



Coordinated Watershed Protection in Southeast and South Central Texas

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Update from the Regional Watershed Coordinator

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Hello everyone, welcome to this issue of the newsletter. It has been awhile since the last issue, and there are some new faces and places, and other happenings since then. Here's a brief update on several older and newer watershed planning efforts that are ongoing in the region.

Plum Creek

Most everyone is familiar with the WPP and the Partnership associated with Plum Creek in Hays and Caldwell Counties, as it was highlighted in all of the past newsletters.

In February 2008, the Plum Creek Watershed Partnership approved the WPP document, followed by USEPA's endorsement of the plan meeting the nine elements. The WPP is in the implementation phase with the Cities of Kyle and Lockhart receiving CWA §319(h) funding through TCEQ to implement urban stormwater BMPs and other pollution reduction controls. Caldwell-Travis SWCD #304 received CWA §319(h) funding through the TSSWCB to implement agricultural BMPs through TSSWCBs Water Quality Management Plan Program. There are more implementation activities ongoing, and there is a full update in this newsletter on the PCWP.

Geronimo and Alligator Creeks

The Geronimo Creek watershed is located in Comal and Guadalupe Counties, near the Cities of New Braunfels and Seguin. Alligator Creek is a major tributary to Geronimo Creek. In 2008, Guadalupe-Blanco River Authority received a CWA §319(h) grant through the TSSWCB to develop a WPP for Geronimo and Alligator Creeks.



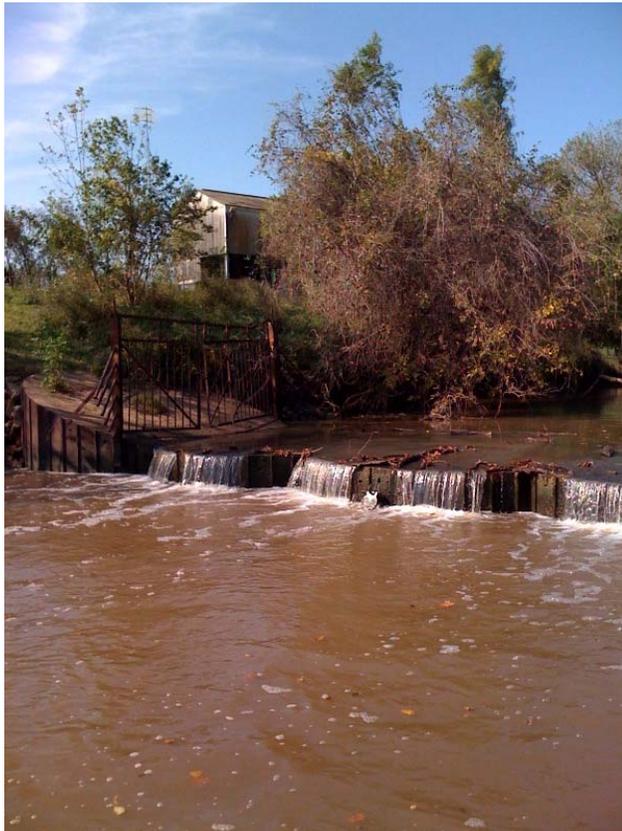
GBRA staff demonstrate biological monitoring techniques for stakeholders on a tour of Geronimo Creek; photo by Brian Koch

Data collection in the watershed began in the fall of 2008, followed by the first stakeholder meetings in the fall of 2009. The WPP is still in development. Geronimo Creek is listed as impaired for exceeding the contact recreation standard for *E. coli* and has concerns for nitrate being above the screening level. The watershed is faced with urban development in the upper and lower portions, and in the

middle portion has a large agriculture component with cropland and grazing land. For more information, please visit <http://www.geronimocreek.org>

San Bernard River

The San Bernard River watershed is located in Southeast Texas, in Austin, Colorado, Fort Bend, Wharton and Brazoria Counties.



Salt water barrier near Sweeny, Texas on the San Bernard River; photo by Brian Koch

In 2009, the Houston-Galveston Area Council (HGAC) received grant funding through the American Recovery and Reinvestment Act (Stimulus) through TCEQ to develop a WPP for the San Bernard River. The river is listed as impaired for exceeding the contact recreation standard for *E. coli*, and has concerns for low dissolved oxygen.

