



Overview

This Report is issued in response to the Nonroutine Adaptive Management proposal submitted by the Program Manager of the Edwards Aquifer Habitat Conservation Plan (EAHCP), dated September 1, 2016. According to the Funding & Management Agreement, the EAHCP Stakeholder Committee is responsible for reviewing and making recommendations to the Implementing Committee for proposals submitted through the Nonroutine Adaptive Management Process (AMP). This Report presents the final recommendation of the EAHCP Stakeholder Committee concerning this Adaptive Management proposal.

1. Summary of the Nonroutine Adaptive Management Proposal

On September 1, 2016, the EAHCP Program Manager submitted the attached Nonroutine Adaptive Management proposal to the Science, Stakeholder, and Implementing Committees. It involves modifications to the submerged aquatic vegetation (SAV) restoration programs affecting the Long-term Biological Goals (LTBGs) for the fountain darter (*Etheostoma fonticola*) in the Comal and San Marcos systems, and the flow-split management of the Old and New Channels of the Comal River.

2. Summary of September 15, 2016 Stakeholder Committee Discussion

Overview

At the September 15, 2016 Stakeholder Committee meeting, EAHCP Program Manager Nathan Pence provided a comprehensive presentation, *Submerged Aquatic Vegetation Nonroutine Adaptive Management* to the Committee. This presentation covered (1) the background to the AMP built into the EAHCP; (2) the commissioning of the *Submerged Aquatic Vegetation Analysis and Recommendations* report (SAV Report; BIO-WEST, Inc. & Watershed Systems Group, Inc., 2016); (3) the findings of the SAV report; (4) the stakeholder-driven process whereby the eventual Nonroutine AMP proposal was developed; (4) the elements of the Nonroutine AMP proposal itself; and (5) the Science Committee's Scientific Evaluation Report, including that Committee's scientific recommendations concerning the Nonroutine AMP proposal.

The following sections provide a lightly edited summary of the Stakeholder Committee's discussion of the Nonroutine AMP proposal. This summary is organized according to the main themes that emerged over the course of the Stakeholders' discussion.

This section concludes with the final motions made by the Stakeholder Committee concerning (1) recommending the Nonroutine AMP proposal to the Implementing Committee for approval and adoption, and concerning (2) approving an expedited process to prepare and submit this Nonroutine AMP Stakeholder Report to the Implementing Committee.



Opening Comments

As co-facilitator along with Vice-Chairman Myron Hess (National Wildlife Federation), Chairman Steve Raabe (San Antonio River Authority) provided an introduction to the Stakeholders' discussion concerning the Nonroutine AMP proposal. Vice-Chairman Hess also provided opening comments concerning the significance of the Nonroutine AMP proposal, and commending the efforts of the EAHCP staff in facilitating this process, before the Committee began to discuss any specifics. Mr. Raabe thanked the Committee members for their attendance, and noted that EAHCP staff would capture their comments concerning the proposal for the record.

General Issues Concerning the Nonroutine AMP Proposal

Roger Biggers (New Braunfels Utilities) asked Mr. Pence for clarification concerning the estimated number of fountain darters that would be produced under proposed revised SAV restoration scenarios. His question specifically inquired whether original estimations accounted for the fact that Texas wild-rice (*Zizania texana*) provides habitat for the darter. In reply, Mr. Pence confirmed that Mr. Biggers was correct in stating the original calculations did not factor in Texas wild-rice as darter habitat, as well as that the proposed readjustment for factoring in Texas wild-rice, along with adjusting SAV areal coverage targets, does result in a net loss in overall estimated darters. Dianne Wassenich (San Marcos River Foundation) noted that scientists have encountered some difficulty in precisely measuring darter density within Texas wild-rice as compared to other SAV species, due to the fact that it is not possible to disturb Texas wild-rice due to restrictions on taking because it is a protected species.

