



Headwaters

River Systems Institute Texas State University-San Marcos EPA Region 6 TCEQ Fall 2009

Ten Years at Texas State University – Looking Ahead with an Eye on the Rearview Mirror

by Jason Pinchback, Texas Stream Team

As Texas Stream Team turns 18 this year, the program continues its core focus on citizen monitoring, stakeholder engagement, and watershed education activities. From 1991 to 1999 Texas Stream Team, then known as Texas Watch, was focused on citizen monitoring and data collection. When the program was transferred to Texas State University in 1999, TST had a dual focus on watershed education and citizen monitoring. Now in its tenth year at the university, TCEQ is asking Texas Stream Team to place a programmatic priority on citizen data collection, data communications and use, and coordinating with total maximum daily



load (TMDL) and watershed protection plan (WPP) projects.

In December 2009 TST is beginning a new two-year scope of work that will focus on completing over twenty trainings and training over 600 new monitors; conducting ten targeted outreach workshops in TMDL and WPP areas; intensive E.coli surveys; hosting over forty watershed education workshops; developing a new data viewer (summer 2010); communicating data to stakeholders; developing over twenty-four data summary reports; developing a communications plan for monitors and partners; hosting a volunteer and partner recognition event (summer 2010); hosting the statewide Meeting of the Monitors (2011); adopting new methods for turbidity, nitrates, and phosphates; developing a membership structure; facilitating more than eight teacher workshops; presenting to steering committees, and much more.

This next two years will bring a renewed focus on increasing volunteer retention rates, receiving more data from trained monitors, communicating data results, and expanding the types of information that monitoring data can reveal. The new data viewer will allow partners

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Looking Ahead...

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and monitors to directly upload and download data as well as make graphs and perform other program management functions.

We will be looking towards monitors and partners to be more active in communicating data and taking part in stakeholder meetings. When data show concerns, Texas Stream Team will be more diligent at communicating the information and bringing measurable results at reducing pollutant loads. As resource witnesses, trained monitors and staff must do their part in seeking solutions to problems in a constructive way. This is part of our collective mission. •

Texas Stream Team's Role in the River Systems Institute

By Emily Warren, River Systems Institute

For those of us who are lucky enough to live in close proximity to a natural body of water, water takes on many meanings. Take the San Marcos River, for example. In San Marcos, the river is a gathering place, much as water bodies in many times and places have served as "it" spots. Locals and students alike interact with the water in their studies, in exercise, in their social lives, and to be able to catch a quick break from the Texas heat. This area, where the San

Marcos Springs emerge from the Edwards Aquifer to fill Spring Lake and form the San Marcos River, is a significant ecological resource for the state of Texas, so much so that the Texas Legislature recently made a significant financial investment to further understand it. The headwaters of the San Marcos River System are also home to the River Systems Institute (RSI), Aquarena Center, and Texas Stream Team.

Texas State University purchased the Aquarena Springs theme park in 1994 and changed the focus of the former theme park from entertainment to preservation and education. The 90-acre acquisition, and the formation of the River Systems Institute in the early 2000s, has enabled Texas State University to preserve the beautiful, ecologically fragile site for the state, while opening up classroom, laboratory and research possibilities for the university. RSI was established as a leadership initiative to coordinate and expand university-wide efforts in the field of aquatic resource management, and it emphasizes the primary impor-

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Texas Stream Team Headwaters Vol. 2, No. 3, 2009

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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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 email your request to txstream-team@txstate.edu.

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.



**RIVER
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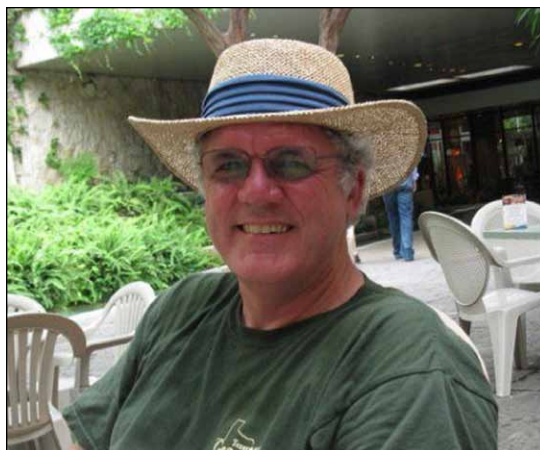
Volunteer Spotlight –**Mark Carter and the Geography Intern Program***by Mary Waters, Texas Stream Team*

