



May-June 2017

NAS Report 2

National Academy of Sciences Seeing Progress in EAHCP

The National Academy of Sciences (NAS) recently published its second report of a three-part series on the Edwards Aquifer Habitat Conservation Plan (EAHCP). The EAHCP Implementing Committee engaged NAS to act as its science review panel to provide advice on various scientific aspects of the EAHCP as the region works to implement it.

As part of this science review, the EAHCP staff convened a day-long workshop for the Stakeholder Committee, Science Committee and the public to obtain input on the new report. Additionally, the NAS Work Group met to discuss the various comments coming out of the workshop. Both review efforts have been facilitated by Suzanne Schwartz from the University of Texas Law School's Center for Public Policy and Dispute Resolution.

The National Academy of Sciences second report focused on five topics:

- hydrological modeling
- ecological modeling
- biological and water quality monitoring
- applied research program
- minimization and mitigation measures

The first four topics were covered in the initial NAS report, while the second report adds the topic of "Minimization and Mitigation Measures." The EAHCP lists 38 minimization and mitigation measures that when implemented are meant to protect the listed species from the impacts of both human-caused and natural disturbances to the Edwards Aquifer spring systems.

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Cindy Loeffler is the water resources chief for Texas Parks and Wildlife, and is chairing the NAS Work Group charged with reviewing the National Academy of Sciences second report on the Edwards Aquifer Habitat Conservation Plan.



“In general, NAS commented that the implementation of key minimization and mitigation measures is moving in the right direction, with the various programs being led by competent project teams and sustained efforts,” said Cindy Loeffler, chair of the NAS Work Group. “Our goal as a small working group is to focus on the items that the EAHCP staff have reviewed and brought to our attention. This way we are able to provide our technical expertise in the areas most needed.”

Having served on the first NAS Work Group, Loeffler noted that recommendations flowing from this group will likely include more items for the Implementing Committee to consider and discuss before taking formal actions.

Overall, the second NAS report has been complimentary of work undertaken by the EAHCP. The

update of the Groundwater Model is viewed as a major step forward, and NAS is recommending continued updates every five years. In general, the report finds that ecological modeling efforts have made good progress and that scientifically sound frameworks and approaches for the submerged aquatic vegetation and fountain darter models are in place.

In response to biological and water quality monitoring suggestions from NAS, the EAA established two working groups in its first report to assess the monitoring programs. NAS noted that long-term data collected by the monitoring program will be critical to continuously refining the ecological model. In the Applied Research program, NAS commended the changes made to the procedures to identify, solicit and review proposed projects. Also as recommended, the Edwards

Aquifer Authority developed a database management system that will provide data storage, curation, and access into the future.

“Our committee has identified items surrounding potential operations audits of the springflow measures, adjustments to the hydrologic model, riffle beetle population estimates and other topics that we want the Implementing Committee to spend some time on,” Loeffler said. “And we are determined to get all of those detailed observations and recommendations to the Implementing Committee for them to take action by mid-summer.”

Listen to an interview with Cindy Loeffler in the latest edition of the *EAHCP Steward* podcast at www.EAHCP.org.



The Science and Stakeholders Committees gathered to discuss the NAS Report 2 findings in a public workshop.

National HCP Coalition Coming Together

It wasn't that long ago that struggles between land developers and environmental agencies often played out in courtrooms across the country. Today, these groups are gathering in meeting rooms to work through the delicate balance of protecting endangered species habitat while recognizing that development drives the economic engines in their communities.

The Edwards Aquifer Habitat Conservation Plan (EAHCP) is one such model for collaboration, but there is a growing number of habitat conservation plan teams experiencing the same type of planning evolution. And that growth has generated a national coalition which focuses on bridging gaps in the sometime conflicting goals of ecosystem protection and economic development.

USFWS new HCP handbook, and provide some input to the federal government's new transition team about grant funding for our country's HCPs. I think the momentum is very positive and we're looking forward to working very hard to make this work."

Toward its goals of creating efficiencies for HCP programs, the HCP Coalition is working to encourage the USFWS, U.S. Army Corp of Engineers and other federal agencies to improve alignments in the Endangered Species Act, Clean Water Act and other associated regulations to reduce staff time in preparing, reviewing and administering the various aspects of their permits. Additionally, the Coalition will be seeking to increase



These are a few of the endangered species being protected around the country. From left to right, Comal Springs Fountain Darter, the Pacific Fisher found in California, and the Florida Manatee.

"The National HCP Coalition is only a couple of years old, but I've already seen some benefits in our participation," said EAHCP Program Manager Nathan Pence. "While the ecosystem challenges we face in the Edwards Region are different than those of other HCPs, we all are working to meet federal regulations while trying to be a positive component in our local development. That's not always easy to achieve, and so it's helpful to listen to others talk about situations and how they've worked through things in their own communities."

Pence noted that the HCP Coalition has managed to bring together HCP program managers, federal regulators like the U.S. Fish & Wildlife Service (USFWS), environmental agencies, academia, stakeholder organizations and developers alike to talk through the extremely detailed habitat conservation plans being implemented in various corners of the country.

