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Springflow Habitat Protection Work Group  
Meeting 6 Minutes  
July 8, 2020  
9:00am-11:00am

**1. Confirm attendance**

All Work Group members were present.

**2. Meeting logistics**

Jamie Childers provided an overview of virtual meeting logistics, meeting points of contact, and Work Group logistics.

**3. Public comment**

There were no public comments.

**4. Work Group decision process *presentation and overview of discussion documents***

Jamie introduced the Menti polling application which all attendees used to submit their comments and suggestions during the Issue 1 and 2 discussion.

Myron Hess, Work Group Chair, presented an overview of the process of refining the final questions that the Work Group will recommend to the Implementing Committee to fulfill Part 1 of the Charge. He referenced documents provided to Work Group members including an outline the four main issues of the work group charge and lists potential questions and a matrix of “other” adaptive management process (AMP) study commitments listed in the HCP. The latter included his recommendations as a starting point for possible next steps.

Cindy Loeffler expressed appreciation to Myron for addressing her comment from the previous meeting by providing recommendations for next steps.

**5. Overarching Issue 1 discussion**

Myron talked about two potential overarching topics that could be related to Issue 1: elevated temperature in the Old Channel and potential for die-off of aquatic vegetation impacting the dissolved oxygen. According to Thom Hardy’s presentation in Meeting 2, the springflow that emerges during low flow periods may not mix well and bypass the Old Channel which would result in warmer temperatures than originally modeled.

Tom Arsuffi suggested that the temperature differential between the Old Channel and the New Channel should be assessed but asked if it is significant enough to influence the species and their habitat. He then inquired if temperature data were available for Landa Lake versus the Old Channel? Chad Furl responded that temperature data were collected for those sites during low

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flow conditions in 2014 and there was not a significant differential, however, the differential may be greater if the systems experienced low flow for an extended period of time, such as years.

Charlie Kreidler noted that the data that have been collected during low flow do not show much of change because the groundwater temperature remains relatively constant. However, if the groundwater flow paths change between the artesian block and the upthrown block the water chemistry may change. Charlie also agreed that Cindy Loeffler's question about which springs are still flowing during low flow conditions was a more relevant question than the chemistry of the water.

Mark Enders inquired if there enough mixing of the spring water and do we know if the cooler water from Spring Runs 1, 2, and 3 are going to the New Channel instead of Old Channel? Chad Furl emphasized that after 20 years of temperature sampling, over a range of conditions, including a three-week period of flow down to 63 cfs in Comal system, water temperature has remained relatively constant. Chad also acknowledged it might change with a longer period of low flows. Myron acknowledged Chad's point about not having data at lower flows to inform modeling but added that the Work Group may also identify new ways of monitoring during low flow that better collect needed information.

Chad Norris inquired about Thom Hardy's temperature modeling and if it has been validated with recent data and newer models. Chad Furl replied that the temperature model from 2010 was calibrated with the 2009 data which represents low flow conditions in both systems; lower flows in the Comal system (2014) were not used in modeling.

Myron asked about the San Marcos water quality model results and if anyone had comments. Tom Taggart asked about carbon dioxide content and how that affects vegetation during low flows. Cindy noted that during Meeting 2 she asked Ed Oborny how the increased aquatic vegetation in the San Marcos could influence the net dissolved oxygen; at that meeting Ed noted there was not a net increase in vegetation. Jacquelyn Duke recalled an indication that flows below 45 cfs would be a loss of vegetation which may be more of an issue than the dissolved oxygen and the temperature. She asked if the 80 cfs is the appropriate flow to focus on and if vegetation loss needs to be addressed. Melani Howard responded that modeling Thom Hardy performed did show detrimental impacts to Texas wild-rice (TWR) at flows around 100 cfs, not sure about other macrophytes. Myron clarified that the Issue 1 is related to water quality and that the 100 cfs impacts to TWR may not be dissolved oxygen or temperature, but other factors; Melani agreed.

Meeting attendees submitted their comments and questions for Issue 1 via the Menti application. Original submissions can be viewed within the July 8, 2020

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Presentations PDF. After providing an opportunity for input between meetings, members will discuss the themes and prioritization of the submissions at meeting 7.

**6. Overarching Issue 2 discussion**

Myron introduced four potential overarching topics related to Issue 2, the Comal Springs riffle beetle (CSRB), that might be considered. First, does the subsurface substrate in the spring runs allow for CSRB to migrate during extended periods of low flow? If they can migrate, will the CSRB adults and larvae survive? Thirdly, does sedimentation negatively impact the survival of CSRB during low flow? Variations of the topics listed above, as well as results from ongoing studies at Texas State University and the EAHCP Refugia, may be appropriate for assessment by the Comal Springs riffle beetle Work Group. Members were invited to begin entering proposed issues through the Menti application as well as raising them orally.

Myron referenced Chad Norris' presentation during Meeting 4 and how some findings from the 2014 Texas Parks and Wildlife Department (TPWD) Comal Springs survey may be inconsistent with the assumptions that have been made about springflow along the western shoreline. He also noted the subsurface flow path issue that Charlie Kreitler had discussed during Meeting 4 and its influence on spring flow during low flow conditions.

Chad Furl added that there are three separate entities (EAHCP Refugia, BIO-WEST, and Texas State University) actively investigating the CSRB with a total of six ongoing or planned studies in the coming years. These include two population surveys, one husbandry/life history, and one cotton lure study ongoing through the EAHCP Refugia and BIO-WEST; in addition to the population and genetic studies at Texas State University.

Tom Arsuffi inquired about the stability of the flow paths and if they change over time. Charlie replied that he is not aware of specific changes over time but when dye was injected near Panther Canyon, it emerged in springs along the western wall. However, dye injected into the Lower Colorado River Authority well then emerged in the lake and New Braunfels Utilities well near the golf course. He then added that the hydrogeology for Comal, and probably San Marcos, springs has been assessed at a more regional level and not specific level, but that detailed, site-specific information might be beneficial. That may entail geophysical surveys and shallow wells and assessing the elevation of various springs along the western shoreline and springs in Spring Lake. Charlie also noted that chemistry is different for springflows in southern part of Landa Lake than for those in northern part. Melani Howard added that Spring Lake staff have observed the southern springs there flowing more during low flow conditions and northern springs less.

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Meeting attendees submitted their comments and questions for Issue 2 via the Menti application. Original submissions can be viewed within the July 8, 2020 Presentations PDF. Members will have further opportunity to submit CSRB input at the next meeting. We will also discuss the themes and prioritization of the Issue 1 input at Meeting 7.

**7. If time allows, overarching Issue 3 discussion**

The group agreed that they will need more time to assess Issues 1 and 2. Issue 3 will be discussed on a later date.

**8. Public comment**

There were no public comments.

**9. Future meetings**

A poll will be sent to Work Group members to select the next meeting date and time.