



# **LakeForecast.org: All Eyes on Lake Water Quality**

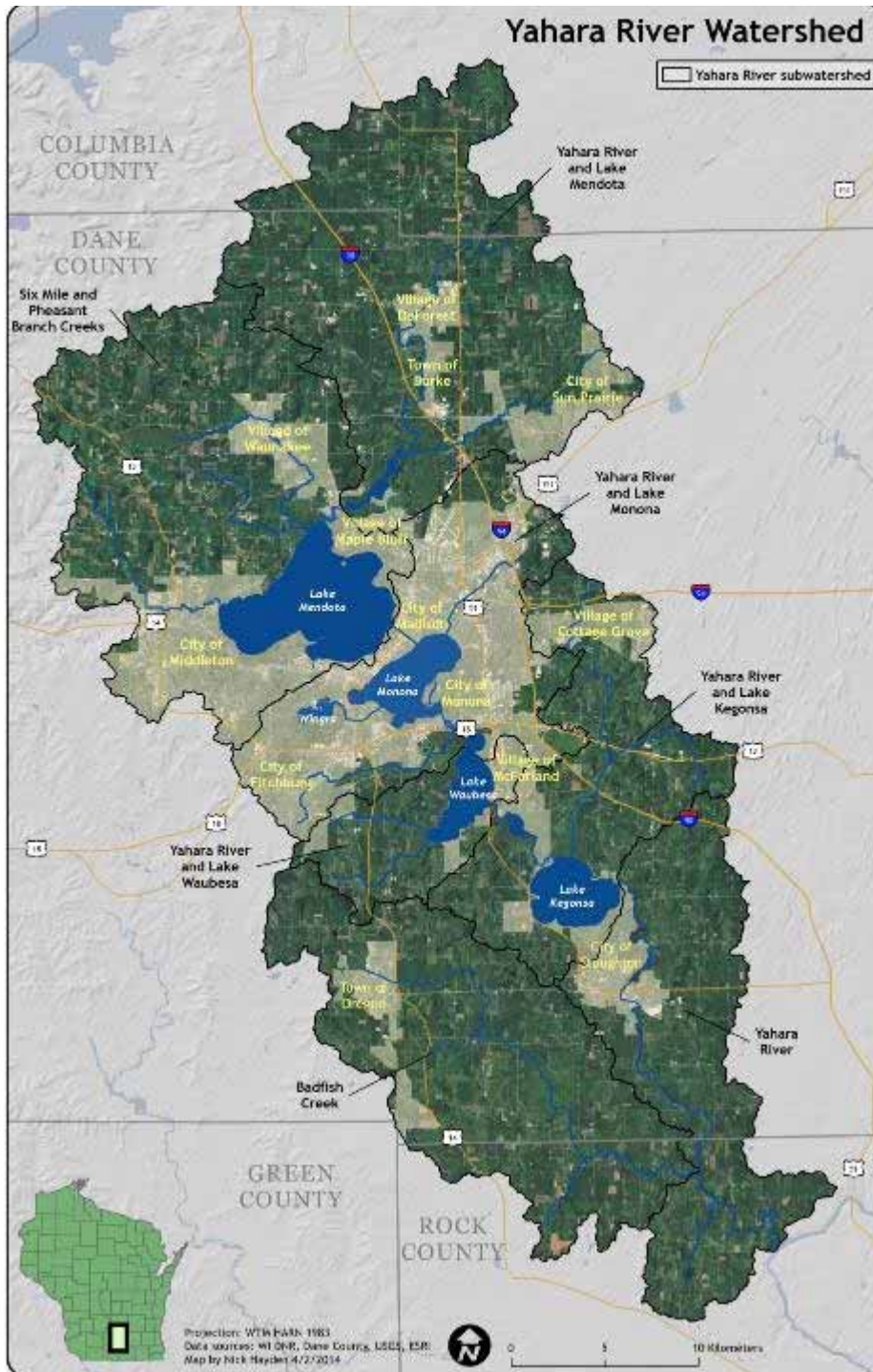
Katie Nicholas- Watershed Coordinator



# Vision

*Healthy Lakes. Healthy Community.*





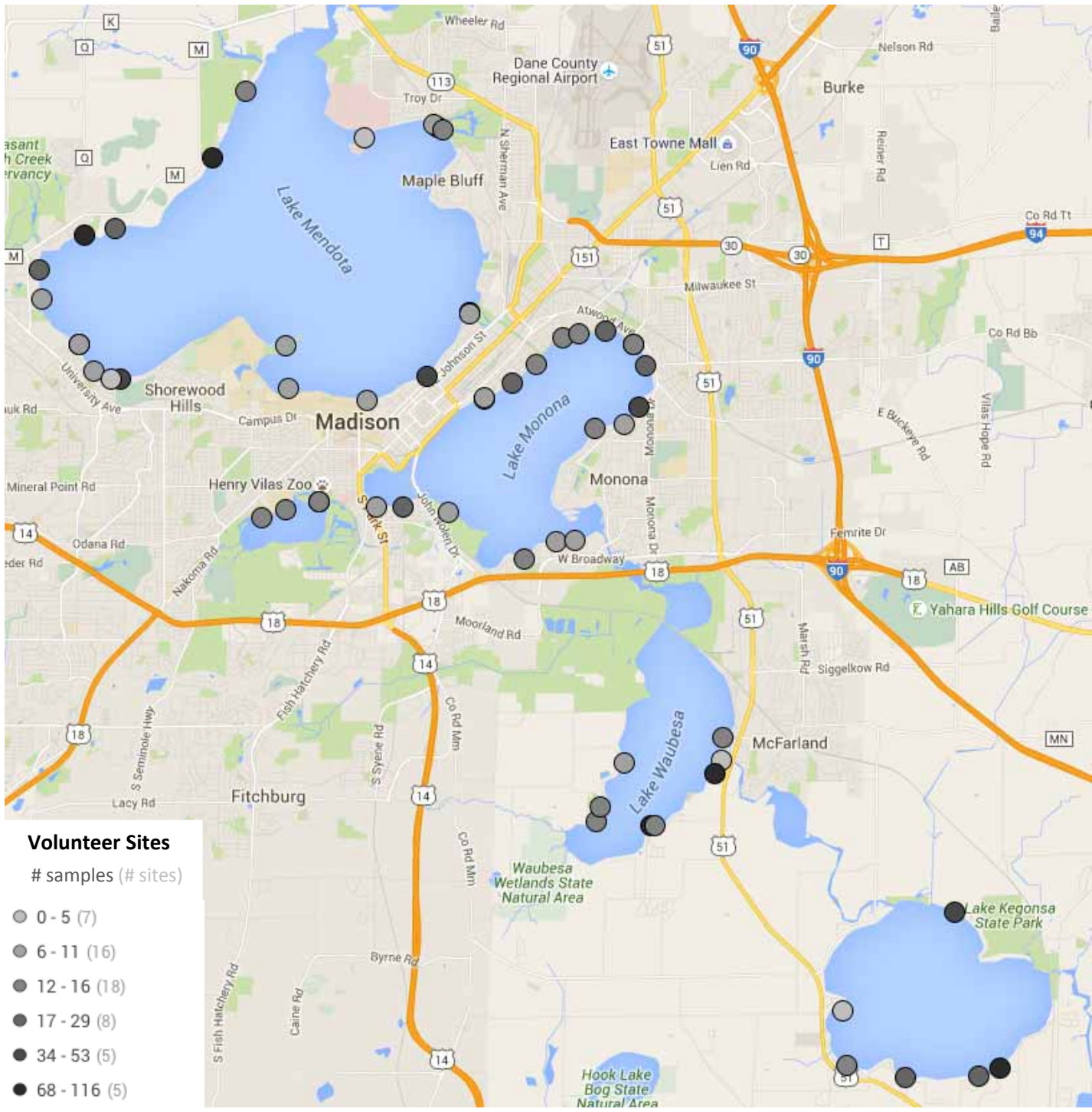
- 💧 359 mi<sup>2</sup> watershed
- 💧 28 municipalities
- 💧 370,000 people
- 💧 29 mi<sup>2</sup> of lake area
- 💧 58 miles of shoreline
- 💧 22 public beaches
- 💧 >3,200 lakefront property owners



