EAHCP STEWARD
News from the Edwards Aquifer Habitat Conservation Plan - July 2020

Tag… You're It!

Invasive Catfish Tagging Study to Help Assist EAHCP Removal Programs

Allison Hay and Josh Perkin

Near the end of a lengthy discussion about removing the invasive Suckermouth armored catfish from the San Marcos River, Dr. Joshuah S. Perkin, assistant professor at Texas A&M University, said that at times, they feel like they are outnumbered. But, that particular outlook was more than tempered with an enthusiastic confidence that the current research project, designed to make the removal of the ecologically detrimental fish species much more effective, will be successful.

"Part of our research, which was funded by the Department of Ecology and Conservation Biology at Texas A&M, leads us to believe that the population of the armored catfish in the San Marcos River began in the early 1990s," Perkin said. "These fish, which are common in the aquarium trade, are used to remove algae from the sides of aquariums when they're small. That small sucker type mouth is very effective for that. However, they do get much larger and so people who own them think that 'freeing' the fish in the river is the humane way to dispose of them. Unfortunately, that good intention is definitely misdirected because these fish have been very destructive to the San Marcos River system and the native and endangered species


Allison Hay inserts Passive Integrated Transponder.

living there. The problem is, these fish have had about a 25-year head start in building a large population and so the goal to remove them is definitely an uphill battle."

Perkin explained that the armored plates on the fish are created when it takes up large amounts of nutrients in the water. That obviously leaves fewer nutrients for the endangered species to thrive on. Additionally, the catfish are notorious for burrowing into the banks of the river which can destabilize the riverbank over time and lead to unwarranted silting. Too much silt covers over habitat needed by the endangered species for survival.

Over the past few years, Atlas Environmental, a City of San Marcos contractor for EAHCP conservation measures has been tasked with spearing as many of the catfish as they can. In addition to its routine schedule of scouring the river for these fish, Atlas initiated two, spearfishing tournaments to not only increase the numbers of armored catfish removed each year, but to raise overall awareness about the issue in the San Marcos community.

"One of the unique features of this particular research project that drew me in was the community involvement aspect," noted Allison Hay, a Texas A&M undergraduate scholar working with Dr. Perkin. "In the long run, changing the habits of the people who own aquariums will be essential to making the catfish removal successful. So, while I'm very interested in seeing what the data tells us from our fish tagging and tracing work, I'm also excited about the fact that this is such a large group of people working together to improve the overall ecology in the San Marcos River."

Hay explained that the process for tagging the armored catfish starts with capturing the fish and logging the exact location. The fish are then tagged with dual devices. The first is a Passive Integrated Transponder (PIT) tag which she said is similar to the chips used by pet owners find lost animals. The second tag is placed on the dorsal fin. Each fish is measured and weighed and then given a unique tracking number. Once the tagging is completed, the fish are released in the same locations they were captured.

"While releasing these fish back in the environment where they are doing harm seems a bit counter intuitive, we will get some very helpful information about where the armored catfish like to be in the river and also to what extent we are impacting the mortality rate of the fish through current removal techniques," Perkin explained.

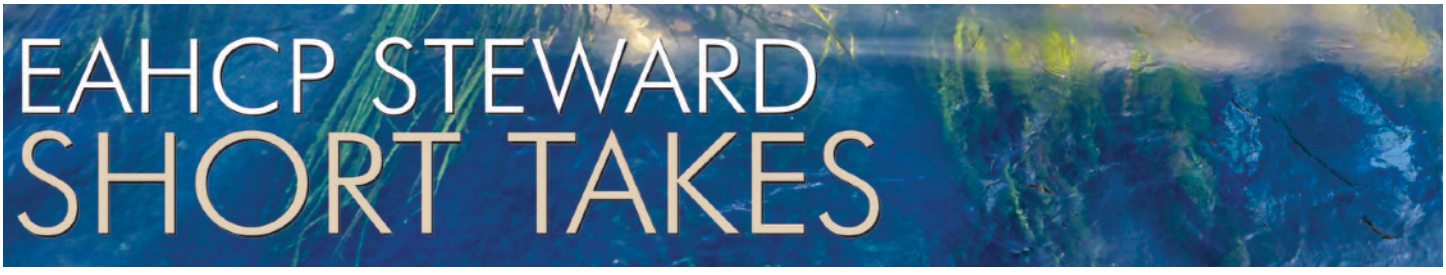
COVID-19 - Continued

Dr. Josh Perkin measures, weighs and gets a photo of each catfish.