Mark Carter, of the Texas State University's Department of Geography, sends geography students seeking internships to Texas Stream Team every semester. There are about 20 to 30 geography students per semester looking for internships and they know to talk to Professor Carter. He has been sending students to Texas Stream Team for 9 years, resulting in about 40 geography interns over the years. These interns are always enthusiastic and skilled, a combination that has helped the water quality volunteer monitoring program immensely. So, it is easy to say that part of the success that Texas Stream Team has experienced in the last ten years is due to Carter, and the quality interns that he provides.

In 1999, Texas Stream Team (Texas Watch at the time) found a home in the Department of Geography at Texas State University (then, Southwest Texas State University), forging a partnership that has lasted to the present. In 2006, Texas Stream Team was relocated to the River Systems Institute, and the Geography Department has remained in close contact.

The students who seek internships at Texas Stream Team come from Geography with an understanding of concepts that the program uses every day. They often have skills such as Geographic Information Systems and other mapping training that Texas Stream Team needs in many projects and reports. They complete their internship with a certification as a volunteer water quality monitor, and some go on to complete training as a Certified Trainer. These experiences prepare them for careers in geographic fields including water resource management. Carter says that "most geography majors, I think, have an interest in water management. It's the essential ingredient to having the world that we know." It's a good trade. At Texas Stream Team, Geography interns get real-world applications and experience and the interns bring interest, expertise, and knowledge to the program.

This year, Texas Stream Team staff has noticed an increase in students applying for internship positions. Carter says this is due to the tough economic times, likely making stu-



dents more motivated to get good experiences for their resume and career search. He also thinks the drought conditions here in Central Texas have increased water awareness among students, causing them to think about water resource management as a career option.

Professor Carter's enthusiasm shows as he lines up interns with opportunities semester after semester. But for him it's more than just his job. "It's really all about creating experiential learning opportunities for our students, but for me personally, it's also about helping support a program that helps keep our natural, flowing waters clean and clear." His passion as a steward shows through the quality students who have served as interns in the last decade, and earned him a Texas Stream Team Award of Outstanding Service, presented at this past summer's Meeting of the Monitors. Thanks to Mark Carter for all of his efforts! •

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Data Summary Report – Lake Palestine in Henderson County

by Josh Oyer, Texas Stream Team

This article summarizes water quality data collected from four sites on Lake Palestine in Henderson County and Smith County, Texas, from April 18, 2000, to December 18, 2008. The sites listed from upstream downstream are named Lake Palestine at: Wildwood Pier, at SH 315 over Flat Creek, at Malibu Bay, and at Fish Bay. All data were collected by Texas Stream Team volunteers of the Greater Lake Palestine Council (GLPC) in partnership with the Angelina & Neches River Authority.

Lake Palestine is designated as stream segment 0605 by the Texas Commission on Environmental Quality (TCEQ) in the Neches River Basin. It impounds the Neches River (segment 0606) and Kickapoo Creek (segment 0605A) to create a 25,560-acre reservoir that is designated for aquatic life use, contact recreation, fish consumption, public water supply, and general use.

