

Pacific Northwest Native Freshwater Mussel Workgroup

December 20, 2019; 10:00 – 12:00 Pacific Time

Meeting Agenda

1. Emilie Blevins, Xerces Society— welcome and introductions
2. Patty Morrison, USFWS retired; Teal Waterstrat, USFWS; Kevin Aitkin, USFWS; Emilie Blevins, Xerces Society— discussion of FMCS 2021 symposium and PNW 2020 symposium [recurring agenda item]
3. Discussion regarding adding the Unio and FMCS listserv updates to our PNW emailings
4. Emilie Blevins, Xerces Society and Julie Tyson, WDFW— Mussel die-offs in the news
5. Dave Stagliano, Montana Biological Survey— update on pearlshell gravidity and host infection study, and introduction of graduate student Kristen who is working on in-depth timing of fertilization/embryo development and brooding in pearlshells
6. James Barron and Ann Gannam, USFWS Abernathy Fish Technology

Attendees: Emilie Blevins*, Xerces Society; Patty Morrison, retired USFWS; Kristen Cook, USFWS; Jodi Bluhm, Samish Tribe; James Barron, USFWS; Ann Gannam, USFWS; Al Smith, retired ODFW; Dave Stagliano, Montana Biological Survey; Celeste Searles Mazzacano, CASM Environmental; Jennifer Poirier, USFWS; Elizabeth Bockstiegel, WDFW; Kevin Aitkin, USFWS; Teal Waterstrat, USFWS; Courtney Newlon, USFWS

**note taker*

Call Notes

1. **Emilie Blevins, Xerces Society— welcome and introductions**
2. **Patty Morrison, USFWS retired; Teal Waterstrat, USFWS; Kevin Aitkin, USFWS; Emilie Blevins, Xerces Society— discussion of FMCS 2021 symposium and PNW 2020 symposium [recurring agenda item]**
 - PNW Symposium (**note this symposium was postponed due to the Covid-19 pandemic**)
 - o Following the survey filled out in March, we developed a committee to assist with planning a 2020 regional symposium and the 2021 FMCS symposium. Committee includes: Teal Waterstrat, Kevin Aitkin, Patricia Morrison, Michele Weaver, Alexa Maine, Kate Holcomb, Emily Davis.
 - o Identified a venue that is providing free use (Vancouver WREC).
 - o We have a webpage! Free registration for the event at our pnwmussels.org page (click the link at the top). First call for abstracts and a proposed schedule on the page. Please register and submit abstracts as soon as possible. We want to hear about your surveys, research, and projects. Deadline is January 31, 2020. Early registration ends on February 29.
 - o Seeking additional sponsorships to help offset costs for plenary speakers, provide refreshments, and if possible offset travel costs for some members. Already have

received some donations from Oregon AFS, HDR consulting, and FMCS but additional funds are needed. Sponsorship letter available if folks have someone in mind.

- We will be asking for assistance at the meeting from workgroup members. If you are planning to attend and able to help with registration, poster setup and takedown, or other tasks, please get in touch with me.

Discussion among group indicated that multiple members are planning on attending. Kevin and Teal can put together a poster on the mussel workgroup for the symposium, and Al can bring some older posters from the workgroup as well. Courtney Newlon and Liz Bockstiegel also volunteered to assist at the symposium.

- FMCS Symposium

- Will be held April 11-15, 2021 in Portland, OR at the Double Tree hotel in the Lloyd District. The theme is “Mountains to Sea and the Mollusks Between.” More information will be available in June 2020 on registration costs and the first call for abstracts.

Al noted that he has attended multiple and thinks they are great. This is an opportunity to meet some of the big names in mussel research and conservation.

3. Kevin Aitkin, USFWS— Discussion regarding adding the Unio and FMCS listserv updates to our PNW emailings

Kevin Aitkin: Matthew Patterson said we could add the PNW workgroup listserv to Unio listserv. What do people think about receiving more emails? Celeste asked whether if people subscribed to both, would they receive 2 emails or 1. Patty said many already are receiving 2 emails because it is forwarded to our listserv. Emilie asked if the number of emails people were receiving are overwhelming. Several people said no. Teal: Would we be impacting Unio’s numbers by grouping so many people from the NW together? Kevin said he can ask Matthew. Teal also asked whether subscribing to FMCS would reduce interest from people in our region? Kevin said it could help get information about the group out before the meeting. Emilie said she can ask Jeremy Tiemann about concerns. As no one has asked to be removed from our email listserv, we can probably go ahead and sign up. People can change their email preferences if they are receiving too many.

4. Emilie Blevins, Xerces Society and Julie Tyson, WDFW— Mussel die-offs in the news

Emilie noted that there has been lots of recent press about mussel die-offs in the Clinch River, and reporters reached out to her as well to learn more about observations in the PNW. This was because of a current partnership with USFWS, USGS, UW Madison, and Xerces to sample and investigate mussel die-offs. Workgroup members may remember there was interest by FMCS back in 2017 in observations of mussel die-offs. Al Smith compiled observations from the workgroup and shared on our behalf. Teal also developed a letter with a link to a reporting page to gather more observations from the public and biologists.

