

## **Pacific Northwest Native Freshwater Mussel Workgroup**

September 27, 2018 1:00-3:00 Pacific Time

Call-in details: dial ((US) +1 774-338-4915. Enter the PIN: 190 729#. Please announce your name/affiliation when you join.

### **Meeting Agenda**

1. Emilie Blevins, Xerces Society— welcome and introductions
2. Emilie Blevins, Xerces Society— updates on recent mussel BMP workshops and recent work on climate change analysis
3. Anndrea Navesky and Matt Hill, EcoAnalysts— recent mussel presentation and discussion of freshwater mussel protection efforts in Idaho
4. Emilie Blevins, Xerces Society— discussion of future mussel monitoring efforts and protocols
5. Meeting attendees— updates on mussel work this season

Attendees: Kevin Aitkin, USFWS; Emilie Blevins, Xerces Society; David Huebert, AECOM; Patty Morrison, USFWS retired; Jennifer Poirier, USFWS; Celeste Searles Mazzacano, CASM Environmental; Al Smith, ODFW retired; Cynthia Tait, USFS; Teal Waterstrat, USFWS; Denise Dammann, Denise Dammann Consulting; Derek Wilson, ODFW; Jodi Bluhm, Samish Tribe; Michele Weaver, ODFW; Ann Gannam, Abernethy Fish Health; Laura Johnson, UO Graduate Student; Jeremy Lees, Bio-Surveys, LLC; Anndrea Navesky, EcoAnalysts.

### **Call Notes**

1. Welcome
2. Updates on recent mussel BMP workshops and recent work on climate change analysis
  - a. BMP workshops: This year Xerces staff and collaborators held 7 mussel workshops (1 in the Alsea basin in OR, 1 in the Deschutes in OR, 3 in the Willamette in OR, 1 in the Salmon in ID; 1 in the Klamath in CA). A total of 165 people registered, and there is 1 more coming up on October 10<sup>th</sup> in Klamath Falls. There is still space. The workshops enabled me to show mussel beds at the Smith Rock die-off site, healthy beds in the Klamath River, pearlshell populations in the mid and upper Willamette, and floater mussels in northeast Portland. Workshops were intended to introduce the BMP guidance, but also intended to introduce people to mussels and spark more interest in conducting surveys. If anyone is interested in collaborating on mussel workshops elsewhere next year, these can continue.

Teal recommended giving a BMP workshop to biologists in WA state working on the expedited fish barrier removal projects.

- b. Climate change analysis project in WA, OR, ID: Xerces received funding to assess the potential for western watersheds to serve as climate refugia for freshwater mussels. The project used NorWeST climate data and publicly-available datasets, plus data from the

western mussel database. The project is described in a short article in the *Wings* newsletter. The report is under revision, and we are looking to have interactive maps on the Xerces website to show where climate refugia may occur. Emilie will share with the workgroup once this is up.