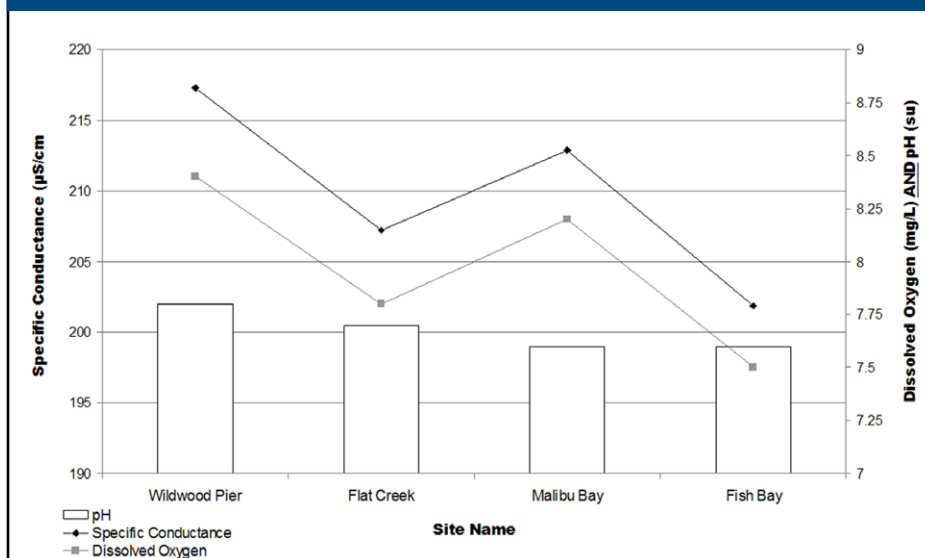
The Neches River and Kickapoo Creek have both been listed on the TCEQ’s “Texas Water Quality Inventory and 303(d) List” as impaired water bodies for various reasons. The Neches River has been listed for zinc in the water since 1996, low pH since 2002, depressed dissolved oxygen since 2004, and bacteria as of 2008. Kickapoo Creek has been listed for bacteria since 2000 and depressed dissolved

oxygen since 2006. Lake Palestine itself has been listed for low pH values since 2006. Lake Palestine has also been noted in the past as having eutrophic conditions that contributed to extensive algal growth. The land cover around Lake Palestine is almost exclusively privately owned residential, and the majority of activity on the lake is recreational, including fishing and boating. There are plans at the Texas Water Development Board to raise the dam by five feet, flooding many acres of lakeside property. As the dam alteration causes major changes in water quantity, continuation of water quality data collection is critical.

There were 293 samples taken from Lake Palestine from April 18, 2000, to December 18, 2008, ranging in times from 6:30 a.m. to 6:30 p.m. Mean water temperature readings ranged from 20.6°C to 22.6°. The maximum reading of 38° was taken at both Wildwood Pier and Flat Creek in June of 2006 and 2005, respectively. The minimum of 5.5° was taken at Fish Bay on January 5, 2001. Mean specific conductivity values ranged from 201.9 to 217.3 µS/cm. The maximum value of 380 µS/cm was observed at Wildwood Pier on December 15, 2006, and the minimum value of 50 µS/cm was observed at Flat Creek on January 16, 2007.

Mean dissolved oxygen (D.O.) values ranged from 7.5 to 8.4 mg/L. The maximum value of 12.2 mg/L was observed at Wildwood Pier on February 4, 2001, and the minimum value of 3.1 mg/L was observed at Fish Bay on August 15, 2005. Mean pH values stayed within a tight range of 7.6 to 7.8 su. The maximum value of 9.5 su was observed at Wildwood Pier on September 20, 2004, and the minimum value of 5.5 su was observed at Malibu Bay on January 18, 2005. From the data presented, pH values appear to have stayed consistently healthy.

All Site Means: Specific Conductance, Dissolved Oxygen, and pH



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Lake Palestine...

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Of all the 293 samples taken from Lake Palestine represented here, only 30 recorded a D.O. value lower than the 6.0 mg/L standard for “exceptional” aquatic life use criteria. This represents 10% of all D.O. values in the dataset. While some of these lower D.O. values are below the “exceptional” aquatic life use criteria, some flexibility is built into interpreting environmental data. In this case, much of the lower D.O. data are correlated with summer and higher water temperatures. This is a natural phenomenon observed in many streams and reservoirs. Specific conductance in this region tends to stay below 400 $\mu\text{S}/\text{cm}$, indicative of low total dissolved solids. The pH values all fall within an acceptable range, making the water body ideal for aquatic life.

The dataset stays fairly consistent in terms of months monitored. Except for one sampling event at Fish Bay on March 31, 2002, sampling events broke in May 2001 until March 2003. However, once activity resumed again in 2003, sampling events went essentially uninterrupted until the present time. This is a sign of a committed team of volunteers. With consistent data, it becomes easier to recognize trends in the water quality. This information is shared with the ANRA and is used for problem identification. If the plans at the Texas Water Development Board to raise the dam are approved, the ambient water quality data generated by the GLPC will become extremely valuable to ensure the ability to recognize changes in water quality from an increase in water quantity. The GLPC and data manager Larry Hofmann were recognized this summer with an award from Texas Stream Team for their outstanding service. It is efforts from groups like the GLPC that are helping to keep surface water quality swimmable and fishable for the future generations of Texan citizens. ●

Role in the RSI...

