



Coordinated Watershed Protection in Southeast and South Central Texas

Volume 2, Issue 1

March 2007

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Update from the Regional Watershed Coordinator

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Hello, everyone and welcome to this issue of the regional newsletter. The past couple of months flew by, with many activities and meetings throughout the region.

On January 24 and 25, the Galveston Bay Estuary Program held their 8th Biennial State of the Bay Symposium. The Symposium was titled: *Charting the Course to 2015: People, the Bay and the Future*; and focused on exploring potential impacts of projected population growth on Galveston Bay and its supporting landscapes. The first day included field trips to different points of interest in and around Galveston

WCSC Meeting Schedule

June 7, 2007

September 6, 2007

December 6, 2007

March 8, 2008

Bay. The plenary sessions featured federal, state, and local policy makers and resource managers who focused on challenges to water supply, water quality, habitat, fish and wildlife, and people; and discuss opportunities to shape the regions future, through cooperative management

of the region's natural resources. The strategies will be outlined to enhance management toward a sustainable Galveston Bay for generations to come.
<http://www.gbep.state.tx.us/>

On February 13 and 15, the Nueces River Authority held their Clean Rivers Program stakeholders meetings in Uvalde and Corpus Christi, respectively.



The Aransas River in Refugio and San Patricio Counties is monitored by the Nueces River Authority; photo by Brian Koch

A draft of the 2007 Basin Highlights Report was reviewed.

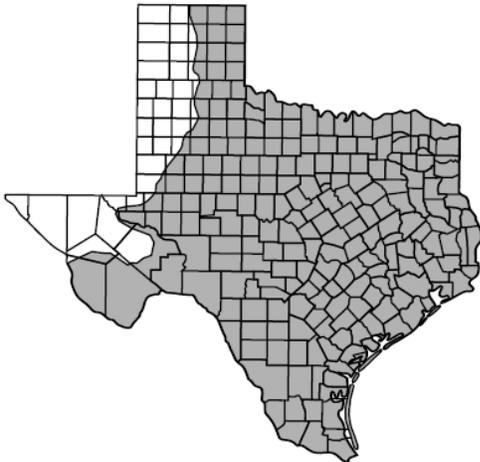
The Coastal Bend Council of Governments received a USEPA CWA §319(h) grant through TCEQ to combat dumping in Nueces County. Their efforts for education include Public Service Announcements on television, NPS

education through a watershed model, and site cleanups.

Water quality priority areas in the basin were highlighted, including the Headwaters Stewardship Education Project, the Nueces Basin Watershed Model, South Central Texas bacteria and DO and the Copano Bay watershed, where a TMDL is currently underway for bacteria in oyster waters.

<http://www.nueces-ra.org/>

On February 20, in Luling, Texas Cooperative Extension hosted a workshop on management and control of feral hogs, targeted for Caldwell, Hays, Travis, Bastrop, Guadalupe, and Gonzales Counties.



Feral hog distribution in Texas 2004; Texas Cooperative Extension

Feral hogs have the potential to negatively affect water quality, and have impact on water quality improvement projects, such as the Plum Creek WPP and the Elm and Sandies Creek and Peach Creek TMDLs located in the focus area. Also, billions of dollars annually are lost due to crop damage and disease transmission to livestock by feral hogs. Presentations included information on basic feral hog biology; including life history, diet, range, habitat preference, and breeding; management strategies including hunting, trapping, and snaring were given, and included strategies for landowners to profit from selling hunts and the meat

from feral hogs; and a presentation was given focusing on studies concerning disease transmission to livestock, indicating swine brucellosis and pseudorabies as the most common diseases carried by feral hogs.