# What's our purpose?

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





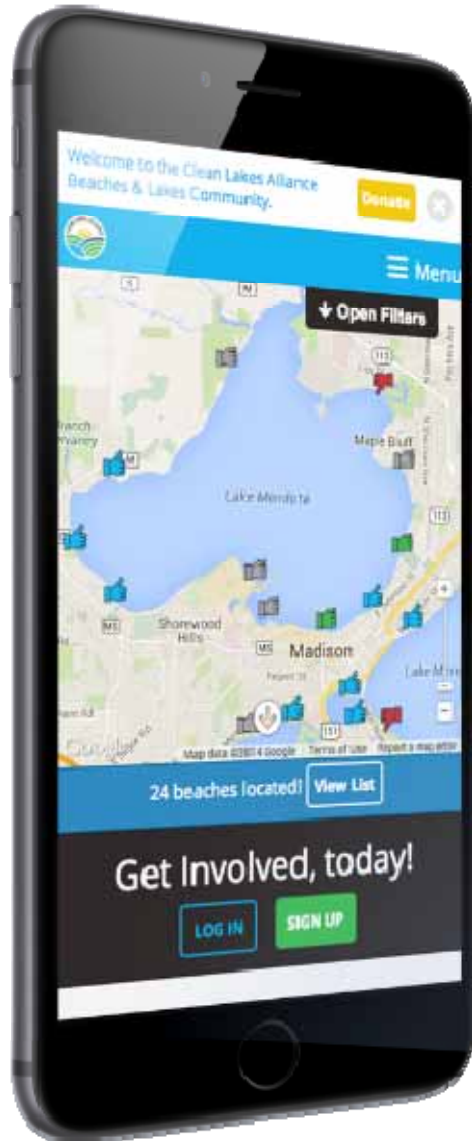
# Lake User Risks

⚠️ *E. coli* Bacteria

⚠️ Blue-green Algae (Cyanobacteria)



# LakeForecast.org

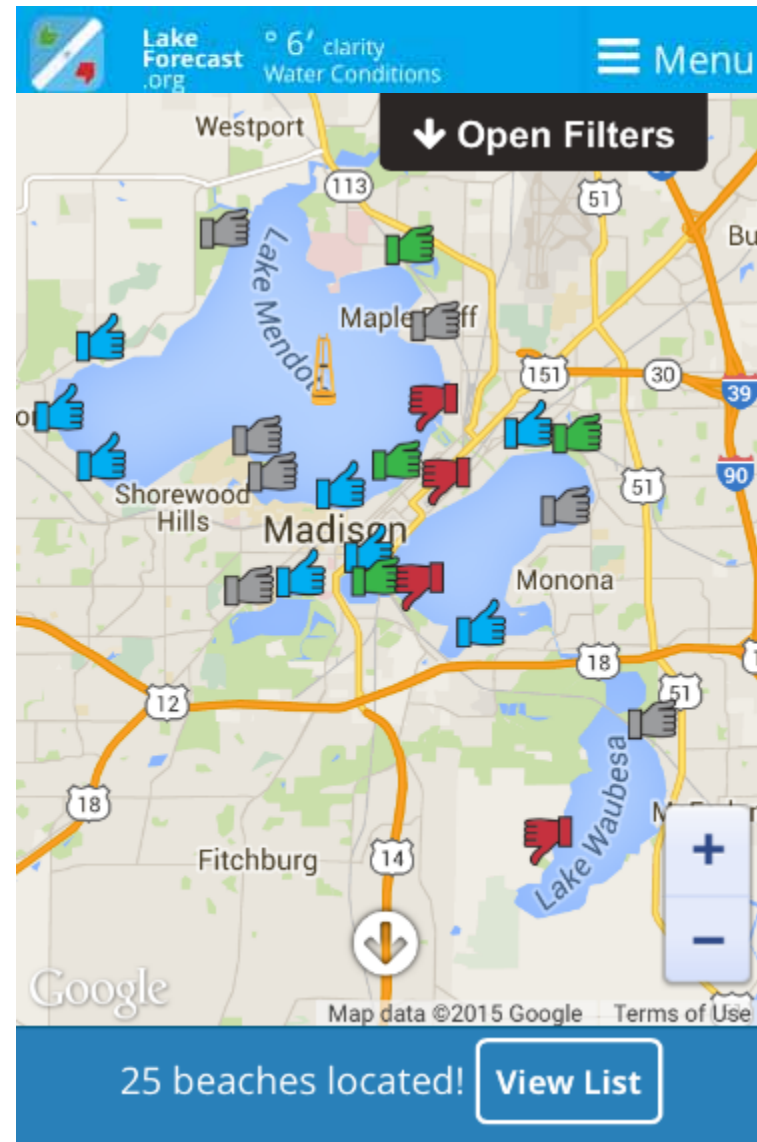


- Purpose
  - Better inform beachgoers of more real-time site conditions
  - Encourage more consistent testing and data collection



