EAHCP STEWARD

News from the Edwards Aquifer Habitat Conservation Plan - November 2021

Going, Going, Gone

U.S. Fish and Wildlife Service Proposes Delisting San Marcos Gambusia from Endangered Species List

Dr. Bob Edwards was the last person to have caught and handled the very rare San Marcos gambusia, a mosquitofish native and endemic to the San Marcos River. Toward the end of his work with this endangered species, he got down to housing one female fish in his lab. After many attempts to preserve the San Marcos gambusia genes through hybridization, he said that last known San Marcos gambusia died a “lonely spinster” after refusing to mate with other species of the Gambusia genus located in the San Marcos River ecosystem. And that concluded the saga of the San Marcos gambusia, one of the Edwards Aquifer’s endangered species.

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San Marcos Gambusia - Continued

"In 1978 and 1979, a fellow scientist and I were recruited to sample the San Marcos River from Spring Lake all the way down to Martindale," Edwards said. "In that lengthy expedition, we managed to find 18 San Marcos gambusia. These fish have always been rare being first described in the late 1960s. We managed to breed the fish we caught and created a nice population of the gambusia in captivity. However, that group of fish were transferred to a fish hatchery in New Mexico which handled and managed endangered species. Unfortunately, the entire cultured population perished during an extremely cold winter their first year there."

Edwards explained that upon hearing about the lost culture, he began sampling the San Marcos River every month to try and find other San Marcos gambusia. He found a few males and finally one female. But after two years of trying to find the perfect mate for the female, that last known San Marcos gambusia in existence died as well.

A part of the San Marcos River that the San Marcos gambusia once lived.

It is always a sad day when one of the Earth's animal species goes extinct. But those events give people the opportunity to discuss what is being done to protect and preserve endangered species around the world, and specifically in the State of Texas.

In 1973, the United States Congress voted to institute the Endangered Species Act. The U.S. Fish and Wildlife Service (USFWS) carries the responsibility for managing and enforcing that legislation. Early on, there was not a lot of information on species that the Service listed as at risk for extinction. Today, though, the Service goes through a thorough species status assessment before making recommendations on listing the species as threatened or endangered. In the process, regional USFWS staff will evaluate the current conditions of the species in question in the wild and similarly assess the status of its habitat. Then, computer modeling is used to predict how the species might fare in the future based on various development and climate scenarios. At the conclusion of the assessment, the field biologists will make a recommendation to a regional director who will then review the work and make a policy recommendation on the particular listing of that species.

In reviewing the species specific to the Edwards Aquifer, USFWS Biologist Paige Najvar says the most important things they look at are all of the threats that the species face. "For the Edwards Aquifer species, we understand that this is the only place in the world they exist, meaning that if something ever happened to the aquifer, the endangered species and others could be gone forever. Additionally, we consider the amount of water being pumped from the Edwards Aquifer now and amounts needed for the future, how water quality is being maintained, and other conditions that might threaten the water quality and quantity needed to preserve the endangered species."

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San Marcos Gambusia - Continued

When it comes to the San Marcos gambusia, fellow biologist with Najvar in the Austin Ecological Services Field Office, Donelle Robinson, explained that the species was proposed for listing as endangered in 1978. At the time, the fish was already rare with an estimated population of about 1,000 fish. “The San Marcos gambusia was officially listed as endangered in 1980. At that time, there were several focused efforts to find Gambusia in the San Marcos River and increase their population in captivity. However, all of those attempts were not successful. Around the 1990 timeframe, another extensive survey of portions of the San Marcos River was conducted to see if there might be any San Marcos gambusia still living. That work also came up empty. We reviewed all of that program data and reporting before we made the decision to propose delisting the San Marcos gambusia due to extinction. We are currently in the comment phase of the process and that will give us essentially one last opportunity to see if there is any information out there that would warrant us reconsidering the removal of the San Marcos gambusia from the endangered species list.”

