



Wildlife Survey & Photo Service

2443 Fair Oaks Blvd. # 209 • Sacramento, CA 95825 • (916) 747-8537

REPORT 4539

Lake Berryessa Mussel Surveys



August 15, 2013

To: Chris Lee
Solano County Water Agency

Regarding: *Eurasian Mussel Surveys - Lake Berryessa - January - July 2013*

Report:

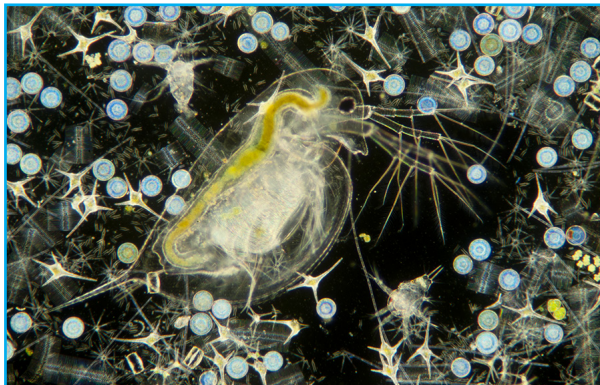
I have provided below a brief description of the survey protocols with sites and dates conducted in the first six months of 2013. This information is for Eurasian Mussel Surveys in the Lake Berryessa Sector of the Solano Project. The funding and assistance for the Lake Berryessa Sector also includes training and certification of Watercraft Inspectors that includes USBR Staff, Lake Berryessa Concessionaires, and SCWA Interns. **KD**



Subsurface Image clipped from video examination of bottom of Capell Cove.

SUBSURFACE VIDEO - NEW

I've added subsurface video inspections of high risk sites - such as the Capell Public Launch Ramp because it is relatively inexpensive, quick, and highly effective. The two-foot boulder on the left was recorded at a depth of 7.5 feet below the Capell Boat ramp. I've examined a wide variety of subsurface video taken in Lake Mead and in the Great Lakes and believe that the technique is effective at locating a mussel infestation.



Plankton image from specimen collected in Lake Berryessa. Shows water flea (*Daphnia*) and several species of algae.

PLANKTON COLLECTION & EXAMINATION

Plankton is collected using standardized collection protocols under the auspices of my DFW Scientific Collection Permit. All samples are preserved and examined using standardized laboratory techniques within 12 hours of the collection. Suspect samples are compared to Plankton Image Library developed for the Lake Berryessa Sector of the Solano Project.



Section of colonization tree that was deployed on the houseboat dock at Markley Cove Marina. The devices are locked to avoid theft and vandalism.

ADULT MUSSEL: COLONIZATION PLATES

Colonization plates - also called colonization trees - have been placed (hung) from strategic sites at Lake Berryessa marina docks. The colonization trees are typically a mix of materials that are strung on aircraft cable, rope, or chain to extend the selection of materials to 30 - 50 feet depth. All plates are placed with the knowledge and cooperation of the Marina management and the USBR.



Gas dock, cables, and banks at Markley Marina.

VISUAL INSPECTION - INFRASTRUCTURE AND BANKS

On a regular basis, the existing infrastructure, such as banks, docks, cables, cobble etc., are checked for the presence of adult Eurasian mussels.

EURASIAN MUSSEL SURVEYS - LAKE BERRYESSA

Date	Collection No:	Sub-Site	Survey Type	Results
1/8/13	4338-17A	Capell Launch Ramp	Plankton Tow	Negative
		Capell Cove	Visual: Banks	Negative
1/9/13	4342-17E	Pleasure Cove Marina	Plankton	Negative
		Pleasure Cove	Visual: Infrastructure & Banks	Negative
1/14/13	4345-17	Steele Canyon Docks	Plankton	Negative
		Steele Canyon	Visual: Infrastructure & Banks	Negative
1/17/13	4351-17	Putah Creek Canyon	Plankton	Negative
		Putah Creek Canyon	Visual: Infrastructure and Banks	Negative



