

The Water Monitor

Texas Commission on Environmental Quality- Monitoring and Assessment Section



Welcome to *The Water Monitor*, a quarterly newsletter focusing on issues related to monitoring, evaluating, and protecting surface water quality.

Inside This Issue

- 1 Water Programs Undergo Change
- 2 Annual SWQM Workshop
- 3 East Texas Hit Hard by Ike
- 4 ANRA Research Project & Planning Grant
- 5 Binational Cooperation in the Rio Grande Basin
- 6 FY 10 Coordinated Monitoring Meetings
- 7 Pine Island Bayou
- 8 SWQM Staff Participate in Relay
- 10 Upcoming Events

Water Programs Undergo Change

To better coordinate resources, enhance communication, and more effectively address water quality issues, the TCEQ's various water quality programs have been moved to a newly formed division in the Chief Engineer's Office. The new Water Quality Planning Division has three sections. The Monitoring and Assessment Section, managed by Laurie Curra, includes the Surface Water Quality Monitoring (SWQM) Team, Clean Rivers Program (CRP), Data Management and Analysis Group, and Water Quality Standards Group. The Planning and Implementation Section, managed by Katherine Nelson, includes the Total Maximum Daily Load (TMDL) Team, Nonpoint Source Team, and Galveston Bay Estuary Program. The TCEQ Houston Laboratory makes up the third section.

With this reorganization comes new leadership in the Monitoring and Assessment Section.

Andrew Sullivan is the team leader of the Surface Water Quality Monitoring Team. Andrew received a BA in biology and an MS in wildlife and fisheries. He began his career at the TCEQ in 1996 with the Water Quality Standards Team. In 2001, Andrew started working with the TMDL program as a project manager. Prior to working at the TCEQ, Andrew was involved in projects assessing ambient water quality in the Chesapeake Bay and examining the nutritional requirements of aquatic species in Mississippi and Louisiana.

Nancy Ragland is the work leader of the Data Management and Analysis Group. Nancy holds degrees in both geology and geography. She began her career at the TCEQ in 2001, when she joined the Water Data Management and Analysis Team.

Allison Woodall is the work leader of the Clean Rivers Program. Allison earned a BA in geography and an MS in environmental studies. Allison began her career with the agency in Water Rights Permitting. In 1996, Allison joined the Clean Rivers Program.

Lori Hamilton is the work leader of the Water Quality Standards Group. Lori earned both a BA and an MS in environmental science. Lori began her career at the TCEQ on the Water Quality Standards team. In 2007, Lori became work leader for the Water Quality Standards Team and managed a workgroup to evaluate wastewater discharges and impacts of federal dredge and fill projects.

"Our days immediately following the storm [Ike] consisted of measuring dissolved oxygen and conductivity in the Neches River, Pine Island Bayou and LNVA Canals. The saltwater intrusion from the storm surge was significant. The Neches River Saltwater Barrier is not designed for the extreme negative flows experienced during the storm. Therefore, the saltwater intrusion jeopardized freshwater intakes on the Neches River and Pine Island Bayou. It was a highly unusual event which has not occurred in recent history."
David Hancock, LNVA

See full story on page 7

The 22nd Annual SWQM Workshop a Big Success

By Anne Rogers, TCEQ

The Annual SWQM Workshop was held at the Mayan Ranch in Bandera from October 20-23, 2008. As in previous years, the workshop was well attended and according to the evaluations forms was thoroughly enjoyed by all. Big changes this year were the attendance of our new management. Kelly Keel, the new Division Director for the Water Quality Planning Division, and David Schanbacher, the Chief Engineer for the Office of the Chief Engineer both attended Monday and Tuesday and had very positive things to say about how well the participants work together to move monitoring in Texas forward. Over the past decade, the workshop has served to bring monitoring entities together for not only learning new things, whether it is data management processes or new technologies, but to also have time for fellowship and to share with other monitors our monitoring successes and challenges. This year's workshop also brought some new initiatives in the field. The **Water Monitoring Challenge** was a big success and provided a new way to learn field methods through hands-on activities. The data management "Jeopardy" game was also an enjoyable way to learn in a fun way. The evaluation survey question about whether to have the next workshop at a reservoir setting was overwhelmingly approved of as was the preference to leave the field session on Wednesday afternoon. A big thank you to everyone who helped to make this year's workshop such a huge success!



