



Headwaters

River Systems Institute Texas State University-San Marcos EPA Region 6 TCEQ Summer 2011

Texas Stream Team Wish Jason Pinchback and Josh Oyer All the Best as They Move Into New Areas

by Emily Warren, River Systems Institute

Texas Stream Team has experienced some personnel changes over the last few months. This summer the staff says farewell to two key people: Jason Pinchback, former Program Manager; and Josh Oyer, former Volunteer Coordinator. We have all enjoyed working so closely with them, and they will certainly be missed. But for now, Texas Stream Team is in the hiring process to replace them, and continuing all planned business as usual.

Jason Pinchback served as Program Manager of Texas Stream Team from March 2008 to August 2011, and is moving on to work in the coastal division of the Texas General Land Office. Jason was an invaluable member of Texas Stream Team's staff, working with the organization for over a decade. When he started, the organization was called Texas Watch and was housed in the Department of Geography at (what was then) Southwest Texas State University. There have been many changes



of name and iterations at Texas Stream Team since then, but the core mission of training and supporting volunteers to monitor water quality has remained the same, with Jason's effort and energy behind it the whole time. In recent years, in addition to directing Texas Stream Team, Jason worked on the Cypress Creek Watershed Protection Plan.

Another highly valued staff member has moved on this summer to work at Texas Parks and Wildlife Department. Josh Oyer served as the Volunteer Coordinator from June 2008 to June 2011. The spring before that he worked as an intern at Texas Stream Team. He got his feet wet, so to say, during that internship, and upon graduating from Texas State University started his position as full time staff. He worked on the

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The preparation of this publication is financed through grants from the U.S. Environmental Protection Agency through the Texas Commission on Environmental Quality. Printed on recycled paper.

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Feral Hogs and Plum Creek Watershed

by Jared Timmons, Texas A&M Extension Service

Feral hogs are a major problem in Texas with an estimated population between 1.9 and 3.4 million causing more than \$52 million in losses to agriculture annually. Along with crop damage, feral hogs are suspected of predation of wildlife and livestock, disease transmission, and reducing water quality.

Feral hogs impact water quality largely due to behavior related to their physiology. Because feral hogs do not have sweat glands, they commonly wallow in and near water sources to keep cool. This process covers their skin with mud that they rub off on trees and utility poles to remove ectoparasites. However, wallowing damages riparian areas and increases sedimentation. At the same time, the hogs defecate in and around the water source increasing levels of bacteria and nutrients. In some areas, hogs' contributions to water quality degradation are so severe that they may be impacting a water body's ability to support contact recreation (swimming, wading, etc.) or aquatic life. One example is Plum Creek.

Plum Creek is a 52-mile long stream that begins in Hays County north of Kyle and flows southeast through Caldwell County, passing Lockhart and Luling before meeting the San Marcos River near the Caldwell-Gonzales County line. Beginning in 2002, portions of Plum Creek were listed by the Texas Commission on Environmental Quality as not meeting water quality standards for contact recreation. As of 2010, the entire reach was listed for bacteria and also had concerns for nutrients.

The Plum Creek Watershed Partnership is a collaborative effort between the citizens living in the watershed and numerous state, federal, and regional agencies. During development of the Plum Creek Watershed Protection Plan, analysis of potential sources of pollution identified feral hogs as a significant contributor. As a result, Jared Timmons, an Extension Assistant in Wildlife and Fisheries with the Texas AgriLife Extension Service, was hired to help address the issue. Timmons works in the watershed to provide information and technical assistance

to landowners concerning feral hogs. He conducts site visits for landowners to assist them in determining the best methods for feral hog control on their property, develops factsheets and other publications on hog management practices, and delivers public education and training programs for citizens in the watershed.

Feral hog wallowing along a water source.



**Texas Stream Team
Headwaters
Vol. # 4 No. # 2, 2011**

The mission of Texas Stream Team is to facilitate environmental stewardship by empowering a statewide network of concerned volunteers, partners, and institutions in a collaborative effort to promote a healthy and safe environment through environmental education, data collection, and community action.

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Outreach Coordinator
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Volunteer Coordinator
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Database Manager
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TCEQ Project Manager
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**River Systems Institute
Executive Director**
Andrew Sansom

Headwaters disseminates information about nonpoint source pollution and facilitates the exchange of ideas and monitoring data between environmental monitors and supporting partners throughout the state of Texas.

The newsletter is published three times a year. For a free subscription, call toll free at (877)506-1401 or submit your online request at <http://txstreamteam.rivers.txstate.edu/newsletter-request.html>.

Contributions to the newsletter are welcomed and encouraged. Please send any articles, letters, or questions to Texas Stream Team at the postal address listed on the back page or submit them via email to the editor.

If you wish to reprint any material published in *Headwaters*, please notify the editor and submit a copy of the final publication.