3. Idaho mussel protection efforts: Anndrea briefly discussed an interest in identifying opportunities to increase protections for mussels in ID. Cynthia mentioned that *Gonidea angulata* is now a species of concern on the Salmon-Challis NF. Al mentioned that fishing regulations reach a lot of people so this could be a good route. Teal mentioned that Liz Bockstiegel has pointed out that the HPA process includes protections for fish and shellfish, so this provides another opportunity to include protections during in-water work permitting. Patty mentioned that in eastern states, the Army Corps considers freshwater shellfish in the permitting process. Emilie mentioned that Dave Stagliano was able to get western pearlshell included in MT as restricted for collection. Anndrea and Matt will look into some of these opportunities and follow up with workgroup members to explore.
4. Discussion of future mussel monitoring efforts and protocols: Emilie discussed an interest in developing a better definition of a “mussel bed” for western species for use in monitoring and survey projects. The idea is that we could develop categories of mussel density that would be standardized and could be used to better compare and track mussel densities over time. Similar efforts have already been developed for western pearlshell in Montana (Dave Stagliano’s work) and are in process in Idaho (Doug Nemeth and Joel Sauder). Al said he would be interested to review. The scheme could apply really well to pearlshell and western ridged mussel since they are clumped but floaters are often scattered. Might be a good approach for those species. Laura Johnson mentioned that she has been doing a lot of surveying for mussels, and thinks that categories could be specific enough for comparing over time. Could be used generally as well. She said it is a good idea to develop something like this so that we can make these comparisons. Would be good to have several tiers of mussel sampling. For people contributing to the database, like ODFW (non-mussel specific). Might need to just keep the general count category instead of density since they might not be doing area-based sampling. Cynthia mentioned that there are lots of protocols in the eastern U.S. Suggests having some clear information about the specificity and goal of monitoring. Is the idea to determine trends? Patty also mentioned there are some rapid assessment tools in the eastern U.S. Jeremy brought up his work conducting fish inventories and 20% pool sample. Was interested in whether I could be adapted for use in this kind of sampling. Emilie will look at eastern examples and follow up on these ideas and questions with the workgroup.
5. Updates on Mussel Surveys:
  - a. Al discussed his surveys with Trevor Sheffold at Tualatin NWR, who asked Al to help do surveys on the refuge years ago. He was promoted to Conboy NWR on eastern slope of Mt. Adams. 4 streams that had been on ranches that are now channelized. Found mussels (CA and OR floaters, no juveniles but good size range). Sampling was challenging because of sediment and vegetation. Refuge is aware of their presence. Cynthia asked how sampled. Al said dredge net and sieves on broomstick. Could not see mussels visually. Teal brought up that the area is historically fishless. Al mentioned that there are brown bullhead and speckled dace now. 2 AmeriCorps volunteers are netting them by the thousands. Teal mentioned there are also possibly brook trout. Al said that

yes, they were introduced years ago. Hoped to find western pearlshell there because of the brook trout, but habitat did not look right. Elevation is 1800 feet.

- b. Laura introduced herself as an MS student at UO. She just completed field season last week- targeting effort in South Umpqua basin. Looked at 3 sites where there were older mussel records from the last 20 years. All were western pearlshell. Visited historic sites and spent 5-6 person hours snorkeling. When found, took GPS point and did timed search efforts to calculate densities. When beds were encountered, did transects and .25m<sup>2</sup> quadrats (beds less than 50m<sup>2</sup>). Did representative random sampling in larger beds. Tiller site had a floater mussel bed (108 individuals in <50m<sup>2</sup>). Excavation showed small juveniles. Also found a very large western pearlshell mussel bed (giant bed 900m<sup>2</sup> area, somewhere between high 10s thousands or low 100s thousands) 158 mussels in 1m<sup>2</sup>. She also found juveniles. Documented a western ridged mussel shell on lower South Umpqua. First confirmed WRM in the South Umpqua. Also censused a western pearlshell mussel bed in Cow Creek. Only found Asian clams in the lower South Umpqua—huge density of them but only scattered, patchy western pearlshell mussel beds. Local landowners remembered larger beds. Cynthia asked what kind of substrate? Did you take photos? Laura said larger sized gravel, cobble, and boulders. A little bit of sand along the sides of the banks of the rivers settled into bedrock, also had mussels. mussel density was so high that mussels were squeezed together. Al asked if she looked at size variability. Laura said yes, in quadrats. In upper South Umpqua, much wider range of sizes, including juveniles of both Anodonta and Margaritifera. In lower South Umpqua did see a range of sizes but not exactly juveniles. 4-6 cm in length and big ones. Cow Creek population was mostly young (5-6 cm). Not finding juveniles in excavation but did find 1-2cm size right along the river bank. Easier to find because material more embedded. Al noted that smaller sizes are difficult to find especially in colder water. Often find them on the periphery of the stream. Teal said he had never seen a juvenile ridged mussel. Do they look similar to western pearlshell? Al said that no, they are very distinctive, look like an adult. Derek asked who the main landowner is around the larger mussel bed? Have you told the local biologist about the really large mussel bed? DSL? Want to make sure they know it is out there. Greg Hutchko is the local district fish biologist. Laura said she will be sharing the data with many people, including the FS, BLM, WC, tribes. Will share with DSL too. Good idea- any other thoughts? One side of stream is Roseburg Timber. Other side is also private rural residential. Just downstream of FS land. Tiller RD is nearby. Denise Dammann said she organizes a “hydrology breakfast” in the Umpqua Basin. Monthly presentations- would be great to have you come and present.