Meeting participants listening to the **Basin Highlights Report: Steps in Watershed Analysis** presentation by Dave Cowan (LCRA-CRP).



The **Medina Muskrats** working at the benthic macroinvertebrate and fish station during the **Water Quality Challenge**; L to R: Dennis Runyan (APAI), Todd Running (H-GAC-CRP), Maria Rafily (TCEQ Data Management), Cindi Makowsky (TRA-CRP); Jack Davis (BRA-CRP) station expert.



Winners of the inaugural **Water Quality Challenge**: L to R, **The Lucky Sevens**: Gerado Arrambide (TCEQ R-14), Cliff Moore (TCEQ R-3), Tabitha Kirkland (TCEQ Data Management), Dale Jureka (LCRA-CRP), and Jeremy Nickolai (BRA-CRP). Not pictured- Gregg Easley (TCEQ Water Quality Standards Implementation).



Karen Sablan (SARA-CRP) at the Water Quality Challenge water sample collection station.

East Texas Hit Hard by the Winds of Hurricane Ike

By: Matt Romig, Angelina and Neches River Authority

As Hurricane Ike slowly passed through East Texas on Saturday September 13, 2008, hurricane force wind gusts caused major damage. We all know about the impact that Ike had on the Texas coast, but areas further inland suffered much damage as well. Ike took down countless trees and power lines in the Lufkin/Nacogdoches area as it passed through. Many roads were impassible and the damage to homes, businesses and other infrastructure was widespread.

Hurricane Ike brought with it strong winds, but what it did not bring to East Texas was heavy rains. The Nacogdoches area only saw about 0.5 inches of rainfall with the storm. Although there was a lot of wind damage, thankfully there was no flooding.

At the peak of Hurricane Ike's fury, 108,000 homes and businesses were without power in the Lufkin, Nacogdoches, and Tyler areas. In less than one week, electric crews had reset or repaired hundreds of poles, replaced transformers, energized substations and repaired downed lines. In addition to power outages, the debris left by the storm was tremendous and damaged many homes and businesses.

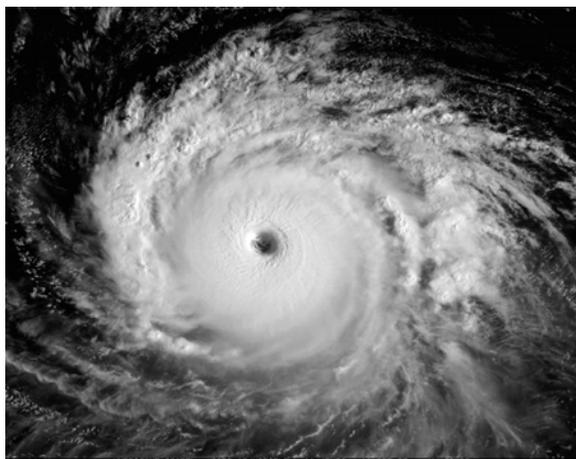
Evacuees came in droves to the East Texas area, and were lucky to find a vacancy in any hotel or shelter. When Ike ripped through the area and knocked out power, evacuees and residents alike had a difficult time finding food and fuel. Most business had no electricity, and those that did simply ran out of what they had.

Power was restored in the cities quickly, but some residents in the outlying rural areas were without electricity for well over a week. Generators ran 24/7 as people tried to cope with the aftermath of the hurricane and clean up the debris around their homes.

We were fortunate here at the Angelina & Neches River Authority office in Lufkin to have power restored only hours after the storm. By Monday, our laboratory was open and accepting many drinking water samples from local public water supplies. With the widespread power outages, nearly every public water supply in the area had to issue boil water notices. The fact that ANRA was open for business was extremely helpful in returning these systems to normal operation in the following days and weeks.