(Continued from page 2)

tance of river systems in the hydrologic cycle. The River Systems Institute has a mission to develop and promote programs and techniques for ensuring sustainable water resources for human needs, ecosystem health, and economic development. It develops and promotes holistic approaches to the management of river systems, with those systems including the springs, streams, groundwater, and watersheds that feed them, as well as lakes, bays, and estuaries into which they flow.

The year 2006 was a big one for the River Systems Institute because Texas Stream Team joined RSI, allowing RSI's focus to be revitalized, and bringing RSI the gift of community involvement. RSI's four main functions were now redefined as including research, education, stewardship, and service. Texas Stream Team continues to support the Institute's efforts through the pursuit of watershed management, research and planning, supporting stakeholder training and education in data collection, and in disseminating information.

Texas Stream Team volunteers should be proud. It is through volunteer monitors that Texas has the ability to assess and care for its water. This is a job that could not be accomplished without volunteer efforts. Texas Stream Team's more than 1,400 volunteers monitor more than 250 sites across the state. Stream Team's long focus and dedication to water quality monitoring, education, and community involvement has not only strengthened the RSI mission, but has also provided unique environmental educational opportunities for the Texas communities in which its volunteers serve.

Together, RSI and Texas Stream Team are dedicated to studying, preserving, and interpreting the remarkable aquatic systems that surround us and extend to systems across the state, the nation, and the world. ●





Calling All Stray Kits!

If you have (or know of) any monitoring kits, equipment, or supplies that are no longer being used, we would very much like to have them back so that they may be reassigned to other monitors.

If you ship equipment back to us, make sure to use our physical address as opposed to the mailing address that appears on the back page of this newsletter. Our physical address is:

Texas Stream Team
The Landing
901 Aquarena Springs Drive
San Marcos, TX 78666

Fall 2009 TST Interns

Josh Oyer, Texas Stream Team

Drue Kogler graduated from the Texas State University Geography Department with a degree in Water Studies in May of 2009. Drue is from Austin, Texas, and will be working with the Cypress Creek Project for his internship as well as assisting in the development of social marketing campaigns in Texas Stream Team's special project areas.

Misty Downing is a graduate student in the Texas State University Geography Department hailing from Bandera, Texas. She is currently working toward her Master's degree in Geographic Information Science. She has been taking on various map-making duties for Texas Stream Team to help better communicate the geographic distribution of monitoring locations.

Mamta Singh defended her dissertation, titled "Assessing Student Success in Entry-Level Undergraduate Science Courses," from the Texas State University Biology Department this past spring. She is originally from Nepal and her Ph.D. from Texas State will be her fifth degree. Mamta holds three Master's degrees: one in Biology from Tribhuvan University in Nepal, a second in Natural Resource Management from the Norwegian Institute of Life Science in Norway, and a third in Environmental Studies from Ohio University. Mamta is assisting with the outreach program by leading presentations and developing curriculum.

Neal Denton is a senior in the Texas State University Geography Department from Dallas, Texas. He is working toward his Bachelor's degree in Water Studies. He is a general program intern for Texas Stream Team and has been working on a water quality data presentation to be delivered at Mustang Island State Park in addition to assisting with monitor trainings.

Nick Maulding is from Austin, Texas, and will be graduating in December 2009 from the Texas State University Geography Department with a degree in Geographic Information Science. His work with Texas Stream Team is focusing on the Cypress Creek Project, assisting with the installation of storm-water monitoring stations in the watershed to collect data on suspended sediment, *E. coli*, and nitrate and phosphate levels. ●

An Almost Perfect Success Story:

Reducing *E. coli* in the San Marcos River

By Jason Pinchback, Texas Stream Team

The San Marcos River has a good reputation for being one of the cleanest and clearest rivers in Texas. Emanating from the ground at Spring Lake in San Marcos, this river is fed almost exclusively from the Edwards Aquifer when it is not raining. This river is routinely sampled by the Guadalupe-Blanco River Authority, the City of San Marcos, Texas State University, San Marcos River Rangers and other citizen monitors, the U.S. Geological Survey, researchers and others. Much of this dry weather water chemistry and bacteriological data show the river to be in excellent condition for the most part.

