

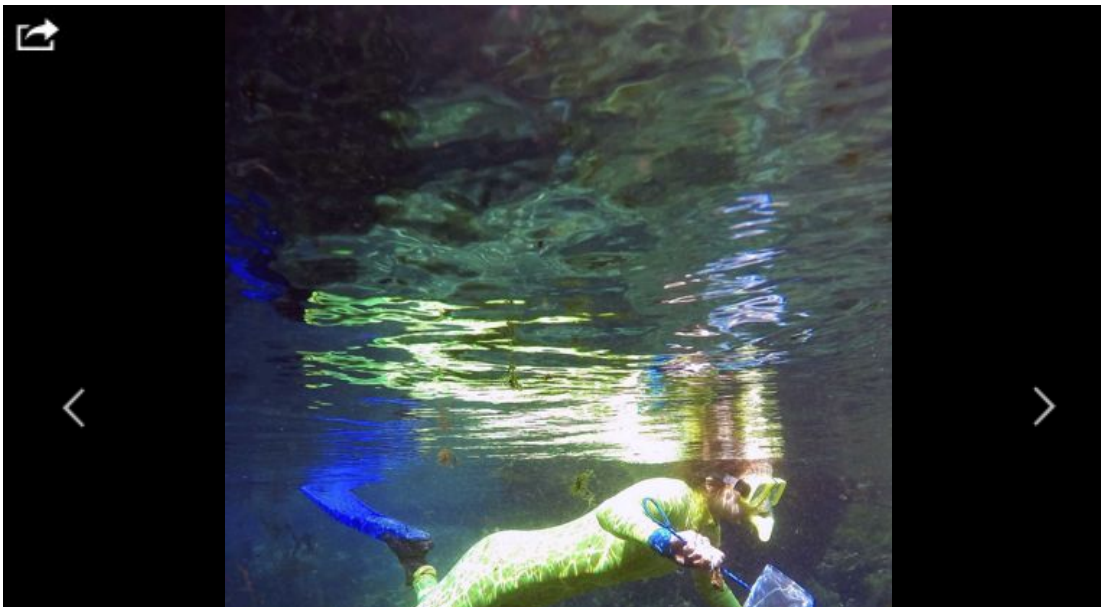
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Scientists dive in to shore up protected salamander





William Luther/San Antonio Express-News

Volunteer Kristina Zabierek snorkels on the surface of Spring Lake Tuesday Sept. 23, 2014 waiting for U.S. Fish and Wildlife Service divers to surface with San Marcos Salamanders collected from the underwater springs that create Spring lake and form the head waters of the San Marcos River.

By William Luther, San Antonio Express-News

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SAN MARCOS — A handful of scientists and volunteers gathered at the edge of the water at the former Aquarena Springs tourist attraction to do something few people get to do.

They collected living San Marcos salamanders, which are federally protected amphibians listed as threatened and found only in the headwaters of the San Marcos River.

“We generally collect once in the fall and once in the spring to maintain (salamander) populations” in our refuge facilities, Valentin Cantu, a fish biologist with the U.S. Fish and Wildlife Service in San Marcos and coordinator of the collection activities at Spring Lake, said Tuesday.

Video: A look at the natural habitat of the San Marcos salamander

Video: A collection of salamanders to be studied by Texas Parks & Wildlife

The refuge, called a refugia in scientific terms, has tanks to house the salamanders and other rare species to maintain their genetic diversity should a dramatic change occur in

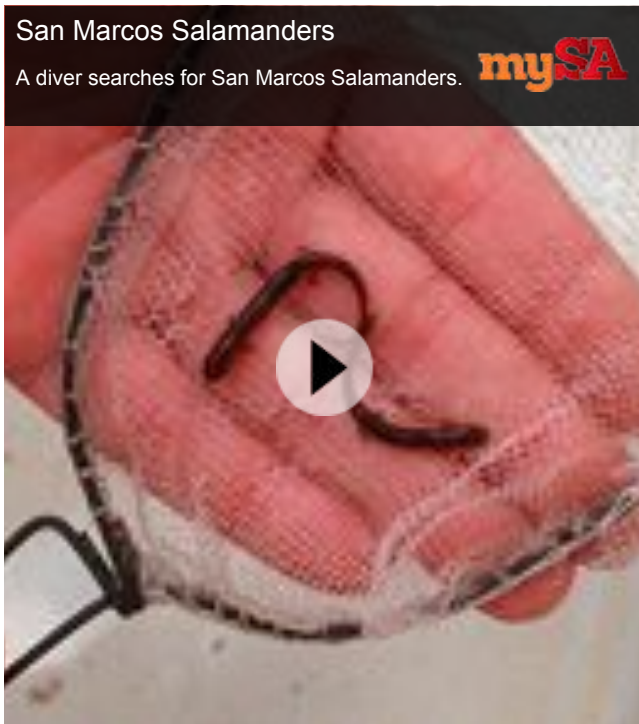


their habitat.

Such a change is not impossible, considering its geographically small habitat.

“We have a map that shows all the spring sites (in Spring Lake) and there are about 22 different areas where the San Marcos salamander can be found,” Cantu said. “And some of those areas are quite small.”

Spring Lake is fed by the Edwards Aquifer, which remains way below normal as the 4-year-old drought persists.



Declines in spring flows — the 10-day average on the collection day was 105 cubic feet per second compared to the average of 170 cfs — can cause serious damage to the salamander's habitat and dictate extra monitoring, according to the Edwards Aquifer Habitat Conservation Plan.

“The more the springs go down, the more siltation there is,” said Cantu, who noted that the lungless salamanders require clean, flowing water

to live since they get 80 percent of their oxygen directly through their skin.

So with two divers to find the salamanders, two snorklers to facilitate transfers to a holding tank, and a data collector on the work barge to record information about each amphibian, the crew made their way into the gin-clear, 71-degree water.

After a few minutes of the divers moved rocks and placed them back in their original location to minimize habitat disturbance, the first salamander was brought to the surface.

Then a slow progression of salamanders began to emerge from the water, one at a time, as the divers found a healthy number of them. Some were as big as two inches while the juveniles were smaller than a fingertip.

The “collections went well,” Cantu said afterward. “The team was able to collect all the wild stock salamanders needed at this time.”

As for the effects of the drought on the aquifer's endangered and threatened species, Tom Brandt, the agency's San Marcos Aquatic Resources Center director, said it is too early to make any definitive statements, but he noted additional “data is being collected, examined and discussed.”

“We are operating as if the drought is going to continue,” said Brandt, adding, “We have also been discussing how we can increase the facility's (holding) capacity.”

Additionally, we “have stepped up monitoring,” he said.

While most of the Aquatic Resources Center's activities have picked up due to the drought, one thing has slowed.

“Up until recently, (the center) was producing Texas wild rice for a restoration project in the San Marcos River,” Brandt said. “That project has been temporarily suspended until spring flows increase.”

Recent rain spells have brought the San Marcos and Comal Spring flows some short-lived relief, but significant increases in the flows up to

seasonally normal levels are not expected as the aquifer bounces around historically low levels. The J-17 monitoring well measured 629 feet above sea level on the salamander collection day — 32.1 feet below the well's historical average for this time of year.

When asked what he and other staff members at the Aquatic Resources Center are doing as the drought extends into fall, Cantu had a pretty simple answer that anyone can do: “We are keeping our fingers crossed for more rain.”

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