

Zebra Mussel Volunteer Monitoring Program

Progress Report

Project period: January 1 through June 30, 2005

Submitted to:

Pacific States Marine Fisheries Commission

Submitted by:

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**Zebra Mussel Substrate Project:
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for
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Existing volunteer monitors

There are currently 106 active volunteers monitoring 233 substrates in the states of Arizona, California, Colorado, Idaho, Montana, Nebraska, Nevada, North Dakota, Oregon, South Dakota, Utah, and Washington (See map at end of report). No zebra mussel sitings were reported on the substrates during the project period. A zebra mussel veliger (larval stage) sampling program has been developed and initiated for the Columbia and Snake Rivers by the US Army Corps of Engineers and the CLR at Portland State University.

New volunteer recruitment

A total of 58 new zebra mussel substrates were sent to 29 new volunteers between January 1 and June 30, 2005 (Table 1). Many of these substrates have been sent to volunteers but the volunteer monitoring status remains 'inactive' because required documentation has not yet been returned to the Center for Lakes & Reservoirs. The greatest percentage of new substrates was sent to California and Idaho (55%, 36%, respectively). Oregon received 5% while Washington received 3% of the new substrates. Seventy-two percent (21) of the new volunteer monitors are from California, 10% (3) are from Oregon, 10% (3) are from Idaho and the remainder (2) is from Washington. Fifty-two percent (15) of new volunteers are private marinas. Water and power companies and private citizens each represent 17% (5) of the new volunteers. Government agencies and private organizations each comprise 7% (2) of the new volunteers. The Columbia River Basin received 24 new substrates, 21 of which went to volunteers on the Snake River and 3 to volunteers on the Columbia River. The Colorado River Basin received 2 new substrates. The San Joaquin-Sacramento River Delta received 14 new substrates. Water and Power companies were contacted to assist with monitoring in southern California and this resulted in some confusion regarding the number of substrates placed in each river basin. The water supplied to

southern California originates either in the San Joaquin-Sacramento River Delta or the Colorado River. Substrates were sent to two coastal watersheds and lakes in northern California as well.

A statewide monitoring and reporting strategy has been developed for California that ensures collaboration with national and regional zebra mussel monitoring. The California Department of Water Resources (DWR) has had a monitoring program in place in the Sacramento-San Joaquin River Delta that will be maintained by the DWR. The CLR is recruiting new volunteers in areas not being monitored within the DWR program. The areas of focus include the San Joaquin-Sacramento River Delta, coastal watersheds and the Colorado River Basin.

In addition to expanding substrate monitoring for adult zebra mussels in California, the CLR is developing a veliger monitoring strategy, focusing on the highest risk areas of California (San Joaquin-Sacramento River Delta and the Colorado River Basin). Veliger sampling does not replace substrate monitoring but enables more thorough presence/absence monitoring in especially high risk areas. A veliger sampling program was initiated for the Columbia River Basin this year and will continue through the summer of 2005.

The CLR is responding to concerns raised by volunteers about California Department of Fish and Game Restricted Species Laws and Regulations, Section 671 through the development of a 'Letter permit'. This process is underway and mitigates legal concerns without requiring each individual volunteer in California to obtain a 'Scientific Collector's permit'.

Table 1: Distribution of new substrates and new volunteer monitors in 2005

State	# New substrates	%*	New volunteers	%*	# 'Activated' volunteers**
California	32	55	21	72	4
Idaho	21	36	3	10	1
Oregon	3	5	3	10	1
Washington	2	3	2	7	0

* Percentages rounded to whole numbers

**Number of volunteers that have completed documentation after receiving substrate and are in database

Public Outreach and Education

A recruitment brochure for the Zebra Mussel Monitoring Network, “Keep the West a Zero Zebra Zone” was developed, printed in December 2004, and is being distributed. “Zebra Mussel Watchcards” were modified for distribution in California by adding the DWR hotline for zebra mussel sightings. Information, including brochures (“Keep the West a Zero Zebra Zone”, “Zap the Zebra” and “Threats to the West”), Watchcards (New Zealand mud snail, zebra mussel), and journal articles have been sent to marinas, private citizens and private organizations. For example, ANS brochures were given to a volunteer that distributed information while guests were onboard the M.V. Sea Lion, a cruise ship in Washington.