"We have been fortunate to attract the right groups to the Coalition which will help us streamline endangered species permitting, facilitate public infrastructure and private development while conserving endangered species' ecosystems," said John Hopkins, one of the founders of the Coalition. "While we've just begun our work, we have already been able to provide quality feedback on the

funding to help entities with land acquisitions critical to the conservation strategies involved in HCPs.

In looking at the ambitious undertaking of the National HCP Coalition, Pence decided to accept a position on the Coalition's Steering Committee.

"Given the fact that this organization is really in its infancy, this will be the perfect time to help shape the direction the organization is going," Pence noted. "Although the Edwards Aquifer Habitat Conservation Plan has several years left on its permit, we'll begin to talk about the roll over of the permit very soon. And this is where I anticipate my work with the Coalition will be very helpful. Plus, others in Texas are facing similar ecosystem challenges, so I'm hoping that creating great relationships through the Coalition will be of benefit to them as well."

According to the USFWS, more than 430 HCPs have been approved, with many more now in the planning stage. One USFWS office in California stated their view of HCPs this way, "Working with landowners, local communities, the State, environmental organizations, and other interested parties, regional HCPs have shown that we don't need to choose between protection of our wildlife and economic development – we can do both."

Updated Groundwater Model Ready to Run for EAHCP Programs

The Aquifer Storage and Recovery (ASR) Leasing Program is a significant springflow protection measure of the Edwards Aquifer Habitat Conservation Plan (EAHCP). As program participants and policy makers develop ideas to rework the springflow protection measures, the ability to use the updated Groundwater Model has been greatly anticipated.

“Essentially, we’ve put about five years of work into updating the original groundwater model that was used to produce the first results for the EAHCP,” said Jim Winterle, EAA director of modeling and data management. “And while we’ll never be finished improving the groundwater model, we have made improvements in our data gathering and input techniques for this version. Additionally, the first model only captured data from 2001-2011. We have added data through 2015. The significance there is that we now have solid rainfall, water use and springflow data which were affected by a major drought.”

Winterle described the way the groundwater model runs various scenarios as a “bottom up analysis.” That means his team will run the model first using a drought of record scenario with the entire Edwards Region pumping the full

amount of water allowed by law. That results in the springs going dry. In subsequent runs, they will layer on springflow protection measures like the water use

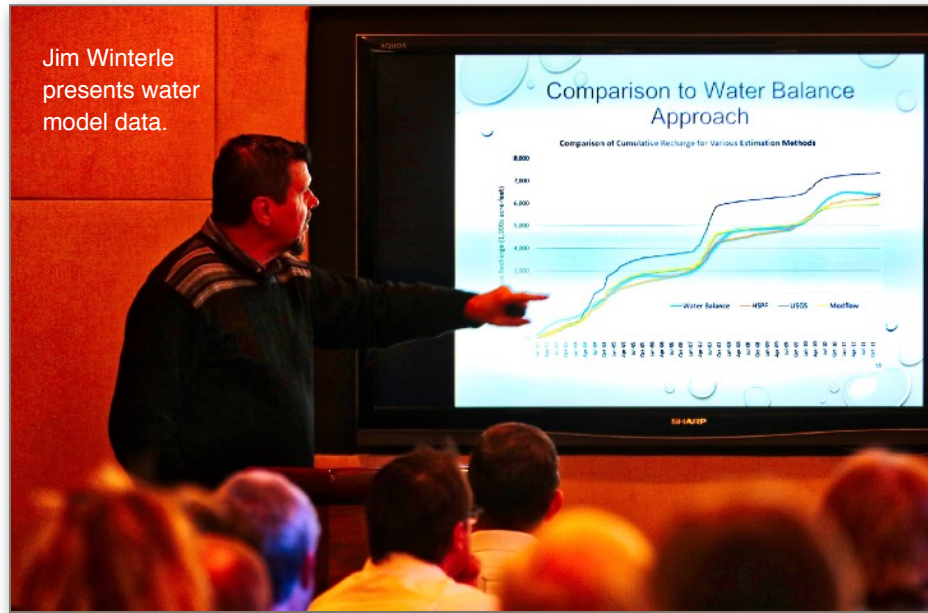
The time involved for a computer to run a particular scenario is only about 15 minutes. But, preparing the data for input can take a week or two. Then, placing the data in

spreadsheets and graphs to make the data usable after the computer run can take up to another two weeks.

“The focus for utilization of the model will be helping the EAHCP enhance its programs so that there are no issues when phase two of the program

comes up for renewal,” Winterle explained. “But, there will be plenty of other applications the model could be used for. Plus, there are other water agencies working on their own ASR projects and the Texas Water Development Board does water use projections. This Groundwater Model will be the most up-to-date tool available for use by policy makers.

“Because the model is improved, I think policy and decision leaders and the various work group members can confidently move forward with program changes that the groundwater model predicts will be effective in a drought of record scenario. We’re now ready to use the new model for some EAHCP program scenarios.”



restrictions in Stages I-IV in the drought management plan. That scenario also produces dry springs.

The next step is to test the application of various conservation programs and springflow protection measures like Voluntary Irrigation Suspension Program Option and the ASR Leasing Program. After the ASR Program is added to the mix, the springs show that they will continue to flow. The last model run uses all measures plus an across the region Stage V drought restriction program consisting of major pumping reductions. That final scenario shows that the springs will flow during a drought of record at nearly the 30 cubic feet per second called for in the EAHCP.