

May-June 2018

A Walk in the Park

EAHCP Team Takes Stakeholders on Tour of Comal River Old Channel



It wasn't your typical walk in the park as Edwards Aquifer Habitat Conservation Plan (EAHCP) leadership team guided about 55 people through a series of improvements made in the Comal River's historic Old Channel. The attentive group included members from all three EAHCP committees, representatives from local, regional, state and federal environmental agencies and some students. Over the course of the tour, the tour group would get a first-hand look at the flow-split management retrofits, submerged aquatic vegetation plantings, riparian restoration, bank stabilization and water quality sampling operations which have helped

improve the habitat for the endangered fountain darters over the last few years.

At the first stop, Mark Enders from the City of New Braunfels explained how the new flow-split system is helping direct Comal Springs water into the river's Old Channel where fountain darter habitat is found. Onlookers could see the recently installed valve and gauge system that will play a central role in diverting water into the Old Channel during times of drought.

"The flow-split system project started in 2014 and has now been operational for more than a year," Enders explained. "Essentially, that system gives us a means to funnel as much water into the Old Channel as needs to be there, whereas in the past, fountain darters and their habitat in Old Channel would not have enough flows during drought conditions. We have nearly 20 years of biological data some of which predates the flow-split system and some that we've recently gathered. In studying that data, we've learned that maintaining about 65 cubic feet per second (CFS) of water flowing into the Old Channel is optimum for the species. The rest of the water flows into the New Channel. It's pretty clear that the flow-split system will be an invaluable tool during those dry periods and low-flow conditions in the river."

In addition to controlling flows into the Old Channel, the EAHCP team determined a need to stop the spread of non-native vegetation and start the process of replanting native plants that are more conducive to improving habitat for the endangered species. Ed Oborny, Senior Aquatic Biologist for BIO-WEST, said that prior to the EAHCP, 25 percent of Landa Lake was inundated with non-native vegetation. In some areas along the Comal River, hygrophila covered the stream bank to bank.

"As we began the plant removals, we measured about 100 square meters of the non-native hygrophila plants and only about 10 square meters of the native ludwigia," Oborny noted. "Today all of the non-natives are gone

from Landa Lake and we're learning every day about how best to plant and manage the native vegetation. Additionally, we are continually mapping the vegetation in the system which will help us improve our vegetation management and species growth sampling over time. The bottom line is that the health of this ecosystem is driven by vegetation, and we've also verified that native vegetation provides a better habitat for the fountain darters."

Another major factor in keeping habitats viable is the water quality in the river. Dr. Chad Furl, Chief Science Officer for the EAHCP, pointed out the five, real-time water quality monitoring stations the Edwards Aquifer Authority maintains in the system.

"Each station is strategically placed in the system to provide data we need to determine the overall health of the system and effects of our overall programs," Furl said. "Our team comes out weekly to ensure each station is operating efficiently so we are gathering accurate data. The data that is collected goes into a very large database at the EAA so we can study current conditions and trends in the system. We know if the dissolved oxygen in the water is good, where and when water turbidity occurs and the exact temperature of water in the river. All of those parameters impact the quality of the ecosystem and that's why we focus so heavily in acquiring that information."

EAHCP Program Manager Nathan Pence concluded by explaining the impacts of the work now underway and expected to continue in years ahead.

"When we got started, we had a bunch of goals but there were no operating procedures to go along with those goals," Pence stated. "The refugia facilities, river bank stabilization projects, water quality and bio-monitoring systems along with other components of the EAHCP have only improved with each new step we take. There is tremendous collaboration among EAHCP partners and even community volunteers that makes this work possible. And while we have very specific permit requirements to meet, we all recognize this environmental work will help improve benefits these natural resources will provide to communities in the Edwards Aquifer Region for decades to come."

Mace Making His Mark on San Marcos Ecosystem

New Meadows Center Associate Director to Take a Seat on EAHCP Implementing Committee



EAHCP Steward - May-June 2018 - www.EAHCPSteward.org

EAHCP Steward had the pleasure of sitting down for a wide-ranging and fun interview with new Meadows Center Associate Director and the Chief Water Policy Officer Robert Mace. His extensive background in water science and policy in Texas and recent position on the EAHCP Science Committee give him great head start in his new position on the EAHCP Implementing Committee.

EAHCP Steward - Give us a little background on your history with water in Texas.

Mace - My technical background is that I have a bachelor's degree in geophysics, a masters degree in hydrology and a Ph.D. in hydrogeology from the University of Texas at Austin. I started my career with the Bureau of Geology at the University of Texas at Austin working on the super conducting, super collider project. While I was there, I got a chance to do some research on the Edwards Aquifer. What I learned on that project is that the Edwards is a fun aquifer to study just because of all the unique and crazy workings of that resource. After the Bureau, I took a job with the Texas Water Development Board. There I was fortunate to work on the first groundwater availability model for this state, a model of the Trinity Aquifer in the Texas Hill

Country. That led the State to require groundwater modeling for aquifers across the Texas. While at TWDB, I had the opportunity to be the Science Committee Chair for the Edwards Aquifer Recovery Implementation Program. That was about a five-year process which ultimately led to the Edwards Aquifer Habitat Conservation Plan we're operating under now.

EAHCP Steward - From your days with the EARIP to the current status of the EA Habitat Conservation Plan, what work stands out to you significant and promising for the future of the EAHCP?