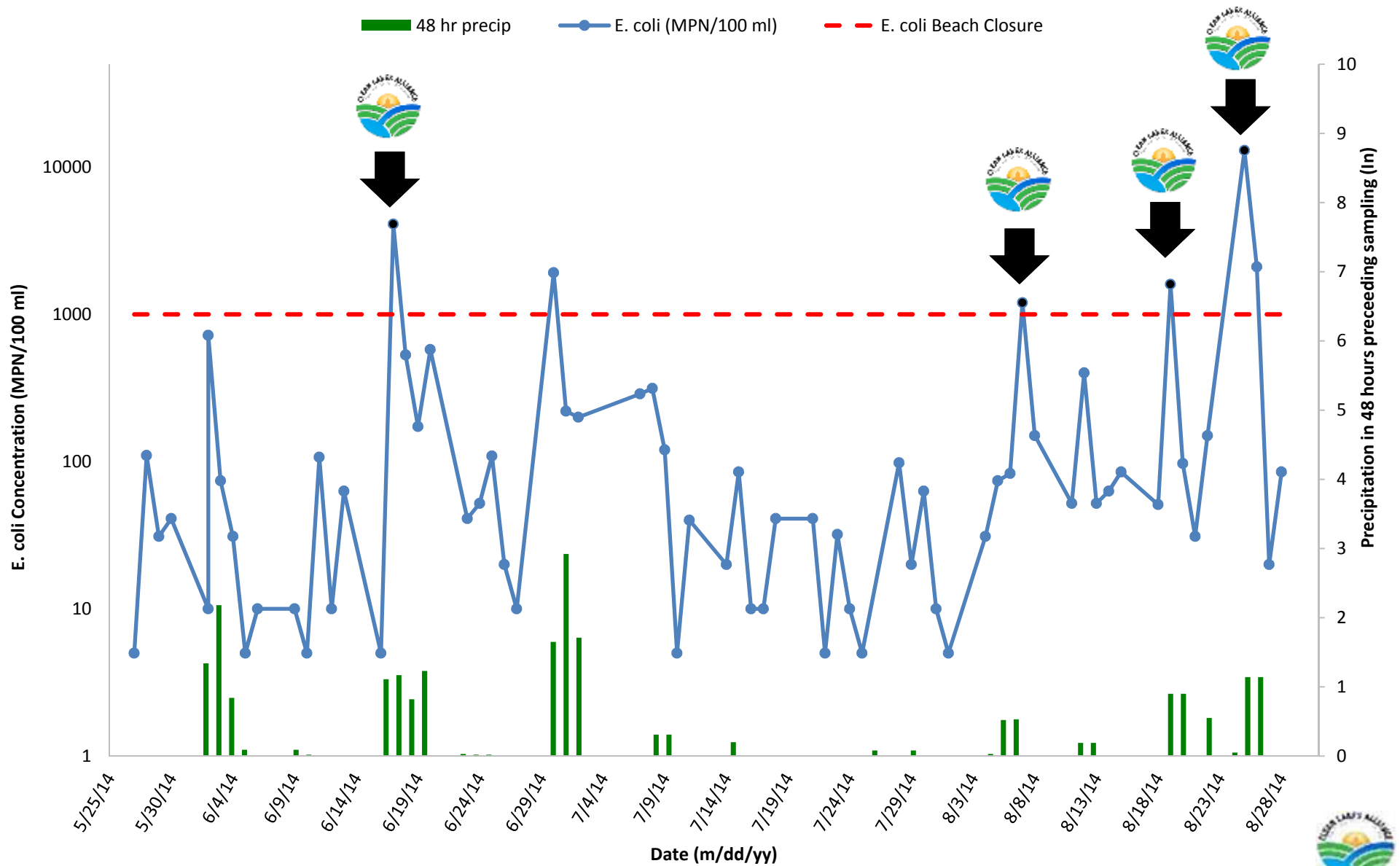
# Beaches

- Purpose
  - Increase confidence in beach safety through *E. coli* bacteria monitoring
- Parameters
  - 2013, 2014, 2015

