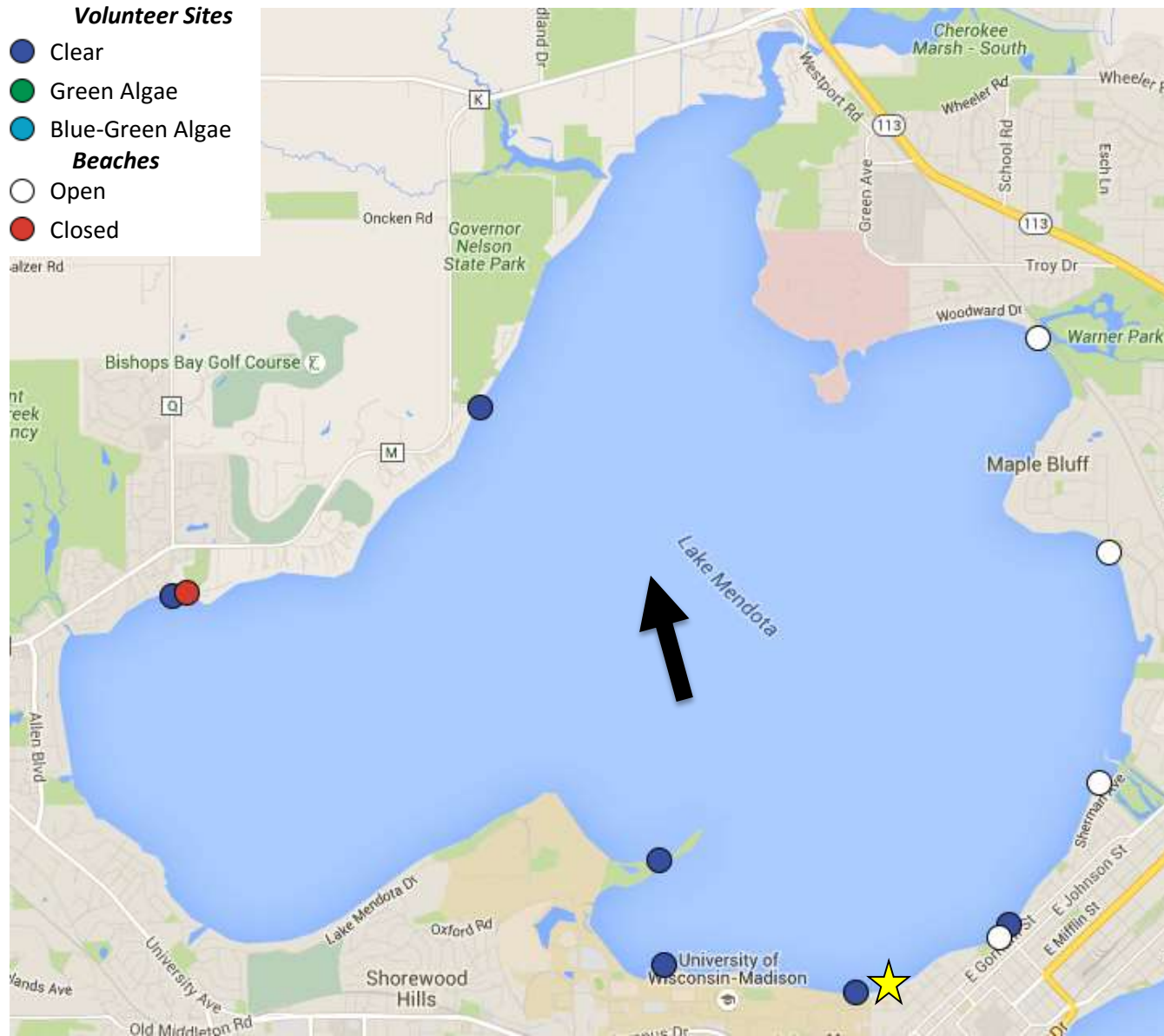
June 15, 2015



June 16, 2015



June 17, 2015





Credit: infosyahara.org





**BEACH
CLOSED**

DO NOT BE ALONE IN
THE SWIMMING AREA.
WHEN THE ALGAE IS
REMOVED, THE BEACH WILL REOPEN.

**PLAYA
CERRADA**

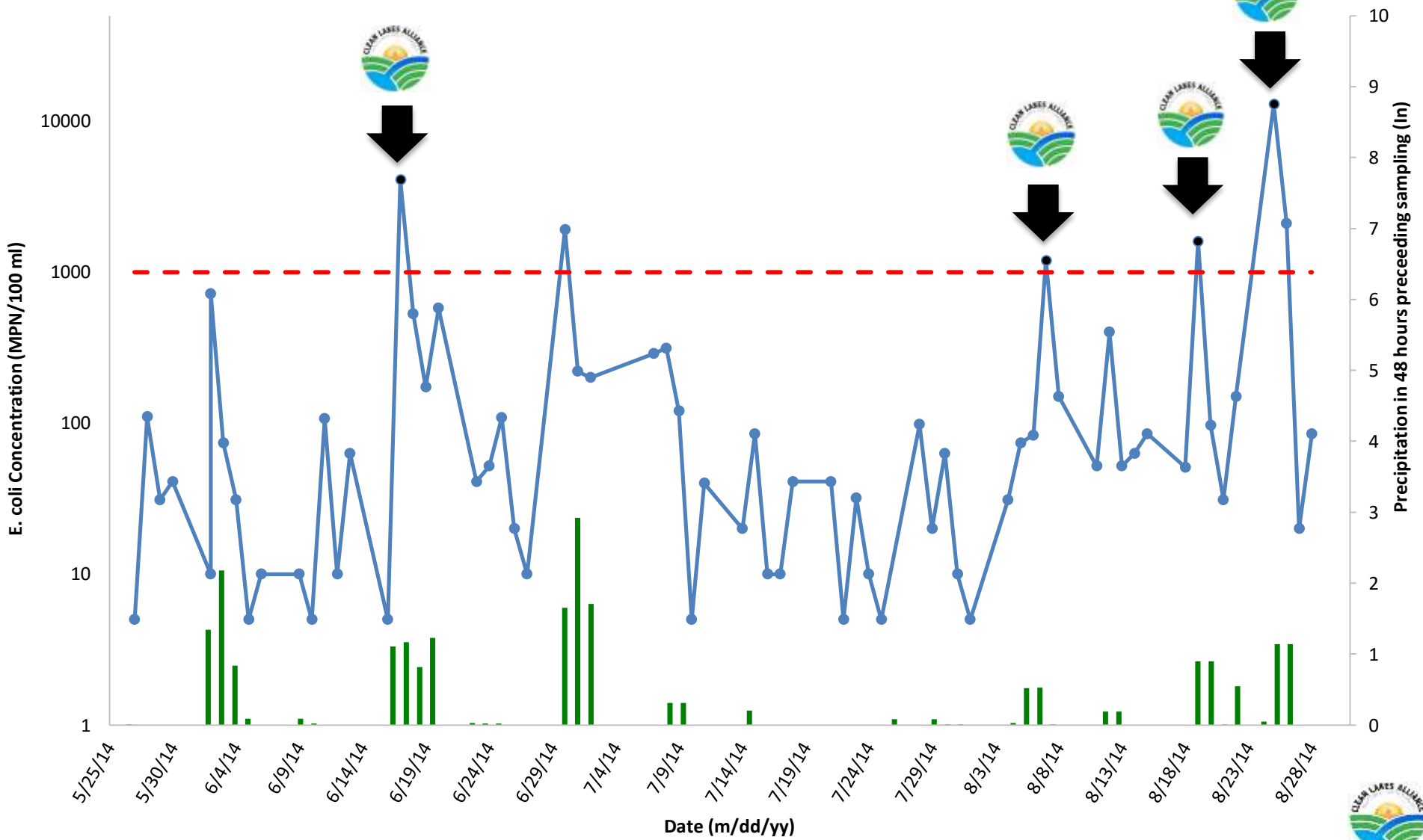
Evitar a la presencia de algas
en el área de natación.
Las algas verticiloides
pueden producir lesiones
profundas.

