

# KEEP THE SESPE WILD & FREE

The Newsletter of the Keep the Sespe Wild Committee

PO Box 715, Ojai, CA 93024

(805) 921-0618 • [www.sespewild.org](http://www.sespewild.org)

MARCH/APRIL 2014

## QUAGGA MUSSELS LOOSE IN THE SANTA CLARA WATERSHED

Quagga mussels, the most invasive exotic species to be found in rivers and lakes in the U.S., have now become established in the Santa Clara River watershed downstream of Lake Piru, and in Lake Piru itself.

Quagga mussels were discovered in Lake Piru in December 2013, and then in Lower Piru Creek in January 2014. These are the first quagga mussels to be identified in Los Angeles, Ventura or Santa Barbara Counties; previous Southern California locations were limited to waterways connected to Lake Mead and the Colorado River, where they were discovered in 2007.

Keep Sespe Wild is urging our legislators, both state and federal, to work together with the greatest possible speed and efficiency, with the relevant agencies, to develop and implement a plan to try to eradicate the quagga mussels in the Santa Clara River system this year, while their numbers are small.

The quagga's population growth is explosive and the larval stages are both free-swimming and microscopic. Lake Mead has been estimated to contain 320 trillion quagga mussels (between 2007 and 2011). One liter of Lake Mead's water can hold up to 29 veligers (the term for quagga larvae).

While the eradication of quaggas has never yet been accomplished, the quagga cannot survive out of water and moisture for something like 30 days (less in hot summer weather). It is possible that the natural dryness of much of the Santa Clara River, particularly in a third year of drought, may be useful in keeping the quagga mussels from flourishing throughout the lower Santa Clara River. Flow releases from Lake Piru required for the southern steelhead of 20 cubic feet per second would have to be curtailed for a few weeks, to create dry conditions in the creek downstream of Santa Felicia Dam on Lake Piru.

In Lake Piru itself, United Water hired divers to hand pick quaggas from the lake bottom. However, this did nothing at all to remove the free-swimming veligers, which in a warm climate may be produced year round. Each quagga female can produce up to a million veligers every year.

Quagga mussels can eventually cover the entire bottom of a creek or lake, at densities of up to 700,000 per square yard. The aquatic food chain can collapse, lowering dissolved oxygen levels to where fish die off.

The journal *Management of Biological Invasions* (2013) volume 4, issue 1, pages 61-69, states that quagga and zebra mussels "arguably are the most serious nonindigenous biofouling pest introduced to North American freshwaters, and are the world's most economically and ecologically damaging aquatic invasive species."

Quagga mussels readily clog up water supply pipelines. From the above journal article, "Regional economic damages were estimated to four billion dollars over the first 10 years of introduction" (to the Great Lakes) "largely from sport fishery losses."

Prior to the discovery of quagga mussels in Western states, "estimates of the economic costs of mussel infestations of North American raw-water intake systems alone have ranged from 100 million to one billion dollars per annum."

We are watching a tragedy of immense and long-lasting proportions unfolding in the Santa Clara River watershed, and time only plays into the quagga's favor.

Only a prompt, coordinated response involving state and federal politicians and agencies has a chance of halting the spread of quagga mussels through our region and beyond. One blue heron flying from Lake Piru to Lake Casitas with a female quagga mussel on its foot, or one fisherman with a quagga mussel on his waders, could easily infect another body of drinking water.

State agencies have jurisdiction because Lake Piru is part of the State Water Project. Federal agencies such as FERC and NMFS have jurisdiction over flow releases for the southern steelhead from Lake Piru into Lower Piru Creek.

The very welcome heavy rains in late February are certain to have carried quagga veligers downstream from Piru Creek all the way to the estuary of the Santa Clara River at McGrath State Beach.

## UNITED WATER FAILS AT LAKE PIRU

The quagga mussels probably arrived at Lake Piru by way of a boat launching on the lake with quagga mussels from elsewhere already in the engine's cooling system. They can survive out of the water for up to 4 weeks in cool weather.

Currently a boat leaving or arriving at Lake Piru is visually inspected to check that their engine's cooling pipes are drained and dry. This is inadequate as a preventive measure, since there can be up to 2 gallons of water remaining inside a boat engine's cooling system (with quaggas present) even when the drain plug is open.

Casitas Water now requires a 35-day quarantine for new boats arriving at Lake Casitas, enough time for any quaggas on board to die off. Lake Cachuma requires a wash of arriving boats' cooling systems with 140 degree water, to kill any quaggas on board. United Water, at infested Lake Piru, does neither for boats leaving their lake. If United Water had been forward-thinking, they would have had an adequate boat quarantine in place before the quaggas infested Lake Piru, and this current situation would have been easily avoided.