<http://feralhogs.tamu.edu/>

The Galveston Bay Estuary Program Water and Sediment Quality Subcommittee met on February 22 in Houston. A report on current and closing projects was given to the group, followed by discussion of the strategic plan and timeline. Discussion on FY 2008 projects took place. Projects of note were for a Clean Texas Marina Program, designed to reduce pollutant loadings from marinas; also a Failing Septic System Initiative-Correction Strategy, targeted for Harris County Precinct 2, to reduce pollution loading from OSSFs into neighboring waterways. Also mentioned, was the ongoing implementation of agricultural BMPs through the TSSWCB Water Quality Management Plan Program, and the potential for a Galveston Bay tributary to be named for WPP development through the WRO WCSC selection process.

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

The Guadalupe-Blanco River Authority held their Clean Rivers Program Steering Committee meeting on March 22, in Seguin. An overview of the CRP activities was given, including Upper Guadalupe monitoring, and monitoring by the Wimberley Valley Watershed Association for their pending Cypress Creek WPP. Texas Watch provided an update of their activities in the basin, including some volunteer monitoring in Plum Creek between Kyle and Lockhart. In 4-6 months, Texas Watch expects to be fully capable to include *E. coli* in their monitoring. Brian Koch gave an update on the activities of the Plum Creek Watershed Partnership, including Steering Committee and Workgroup meetings, tours, and findings from the start of the project until now. Stakeholder concerns for growth along I-35 and erosion and

riverbank modifications in the Plum Creek Watershed were also noted.

TCEQ provided an update on the TMDLs that are ongoing in the basin; the Peach Creek TMDL is waiting on recommendations from the TCEQ/TSSWCB joint technical Task Force on Bacteria TMDLs, but expects to move forward with the project as soon as the recommendations are made. Additionally, the Gonzales County SWCD updated the number of poultry WQMPs (30) and livestock WQMPs (3) currently certified in the Peach Creek watershed.
<http://www.gbra.org/>

The Dickinson Bayou Watershed Partnership held their steering committee meeting on March 27, in Dickinson. This meeting was to bring the steering committee up to speed on the planning process with the partnership's work groups. An update on the TMDLs for DO and bacteria were given. The modeling for the DO impairment is scheduled to be completed in August 2007. Work began in September for the bacteria TMDL; so far additional data is being gathered. The WPP was reviewed, and timelines were set for workgroups to have drafts of their respective sections completed by June 1 and recommendations for implementation complete by December 1. The partnership will meet on April 19 in Dickinson.
<http://www.dickinsonbayou.org>

For more information and past issues of the newsletter please visit:
<http://www.tsswcb.state.tx.us/cwp>

Watershed Coordination Steering Committee

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The eighth meeting of the Watershed Coordination Steering Committee (WCSC) of the Texas State Soil and Water Conservation Board Wharton Regional Office was held in Columbus on March 8.

Updates on Watershed Protection Plans (WPP) from across the region were given. The first was an update of activities from the **Plum Creek Watershed Partnership**. Workgroup meetings were held in November and January, with discussions on potential BMPs for WPP implementation, refinement of the LDC and SELECT modeling, and GBRA's outreach to 760 fourth grade students in the watershed, through a water quality testing campaign. For the Steering Committee meeting in December, the initial LDC and SELECT results for *E. coli* were introduced. To meet water quality standards a 59% reduction at Umland, 12% at Lockhart, and 58% at Luling were needed. The first draft of the WPP was sent out to Stakeholders in February for initial review and comment. A draft of the WPP document should be complete by August 2007.

<http://pcwp.tamu.edu>

Holli Swick, from The Trust for Public Land provided an overview of the **Armand Bayou Watershed Partnership**, with the main focus on the Greenprinting effort.



Tri-colored heron on Armand Bayou; TPWD photo

There are three phases to Greenprinting, and they include:

- Phase I. Watershed Assessment: Identify areas where land conservation provides the greatest benefit to community priorities

- Phase II. Exchange: Address issues and identify strategies through an exchange
- Phase III. Implementation: Fine-tune strategies and begin locally-driven implementation efforts

The goals of the partnership are outlined this way: Protect Habitat, Protect Water Quality, Reduce Flood Damage, Provide Access and Recreation, and Improve Water Quality. Some of the most critical areas are owned by large refineries, and currently strategies are being developed to further protect these areas. There is also work being done to incorporate USEPA's 9-elements for watershed plans into the Armand Bayou Plan.