"Between now and when the next spearfishing tournament happens in the fall, we will be come back to the river four to five times to find our tagged fish and note their movements. Then when the tagged fish are caught during the tournament, we will be able to find out how much they have grown. All of that data will then be assessed to help the EAHCP determine the overall effectiveness of current removal methods. Plus, learning the catfish movements will help focus locations for fishing and in turn improve removal numbers."

Perkin said that while there are about 1,000 Suckermouth armored catfish being removed each year, they still don't really know what the overall population is.

"The San Marcos River is like many other river systems in having this problem with invasive catfish harming the ecosystem. However, because of the consistent water quality and water temperature due to the spring-fed source, the San Marcos River is like one big aquarium for these armored catfish. So, they thrive here whereas in another river environment with highly variable water temperatures, they might die relatively soon after being released. An upside to this tagging research is that the PIT tag doesn't require a battery so we will be able to track the fish over several years if they are not caught in the spearfishing tournaments or by other means. That just improves our ability to know more about the armored catfish and ultimately make a larger impact in removal."



San Marcos and New Braunfels Parks Still Closed for COVID-19

While the summer heat is best beat in the cool waters of the Comal and San Marcos Rivers, this year the recreation season is being cut short due to abundant precautions about the spread of the COVID-19 coronavirus. To keep up with the information about those two parks, just click the links below.

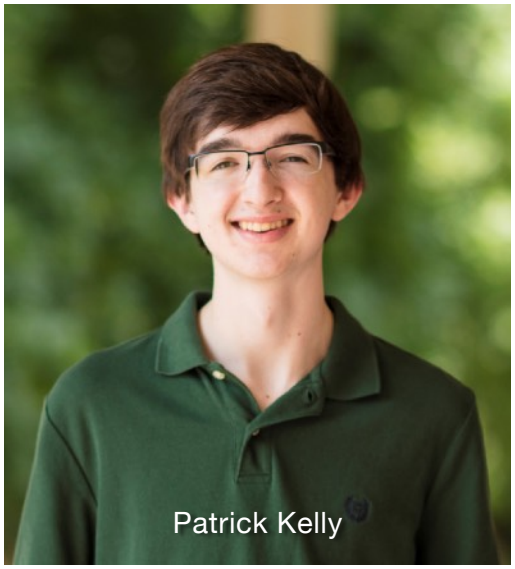
San Marcos River Park

City of New Braunfels Parks and Rivers

Summer Volunteers Working to Further EAHCP Mission

The EAHCP team is happy to have Patrick Kelly and Connor Helsel, both Trinity University students, contributing to the EAHCP mission this summer. Helsel will be a senior and Kelly will be a junior this coming year. Helsel is an Environmental Studies major with a focus on water resources management, while Kelly is studying Business Analytics and Technology. Helsel's project for the EAHCP will involve researching individual characteristics of the endangered species and creating updated profiles of each species for the EAHCP website. Kelly will studying current data about the fountain darter and then using programming language "R" to create a more visual representation of the data sets. R is widely used among statisticians and data miners for developing statistical software and data analysis.


Connor Helsel


Patrick Kelly

You can learn more about Connor Helsel at his LinkedIn page here.

You can learn more about Patrick Kelly at his LinkedIn page here.

Help EAHCP Build Subscribers and Snag Some EAHCP Swag

The EAHCP Steward team is looking to increase the number of readers of the newsletter and we're ready to offer you some incentives to help.

This month we're asking you to submit just **one name and email address** for a chance to win one of 10 EAHCP branded prizes.

Just send your recommended name and email to EAHCP@EdwardsAquifer.org and we'll take it from there. We will contact your perspective subscribers to make sure it is OK to add them to our list. That's it.

Thanks for helping us spread the word about the important work of the Edwards Aquifer Habitat Conservation Plan.