In 2007 Texas Stream Team was developing study design logistics for its new intensive *E. coli* sampling events and our first “test run” was conducted in the San Marcos River watershed. If you are not familiar with our latest watershed service, the intent behind intensive *E. coli* sampling events is to identify pollution “hot spots” by utilizing volunteer and stakeholders to collect over 100 samples from mainstem and tributaries. Nonpoint source pollution (NPS) is often episodic in nature and *E. coli* pollution sources are inherently difficult to track down since they originate from many thousands of sources. *E. coli* investigations are also problematic since the origin, fate, and transport of such pathogens are very specific to each source, watershed, and various environmental conditions. This situation often leads agencies looking for the proverbial needle in the haystack.

During the 2007 sampling event on the San Marcos River monitors fanned out to four tributaries and the mainstem to sample by teams who are walking, driving, and canoeing to sites. One of the teams collected samples from a storm drain that had about .5 cfs flowing from it even though it did not rain recently. Analysis from this showed *E. coli* was over 2000 colony forming units (cfu). This was much higher than any of the other San Marcos River results. Two days later, monitors sampled again and confirmed the high results. This information was forwarded to local and regional agencies.

After high *E. coli* levels are repeatedly documented, the San Marcos River Foundation

jumps into action and begins communications with various local agency staff. Eventually Dianne Wassenich, the Executive Director of the San Marcos River Foundation, convinces San Marcos city staff to send a robotic video camera up the stormwater drain. They discovered the water is coming from a university pond. This pond had previously discharged into the river but a plug was installed years ago so none of the pond’s water would flow to the San Marcos River.

Once the problem was identified by the city, university staff jumped into action and promptly reinstalled a new plug in the pond drain outlet. The flow ceased and the *E. coli* levels returned to normal. This story is a near perfect example of how citizen monitoring efforts work to improve water quality by reducing pollutant loads to streams. Although this area was sampled monthly by two organizations, their data did not identify this NPS pollution source. Their sampling site was only 20 meters away from this drain! Identifying, communicating, and solving NPS pollution issues is tough business.

The only thing that could have been improved upon with this success story is the response time. Elevated *E. coli* and pathogens levels are a serious problem that leads to illness, economic challenges, and watershed impairments. Texas Stream Team trained monitors and staff serve as resource witnesses by collecting environmental data and making it available to the public and decision makers. We very much rely on partnering organizations, such as the San Marcos River Foundation, to help advocate for increased use of data. When another situation occurs, staff and volunteers will work more diligently to solve problems quicker.

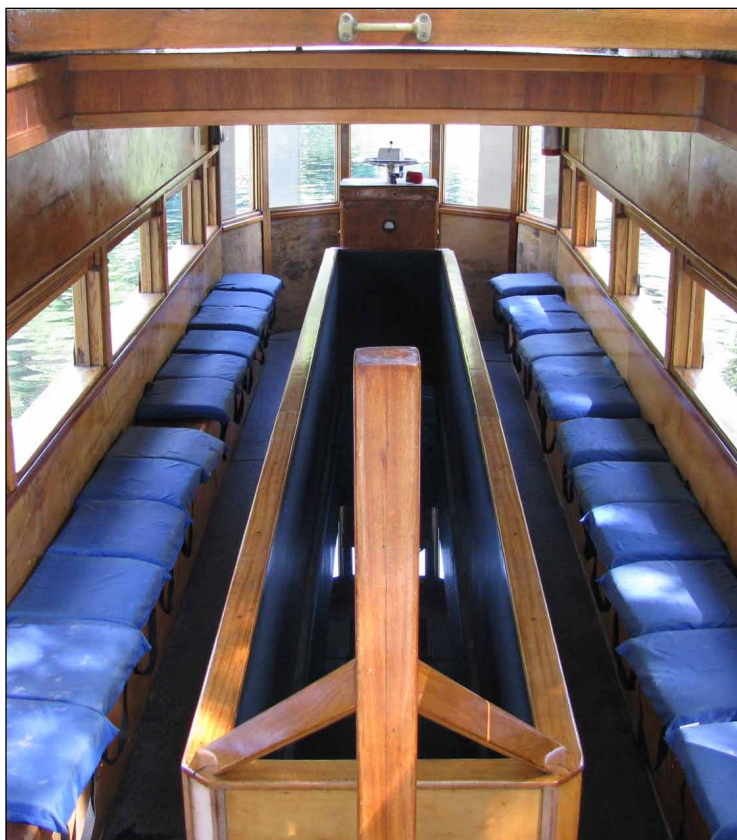
Major thanks and acknowledgments for the City of San Marcos, Texas State University-San Marcos, San Marcos River Foundation, and our dear volunteers for your efforts in protecting and restoring Texas water quality.