<http://www.armandbayou.org>

Bud Solmonsson, from Texas Sea Grant provided an update of the **Dickinson Bayou Watershed Partnership**. The workgroups have been meeting almost monthly, with work focusing on drafting the WPP. The land use workgroup's task is probably the most challenging because of the various types of land use, and how fast some are changing. A new workgroup has been formed for recreation; they will work on different issues affecting recreational use and access on the bayou. One of the local churches has set aside 15 acres of land on the bayou for preservation, which should create a buffer for the bayou, contributing to load reductions. The Partnership will next meet on April 17 in Dickinson.

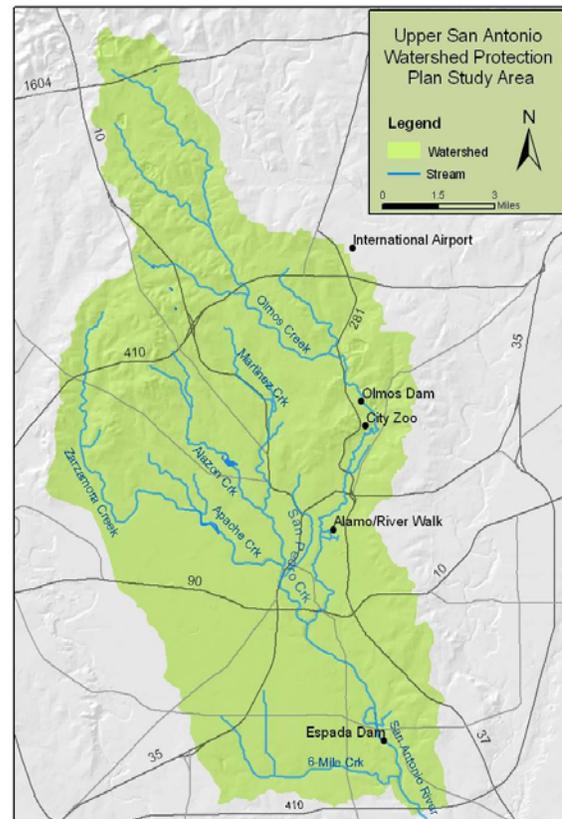
<http://www.dickinsonbayou.org>

Carl Masterson, from Houston-Galveston Area Council provided an update of the **Bastrop Bayou WPP**. Their contract with TCEQ has been approved, with a start date of March 16, 2007. Landowners have already come forward, volunteering to implement Best Management Practices (BMPs) on livestock operations.

<http://www.h-gac.com>

Steve Lusk from the San Antonio River Authority provided an update of the **Upper San Antonio River WPP**. The

WPP document was finalized in January 2007, after the draft was submitted to TCEQ in July 2006. The major issues holding up finalization was there was no timeline in the plan, and the introduction was re-written.



Map of the Upper San Antonio River WPP; provided by San Antonio River Authority

A chart that contained USEPA's 9-elements was included in the plan and distributed to the WCSC. This chart basically lays out each element and what entity would be in charge of implementing each BMP. BMPs are expected to meet the load reductions necessary to attain or even be lower than stream standards for bacteria at base flow.

One of the major load reductions will be disinfecting water from the zoo with UV treatment. The routine monitoring is completed, and one more targeted event is remaining. The WPP information, including the final WPP document, is located under the "New Information" link

on the San Antonio River Authority website. www.sara-tx.org

Richard Eyster from Texas Department of Agriculture (TDA) presented **TDA's Control Efforts for Feral Hogs in Texas**. Texas has an estimated population of around 1.5-2 million feral hogs statewide, and many experts believe the number is higher.



