



# Coordinated Watershed Protection in Southeast and South Central Texas

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## Update from the Regional Watershed Coordinator

Brian Koch, Regional Watershed Coordinator, TSSWCB, Wharton Regional Office, Wharton, Texas  
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Hello everyone, and welcome to our August Newsletter. On August 17, the Galveston Bay Estuary Program (GBEP) held their Water and Sediment Quality subcommittee meeting. Ron Stein from TCEQ gave a presentation on the Total Maximum Daily Load (TMDL) Program in Texas, where he described the TMDL process, provided examples of the different types of TMDLs Statewide. Also provided was a list of all TMDLs either completed or underway, including their name, parameters of concern, adoption, and status.

WCSC Meeting Schedule
November 2, 2006
March 8, 2007
June 7, 2007
September 6, 2007

Also, a project update on the "Failing Septic System Initiative" currently underway by Houston-Galveston Area Council (HGAC) was presented by Dr. Kathleen Ramsey of HGAC. And this initiative is examining the effects of failing systems on surface water quality in Harris

County Precinct 2, by sampling surface waters adjacent to failing systems.

John Jacob from Texas Cooperative Extension/Sea Grant gave an update on Urban Watershed Protection, focusing on the status of the Dickinson Bayou WPP and its respective partnership through July. Also, the Watershed Coordinator Susan Benner will be leaving, so they are in the process of reposting the position for a new Watershed Coordinator.

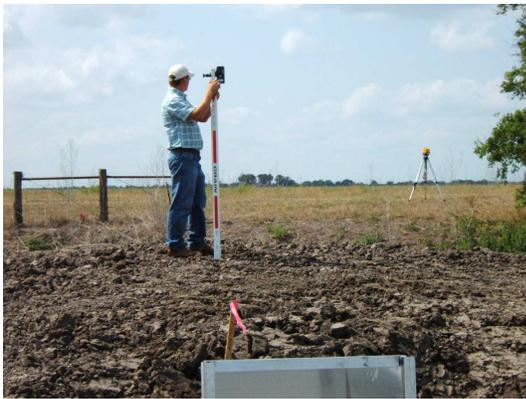
Also, a discussion was held on the focus of the Water and Sediment quality subcommittee in the next ten years to impact the implementation of the Galveston Bay Plan. The discussion spawned questions about the group being a Technical Advisory type of group to support the plan implementation, along with comments about focusing on the current and future growth in the area were the topics. For more information on GBEP, please visit:

<http://www.gbep.state.tx.us/>.

On August 22<sup>nd</sup> in Winnie and on August 24<sup>th</sup> in Edna, staff from the TSSWCB Wharton Regional Office provided trainings on developing 503 Water Quality Management Plans (WQMPs) to 35 staff members from Soil and Water

Conservation Districts and NRCS located within the Wharton Regional Office's service area at both trainings. These WQMPs are site-specific plans developed through and approved by SWCDs for agricultural and silvicultural lands. The plan includes appropriate best management practices to achieve a level of pollution prevention or abatement to be consistent with state water quality standards, and can be important components for WPPs or TMDLs to achieve their respective goals. For more information on TSSWCBs WQMP program please visit:

<http://www.tsswcb.state.tx.us/programs/wqmp.html>



***TSSWCB WRO staff performing engineering design work with laser and rod for a Grade Stabilization Structure to control erosion for a WQMP; photo by Carter Miska***

Also, on August 24 the San Antonio River Authority (SARA) held their Clean Rivers Program Steering Committee meeting. Stephen Lusk from SARA opened the meeting with a brief overview the Clean Rivers Program (CRP), which is funded by TCEQ for water quality monitoring, assessment, and public outreach. The CRP provides the opportunity to approach water quality issues within a watershed or river basin locally and regionally through coordinated efforts. In the past year SARA has been able to purchase new equipment essential for water quality monitoring with funding from CRP.

Presentations included Basin Water Quality Assessment and Coordination, which featured current basin monitoring and the current coordinated monitoring

schedule. Another presentation was on the Watershed Protection Plan Project on the Upper San Antonio River which covered the area within the City of San Antonio where the plan is taking place, sources of bacteria, including the zoo and storm water, and the overall plan which was submitted to TCEQ for review.

Also, an update was given on the current TMDLs and potential WPPs including Salado Creek which was submitted to TCEQ for funding and the Lower San Antonio River which are current TMDL projects. The Development of an Environmental Advisory Committee, which would consist of stakeholders throughout the basin, which includes private citizens, local government, state agencies, federal agencies, and others who would be committed to providing SARA with technical and on the ground knowledge to assist in achieving positive environmental goals for the entire basin. For more information on the San Antonio River Authority please visit:

<http://www.sara-tx.org>.