Information about the 2007 San Marcos River data report can be found on the Texas Stream Team website under Data. ●

Only Five of the Original Ten Remain - New Life for the Glass Bottom Boats

by Aquarena Center Staff

The handmade wooden boats at Aquarena Center in San Marcos were built in the 1950s and may hold the key to preserving Texas' freshwater systems. Each year, over 100,000 people visit Aquarena Center to learn about the unique habitat of Spring Lake. These experiences can create an appreciation for wa-



AQUARENA
TEXAS RIVERS CENTER • SAN MARCOS, TEXAS

ter resources and river stewardship. Aquarena Center is almost completely self-funded by the revenue that it generates. However, the 60-year-old glass bottom boats require approximately \$60,000 per year in maintenance and refurbishing. Aquarena's ability to preserve these floating historical treasures is beyond its financial capacity. Many repairs have been postponed. Only five of the original ten boats remain.

Funding is critical if the glass bottom boats are to continue to educate and fascinate future generations. A reliable source of funding will guarantee continued operation of the boats in the future. In order to accomplish this, the River Systems Institute at Texas State University has established a "Perpetual Endowment" for the boats.

The family of A.B. Rogers, the founder of the Aquarena Springs Resort, has joined the efforts to preserve the glass bottom boats by pledging all royalties from a new book about the history of the resort. The book, entitled "Images of America: Aquarena Springs," was released earlier this fall.

Contributions to the boat endowment may be directed to: Aquarena Center Glass Bottom Boat Endowment, Acct: #6-7968, Texas State University Development Foundation, 601 University Drive/480 J. C. Kellam, San Marcos, TX 78666. ●

The Power of One — Protecting Spring Creek

by Houston-Galveston Area Council

Editor's note: This article is from a press release intended for news media outlets in the Houston metropolitan area. We are reprinting it here as an example of what monitors have accomplished at the local level. We would welcome news clips about your own activities, in order to bring your story to a wider audience.

Anyone who thinks one person can't make a difference should talk to Luis Stuart. His keen observation and persistence led to the recovery of absent aquatic life and Best Management Practices being implemented by two waste water treatment facilities in the Houston-Galveston area.

Stuart has been a water-quality volunteer with the Texas Stream Team, formerly Texas Watch, for several years. Regionally, the Texas

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Spring Creek...

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Stream Team is conducted as part of the Houston-Galveston Area Council's Clean Rivers Program. As a volunteer, Stuart regularly monitors the water quality of a section of Spring Creek, and in late 2007 he started noticing something unusual—a distinct absence of frogs, turtles and minnows.

“I started noticing the aquatic life was becoming less and less and eventually was down to zero,” Stuart said.

Volunteers with Texas Stream Team provide monthly monitoring reports on a variety of parameters, including bacteria, dissolved oxygen levels, temperature, odor and clarity. In addition to monitoring and reporting specific water measurements, volunteers are also charged with noting field conditions, including weather and wildlife.

“Field observations are one of the most important monitoring elements,” said Kristi Tompkins, H-GAC Texas Stream Team coordinator. “As the volunteers spend more time at the reporting sites, they get a sense of what's normal for that area. If they start to notice changes, those changes can indicate there may be a problem.”