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Addressing Bacteria Concerns in the Upper Guadalupe River

by Tara Bushnoe, Upper Guadalupe River Authority

The Upper Guadalupe River Authority (UGRA) is a steward of the watershed and surface water resources in Kerr County. UGRA fulfills this role by routinely monitoring the Guadalupe River and its tributaries and investigating potential threats to water quality. However, protecting our natural resources and the environment isn't just the responsibility of any one person or organization. In 2008, UGRA began working with a dedicated group of individuals and local representatives to address elevated *E. coli* bacteria levels in a portion of the Upper Guadalupe River in Kerrville.

During the summer months, bacteria levels in the section of the Guadalupe River from the confluence of Town Creek downstream to Flat Rock Lake sometimes exceed the state's water quality standards for contact recreation. This section was added to the Environmental Protection Agency's list of impaired water bodies in 2002 and the Texas Commission on Environmental Quality (TCEQ) was tasked with developing a plan to address the impairment. In order for Kerr County entities and interests to be represented in the plan the state adopted, UGRA and a stakeholder group developed an implementation plan at the local level. TCEQ is in the process of approving the grassroots plan and the next step involves implementing the reduction strategies.

UGRA has applied to TCEQ for a Clean Water Act §319(h) grant which outlines a combination of strategies to curtail sources of *E. coli* bacteria in the impaired section of river. This project, called "The Bacteria Reduction



One of seven pet waste stations with degradable "pick-up mitts" in Flat Rock Park.

Plan for the Upper Guadalupe River" is scheduled to begin in September 2011 pending approval. The primary bacteria reduction measures will be implemented through an adaptive management approach and include bird deterrent structures on bridges, management of domestic waterfowl populations, pet waste stations, a guide for homeowners with on-site sewage facilities, street sweeping, river clean ups, and a nonpoint source pollution informational kiosk. Public education will be vital to the success of these strategies and will focus on reaching out to citizens so that they can recognize opportunities in their own lives where they can improve water quality.

The Bacteria Reduction Plan for the Upper Guadalupe River is built upon great local support and partnerships. UGRA, the City of Kerrville, Kerr County, and TxDOT are the primary entities that will put the strategies into place, but they will also gain vital input and assistance from a stakeholder group including members from state and local organizations, agencies, and many Kerr County individuals. ●

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Grant Writing for Teachers

by Jennifer M. Buratti, Texas Stream Team, and Judy Behrens

School budget cuts are common when the economy experiences a downturn. Grants are one of the options that teachers and schools may use in order to make ends meet. At the same time, grant writing is a long and complicated process. A grant writer needs to devote sufficient time and energy to doing research about funding sources and proposal writing, in addition to laying out a careful and well informed writing plan (Behrens 2005).

This Texas Stream Team 2005 news article features guidance from Judy Behrens on how to begin the planning and process of grant writing.

The first step in the grant writing process is to thoroughly define your proposed project by identifying your needs and being well informed on all aspects of them. What are your educational goals? What do you want to accomplish? How does this project support the educational goals of your school and your district? What are the anticipated results of this project? Have a clear idea of what you want to achieve and how you plan to achieve these goals with the grant funds that you are seeking. This project description will help you to successfully match up potential funding sources with the requirements of your project. Take time to discuss your plans in advance with department, campus, and district personnel. Some schools and districts are limited in the type and number of grants that they are allowed to submit, so

ensure that you have the proper approvals from administrators before you invest a great deal of time in writing a particular grant proposal.

One of the best ways to prepare for writing a grant proposal is to spend time becoming familiar with all phases of the grant writing process. Grant writing classes and tutorials are often available through school districts, Education Service Centers, state agencies, and universities. A number of guides to funding and grantsmanship in specific areas have been published in recent years and are available at public or research libraries or through bookstores. The Internet offers access to comprehensive information about the practice of grant writing, including online guidance. Some examples on online guidance are the Corporation for Public Broadcasting's writing tips, <<http://www.cpb.org/grants/grantwriting.html>> and Texas Education Agency's grant process, <<http://ritter.tea.state.tx.us/opge/grantdev/process.html>>. Time invested in learning about the grant writing process will not be wasted; that knowledge will help ensure success as you write your own grant proposal.

Once you have gained a firm understanding of the grant writing process, the next step is to identify possible funding sources and to determine which of these potential sources has granting requirements that match well with your project goals. Educational grants are available from a variety of federal and state agencies, businesses and corporations, and private foundations. Each of these granting entities has its own specifications for the type of projects that they will fund and who is eligible to apply for this support. A proposal that does not meet all of the guidelines laid out by a granting organization will not be considered for grant funding. Take time to review the projects that have received grants from each prospective funding source in recent years to gain a better understanding of what characteristics they are looking for. The more you understand the audience who will be judging the merits of your grant proposal, the stronger your chances are of being successful in securing funds to support your educational project. ●



University Water Resources, Programs, and Research Institutes in Texas

by Victoria G. Stengel, Texas Stream Team Intern

It is no secret that the planet is experiencing a variety of challenges associated with water quality and quantity. The global population is rapidly increasing, and for the first time in human history, more than half of the world population resides in urban areas (United Nations 2009). Texas is playing a part in this global phenomenon. The population of Texas grew by 20% from 2000 to 2009; more than double the national growth rate (Census 2010).

