
Springflow Habitat Protection Work Group

Meeting 4 Minutes

June 3, 2020

2:00pm-4:00pm

1. Confirm attendance

Kristina Tolman indicated that all Work Group members were present except Doris Cooksey; Ryan Kelso called into the meeting late.

2. Meeting logistics

Jamie Childers provided an overview of virtual meeting logistics, meeting points of contact, and work group logistics.

3. Public comment

Damon Childs indicated that there were no public comments.

4. Texas Parks and Wildlife 2011 and 2014 Comal Springs mapping and how that relates to occupied Comal Springs riffle beetle (CSRB) habitat presentation and discussion

Chad Norris, Texas Parks and Wildlife presented work performed in 2011 and 2014 to map 425 spring features in the Comal Springs system, with a flow of about 240 cfs in 2011, and a history of studies performed to understand occupancy of the Comal Springs riffle beetles and their habitat. Efforts included collecting elevation data for spring emergence. Most of these features are dry at low flows. Have not sampled for CSRB at most of these features, primarily have focused sampling on spring runs 1-3, western shoreline, and Spring Island areas. He described 2014 conditions of sampling with flows between 90 cfs and 80 cfs when most spring features were dry or reduced to seeps along western shoreline. He did indicate that CSRBs were collected during biomonitoring in that year, although not at traditional locations.

5. Preliminary Results of CSRB Occupancy Study presentation and discussion

Weston Nowlin, Texas State University, presented on recent research on CSRB occupancy and N-mixture modeling to establish CSRB populations at spring orifices in Landa Lake. He presented preliminary results generated from Pearson correlations and ANOVAs for differences between site covariates and predictors. In the discussion that followed Dr. Nowlin indicated that the results from the models will not establish CSRB abundance but instead will describe the probability of occupancy for each of the sampled orifices. About 500 spring openings mapped in 2018. Selected 85 sites at random, distributed with 23 sites in spring runs 1-3, 33 along western shoreline, 12 in Spring Island area, 12 in Landa Lake, and 5 in spring run 4.

He also indicated that CSRB were collected in Spring Run 4 where they had not previously been found; Spring Run 4 was an area of the system that did not have measurable flow

for a three-month period in 2014. Dr. Nowlin indicated that the collection of CSRB in Spring Run 4 does not tell us if they are moving through the subsurface versus the surface. Data analysis is ongoing, expect completion later this year.

6. How recent drought (2011-2014) has impacted CSRB populations *presentation and discussion*

Will Coleman, Texas State University, presented an overview of previous and current CSRB population and genetic studies. He detailed his ongoing research using a frequency model to simulate effective population size (i.e. breeding population) and make comparisons with observed summary statistics to estimate CSRB populations. Mr. Coleman indicated that the final analysis should be complete in 2021. Understanding how water moves may help us understand how CSRB could move within the subsurface.

A discussion of the work group followed:

Charlie Kreitler described previous work to understand flow paths in the Comal Springs system. He suggested the Work Group members consider performing geophysical studies to understand how water moves in the system during periods of flow less than 80 cfs and to better understand the distribution of CSRB habitat. Chad Norris deferred to Dr. Kreitler in the value of performing studies to understand how flow moves through the system and when areas go dry.

Dr. Meitzen proposed a comparison of well elevations with CSRB data collection to try to address habitat connectivity between springs with more robust population data from species sampling. Weston Nowlin indicated he could provide that data to Chad Norris to perform such an analysis.

Myron Hess reminded members of the Work Group process and invited members to begin thinking about how the questions of the charge can be refined and clarified.

7. Public comment

Damon Childs indicated that there were no public comments.

8. Future meetings

Myron Hess indicated that we will be scheduling the next meeting and proposed topics for that meeting.