Carol Patterson (Edwards Aquifer Authority) added a comment concerning restoration reaches. Mrs. Patterson pointed out that the restoration reaches would add additional habitat for the fountain darter that should also be taken into account when considering the impact of the Nonroutine AMP proposal on the overall numbers of fountain darters. Mrs. Patterson also commended the proposal for achieving significant expansion of SAV restoration activities while keeping the budget within the limitations set by Table 7.1

Mr. Hess expressed his support for the proposal as a realistic initiative, expressly mentioning the fact that original components of the EAHCP were not quantified, and that through this exercise, these undefined elements are now being quantified. Thus, although this results in fewer estimated darters overall, this can be considered an artifact of unrealistic assumptions built into the EAHCP, that this AMP exercise is now correcting. Cindy Loeffler (Texas Parks & Wildlife Department) joined, emphasizing Mr. Hess' comment that the darter numbers are estimations; she recommended that this fact should be kept in mind, as well as the fact that the proposal expands their



habitat, thus making supporting the proposal moving in the right direction for the program overall.

Tom Taggart (City of San Marcos) added to Mr. Hess' earlier commendations of the staff for facilitating this effort. Mr. Taggart commented that in relation to the number of darters, it may also be helpful to show what percentage the change in darters represents of the darters' total population. He noted that overall, this Nonroutine AMP proposal impacts a small percentage change to the darter' total population—recognizing that, while it's a conservative estimate, and the fact that it's only an estimate, it is nevertheless a small change.

Gary Spence (Guadalupe Basin Coalition) asked Mr. Pence if the proposal would provide more stable habitat; Mr. Pence stated that he would not generally characterize the proposed modifications to the SAV restorations as providing more stable habitat, it would be higher quality and more optimal habitat, and that possibly in the case of the Old Channel of the Comal River, adjustments to the flow requirements for the flow-split infrastructure there would result in decreased scouring and hence, some measure of added stability.

Impacts of Rain Events on EAHCP Restoration Activities

Mr. Taggart also recommended that the effect of floods on scouring SAV restoration, (especially since flooding events often coincide with fall biological monitoring/take analysis), be included in reports to the U.S. Fish & Wildlife Service (USFWS) to provide context. Related to Mr. Taggart's suggestion, Gary Middleton added that when reporting on flood events, it would be helpful to use a standard reporting system that provides an objective measure of the severity of such events (e.g., 10-year events, 100-year events, or 10-inch rains, 15-inch rains). Mr. Pence noted there have been at least three times in the past few years that significant flooding events occurred that impacted EAHCP activities in the spring and river systems. He went on to state that while 1-3-inch rains may not result in noticeable flooding, even moderately increased flows can still impact the ecosystems (e.g., through dislodging propagules of non-natives). Adding to this discussion, Gary Middleton (South Central Texas Water Advisory Committee) asked whether sediment removal could be included under the ecosystem impacts that are produced by flooding events; Mr. Pence stated that the characteristics of the flood event determine a given flood's impact on the removal of sediment, and some may deposit more sediment than they take away.

Colette Barron-Bradsby (Texas Parks & Wildlife Department) suggested a record of flooding events could supplement monitoring data collected, since even brief storms that are high intensity could have significant impact on the systems and that this may be an important variable for understanding ecological dynamics. Mrs. Barron-Bradsby commented that the EAHCP's data management initiative would also help with the collection and management of this data. Mr. Pence stated that this is done to some



extent in the EAHCP's Annual Reports, and that this would be the place to include this information, granting that such information could be elaborated in the future to provide more information along the lines suggested by Mrs. Barron-Bradsby.

Question Concerning SAV Monitoring in Spring Lake

A Stakeholder asked whether the SAV in Spring Lake is monitored through the EAHCP monitoring program. Mr. Pence replied that while this is done every 5 years through the EAHCP's monitoring efforts, SAV monitoring in Spring Lake is also complemented by Meadows Center for Water and the Environment's (Texas State University) efforts, as they also monitor the lake, and on a more frequent basis.

Implementation of the Proposed Nonroutine AMP

Patrick Shriver (San Antonio Water System) asked whether work would be anticipated this or next year if the proposed Nonroutine AMP proposal passes. Mr. Pence replied that, assuming the proposal is approved by the Implementing Committee later in the afternoon, a set of clarifications and amendments would be communicated to the USFWS, and that consequently amended Work Plans and Funding Applications reflecting the proposed changes will go before the Implementing Committee in October 2016, with the intention being to implement this proposal beginning in January 2017.