The new ANS sign “Stop Harmful Species” is being distributed and posted in Oregon, typically at boat landings next to other boater information notices. A field technician has been hired by the CLR to expedite this process. Zebra mussels are one of the invasive aquatic species pictured on the sign. Journal articles, brochures (e.g., “Threats to the West” and “Zap the Zebra Mussel”) and other information have been provided to visitor centers, high-school teachers, organizations and interested citizens.

CLR personnel attended a workshop for identifying freshwater mussels in the Pacific Northwest. The workshop provided an opportunity to network additional volunteers for monitoring as well as local resources for information.

The CLR acted as a liaison between the American River Conservancy in California, the USFWS and the University of California-Davis Extension system regarding a native vegetation-landscaping workshop focusing on pesticides and aquatic nuisance species such as zebra mussels and water hyacinth.

Monitoring information was shared with the Willamette Riverkeepers, an organization that has minimally worked with the CLR regarding monitoring activities on the Willamette River. Hopefully, further collaboration can be achieved.

Recommendations

- The Snake River in southern Idaho is poorly represented in the “active” monitoring network. Inactive volunteers will be contacted again to ensure an active status monitoring on the Snake in southern Idaho. This will require cooperation with Idaho Power.
- Expansion of adult substrate sampling will continue in California, Nevada, Oregon, Idaho and Washington. The current focus of expansion is California.
- Veliger sampling in California could be incorporated into the volunteer monitoring program if funds for sample analyses, equipment, and travel were available. The San Joaquin-Sacramento River Delta and the Colorado River Basin are the areas being targeted for veliger sampling in California. Development of the FlowCam for veliger samples would facilitate rapid assessment of samples.
- ‘Letter permits” need to be signed and issued to interested California volunteers.
- The Red and Canadian Rivers in south-central U.S. are not included in the monitoring network, but zebra mussels have been found in the nearby Arkansas River. Both of these rivers straddle the 100th Meridian and preliminary results of modeling by Drake and Bossenbroek suggest that these rivers have a high potential for zebra mussel invasion. Volunteer recruitment in the Red and Canadian river systems is recommended.

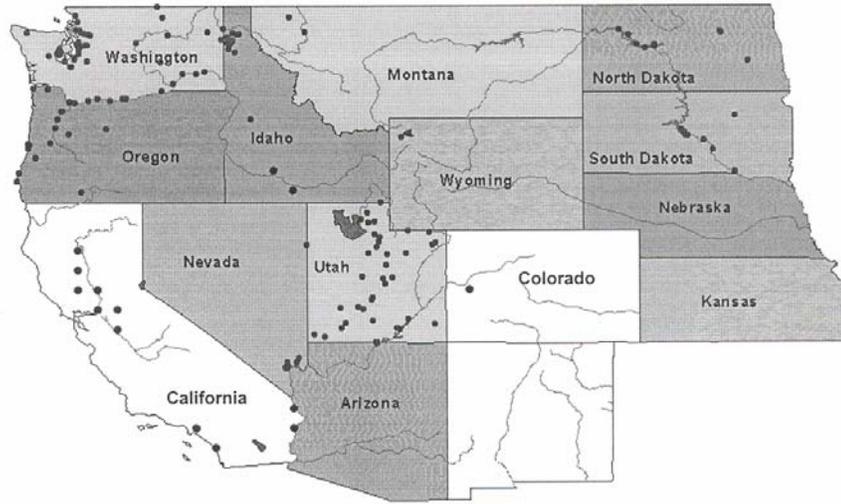


Figure 1: The locations of the 'active' volunteers monitoring for adult zebra mussels via the PVC pipe substrate as of 8/3/05. 'Active' volunteers have contact information entered in the Portland State University Zebra Mussel Volunteer Monitoring Database.