



Meeting Minutes from Research Work Group held on December 7, 2021

1. Call to order--Establish that all Work Group members are present - 1:00 pm. *Meeting was called to order at 1:02pm and the meeting was recorded.*
2. Review of online meeting logistics.
3. Action Item: Nominate and vote on a replacement for Ken Ostrand to serve as a member of the CSRB Work Group. *With Ken Ostrand leaving for a new position in Atlanta, Dr. Chad Furl recommended that Dr. David Britton, new SMARC Center Director, serve at the replacement work group member. Chad Norris made a motion and Tom Arsuffi seconded for Dave Britton to serve on the work group committee.*
4. Public Comment. *No publics from the comment.*
5. Review of CSRB Workgroup Goals and an overview of the conclusions and recommendations developed by Workgroup members. *Chad Furl reviewed previous meetings of the CSRB workgroup and the cotton lure mesocosm study completed in 2021. Additionally, the work group in 2021 helped put together a SOW for the CSRB population study. Dr. Ely Kosnicki and Bio-West was selected to complete the study and will present later in this meeting.*
6. Review of the EAHCP CSRB Refugia and Biological Monitoring Programs 2021 activities.
 - i. Presentation on Refugia and Biological Monitoring CSRB collection numbers, Refugia husbandry procedures, and Refugia survivability curves.

Dr. Chad Furl briefly discussed the number of CSRB collected during the Biological Monitoring program. In summary, the numbers of CSRB were higher compared to previous years. Spring Island numbers improved since last year but Western shore and Spring Run 3 were still slightly below the long term average.

For 2021, survival rates of CSRB held in the EA Refugia program were slightly lower than previous years but not significant. To maintain current standing stock requirements, approximately 300 beetles will need to be collected annually.

No update to the CSRB Biological Goals but these will be addressed in the coming years and hopeful the population study in conjunction with the EA Refugia genetic assessment will help refine Biological Goals in the future.

No comments from individuals attending the work group meeting.

7. Discussion of the CSRB population survey in Landa Lake starting in 2022.

- i. Presentation on the proposed study design to evaluate the CSRB population in Landa Lake.

Dr. Ely Kosnicki presented over the upcoming CSRB population study. Other members of the project team will include Dr. Shannon Brewer from Auburn University and US Geological Survey, Dr. William Link with US Geological Survey, and Dr. Andy Royle with US Geological Survey. Ely briefly discussed general background of the CSRB. Ely then discussed the proposed field methodology for the population study. The spring map in the Landa Lake and the spring runs will be used to distribute approximately 80 sampling sites. The springs sampled will be randomly sampled and the number of sampling sites will mirror the number of springs within each section of Landa Lake. Cotton lures will be used to collect CSRB at each sampling location and environmental and water quality parameters will be collected as covariates during the placement and retrieval of each lure. Lures will be placed for a period of 4-5 weeks, but there will be further discussion on the duration of each replicate. Up to five sampling events will occur in 2022 and 2023. A range of statistical analyses are proposed to interpret the field data including N-mixture models, Bayesian fitting, and Random forests. The question of potentially completing depletion survey was discussed but would likely be difficult with the CSRB. Additionally, the question of completing mark recapture on some CSRB for this study was discussed with the option to further explore this using refugia held beetles. However, previous studies performing mark recapture on this species proved difficult. The project team plans on assembling in spring to visit Landa Lake and further refine field methodologies. Another meeting with the CSRB workgroup members is planned sometime in the spring to review the refined field and analytical methodologies for this study.

8. Questions from the public. *No comments from the public.*

9. Adjourn. *Meeting was adjourned at 2:38pm and the meeting was stopped recording. The recording will be available on the EAHCP website.*