EAHCP STEWARD

News from the Edwards Aquifer Habitat Conservation Plan - May 2020

Spring Forward

Vegetation mapping shows improvements in Spring Lake

Kristina Tolman and Casey Williams at Spring Lake

Archaeologists tell us that humans inhabited the land around Spring Lake in San Marcos as long ago as 12,000 years. But it wasn't until about 170 years ago that people living in the area decided to dam up the San Marcos River near its headwaters to create Spring Lake. Once that happened, the landscape of aquatic vegetation began to change, and not so much on the positive side of the ledger.

To reduce the dominance of nonnative vegetation in Spring Lake and San Marcos River downstream of the lake, the Edwards Aquifer Habitat Conservation Plan (EAHCP) participants, with assistance from the Meadows Center aquatic restoration team, initiated a comprehensive program to remove nonnative vegetation from the river and lake. That work also included the replanting of native plants where nonnatives were removed. And, over the past seven years that once-detrimental trend of nonnative vegetation prevalence has been slowly but surely been reversing course.

Spring Lake Mapping - Continued

An important part of that program includes a process called “vegetation mapping,” which essentially is like taking an inventory of all of the types of vegetation in an area like Spring Lake. The plants in the lake and river are often referred to as submerged aquatic vegetation (SAV). And the latest SAV survey says Spring Lake is in great shape.

“Spring Lake is considered a refugium since it is the habitat for several endangered species that thrive on the high-quality water that pours out of the springs,” said Casey Williams, a biologist for BIO-WEST who recently completed the SAV mapping of the lake. “Because of its environmentally-sensitive nature, keeping Spring Lake healthy over the long run will be a priority for everyone involved. Our latest mapping effort showed that more than 99 percent of the nonnative water-hoarding elephant ear plants have been removed. Additionally, nonnative tallow and ligustrum trees have all but been eliminated from the banks surrounding the lake. Overall, I’d say it’s game on for the endangered fountain darter, salamanders and Texas wild- rice that make their home in Spring Lake.”

EAHCP Coordinator Kristina Tolman, who was the project manager for this effort, explained that Spring Lake had not been mapped since 2009, and that it was not included in the last major system-wide mapping effort that occurred in 2013 and in 2018.

“It’s important to the EAHCP program to understand the SAV composition and its location so our contractors can effectively remove nonnatives such as hygrophila, and identify Texas wild-rice planting zones in Spring Lake,” she explained. “Spring Lake was identified as a source of hygrophila that was impacting native SAV removal efforts downstream. But, once we remove it from Spring Lake, we are expecting to see a reduction in new stands of hygrophila downstream of Spring Lake in the coming years. Maintenance and routine removal of hygrophila fragments will be required to effectively remove it from the system.”

Williams added that the problem with hygrophila is that it resembles the native ludwigia plant but it doesn’t protect the endangered species as effectively as the native plants. Additionally, the hygrophila plant is very brittle. A handful of hygrophila can fragment into thousands of pieces and easily spread across the lake and river. Once rooted, hygrophila is not easily overtaken by native plants.

Spring Lake covers approximately 22 surface acres and was originally created to power a saw mill in the mid-1800s. With the impoundment of water there, the lake covered over the spring openings that deliver Edwards Aquifer water to the lake and ultimately the San Marcos River. The San Marcos Springs are the second-largest springs system in Texas. Spring Lake can be divided into three main sections, with two arms flowing south and eventually joining and forming a small bay area. The spring arm of the lake is located along the western shore and is the location of most of the spring openings. The water quality there is

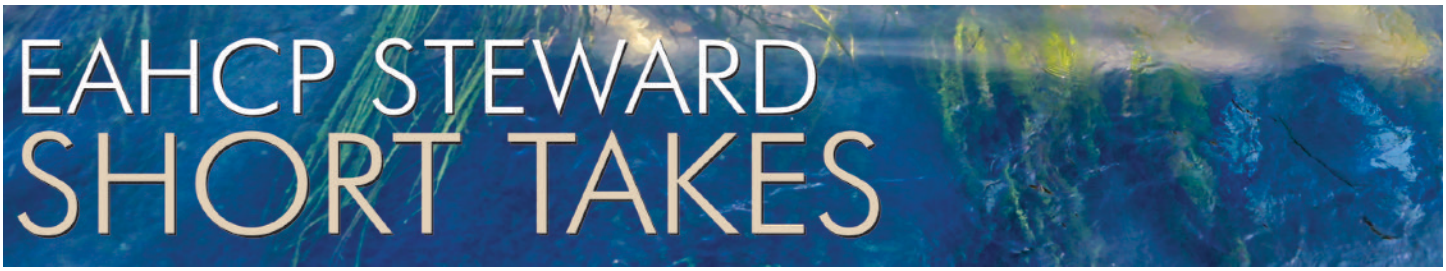
Spring Lake Mapping - Continued

excellent and always of a consistent, cool temperature. That creates the perfect habitat for the endangered species, which includes the Texas blind salamander which lives in the spring openings.

While a 22-acre lake with 80 percent vegetation cover seems like a large task to take on, Williams was able to create the Spring Lake SAV map in about a week. To gather data for the map, he paddled out on the lake in a kayak with his portable GPS system, maneuver around a patch of plants and record the GPS coordinates into his device. In addition to the plant location information, he would make notes of the plant mix there and the total area of the patch. Knowing the size of each patch also helped program managers know how much natural habitat could be restored.

The findings from Casey's survey were promising. While we've seen a definite increase in Texas wild-rice, we still have about 760 square meters to plant to reach our long-term goal of 1,000 square meters of Texas wild-rice in Spring Lake," Tolman concluded. "Before BIO-WEST began their work, they hired Baylor University to fly the lake with a drone and capture high-resolution aerial imagery of current distribution of SAV in the lake. That was a first for our program. The mosaicked imagery plus Casey's veg data will be invaluable to us over the next several years as the City of San Marcos and Texas State University continue their SAV restoration efforts in Spring Lake the San Marcos River."

The final report will be made available on the EAHCP Website by June 1.



Robert Mace Appointed Executive Director at Meadows Center

Congratulations to EAHCP Implementing Committee Secretary Dr. Robert Mace on his recent appointment to the Executive Director & Chief Water Policy Officer at the Meadows Center for Water and the Environment.

Robert has more than 30 years of experience in hydrology, hydrogeology, stakeholder processes, and water policy, mostly in Texas. Before joining Texas State University in 2017, Robert worked at the Texas Water Development Board for 17 years ending his career there as the Deputy Executive Administrator for the Water Science & Conservation office.

You can read more about Robert at this link.

Childers Earns Master's Degree in Science, Natural Resource Policy

Congratulations to EAHCP Manager Jamie Childers for recently earning a Master's degree in Science, Natural Resource Policy and Administration as well as a Certificate in Environmental Education and Communication from the University of Florida. Great job Gator Grad!

The EAHCP Steward introduced Jamie in the March 2019 Steward newsletter. [You can read that newsletter here.]

EAHCP Joint Committee Meeting Scheduled for May 21

A Joint Meeting of the EAHCP Stakeholder and Implementing Committees will be held via teleconference on May 21, 2020 at 10:00 AM. Please RSVP to eahcp@edwardsaquifer.org if you would like to watch and/or participate in this meeting.