

# Lake Berryessa Boater Outreach Program

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Chris Lee & Alex Rabidoux,  
Solano County Water Agency



# Eurasian Mussels

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**Zebra Mussels** (*Dreissena polymorpha*)



**Quagga Mussels** (*Dreissena rostriformis bugensis*)



**Golden Mussels** (*Limnoperna fortunei*)

# Eurasian Mussels

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Lake Erie, Sterling Beach

# Eurasian Mussels

Colorado River Aq.  
- Lake Havasu



**Whitsett Intake Trash Racks**  
**3.5" Opening**

**12/17/07**

**3/4" steel trash racks**

# Eurasian Mussels

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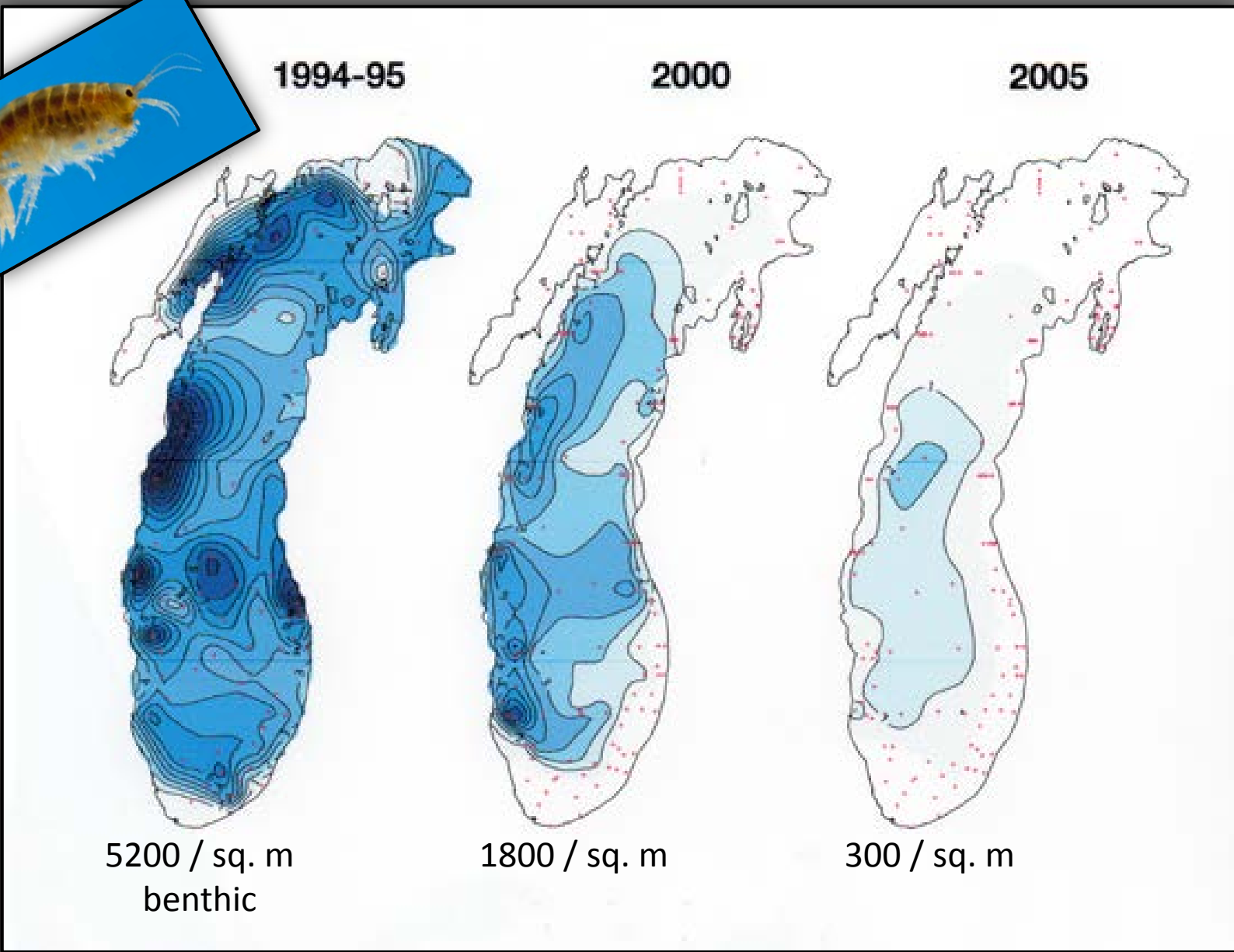