**NO
LIFEGUARD
ON DUTY**

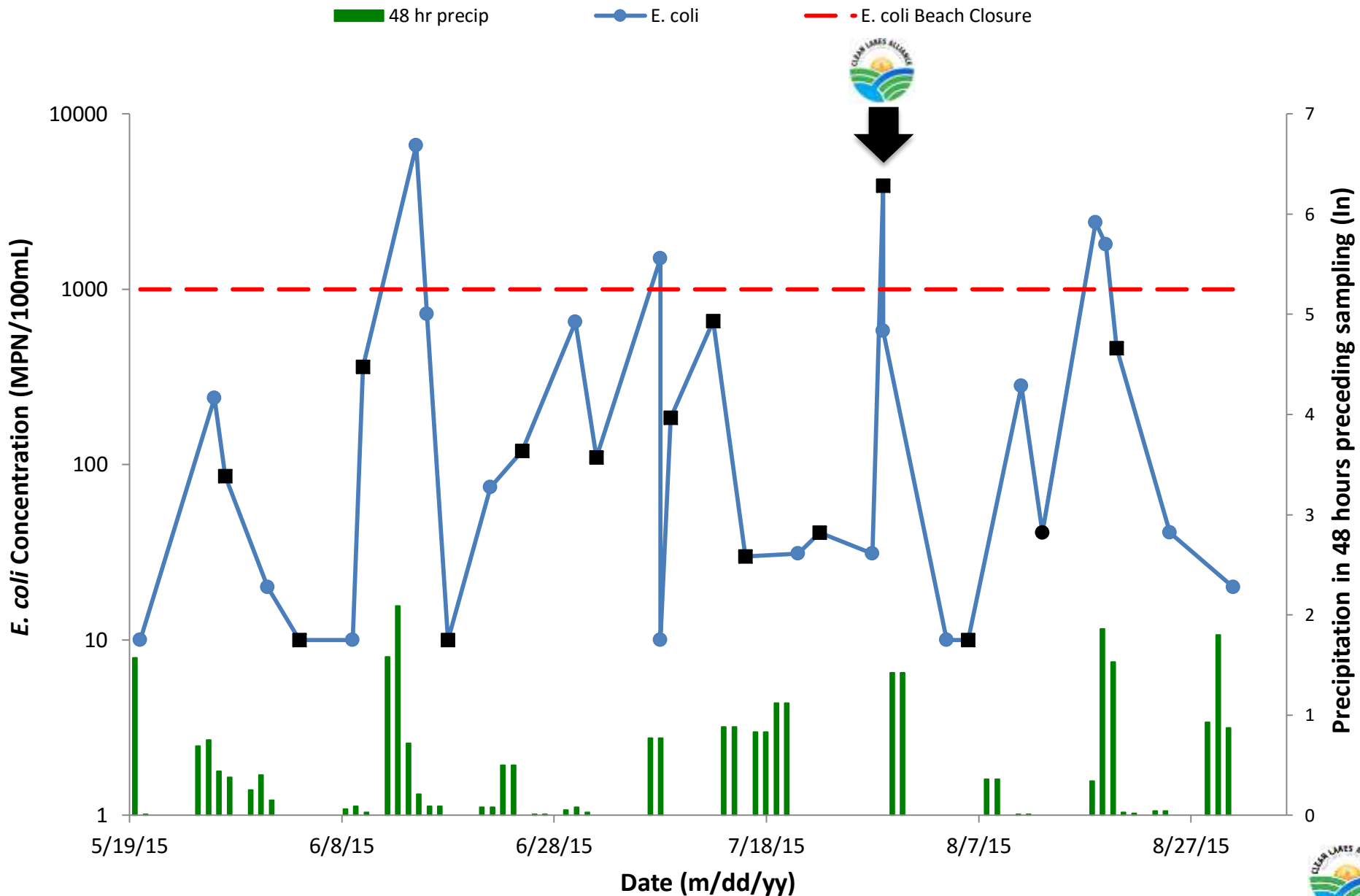
**NO
SALVAVIDA
PRESENTE**

James Madison Beach 2014 *E. coli* Data

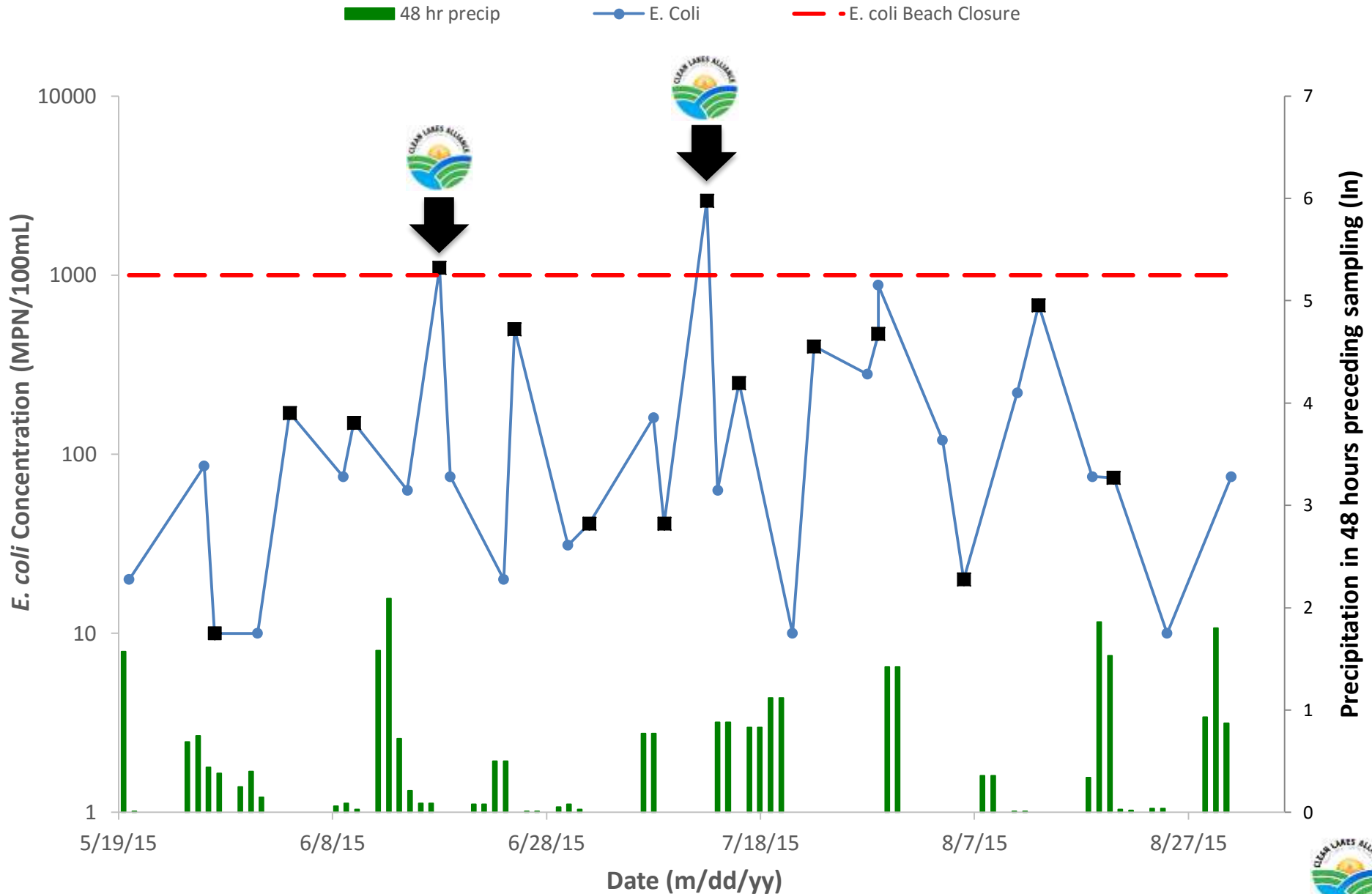
■ 48 hr precip
 —●— *E. coli* (MPN/100 ml)
 - - - *E. coli* Beach Closure



