



## PREDECISIONAL

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(3) Ask Work Group members, individually, to propose prioritization of the 15 identified questions using the agreed-upon prioritization scheme.

(4) Meet to discuss the compiled results of the individual prioritization and seek to reach Work Group agreement on the Work Group prioritization.

(5) As necessary, convene a third Work Group meeting to continue efforts to agree upon a Work Group prioritization for submission to the IC at the August 19 meeting.

[The IC discussion, which occurs at minutes 10-44 of the video linked here](#), suggests a focus for prioritizing the 15 previously identified questions from the perspective of those that add the greatest value (1) in renewing the Incidental Take Permit and (2) clarifying the 80 cfs component in the EAHCP flow objectives. The following prioritization scheme was developed as an attempt to integrate the IC member's discussion into this process.

To date, refugia research and Comal Springs riffle beetle population studies have been prioritized by other work groups or in work plans during Phase II. Studies to support renewal of the Incidental Take Permit have yet to be established. However, the studies proposed by this Work Group for high prioritization are expected to be complete in time to inform future activities under the current permit. Therefore, the proposed studies may, or may not, result in consideration of an Adaptive Management proposal to modify the existing Incidental Take Permit.

### Prioritization Scheme

The Mentimeter polling tool will be used to summarize prioritization input from the Work Group. Each Work Group member will be asked to prioritize the 15 questions, with some questions grouped, using 3 ranking polls, each addressing a specific criterion. The 3 ranking polls were developed from IC member comments at the May 20 meeting. Within each poll, rankings can be given 1-12 where 1 is the highest priority. Mentimeter limits the number of items that can be ranked to 12, which is why some technical questions are proposed to be grouped for prioritization. Although prioritized separately in each of the three polls, the Work Group will be considering the collective results in identifying which questions rank as highest priority collectively. If grouped questions are ranked as high priorities, further Work Group discussion of prioritization within the grouping may be appropriate.

In three contemporaneous polling exercises, prioritize the proposed technical questions based on those that would:

1. Add the greatest value in clarifying uncertainty in the Edwards Aquifer Habitat Conservation Plan flow objectives; particularly the need for 80 cfs or a similar increased flow periodically during prolonged drought.
2. Add the greatest value in clarifying uncertainty in the Edwards Aquifer Habitat Conservation Plan biological goals and associated objectives.
3. Provide important new information to improve design of management measures for addressing impacts of extended periods of low flow on covered species.

Recall Mentimeter associates a point value to rankings. The compiled rankings and point values will be presented to the Work Group for discussion. The goal will be to develop a prioritized list of technical questions for presentation to the IC at the August 19, 2021 committee meeting.

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## 15 Identified questions paired to 12 for prioritization

See the Report and Charge for the complete list of questions and more detailed content to their intent. [If the Work Group determines that pairings for prioritization are not acceptable, prioritization can occur outside Mentimeter. Mentimeter calculations would be applied to define prioritization.]

1. **PAIRED (1-1 and 1-5) Question 1-1:** Based on consideration of the results of a validation and sensitivity exercise using data collected during 2014 drought conditions, is the Hardy model effective and suitable to evaluate water quality (dissolved oxygen and water temperature) effects of springflows below 80cfs? **Question 1-5:** Depending on results of Question 1-1 regarding validation, what other modeling approaches should be considered for water quality impacts?
  2. **Question 1-2:** Which spring openings will still be flowing at various flow levels below 80cfs in the Comal and San Marcos springs systems and how does that relate to effects on Covered Species?
  3. **Question 1-3:** How does the flow of cool water from spring openings in the Comal system travel through Landa Lake during extended periods of low flow and what is the potential for the cool water to bypass the Old Channel?
  4. **Paired (1-4 and 1-6) Question 1-4:** Is the available spring data being collected, consistent with the outcomes of the 2016 Expanded Water Quality Work Group, adequate to inform how the physio-chemical aspects, chemistry, discharge, and spring locations change under low flow conditions? **Question 1-6:** Do existing modeling and statistical tools and available data allow us to incorporate predictions for future drought conditions and make springflow management decisions during periods of extended low flows?
  5. **Question 2-1:** What aquifer flow paths contribute to individual springs or spring emergence areas that are likely to be significant flow sources into the Comal and San Marcos systems during low flow periods and which fault block—upthrown block or downthrown block—are those flow paths associated with? And, are those springs habitat for, and occupied by, Covered Species?
  6. **Question 2-2:** How can results of ongoing genetic studies be used to inform our understanding of impacts of low flow periods on Comal Springs riffle beetle? If those results are not sufficiently helpful in understanding such impacts, how could variations on those studies or other genetic studies be used to provide useful insights?
  7. **Question 3-1:** How are changes related to vegetative die-off expected to affect the dynamics of habitat, dissolved oxygen and vegetation loss during predicted low springflow in the future in both systems?
  8. **Question 3-2:** Over what section of Spring Lake Dam does flow move during periods with flows below 80cfs?
  9. **Question 3-3:** What specific recreational impacts exist and what are their data-supported impacts to Texas wild-rice, fountain darters, and San Marcos salamander and are impacts greater during lower flows?
  10. **PAIRED (3-4 and 3-5) Question 3-4:** What locations and approaches would be most effective for enclosures in the State Scientific Area (SSA) to ensure protections for Texas wild-rice, fountain darter, and the San Marcos salamander habitat during low flow conditions? **Question 3-5:** Based on existing and ongoing data collection, what areas within the San Marcos system represent habitat important for maintaining fountain darter populations that can be factored
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into management decisions, in particular designation of exclusions under the SSA, during periods of low flows?

11. **Question 4-1:** What consecutive periods of flows at or below specific identified flow levels between 80 cubic-feet-per-second (cfs) and the relevant minimum springflow level for each spring system are predicted using the updated mod-flow model reflecting implementation of the Phase 2 flow protection Work Plan measures? What is the significance of those durations in terms of impacts on the Covered Species?
12. **Question 4-2:** What is the likely effect of extended periods of springflows below 80 cfs in the San Marcos system on siltation around spring openings and, in turn, on the population of San Marcos salamanders?