Population growth and rapid urbanization increases the need for accessible freshwater, wastewater infrastructure, and watershed management. The growing demand for water services creates a growing demand for scientific research and water resource professionals.

Many universities across the state have created academic programs and research institutions dedicated to the study of water resources. Considering that water resources is an interdisciplinary field, and water resource needs vary across the state of Texas, the different academic programs and research institutions are unique. Programs have been developed from different university departments, including aquatic biology, engineering, environmental sciences, and geosciences. These academic programs train water managers, scientists, and engineers. The research institutions work with academic, government, and industry in their local regions as well as on a national and an international scale.

The following descriptions highlight some of the different angles by which universities approach and specialize in the dynamic field of water resources:

The University of Texas at Austin (UT) developed the Center for Research in Water Resources (CRWR), a research component of The Bureau of Engineering Research. The mission of CRWR is to research water resources and waste management primarily related to Texas, but also serves locations around the world. CRWR has partnered with Environmental Systems Research Institute, Inc. (ESRI), the global leader in Geographic Information Systems (GIS) software development, to create ArcGIS Hydro (CRWR 2011). The GIS

software helps visualize, model, and predict geospatial components of water resources. The Cockrell School of Engineering offers graduate programs in environmental and water resource engineering (UT 2011). The University of Texas Marine Science Institute performs scientific investigations of the marine environment (MSI 2011). The UT School of Biological Sciences offers a B.S. in marine and freshwater studies, as well as graduate studies in marine science (UT 2011).

The Texas State University – San Marcos River Systems Institute's mission is to “develop and promote programs and techniques for ensuring sustainable water resources for human needs, ecosystem health and economic development” (RSI 2011). The Department of Geography offers studies in water resources from a geographic perspective in both the undergraduate and graduate levels. The Department of Biology offers aquatic biology at the undergraduate level and aquatic resources at the graduate level (Texas State University-San Marcos).

Texas A & M University's Texas Water Resource Institute conducts research in water resources and educational outreach programs. The institute is a program of Texas AgriLife Extension and therefore works closely with the agricultural community (TWRI 2011). Texas A & M offers graduate studies in water management and hydrologic science (Texas A&M University 2009).

Tarleton State University, Stephenville, TX, is home to the Texas Institute for Applied Environmental Research (TIAER). The Texas Legislature established TIAER in 1991 to research environmental issues that have an impact on public policy. TIAER generally focuses on water resources (TIAER 2011). Tarleton State University offers a B.S. in hydrology, hydraulics & watershed in the Department of Engineering & Physics (Tarleton State University).

The Texas A & M University-Corpus Christi Harte Research Institute for Gulf of Mexico

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University Water Programs in Texas...

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Studies focuses on providing leadership and knowledge about the ecosystem and economics of the Gulf of Mexico (HRI 2011).

There are many more unique research institutions and academic water resources programs in the state of Texas. Additional university water resources research institutes include (Sansom 2008):

- Bureau of Economic Geography at the University of Texas at Austin
- Center for Water Research at the University of Texas at San Antonio
- Environmental Institute of Houston at the University of Houston at Clear Lake
- Institute for Environmental Human Health at Texas Tech University
- Water Resources Center at Texas Tech University

These universities and other institutions around the world are working hard to help solve water issues that our state and our planet are facing today while simultaneously training professionals and developing knowledge, tools, and techniques to prepare for the future.

Summer GIS Intern, Victoria Stengel

Victoria began working for the Texas Stream Team on May 29, 2011. Victoria is a 2011 graduate of Texas State University-San Marcos, where she earned a B.S. in Geography

– Geographic Information Science (GIScience). Victoria will return to Texas State in the fall to pursue a master's degree. She plans to study advanced topics in GIScience and water resources.

According to Victoria, "I am very excited to have the opportunity to create a series of watershed maps for the Texas Stream Team. This will be my first professional mapping project." ●



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Summer 2011 Volunteer Spotlight**Ken Barton, Lake Texana - Lavaca River Basin**

by Josh Oyer, Texas Stream Team

Ken Barton, of Edna in Jackson County, has been monitoring Lake Texana consistently since September 1993. With nearly 18 years of volunteer water quality monitoring for Texas Stream Team, that makes him one of the longest standing monitors for the program.

While he was introduced to the program when working in Round Rock, Ken first became a certified monitor after moving to Edna and attending a workshop in Palacios. Upon becoming sponsored by the Lavaca-Navidad River Authority, Ken plunged head-first into water quality monitoring and has not looked back since. He finds his monitoring to be a peaceful time, a break from his normally busy routine of teaching science at Edna High School. He holds an open invitation each month to any student at his school who might be interested in tagging along to learn about water quality monitoring. Throughout his years of monitoring, Ken's two sons have frequently joined him in monitoring. His oldest son even eventually obtained a job with the Lavaca-Navidad River Authority.

