

The Edwards Aquifer Authority 2018 Work Plan Summaries

Presented for update:

- Applied Research
- Water Quality Monitoring
- Biological Monitoring
- Ecological Model
- Refugia

No review necessary for:

- Aquifer Storage and Recovery
- Regional Water Conservation Program
- Voluntary Irrigation Suspension Program Option
- Stage V

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.

2018 Goals:

Specific work plan detailed in the Research work group Report is pending approval at the May 10 Science Committee meeting.

2018 and 2019 represent the final two years for the Applied Research program of the EAHCP. In prior years, the Applied Research program has primarily undertaken study of the Comal Springs riffle beetle, fountain darter, and submerged aquatic vegetation to provide information utilized in creating the Ecological Model (EcoModel), which was completed in 2017. Given the completion of the EcoModel and the 2017 startup of long-term Refugia operations, specific research tasks related to species collection methods and techniques, husbandry, propagation, genetics, and reintroduction will take place as part of the Refugia research program.

Methods to achieve 2018 goals:

In 2017 a workgroup of EAHCP science committee members (Research workgroup) met to discuss the Applied Research project schedule for 2018 and 2019. The Applied Research workgroup identified projects and are included in the final Research workgroup report.

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.

2018 Goals:

For 2018, the water quality monitoring program will implement the recommendations provided by the 2016 water quality monitoring work group. The contractors utilized in 2017 will perform the work in 2018, and the same sampling locations will be targeted. Table 1 provides an overview of the 2018 activities.

Table 1. Overview of the approved water quality monitoring program for 2018.

| 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 Pharmaceuticals and 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 |

6.3.1 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.

2018 Goals:

For 2018, 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.

Methods to achieve 2018 goals:

The standard operating procedures for the BioMP that were modified in 2016 are the same used in 2017 and 2018. The modifications include:

1. Replacing the previously conducted macroinvertebrate food source monitoring with Texas Commission on Environmental Quality/Texas Parks & Wildlife Rapid Bio-Assessment (RBA) protocols for macroinvertebrate community health, conducted at the same time as fixed drop-net sampling for fountain darters at five reaches in the Comal system and four reaches in the San Marcos system.
2. Flow-partitioning within Landa Lake conducted by the EAA, but not through the EAHCP.
3. During the “Water Quality Grab Sampling” component of the BioMP, the method detection limit (MDL) for soluble reactive phosphorus were reduced from 50 µg/l to at least 5 µg/l.

Also in 2017, the EAA shared data with other entities conducting monitoring within the spring systems, such as the Guadalupe-Blanco River Authority & TCEQ Clean Rivers Program in the Comal and San Marcos rivers, the EAHCP Biological and Water Quality Monitoring Programs and the EAA Aquifer Science Department’s groundwater and spring orifice-sampling programs. These procedures will continue in 2018.

6.3.3 Ecological Modeling

Measure summary:

The development of a mechanistic ecological model (Ecomodel) is assigned to the Edwards Aquifer Authority (EAA) per section 6.3.3 of the Edwards Aquifer Habitat Conservation Plan (EAHCP). The purpose of the Ecomodel is to evaluate potential adverse effects to Covered Species and their critical habitat, and to the extent such effects are determined to occur, quantify their magnitude and develop alternate strategies. The Ecomodel, documentation and EAHCP Staff training was completed in 2017.

2018 Goals:

With the completion of the Ecomodel in 2017, no contractor work products or expenditures are scheduled for 2018.

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), and BIO-WEST Incorporated (BIO-WEST) will provide refugia services.

2018 Goals:

For 2018, 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.