FEMA declared parts of East Texas as far north as Tyler federal disaster areas and provided public and individual assistance to help deal with the aftermath of Ike. In recent weeks, mobile FEMA assistance trailers have been set up in the affected areas to help local residents get government assistance.

The people in this area have a strong sense of community and did not hesitate for a second to pull together and help one another in times of need.



Hurricane Ike



Wind Damage from Hurricane Ike

ANRA Awarded Research & Planning Grant

By Matt Romig, Angelina & Neches River Authority

The Angelina and Neches River Authority (ANRA) was recently awarded a Research and Planning Grant from the Texas Water Development Board. The project will serve as a source water assessment for a future reservoir site, Lake Columbia. The outcome may have statewide implications as a model or guide to source water assessments for future reservoir projects within the state.

This project will evaluate the quality of the source water of the reservoir prior to its construction and help determine the relative threats to drinking water sources before treatment. By identifying relative threats to water quality, the source water assessment data will help ANRA determine protection priorities for addressing these threats.

As a major component of the source water assessment, ANRA will sample and test the water quality in Mud Creek, West Mud Creek and Kickapoo Creek (direct tributaries to Mud Creek), in Cherokee and Smith Counties, in what will become Lake Columbia. The proposed sampling and testing will include 7 sampling locations, with each location being sampled monthly for a period of one year, beginning in February 2009. The one year sampling period will not only allow for observing changes due to seasonal variation, but could also potentially assess changes due to factors such as intermittent rainfall. The parameters being tested will provide a comprehensive analysis of the water quality conditions at the proposed reservoir site.

Additional monitoring data will afford ANRA the following opportunities:

- Establish baseline water quality conditions in Mud Creek,
- Evaluate the significance of changes in specific water quality constituents based on comparison with previous monitoring data, and where appropriate, investigate and seek a solution to significant pollutant sources,
- Identify and address non-point and point source contamination if necessary, prior to the impoundment of reservoir waters,
- Evaluate the effects of urbanization on water quality in the upper Mud Creek watershed,
- Provide a basis for predicting water quality conditions in Lake Columbia,
- Identify and plan for processes to treat the raw water from Lake Columbia to meet drinking water quality standards,
- Develop a water quality protection strategy that will benefit all users of Lake Columbia, and,
- Develop a project template that will be useful to other entities for assessment of future reservoir locations.



West Mud Creek @ FM 3052, Station #10538

Utilizing previously performed water quality test results from 2001, ANRA can evaluate whether there has been any water quality degradation. The current research project will also test for components not assessed by the 2001 program, such as metals and organics. ANRA recently approved Water Quality Protection Regulations for the immediate Lake Columbia Watershed. These regulations grant authority to ANRA, as described in Senate Bill 1362, to address any contamination issues or water quality impairments discovered during the course of this project.

Previous water quality studies in this area have addressed routine nutrient criteria. This project would expand upon this data and extend the scope to include metals such as cadmium, mercury and lead, volatile and semi-volatile organics, polychlorinated biphenyls (PCB's), herbicides, pesticides, and other toxic materials that pose concerns for human health. Many of these substances are potentially carcinogenic, and by testing for them at this stage, potential sources of these hazardous chemicals can be identified and addressed prior to the impoundment of water at the future reservoir site.

All laboratory test results and field data will be sent to TCEQ for inclusion in the Surface Water Quality Information System database with the goal of being used for future assessment purposes. The water quality data currently available for this watershed is limited, so the data generated from this research project will add to the body of knowledge regarding water quality in this portion of the Neches River basin.



Binational Cooperation in the Rio Grande Basin

By Elizabeth Verdecchia, International Boundary and Water Commission

For almost 1,300 miles, the Rio Grande forms the international border between Texas and Mexico, presenting unique challenges in the management of the Rio Grande Basin. Seven of eighteen segments of the Rio Grande and its tributaries are listed as impaired on the 303d List, and some segments have been listed as far back as 1996. Texas, New Mexico and Mexican dischargers are all subject to different standards, one of the many complications of a multi-state and international river.

