

Edwards Aquifer Authority 2019 Work Plan Summaries

Presented for update:

Biological Monitoring

Applied Research

Water Quality Monitoring

Refugia

No review necessary for:

Aquifer Storage and Recovery

Regional Water Conservation Program

Voluntary Irrigation Suspension Program Option

Stage V

Ecological Model

6.3.1 Biological Monitoring

Measure summary:

The purpose of the Biological Monitoring program (BioMP) is to monitor changes to habitat quality, availability, and population abundance of the Covered Species that may result from Covered Activities and to collect data that can be used in the applied environmental research studies and provide data and information for the ecological model.

2019 Goals:

For 2019, the BioMP will implement the recommendations provided by the 2016 biological monitoring work group. The BioMP for the Comal and San Marcos aquatic ecosystems will continue to use the standard operating procedures used in 2017 for Comprehensive, Critical Period, and EAHCP Low-Flow Sampling and for the EAHCP Baseline, Disturbance components of Biological Monitoring and Take Determination.

The current contract will be open for bid in 2018. Under the new contract methods and sampling locations will be the same as in 2017 & 2018. The standard operating procedures for the BioMP that were modified in 2016 and approved in the 2017 and 2018 Work Plans.

5.7.2 Water Quality Monitoring

Measure summary:

The goal of the water quality monitoring program is to detect water quality impairments that may negatively impact the listed species.

2019 Goals:

For 2019, the water quality monitoring program will implement the recommendations provided by the 2016 water quality monitoring work group. The current contract will be open for bid in 2018. Under the new contract methods and sampling locations will be the same as in 2017 & 2018. Table 1 provides an overview of the 2019 activities.

Table 1. Overview of the Approved Scope of Work

Sampling Method	Frequency
Surface Water Passive Sampling	<ul style="list-style-type: none"> • February, April, June, August, October, and December <ul style="list-style-type: none"> ○ Add Pharmaceutical Personal Care Products membrane only at the bottom of the channel in both systems
Stormwater Sampling	<ul style="list-style-type: none"> • Reduced to one sampling event per year <ul style="list-style-type: none"> ○ Test only for Integrated Pest Management Plan chemicals in odd numbered years at the Comal River system (Upper Springs and New Channel) ○ Test full suite in even numbered years as currently done in both systems • Add two samples to the rising limb of the hydrograph for a total of five samples per location <ul style="list-style-type: none"> ○ Priority given to locations at tributary outflows
Sediment Sampling	Biennially in even numbered years from both systems
Fish Community Sampling	Biennially in odd years from both systems

6.3.4 Applied Research

Measure Summary:

Section 6.3.4 of the Edwards Aquifer Habitat Conservation Plan (EAHCP) includes Applied Research as a “valuable” component of the Phase I package and states that the “Edwards Aquifer Authority (EAA) will contract for the research activities.” Applied Research is specific research to fill data gaps and to provide necessary information to further the understanding of the systems and the Covered Species. The data is utilized in other studies, the ecological model, and will subsequently be used to inform the Adaptive Management Process.

2019 Goals:

2019 will be the second year of the Sessom Creek sediment export study. This study is an examination of sediment export from the Sessom Creek watershed to the upper San Marcos River was suggested as part of the Applied Research Work Group from March 2017.

5.1.1 Refugia

Measure summary:

The U.S. Fish and Wildlife Service (USFWS) San Marcos Aquatic Resources Center (SMARC) and Uvalde National Fish Hatchery (UNFH) will continue to provide refugia services.

2019 Goals:

For 2019, the contractors will provide refugia, salvage, reintroduction, and monitoring services in fulfillment of the Refugia Contract (Contract # 16-822-HCP) between the Edwards Aquifer Authority (EAA) and the USFWS.

The main focus for 2019 will be to complete all capital projects at both the SMARC and Uvalde facilities as well as continue to maintain standing stock of species and conduct research.

Research includes:

Project 1:

- Environmental influences on pupation rates of CSRБ
 - Examine how temp, DO, flow, light, diet, etc. influence pupation rates.

Project 2:

- Long-term marking success of salamander species
 - Determine efficacy of various tagging methods

Project 3:

- Increasing salamander egg survivorship within a captive setting
 - Examine fungal treatments approved for fish species and how effective they are on salamander eggs

Project 4:

- CSRБ nutrition supplementation
 - Examine gut content of CSRБ to determine deficiencies in captive populations