Mr. Raabe asked if there were any further questions or comments. Mr. Hess noted that the flow-split should be considered under the rubric of storm events since it plays a crucial role in the avoidance of scouring events in the Old Channel, and that the proposal does address management of this flow-split infrastructure. There were no further questions or comments.

Final Motions by the Committee

- ❖ Recommending the Nonroutine AMP Proposal to the Implementing Committee for Approval and Adoption

Mr. Middleton motioned to accept the Nonroutine AMP proposal as presented. Mrs. Patterson seconded the motion.

Mr. Raabe asked whether there were any comments. Mr. Hess commented that there is a typo in the proposal that should be noted for the record (the second table in Exhibit A should be labeled the San Marcos system, not the Comal system).

Con Mims (Nueces River Authority) made a corrective motion proposing that Mr. Middleton's motion be amended to state specifically that the Committee recommend the proposal to the Implementing Committee for approval and



adoption, rather than simply “accepting” the proposal; Mr. Middleton accepted the amendment, as did Mrs. Patterson.

Mr. Raabe asked if there were any objections to the motion as amended and moved. There were no objections. The Nonroutine AMP proposal was recommended for approval and adoption by the Implementing Committee by consensus.

- ❖ Approving the Process to Develop, Approve, and Submit the Stakeholder Report to the Implementing Committee

Mrs. Wassenich motioned to approve the process by which Mr. Raabe and Mr. Hess would be authorized to approve the report. Glenn Lord (Dow Chemical) seconded the motion. Mr. Raabe asked whether there were any comments; having heard none, the process to develop, approve, and submit this Stakeholder Report to the Implementing Committee was approved by consensus.

3. Nature of Stakeholder Committee Decision

Twenty-four members of the Committee were in attendance at the September 15, 2016 meeting, achieving the quorum requirement for the meeting. Both Committee votes concerning the Nonroutine AMP proposal were by consensus; there were no competing positions regarding the Nonroutine AMP proposal as presented.

In reaching its decision on this Nonroutine AMP proposal, the Stakeholder Committee discussed the following as points to be summarized in this report:

- *Acknowledge that this proposal is realistic*—This proposal is realistic, in that it establishes achievable, quantifiable goals for the fountain darter that reflect the realities in each of the system. Additionally, by defining the restoration reaches, this proposal provides a realistic plan for the proportional expansion of SAV restoration efforts in the Comal and San Marcos systems.
- *Acknowledge that the loss of fountain darter habitat is minimal in the systems*—By implementing the proposed modifications to the SAV restoration programs in each of the systems, this proposal would result in a 2% estimated reduction of fountain darters relative to the total population of the species.
- *Acknowledge and document the impacts of rains, flooding, and droughts to the systems and to the SAV restoration programs*—With regard to the impacts of rains, flooding, and droughts to the systems and to the SAV restoration programs, EAHCP biological monitoring should include standardized documentation of the impacts of these phenomena at the time of monitoring.



- *Correct the error on Exhibit A of the Nonroutine AMP proposal*—Exhibit A of the proposal should be corrected to show that the revised LTBGs depicted are for the San Marcos system, and not the Comal system.

4. Recommendation

By consensus, the Stakeholder Committee recommends the Nonroutine AMP proposal to the Implementing Committee for approval and adoption.

5. References

BIO-WEST, Inc. & Watershed Systems Group, Inc. 2016. *Submerged aquatic vegetation analysis and recommendations*. Including *SAV Addendum* (revised Section 3.1.2 and revised *Appendix B*). Prepared for Edwards Aquifer Authority, San Antonio, TX.

6. Attachments

- Nonroutine Adaptive Management proposal dated September 1, 2016
- Nonroutine Adaptive Management Scientific Evaluation Report, EAHCP Science Committee, September 9, 2016
- Minutes from the September 15, 2016 Stakeholder Committee Meeting