Feral Hogs along the Colorado River in Matagorda County; photo by Brian Koch

Feral hog damage is felt throughout the agriculture community; these animals are very fond of domestic agricultural crops such as corn, grain sorghum, rice, wheat, soybeans, peanuts, potatoes, watermelons and cantaloupe. Feral hogs are omnivorous, and also prey on young lambs, kid goats, shellfish and even fish.

They have also been known to kill and eat ground-nesting birds, such as turkey and quail. In addition to damaging crops and livestock, feral hogs are also vectors of several diseases that can lead to losses in agriculture, including: pseudorabies, hog cholera, swine brucellosis, tuberculosis, and anthrax. They are also potential carriers of FMD (foot-and-mouth disease). Texas Cooperative Extension estimates that statewide annual economic damage caused by feral hogs is \$51.7 million.

As a result, in 2005 the Texas Legislature awarded TDA \$500,000 for feral hog research. Texas A&M University was awarded \$390,500 to assess feral hog damage to crops, evaluate current control efforts and to measure economic impact.

The remaining \$109,500 went to Texas Tech University to develop pheromone and odor combinations which can be used to attract feral hogs to traps and other control locations. The grant will also be used to research reproductive control methods, with the long-term goal to apply these methods on a large-scale basis in Texas.

It has also been noted that feral hogs are potential sources of pathogens affecting many of the streams in Texas, which make pollution controls such as TMDLs and WPPs more difficult to manage.

<http://www.agr.state.tx.us>
<http://feralhogs.tamu.edu/>

The criteria that were used to select Plum Creek as a pilot watershed for WPP development were reviewed. The criteria were sent to the WCSC members for comment, to potentially improve and refine this selection process of a watershed for WPP development. All comments are due by April 30, 2007, to ensure all will be addressed at the June WCSC meeting. In September, the WCSC members will be asked to submit priority watersheds in their areas, which will then be run through the spreadsheet, and then in December, the next watershed will be selected.

For more information on the WCSC, including meeting handouts and summaries, please visit:

<http://www.tsswcb.state.tx.us/cwp>

Prescribed Burning Benefits for Water Quality

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Fire has been a part of the ecological history of Texas, long before its current use as a grazing and range management tool. Native peoples used fire to aid in hunting efforts and the natural occurrence of fire shaped many of the diverse ecosystems across the state.



Rangeland before prescribed burn in Victoria County; photo by Brian Koch

The benefits of prescribed fire are well known among landowners who use this effective tool; including increased production and availability of forage and browse, suppression of most brush and cacti species, control of selected forbs and grasses, removal of excess mulch and debris, and improved nutrient cycling.

Let us take a closer look at the selected benefits, and at the same time think of water quality.

Increased production and availability of Forage and Browse

Increasing the available forage and browse has several benefits to water quality. Prescribed burning in many cases targets native rangeland and plants that are adapted to the sometimes harsh climate in different areas of Texas. These plants are selected to use less water, and for the most part have deeper root systems which increases infiltration by channeling water through the soil, allowing nutrients and bacteria to be filtered by the roots and soil. This process also benefits water availability in the soil and in groundwater, by decreasing runoff. Above ground, the plant leaves filter out sediment and bacteria from runoff water that was not able to go through the soil.

Suppression of most brush and cacti species

The benefits of removing brush and cacti include increased forage production and increased water savings. The lowered

amount of canopy from brush allows sunlight to reach plants that are suited for grazing and wildlife, and allows more area for these plants for nutrient uptake, and filtering of sediment and bacteria. Also, there are less “water loving” brush species, such as mesquite and juniper which allows higher water availability in the soil and groundwater, and eventually in streams.

Control of selected forbs and grasses

Controlling selected forbs and grasses with fire benefits the existing plant community. This is done by decreasing invasive plants which grow faster and have shallower root systems, which decrease water infiltration and increase water runoff, allowing more sediment, bacteria, and nutrients into streams.