The WPP is currently being developed to address the impairment and concerns. For more information, please visit <http://www.h-gac.com/go/sanbernard>

Bastrop Bayou

The Bastrop Bayou watershed is located in Brazoria County, near the Cities of Angleton

and Lake Jackson. H-GAC received funding from a CWA §319(h) grant from TCEQ to develop a WPP for Bastrop Bayou. Currently Bastrop Bayou is not listed as impaired, but has concerns for *E. coli* bacteria from various sources, including failing OSSFs, urban stormwater, and grazing cattle. The WPP will be used to address these concerns. For more information, please visit <http://www.bastropbayou.org/>

Dickinson Bayou

The Dickinson Bayou Watershed is located in Brazoria and Galveston Counties near the cities of Alvin and Dickinson, and is impaired for low dissolved oxygen(DO) and exceeding the contact recreation standard for *Enterococcus* and *E. coli* bacteria. Currently, the TCEQ is performing TMDLs for DO and bacteria, and Texas Sea Grant Extension was funded by TCEQ to develop a WPP, which is being implemented in part under conditions from USEPA for the WPP to meet the nine elements. Currently TCEQ is performing a Recreational Use Attainability Analysis on the Above Tidal portion of the bayou. <http://www.dickinsonbayou.org/>

Bacteria Implementation Group (BIG)

The BIG was formed in the summer of 2008 to develop an implementation plan for the bacteria TMDLs in the Houston area. The TMDLs in the implementation plan are for Buffalo/White Oak Bayous, Clear Creek, Lake Houston, and Metro Houston. All of the waters covered in the TMDLs are impaired for exceeding the contact recreation standard for *E. coli* in non tidal waters or *Enterococci* in tidal waters. The I-Plan is currently being developed by stakeholders in Harris, Montgomery, Fort Bend, and Galveston Counties. The stakeholders represent various interests including: agriculture, city and county government and wastewater dischargers.

<http://www.h-gac.com/community/water/tmdl/BIG/default.aspx>

San Antonio Bay Partnership

In late 2009, the Coastal Bend Bays and Estuaries Program allocated funding to explore the interest and possibility of a stakeholder led, non regulatory management program for the San Antonio/Guadalupe Estuary.



The town of Seadrift is located on the eastern shoreline of San Antonio Bay and is supported by commercial fisheries and recreation opportunities from the bay. Photo by Norman Boyd; TPWD

In January 2010, a public meeting was held in Victoria, and was well attended by about 100 people. The purpose of the meeting was to evaluate the interest in forming a group to develop a comprehensive management plan for the bay and estuary. Presentations focused on the bay, stakeholder driven groups focused on watershed planning, and estuary programs.

At the end of the meeting, the audience was asked if they supported moving forward with the process, and they overwhelmingly supported a non-regulatory, voluntary, stakeholder driven process to develop the plan for San Antonio Bay.

As a result, a steering committee was formed to create a path forward for the partnership to develop the estuary management plan. The Steering Committee has met several times since January and is making progress, securing funding from the San Antonio River Authority to continue the initial planning process.

For more information on the San Antonio Bay Partnership, please visit <http://www.sabaypartnership.org/>

Southeast and South Central Texas Watershed Coordination Steering Committee Meeting

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On September 2, 2010, Brian Koch hosted a quarterly WCSC meeting in Columbus. This meeting featured two presentations on activities happening across the region.

TPWD Nutrient Study

Jennifer Bronson from TPWD presented results from their study titled *Nutrient Impacts in Aquatic Communities in Six Wadeable Brazos River Basin Streams*. The reason for this study is that USEPA is asking the states for numeric nutrient criteria for streams, and TPWD is working with TCEQ to help with this task.

WCSC Meeting Schedule

December 2, 2010

March 3, 2011

June 2, 2010

This study focused on three streams in Ecoregion 32 (Texas Blackland Prairies) and three streams in Ecoregion 33 (East Central Texas Plains), each with varying nutrient levels and impacts. They assessed fish, benthic macroinvertebrates, water quality and habitat and looked at potential of mussels and periphyton (algae, fungus, and bacteria) to indicate nutrient impacts. The study took place in 2007 and 2008; one being a very wet year, and the other being very dry, and data was collected in four events April-October.

The results included Blackland Prairies streams had higher average nutrient levels than the East Central Texas Plains streams. The DO levels were good, except during the drought. The periphyton was collection resulted in findings that periphyton growth may show elevated nutrient levels before extreme conditions occur. Periphyton biomass and the diatom community differentiated wastewater dominated streams from non-wastewater dominated streams.