The Texas Clean Rivers Program (CRP) began in the Rio Grande Basin in 1991. In 1992, the International Boundary and Water Commission (IBWC) signed Minute 289, a formal binational agreement that outlined the need to conduct a binational water quality study and continue a monitoring program. The unprecedented Minute enabled the coordination of EPA, IBWC, TCEQ and other Mexican and U.S. agencies to conduct an intensive binational study that led to a series of reports, published in 1994, 1998, and 2004, on the presence of toxic substances in the Rio Grande/Rio Bravo and its tributaries along the boundary portion between the U.S. and Mexico. In 1998, the IBWC partnered with the TNRCC to implement the CRP for the Rio Grande. In recent years, increased cooperation has occurred among local, state, and federal agencies and organizations in the U.S. and Mexico, as well as planning efforts from the Border Environment Cooperation Commission and the North American Development Bank for infrastructure projects. In 2000, Secretaries of the U.S. Department of Interior and Mexico's environmental agency (SEMARNAT) signed a Joint Declaration to enhance cooperation to protect the ecological integrity of the Rio Grande, and the signing was accompanied by a binational symposium to build collaboration in the reach from Fort Quitman to Amistad Reservoir. Also in 2000, the IBWC, in coordination with TCEQ, EPA, and Mexico's water agency, CONAGUA, and Nuevo Laredo's Municipal Commission on Potable Water and Sewage (COMAPA), published another binational water quality study of the Laredo/Nuevo Laredo area. The USGS released a report this year on water and sediment quality of streams near abandoned mines on both sides of the river in the Big Bend area; this report was also the result of cooperation in 2002 of various U.S. and Mexican agencies including IBWC, TCEQ, National Park Service, and SEMARNAT. Cooperative efforts on the Rio Grande have also led to binational studies on the Western Boundary.

In 2008, the spirit of binational cooperation is still strong. One example is a multi-year project initiated by TCEQ and EPA to address the water quality issues in certain segments of the river, focusing the pilot project on the high bacteria

levels in the Lower Rio Grande Valley. Agencies, organizations, and institutions from both countries are forming technical, policy, and steering committees in order to address the water quality from a trans-boundary perspective. This binational watershed protection plan approach will lead to a framework for implementing water quality restoration initiatives throughout the basin.

In addition, the World Wildlife Fund (WWF) and other partners in the Chihuahuan Desert Ecoregion recently hosted a binational workshop on environmental and restoration research activities in the Big Bend area of the Rio Grande, a follow up of the 2000 Joint Declaration. At this workshop held in November 2008, researchers from 25 agencies and organizations in both countries came together in Alpine, Texas to share their work on the river's historic and current hydrology and channel morphology, fish assemblages, the status and experience of several riparian rehabilitation efforts, climatic trends in the ecoregion, and the efforts to release the salt cedar leaf beetle and the endangered silvery minnow. The binational team discussed how they could work to formulate a strategy for river ecosystem rehabilitation.

Other organizations with projects that have potential trans-boundary effects are also encouraging the participation of Mexican officials. USDA Agriculture Research Service, Texas A&M University, and the Rio Grande Institute are

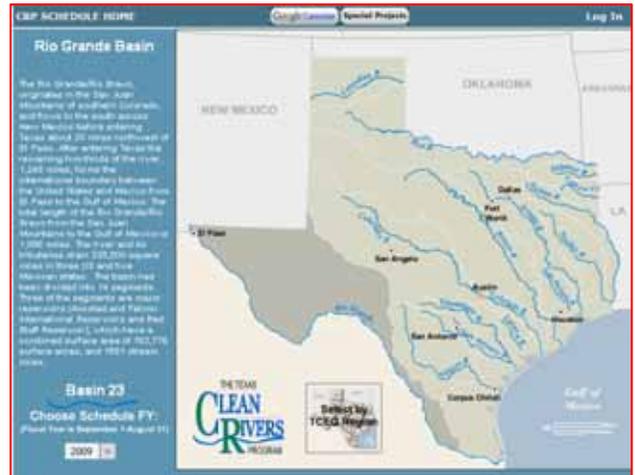
(Story continued on page 5.)



Participants from 25 agencies, institutions from both countries listened to scientific and policy presentations related to the Rio Grande, November 2008.