Ken monitors monthly on Lake Texana, at the Simmon's Cove boat dock. He describes the water quality conditions as relatively stable, with dissolved oxygen being the only parameter fluctuating regularly. He has noticed as the seasons and air temperature change, the dissolved oxygen becomes generally more or less abundant. Colder water is denser, and therefore can hold more dissolved oxygen. Given these favorable characteristics, Lake Texana is a great habitat for aquatic life and used extensively for contact recreation. The lake is also used as a municipal water source for Corpus Christi. During dry periods, Ken notices that the water level sometimes falls below the point where he can effectively sample from the boat dock. Fortunately, the boat ramp adjacent to the dock allows Ken to access the water during low water levels.

After earning a degree in Biology from the University of Texas at Arlington, Ken earnestly considered a career in forestry. Instead, he ended up getting his teacher certification and has been teaching science in middle and high school ever since. At first, Ken coached football and baseball in addition to his teaching duties. Once he moved to Edna in 1992, he stopped coaching and now teaches Chemistry and an Integrated Physics and Chemistry course. Through all the busy days of teaching school, it has never kept Ken away from his volunteering and the peacefulness of Lake Texana. Thank you Ken Barton, a model citizen scientist and environmental steward!

For more information on visiting Lake Texana, go to:
<http://www.tpwd.state.tx.us/spdest/findadest/parks/lake_texana>. ●

Staff Changes...

(Continued from page 1)

historical data analysis of the Rio Grande, and organized the volunteer water quality monitoring events that occurred over the last two years.

During the transition as the positions are filled, staff from the River Systems Institute is stepping in to help this year's events proceed on schedule. Emily Warren, Assistant Director of RSI, is managing the program while we find a replacement for Jason. All program activities including Meeting of the Monitors, Partner Meeting and trainings will continue as scheduled. See the schedule on the Texas Stream Team Website. For any questions please contact txstreamteam@txstate.edu. ●

**New Address Information
for Texas Stream Team**

Texas State University
Texas Stream Team
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601 University Dr.
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txstreamteam@txstate.edu
Phone: (512) 245-1346
Fax: (512) 245-2095

Our new offices are located:

The Riverside Apartments on
Charles Atlas Drive behind
Strahan Coliseum at Texas State
University-San Marcos

Data Quality Reminder

Revisiting an Old Issue: “Algae Cover - an Explanation”

by Greg Rogers, Aquatic Scientist, formerly of “Texas Watch”

One of the most informative observations you can make as a water quality monitor is noting the abundance of algae at your monitoring site. When algae is found growing along the bottom of streams, it can create long hair-like wisps, or it can be attached to rocks like a green velvet carpet. In lakes or slow-moving areas, you may encounter floating mats of algae, sometimes these mats cover the entire surface of a water body.

The reason this observation is so important is because of the relationship algae cover has with the dissolved oxygen (DO) in water. When large amounts of algae are present and the sun is out, providing the energy for photosynthesis, there will be a large amount of oxygen produced by the algae. The opposite is true at night. When the sun is not out, algae use the oxygen for respiration. If there are enough algae and other organisms using up the oxygen, this can bring the DO values down low enough to cause fish kills.

When recording your observations on the Texas Stream Team data sheet, simply write in a

number that corresponds to the algae cover in the general vicinity of your monitoring site. Use the following descriptions as a rule of thumb to determine which number best represents the amount of algae present. Remember to include both substrate and floating algae when evaluating algae cover.

You may still want to write some observations in the comment box regarding the algae cover, especially if it appears to have changed since your previous monitoring trips. You may also want to describe whether the algae are mainly on the substrate or on the surface in mats.

One thing to remember! Don't mistake aquatic macrophytes, which are aquatic plants with vascular tissues, for algae. These macrophytes will have roots, stems, and leaves. Any examples on macrophytes observed should be written in the comments.

With this new information on every data sheet, it will make it easier for you to make your observations without overlooking algae cover and it will be easier for your result to be interpreted.

- 1 = Absent – No algae apparent.
- 2 = Rare (<25%) – Small patches, not readily apparent.
- 3 = Common (26 - 50%) – Some substrate algae or surface mats noticeable.
- 4 = Abundant (51 - 75%) – Substrate and/or surface algae cover obvious and may be thick in places.
- 5 = Dominant (>75%) – The site is choked with algae. The entire substrate or surface is covered.

(Updated article from Texas Watch newsletter dated Fall 1997/Winter 1998. Greg Rogers is currently working for TCEQ.) •

Feral Hogs...