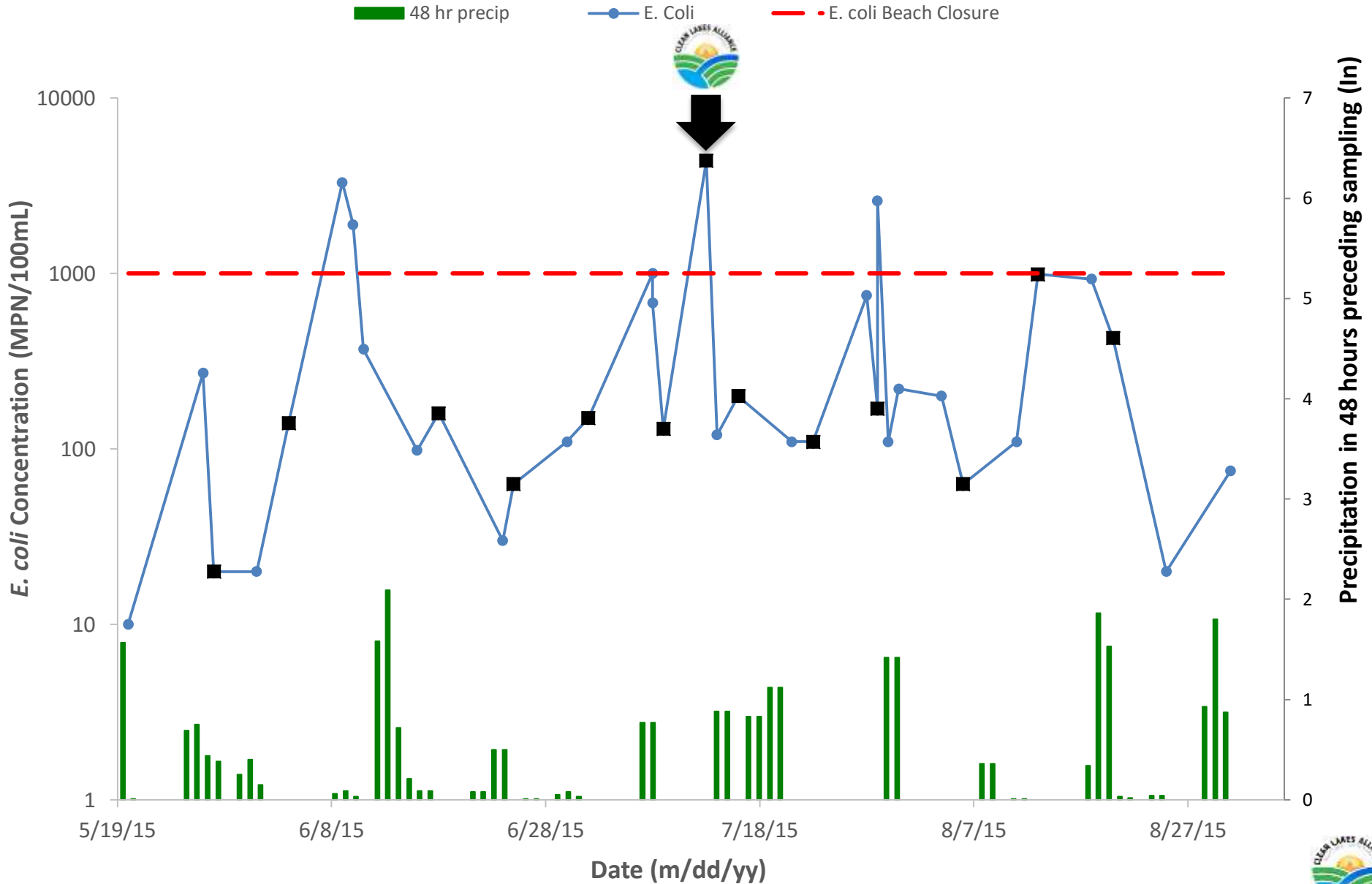
James Madison Beach 2015 *E. coli* Data



Warner Beach 2015 *E. coli* Data



Olbrich Beach 2015 *E. coli* Data

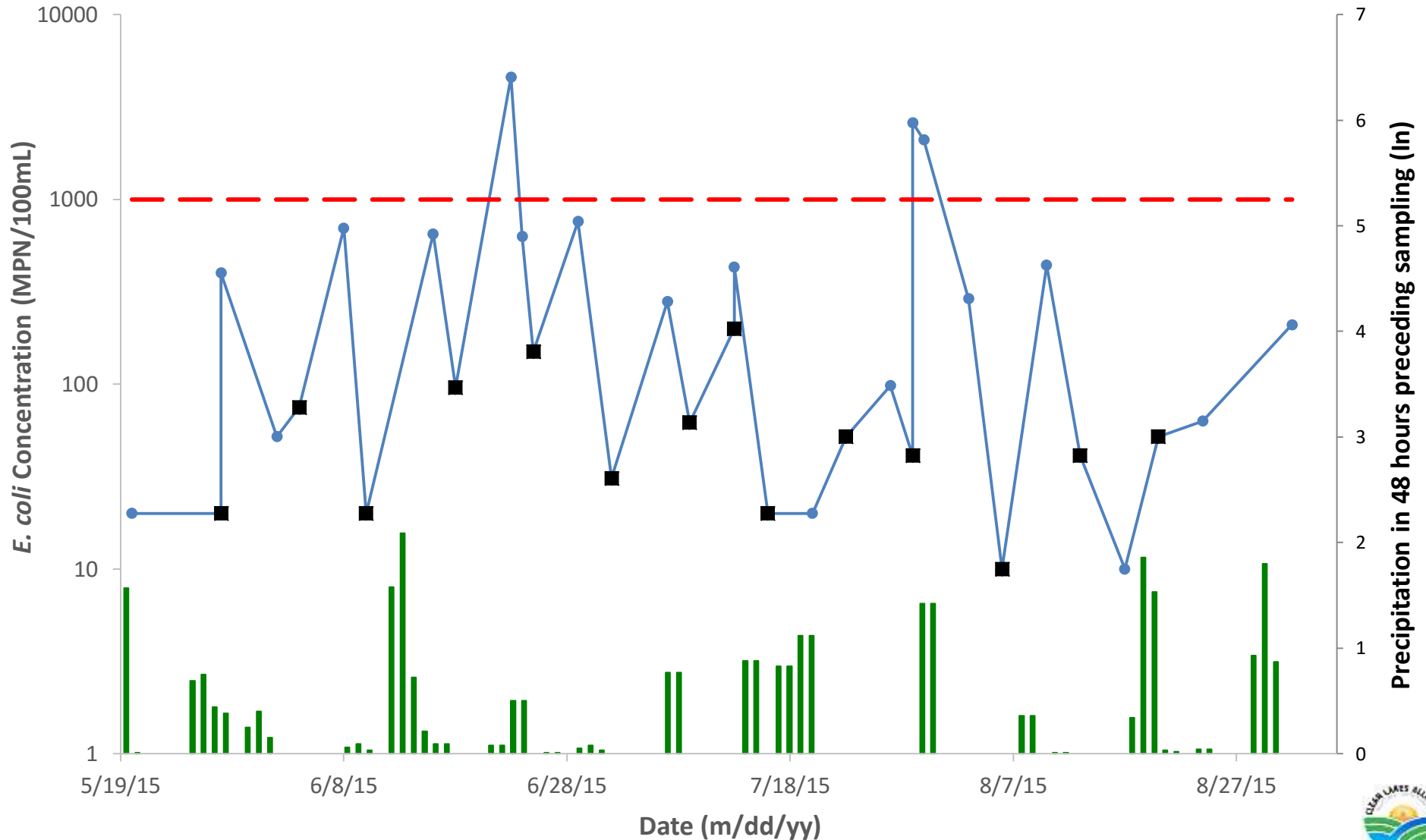


Vilas Beach 2015 *E. coli* Data

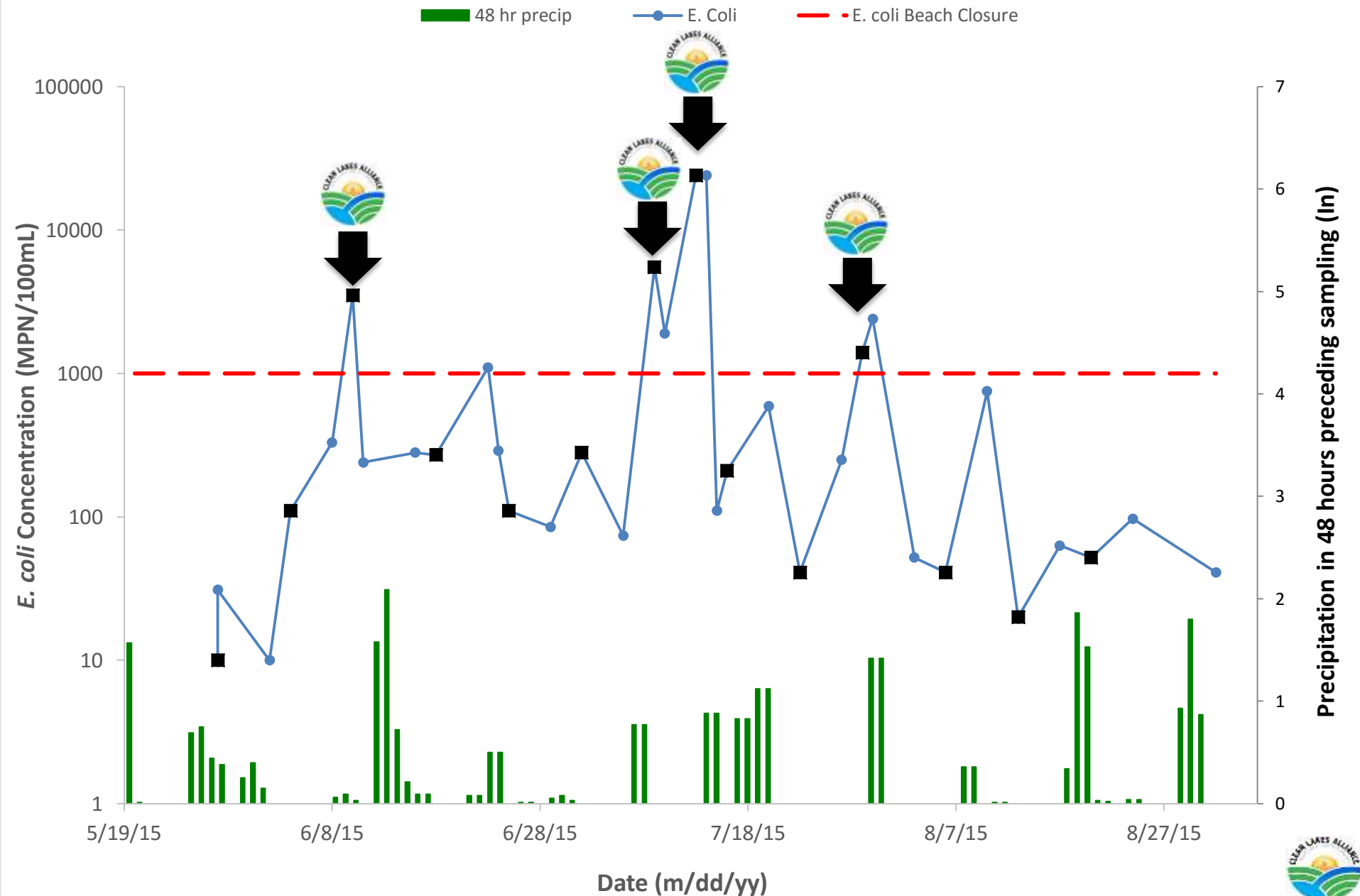
