

GBRA: Educating the Next Generation of Water Providers and Users

For water entities, an informed public is essential for support of investments in agriculture, infrastructure, and conservation. There are a variety of collegiate and professional water programs instructing individuals in hydrology, irrigation, engineering, and environmental science. But those programs cater to a set of people already

educator Cinde Thomas-Jimenez described it, “The more you educate people about conservation, the more you stretch the resource for that area.”

THE CURRICULUM

Back in 1989, GBRA contracted with teachers and artists to develop a fourth-grade curriculum, “Journey Through the Guadalupe River Basin.” The interdisciplinary program guides teachers and students down the Guadalupe River through the eyes of an armadillo and turtle, introducing them to the watershed, the history and geography of the river basin, aquifers, dams and hydroelectric generation, how water is used, water quality, and the importance of water conservation. GBRA ships the kit to Guadalupe River Basin schools each fall, providing teachers’ guides, workbooks, CDs, and maps. Over the years, the GBRA education department has revised the program, adding a substantial amount of science content.

The elementary-school curriculum reflects the relative freedom elementary-school teachers have in what they teach. Often, those teachers are in self-contained classrooms where they teach every subject. They can pull in a lot of activities from different content areas,



Cinde Thomas-Jimenez teaching a group of Lockhart, Texas, middle-school students about water quality.

interested in the subject area. To inform a broader swath of people about water issues, educators have to start early and provide multidisciplinary content. For over 25 years, the Guadalupe–Blanco River Authority (GBRA) has dedicated part of its operations to cultivating water awareness and education in the Guadalupe River Basin in south-central Texas.

The GBRA education department works with customers, teachers, students, and the general public to increase awareness of water and natural resources in the Guadalupe River Basin. The department uses a variety of materials and formats, including free education programs that meet state standards, such as Texas Essential Knowledge and Skills (TEKS) and State of Texas Assessments of Academic Readiness (STARR™); special focus publications; tours; and guest speakers. GBRA currently has program components geared to second grade, fourth grade, and middle school.

The goal is simple: Teach the children of the Guadalupe River Basin about water quality and water conservation. The impact is long term. As GBRA



GBRA kiosk located inside of the Patrick Heath Public Library in Boerne, Texas. The two women working the kiosk are (left) Debbie Magin, GBRA's director of water quality, and Cinde Thomas-Jimenez, GBRA's environmental education administrator.

not just one topic. According to Ms. Thomas-Jimenez, “When you get into middle school and high school, the curricula are far more structured. It is more challenging to integrate content from outside curriculum supplements.”

With that in mind, GBRA has worked with Hamline University to develop a middle-school curriculum called “Water to the Sea—Guadalupe Basin.” It modernizes water quality and conservation education with an Internet-based, interactive program with videos and learning modules designed like computer games. According to GBRA’s Chief Strategic Communications and Public Affairs Officer LaMarriol Smith, students can go online and maneuver through different components of the program. Launching this fall, the comprehensive program will provide hours of learning content as students virtually travel down the Guadalupe River.

Teacher training is an essential component of the program. Ms. Thomas-Jimenez instructs teachers on the use of the curriculum, how to cultivate interaction between the students and the curriculum, and how to monitor the water quality of streams and rivers. The teachers then incorporate that information into their science curriculum.

GBRA is not only working with school districts, but it is also integrating curriculum components into touchscreen kiosks throughout Guadalupe River Basin districts and counties. For example, there may be a kiosk located at a public library, where it provides information about the specific watershed in which the kiosk is located. The kiosk program also utilizes historical figures to tell the story of the area. For example, areas settled by Germans use German characters to talk about the culture and heritage of the area.

Success is easy to measure. Year after year, teachers request GBRA education programs and materials. Ms. Smith noted that “[the program] works for those educators and meets their educational standards.”

THE ENVIRONMENTAL LEARNING CENTER

Looking ahead, GBRA’s education department wants to focus on more interactive and hands-on learning opportunities. Many state river authorities and district entities run learning centers or nature centers. Those centers are important venues to engage both students and the general public in environmental learning. So GBRA is working to develop an environmental learning center in its upper basin area, situated adjacent to the Canyon Lake Gorge in Comal County, Texas.

Canyon Lake Gorge is an impressive natural feature formed by floodwaters in 2002. Those waters carved a gorge into the landscape below the Canyon Lake Spillway, revealing fossils and geological formations. Scientific and commercial entities use the gorge for research on the movement of water through soil and rock. GBRA has acquired a piece of property near the gorge and created a nonprofit organization—the Guadalupe River Foundation—to fund education, activities, and programs for GBRA, including the development of the environmental learning center.

To view "Water to the Sea—Guadalupe Basin," go to <http://cgee.hamline.edu/WTTS-Guadalupe/>.

Rendering of the proposed environmental learning center.

