

### Sewanee Internship Report Summer 2013

The Guadalupe Blanco River Authority (GBRA) located in Seguin, Texas manages water resources for a ten-county district in Texas. They regulate water flow along the Guadalupe and Blanco rivers, using these rivers as a water source for people and organizations throughout the region. They manage the rivers through a series of hydroelectric dams and conduct routine biological assessments along the two rivers and their main tributaries. Furthermore the GBRA has a fully functioning lab, which processes hundreds of water samples from locations like wastewater treatment plants, Guadalupe and Blanco Rivers, and the San Antonio Bay. Todd Votteler, my mentor for the summer, serves on several committees that help to regulate and preserve the Edwards Aquifer, the sole source of drinking water for much of the region and the headwaters of both the Guadalupe and Blanco rivers. I was fortunate enough in that this internship was sponsored by and paid for by the Diocese of West Texas; enabling me to focus on the internship and not worry about logistics such as housing. The diocese also served to form a community which was very welcoming in a new city.

Through this internship I was able to experience all sides of the water conservation effort. I attended meetings relating to the state and regulation of the Edwards Aquifer, participated on several biological assessments, and aided in endangered species conservation along the San Marcos River. I also wrote a couple press releases for the Guadalupe Blanco River Trust and helped to edit a manual aimed at ways to lower the impact of development on environmentally sensitive areas. The meetings centered on the Edwards Aquifer Habitat Conservation Plan (EAHCP), an

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extensive document which was created to aid in the preservation of the Edwards Aquifer and the endangered species which inhabit the region. The EAHCP requires conservation projects to be conducted throughout the region such as invasive species removal, bank stabilization, educational elements, and the use of a scientific review panel to ascertain the effectiveness of the HCP.

I was able to participate on several biological assessments throughout the summer, the data of which is used to determine the health of the river system. On the assessments water chemistry data was collected as well as bank type, instream cover, classification of the stream bed and type, macro-invertebrate studies, and fish collections. As I have never fished or learned about fish ecology, it was interesting to see how the physical properties of the river affected the type and size of fish found. For example, often smaller species were found in the portions of the river known as a riffle while the larger species were located in the deeper portions that had more extensive cover. Fish found include large-mouth bass, spotted bass, various species of shiners, several catfish, and many sunfish. I enjoyed spending time in the river on these days and got to experience something completely new.

When not attending meetings or biological assessments, I worked closely with the San Marcos Conservation Crew. The Conservation Crew is a team of people who are sponsored by the University of Houston through the EAHCP to help protect and maintain the San Marcos River. Home to Texas Wild Rice, an endangered aquatic grass found only in the San Marcos River, the ecosystem is a completely spring fed river whose source is the Edwards Aquifer. When working with the conservation crew I helped

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to erect a barrier around the large stands of Texas Wild Rice, removed litter from the banks and the river itself, and kayaked along the San Marcos as a way to easily talk to and educate recreationist about the conservation efforts. I was a member of a multi-organization team that mapped (using GIS) and took data on the wild rice throughout the extent of the river. This data is used to determine how various flow regimes are affect the condition and growth of wild rice. This information is then used to determine how much water may be pumped from the aquifer during times of drought.

This internship provided several learning opportunities in many different fields. As a Texas native, it provided the opportunity to enjoy, explore and study an ecologically sensitive area. I would have enjoyed the opportunity to conduct a research project on the policy aspects of water regulation, but was able to learn a great deal through speaking with my mentor Todd Votteler and the director of the GBRA, Bill West. As a result of working on the policy side of water management, I would like to focus my career goals towards law school or other fields that correspond to environmental regulations.