Removal of excess mulch and debris

Removing excess mulch and debris from the ground, decreases the amount that could be washed into streams, creating oxygen demand for the decaying material, and reducing dissolved oxygen for aquatic life.



Rangeland being burned; photo by Brian Koch

Improved nutrient cycling

The benefit of improved nutrient cycling by range plants probably has the most obvious connection to water quality. With more nutrients being taken in by range plants, the less runs off to the stream, limiting the “buffet” for algae blooms that decrease dissolved oxygen.

Prescribed burning has many benefits to rangeland, wildlife, and water quality.

With these many benefits, there are many dangers associated with it, including loss of property, damage to property and even loss of life.



Rangeland immediately after a burn; photo by Brian Koch

Before conducting a burn, there are a few guidelines that need to be followed. First, contact your local USDA NRCS office for help with planning the fire and appropriate times to burn; certain offices also have tools and materials necessary for conducting burns. Also, contact your local authorities, including fire department and sheriff's department with all of the details concerning the fire.



Rangeland approximately 3 weeks after prescribed fire; photo by Brian Koch

For more information, resources, and regulations on prescribed burning, please visit the following links:

http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_0196.pdf

<http://www.ranchmanagement.org>

http://efotg.nrcs.usda.gov/references/public/IA/N338_06-2002.pdf

http://www.agr.state.tx.us/agr/program_ender/0,1987,1848_5538_0_0,00.html?channelId=5538

<http://www.tceq.state.tx.us/assets/public/legal/rules/rules/pdflib/111b.pdf>

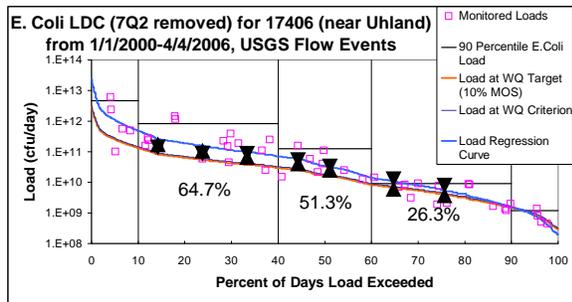
Update from the Plum Creek Watershed Partnership

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The Plum Creek Watershed Partnership (PCWP) has been working hard on the issues in the watershed and developing the Watershed Protection Plan (WPP). During the month of February, the partnership was sent the first draft of the initial sections of the WPP to review and comment on. These comments and suggestions will be used to guide the continued work on plan. The draft WPP will continue to be updated as additional sections are drafted and as comments are incorporated. The draft WPP can be downloaded from the website at <http://pcwp.tamu.edu/> and is open to comment by the public. Matt Berg with Texas Cooperative Extension is leading the effort of writing the Plum Creek WPP. Please feel free to email comments to Matt Berg at: MBerg@ag.tamu.edu or fax them to 979-845-0604.

The sixth PCWP Steering Committee Meeting was held in Lockhart on March 8. Presentations at the meeting included: Goals of the meeting by Mark McFarland; New Results of Load Duration Curves (LDCs) and Load Reduction Estimates by Dr. Meghna Babbar-Sebens, Texas A&M

University (TAMU) Biological and Agricultural Engineering (BAEN) Department. Initial results were presented at the December Steering Committee meeting where comments and suggestions were made including removing the 7Q2 flow data and taking into account urban runoff beyond dog waste. These comments and suggestions have been addressed and changed the numbers slightly in these new results. The new LDC and SELECT results to meet water quality standards for *E. coli* include: a 64.7% reduction at Uhland, 15% at Lockhart, and 40.9% at Luling were needed during periods of high flow.



