

## Project Summary: FRESH WATER SUPPLY TO THE CRENSHAW HABITAT

School: Crenshaw School on the Bolivar Peninsula, Texas

Student scientists participating in the project from the Fifth Grade Science Class are: Sarah Campbell, Paulina Cruz, Stephanie Turbeville, Antonio Tyrese, Nivek Silvestre, Jacob Hinkle, Zachary Munsch, Jason Ortiz, and Michael Tovar. Stephanie did a water quality project for our science fair with water she brought back from Mexico. Because of her experience, she was our project leader. All students in 5th grade participated fully. Additional student participant is Caitlyn Jackson, 6th Grade.

Instructor: Jessie Minter

Principal: Eric Paul

**ABSTRACT:** Crenshaw School, an Environmental Themed School on the Bolivar Peninsula has a 33 acre U.S. Fish and Wildlife designated Habitat adjacent to our campus. We are a coastal, storm prone area. Ike devastated our Peninsula and changed our weather. We at Crenshaw, a Pk-9th grade campus of 120 students, want to document the recovery and risks to our Habitat area. We became a G.L.O.B.E. Project School in order to learn how to gather data for our Habitat. Our first project was to upload a land sample from the Habitat. Then, for this project in the Virtual Conference, we have observed the fresh water status of the Habitat. Before Ike, the Habitat had an almost year round supply of fresh water in a drainage ditch that passed all the way across the Habitat.

After Ike, there was a change in the ground level conditions and a 3 year drought. There was no fresh water in the Habitat until early 2012. when the drought broke. Fresh water is critical to the native plants and animals that live in the Habitat and migrate through as this is one of the most frequent destinations of migratory birds in the United States. Without fresh water, they would not be able to get their migratory needs met here and would possibly die. So, our Habitat is important to more than us. Monitoring our fresh water supply is critical to understand and maintain our Habitat for all its residents and larger community.

**Question:** What is the difference in the dissolved oxygen level in the fresh water supply at the south end of the Habitat and the north end of the Habitat? The south end is open to livestock in the field adjacent to the Habitat. The north end water fresh water supply is not.

**Our Hypothesis** is that there will be more dissolved oxygen in the water on the south end. We have observed a more rapid algae growth and hypothesize this will result in a higher dissolved oxygen level in that water supply.

**Our Experimental Procedure** was to, as often as we could while the water was available, before it all evaporated, daily check the dissolved Oxygen levels in both supply areas with the Water Testing Kit supplied to us by G.L.O.B.E, following those procedures precisely. We took prescribed samples from, as closely as possible, the exact same area each time to test it. We observed the water and what was in it.

**Our results** were consistent with our Hypothesis. The results showed that consistently the

water in the south end supply had a higher level of dissolved oxygen

#### Conclusions:

The water on the north end that was used by the livestock did have more algae growth and therefore, because of photosynthesis, more dissolved Oxygen in the water. There were a lot of tadpoles in it and not any were found in the north end area. That was interesting because we were worried about the high dissolved Oxygen levels in south end making the water supply unhealthy for frogs. Our hypothesis was correct, there was more dissolved Oxygen in the south end. However, it appears tadpoles and some interesting invertebrates liked it much better than they did the fresh water with less dissolved oxygen in it on the north end. The fresh water supply dried up in a week and we have not had rain since. More is due soon and we will check it again, run our experiments again, testing the water for dissolved Oxygen. This time we will investigate the invertebrates, too. We found dragon fly larvae, mosquito larvae, water skimmers and tadpoles in our water samples. We hypothesize there are more. We will work on our technique at collecting the invertebrates so that we can get a better documentation of what is there. Since dissolved oxygen is the accepted indicator of water health, we chose to start our investigations by measuring dissolved oxygen in two places in the Habitat and compare them. Next time we will take it at different times of the day as well. We did not have the option of taking it at different times of the year because we were in a drought. We will take it more often if the rain continues.