48 hr precip

E. Coli

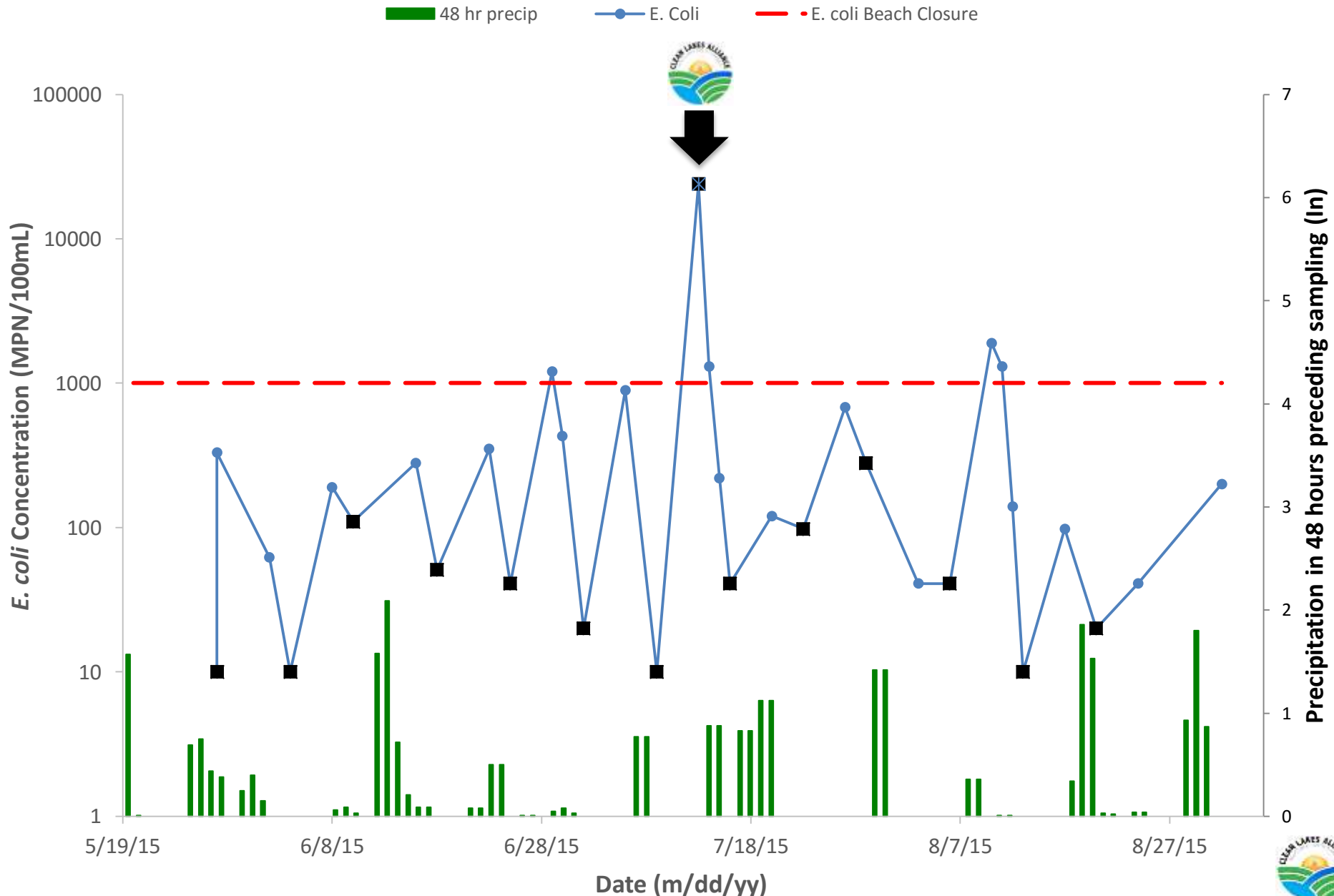
E. coli Beach Closure



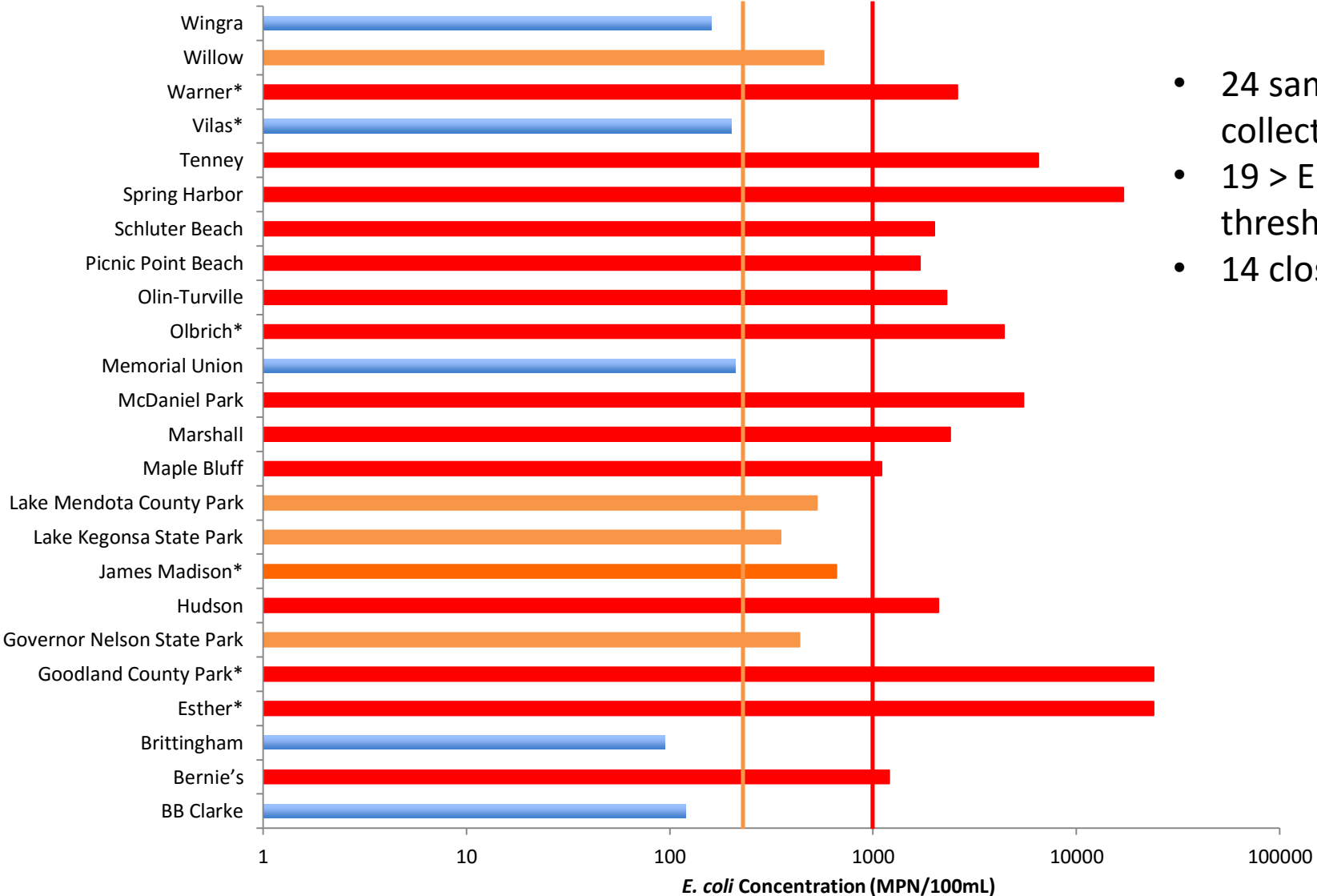
Esther Beach 2015 *E. coli* Data



Goodland County Beach 2015 *E. coli* Data



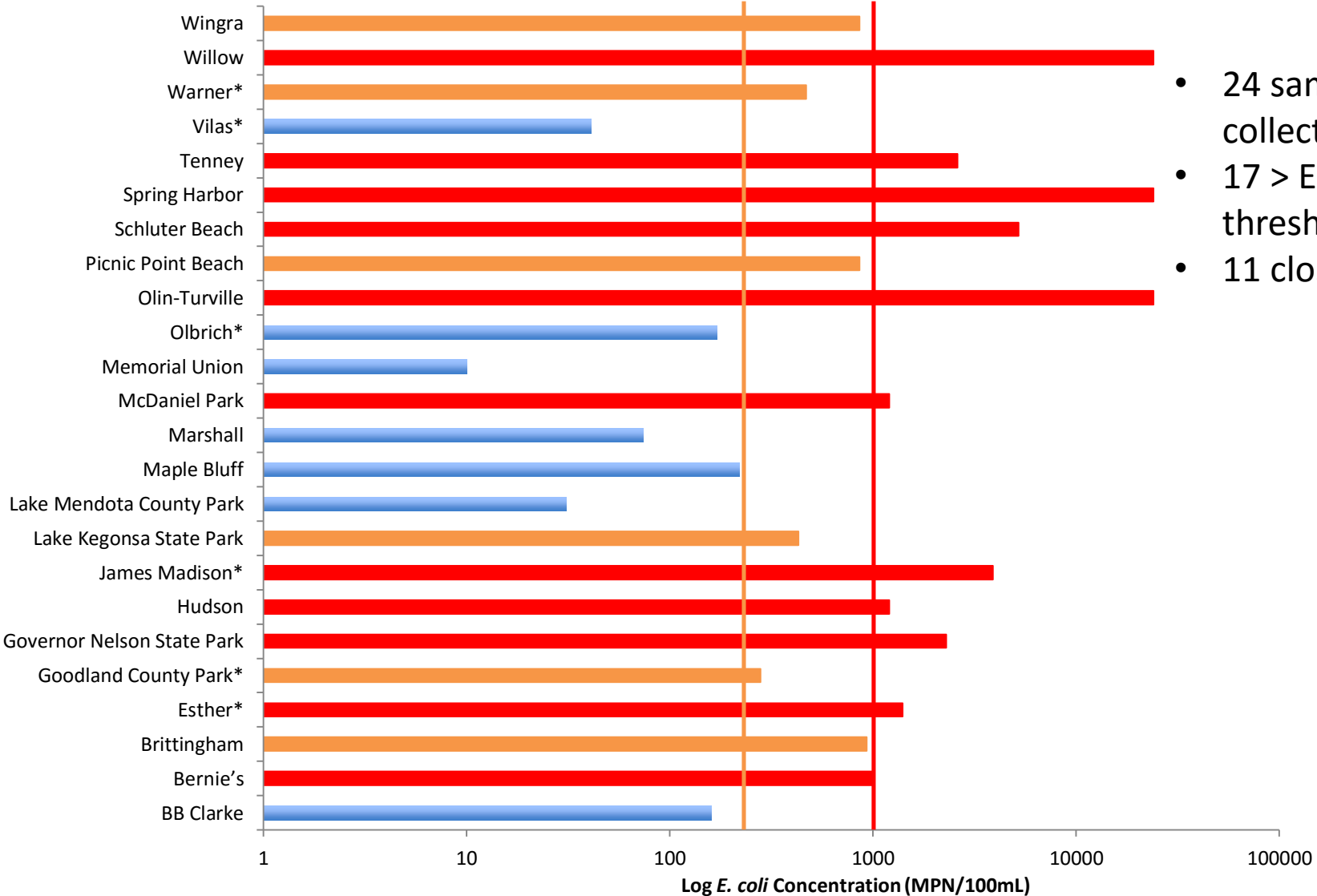
Post-Rain Monitoring Blitz: July 13, 2015



- 24 samples collected
- 19 > EPA advisory threshold
- 14 closures



Post-Rain Monitoring Blitz: July 29, 2015



- 24 samples collected
- 17 > EPA advisory threshold
- 11 closures



Water Clarity

HELP US MONITOR MENDOTA: IS CLEAR-WATER PHASE A MEMORY?

