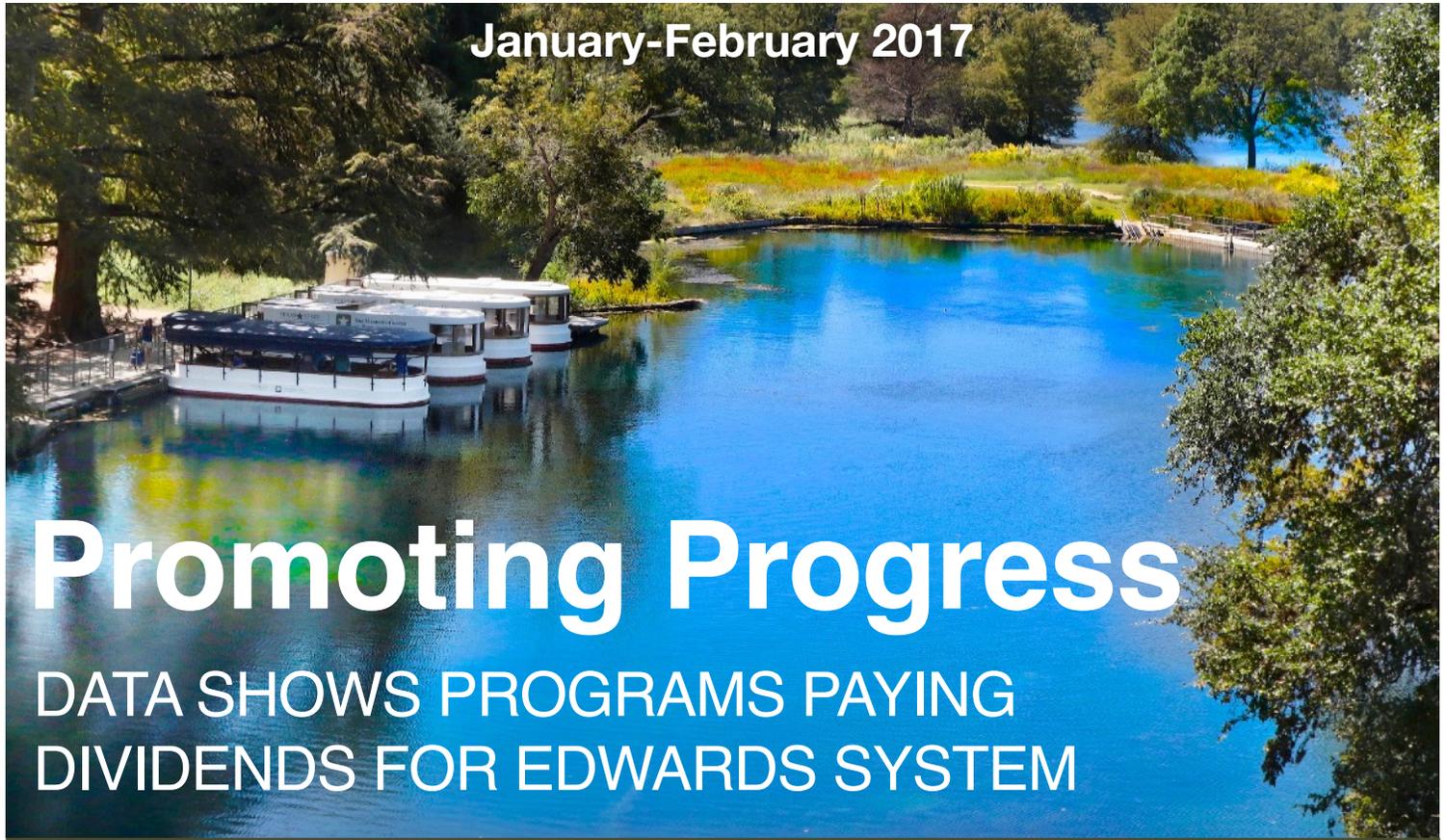




January-February 2017



Promoting Progress

DATA SHOWS PROGRAMS PAYING DIVIDENDS FOR EDWARDS SYSTEM

With a stack of slides filled with decades of data, Bob Hall has been describing how the Edwards Aquifer water permitting system, Edwards Aquifer Habitat Conservation Plan (HCP) and community water conservation efforts have converged to benefit water levels in the Edwards Aquifer. The most important point being that the Comal Springs in New Braunfels still flowed during the height of the near drought of record in 2014. Hall's approving grin at that point of the presentation gives away the satisfaction he feels in witnessing aquifer preservation in action.