# Eurasian Mussels



*Diporeia*  
(zooplankton)

*Significant decline  
w/mussels*



5200 / sq. m  
benthic

1800 / sq. m

300 / sq. m

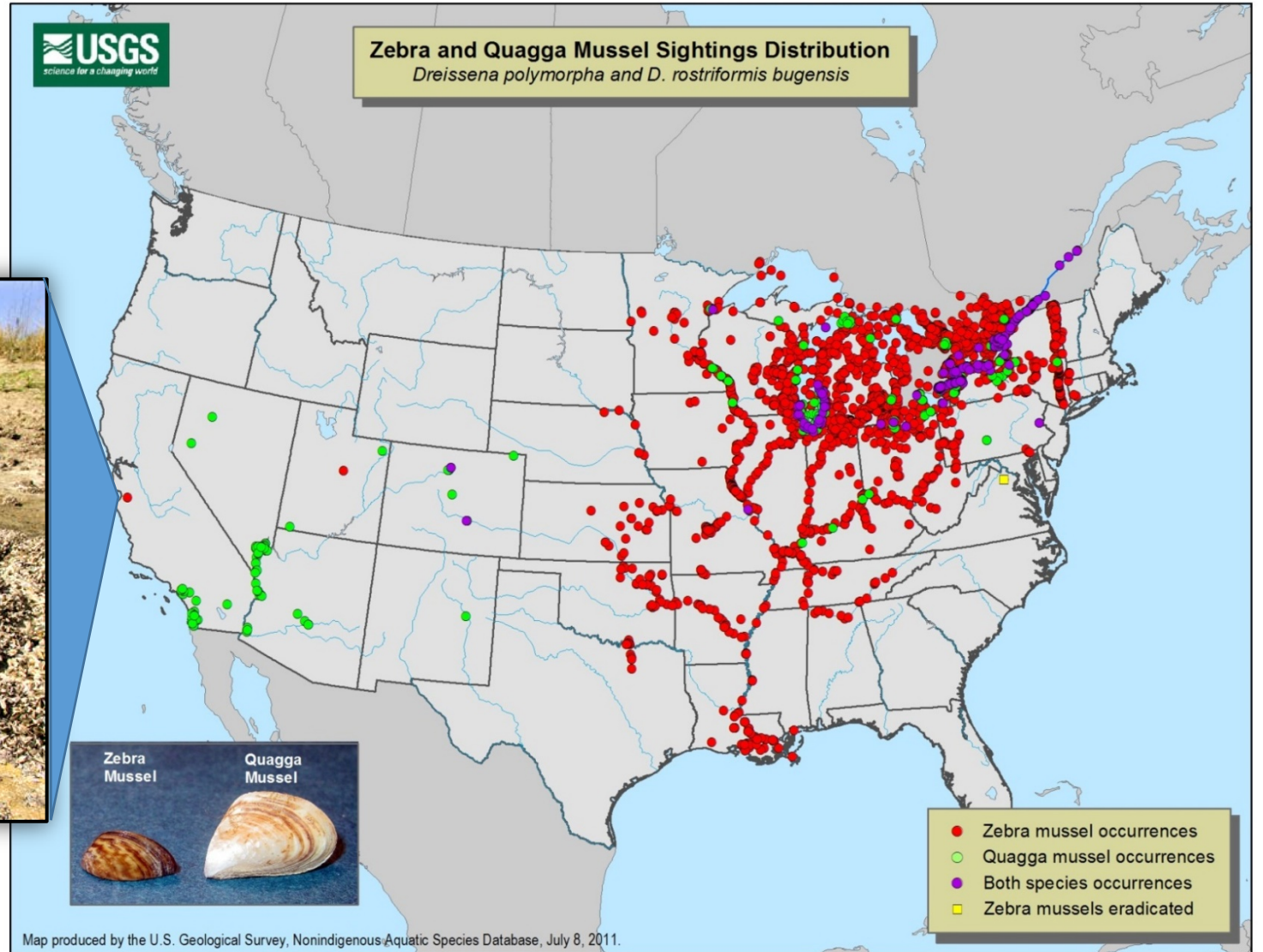
# Eurasian Mussels

## San Justo Reservoir

- Hollister, CA

- 100-120 miles from

Lake Berryessa / Solano Project



# Eurasian Mussels

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- Lake Berryessa has “Optimal” water quality for the Quagga Mussel