🕒 MAY 20, 2015 👤 ADAM HINTERTHUER 💬 9 COMMENTS

by Jake Walsh

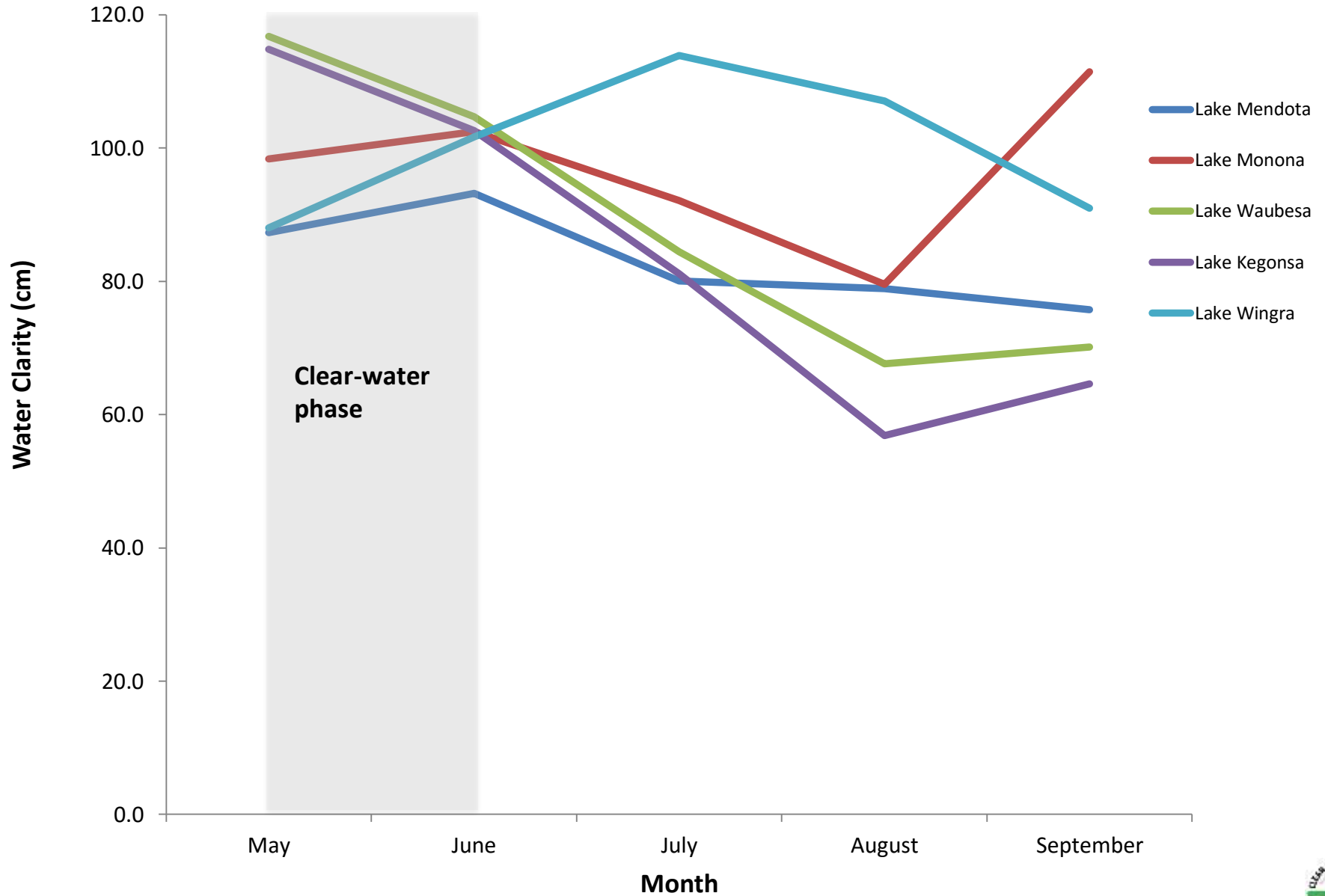
We've written before about how an invasive zooplankton called *Bythotrephes longimanus*, or "the spiny water flea" (SWF) [is eating our native algae-grazing friends](#), the tiny crustaceans called *Daphnia*.

Source: limnology.wisc.edu

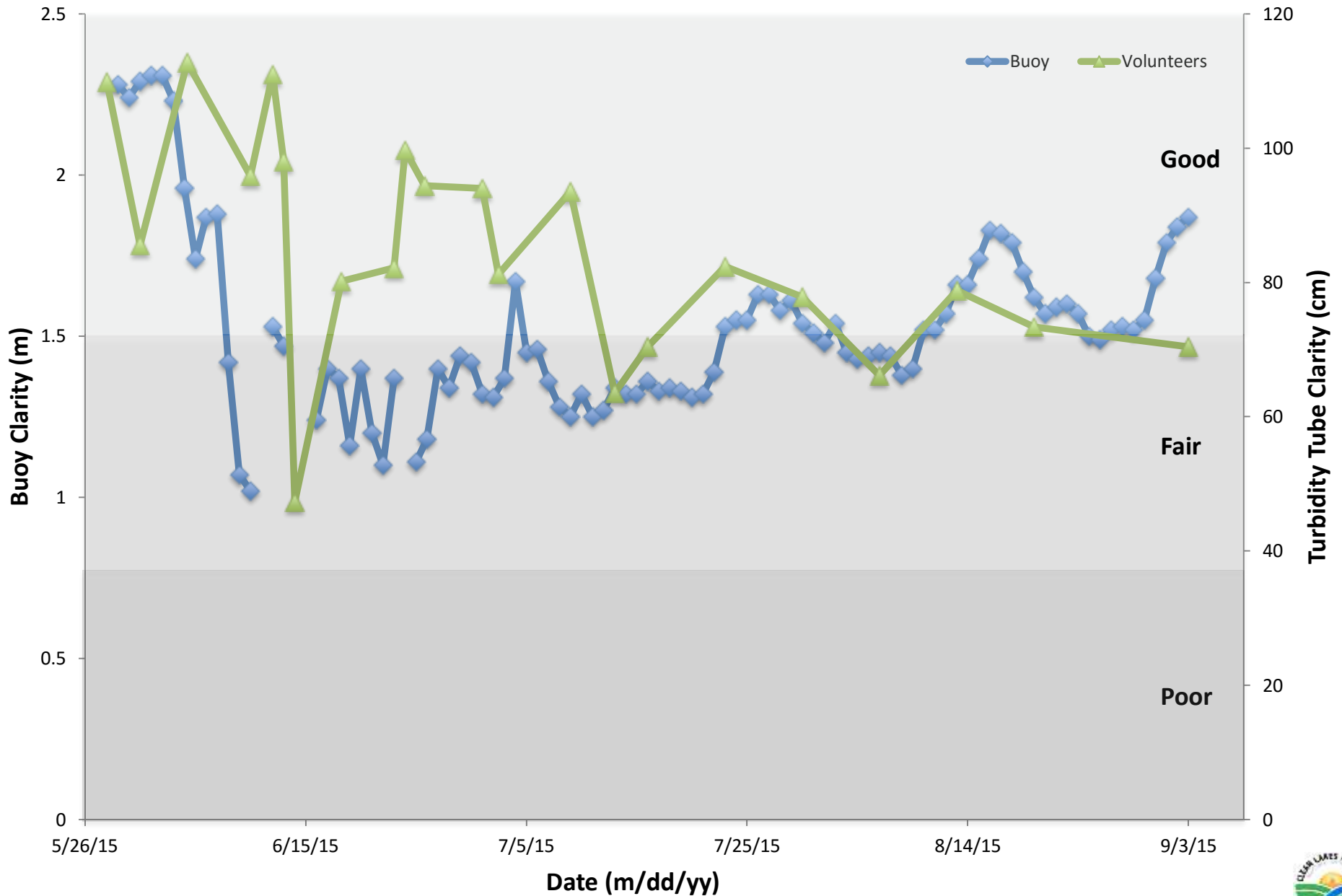


Spiny water flea under the microscope. Photo: Jake Walsh

2015 Yahara Lakes Near-shore Clarity



Lake Mendota Water Clarity- Summer of 2015



Plans for Future

- Beaches
 - Targeted bacteria sampling
 - Determine bacteria sources
 - Lifeguard monitoring
- Volunteer sites
 - Phosphorus sampling
 - Assist FLAMe research



Photo credit: Jeff Miller

How to participate



Lake Forecasting Steward Donation

\$135.00

As a Lake Forecasting Steward, you will be taking lake samples on a regular basis as well as picking up the cost of our fixed supplies needed to run the program. This monitoring effort is part of one of our key objectives, which is to report progress. This program is extensive and the cost to run it greatly exceeds the fixed supplies cost, including staff time and resource allocation.