United Water claimed that the turbulence in their outflow pipe that releases water downstream for steelhead flows and for sending water downstream to the Freeman Diversion on the Santa Clara River at Saticoy (that sends water into overdrafted aquifers underground) would kill the quagga veligers released with the flows. Then in Jan. 2014 they found adult quaggas in lower Piru Creek below Lake Piru's Santa Felicia Dam.

United's consultants (who did not return our call) stated that the quaggas would not breed until warm waters in May. They hired divers to hand pick quaggas off the bottom of Lake Piru. Of course, this could do nothing to eradicate the billions of veliger larvae free-floating around the lake. Just last week the divers discovered "an abundance of very small quagga mussels, not seen before".

Now the consultants plan to contain fish that eat quaggas in fish-farm type nets, and move the nets around the lake so the fish will graze the quaggas. And place some sort of cover over gravel areas to deprive the quaggas of oxygen.

Nothing United Water has yet proposed has had any component to deal with the veligers in the lake, to stop releasing veliger-contaminated water from the dam 24 hours a day, 7 days a week, or to address the

contaminated boats leaving Lake Piru regularly. While United can claim to be doing "something", it is clear that so far nothing they have planned can or will have any meaningful effect whatsoever on the quagga's spread around and beyond the lake.

## THE QUAGGA'S LIFECYCLE & SPREAD

The quagga mussel, *Dreissena r. bugensis*, was first found in the Great Lakes in 1989, probably arriving from its origin in the Ukraine in the ballast water of a cargo ship. It is closely related to another invasive *Dreissena* species, the zebra mussel.

Each mussel is either male or female, and the female's one million eggs each year turn into the free-swimming, microscopic veligers within a few days. These cannot swim upstream in a creek current; rather they drift with the water currents for about a month while looking for suitable substrata (rocks or sand grains), where they settle and attach.

Quagga adults are quite small, nothing like mussels found in the ocean. They are only three quarters of an inch long and are too small to provide much nourishment for a predator. They live for about 3-5 years. Their shells are razor sharp and will slice up your bare feet if you walk on a quagga-infested beach.

The quagga's prolific breeding and its love of warm waters means it is very likely to spread rapidly through local watersheds. Quaggas were first discovered in the Western States in Lake Mead – probably introduced through water in a motorboat's engine cooling pipes – in January of 2007, and by the end of that same year they were to be found in 7 southern California reservoirs further downstream.



Quagga mussels can readily clog up a boat engine's cooling system to where the cooling does not function properly and the engine burns up.

## CALIFORNIA STATE ACTIONS

John Laird, Secretary of California's Natural Resources Agency, wrote to Casitas Water in March 2014, that the Ca. Dept. of Fish & Wildlife (CDFW) has the authority for and an aggressive program to prevent the spread of quagga mussels (in this case, the spread from Lake Piru). This is under Fish & Game Code Sections 2300-2302. They can quarantine a lake's boat traffic to stop boats leaving that may potentially have quagga mussels or veligers on board.

CDFW staff reported that United Water at Lake Piru "is undertaking adequate steps to contain the issue". However, United Water has not quarantined boats leaving Lake Piru, it has not contained the quaggas from spreading downstream into lower Piru Creek and the Santa Clara River all the way to the ocean, and it does not have a CDFW-approved action plan for the quagga issue.

It is questionable that CDFW is being professional about an invasive species outbreak that is now spreading like wildfire around Ventura County. Last month the CDFW told Casitas Water that they were planning a fisheries inspection of Lake Casitas from their own boat, saying they would visit Lake Casitas before going on to Lake Piru. Fine – except that when they arrived at Lake Casitas, they had actually been afloat on Lake Piru only 3 weeks earlier, and had not treated their boat for quagga contamination.

What is more, the CDFW actually has a conflict of interest in taking action on quagga mussels, as their agency depends on the revenue from the sale of state fishing licenses. This statement came from the mouth of John McCammon, then acting Director of the CDFW, at an Association of California Water Agencies conference in May of 2008.