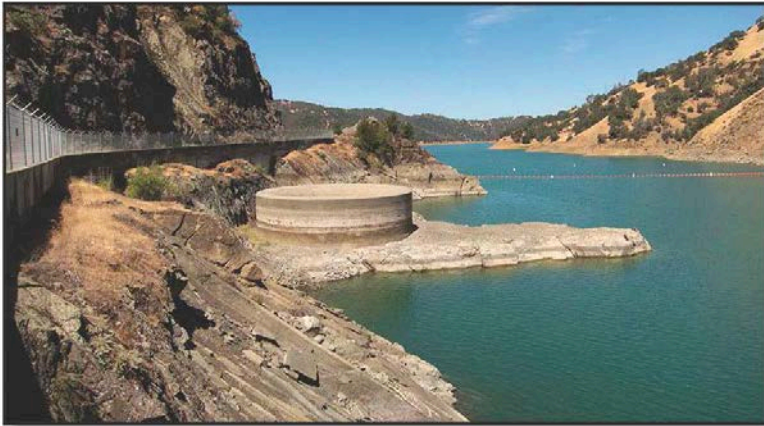
Constituent	Optimal Level	Lake Berryessa
Calcium	12-28 mg/L	19.2 (Moderate)
pH	7.4-9.5	8.3 (High)
Total Phosphorous	5-50 ug/L	7.8 (Low)
Secchi Depth	0.1-8 m	5.3 (Low)
Dissolved Oxygen	3-8 mg/L	-
Mean Summer Temp.	6-32 C	20.7 (High)
Conductivity	30-110 us/cm	320 (High)



# SCWA Mussel Plan

October 2014 Update

## SOLANO PROJECT



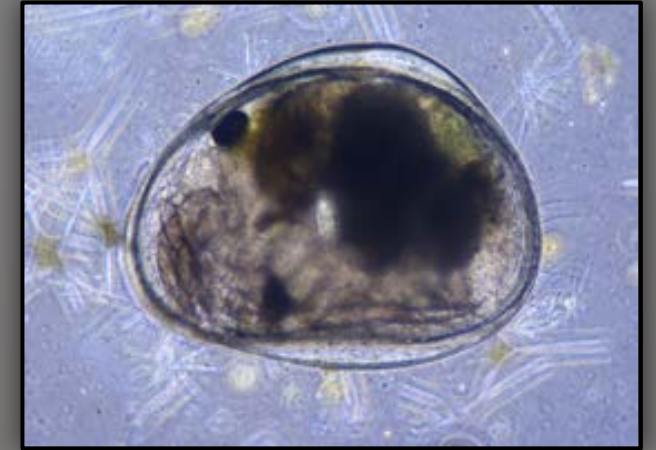
### Early Detection & Education Plan for Eurasian Mussels

Solano County Water Agency  
810 Vaca Valley Parkway, Suite 203  
Vacaville, CA 95688

October 1, 2014  
(Update)