\$57.50: Turbidity Tube

\$30.75: Thermometer

\$11.75: Office expenses and supplies

\$35: Friend of Clean Lakes

\$135 = Lake Forecasting Steward Donation

1

Add to cart

<https://www.cleanlakesalliance.com/product/lake-forecasting-steward-donation/>



Thank You!

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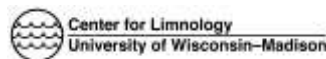
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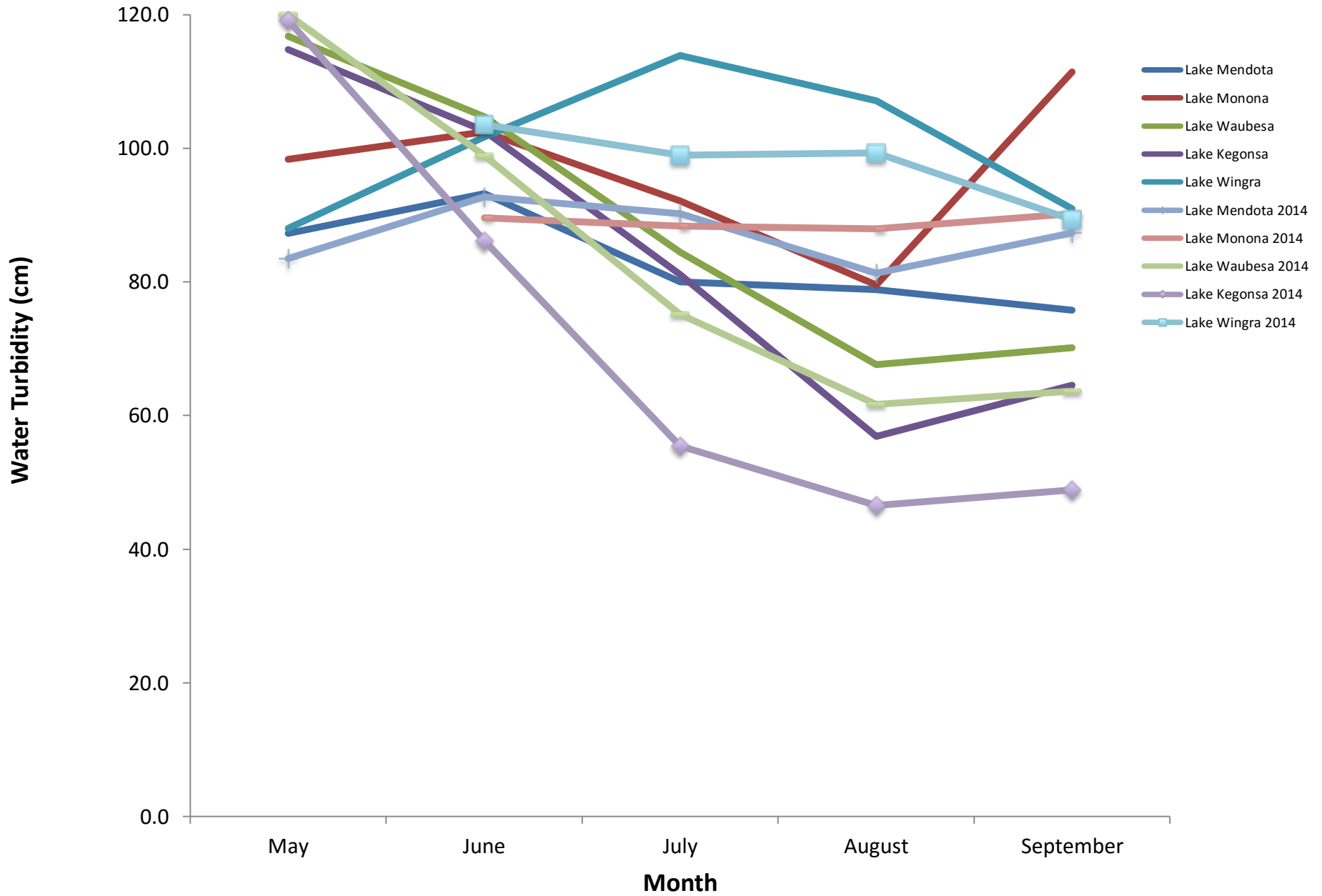
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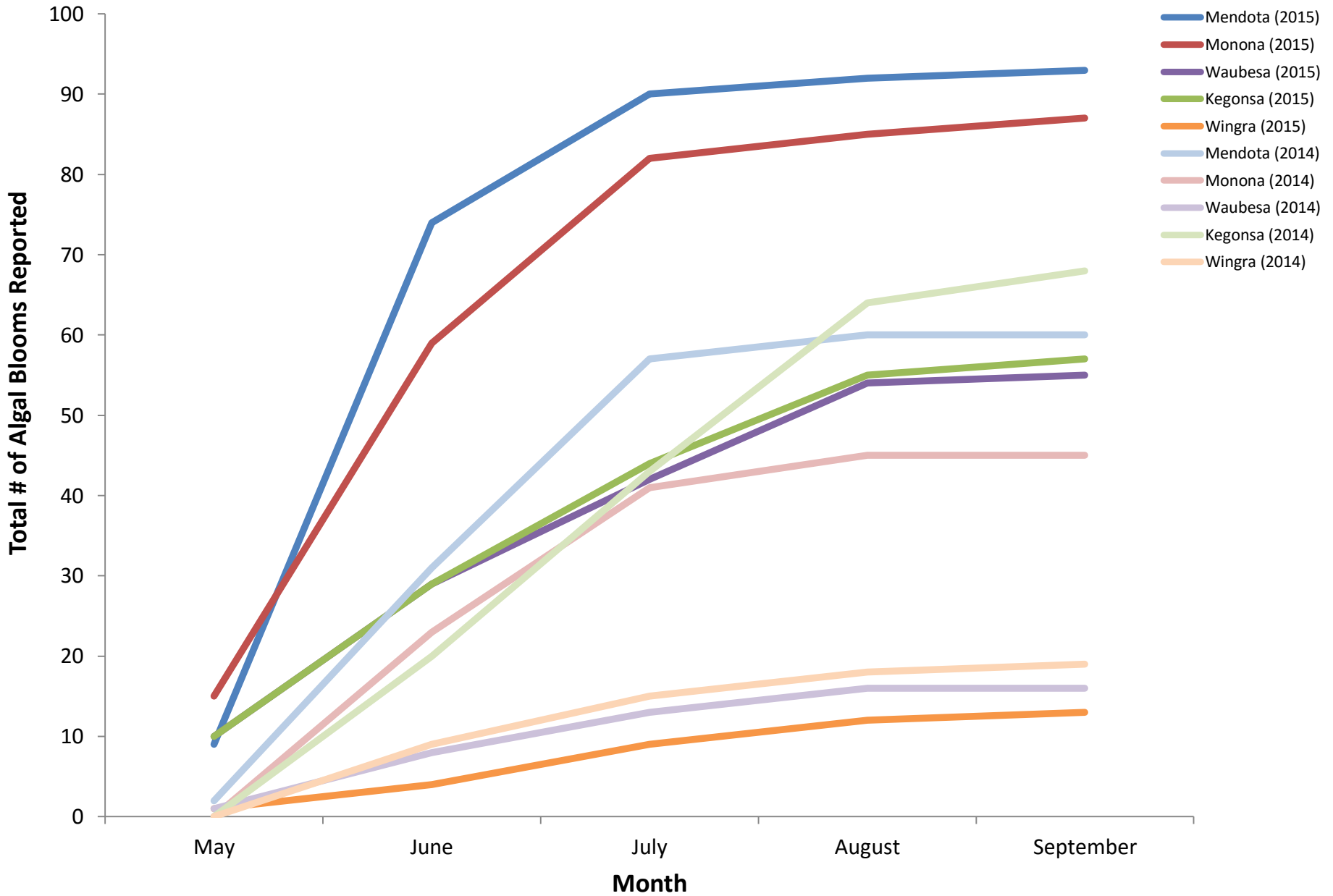
Justin Chenevert