In 2014, Ray Kinney reported to the workgroup his observations at Smith Rock State Park, and Al Smith also visited the site to see conditions. Similarly, WDFW staff observed and reported on mussel die-offs in the Chehalis River back in 2015. There is now a partnership between USFWS, WDFW and Xerces to collect information on mussel health and distribution in the Chehalis River and tributaries. The intent is to help understand what is happening at die-off sites and look for relationships with water quality,

population characteristics, and mussel condition. Sampling will begin in 2020. Simultaneously, mussels were collected and sent to the lab in 2018. These mussels have a high incidence of a previously unreported virus that is different from the one detected in the Clinch River and new to science. High association with sick mussels.

Teal added that Curt Holt was the first observer in the Chehalis. Teal is glad that this work is progressing and that the workgroup is in place to answer questions from the public. Patty said the most recent issue of FMBC is dedicated to health and disease, the topic of the FMCS workshop in 2018. Lots of information on mussel die-off research, global in scope. Open access is available from the FMCS website. Patty will send out a link. (here is the link:

https://molluskconservation.org/PUBLICATIONS/FMBC/FMBC_Vol22/FMBC_Volume22-2.pdf

5. Dave Stagliano, Montana Biological Survey— update on pearlshell gravidity and host infection study, and introduction of graduate student Kristen Cook who is working on in-depth timing of fertilization/embryo development and brooding in pearlshells

Dave introduced Kristen Cook at Montana State. Kristen is working with him and Michele Anderson. She just passed comps and presented MS thesis proposal. Chris Barnhart in Missouri is on her committee. This joint project is gathering information on 5 watersheds, 25 populations and conducting multiple revisits to determine reproductive status and timing. Western pearlshell are gravid from Memorial Day to July, and she is looking at influence of stream temperature. Glochidia release is much quicker from brooding point. Host fish are brooktrout, redband, brown trout, cutthroat trout. Several populations are surviving on brook trout.

Kristen is looking at reproductive biology, oocytes to fertilized eggs in marsupium. 2nd year coming up. She is a biologist with USFWS and is hoping to get region involved in MT pearlshell more. She is focusing on 2 of the 5 watersheds. She can look at how fast embryos are developing. Al and Teal said great work. Dave said this project was conceived 4 years ago, and it took this long to get funding.

6. James Barron and Ann Gannam, USFWS Abernathy Fish Technology— update on recent mussel activities

James and Ann work at the Abernathy Fish Tech Center in SW Washington. They have been doing hands on mussel work for 1.5 years now, working with Margaritifera mainly. Started with an interest from ID, and wanted to make sure they could hold mussels. 23 western pearlshell collected from Abernathy Creek. Have not worked on a burrowing study yet, but have been holding and monitoring them. They released glochidia last spring. They inoculated fish and have 1 juvenile produced in captivity that is still alive fed and held only on creek water. Abernathy is not a production facility, but once was so they have the setup to hold and propagate if needed. Have some funding through FWS to work on mussels. Currently looking at a physiology study related to temperature. Collected another 23 mussels to look at hemolymph nonlethally. Looking for stress biomarkers. Treated in higher temps up to 26 C for 5 days. Drew hemolymph and can run multiple tests. More information soon. Will look at cortisol, Tbars, calcium, glucose, etc. Looking to figure out how much they can analyze from the samples. Will analyze in January. Monitoring to see how the mussels recover from hemolymph draw. Original 23 mussels still around except 1 mortality. Also doing nutritional work with western pearlshell. Will do an analysis of creek water and look at algae. Trying to inoculate more fish and produce more juveniles. Were able to

inoculate steelhead and coho, but mussels did not survive on coho. Could have another funding opportunity to hold western ridged mussel to look at condition health indices.

Patty wanted to ask the group if there are other facilities working on grow-out. James said Alexa is the only one he knows of in the West. Abernathy may be able to work on this more. Celeste said Jonathan Young at Presidio Trust has worked on this and that we should invite him to symposium. Patty mentioned that some facilities specialize in propagation and others in grow out. James said propagating has worked but the grow out meant lots of loss. Could be smothered in the silt. Emilie mentioned that Presidio is just *Anodonta*. James invited workgroup members out to see the facility.

7. Discussion of use of mussels and harvest

Teal has heard from people but there seems to be limited examples of harvest. There is an Idaho example of harvest that Emilie found online. Dave wondered if we would support a letter to Idaho to end legal harvest of mussels. Dave did this in Montana. Travis said that is a great idea. Al said it was 20 years ago that he testified before the commission in Oregon. Al said a letter from the workgroup copied to chair of Idaho Fish and Game Commission and to the director, with support from biologists in the state, could be one route. Kevin Aitkin said it would be great to find someone in house to help push this through. Al said it was a smooth process. Dave said Joel Sauder would be a good contact, and it would be worth asking Forest Service and Fish and Wildlife to weigh in. Al suggests sending an email to the membership about taking a stand and seeing if there is opposition. Teal was wondering if FMCS was interested in taking a policy position and would be willing to join in. Al said AFS would be good to get in touch. Al and Dave would be able to help.

8. Celeste wanted to congratulate Travis on receiving an award from the Grande Ronde who have been involved in mussel surveys. Travis can see if Brandon at the tribe wants to join the listserve.