

2023 ANNUAL REPORT SUMMARY

EDWARDS AQUIFER HABITAT CONSERVATION PLAN

The Edwards Aquifer Habitat Conservation Plan (EAHCP) is a regional plan to protect 11 species associated with the Edwards Aquifer while helping to ensure its stability as a regional water supply.



INSIDE ►

Overview of activities and accomplishments in 2023, the eleventh year of EAHCP implementation.

Overview of the Edwards Aquifer Habitat Conservation Plan (EAHCP)

The *Edwards Aquifer Recovery Implementation Program Habitat Conservation Plan (EAHCP)* was approved by the U.S. Fish & Wildlife Service (USFWS) as a regional plan to protect eight federally listed and three non-listed species—termed **Covered Species**—associated with the Edwards Aquifer while helping to ensure its stability as a regional water supply.

After approval of the EAHCP, the USFWS issued an **Incidental Take Permit (ITP)** under the federal Endangered Species Act of 1973 to five cooperating Permittees: **Edwards Aquifer Authority (EAA), City of New Braunfels, City of San Marcos, Texas State University,** and the City of San Antonio acting by and through its **San Antonio Water System** Board of Trustees.

The area covered by the ITP (**Permit Area**) is bounded by EAA’s jurisdictional boundary, which encompasses Uvalde,

Medina, and Bexar counties and portions of Atascosa, Caldwell, Comal, Guadalupe, and Hays counties.

The EAHCP describes impacts that are likely to result from **Covered Activities**, identifies **Conservation Measures** to minimize and mitigate those impacts, and assures funding to implement those Conservation Measures and, more broadly, the EAHCP.



Covered Species



Texas Wild-Rice
Zizania texana
ENDANGERED



Texas Blind Salamander
Eurycea rathbuni
ENDANGERED



San Marcos Salamander
Eurycea nana
THREATENED



Fountain Darter
Etheostoma fonticola
ENDANGERED



San Marcos Gambusia¹
Gambusia georgei
ENDANGERED



Comal Springs Dryopid Beetle
Stygoparnus comalensis
ENDANGERED



Comal Springs Riffle Beetle
Heterelmis comalensis
ENDANGERED



Peck's Cave Amphipod
Stygobromus pecki
ENDANGERED



Edwards Aquifer Diving Beetle
Haideoporus texanus
PETITIONED



Texas Troglitic Water Slater²
Lirceolus smithii
NOT LISTED



Comal Springs Salamander³
Eurycea sp.
NOT LISTED

¹ USFWS published a final rule on October 17, 2023, to delist San Marcos gambusia due to extinction. Photo courtesy of Texas Parks & Wildlife Department.

² USFWS published its finding on November 28, 2023, that Texas troglitic water slater is not warranted for listing.

³ The petition to list the Comal Springs salamander was withdrawn in 2020.

Note: All 11 Covered Species will remain on the EAHCP ITP through the permit’s duration regardless of changes to species status as determined by USFWS.

EAHCP Implementation: Highlights of 2023

Program Administration

- As part of the ITP renewal process, the EAHCP Implementing Committee approved memoranda with recommendations for changes to proposed Covered Activities, Covered Species, and Existing Conditions.
- USFWS published rules addressing two EAHCP Covered Species. On October 17, it published a rule delisting the San Marcos gambusia due to extinction. On November 28, it published a rule finding that the Texas troglitic water slater is not warranted for listing. Both species will remain covered under the EAHCP until the ITP is amended.

Springflow Protection

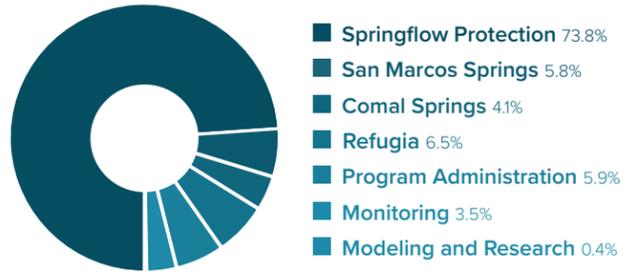
- Extreme drought conditions persisted through 2023, causing some of the lowest springflows observed since EAHCP implementation began. The lowest springflow occurred in August (55 cfs in Comal and 64 cfs in San Marcos). Springflows remained below Condition M levels for most of the year, and restoration activities were limited in accordance with the ITP.
- Conditions at the J-17 Bexar Index well on October 1 triggered the Voluntary Irrigation Suspension Program Option for the second year in a row. Participants will not pump Edwards Aquifer water in 2024.