2015 Yahara Lakes Near-shore Clarity



2014 & 2015 Algal Blooms Reported By Lake



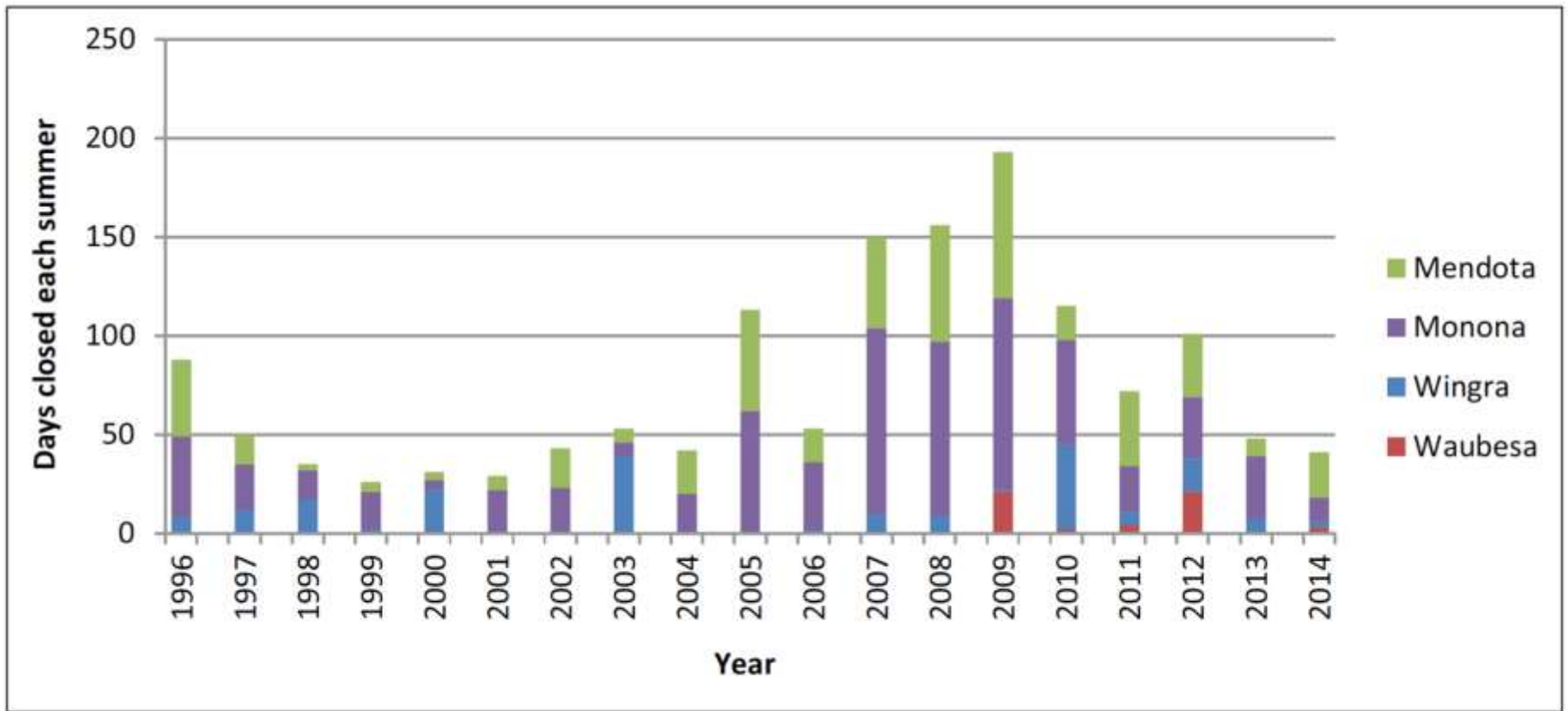
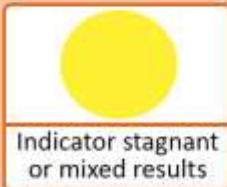


Figure 14: Madison-Area Beach Closures by Year

Source: Madison and Dane County Public Health data.

Beach Closings Take-Away



Beach closings have declined in the last 5 years, although 44 beach closings in 2013 is still cause for concern.

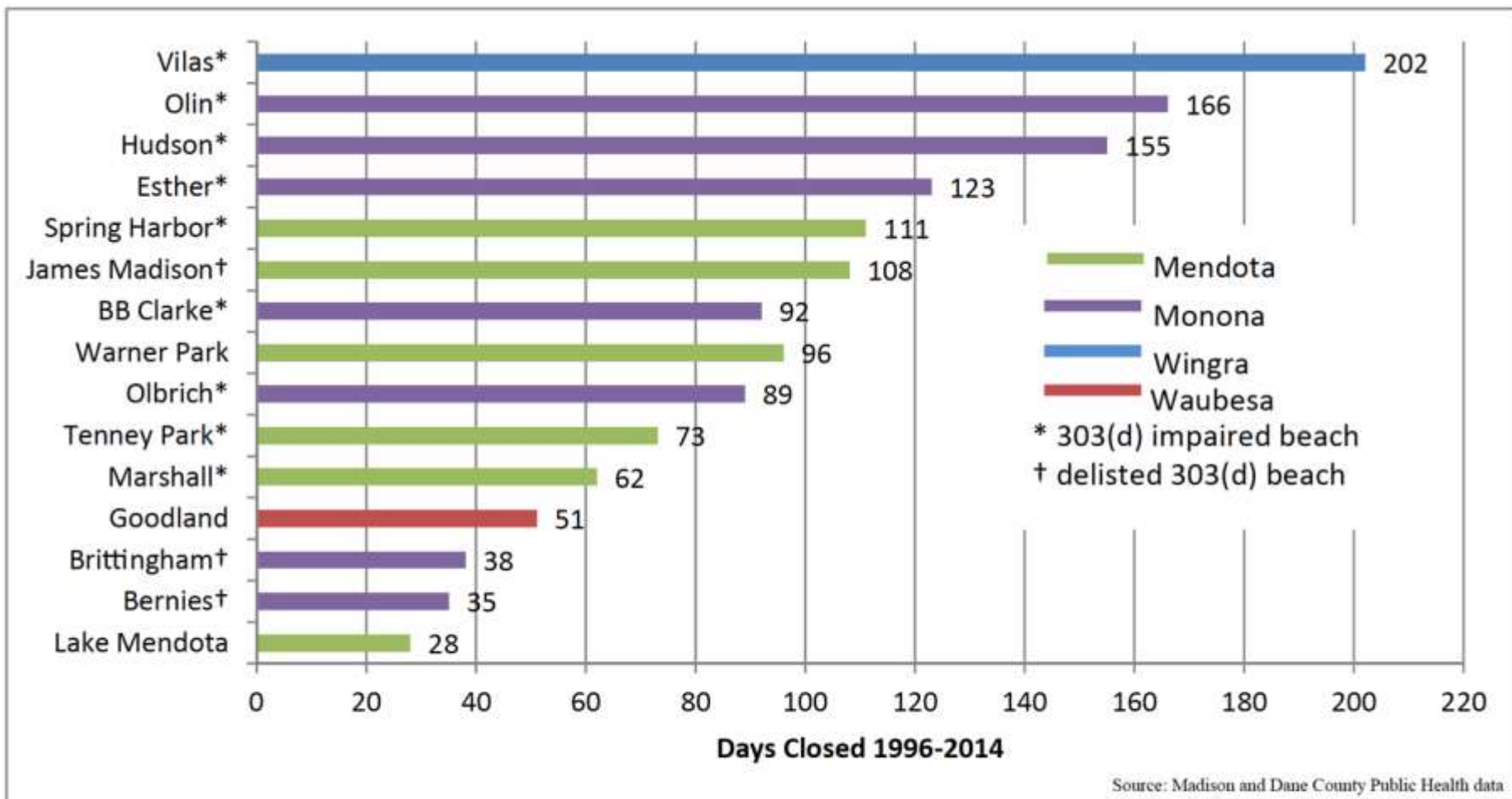


Figure 15: Closures by Beach 1996—2014

Source: Madison and Dane County Public Health data.

Perceptions vs. Reality