FY2010 Coordinated Monitoring Meetings

Coordinated monitoring makes collecting and analyzing data on surface water more efficient for the SWQM Program and its participants—TCEQ, CRP, other state and federal agencies, municipalities, and others. The coordinated monitoring schedule (CMS) is planned and developed from March through May of the preceding fiscal year. The TCEQ supports coordinated monitoring with guidance for site selection and for sampling requirements for routine monitoring, special study, and targeted monitoring. The most recent information on all surface water monitoring being conducted by the participants can be found on the CMS. Information on special studies across the state can also be found on the CMS Web site. Planning is underway for the FY2010 coordinated monitoring meetings. To view the CMS online, go to cms.lcra.org.



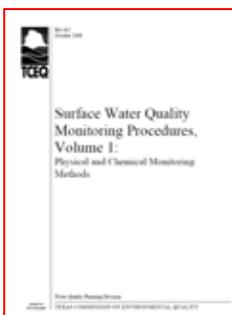
Binational Cooperation (continued from page 5)

conducting research on the biological control of salt cedar and have released salt cedar leaf beetles (*Diorhabda elongata*) to control the invasive salt cedar/tamarisk populations in riparian habitats of various water bodies in Texas, including the Rio Grande. In September 2008, both the U.S. and Mexican Sections of the IBWC participated in a site visit of research areas along the Rio Grande in the reach upstream of Presidio, as well as Big Spring, Texas, to see the progress the beetles have made in several stages of its release. Since the beetles will not respect administrative boundaries, the involvement of both U.S. and Mexican agencies is imperative.

The efforts of previous IBWC Commissioners, including Carlos Marin and Arturo Herrera, who tragically lost their lives while working together to resolve flood issues in Presidio-Ojinaga, have helped to foster an understanding that binational cooperation is essential to progress in the Rio Grande Basin. Agencies and organizations have extended invitations to Mexican participants, encouraged discussions across borders, and accepted the challenge of continuing these discussions despite language, cultural, and regulatory obstacles, for the sake of the future of the communities and ecosystems that depend on the river.



Representatives of both the U.S. and Mexican Sections of IBWC view the expanse of salt cedar defoliation from the beetle near Big Spring, Texas, with Dr. Jack DeLoach from USDA.



Hot Off the Press!!!

The SWQM Procedures, Volume 1: Physical and Chemical Monitoring Methods (RG-415) is now available in hard copy or online in PDF.

To order a hard copy or to download the PDF version go to http://www.tceq.state.tx.us/comm_exec/forms_pubs/search_pubs.html

Working Down on the Bayou...Pine Island Bayou

By Shawna Simpson, TCEQ

If you were to guess which East Texas stream is described as a beautiful, slow-flowing stream consisting of cypress swamps, pine and hardwood forests... ok... that would describe many of them, but if the above description conjures images of Pine Island Bayou (PIB), then you would be right. PIB begins in Liberty County and flows southeast through Hardin County, with approximately 25 miles of the bayou flowing through the Big Thicket Preserve and ending at the confluence with the Neches River, just upstream of the saltwater barrier.

In 1996, PIB was identified on the 303(d) List as not supporting the Aquatic Life Use (ALU) due to depressed dissolved oxygen (DO). In 2000, Boggy Creek, Little Pine Island (LPIB), and Willow Creek, tributaries of PIB, were also listed for low DO. Boggy Creek was subsequently delisted in 2008 when a review of the data showed it was listed in error.

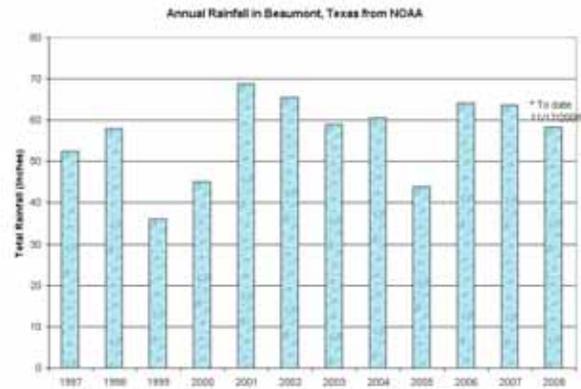
These water bodies were placed in Category "5b" for depressed DO, which means a review of the standards would be conducted before a TMDL would be scheduled. That meant a Use Attainability Analysis (UAA) would be scheduled, lead by Bill Harrison at the TCEQ Central Office. A UAA includes 24 hour DO sampling, as well as sampling for fish, benthic macroinvertebrate, and habitat characterization. Prior to the September 2005 start of the UAA, several 24 hour DO samples were collected beginning in May of 2002 and continued each year until the UAA began.