Habitat Restoration

- In New Braunfels, Permittees planted 7,046 individual native aquatic plants, or an area of 431 m², in Landa Lake. Permittees also removed 22 m² of non-native *Hygrophila* from the Comal River system. Due to implementation of Condition M in July, no additional plantings occurred in other reaches of the Comal River system in 2023.
- In San Marcos, springflow remained below 120 cfs the entire year, and aquatic restoration was restricted. USFWS reviewed and approved aquatic restoration starting in June in select areas of the San Marcos River, comprising 7,862 individual native aquatic plants within the river adjacent to Bicentennial Park.
- Permittees completed construction of a bioretention basin at the Landa Park Aquatics Complex parking lot near Comal Springs.
- The construction of Phase I of the Sessom Creek restoration project was completed in May. The project is a recommendation of the San Marcos Water Quality Protection Plan.

Fiscal Stability

Budget by Program Activity, 2023



The current financial projections and cost estimates for the EAHCP indicate an overall fiscally stable Program with an adequate budget for Program implementation in fiscal year 2024. The Program has a reserve balance of \$13,918,433 and a cash balance of \$26,266,516. There are adequate funds for the Program in fiscal year 2024.

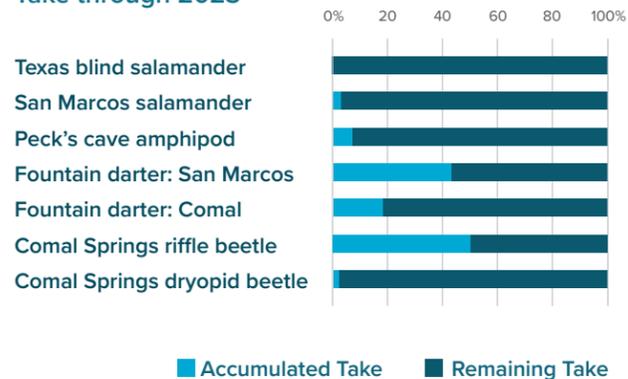
Incidental Take

Incidental take of listed species from Covered Activities is quantified annually and measured against the total take authorized by the ITP.

In the Comal Springs system, take totaled 72,630 fountain darters, 2,502 Comal Springs riffle beetles, 12 Comal Springs dryopid beetles, and 925 Peck's cave amphipods. The Comal invertebrate take was mostly due to severe drought conditions that reduced portions of occupied habitat.

In the San Marcos Springs system, take totaled 49,145 fountain darters and 769 San Marcos salamanders, primarily due to severe drought conditions that reduced portions of occupied habitat.

Covered Species Accumulated Take through 2023



Implementation of Conservation Measures

Conservation Measures are activities carried out by the Permittees in the Permit Area as part of EAHCP implementation. These measures encompass springflow protection, habitat conservation, and various supporting activities such as research and biological monitoring.

The tables at right summarize progress toward fulfilling the Conservation Measures. Implementation efforts are highlighted for 2023. As the EAHCP enters its 12th year of implementation, most Conservation Measures have either been fulfilled or are in an on-going or maintenance phase.

All efforts to implement the Conservation Measures were conducted in accordance with the Permittees' approved annual Work Plans.



SPRINGFLOW PROTECTION **HABITAT CONSERVATION** **SUPPORTING ACTIVITIES**

Status Key and Abbreviations

- Implementation Status**
- W Working toward fulfillment
 - ✓ Fulfillment expected or partially achieved
 - ✓ Fulfillment achieved or implemented
 - M Maintenance
 - O On-going
 - I Implemented when triggered
 - T Triggered
 - No activity

Permittees

- CONB** City of New Braunfels
- COSM** City of San Marcos
- EAA** Edwards Aquifer Authority
- SAWS** San Antonio Water System
- TXST** Texas State University