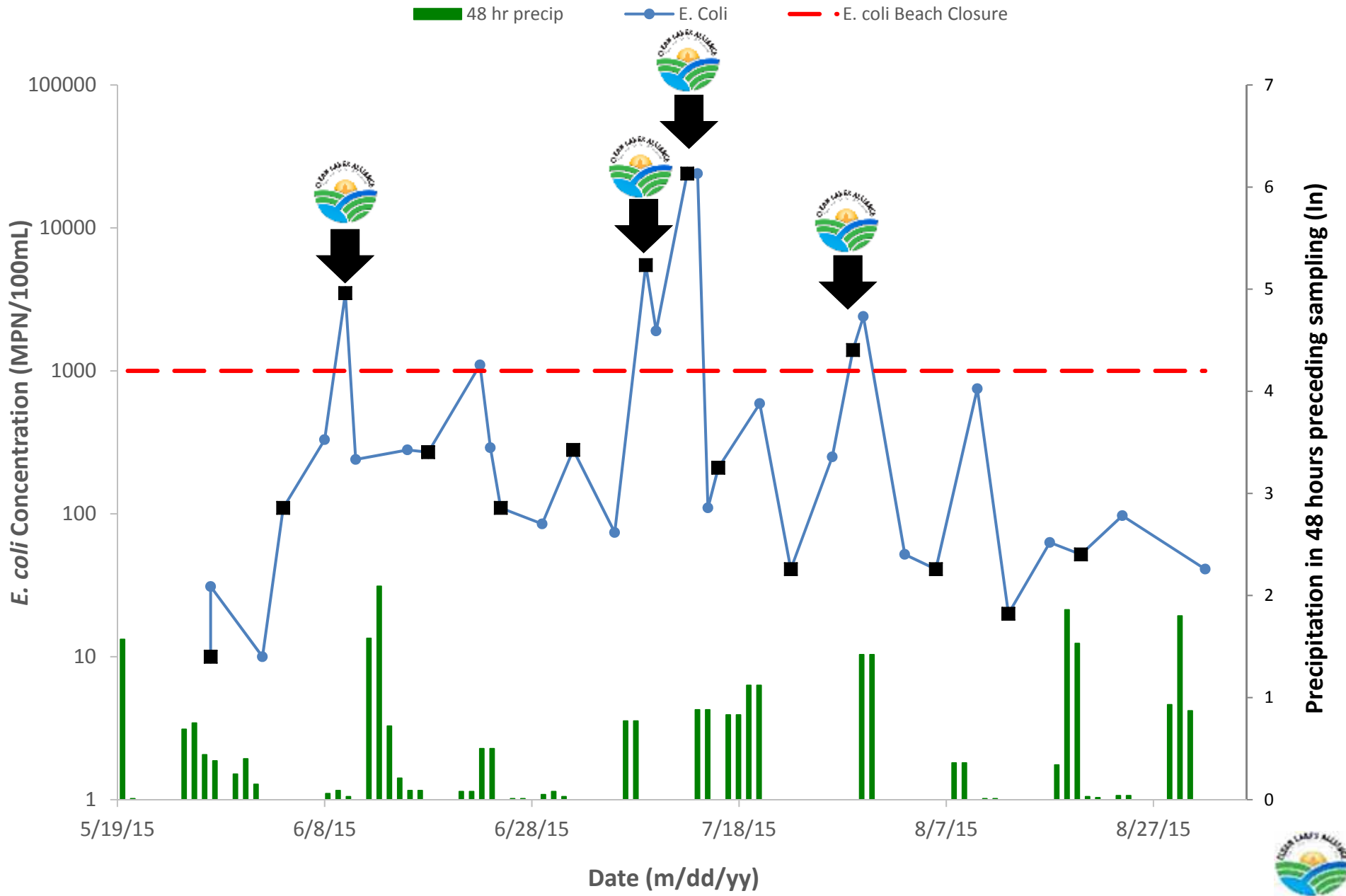




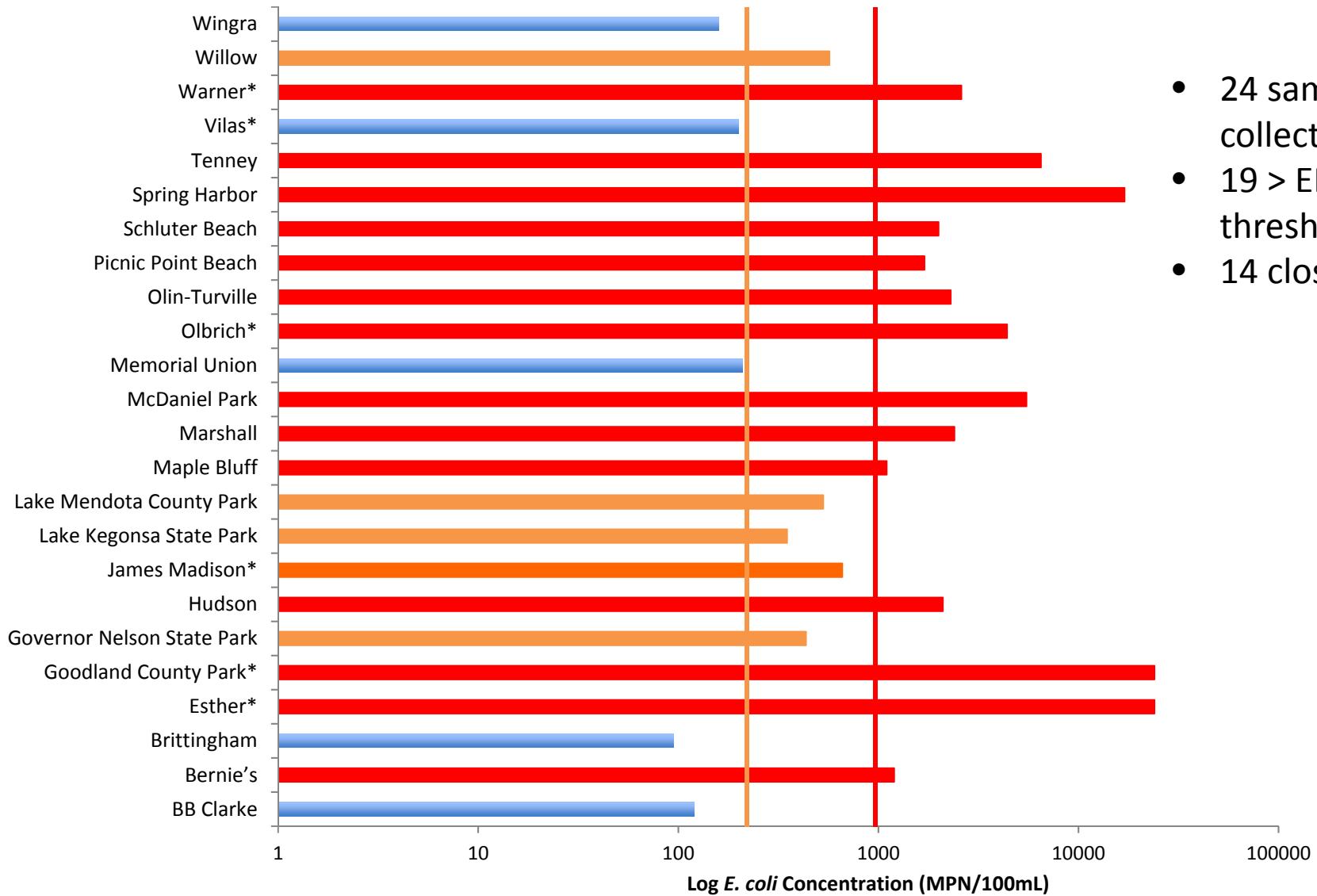
# James Madison Beach 2014 *E. coli* Data