Did I say September 2005? Yes, that was the ill-fated starting date for sampling PIB and LPIB. For those of you who still see water stains on your ceiling and walls from Hurricane Rita, you know that date very well. The sampling crew was chased out of the Beaumont area with the threat of Rita high on their tails. Before leaving, they were able to collect three samples on PIB, but had to skip LPIB that trip. The first hot, smelly four hours (after sampling, they hopped into the state vehicles and, to conserve gas, kept the A/C off... you get the picture) driving back to Austin only got them 16 miles. Overall, it took 14 hours to return to headquarters from the Beaumont area.

Old Rita was just the beginning. On May 29, 2006, an unnamed (as far as I can tell) tropical rain event dumped 10-15 inches on the Beaumont area in the morning hours, causing flooding of homes and vehicles. Then there was Hurricane Humberto in September 2007 and Tropical Storm Erin in August 2007.

In 2008, Southeast Texas was visited by Tropical Storm Eduard in early August and Hurricane Gustav in late August and, last but not least, Hurricane Ike in September.

I'm sure I am leaving out some major rain events, but the ones listed above were easily identifiable and of course, resulted in the postponement of several scheduled sampling events.



Annual Beaumont Rainfall Estimates

Thus far, a second sampling event successfully occurred in May 2008 at PIB and a first sampling event at LPIB. Initial results of the 2005 benthics and fish data show ALUs ranging from limited to exceptional. Further sampling is required to determine the overall appropriate ALU for these water bodies, if the weather permits.

In addition to being a slow-moving, beautiful bayou, PIB is also a public water supply source. Occasionally, the Lower Neches Valley Authority (LNVA) pumps water from the bayou, just upstream of Hwy 69, into a 400-mile canal system, covering approximately 700 square miles. The LNVA canal system serves "numerous cities, industries, and rice farmers [who] rely on this sole source of freshwater diverted primarily from the Neches River to the region," says David Hancock, the Environmental Lab Supervisor and Clean Rivers Project Manager at LNVA.

Story continued on page 8...



L to R: Shawna Simpson (TCEQ), Matt Romig (ANRA), and Gordan Linam (TPWD) collecting fish on PIB.

Well there's floodin' down in Texas....all of the telephone lines are down
Stevie Ray Vaughan

Pine Island Bayou (continued from page 8)

In September 2006, David submitted a proposal for a Continuous Water Quality Monitoring (CWQM) site at PIB in response to TCEQ's open request for proposals. He was interested in installing a "real-time" site to improve the overall operation and management of the LNVA canal system. TCEQ staff also immediately recognized the potential value of deploying a CWQM site in PIB to basically collect and report constant 24 hour DO data that could potentially be included in the UAA and the 305(b) Assessments. Win, Win!

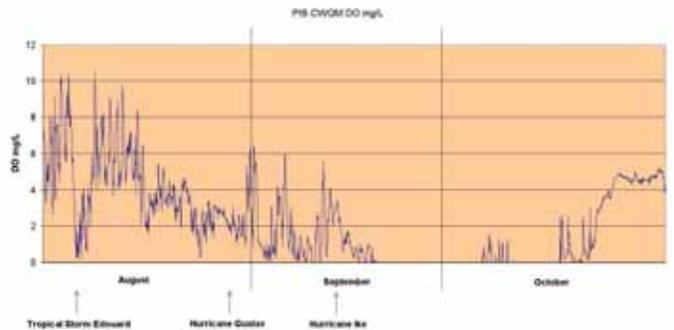
Two years after his original proposal, TCEQ staff deployed the site on June 9, 2008. Since then, data have been collected continuously, capturing some interesting events, including Hurricane Ike. LNVA staff intentionally left the sonde deployed at the CWQM station, collecting valuable data during and after the storm, which proved quite fortuitous.