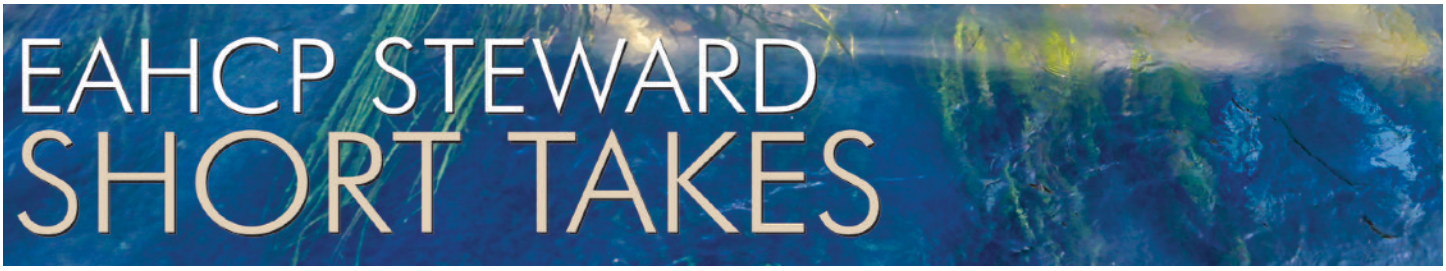
TPWD’s Kevin Mayes, left, on the search for the San Marcos gambusia.

Kevin Mayes, the Texas Parks and Wildlife Department Native Fish Conservation Coordinator, was a part of the team that scoured the San Marcos River in 1990 in what would be a final effort to locate a San Marcos gambusia. “It was definitely quite the excursion. There were at least a couple of dozen fish biologists with seines and dip nets on the hunt for the San Marcos gambusia. Over the course of a few days, we collected thousands of Gambusia. We took them to the federal fish hatchery in San Marcos where each fish was examined by experts like Bob Edwards and Clark Hubbs. Only a few potential hybrids were found, but there were no pure San Marcos gambusia, only Western Mosquitofish and Largespring Gambusia which are also native to the river.”

When asked what could have caused the loss of the San Marcos gambusia, Mayes said, “There are some theories that say the non-native elephant ear plants that once blanketed the San Marcos River essentially crowded out the San Marcos gambusia. But, there are probably a number of factors, such as a long history of dam construction, urban runoff increasing with the growth of San Marcos, the channelization of some parts of the river and the introduction of additional exotic, non-native plants that led to changes in habitat for the San Marcos gambusia.”

Mayes’ final thoughts about the San Marcos gambusia were essentially a call to action on the part of citizens and biologists alike. He said that more than 40 percent of America’s freshwater fishes are imperiled and subject to possibly being listed on the federal endangered species list.

“The important point to all of this is that even though the San Marcos gambusia is gone from Texas and planet Earth, we should make sure that its extinction from the San Marcos River is not forgotten. That will help us ensure that the natural heritage of Texas endures, and that all of us continue to put forth every effort to save other species that are in danger of extinction.”



EAHCP Upcoming Meeting Schedule

EAHCP Research Work Group

Date: December 6, 2021
Time: 1:00 PM
Location: Microsoft Teams

EAHCP Comal Springs riffle beetle Work Group

Date: December 7, 2021
Time: 1:00 PM
Location: Microsoft Teams

Joint Implementing Stakeholder, Implementing, Science Committee Meeting

Date: December 16, 2021
Time: 10:00 AM
Location: Microsoft Teams

Two Sessom Creek Workdays Happening in November

The upcoming volunteer Sessom Creek workdays for November are scheduled for Thursday, November 18, and Saturday, November 20. Both sessions will run from 9 a.m. - 11 a.m.

With the cooler weather approaching, the Sessom Creek workdays will begin to include broadcasting native seed mixes in areas where invasive species removal work is complete. Other tasks to be accomplished will be prepping seeding areas and small invasive species removal as needed. Tools will be provided, but bring a water bottle. Meet at Vie Lofts parking lot (5 designated spots for park users). Parking will also be available along Chestnut, Walnut, and Acorn Streets.

You can RSVP at: https://www.signupgenius.com/go/30e084ba8ae2ca7fc1-habitat.