



**Comal Springs Riffle Beetle Work Group  
Meeting Minutes  
San Marcos Rec Hall  
September 4, 2019**

**Members of this committee included:** Conrad Lamon, Chad Norris, Tom Arsuffi, Butch Weckerly, and Ken Ostrand

**Audience:** Amelia Hunter, Lindsay Campbell, Ely Kosnicki, Ashley Jackson, Mark Enders, Phillip Quast, Rachel Sanborn, and Brandon Payne.

1. **Call to Order:** 9:00 am – All members of the work group were present.
2. **Public Comment:**  
There were no comments from the public.
3. **Approve minutes from July 2, 2019 Work Group meeting.**  
The Work Group approved the meeting minutes from July 2, 2019. There were no objections.
4. **Review of the CSRB Work Group Meeting 2 held on July 2, 2019 to discuss Charge 1: Cotton lure sampling methodology.**

Dr. Chad Furl discussed what was presented at the prior work group meeting and recapped the lessons learned. As a result of the last meeting, EAHCP staff developed a proposed research project aimed at understanding the efficiency of the cotton lure for sampling riffle beetles. The general concept of the proposed research project is to recreate cotton lure sampling in a controlled laboratory setting. Dr. Chad Furl presented the details of the proposed project, informing the Work Group of the ideas surrounding tank construction, materials in the tank and specific intervals to count the number of beetles on the lure.

Dr. Tom Arsuffi had concerns of replication with regards to the distances of the cotton lure and the position of the riffle beetle to other treatments (i.e. leaves, woody debris, etc.). Dr. Conrad Lamon expressed concerns of the utility of a laboratory sampling to help understand the natural environment. Dr. Ken Ostrand suggested simplifying the project by decreasing the number of treatments available to the riffle beetle in a lab setting. Dr. Butch Weckerly supported the proposed project and the overall evaluation of the cotton lure's efficiency.

**Treatment Types:** Amelia Hunter suggested using one leaf type, one wood type and the cotton lure. Dr. Arsuffi noted the issue on decomposition rates of leaves and recommended prefacing the experiment with three types of substrates. Dr. Kosnicki and Ms. Hunter recommended using Sycamore leaves.

Ms. Hunter questioned the method of observing the riffle beetle and the possibility of disturbance (looking vs grabbing). Dr. Arsuffi recommended that the surface area of the substrate should be taken into consideration.

**Substrate:** Dr. Furl noted that the project would include wood, gravel and leaves in the tank and possibly buried 4 inches deep into the substrate. Dr. Campbell suggested that 4 inches is too deep and recommended to reduce the thickness just below the surface. Ms. Hunter noted that riffle beetles do not typically use rocks but rather gravel. The Work Group recommended using store bought gravel and condition it prior to experiment.

**Woody Debris:** Ms. Hunter recommended using conditioned balsam wood and offered to provide some that she has already prepared. Dr. Chad Norris had concerns using something that hasn't been historically used and is not found in the field. Additionally, Dr. Norris commented that there are too many unknowns using woody debris, however, if there is a choice, natural wood would be the best option. Dr. Kosnicki noted that popular debris takes about three months to condition where as balsam may take only a month to condition. Dr. Campbell suggested using harvest natural log cut into segments.

**Leaf Type:** Ms. Hunter noted that there has not been an experiment to determine which types of leaves riffle beetles prefer. Sycamore, anacua, and pecan leaves are most common near riffle beetle habitat. Dr. Kosnicki recommended using a single leaf type, conditioned, and in a cage. Dr. Arsuffi recommended keeping the leaf types separate.

**Number of Beetles:** The work group agreed that 20 beetles was sufficient. Dr. Campbell suggested a 50:50 sex ratio.

**Replication and frequency:** The work group recommended sampling five tanks at one time at 10/20/30 day intervals. Dr. Arsuffi recommended introducing the beetles at equidistant locations from a treatment type.

**Tank recommendation:** The work group suggested using a 10-gallon round tank.

Dr. Ostrand questioned if gravel was necessary and if not, could it be replaced with tile for easier observation. Dr. Kosnicki noted that substrate is used for mobility. Tile would work for this experiment, plastic mesh is not a good substrate, and gravel could take up too much space. Dr. Campbell had concerns with tile being too different from the field.

**Proposed measurements at the conclusion of experiment:** Dr. Arsuffi suggested research into the microbial biomass associated with substrates. The work group discussed the color change of the cotton lure; however, it was noted that observations can be subjective.

## 5. CSRB Work Group Charge 2: Biological monitoring, Refugia collections and Applied Research collections associated with the CSRB.

Dr. Furl reminded the work group of the goals of the biological monitoring program.

- "...will provide a means of monitoring changes to habitat availability and the population abundance of the Covered Species..."

- “...will provide information to effectively determine whether the conservation measures are achieving the biological goals and objectives...”

In regard to sampling locations, the work group agreed that sampling should occur beyond the reaches that are typically measured. Sampling two times at three locations is insufficient. Dr. Furl proposed, due to duplications of efforts by multiple agencies, a population study every 3-5 years and to continue cotton lure sampling in the LTBG reach.

Dr. Weckerly suggested that the findings of the Texas State population study be duplicated in the future so that the results can be used for comparison with the concurrent biomonitoring studies.

Dr. Norris recommended adding more sampling locations at deeper spring depths in addition to the monitoring that is already occurring. Furthermore, Dr. Norris suggested studying migration and genetics.

Dr. Arsuffi recommended monitoring the fix sample sites every 2 years and random sampling of the 85 sites used in the Texas State population study using their methodology. Dr. Weckerly recommended using the same sampling times that are used in the Texas State study.

**6. Questions from the public.**

None.

**7. Adjourn – 11:42 am**