PIB CWQM Site

No equipment was damaged and the sonde post-calibrated correctly nine days after Hurricane Ike passed. The DO trend from August to October can be seen in the graph PIB CWQM DO below. Note the drops in DO after Edouard and then especially after Ike, when it dropped to zero for several weeks and did not recover until about October 21. The USGS gage stations also captured interesting data during the hurricane. The *Saltwater Barrier Discharge* graph shows the surge in the Neches River going upstream at negative 35,000 cfs. At PIB CWQM site, the USGS gage station (see USGS Gage at PIB CWQM Site graph) that is mounted on the same structure illustrates the high flow events in August and September and recent rains in November.

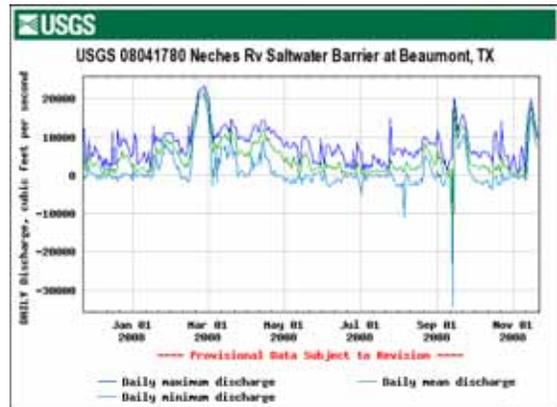
David also reported that the hurricane's storm surge consisting of saltwater flowed up into the lower portion of PIB. However, conductivity data collected at the site during the storm indicated that the saltwater intrusion did not reach that far into the bayou. He also stated that after the hurricane, while checking water quality in the bayou, they traveled by boat up to the CWQM site, and observed dead fish, large-bodied fish gulping for oxygen at the surface, and dark water which turned nearly black



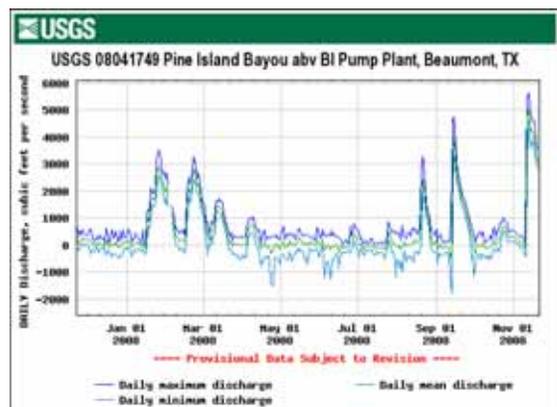
PIB CWQM Dissolved Oxygen Data

from the anoxic conditions. Hopefully, the apparent rebounding oxygen levels that began in late October will remain in the normal range.

Bill Harrison will schedule the remaining necessary sampling trips for the UAA once he deems the bayou to have recovered sufficiently to provide meaningful, representative data. We can only wait to see what Mother Nature has in store for those scheduled trips. Texas floods indeed.



Saltwater Barrier Discharge



USGS Gage at the PIB CWQM Site

SWQM Participates in the Inaugural Texas Myomed Ragnar Relay

By Jill Csekitz, TCEQ

Five members of the Surface Water Quality Monitoring "family" immediately left the annual workshop in Bandera, TX to participate in the 180.3 mile Ragnar Relay adventure race through the scenic Texas Hill Country. Under the enthusiastic leadership of team captain Marty Kelly (Region 12 Houston), a twelve-member squad was assembled in April, 2008 to take-on the running challenge and begin coordination of race logistics. Team Asphalt Junkies also included Lythia Metzmeier (Region 12-Houston), Boyd Guthrie (Region 8 – San Angelo), and Jill Csekitz (SWQM Central Office), as well as eight of Marty's non-TCEQ friends. Volunteer support was graciously provided by Shawna Simpson (SWQM Central Office), who coordinated a group of student volunteers from McNeil High School to provide tear-down of race infrastructure at the finish line.