2023 is the 11th year of EAHCP implementation

Springflow Protection Measures

		13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Aquifer Storage and Recovery Springflow Protection Program Enrollment	EAA, SAWS	W	W	W	W	W	W	W	✓	✓	✓	✓	✓	W	W	W
Aquifer Storage and Recovery Springflow Protection Program Storage	EAA, SAWS	W	W	W	W	W	W	W	✓	I	I	I	I	I	I	I
Aquifer Storage and Recovery Springflow Protection Program Forbearance	EAA, SAWS	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Voluntary Irrigation Suspension Program Option Enrollment	EAA	W	W	✓	✓	✓	✓	W	W	✓	✓	✓	✓	W	W	W
Voluntary Irrigation Suspension Program Option Implementation	EAA	I	T	✓	I	I	I	I	I	I	T	✓	✓	I	I	I
Regional Water Conservation	EAA	W	W	W	W	W	W	W	✓	-	-	-	-	-	-	-
Stage V Critical Period Management (San Antonio Pool)	EAA	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Stage V Critical Period Management (Uvalde Pool)	EAA	T	T	T	I	I	I	I	I	I	I	I	I	I	I	I

Habitat Conservation Measures

		13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Management of Public Recreation	CONB, COSM, TXST	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Designation of Permanent Access Points/Bank Stabilization	COSM	W	✓	M	M	M	-	-	-	-	-	-	-	-	-	-
Native Riparian Habitat Restoration	CONB, COSM, TXST	W	W	W	W	W	W	W	W	W	W	W	✓	M	M	M
Native Riparian Habitat Restoration (Riffle Beetle)	CONB	W	W	W	W	W	W	W	✓	M	M	M	M	M	M	M
Texas Wild-Rice Enhancement	COSM, TXST	W	W	W	W	W	W	W	W	W	W	W	W	✓	M	M
Aquatic Vegetation Restoration and Maintenance	COSM, TXST	W	W	W	W	W	W	W	W	W	W	W	W	✓	M	M
Aquatic Vegetation Restoration and Maintenance	CONB	W	W	W	W	W	W	W	W	W	W	W	W	M	M	M
Decaying Vegetation Removal and Dissolved Oxygen Management	CONB	T	T	T	T	I	I	I	I	I	T	T	I	I	I	I
Management of Floating Vegetation Mats and Litter	CONB, COSM, TXST	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Reduction of Non-Native Species Introduction and Live Bait Prohibition	CONB	O	O	O	O	O	O	✓	O	O	O	O	O	O	O	O
Monitoring and Reduction of Gill Parasites	CONB	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Non-Native Animal Species Control	CONB, COSM, TXST	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Flow Split Management	CONB	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Diversion of Surface Water	TXST	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Research Programs in Spring Lake	TXST	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Diving Classes (Spring Lake) and Boating (Spring Lake and Sewell Park)	TXST	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Management of Golf Course and Grounds	CONB, TXST	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Prohibition of Hazardous Material Transport Routes	CONB	W	W	W	✓	-	-	-	-	-	-	-	-	-	-	-
Prohibition of Hazardous Material Transport Routes	COSM	W	W	W	W	W	W	W	W	W	W	W	✓	-	-	-
Management of Household Hazardous Waste	CONB, COSM	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Minimizing Impacts of Contaminated Runoff	COSM	W	W	W	W	W	W	W	✓	-	-	-	-	-	-	-
Impervious Cover/Water Quality Protection	CONB, COSM	W	W	W	W	W	W	W	W	W	W	W	W	W	W	-
Sessom Creek Sand Bar Removal	TXST	W	W	W	✓	-	-	-	-	-	-	-	-	-	-	-
Sediment Management	COSM, TXST	W	W	W	W	✓	-	-	-	-	-	-	-	-	-	-
Septic System Registration and Permitting Program	COSM	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Impervious Cover/Water Quality Protection: Coal Tar Sealant Ban	EAA	W	W	✓	-	-	-	-	-	-	-	-	-	-	-	-

Supporting Measures

		13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Net Disturbance	EAA	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Incidental Take	EAA	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Refugia	EAA	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Applied Research	EAA	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Biological Monitoring	EAA	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Water Quality Monitoring	EAA	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Ecological Modeling	EAA	W	W	W	W	✓	-	-	-	-	-	-	-	-	-	-
Groundwater Modeling	EAA	W	W	W	W	W	W	W	✓	-	-	-	-	-	-	-