(Continued from page 2)

Timmons also manages a website that provides information on feral hogs and methods for their control <<http://plumcreek.tamu.edu/feralhogs>>. The site contains information on everything from recognizing feral hog sign to trapping and snaring. In addition, the website has an online reporting tool that allows both cooperating landowners and the general public to report sightings and damage. This reporting tool enables Extension to direct efforts into areas of the watershed with the greatest problems due to feral hogs. For more information, contact Jared Timmons at 254-485-4886 or <jbtimmons@ag.tamu.edu>. *Funding and support for the implementation of the Plum Creek Watershed Protection Plan is provided through a Clean Water Act §319(h) Nonpoint Source grant from the Texas State Soil and Water Conservation Board and the U.S. Environmental Protection Agency. •*

**Texas Stream Team's
New Monitor List will return in
the Fall 2011 newsletter.**



Headwaters

River Systems Institute Texas State University-San Marcos EPA Region 6 TCEQ Summer 2011



Texas Stream Team, in partnership with the Houston-Galveston Area Council, is hosting the **Meeting of the Monitors** Conference from September 29th to October 1st in Houston, TX. This conference will provide educational and networking opportunities for citizen water quality monitors and professionals working in the environmental field. It will also provide opportunities for the general public to learn about relevant water quality issues in Texas. Attendees will have the opportunity to participate in trainings and workshops on macroinvertebrate identification; fish dissection; data analysis; the monitoring of nutrients, turbidity, streamflow, mussels, and invasive species; and more.

“A collaborative approach to watershed planning is essential,” said Kerry Niemann, the TCEQ Nonpoint Source Program Manager. “That is why it is so important to actively engage citizens by bringing them together to help in information gathering, such as volunteer monitoring efforts, and decision making. The Meeting of the Monitors is providing an excellent venue for citizen monitors and professionals to learn and collaborate.” ●

Meeting of the Monitors Schedule

Thursday, September 29

1:00-5:00pm H-GAC Clean Waters Initiative

Friday, September 30

8:30-9:00am	Registration
9:00-9:15am	Welcoming Remarks
9:15-Noon	Solutions for Urbanizing Areas
12:00-1:00pm	Lunch
12:15-12:45pm	The Importance of Volunteer Monitoring: H-GAC's Texas Stream Team Program
1:00-4:00pm	Keeping Your Volunteer Monitors from Swimming Upstream
1:00-4:00pm	Now What Do I Do? – Effective Strategies in Stakeholder Facilitation & Conflict Resolution
4:00-6:00pm	Exhibition and Networking Session
5:30-8:30pm	Clear Lake Eco-Tour Boat Ride
6:00pm	Adjourn

Saturday, October 1

7:00-8:45am	Armand Bayou Nature Center Birding Field Trip
8:00-8:45am	Breakfast and Registration
8:45-9:00am	Welcoming Remarks
9:00-9:30am	Texas Stream Team at 20 Years: Where We've Been, Where We Are, and Where We're Going
9:30-10:00am	Surface Water Quality Monitoring in Texas
10:00-11:00am	Texas Stream Team Quality Control Session
10:00-Noon	Something Fishy! A Fisheries Identification Workshop
10:00-Noon	Tidal Stream Macroinvertebrate Identification
10:00-Noon	Your Piece of the Puzzle: What Does Your Data Tell You?
11:00-Noon	Using the Enviroscope Watershed Workshop
12:00-2:00pm	Lunch and Volunteer Recognition Ceremony
2:00-5:00pm	Texas Stream Team Advanced Monitor Training
2:00-5:00pm	Texas Parks and Wildlife Mussel Watch Training
2:00-5:00pm	Texas Invasives Citizen Scientist Training
5:00pm	Adjourn

Conference Location and Accommodations

The Hilton Houston NASA Clear Lake provides a professional atmosphere for conducting the 2011 Meeting of the Monitors right on the shore of beautiful Clear Lake. Attendees will be given a discounted "state rate" for the conference. All of the rooms are built around floor to ceiling windows and all offer panoramic views of Clear Lake. In addition to excellent meeting spaces, the Hilton Houston NASA Clear Lake offers many amenities including sports facilities, pools, hot tubs, a fitness room, jet skiing, water skiing, and wireless internet throughout.

You may reserve your rooms by following the link on the Stream Team website at :

<http://txstreamteam.rivers.txstate.edu/mom>

or by calling 832-864-0102.

Address

Hilton Houston NASA
Clear Lake
3000 NASA Road One,
Houston, TX 77058

Thursday Special Session

Houston-Galveston Area Council's Clean Waters Initiative Thursday, 1:00 PM – 5:00 PM

The Basin Summary Report is published every five years and provides a comprehensive review of water quality data and related information for each river and coastal basin in Texas. This report develops a greater understanding of water quality conditions and enhances the ability to make decisions regarding water quality issues. Questions answered in this report include: what are the water quality issues, why do these issues exist, what are the possible effects, and what could or should be done about it?

The goal of the Basin Summary Report is to explain why current water quality conditions exist and to describe the reasons for problems and what can be done with this information. This information helps H-GAC develop monitoring plans and update priorities, enhance knowledge and understanding of water quality issues, verify and explain findings on the State's Water Quality Inventory, correlate water quality conditions with possible sources, prioritize water bodies for action, select watersheds for special studies, highlight sections of the basin that need more land use information, and assess the success of water quality improvement projects.