For more information on the Watershed Coordination Steering Committee and to view past issues of this newsletter, please visit:

[http://www.tsswcb.state.tx.us/programs/wharton\\_wcsc.html](http://www.tsswcb.state.tx.us/programs/wharton_wcsc.html)

## **Update from Plum Creek**

Brian Koch, Regional Watershed Coordinator, TSSWCB, Wharton Regional Office, Wharton, Texas  
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August was another busy month in the Plum Creek Watershed. On August 10, the Plum Creek Watershed Partnership Technical Advisory Group (TAG) met to receive an update on the project, including the project receiving Tri Agency (USEPA, TCEQ, and TSSWCB) status as a priority watershed and how to better focus resources from the represented agencies to make the Watershed Protection Plan a success by achieving the water quality standard for bacteria, and reducing the high amount of nutrients in Plum Creek. The TAG was a direct result of forming the

PCWP, and it consists of state and federal agencies that have the knowledge and expertise necessary to provide input to achieve the goals put forward by the partnership. The TAG agencies are USEPA, USDA NRCS, TCE, GBRA, USGS, TCEQ, TDA, TxDOT, RRC, TWDB, TWRI, USDA FSA, and TSSWCB.

At this meeting, Brad Lamb from USEPA, Arthur Talley from TCEQ, and Aaron Wendt from TSSWCB, each gave an overview of what their respective agency's goals were for the decision to give Plum Creek this status.

Aaron Wendt then talked to the group on how Plum Creek was selected by the WCSC for a watershed protection plan. Nikki Dictson then provided the group with an update on the current status of the PCWP and the WPP from the first meeting with local entities through the tour on July 27<sup>th</sup>.



**The PCWP Steering Committee meeting on August 10; photo by Allison Woodall TCEQ**

Mark McFarland followed with an assessment of the data needs and planning for the partnership, including information on data and leadership on the workgroups for plan development, and funding and staff needs for plan implementation. Also, discussion on the entire project including any information available the TAG agencies could provide in detail to assist with achieving the goals of the PCWP.

Also, on the 10<sup>th</sup>, the PCWP held their third steering committee meeting. At this meeting the three agencies explained the

importance of Plum Creek being named as the Tri-Agency Watershed, and what this means for the partnership which is how to better focus resources from the partner agencies to make the Watershed Protection Plan a success.

Updates from the July workgroup meetings were provided, which included the discussions on various topics from each meeting. The tour held on July 27<sup>th</sup> was also featured in these updates, complete with pictures and detailed descriptions from each stop; with those not able to attend the tour will be able to view the DVD that TCE Agriculture Communications is currently putting together featuring the tour.

We are also pursuing some help on land use data and modeling from the Spatial Sciences Lab at Texas A&M University, which is essential for helping to identify pollutant sources, and targets for implementing BMPs to reduce loading from these identified sources.

For more information on this project, including presentations from previous meetings and future meeting schedules please visit: <http://pcwp.tamu.edu> or contact Nikki Dictson or Brian Koch at the information provided at the end of this newsletter.

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## **PCWP Meetings in September**

### **Agricultural NPS Work Group**

September 13, 2006  
6:00 - 9:00 pm  
Lockhart County Annex Lobby  
1400B FM 20E Lockhart

### **Water Quality and Habitat**

September 20, 2006  
6:00 - 9:00 pm  
Polonia Water Supply Corp Office  
354 Old Lytton Springs Road, Lockhart

### **Urban Stormwater and NPS**

September 21, 2006  
9:30 am -12:30 pm

Buda City Hall  
121 Main Street, Buda

### **Wastewater and Industry**

September 21, 2006

2:00 pm - 5:00 pm

San Marcos River Foundation

222 West San Antonio, San Marcos

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## **Floating Plant Mats Help Clean Manure Lagoons**

Sharon Durham, USDA Agricultural Research Service News Service

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Studies have shown that it's possible to remove excess nutrients from manure lagoons by growing plants on floating mats. Agricultural Research Service (ARS) scientists in Tifton, Georgia, have been studying how to most efficiently use this method to extract excess nitrogen and phosphorus from wastewater so it won't become an environmental problem.

