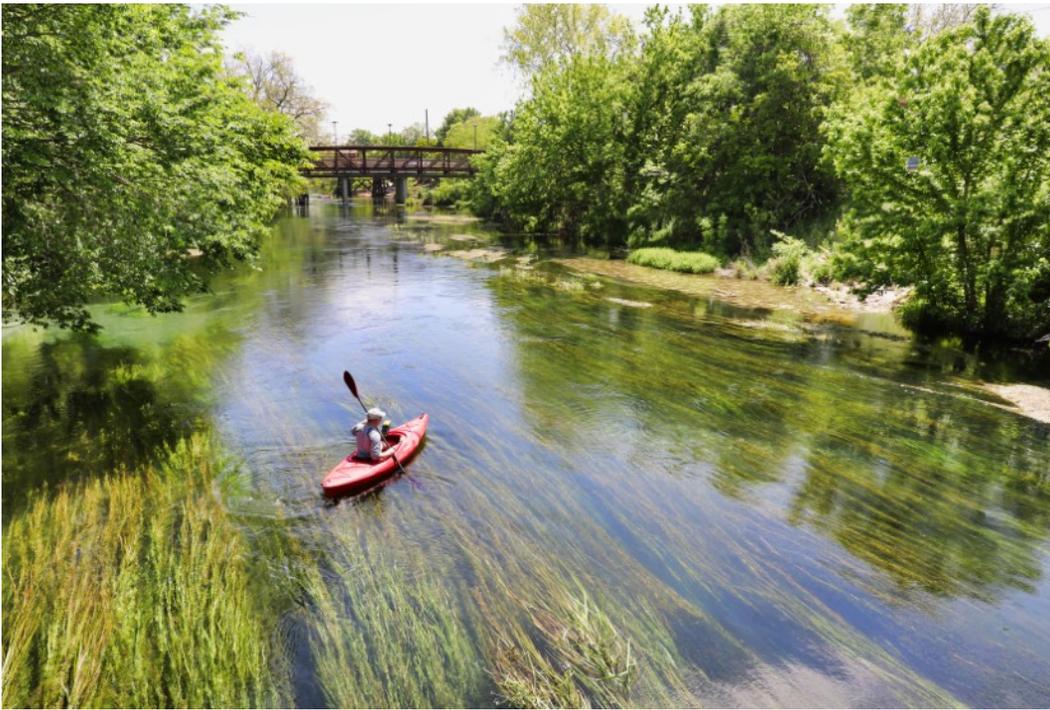


Putting Native Vegetation on the Map

EAHCP Completes Five Year Cycle for Monitoring Vegetation



“It was a sizable task, and maybe a bit of a brain tease at the start.”

Those few words from Casey Williams, a BIO-WEST biologist, gives you an idea of the thoughts running through his mind as he launched his kayak into the San Marcos River to begin mapping the submerged aquatic vegetation (SAV) of the entire San Marcos and Comal River systems.

“I had been doing some spot [SAV] mapping in the river systems before the Edwards Aquifer Habitat Conservation Plan (EAHCP) five-year program began in 2013,

but thinking about getting through the entire San Marcos and Comal Rivers was a new hill to climb,” Williams said. “It wasn’t just the magnitude of the effort, but I also wanted to make sure that the final product was beneficial to the EAHCP team members.”

The 2013 SAV mapping effort set the baseline for future years so the EAHCP could monitor progress in removing non-native plants in the system and replacing them with native species. The planting of native vegetation was expected to have a reciprocal positive impact on the endangered species living in the river systems, as well as the general health of the overall ecosystem.

To create the map, Williams would head out in a kayak with his portable GPS system, paddle 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.

“When we started in the Comal River, the entire riverine area was covered with the non-native *Hygrophila*,” Williams explained. “It was very dense and looked like huge swaths of muck in the river. In some places, it controlled the river from bank to bank. In San Marcos, we found huge areas of elephant ear plants and *Hygrophila* as well. So, after five years of mapping this area and observing EAHCP programs to reinstate native plants, the two river systems look very different from the first day I put my kayak in the water back in 2013. The elephant ears are gone and the endangered native Texas wild-rice has really grown beyond what I anticipated.”

Kristy Kollaus, EAHCP Environmental Scientist, has also witnessed the native vegetation improvements and stated that this whole process has helped the EAHCP team members adapt to new findings.

“One of the things we learned from reestablishing native plants in the river systems is that some native species fare better in certain locations than others,” Kollaus noted. “That could be attributed to species habitat preferences and changes in available habitat from year to year as well as other factors, but when we do observe these outcomes, we change strategies in an effort to maximize native vegetation expansion to improve habitats for the endangered species. We have even learned new planting techniques that help certain species of plants thrive. For example, we’ve planted *Sagittaria* in front of *Ludwigia* in order to slow the flow of water which the *Ludwigia* prefers.”

Both Williams and Kollaus commented on the positive improvements of Texas wild-rice in the San Marcos River. From 2013 to 2018, Texas wild-rice has expanded an estimated 5,914 square meters, a 240 percent increase, through planting and natural expansion. Overall, nearly 70 percent, 35,000 square meters, of the San Marcos habitat was covered with non-native plants in 2013. However, by 2018, that invasive plant covering had been reduced to 22,000 square meters.

“One very important aspect of this five-year mapping program is that we use the data to update the biological goal reporting we must provide to the U.S. Fish and Wildlife Service as part of our Incidental Take Permit, which is what governs the whole EAHCP program,” Kollaus stated. “We have to provide data on how our habitat restoration programs are effecting the endangered plant and animal species within both river systems. So, the detailed mapping program plays a key role in helping us document those stories.”

Looking forward, both Williams and Kollaus expect more progress in improving the San Marcos and Comal River systems. And while another drought or large flood scouring events could occur, both scientists are confident that the data mapping and field research from the past five years has them well prepared for either of those natural occurrences.

So, with this new knowledge and positive trend toward more and more native plants thriving in the San Marcos and Comal Rivers, could there one day be only native plants found in that ecosystem?

“It is improbable to think that we might someday have 100 percent coverage of native plants in this Edwards Aquifer fed ecosystem. We are really shooting to reverse the ratio of natives to non-natives,” Kollaus concluded. “As mentioned, non-natives dominated parts of both systems just five years ago and now that balance has been shifted and our progress should only accelerate over the coming years based on what we’ve learned in the last few years. We just want to give our native vegetation a fighting chance to flourish and it looks like we’re starting to win that battle.”

Short Takes on the Next Page

Short Takes

EAHCP 2018 Annual Report Available

The 2018 EAHCP Annual Report is ready for download. [Click here for more info.](#)

EAHCP Implementing Committee Meeting Set for May 23 at City of New Braunfels City Hall

A meeting of the Edwards Aquifer Habitat Conservation Plan (EAHCP) Implementing Committee will be held Thursday, May 23, 2019, 10 AM, at the City of New Braunfels City Hall. [Click here for more info.](#)

EAHCP at San Marcos Sustainability Fair

The EAHCP team volunteered (Olivia Ybarra, left, and Kristina Tolman) at the City of San Marcos Sustainability Fair and Native Plant Sale on Saturday, April 6. Proceeds from the plant sale helped fund the



native plant demonstration beds and plant propagating program at the Discovery Center. EAHCP staff informed visitors of the habitat restoration and conservation activities occurring in the San Marcos River and Comal River systems as well as the goals, initiatives and accomplishments achieved by the program.

A huge thank you to Melani Howard, Eric Weeks, Conrad Chappell and the Discovery Center staff for hosting such a successful event.