Monitoring



Layered Science



Inspection



Education

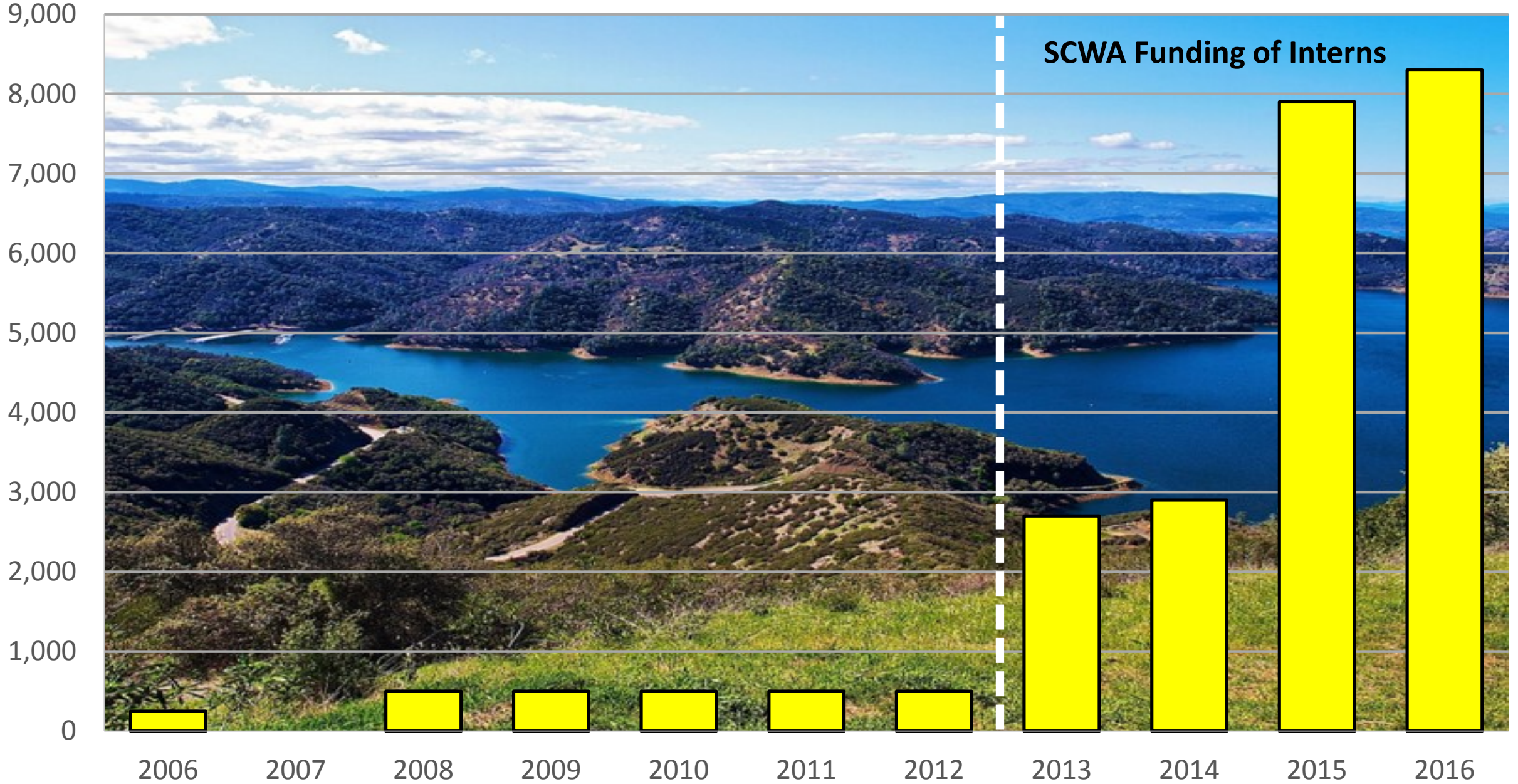
# Lake Berryessa Outreach Program

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- **Part of the Lake Berryessa Watershed Partnership (1999)**
  - SCWA, USBR, Solano RCD, Solano County/Cities, Napa County, and others
  - Solano RCD provides lead role for Partnership (but funded by others)
  - Solano RCD involved in education and land stewardship throughout Solano County
  
- **Lake Berryessa Outreach (LBO) Program**
  - Program started in 2006
  - In 2006 (1-part time intern, 3 mo)
  - In 2015 (11-full time intern, 5 mo)
  - Starting in 2012, SCWA began hiring/funding LBO Interns
  - In 2015 received DBW Grant, allowed further expansion of the LBO program
  - Have applied for 2016-2017 DBW Grant



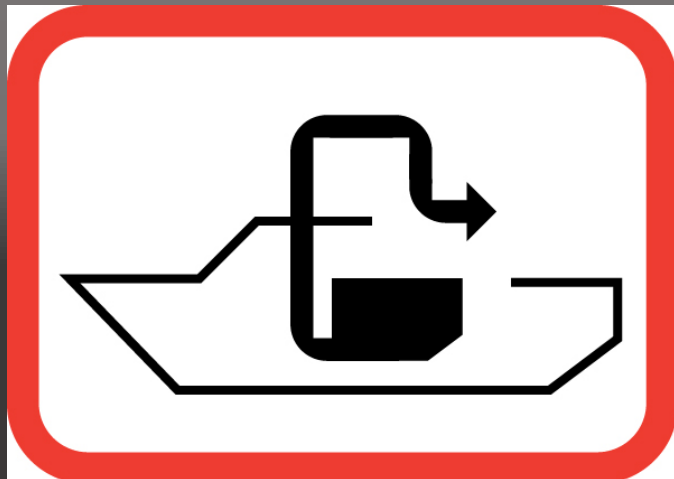
# Lake Berryessa Outreach – Intern Hours per Year