Soil scientist Robert Hubbard, in the ARS Southeast Watershed Research Unit at Tifton; plant pathologist Jeffrey Wilson and geneticist William Anderson at the ARS Crop Genetics and Breeding Research Unit in Tifton; and colleagues Larry Newton, John Ruter and Gary Gascho at the University of Georgia are trying to determine the feasibility of removing excess nutrients in this way.



***Giant reed, which has shown the greatest biomass production potential for floating platforms on wastewater lagoons, is examined just before harvesting. USDA photo***

Lagoons are commonly used to store wastewater from confined-feeding dairy and swine operations. The nutrient-laden water is generally applied to land as fertilizer. But if it's not applied properly, any excess nitrogen and phosphorus may eventually contaminate drinking water, impair soil quality and cause "dead zones" in surface waters.

One research phase has been completed and a second is under way. The first phase was conducted in small tanks, the mats tested on full-strength wastewater, half-strength wastewater, or an inorganic solution. Vegetation was grown atop floating rafts constructed of PVC pipe and chicken wire that was covered with jute erosion-control matting.

In that phase, cattail grew the best on full-strength wastewater, produced the most biomass, and removed the most nutrients. Studies showed that harvesting cattail from the floating rafts could remove an average of 493 grams of nitrogen and 73 grams of phosphorus per square meter per year.

Now the second phase of research is being conducted at Southern Select Farms, a commercial hog farm in Tifton that has a single anaerobic lagoon. A new type of floating mat, consisting of plastic foam covered with braided coir--the coarse fibers from the outer shell of coconuts--will be tested. It was designed in cooperation with Maryland and Charleston Aquatic Nurseries, located in Jarrettsville, Maryland, and Johns Island, South Carolina, respectively.

Several different plant species seem to be good candidates, including St. Augustine grass, coastal Bermudagrass, and giant reed, which have potential as a source of bioenergy fuel.

Read more about the research in the August 2006 issue of Agricultural Research magazine, available online at:

<http://www.ars.usda.gov/is/AR/archive/aug06/lagoon0806.htm>

ARS is the U.S. Department of

Agriculture's principal scientific research agency.

## Filling Ponds with Well Water Can Kill Fish

Robert Burns, Texas Cooperative Extension,  
[rd-burns@tamu.edu](mailto:rd-burns@tamu.edu)

Landowners seeking to replenish their drought-depleted farm ponds with well water could kill their fish if they're not careful, said an expert with Texas Cooperative Extension.

"We can kill fish with well water that's perfectly good to drink," said Dr. Billy Higginbotham, Extension fisheries and wildlife specialist. Because of the ongoing drought, water levels of many of Texas' estimated 1 million farm ponds are dropping. With dropping water levels, the surface area of a pond is also likely to shrink, Higginbotham said. When the surface area – the area of water exposed to the air – shrinks, then the pond water's ability to absorb oxygen is reduced as well. Even during a normal summer, the most likely cause of fish death is oxygen depletion, Higginbotham said. The hot, windless days often experienced in summer reduce the ability of ponds to absorb and hold oxygen. Also, cloudy days in summer can slow down photosynthesis of aquatic plants, which release oxygen, compounding the problem. "Oxygen depletion problems account for about 85 percent of all fish die-offs in Texas farm ponds," he said. But with reduced surface areas, the risk is increased, Higginbotham said. Many pond owners know this, and have been calling asking about adding water from their wells. But though the pond water may be muddy and green, while the well water is clear and clean, it's still not a good idea to rush in, he said.

"There are two issues -- quality and quantity of the well water – that must be taken into consideration," he said. The most critical is quality. By "quality," Higginbotham meant a difference in quality between the pond and well water.



***Wadded up hardware cloth – metal or plastic screening – can "break up" well water and aerate it before it enters the pond. Texas Cooperative Extension photo by Robert Burns***

"Either a too large of a change in temperature or pH can shock the fish and result in fish death," he said. With pH, a change of more than one unit, either up or down, can endanger fish, if occurring in a short period of time. With temperature, a quick change of 10 degrees or more, also either up or down, can put the fish at risk, he said. Which leads to the second consideration: quantity, Higginbotham said. "If we've got a garden hose running into a pond, then the change in (water) quality is going to be small over a long period of time, particularly in a larger pond," he said. "The fish will have time to adapt." But with a 6-inch line pumping at fire hose quantities into a fairly small pond, the change in quality will happen much more quickly.

It's not just the change; it's the rate of change." Even if the pH is similar, a wholesale temperature change can also result in fish death, Higginbotham said.