Texas Parks and Wildlife Department staff scrape periphyton from woody debris collected for the nutrient impact study; TPWD photo

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It was also noted periphyton is cheap and easy to collect, that nutrient criteria may need to recognize ecological differences, like ecoregion specific criteria, and TPWD recommended periphyton would be a good way to collect nutrient data. The study can be found at

http://www.tpwd.state.tx.us/landwater/water/environconcerns/water_quality/

Tule Creek Stormwater Wetland

Naismith Engineering presented information on the Tule Creek Stormwater Treatment Wetland. Tule Creek is a 3,000 acre watershed in the cities of Rockport and Fulton in Aransas County, and drains to Little Bay, which is a famous recreation and important habitat area.

Recently Aransas County residents voted for a tax hike for quality of life improvements, so one improvement was to maintain water quality and habitat in the small coastal watershed that have direct impact on the local bays. The Cities of Rockport, Fulton, and Aransas Pass partnered with the Navigation

District and the County to protect stormwater.

The first project is Tule Creek, because of its impact to Little Bay, and possible effect of increased sediment loading to seagrass loss in the bay, due to land use changes. Funding for the treatment wetland is from CWA §319(h) funding through TCEQ.

Naismith Engineering was contracted to conduct? The study, and with no water quality data, decided to try to revert to natural functions of wetlands and coastal prairie potholes to help treat stormwater.

One existing pond will be retrofitted to become a sediment catch basin and streambank slopes will be reduced by widening. Also, removal of invasive plants is a key function of improving habitat, the main invasive plants are, Chinese Tallow, Brazilian Pepper, Cattails, and Water Hyacinth.



Existing pond along Tule Creek to be retrofitted to become a sediment catch basin; Photo provided by Naismith Engineering

Another part of the project is to increase public knowledge and buy-in through workshops, open houses, and different educational tools. Also identifying drainage issues, funding sources for implementation, interjurisdictional involvement, and adaptive management strategies, are all part of the project.

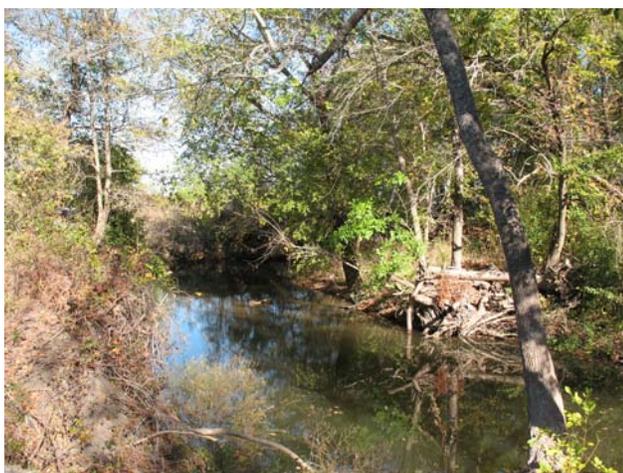
Brian Koch closed the meeting with announcements of upcoming meetings and events that would be of interest to the group. The next WCSC meeting is scheduled for December 2, 2010.

The WCSC is composed of about two dozen water quality monitoring and restoration partners, including other state and federal agencies, river authorities, national estuary programs, and councils of governments. The WCSC is tasked with providing guidance to TSSWCB SRM staff on watershed planning activities in 47 counties across southeast and south central Texas. More information, including meeting materials, is available at <http://www.tsswcb.state.tx.us/cwp#summaries>

Update on Plum Creek Watershed Partnership

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The Plum Creek Watershed provides many benefits including important habitat for a variety of aquatic plants and animals. However, high levels of bacteria and nutrients from both human and animal sources are threatening this valuable resource.



Plum Creek begins in Hays County, and flows through Caldwell County to its confluence with the San Marcos River south of Luling, Texas; photo by Nikki Dictson, Texas AgriLife Extension

From May 2006 through February 2008, the partnership developed a plan to protect the water in the creek. Since the plan was adopted in 2008, the partnership and partnering entities have been working to obtain funding and have been participating in projects related to implementation and community education about the water quality of the watershed.