Stuart continued his monthly monitoring, diligently noting the absence of specific wildlife. He said he wanted to make sure the absence wasn't simply a seasonal change, so he kept thorough notes. He also walked about a mile upstream, to a spot just 20 yards past two waste water treatment facilities, and noticed the aquatic life in that area appeared to be at normal levels. So, in May 2008, he contacted the Texas Stream Team program coordinator to voice his concerns. The coordinator forwarded his information to the Texas Commission on Environmental Quality (TCEQ), which promptly scheduled an investigation.

“We process numerous data forms each month, and we may not notice the changes in an area as quickly as a volunteer would. It's good that he brought this issue to our attention,” Tompkins said.

The TCEQ investigation revealed the two waste water treatment facilities were discharging high levels of chlorine into the waterway. While the use of chlorine is a viable method for treating waste water before returning it to the waterway, an excessive amount of the chemical can be detrimental to the ecosystem.

“Excessive chlorine sterilizes that segment of the waterway and essentially turns it into pool water,” Tompkins said. “You use chlorine in your pool to kill algae and bacteria. In a pool, these levels are needed. A natural water body needs plants, animals and a variety of living creatures for a healthy environment.”

Since Stuart's initial complaint, both companies have instituted Best Management Practices to try to correct the situation. According to Kim Laird, Environmental Investigator in the Water Section of TCEQ Region 12, management at one of the

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Texas Stream Team Volunteers of the Month

Spring, Summer & Fall 2009

April

Ivan Santoyo

Rio Grande at Laredo
Dos Laredos Project

May

Missy and Jack Harrington

Pecos River at Lake Amistad
Shumla School, Val Verde County

June

Maureen Lemke

Department of Biology
Texas State University-San Marcos

July

Sharon Slagle and Richard Ramke

Arroyo Colorado
Rio Grande Valley Master Naturalists

August

Dan Holman, Julie Collins, and Gary Spence

Trinity River Basin
City of Dallas

September

Mark Carter

Geography Department
Texas State University-San Marcos

November

Myra Winfield

Brushy Creek Watershed
Brazos River Basin

To nominate a volunteer for recognition, contact Josh Oyer at jo27@txstate.edu or call (512) 245-3461 or toll free (877)-506-1401. To view our Web page featuring current and past Volunteers of the Month, go to <http://txstream-team.rivers.txstate.edu/Vol-Spot>

Spring Creek...

(Continued from page 9)

Luis Stuart (l), Texas Stream Team Volunteer, reviews the area as TCEQ Investigator Kim Laird (r) records data from Spring Creek.



facilities was unaware of the problem due to testing times and equipment consistency. This facility has installed new chlorine feed equipment to better control its chlorine output. The second facility has indicated that plans are being put in place to better moderate its chlorine output.

Stuart, one of 77 active volunteers at 68 monitoring station sites around the region, remains vigilant. In fact, following the initial resolution, he notified the Texas Stream Team that aquatic wildlife had increased in the area. However, he continues to notice an occasional decrease in wildlife in the area, leading to additional TCEQ follow up visits.

“I’m very pleased with the authorities and how they’ve handled this situation. I’m going to periodically keep going back (to the treatment facilities) and checking,” Stuart said. “Eventually, we are going to get our creek back.”

Stuart’s efforts, along with the efforts of all of the volunteers, are critical to maintaining healthy waterways. Currently, professional investigators monitor water quality on a quarterly, rotating basis, and investigators from TCEQ only conduct facility site visits every two to three years.

“Volunteers are able to find problems that we couldn’t possibly find going out once every two years,” Laird said. “Because of Mr. Stuart’s efforts, we were able to find out about the problem and do something about it.”

Maintaining healthy waterways is essential to the region’s economy and well-being. All of the creeks and streams in the Houston-Galveston monitoring area ultimately flow into Galveston Bay.

“We need healthy, clean and biologically-diverse waters to feed the bay and estuary,” said Tompkins. “Basically, if you like to eat fish, oysters and shrimp, you want to keep your waterways clean. A large part of our local economy is dependent on the health of our local water bodies.”

Stuart is retired after working for the same company for 43 years and was interested in finding an organization that would allow him to volunteer to help monitor water quality. A friend helped him get in touch with the Texas Stream Team, giving him the opportunity to take classes and become a certified water monitor.