Each team member was required to run three legs of varying mileage over the course of the race. The total distance traversed by each runner was roughly 15 miles. Team members were divided into two vans to run portions of the route at separate times, and provide much needed rest for runners in the "off-van". Camaraderie among team members was strong and time spent in the van never boring!

Running was not the only activity contributing to the adventure. The race was largely un-supported, meaning participants were responsible for their own food, water, and navigation along the route. Skills learned in the SWQM program like operating a GPS, map reading, and driving a large vehicle through remote areas came in handy. The team did not get lost at any point during the race!

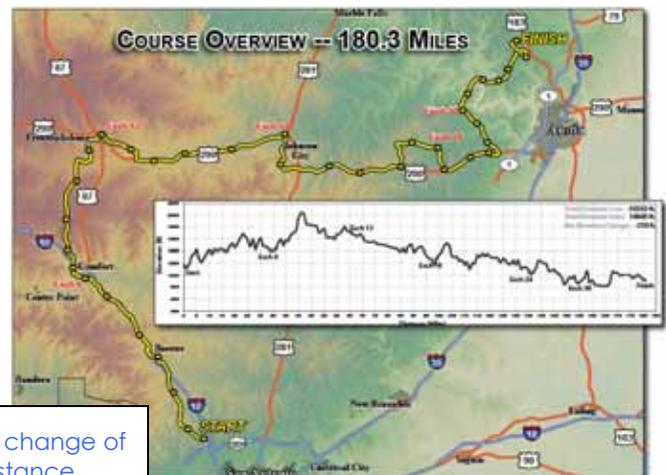
The Asphalt Junkies competed well in the relay, receiving the bronze trophy for third place in their division and 11th overall, out of 41 teams registered. Their time of 26:16:36 can be a goal to beat for next year's all-TCEQ team! If you are interested in participating, contact Marty Kelly (mkelly@tceq.state.tx.us).



SWQM Participants in the Myomed Texas Ragnar Relay Adventure Race; First row L to R: Jill Csekitz, Lythia Metzmeier; Second row L to R: Marty Kelly (team captain) and Boyd Guthrie.



Members of the Asphalt Junkies cool off in a hill country stream somewhere in Gillespie County, TX. The fun quickly ended when the landowner came by to declare stream water quality as not-supporting primary and secondary contact recreation. Upon closer observation, numerous cow-piles (initially mistaken for flat rocks), were identified!



The grueling 180.3 mile course. The elevation change of >10,000 feet was as challenging as the distance.

Upcoming Events

Water Quality Standards Advisory Workgroup Jan 6-7, 2009
 <http://www.tceq.state.tx.us/permitting/water_quality/stakeholders/swqsawg.html>

Ninth Biennial State of the Bay Symposium Jan 12-14, 2009
 <www.gbep.state.tx.us>

"The Galveston Bay Estuary Program's Ninth Biennial State of the Bay Symposium will be held in Galveston, Texas, January 12-14, 2009, at the Galveston Island Convention Center. In the wake of the devastating impacts of Hurricane Ike, we are pleased to return to the island and support the City of Galveston and surrounding communities". *Helen Drummond, Galveston Bay Estuary Program.*
Register Now!!

Golden Alga Int'l Symposium Jan 27-31, 2009
 <<http://www.tpwd.state.tx.us/landwater/water/enviroconcerns/hab/ga/research/symposium09.phtml>> **Register Now!!**

112th Annual Texas Academy of Science Meeting March 5-7, 2009
 <<http://www.texasacademyofscience.org/index.cfm/Home>>

JANUARY 2009						
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4	5	6	7	8	9	10
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"We came back yesterday. It's a mess along the coast. The snakes were striking at the trucks. The reason the snakes were on the road? The ditches were full of alligators. I don't know what was out in the pastures."
Dan Warren, TCEQ Region 3 on Strike Team duty post Hurricane Ike.



To contribute articles, updates, or photographs to the newsletter contact:

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