The Plum Creek Watershed Partnership, Guadalupe-Blanco River Authority and Texas AgriLife Extension Service were recently awarded a 2010 Envision Central Texas Community Stewardship Award for their public awareness program called "Taking Charge of Water Quality in the Plum Creek Watershed". Our partners and stakeholders have been addressing a variety of water quality issues, including potential sources of bacteria, nutrients and other pollutants, wastewater treatment, storm water and storm drain management, urban growth issues, pet waste cleanup and disposal, illegal dumping, proper disposal of hazardous chemicals and more. Having an active and involved steering committee had been vital to past partnership efforts and will continue to be an important element in future activities.



Trapping feral hogs is an effective management tool, and is being promoted in the Plum Creek Watershed. Photo by Jim Cathey, Texas AgriLife Extension

Another major issue we have been working on is feral hogs in the watershed. Feral hogs are non-native and invasive species and they cause around \$52 million in damages annually to Texas farms, ranches and the agricultural industry.

Jared Timmons was recently hired as an Extension Assistant for Texas AgriLife Extension Service. Jared's new job role will be to develop and deliver educational materials to landowners in Caldwell, Hays, and Travis counties, while serving the Plum Creek Watershed Partnership. Landowners work hard to reduce the negative impacts that feral hogs have on land and water sources like Plum Creek. Jared will build on past efforts

including seven extension publications and five videos that teach biology and trapping techniques for feral hogs. He will have the opportunity for face-to-face visits to provide guidance on removing feral hogs from the landscape.

"For most people, feral hogs are a neighbor you just don't want", Timmons said in reference to the damage to habitat and the contributions of *E. coli* bacteria added to Texas streams. "I am glad to have the opportunity to work with landowners, as they are the ones that can do the most good to reduce feral hog populations," he said.

Jared works under the direction of Dr. Jim Cathey, Extension Wildlife Specialist with Texas AgriLife Extension Service in College Station, TX.

"Jared will make a great resource for the folks in Caldwell, Hays, and Travis counties – hogs beware," Cathey said.



Funding from this project was provided through a \$319(h) nonpoint source grant from the Texas State Soil and Water

Conservation Board and Environmental Protection Agency.

For more information on the Plum Creek WPP Implementation, contact Dictson at 979-458-3478, n-dictson@tamu.edu.

More information on the Plum Creek Watershed Partnership can be found at <http://plumcreek.tamu.edu>.

Riparian Areas-What are They Worth

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To answer that question, you may first ask, "What is a riparian area?"

A riparian area, in its simplest term is the band of vegetation that occurs adjacent to the streambank. These areas serve as transitional zones between the wetland and upland areas. A healthy riparian zone will contain a diverse collection of native vegetation that is normally found in close proximity to water. Many of these plants have deep roots that bind the soils of the streambank and protect against erosion.



A good example of a healthy riparian zone; TPWD photo.

Healthy riparian zones will provide many benefits:

- Provide important habitat for wildlife and fish in the form of shade, food, and cover
- Improve water quality by helping to filter and catch sediment and pollutants
- Aid streambank stability by reducing the velocity of floodwater and armoring the banks
- By storing water in the banks and floodplain, these areas prolong base flow and recharge the aquifer
- Important recreational resource for anglers, hunters, canoeists, etc.

Now that we know the benefits a healthy riparian area can provide, it is important to understand what an unhealthy, or impaired riparian area looks like.



One example of an impaired riparian area; TPWD photo.

An impaired riparian zone will contain one or more of the following:

- Lack of vegetation, exposed soil, and eroding banks
- Presence of vegetation more typical of upland sites
- Sites dominated by exotic or introduced species
- Park-like settings or ones that have been continuously grazed

When a riparian area becomes impaired, many of the beneficial effects listed previously are lost, and the stream begins to experience:

- Streambank stability problems
- Reduced wildlife habitat
- Degraded fish habitat
- Silt and pollutants more readily entering the stream

To maintain or improve riparian area health and all of the associated benefits, a key element is to maintain or restore appropriate native vegetation. This can be done by instituting rotational grazing practices, leaving a smaller recreational footprint where applicable, and if a seed source of native vegetation is not present on the site, replanting with a mixture of native trees, grasses, and shrubs.