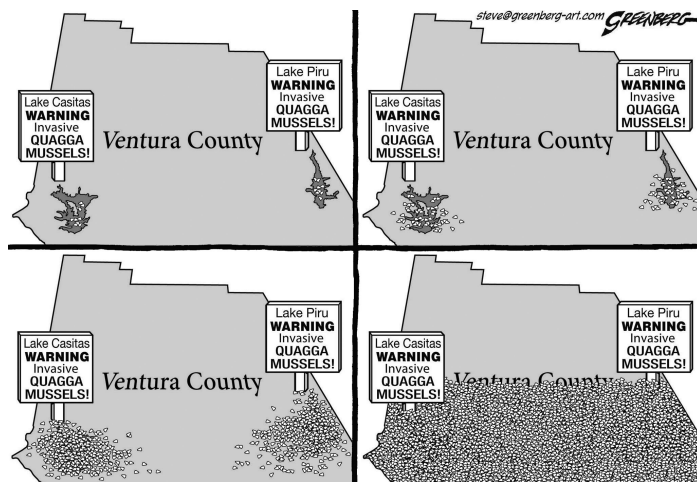
## QUAGGA ACTIONS NEEDED AT LAKE PIRU

The Bureau of Reclamation is evaluating treatment and screening options for preventing quagga veligers from being carried downstream with flow releases from dams. These options must be evaluated for Lake Piru.

Boats leaving Lake Piru must undergo heat treatment of their cooling systems, or quarantines.

Surveys are needed in other parts of the Santa Clara watershed to pinpoint new quagga populations.

Options for the safe and reliable biological control of quagga mussels are beginning to receive research funding, which efforts must be supported. It could be years until these methods may be implemented.



*This cartoon demonstrates the potential spread of quagga mussels from Lake Piru throughout Ventura County.*

## IT'S TIME TO DRAIN LAKE PIRU!

While draining Lake Piru may initially sound drastic, there are some major benefits that are likely only in place this year. We are in severe drought conditions, and Lake Piru now only holds about 17,000 acre feet of water, about 20% of its full capacity of 83,000 acre feet.

There are no expected deliveries of State Water to Southern California this year, because of the drought, and the 17,000 acre feet of water in Lake Piru is only a small fraction of what United Water regularly delivers to the downstream Freeman Diversion for recharging depleted aquifers under the Oxnard Plan.

Drying out the lake would be the most scientifically sound, lowest-cost solution to eliminate the quaggas and veligers in Lake Piru. In our opinion, there is no other option for eliminating them.

This option will not be available if heavy rains fill up Lake Piru next winter. The dry period would have to be determined by biologists with an expertise in quagga mussels, but the period of one month is mentioned in the literature, particularly with the quagga-killing heat of summer.

While there would be mortality of steelhead trout in the lake, and of other fish, this pales in comparison to a future where the fisheries' habitat is diminished by the presence of quagga mussels – forever.

Some sections of the Santa Clara River downstream do not dry out normally. The quaggas would persist there. In other areas where at least one month's summer dryness is common, the quaggas would likely never become permanently established.

**Keep the Sespe Wild**  
**P.O. Box 715**  
**Ojai, CA 93024**

**Address Service Requested**

**U.S. POSTAGE**  
**PAID**  
**OJAI, CA**  
**PERMIT NO. 306**

**Printed on Recycled Paper**

**All Sespe T-Shirts \$16.00**

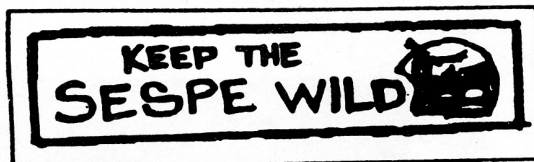
**Our original T-shirts are light blue with the Keep the Sespe Wild logo in five colors.**

**Our newer T-shirts are white with the same five color logo on the back, and with an additional, pocket-sized logo in blue on the left front.**

**Please state white or blue with your order. Sizes are S, M, L, XL and XXL.**

**All 100% cotton.**

**Bumper Stickers \$2.00**



**All prices include tax and shipping. Please include address and a phone number. Allow 2 to 3 weeks for delivery.**

**Send your order and check, made out to KSWC to: Keep Sespe Wild, PO Box 715, Ojai, CA 93024**

**THE REST OF THE NEWS, IN BRIEF**

The Limoneira Company in Santa Paula is beginning the process of a Supplemental EIR for their proposed East Area One housing development on the east bank of lower Santa Paula Creek north of Hwy. 126. This new planning document was agreed in an appeal settlement with KSWC in 2011. It will study the issues of potential flooding, steelhead migration and the size of a creekside setback that will allow for future widening of the east bank of the concrete creek channel there. We shall keep you informed as the Environmental Impact Report is prepared, and on when you may submit public comments.

Please continue to support KSWC's work with your donations, our only source of revenue.

The arroyo toad, a federally-listed endangered species whose Sespe Creek population is second only to that at Camp Pendleton, is being considered by the US Fish & Wildlife Service for a change of protected status from endangered to threatened.

Kitty Benzar of the Western Slope No-Fee Coalition testified in early April in D.C. at House hearings on the future of the FLREA fee legislation requiring fees for access to certain public lands. More on this in our upcoming summer newsletter.