"I have thoroughly enjoyed this whole process," said Hall, a senior project coordinator working on the Habitat Conservation Plan. "I've been involved in the ecosystems since my college days in 1975 and I can tell you that things are

definitely moving in the right direction. There are more native plants in the ecosystem, more water available for flows in the Comal and San Marcos Springs, and best of all, more people caring about how they use water. All of those things haven't just happened. There has been tons of research, solid water-saving programs implemented and a lot of money invested to make sure we protect the Edwards Aquifer for everyone living and working in the Edwards Region and for the endangered species living in this system."

Hall's favorite slide shows a projection of what water data modelers predict would have happened at the Comal Springs in 2014 if none of these programs had been put in place.

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Bob Hall, senior project coordination with the Edwards Aquifer Habitat Conservation Plan.

HCP TO CREATE BETTER HABITAT FOR SPECIES

“If you look at the water use between 1970 and 2014, you will see that water use started to decline in about the year 2000,” Hall explained. “It’s also about that time that San Antonio’s water consumption began to drop due to its conservation programs. Reductions in farming water also started to kick in around that time. Then you take into

account the recent implementation of the HCP that includes water pumping curtailment programs, our data shows that we’ve probably saved more than two million acre feet of water over the last 15 years or so. That cumulative effort over time saved the Comal Springs from going dry in 2014, and that is an incredible statement to make.”

Habitat Conservation Plan

Hall also talks about major improvements in the endangered species habitat through very focused programs designed to create a better home for the species.

“The HCP is designed to create a better habitat for the species. First, you have to have more water in the system, which I’ve described how that has occurred. Then you have to ensure good water quality as best you can. We’ve made some significant strides in enhancing water quality with sediment removal efforts, river banks have been stabilized, non-native plants have been taken out of the rivers and native plants have been replanted in their place. All of these

efforts have produced some encouraging results in just the last three years.”

