EAHCP
EDWARDS AQUIFER
HABITAT CONSERVATION PLAN

Biological Goals Subcommittee Report

2023

Report

To:	EAHCP Implementing, Stakeholder and Science Committees Permit Renewal Contractor – ICF
From:	EAHCP Biological Goals Subcommittee
Date:	March 23, 2023
Re:	EAHCP Biological Goals Subcommittee Report - 2023

1. Introduction

The Edwards Aquifer Habitat Conservation Plan (EAHCP) is currently in the process of renewing the Incidental Take Permit with the U.S. Fish and Wildlife Service. As part of that process, the existing components of the Habitat Conservation Plan (HCP) conservation strategy will be reassessed, new elements recommended, and modifications discussed. As a required component of habitat conservation plans, biological goals are a guide for quantified biological objectives and management actions taken through conservation measures to achieve the conservation strategy.

The joint 2016 U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service "Habitat Conservation Planning and Incidental Take Permit Processing Handbook" (HCP Handbook) defines biological goals as broad, succinct statements that work toward the vision of an HCP. Each goal can be habitat- and/or species-based. Biological goals are addressed by quantified biological objectives that are written to achieve the corresponding goal. This hierarchical process is described in Chapter 9 of the HCP Handbook which served as a reference in the development of the EAHCP biological goals.

2. Biological Goals Subcommittee Overview

The purpose of the Subcommittee was to review, discuss, and develop recommendations for biological goal(s) that should be considered for inclusion in the next EAHCP. The Subcommittee charge was approved by the EAHCP Stakeholder Committee on December 15, 2022 (**Appendix A**).

Throughout February and March 2023, four meetings were conducted in-person and virtually via Microsoft Teams. Meeting materials including meeting handouts, meeting agendas, presentations, and approved meeting minutes are in **Appendix B, C, D, and E,** respectively.

Members of the Biological Goals Subcommittee are:

- Mark Enders (Subcommittee Chair) – Stakeholder Committee (City of San Marcos)
- Rachel Sanborn – Stakeholder Committee (San Marcos River Foundation)
- Kimberly Meitzen – Stakeholder Committee (Texas State University)
- Kevin Mayes – Stakeholder Committee (Texas Parks and Wildlife Department)
- Charlie Kreitler – Science Committee (LBG-Guyton - Retired)

- Jacquelyn Duke – Science Committee (Baylor University)

3. Biological Goals Subcommittee Meetings

The Subcommittee convened four times to discuss the following:

- Current EAHCP biological goals.
- HCP Handbook guidance pertaining to biological goal development and structure (Chapter 9).
- Development of biological goals.
- Approval of the Biological Goals Subcommittee Report.

On February 16, 2023, the Subcommittee agreed, by consensus, to develop biological goals by reviewing and revising the current biological goals and to create new biological goals for the next EAHCP.

The San Marcos gambusia, (endemic to the San Marcos River), is no longer considered in development of the biological goals due to its pending delisting from the Endangered Species Act (ESA). Moreover, in 2021, USFWS proposed a rule that San Marcos gambusia may be extinct (Federal Register; 86 FR 54298). The Comal salamander was also not considered due to the recent removal of the petition for the species to be listed and covered by the ESA. The following are the Covered Species that were considered during the development of the biological goals:

- Texas blind salamander (*Eurycea rathbuni*)
- San Marcos salamander (*Eurycea nana*)
- Texas wild-rice (*Zizania texana*)
- Fountain darter (*Etheostoma fonticola*)
- Comal Springs riffle beetle (*Heterelmis comalensis*)
- Peck's cave amphipod (*Stygobromus pecki*)
- Comal Springs dryopid beetle (*Stygoparnus comalensis*)
- Texas troglobitic water slater (*Lirceolus smithii*)
- Edwards Aquifer diving beetle (*Haideoporus texanus*)

4. Biological Goal Recommendations

The following are the biological goals that the Biological Goals Subcommittee recommends the EAHCP Committees and Permit Renewal Contractor (ICF) consider for inclusion in the next EAHCP. Bolded key terms within the biological goal are described in the glossary.

Goal 1: Conserve the quantity and quality of springflow and maintain a **suitable** ecosystem within the **Plan Area** to provide for the **resiliency** of the **Covered Species**.

> **Reasoning:** This goal is intended to serve as a broad, overarching goal that addresses water quality, water quantity, springflow, and suitable ecosystems not related to any specific species; but rather, all the EAHCP Covered Species collectively in the Plan Area.

Biological Objectives: may include, but are not limited to, springflow, water quality and quantity, and overall ecosystem health.