Mace - The EAHCP is really focused on protecting endangered species in the Comal and San Marcos Springs ecosystems. One of the items promised in the EARIP planning was the updating of the Edwards Aquifer groundwater model. That multi-year process has given us a very good tool to base future EAHCP decisions on. The adaptive management component in the EAHCP is another important aspect of the program because it gives us the opportunity to take what we've learned and adapt the means we achieve our federal permit goals going forward. Lastly, there has been a ton of research in learning about the endangered species. I think I've learned more about the mating habits of beetles than I ever thought I would as a hydrogeologist.

EAHCP Steward - How did your work on the EARIP help prepare you for your new position on the Implementing Committee, where all of the big decisions about the EAHCP are made?

Mace - I still marvel at Robert Gulley's (chair of EARIP) ability to herd a large group of scientists and stakeholders through the EARIP process using consensus as the decision tool. Sometimes I'd find myself just watching him in action. He could gauge the temperature of the room, knew when to take a five minute break that would last 40 minutes, but then resume the meeting with everyone going in the same direction. That experience in seeing Robert's ability to effectively work with people and organizations will be invaluable in my responsibilities going forward.

EAHCP Steward - Tell us about the Meadows Center and how it impacts into the EAHCP.

Mace - The Meadows Center is a water and environment research arm for Texas State University. We're located a San Marcos Springs, formerly known as Aquarena Springs. The famous pig is no longer here but we still have the glass bottom boats for the public to use. Our basic mission to ensure there is enough water for people and the environment. That fits perfectly with the EAHCP where we're working to make sure that we have enough quality water to maintain the endangered species but also for growing communities in the Edwards Region. We have great expertise here at the Meadows Center in hydrology, the study of endangered species in this ecosystem and the Edwards Aquifer in general.

EAHCP Steward - Looking into the future, what do you think the Edwards Region will look like 20 years from now?

Mace - Actually, I feel very good about our outlook. With the Edwards Aquifer Authority managing pumping from the Edwards Aquifer and the EAHCP working to learn about and improve the ecosystem here, I think we will be in good shape in the future. Another drought of record, potential pollution from population growth in Edwards recharge areas along with things we don't know about possible climate change and its impacts on a drought of record all could be challenges. But, we really have a sound team of professionals, a large body of data from extensive Edwards research to draw from and group of partners in the EAHCP determined to work collaboratively. Those positives give us a leg up on addressing problems down the road.

New Program Measures in Store for ASR Leasing, VISPO

Two of the Edwards Aquifer Habitat Conservation Plan's (EAHCP) top spring flow protection measures have recently been updated to reflect future needs in meeting the Edwards Region's Incidental Take Permit from the U.S. Fish and Wildlife Service. The ASR Spring Flow Protection Program will change the most while VISPO (Voluntary Irrigation Suspension Program Option) is only receiving slight modifications. Extensive computer modeling show that those two programs will provide the greatest levels of protection to flows at Comal Springs and San Marcos Springs with the occurrence of an extended dry period similar to the drought of record from the 1950s.

The ASR Program will be doing away with all short-term leases and replacing them with a single, 10-year agreement. Because the EAA and SAWS have worked together to store nearly enough actual water in SAWS'



Aquifer Storage and Recovery facility to meet anticipated drought-related needs under the program, the ASR Program will now move to a forbearance system similar to VISPO's. That means if the new ASR Program triggers in a given year, permit holders enrolled in the program will not be allowed to use that enrolled water in the upcoming year. Outside of the forbearance years, permit holders will be able to use their water as they typically do. In doing extensive research on how often ASR might trigger, EAA staff predict that will happen in drought of record conditions similar to the 1950s. The trigger for ASR is a 10-year rolling recharge average of 500,000 acre-feet. That means each year an analysis of

the previous 10 years of Edwards Aquifer recharge will be analyzed. If the average for that 10-year period falls below the 500,000 acre-foot amount, that will trigger the ASR forbearance for the following year.

The original ASR Leasing Program was open to only unrestricted water rights, but due to the fact that the new program will be one of forbearance rather than pumping and storing actual water, all water, restricted and unrestricted, will be eligible for the program. And while the agreement is listed as a 10-year agreement, all agreements will expire in 2028 when the federal permit making this program necessary is up for renewal.

“We’ve been working for months in developing the program parameters and discussing ideas with stakeholders around the region,” said Marc Friberg, Executive Director of External and Regulatory Affairs for the EAA. “Our goal was to strike a balance between the right market pricing and the most appropriate forbearance triggering. We believe we are in a good place now with ASR potentially triggering only in drought of record conditions and a stable \$100 per acre foot lease price. We’ve already had good interest, so we’ll see how sign-ups go over the next several months.”

VISPO, which is open to eligible irrigation water rights permit holders, is also renewing agreements. The only changes to VISPO going forward include offering five-year renewal agreements and replacing the original 1.5 percent annual price escalator with a higher set price. Current VISPO pricing includes a \$54 per acre-foot per year standby fee in years that the program does not trigger. A \$160 per acre-foot price in forbearance years in addition to the standby rate (\$54 per acre-foot) brings the total to \$214 per acre-foot paid in years the program does trigger. New VISPO enrollees may be considered if current participants elect not to enroll.

There are 96 VISPO contracts coming due that represent 25,300 acre-feet of water. The Edwards Aquifer Authority team is working now to get those agreements renewed by the end of May.

“Now that we have the final pricing set for the ASR Leasing Program at \$100 per acre foot, we can start to work with permit holders in helping them decide whether the program is right for them,” Friberg noted. “In addition to this newsletter, we have produced other flyers and updated our website to present the various program components. There is a limit on how much water we can lease, so I would encourage all permit holders to take a serious look at these leasing opportunities and to give us a call if they are trying to decide which program best meets their needs.”