Such a wholesale change can happen naturally during the summer if a period of high temperatures is followed by a heavy rain, he said. This is because ponds can become stratified. The top stratum of water will be warmer because warm water, like warm air, rises. The lower strata, including the bottom stratum, remain cooler. Moreover, dead organic matter will build up on at the lowest levels. Deprived of oxygenated water, this

organic matter will remain in a kind of stasis, not decaying, he said.

But a cool rain or strong wind from a summer thunderstorm can cause the pond to "turn over" as the now-cooled top layer sinks and mixes with the warmer lower layer. This causes the dead organic matter to be brought to the surface, he said. With the dead organic matter now exposed to oxygenated water, a natural decay process can proceed at a vigorous rate, and so reduce oxygen levels that results in fish kills. Pumping large amounts of cool water into the surface of a stratified pond can duplicate the process of "pond turnover," he said. But even if pH and temperature of the pond water and well water are similar, it's still possible to deplete the level of oxygen if the landowner isn't careful, Higginbotham said.

This is because well water has no appreciable absorbed oxygen whatsoever, he said, and it may have a high level of carbon dioxide. To remedy this, Higginbotham advised "breaking up the well water" before letting it enter the pond. Breaking up the water – agitating it and exposing more of its surface to the air – can be done by various methods.

The simplest is just to let the pond water run over some balled-up hardware cloth on its way to the pond's surface. More complicated methods, he said, involve dropping the water from a series of boxes arranged in stair-step fashion. "Anything that serves to aerate the water before it enters the pond should work," he said. A small flow of water is easier to break up than a large one, he noted.

## **September Water Quality Meetings**

### **September 13, 2006**

Advisory Group Meeting for the Houston Ship Channel Dioxin TMDL  
H-GAC Offices, Meeting Room A  
3555 Timmons, Suite 120  
Houston 1-4pm

### **September 21, 2006**

Public Meeting regarding the Clear Creek Bacteria TMDL  
Friendswood Public Library  
416 S. Friendswood Dr.  
Friendswood 6-8:30pm.

## **Announcements**

**Position Announcement for a Dickinson Bayou Watershed Coordinator**, Texas Sea Grant/ Texas Cooperative Extension are seeking applications for a Watershed Coordinator for work in the Lower Galveston Bay Watershed in Texas. For more information, contact John Jacob, [jjacob@tamu.edu](mailto:jjacob@tamu.edu).

**September 12, 2006 "Connecting the Dots" Texas Water Monitoring Congress Public Outreach Symposium** 9:00am-4:00pm, the Commons-University of Texas, Austin **Registration:** Please respond on or before Wednesday, September 6, by contacting Texas Watch: phone- 877/506-1401 or email [tw05@txstate.edu](mailto:tw05@txstate.edu). We strongly encourage all participants at this meeting to attend the Texas Water Monitoring Congress. You may register for this meeting at: <http://www.txwmc.org/>

**September 13-15, 2006 The Texas Water Monitoring Council will sponsor the sixth Texas Water Monitoring Congress in Austin.** We will be celebrating the 10th year of the Congress. This meeting offers those involved in water monitoring an opportunity to see presentations on current issues, talk about issues, network with colleagues, share successes, and go back to their own programs with new ideas. For further information or if you have suggestions for the Congress please contact Mr. Robert Bradley at: 512-936-0870 or by email at: [robert.bradley@txwin.net](mailto:robert.bradley@txwin.net)

**September 14-15, 2006 Water Quality/Storm Water Seminar** This seminar by the Water Quality Division focuses on Phase II MS4 storm water

permits, wastewater permitting, new EPA initiatives, compliance improvement strategies, pretreatment, and Homeland Security. Austin Marriott North 2600 La Frontera, Round Rock, Call 512/239-3150 or send e-mail to [events@tceq.state.tx.us](mailto:events@tceq.state.tx.us).

**October 11, 2006** Texas Commission on Environmental Quality is holding their Clean Rivers Program Statewide Stakeholders meeting. If you have any questions regarding this meeting, please contact Cory Horan of the TCEQ Clean

Rivers Program staff at (512) 239-4026 or by email at: [choran@tceq.state.tx.us](mailto:choran@tceq.state.tx.us)

**October 12, 2006** TCEQ and the TSSWCB will be co-hosting their Nonpoint Source Pollution Management Program Stakeholder Meeting. The meeting will provide an opportunity to learn about watershed planning and implementation efforts underway throughout the state, as well as provide input on program management. For any questions regarding this meeting please contact TJ Helton at: [thelton@tsswcb.state.tx.us](mailto:thelton@tsswcb.state.tx.us).

### Contact Information

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