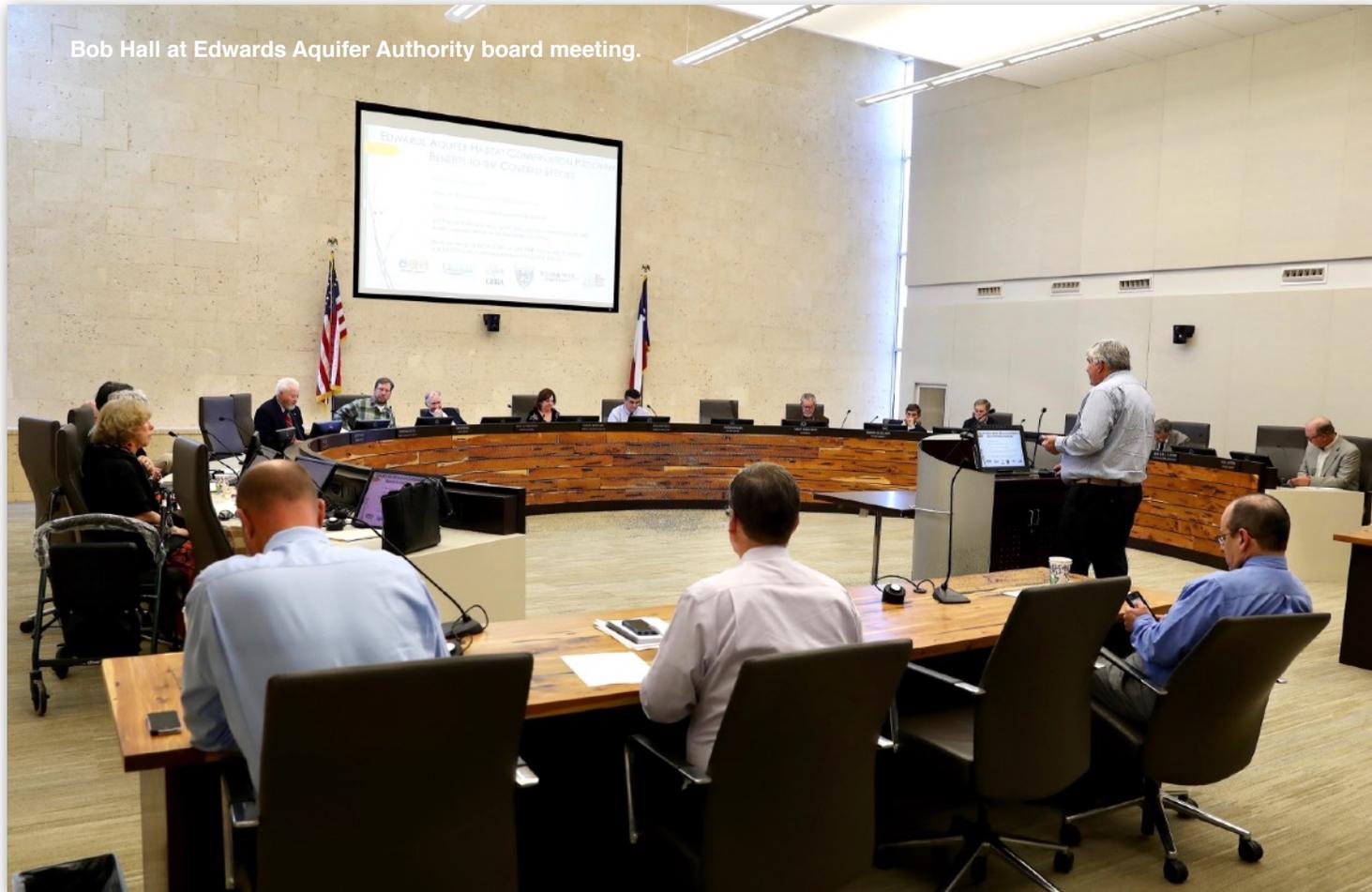
Hall says that these steps have created potential habitat for thousands of more fountain darters and more square meters of Texas Wild Rice to grow.

“The overall concept of the HCP is to keep the Edwards Aquifer ecosystem as healthy as possible, fix as many problems as we can. That creates a better environment for the species. The huge upside is that when we do experience a drought of record, which we can’t control, and flows in the springs do get low, the species are less impacted and have a much better chance of surviving.”

And that, Hall says, is definitely worth talking about.

Listen to an interesting interview with Bob Hall.

EAHCP Steward’s podcast can be heard at www.EAHCP.org.



Bob Hall at Edwards Aquifer Authority board meeting.

EAHCP OUTLOOK FOR 2017

The Edwards Aquifer Habitat Conservation Plan team is preparing for an ambitious year ahead. From securing a sound understanding of EAHCP data, to ensuring increased establishment of native aquatic plants in the Comal Springs, the next 12 months is viewed with much promise.

The Edwards Aquifer Habitat Conservation Plan (EAHCP) was approved by the U.S. Fish and Wildlife Service (USFWS) as a regional plan to protect the Edwards Aquifer and its species while helping to ensure stability of the Edwards Aquifer as a water supply for the region.

After approval of the EAHCP, the U.S. Fish and Wildlife Service issued an Incidental Take Permit under the Endangered Species Act, with an effective date of March 18, 2013.

The five partners responsible for maintaining the permit include the Edwards Aquifer Authority, City of New Braunfels, City of San Marcos, Texas State University and City of San Antonio which is represented by San Antonio Water System. Each of these organizations has a specific set of programs to implement and work through the EAHCP Implementing Committee to ensure that

budgets, plans and tasks are considered and authorized to move forward.

“At the end of each year, we gather our stakeholders and the general public to not only look back on how we’ve progressed over the past year, but also to look ahead,” said EAHCP Program Manager Nathan Pence. “We always have a good crowd for that meeting and that’s satisfying knowing people are interested in helping us be successful in implementing the Habitat Conservation Plan. Some of the folks in the audience thought we should spread the word a little more, so that’s something we’ll be taking up soon as well.”