In addition to providing an overview of the report, the workshop will also present some of the special studies and Watershed Protection Plans that H-GAC has worked on in the past year, including Bastrop Bayou, San Bernard River, and Cedar Bayou. ●

Friday Presentations

Solutions for Urbanizing Areas Friday, 9:15 AM – 12:00 PM

Rural areas are being transformed into urban area all over Texas. This transformation brings with it a number of potential problems for surface water bodies which smaller communities may not be fully equipped to address. This presentation track is intended to assist these communities at proactively addressing potential water quality problems resulting from development. Deborah Viera with the City of Denton will discuss the City's vision for addressing potential water quality problems before they become a problem. Matt Hollon with the City of Austin will discuss the City's plan to implement water quality protection measures along a Tollway where future growth is predicted. Kevin Wagner with Texas Water Resources Institute will address the agricultural perspective on this process. All three presenters will be available for a Q&A session at the end in order to collaboratively answer questions. ●

The Importance of Volunteer Monitoring: H-GAC's Texas Stream Team Program Friday, 12:15- PM – 12:45 PM

Todd Running, the Director of the Clean Rivers Program at the Houston-Galveston Area Council, will discuss ways which information collected by volunteer water quality monitors has been instrumental in watershed protection planning efforts in the Houston-Galveston area. ●

Friday Presentations (cont.)

Keeping Your Volunteer Monitors from Swimming Upstream

Friday, 1:00 PM – 4:00 PM

Do you have a revolving door on your volunteer office? Do you want to know how to better deal with group volunteers? What is your social media strategy for volunteer recruitment? These and many other answers on how to create a more effective and sustainable volunteer program will be answered during this session by Mary Beth Harrington of the Texas Association of Nonprofit Organizations.

In this session, participants will learn:

- How volunteers impact the bottom line of your budget
- How to effectively utilize every possible volunteer
- How to recruit the volunteers you need and then keep them!
- What is the dirty little secret your staff is hiding! ●

Now What Do I Do? – Effective Strategies in Stakeholder Facilitation & Conflict Resolution

Friday, 1:00 PM – 4:00 PM

This interactive session will help you understand how to bring stakeholders together with clear purpose and with the right tools to fit their needs and the needs of the organization seeking their input. Stakeholder groups each have their own unique needs, which vary with the type of group and its stage. Participants will gain skills in deciding why stakeholder collaboration is being used, how to understand the group's needs even before the stakeholders come together, how to start the group off right, how to keep things running smoothly, and how to deal with entrenched conflict. The presenters (Dr. Barbara Manouso of Manouso Meditaion & Alternative Dispute Resolution, Steve Mikulecak of the Texas Coastal Watershed Program and Suzanne Schwartz of the University of Texas Center for Public Policy Dispute Resolution) will provide tools and skills from their experience geared to the learning needs of the session participants. ●



FIELD TRIPS

Clear Lake Eco-Tour Boat Ride

Cost \$10.00

Friday, 5:30-8:30 PM

Join us as we cruise through beautiful waters of Clear Lake and Galveston Bay! Let the history of the area come alive! Attendees will learn how the Galveston Bay Plan is being implemented with habitat restoration, education and outreach efforts, and water quality monitoring; how the Karankawa Indians and the pirate Jean Lafayette used this unique coastal ecosystem; and how modern man uses the area today! A professional water quality monitor will do a monitoring demonstration while telling us a little bit about how the Texas Clean Rivers Program works. The cost of the field trip includes food and beverages. The boat can only holds 49 people, so sign up now!

Birding at the Armand Bayou Nature Center

Cost \$8.00

Saturday, 7:00 AM – 8:45 AM

The Armand Bayou Nature Center, located less than two miles from the hotel, is one of the largest urban wildlife refuges in the United States. Participants will be guided along Armand Bayou and a wetlands area where they will have the opportunity to see some of the over 220 species of birds which reside or rely on the Nature Center as a safe resting-place on their long migratory journeys. This Nature Center lies along the Central Flyway, which is the largest migratory bird route in North America. Visitors may hear the melody of songbirds such as warblers, flycatchers, orioles, and painted bunting as well as the cry of birds-of-prey such as osprey, owls, kites, and hawks. Vans will be waiting outside the hotel at 7:00 AM Saturday morning to take the participants to the Nature Center where they will have ample time for viewing birds before returning to the conference at 8:45 AM. For more information on the Armand Bayou Nature Center, visit:

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

Exhibition

There will be an exhibition session on Friday, September 30th. Water quality organizations from around the state will share their work and related information. This session will be from 4:00 PM – 6:00 PM, and the booths will be set up throughout the day.

Photo Competition

Do you like to take nature photography? Texas Stream Team is now accepting submissions of photographs based around surface water bodies for the Meeting of the Monitors Photo Competition. The submission may include wildlife and bugs if they reside around a water body. Submissions will be judged by Texas Stream Team staff. Winners will receive a \$50 gift certificate to H.E.B. and will be recognized at the conference and in the Texas Stream Team newsletter. The winning photograph will be used in future Texas Stream Team publications. All submissions will be displayed on rotating slides during lunch and the Volunteer Recognition Ceremony. Submit your photographs by e-mailing Neal Denton at nealdenton@txstate.edu or mailing it to the address on the attached registration form.