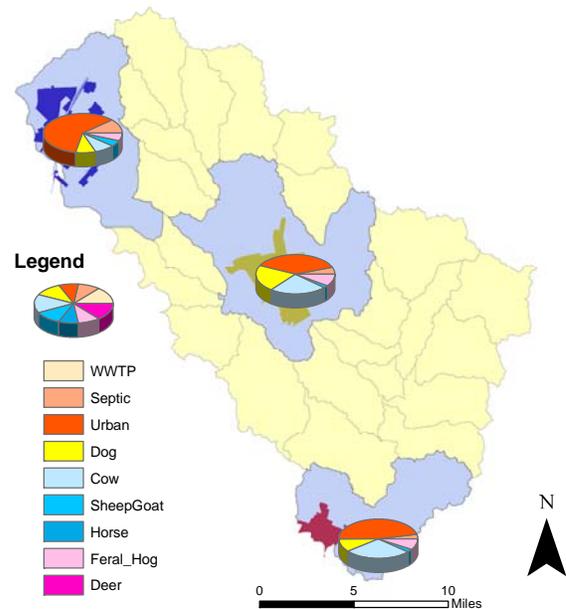
Load Duration Curve for *E. coli* using data from GBRA's monitoring station near Uhland with the 7Q2 flows removed.

Presentations also included several agency updates from the U.S. Environmental Protection Agency by Brad Lamb, Texas State Soil and Water Conservation Board by Aaron Wendt, and Texas Commission of Environmental Quality by Arthur Talley.

A Review of Pollutant Source Evaluation Data and New Results for Urban Runoff was presented by Mark McFarland and Dr. Karthi Karthikeyan of TAMU BAEN Department. The impervious cover was calculated to incorporate urban runoff from the three major urbanized areas: Kyle (5,597 acres – 38% impervious cover), Lockhart (7,212 acres – 27%), and Luling (2,123 acres – 38%). The Urban Runoff was calculated from a study completed by PBS&J, assuming 2004 rainfall depth (this correlates to the land use calculated based on 2004 imagery). A runoff coefficient (RV) of 1 was assumed, or 100% of the urban contribution would

enter the stream. The dog contribution was subtracted from the urban runoff, in order to reflect the non-dog urban runoff contribution.

Relative Potential Loadings from Urban Stormwater Runoff



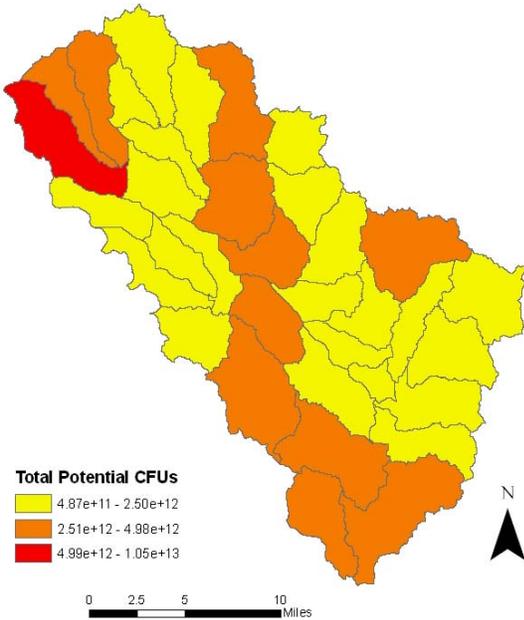
SELECT results showing Relative Potential Loadings from Urban Stormwater Runoff in the subwatersheds for Kyle, Lockhart and Luling.

This allows a direct comparison with other SELECT components, with the assumption that 100% of all other sources will enter the stream.



Plum Creek near Uhland, in Hays County; photo by Brian Koch

Total Average Daily Potential
E. coli Load – All Sources



SELECT results showing Total Average Daily Potential E. coli loads for all sources in each subwatershed in Plum Creek.

The meeting ended with a Discussion of Comments to the Draft Plum Creek Watershed Protection Plan by Matt Berg; and Logo Selection by the Steering Committee by Nikki Dictson.