# Lake Berryessa Outreach Program

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- Main focus of the LBO Program (Education / Outreach)
  - Water Quality (500,000 people; 75,000 acres irrigated land)
  - Clean Boating Practices (Pump Out / Bilge Pad)
  - Bilge Pad Program (Oil Grant Funding)
  - Invasive Species, Mussel Inspection
  - Participate in World Environment Day & Coastal Cleanup Day



# The Summer 2015 Interns



Robert Eggers

Shaina Meiners

Kayla Salazar

Devin McHugh

Natalie Guzman

Sherman Peng

Andy Qutami

Justin Pascual

Daniel Jara

Edward Chan

Brenda Gonzales

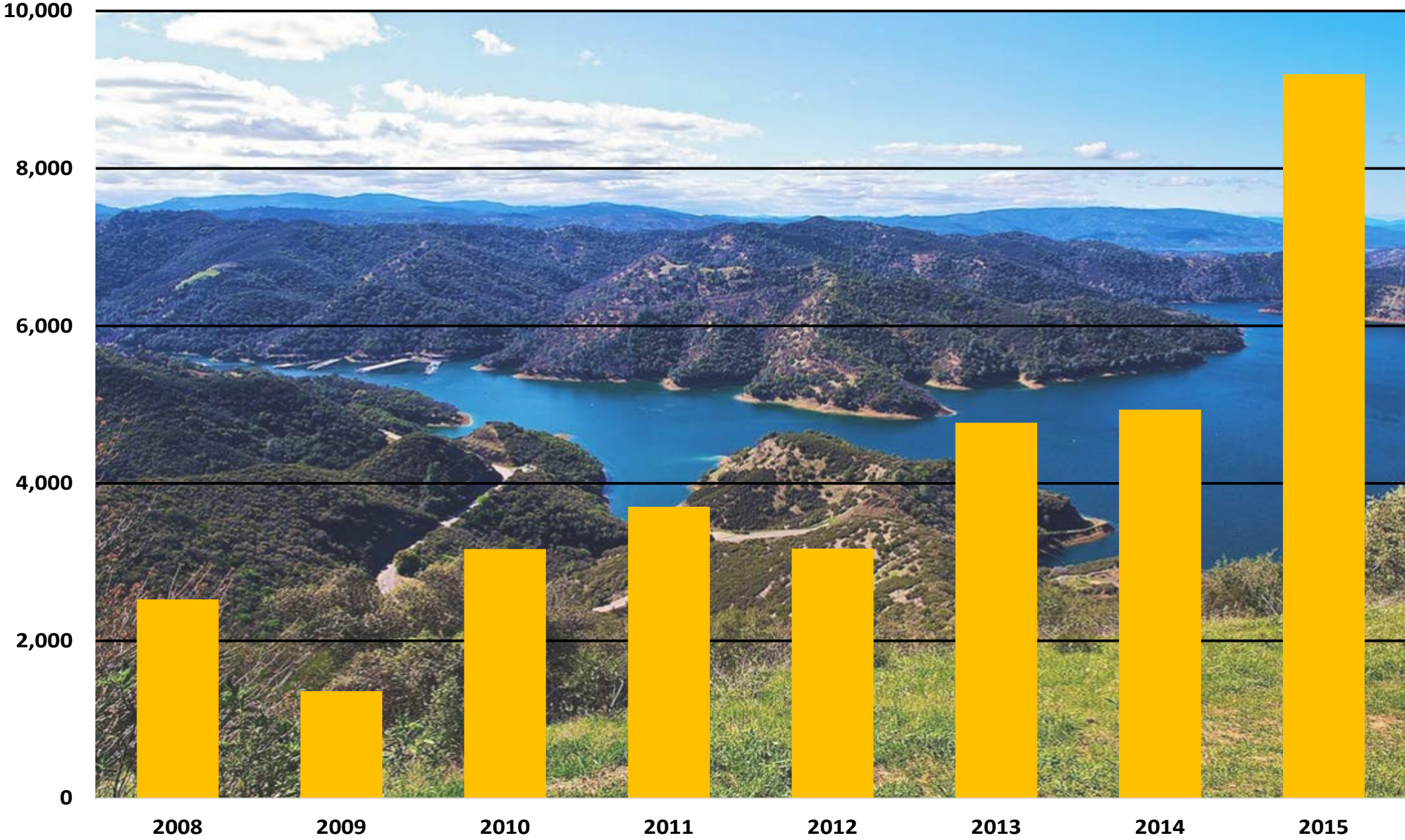
# Lake Berryessa Outreach – Accomplishments

