Springflow Habitat Protection Work Group

Meeting 2 Minutes
May 20, 2020
2:00pm-4:00pm

1. Confirm attendance

Jamie Childers called on each Work Group member. All members were present although Melani Howard joined the call late.

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. 80 cfs pulse flow component overview

Myron Hess opened the discussion by asking Ed Oborny (BIO-WEST) and Thom Hardy (Texas State University) to provide a summary of the envisioned role of the 80 cfs pulse flow overall and then with a focus individually on Comal and San Marcos systems.

<u>Overall discussion</u>

For overall discussion of development of 80 cfs pulse component, Mr. Oborny noted four key issues identified in considerations of flow regime and 80 cfs recommendation: water quality concerns for temperature and dissolved oxygen (DO) for extended periods, DO more unknowns than temperature; aquatic vegetation die-off; sedimentation; and loss of wetted area.. He indicated that a lot of information has been gained through monitoring and studies undertaken since then. Dr. Hardy added that a lot was learned in the Ecomodeling effort. Dr. Hardy also indicated that there are unanswered questions about DO, especially as it relates to vegetation dynamics; he emphasized this for the San Marcos system.

Comal system discussion

Dr. Hardy indicated that additional QUAL2E modeling would not address DO unknowns in the absence of additional data related to sediment oxygen demand and vegetation decay to parameterize any model. He has concerns about sediment oxygen demand and the effect on DO.

Mr. Oborny noted that temperature was not a problem in 2014 when flows got down to around 60 cfs; this was consistent with model predictions. If had vegetation die-off, that would drive DO down, but 2014 experience and lab work suggest vegetation may do better than previously thought below 80 cfs. With increased temperature, have seen more biomass of vegetation. He also indicated that sedimentation from runoff along the western shoreline of Landa Lake could be a problem if springflows were inadequate to clear sediment away and that a lack of surface flow in the spring runs was the biggest issue for Comal Springs riffle beetle (CSRB), but we know that the CSRB survived the drought-of-record.

San Marcos system discussion

Dr. Hardy indicated that at minimum flows the main body of Spring Lake and downstream to nearly Rio Vista temperatures are well maintained. However, downstream, such as around Rio Vista, with low flows temperatures are above levels where see reduced survival of fountain darter larvae. Dr. Hardy also indicated that a loss of aquatic vegetation because of recreation is a concern in the San Marcos River. Because water depth is a function of flow, at 45 cfs Texas wild-rice and other vegetation is more vulnerable to recreation and even at 80 cfs, we will not get vegetation recovery unless can control recreation.

Mr. Oborny also noted that, at low flows, wetted area, depth, and loss of vegetation are issues. He indicated that the key is the duration and 80 cfs will increase depth somewhat, but we will still have impacts from recreation. He also indicated that sedimentation in Spring Lake and conditions in the eastern spillway downstream of Spring Lake dam are his biggest concern. Mr. Oborny indicated that with adequate flow over the eastern spillway, habitat will be maintained there.

5. EARIP water quality modeling effort presentation and discussion

Dr. Hardy gave a history of hydrologic and hydrodynamic modeling in the Comal and San Marcos systems and reiterated points from the earlier discussion. The QUAL2E model includes assumptions about flow from individual spring orifices based on the aquifer level. The QUAL2E model for the Ecomodel effort only had data through 2013. Modeled temperature is okay in key areas even at low flows. However, the model does not simulate a vertical profile. In the Comal system, the temperature vertical profile during low flows could be considered as it related to discharge through the culverts to the Old Channel. For San Marcos system, Dr. Hardy indicated that temperature is not really a concern down to Rio Vista dam area. Key concern is protection of vegetation downstream of Spring Lake, particularly in shallow areas.

6. 2019 VISPO Adaptive Management Process low flow scenarios presentation and discussion

Dr. Furl re-presented drought-specific flow projection information from the 2019 Scientific Evaluation Report prepared as part of the Voluntary Irrigation Suspension Program Option (VISPO) Adaptive Management Process. He discussed figures illustrating the predicted EAHCP Phase II flow regime from MODFLOW. Mr. Hess confirmed that the model assumes withdrawals of full permitted amounts during periods when critical period management limits are not in effect.

7. Public comment

There were no public comments during the second comment period.

8. Future meetings

Myron Hess provided a schedule of future meetings. Kimberly Meitzen proposed a future agenda item, based on the discussions from the meeting, related to the impacts of recreation.

Several members of the Work Group indicated that habitat loss downstream of Spring Lake dam was important and a more detailed discussion about impacts from recreation followed. Ms. Howard indicated that Texas wild-rice is currently thriving in areas it has never occurred because recreation access has been limited recently. State scientific area (SSA) exclosures can be implemented when flows are less than 120 cfs. SSA exclosures and the protection they provide under flow changes was proposed for a future meeting topic. Kimberly Meitzen raised questions about changed bathymetry in San Marcos River since maps used in modeling were developed and about changes in distribution of Texas wild-rice. Dr. Hardy raised questions of SSA exclosures versus depth

Cindy Loeffler also suggested that the group consider implications of changes in oxygen demand with changes in vegetation through implementation of EAHCP conservation measures. Ed Oborny indicated that overall vegetation levels may not have increased, instead there is a change in species make-up.

Following the meeting, Chuck Ahrens and Adam Yablonski suggested that a future meeting of the Work Group include a presentation as a follow up to Chad Furl's presentation regarding the Phase II flow regime. Dr. Furl's presentation indicated that the MODFLOW runs assume full permitted withdrawals, as adjusted for critical period management. Each year Chuck Ahrens presents pumping data versus permitted withdrawals to the EAHCP Committees and Edwards Aquifer Authority Board and that information could be provided to the Work Group.