Overall, the EAHCP work falls into items that are more programmatic, while other functions deal mainly with field work associated with habitat and species protection. Both components of the program are building on work and research accomplished over the last three years, along with regional stakeholder guidance and recommendations from the National Academy of Sciences.



Divers, Drones and Getting Your Hands Dirty

While there is a lot of computer modeling and other technology applied to keeping the endangered species and habitats happy, sometimes you have to literally jump in with both feet and/or fins. Divers are used to remove non-native plants as well as for the replanting of native plant species. Drone technology makes aerial mapping of the rivers much more practical. And, there will always be the need for good old fashioned elbow grease in hauling out trash, plants and other debris harmful to the fountain darters and Texas Wild Rice.



Applied Research for 2017

In 2017, the Applied Research Program will primarily focus on statistical analysis of exist long-term EAHCP data sets. The purpose of this study is twofold: one, to provide a time integrated statistical analysis of HCP data generated by the EAA and its contractors, and two, to develop biological and hydrological statistical questions related to achieving compliance with the EAHCPs long-term biological goals.

Three contractors will be doing an exploratory, time integrated statistical analysis on three categories of data from the Comal and San Marcos springs ecosystems which include water quality and quantity, submerged aquatic vegetation, and the endangered species populations. This effort resulted from the EAHCP's first round of recommendations from the National Academy of Sciences, EAHCP Science Committee and subsequent workgroups.

Eco-model

The Edwards Aquifer Authority is responsible for the development of an ecological model (eco-model), which is designed to evaluate potential adverse effects on the species and their critical habitat. The eco-model is meant to present possible issues found inside the ecosystem, and provide strategies in mitigating adverse impacts to the covered species. The eco-model contract will be completed in 2017, at which time the EAA staff will take over conducting model runs on the Comal and San Marcos ecosystems. This information will be critical in helping the management team and Implementing Committee make program decisions.

Dissolved Oxygen (DO) Management Plan

In 2017, the City of New Braunfels will develop a comprehensive dissolved oxygen (DO) management plan for Landa Lake. The plan will include an evaluation of existing DO data and research, and will identify



feasible mitigation strategies that can be implemented in Landa Lake during periods of depressed DO, that can be brought on by decaying vegetation, high levels of litter and low springflows. The EAA and City of New Braunfels will partner in monitoring and maintaining existing aerators and a DO index site. The efficiency and suitability of the existing aerators to increase DO concentrations during periods of low springflow will also continue to be evaluated in 2017. Real-time DO and temperature monitoring will be used to evaluate existing oxygen levels in the Comal River. Vegetation and floating vegetation mats in Landa Lake will be monitored on a weekly basis during the May through September period to assess overall conditions of the river.

Submerged Aquatic Vegetation

Submerged aquatic vegetation management is designed to decrease the density of invasive, non-native

aquatic vegetation in Comal and San Marcos Rivers, and increase the coverage of native aquatic vegetation that has been demonstrated to provide suitable fountain darter habit. Each year, New Braunfels and San Marcos target a certain level of aquatic restoration to be completed

through removal and planting, with the goal of achieving full system restoration by 2028. Areas where non-native vegetation removal has occurred will be routinely monitored for the re-establishment of non-native vegetation. Additionally, vegetation mapping will be conducted to assess progress of aquatic vegetation restoration efforts.

ASR Leasing Program

The ASR Leasing Program made great progress in 2016 ending the year with more than 52,000 acre feet of water leased and stored in the ground. With the addition of another 33,000 acre feet anticipated for 2017, the program will be close to meeting its goal of having 90,000 acre feet of water stored in the San Antonio Water System underground storage facility in South Bexar County. With the ASR program nearing capacity, program managers will be working toward making some changes to assure its benefits for both Edwards water permit holders and the EAHCP are maintained over the long term.

A series of community meetings were scheduled for late January and early February to get permit holder input. Plus, the ASR Regional Advisory Committee will be assembled to weigh options for future programs.

Listen to an informative interview with incoming EAHCP Implementing Committee Chairman Andy Samson at www.EAHCP.org.

The Edwards Aquifer Habitat Conservation Plan e-newsletter, "Steward," is published to highlight the efforts underway to protect the Comal and San Marcos Springs and ensure a healthy habitat for the threatened and endangered species.