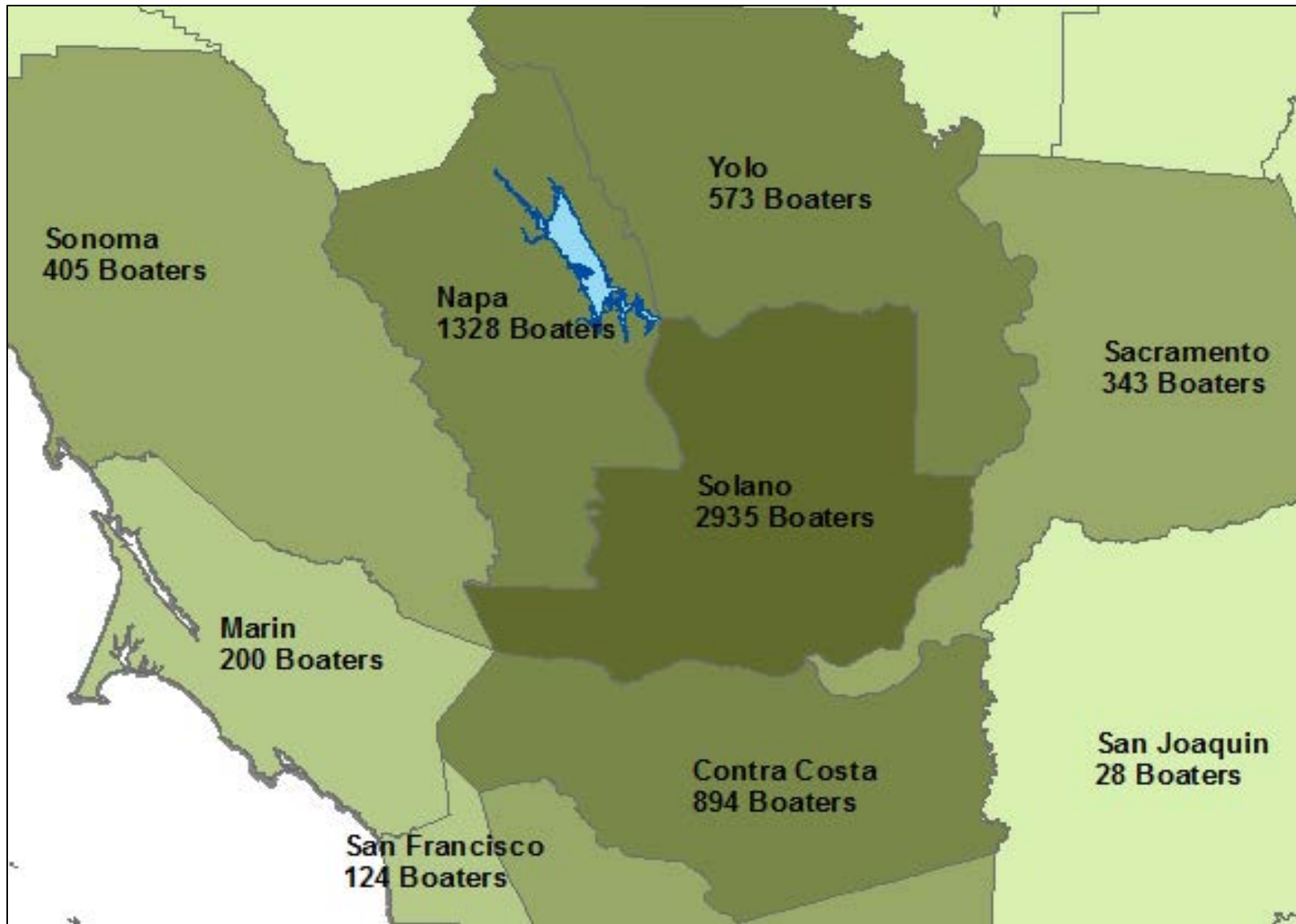
- Screened **9,197** Boats for Invasive Mussels
- Conducted **1,587** Boater & Recreator Surveys (Voluntary)
- Distributed **1,797** Bilge Pads
- **6** potentially infested boats



# Lake Berryessa Outreach Program

Total # of Contacts Made





## BOATER COUNTIES

- Solano (2,935)
- Napa (1,328)
- Contra Costa (894)



# Future Steps

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- Continuation of LBO Program
  - Several improvements for 2016-17 (DBW Grant)
- Challenges/Opportunities
  - Jurisdiction
  - Partners
  - Funding