1/17/13	4353-22M	Monticello Dam	Visual: Banks, plates, Boulders	Negative
2/12/13	4372-17A	Capell Launch Ramp	Plankton Collection & Examination	Negative
	4372-17A-2	Capell Cove	Visual: Banks, infrastructure	Negative
	4372-17A-3	Capell Cove	Video: Subsurface Video exam	Negative
2/12/13	4373-17X	Markley Cove	Hyw. 128 Fishing Banks	Negative
2/12/13	4374-17B	Markley Cove (Dock E)	Plankton Collection & Examination	Negative
	4374-17B-2	Markley Cove	Colonization Plate Exam	Negative
	4374-17B-3	Markley Cove	Visual: Docks, hydrolift, banks	Negative
2/15/13	4377-17B	Markly Cove (Dock D)	Plankton Collection & Examination	Negative
	4377-17B-2	Markly Cove	Visual: docks, hydrolifst, banks	Negative
	4378-17B	Markley Cove (Dock B)	Plankton Collection & Examination	Negative
	4379-17B	Markley Cove (HB Dock)	Repair & Reinstall plates	Negative
3/5/13	4380-17X	Oak Shores	Plankton Collection & Examination	Negative
	4380-17X-2	Oak Shores	Visual	Negative
3/6/13	4395-17A	Capell Cove	Plankton Collection & Examination	Negative
3/13/13	4400-17G	Management Docks	Plankton Collection & Examination	Negative
	4400-17G-2	Management Docks	Visual: Docks, banks	Negative
3/18/13	4405-17B	Markley Cove	Colonization Plate check	Negative
	4406-17B	Markley Cove Gas Dock	Plankton Collection & Examination	Negative
3/28/13	4411-17F	Steele Canyon Docks	Plankton Collection & Examination	Negative
3/28/13	4411-17F-2	Steele Canyon Docks	Visual	Negative
3/28/13	4412-17B	Markley Cove	Plankton Collection & Examination	Negative
	4413-17BA	Markley Cove Banks	Visual	Negative
4/12/13	4418-17E	Pleasure Cove (A,B,C)	Plankton Collection & Examination	Negative
	4418-17E-2	Pleasure Cove (A,B,C)	Visual: Docks, banks, infrastructure	Negative
4/12/13	4419-17B	Markley Cove	Plankton Collection	Negative
	4419-17B-2	Markley Cove	Visual	Negative
4/24/13	4425-17A	Capell Cove Ramp	Plankton Collection & Examination	Negative
	4425-17A-2	Capell Cove Ramp	Visual: Banks, infrastructure	Negative



5/2/13	4429-17	Steele Canyon	Plankton Collection & Examination	Negative
	4429-17-2	Steele Canyon	Visual: Banks, docks, infrastructure	Negative
5/9/13	4433-17A	Capell Launch Ramp	Plankton Collection & Examination	Negative
	4433-17A-2	Capell Launch Ramp	Visual: Banks	Negative
5/9/13	4433-17A-3	Capell Launch Ramp	Video: Subsurface exam of bentos	Negative
5/22/13	4448-17B	Markley Cove	Colonization Device Check	Negative
5/22/13	4449-17B	Markley Cove	Colonization Device Check	Negative
	4450-17B	Markley Cove	Plankton Collection & Examination	Negative
6/6/13	4471-17E	Pleasure Cove	Plankton Collection & Examination	Negative
	4471-17E-2	Pleasure Cove	Visual: Banks & Infrastructure	Negative
6/6/13	4472-17B	Markley Cove	Plankton Collection & Examination	Negative
	4472-17B-2	Markley Cove	Visual	Negative
6/20/13	4488-17A	Capell Cove	Plankton collection & Examination	Negative
	4489-17A	Capell Cove	Video: Examine benthos	Negative
	4490-17B	Markley Cove	Colonization Device Check	Negative
	4491-17B	Markley Cove	Plankton Collection & Examination	Negative
6/27/13	4496-17B	Markley Cove	Plankton Collection & Examination	Negative
7/11/13	4503-17A	Capell Cove	Plankton Collection & Examination	Negative
	4503-17A-2	Capell Cove	Visual: Banks 7 Infrastructure	Negative
	4505-17E	Pleasure Cove	Plankton Collection & Examination	Negative
7/18/13	4510-17G	Headquarter's Dock	Plankton Collection & Examination	Negative
	4510-17G-2	Headquarter's Dock	Visual: Banks, docks, boat hulls	Negative
7/18/13	4512-17D	Putah Creek Canyon	Plankton Collection & Examination	Negative
	4512-17D-2	Putah Creek Canyon	Visual: Docks, banks.	Negative
7/24/13	4534-17B	Markley Cove	Plankton Collection & Examination	Negative
	4534-17B-2	Markley Cove	Visual	Negative
	4535-17B	Markley Cove	Colonization Plate check Dock E	Negative
	4536-17B	Markley Cove	Launch Ramp: Visual	Negative



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Submitted 8/18/13 via e-mail:

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