Since the benefits of healthy riparian perform such valuable ecosystem services and provide essential terrestrial and aquatic habitat, they are key areas to maintain and conserve. By maintaining adequate riparian vegetation, the following chain reaction occurs:

- Banks are protected from excess erosion -Which dissipates energy and slows the velocity of floodwater
- Which allows for sediment to be dropped, -That sediment is then trapped and stabilized,
- Which enlarges the riparian/floodplain “sponge” (water storage area)
- Allowing for increased groundwater recharge
- Which allows for sustained base-flow over time



Healthy riparian areas provide many benefits for ecology and recreation; TPWD photo

Hopefully you can get out and enjoy the benefits of a healthy riparian area near you soon!

In the meantime, if you have questions about riparian areas and how to maintain them, please contact Melissa Parker of the Texas Parks and Wildlife Department's Watershed Conservation Program at melissa.parker@tpwd.state.tx.us, or 512/754-6844

Texas Watershed Steward Program Update

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Texas Watershed Stewards (TWS) is a highly successful one-day training program designed to increase citizen understanding of watershed processes and to foster increased local participation in watershed management and watershed planning activities across the state.

The program curriculum is comprised of five different units including a program introduction, an overview of watershed systems, an overview of watershed impairments, watershed management and regulation, and community-driven watershed protection strategies. The curriculum is compiled into a full-color handbook. In addition, interactive topic modules were developed for each of the five curriculum units to serve as the foundation for the training program.



To date, 25 workshops have been conducted across the state in project watersheds

undergoing TMDL or WPP development and/or implementation. In all, more than 1,200 citizens have become trained Texas Watershed Stewards representing small business owners, landowners, cities, agricultural producers, schools, state environmental agencies, universities, and other watershed residents.

Results from pre- and post-test evaluations indicate that knowledge regarding watershed function, pollutant sources/BMPs, water quality, and regulatory agency responsibility has increased by 31%. Program success is also indicated by the fact that more than 99% of program participants report the program has enabled them to be better stewards of their water resources. Furthermore, results from 6-month delayed post-test evaluations indicate that 80% of workshop attendees have more closely monitored individual actions that could impair water quality, 80% have adopted and/or maintained water quality BMPs on their property, and 65% have encouraged others in their community to attend a Texas Watershed Steward workshop.



Watershed stakeholders look on at a watershed model demonstration during a TWS workshop; photo by Jennifer Peterson, Texas AgriLife Extension

At present, one additional TWS training events are being planned across the state in 2010. The next scheduled event will take place on October 21 in Athens. Future training locations for 2011 are currently being prioritized in collaboration with the TSSWCB and other project partners.

In addition, work continues on the development of the online Texas Watershed Steward training course. Once completed, the online course materials will be accessible from the program website and will allow those unable to attend a watershed-based workshop to complete the course curriculum. For more information on the TWS program, please visit <http://tws.tamu.edu>.

Upcoming Water Quality Meetings and Announcements

October 5, 2010- Adams and Cow Bayous TMDL I-Plan meeting-Orange

Galveston Bay Council Water and Sediment Quality Subcommittee Meeting-GBEP Houston

October 11-14, 2010 – TCEQ Annual Surface Water Quality Monitoring Workshop

October 12, 2010 – Geronimo and Alligator Creeks Watershed Partnership Steering Committee-Seguin

October 12-13, 2010 – Restoration and Management of Riparian Corridors Workshop-Fort Worth

October 21, 2010 – USGS Gulf Coast Regional Cooperators Meeting-Woodlands

October 27, 2010 – Galveston Bay Council-Houston

November 1-2, 2010 – San Antonio Bay Science and Stakeholder Conference-Victoria

November 3-5, 2010 – 30th International North American Lake Management Society Symposium-Oklahoma City, OK

November 9, 2010 – *Building Better Environmental Models for Decision-Making* (USGS webcast)

November 11, 2010 – Plum Creek Watershed Partnership Steering Committee-Lockhart

November 13-17, 2010 – 5th National Conference on Coastal and Estuarine Habitat Restoration-Galveston

November 14-17, 2010 – ASABE TMDL Conference on Watershed Management to Improve Water Quality-Baltimore, MD

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The TSSWCB is the lead agency for planning, implementing, and managing programs and practices for preventing and abating agricultural and silvicultural nonpoint sources of water pollution. The Texas State Soil and Water Conservation Board also coordinates the programs of the state's 216 soil and water conservation districts and administers a Water Supply Enhancement Program.

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 planning activities taking place throughout the 47 counties in the Texas State Soil and Water Conservation Board Wharton Regional Office service area. Past issues of this newsletter are available at <http://www.tsswcb.state.tx.us/cwp>.

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