Goal 2: Promote community engagement and awareness of the EAHCP, support land and water conservation, and mitigate **anthropogenic stressors** and **ecological disturbances** within the **Plan Area** that will benefit the **Covered Species.**

Reasoning: This goal is intended to address societal interactions with the EAHCP, direct and indirect anthropogenic stressors (recreational activities, pollution, climate change and regional population growth) and ecological disturbances (e.g., droughts, floods, biological pathogens) in the Plan Area and throughout the Edwards Aquifer region.

Biological Objectives: may include, but are not limited to, community outreach on species and habitat sensitivity, mitigation/recovery from disturbances and stressors, and land and water conservation in the Plan Area.

Goal 3: Conserve habitats and diverse native **aquatic vegetation** assemblages to support **resilient** fountain darter populations in the Comal and San Marcos spring and river systems.

Reasoning: This goal is specific to supporting habitat for resilient fountain darter populations in both the San Marcos and Comal spring systems. Additionally, this goal promotes aquatic vegetation diversity to prevent a monoculture of any single vegetation species.

Biological Objectives: may include, but are not limited to, recreation management, submerged aquatic vegetation restoration, springflow, and water quantity and quality.

Goal 4: Conserve and manage **resilient** Texas wild-rice populations in the San Marcos spring and river system.

Reasoning: This goal is specific to maintaining resilient Texas-wild rice populations. Management includes, but is not limited to, enhancement and restoration of Texas wild-rice.

Biological Objectives: may include, but are not limited to, sexually reproducing stand of Texas wild-rice, genetic diversity, recreation management, springflow, and water quality and quantity.

Goal 5: Conserve habitats to support **resilient** Texas blind salamander, Comal Springs dryopid beetle, Peck's cave amphipod, Edwards Aquifer diving beetle, and Texas troglobitic water slater populations in the **Plan Area.**

Reasoning: This goal is intended to ensure suitable habitat for the aquifer-dwelling Texas blind salamander, Comal Springs dryopid beetle, Peck's cave amphipod, Edwards Aquifer diving beetle, and Texas troglobitic water slater populations.

Biological Objectives: may include, but are not limited to, aquifer levels, springflow, adequate water quality and quality, and all known biotic and abiotic species needs.

Goal 6: Conserve habitats to support **resilient** Comal Springs riffle beetle populations in the **Plan Area.**

Reasoning: This goal is specific to maintaining resilient Comal Springs riffle beetle populations.

Biological Objectives: may include, but are not limited to, suitable aquifer levels, springflow, recreation management, water quality and quantity, and all known biotic and abiotic Comal Springs riffle beetle species needs.

Goal 7: Conserve San Marcos spring and river **habitats** for the benefit of **resilient** San Marcos salamander populations.

Reasoning: This goal is intended to ensure suitable habitat for San Marcos salamander populations.

Biological Objectives: may include, but are not limited to, springflow, water quality and quantity, riverine habitats, recreation management, and all known biotic and abiotic San Marcos salamander species needs.

5. Glossary of Key Terms

- **Adequate:** Satisfactory or acceptable in quality or quantity.
- **Anthropogenic stressors:** Pressures or dynamics that impact ecosystem components or processes caused by human-associated activities, including, but not limited to, recreation, pollution, climate change and population growth.
- **Submerged aquatic vegetation:** Specifically, assemblages that have been recognized, throughout 10+ years of EAHCP implementation, as habitat that supports viable fountain darter populations.
- **Conserve:** This term includes the preservation, restoration, and enhancement of the Covered Species and their habitats.
- **Covered Species:** Species for which incidental take is authorized in an incidental take permit and is adequately covered in a habitat conservation plan. (HCP Handbook)
- **Ecological disturbances:** This term includes flood and drought events, and biological pathogens.
- **Habitat:** The location where a particular taxon of plant or animal lives and its surroundings, both living and non-living; the term includes the presence of a

group of particular natural conditions surrounding an organism including air, water, soil, mineral elements, moisture, temperature, and topography. (HCP Handbook)

- **Habitat Conditions:** This term includes native vegetation and adequate water quality and springflow conditions.

- **Plan Area:** The specific geographic area where covered activities described in the HCP, including mitigation, may occur. (HCP Handbook)

- **Resilient/Resiliency [Covered Species]:** The resiliency of a Covered Species includes, but is not limited to, maintaining genetic diversity and other population characteristics that support withstanding and recovery from disturbance (environmental and anthropogenic). Moreover, resiliency includes the adaptive capacity of self-sustaining viable populations. Viable, meaning, the ability of a species to persist over the long term, and conversely, to avoid extinction over some time period. (HCP Handbook).

- **Suitable:** Right or appropriate for a particular person, purpose, or situation.

6. References

U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). 2016. Habitat Conservation Planning and Incidental Take Permit Processing Handbook. 361 pp + apps. https://www.fws.gov/endangered/what-we-do/hcp_handbook-chapters.html. (HCP Handbook)