Saturday Presentations

Texas Stream Team at 20 Years **Saturday, 9:00 AM – 9:30 AM**

Mike Bira, the Volunteer Monitoring Coordinator for the US Environmental Protection Agency Region 6, will commemorate Texas Stream Team's 20th Anniversary by discussing the history of Texas Stream Team as well as the importance of citizen water quality monitoring in achieving comprehensive protection and improvement of the quality of Texas' watersheds. ●

Surface Water Quality Monitoring in Texas **Saturday, 9:30 AM – 10:00 AM**

The Texas Commission on Environmental Quality Surface Water Quality Monitoring Department is responsible for conducting an assessment of Texas' water bodies every two years. This information is published in a document known as the Texas Integrated Report for Clean Water Act Sections 305(b) and 303(d). This presentation, by Anne Rogers of the TCEQ Surface Water Quality Monitoring Department, will provide an overview of the findings published in the 2010 report as well as information on how the assessment is performed, and attendees will learn how the work of volunteer monitors is important to the professionals as they perform the assessment. ●

Saturday Workshops & Trainings

Texas Stream Team Quality Control Session * **Saturday, 10:00 AM – 11:00 AM**

Volunteer water quality monitors are required to adhere to an intricate process to assure that all data collected around the state are collected with exactly the same quality-assured procedures. This session will give trained monitors a chance to refresh their knowledge of Texas Stream Team monitoring procedures. Neal Denton of the Texas Stream Team staff will observe monitors as they perform the tests and provide comments if necessary. Testing will be performed side-by-side for accuracy comparison. ●

Something Fishy: a Fisheries Identification Workshop **Saturday, 10:00 AM – 12:00 PM**

Ever heard a fish growl or whistle? Learn about the unique adaptations of fish, crabs and shrimp that inhabit Galveston Bay and the Gulf of Mexico during this hands-on, fun (and fragrant) workshop by Julie Massey of the Texas Sea Grant! Participants will dissect fish and learn how to identify characteristics of their ecosystem, how to choose fresh seafood, and how to do gyotaku, a traditional form of Japanese fish printing. Bring a t-shirt or apron to gyotaku! ●

** Note that these two workshops are 1-hour in length.*

Saturday Workshops & Trainings (cont.)

Tidal Stream Macroinvertebrate Identification Workshop **Saturday, 10:00 AM – 12:00 PM**

The coastal zone of Texas has become one of the most populated areas of the state. As a result tidal streams are often exposed to a wide range of human induced alteration including loss of instream and riparian habitat, channelization, reduced freshwater inflow and degraded water quality. Tidal streams represent a unique ecosystem that possesses a unique mixture of freshwater and estuarine organisms. It is considered nursery habitat for a wide range of estuarine and freshwater organisms. The dynamic nature of this system and the close proximity of these water bodies provides an excellent opportunity for citizen monitors to learn about the relationship of this fauna and watershed conditions. George Guillen, Ph.D, of the Environmental Institute of Houston, will provide Citizen Monitors with an opportunity to learn about the basic taxonomy and identification of common members of this unique aquatic community. ●

Your Piece of the Puzzle: What Does Your Data Tell You? **Saturday, 10:00 AM – 12:00 PM**

You have been collecting data for years now. What do you know about the health of your site? How do you go about understanding what you have? How does your data fit with data collected by other entities in the state? Are you missing any pieces of the puzzle? In this low-tech workshop, we will take data collected by citizen water quality monitors and compare and contrast sites over the years. Jean Lemmon, of Oklahoma Blue Thumb, will talk about what makes a healthy stream and how you can use your volunteer data and your regular site visits to supplement our understanding of the waters of Texas. ●

Using the Enviroscape Watershed Model Workshop * **Saturday, 11:00 AM – 12:00 PM**

Are you an educator looking for new ways to keep your students interested? The Enviroscape Watershed Model gives you the opportunity to interactively demonstrate the effects of nonpoint source pollution on a simulated watershed. This model is appropriate for children and adults alike. It is available for long-term loan from Texas Stream Team, so those that attend will be able to incorporate this demonstration into the classroom. ●



Meeting of the Monitors 2011
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Saturday Workshops & Trainings (cont.)

Texas Stream Team Advanced Monitor Training **Saturday, 2:00 PM – 5:00 PM**

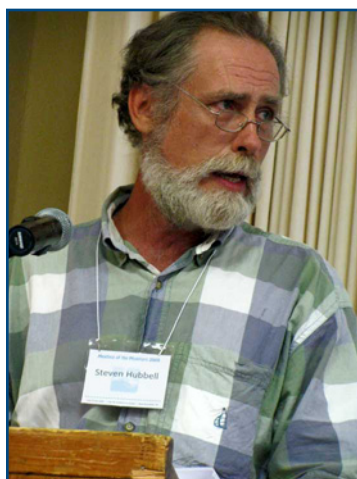
Experienced monitors will be trained in the brand new suite of parameter monitoring procedures. This training will include the procedures for monitoring *E. coli* bacteria, nitrate-nitrogen, orthophosphate, turbidity (chemical method), and streamflow. These parameters give us a good sense of possible adverse conditions for aquatic life and contact recreation which result from non-point source pollution. ●