# Esther Beach 2015 *E. coli* Data



# Post-Rain Monitoring Blitz: July 13, 2015

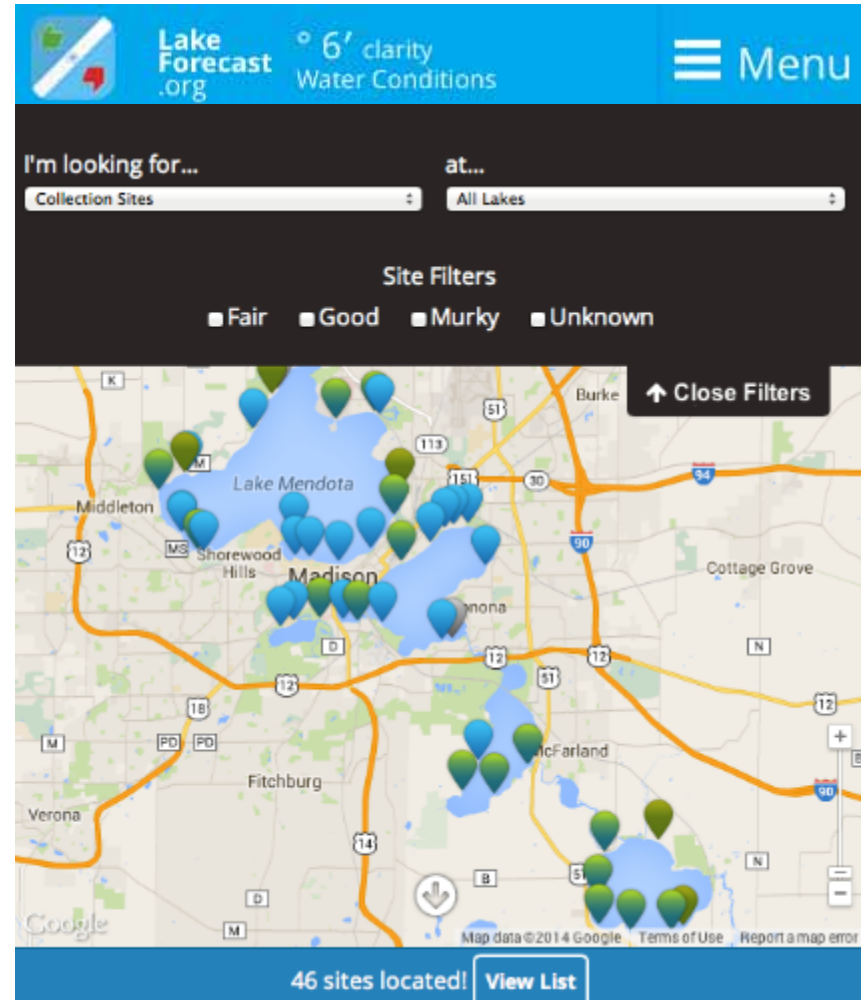


- 24 samples collected
- 19 > EPA advisory threshold
- 14 closures



# End-of-Pier

- Purpose
  - Collect data that may be useful in modeling the formation and movement of blue-green algal blooms
- Parameters
  - Weekly



# Visual Observations



Surface Algal Bloom (click one)

1



None

2



Some clear evidence

3



Strong extensive evidence

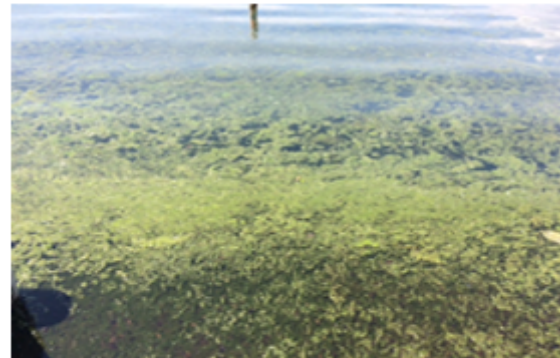
Select bloom type:

Blue-Green



Bluish green tint, paint, oily-like appearance

Green

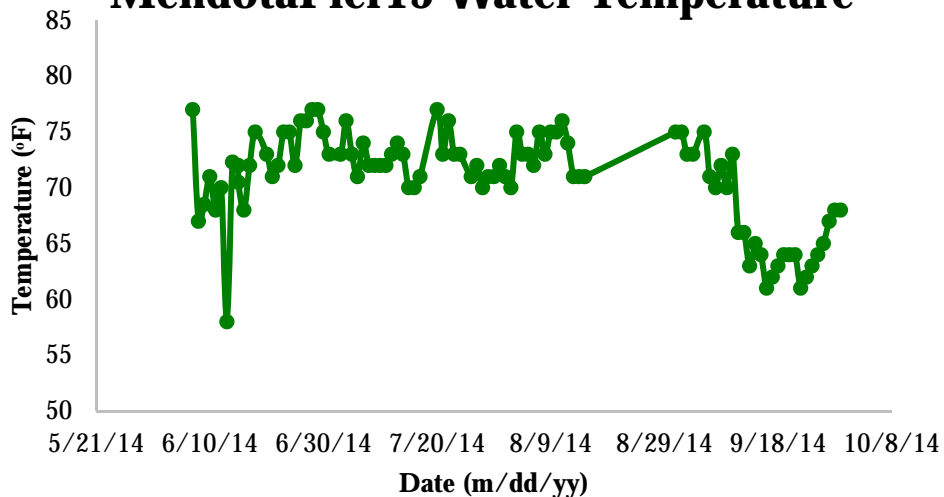


Green in color, filamentous, plant-like hair-like strands

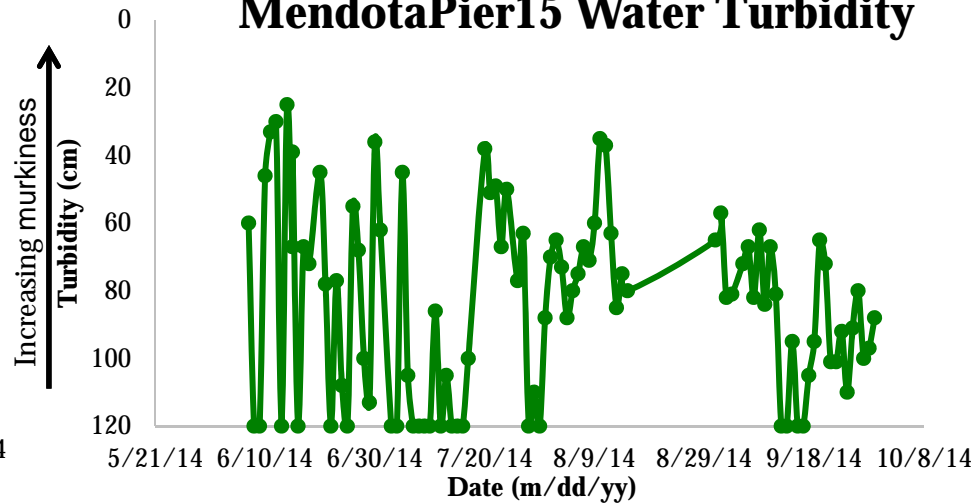
# MendotaPier15 Results



## MendotaPier15 Water Temperature



## MendotaPier15 Water Turbidity



Data Summary	MendotaPier15	Lake Mendota
Number of Observations	95	455
% of Observations When Algae Present	6.3%	13%
Average Water Turbidity	83.9 cm	87 cm
Average Water Temperature	70.8 °F	73.5 °F
Average Total Phosphorus	0.059 mg/L	0.064 mg/L

Sunday, June 14, 2015



Wednesday, June 17, 2015



The water is so clear  
you can see the sand.

Photo credit: Scott Resnick



# Plans for Future

- Near-shore
  - Beaches
  - End-of-Pier
- Off-shore
- LakeForecast.org
  - Crowdsourcing





# 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  
Juliette Schick  
Ken Walz  
Kitty Brussock  
Laura Graham  
Leigh Meier  
Mark Jung  
Mel McCartney  
Mike Horn  
Parker Waller  
Robert Gilbert

Tom Smith

Sasha Kerlow

## Monitors

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Andy Kajcsaracz  
Bill Lamm  
Brenda Bird  
Bowen Prince  
Caitlin Soley  
Carla & Glen Schubert  
Carol Gillen  
Carolyn Betz  
Craig Ostrom  
Daniel Adams  
Dea Larsen Converse  
Deanna Letts  
Debbie & Eli Durcan  
Eric Christenson  
Jerry Jendrisak  
Jim Cordray  
Jim Wilcox  
Josie & Peter Cyffka  
Junalee Ly

Karen Faller

Ken Xavier

Kirk & Betsy Swenson

Madeline Murphy

Matt Melvin

Natalie Marshall

Rhonda Arries

Sarah Balz

Silke Schmidt & Dan Phaneuf

Theresa Vander Woude

Woody Kneppreth

Zak Redding & Kirsten Johnson

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Kirsti Sorsa

Mark Gahler

Pat Gorski

Paul Block

Paul Hanson

Phil Gaebler

Steve Carpenter

Tim Asplund

## Partners

City of Madison

Dane County

MIOsoft

Public Health Madison & Dane County

UW-Madison Center for Limnology

UW Space Science and Engineering Center

UW-Madison Morgridge Center

Wisconsin DNR

Wisconsin State Laboratory of Hygiene

## CLA Intern

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