Plum Creek Watershed Partnership logo as chosen by the stakeholders

Following the meeting of the Plum Creek Steering Committee, a driving tour of the watershed was held on March 9 to reacquaint key agency partners with the landscape and offer an on-the-ground perspective to those unfamiliar with the project. Representatives from the EPA Region 6, Guadalupe-Blanco River Authority, Plum Creek Conservation District, TCEQ, Texas Cooperative

Extension, and TSSWCB were present. The focus of the tour was on the diverse land uses of the watershed and the different water quality issues that result from both urban and rural activities.



Tour participants at the Plum Creek Subdivision in Kyle; photo by Brian Koch

Stops included: a rapidly growing subdivision in Kyle and neighboring flood control structure, a routine water quality monitoring station, Lockhart State Park, and a stream crossing on Clear Fork adjacent to grazed pasture and oilfields. Discussion at stops and en route provided dialogue on outreach and regulatory aspects of the project.

PCWP Meetings in April

Outreach and Education Workgroup
Tuesday, April 10, 2007
9:00 AM - 12:00 PM
Luling Foundation Farm Office, Luling

Agricultural NPS Workgroup
Tuesday, April 10, 2007
6:00 PM - 9:00 PM
Caldwell County Annex, Lockhart

Urban Stormwater and NPS Workgroup
Thursday, April 12, 2006
9:30 AM - 12:00 PM
New Kyle City Hall, Kyle

Wastewater and Industry Workgroup
Thursday, April 12, 2006
2:30 PM - 5:00 PM
New Kyle City Hall, Kyle

Water Quality and Habitat Workgroup
Wednesday, April 26, 2006
6:00 PM - 9:00 PM
Polonia WSC Office, Lockhart

Upcoming Water Quality Meetings and Announcements

April 5; Sabine River Authority Clean Rivers Program Steering Committee Meeting 11am-1pm (Orange)

<http://www.sra.dst.tx.us>

April 5; Meeting of the Houston Ship Channel Dioxin TMDL Stakeholder Group

http://www.tceq.state.tx.us/implementation/water/tmdl/26-houston_group.html

April 11; Meeting to receive public comments on the proposed Mid Cibolo Creek: A TMDL Project for Dissolved Oxygen All comments must be received by 5:00 p.m. on April 30, 2007

<http://www.tceq.state.tx.us/implementation/water/tmdl/31-midcibolo.html>

April 12; Angelina-Neches River Authority Clean Rivers Program Meeting; Nacogdoches

<http://www.anra.org/>

April 19; Dickinson Bayou Watershed Partnership Meeting 5:30-7:30pm (Dickinson)

<http://www.dickinsonbayou.org>

April 26; Trinity River Authority Clean Rivers Program Meeting (Dallas)

<http://www.trinityra.org/>

The TCEQ requests comment on its proposed draft of *Seventeen Total Maximum Daily Loads for Bacteria, Dissolved Oxygen, and pH in Adams Bayou, Cow Bayou, and Their Tributaries*, for Segments 0508, 0508A, 0508B, 0508C, 0511, 0511A, 0511B, 0511C, and 0511E All comments must be received by 5:00 p.m. on April 9.

<http://www.tceq.state.tx.us/implementation/water/tmdl/37-orangecounty.html>

The TCEQ requests comment on its proposed draft of *Three TMDLs for Bacteria in the San Antonio Area, Segments 1910, 1910A, and 1911*. All comments must be received by 5:00 p.m. on April 23

<http://www.tceq.state.tx.us/implementation/water/tmdl/34-uppersanantoniobac.html>

April 15-22; National Environment Education Week

April 29-May 6; National Association of Conservation Districts Stewardship Week

May 1-3; Texas Commission on Environmental Quality Environmental Trade Fair and Conference

<http://www.tceq.state.tx.us/assistance/events/etfc/etf.html>

Contact Information

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This newsletter is published for the benefit of entities with water quality management responsibilities in Southeast and South Central Texas. Its purpose is to inform readers and highlight watershed activities taking place throughout the Texas State Soil and Water Conservation Board Wharton Regional Office service area.

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