Texas Parks and Wildlife Mussel Watch Training **Saturday, 2:00 PM – 5:00 PM**

Freshwater mussels (family: Unionidae) are among the most imperiled group of organisms in North America. Over 70% of North American unionid species are threatened, endangered or of special concern. Effective January 17, 2010, the Texas Parks and Wildlife Department adopted an amendment that adds 15 species of unionids to the state list of threatened species. Eleven of these species have been petitioned for potential listing by the USFWS. Marsha May, of Texas Parks and Wildlife, will cover the history and biology of these amazing Texas invertebrates, as well as information and an activity on identification. ●

Texas Invasives Citizen Scientist Training **Saturday, 2:00 PM – 5:00 PM**

The Invaders of Texas Program is an innovative campaign whereby volunteer “citizen scientists” are trained to detect the arrival and dispersal of invasive species in their own local areas. That information is delivered into a statewide mapping database and to those who can do something about it. The premise is simple. The more trained eyes watching for invasive species, the better our chances of lessening or avoiding damage to our native landscape. Program Manager Travis Gallo, of the University of Texas Lady Bird Johnson Wildflower Center, will be giving a 3-hour citizen science workshop. The workshop participants will be taught to identify local invasive plants, field safety, how to use a GPS and digital camera, data collection and submission protocols, and how to submit the data into the online database. Once a participant has completed a workshop, he or she is free to create a personal profile and to start reporting invasive plants into the Invaders of Texas database. ●





Meeting of the Monitors Registration Form *(return or fax)*

Name:

Organization: *(optional)*

Address:

City:

State: Zip Code:

Phone:

Return registration form and
payment to:

Texas State University
Attn: Terry Wendland / MOM
Texas Stream Team
Riverside Apts Unit C4
601 University Dr.
San Marcos, TX 78666-4616

FAX: (512) 245-2095

Registration Fees - Registration includes lunch, beverages, and snacks.

Registration for Certified Water Quality Monitors

- ☐ Thursday Only Registration (Free)
- ☐ Thursday and Friday Registration (Free)
- ☐ Thursday and Saturday Registration (Free)
- ☐ Thursday, Friday and Saturday Registration (Free)

Registration Total:

Field Trip Total:

Total Payment:

Registration for General Public and Professional Attendees

- ☐ Thursday Only Registration (Free)
- ☐ Thursday and Friday Registration (**\$30.00**)
- ☐ Thursday and Saturday Registration (**\$30.00**)
- ☐ Thursday, Friday and Saturday Registration (**\$50.00**)

Payment Method:

- ☐ MasterCard
- ☐ Visa
- ☐ Discover
- ☐ American Express
- ☐ Check Enclosed
- ☐ Money Order Enclosed

Family Members Attending the Conference (Number attending? _____)

- ☐ Thursday Only Registration (Free)
- ☐ Thursday and Friday Registration (**\$10/person**)
- ☐ Thursday and Saturday Registration (**\$10/person**)
- ☐ Thursday, Friday and Saturday Registration (**\$20/person**)

Credit Card No:

Expiration Date:

Security Code:

Saturday Morning Workshops (10:00 AM - Noon)

- ☐ Quality Control Check * ** 1-hour programs, 10-11am and 11-Noon*
- ☐ Workshop on Using the Enviroscope Watershed Model *
- ☐ Fisheries Identification Workshop
- ☐ Macroinvertebrate Identification Workshop
- ☐ Your Piece of the Puzzle: What Does Your Data Tell You?

**Please make checks/money
orders payable to:***Texas State University*

Saturday Afternoon Workshops (2:00 PM - 5:00 PM)

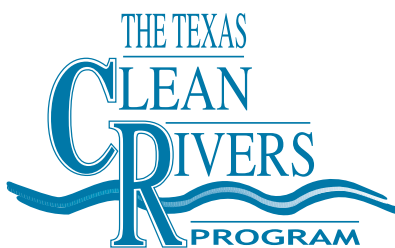
- ☐ Advanced Monitor Training
- ☐ Texas Parks & Wildlife Mussel Watch Training
- ☐ NOAA Phytoplankton Monitor Training
- ☐ Texas Invasives Citizen Scientist Training

Please register online at:

[http://txstreamteam.rivers.
txstate.edu/mom.html](http://txstreamteam.rivers.txstate.edu/mom.html)

Field Trips

- ☐ Clear Lake Eco-Tour Boat Ride (Friday / **\$10.00**)
- ☐ Birding at the Armand Bayou Nature Center (Saturday / **\$8.00**)



MARK YOUR CALENDAR

Sept 29 - Oct 1, 2011 at the
Hilton Houston NASA Clear Lake

meeting of the monitors

Prepared in cooperation with the Texas Commission on Environmental
Quality and the U.S. Environmental Protection Agency



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