The section of Spring Creek that Stuart monitors is on his property, and over the years, he had seen the water quality there deteriorate. However, he said, in the past 10 years, the water quality has gotten significantly better with less litter in the creek and more wildlife in the area.

“When we first moved here, there wasn’t much wildlife,” Stuart said. “Now there is a healthy beaver population. I put out wood duck nesting boxes and have several wood ducks.

Contact Us

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*Texas Stream Team is a partnership of the
River Systems Institute and the Texas Commission on
Environmental Quality.*

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Spring Creek...

(Continued from page 10)

And, I have a rookery of great blue herons on my property.”

Stuart, a former Boy Scouts of America scout master, said he often encourages people to help clean up the environment by picking up just a few pieces of trash each time they go outdoors. He also encourages other Texas Stream Team volunteers to be diligent in their efforts and to take note of everything they see.

“Watch the whole environment where you’re sampling,” he said. “I had no way of knowing something was wrong, except the aquatic wildlife was gone.”

Stuart said in addition to an increase in frogs, turtles and minnows, other aquatic life is beginning to flourish as well.

“Just last week my neighbor caught a three-foot catfish in the creek,” he said, adding the neighbor released the fish back into the waterway.

Luis Stuart is a Houston-Galveston Area Council (H-GAC) Texas Stream Team monitor. The H-GAC (<http://www.h-gac.com>) is a voluntary association of local governments in the 13-county Gulf Coast Planning Region—an area of 12,500 square miles and more than 5.7 million people. H-GAC works to promote efficient and accountable use of local, state, and federal tax dollars and serves as a problem-solving and information forum for local government needs. ●



Data Quality Reminder – When We Knock, Do You Hear Us?

by Robert Sams, Texas Stream Team

One of the greatest difficulties working with volunteer monitors and monitoring groups across this very large state is “contact management.” We must have a way to effectively communicate with all of our volunteers and all of you who have interests in water quality.

This newsletter is one of the few mailings we regularly send to you, but it will be most useful once we remove the many bad or incomplete addresses. After each mailing, we wait for the return of the newest batch stamped “Not at This Address”. We understand that people move, but knowing that someone has asked for information from us but is not receiving it due to our contact list is very frustrating. So...

- If anything changes with your address, please send us a note.
- If anyone has told you that they are not receiving our newsletter, please have them contact us.
- If you have never received an email from us, please let us add you to our email list. Part of water quality is environmental waste, and we would like to move as many of you as we can to electronic communications with us. We send this newsletter out in both paper and electronic versions. You can see them at: <http://txstreamteam.rivers.txstate.edu/Publications/Newsletters.html>.
- If you have asked to receive information from us via email, but have not seen anything, please check with us. Email addresses that are one letter off will not get to you and it’s very easy for us, for instance, to mistake your letter “O” for the number “0”.
- When we have educational programs or activities in your area, we know that many of you may be interested in attending. The only way to get this type of information out effectively is via email and phone calls. Please make sure we have one or the other so that we can keep you in our loop.

We want to keep as many of you up-to-date on what is happening with the state of water in Texas as possible, so please help keep our information current and correct. Our contact information is on page 10 of this newsletter. ●

Congratulations to Our New Water Quality Monitors!

Ana Aceves	Jessica Crow	Augustine Frkuska	Vani Jaladanki	Gail McAdoo	Dave Radke	Halima Taylor
Karolyn Adams	Carmen Cruz	Jerry Fuentes	Georgia Johnson	Scott McCaskill	Debbie Radke	Becky Teague
Gabrielle Alcala	Jana Curry	Erica Garcia	Tiffany Johnson	Ashley McCulloch	Sabrina Ramirez	Sarah Thompson
Elizabeth Alexander	Cristina Davis	Karlyn Gardner	Otho Jordan	Lauren McGee	Julie Randolph	Sonia Thompson
Elizabeth Allen	Kim De La Cruz	Susan Gardner	Jennifer Jordan-Kaszuba	Luke Mendelman-Haenn	Paula Raynes	Edgar Tibayan
Angel Alvarez	Tina Dellinger	Jeanette Gibbs	Jennifer Joseph	Christine Mihealsick	Jennifer Rice	Aaron Van Nostrand
Christina Anguiano	Cathy Delwiche	Debbie Gilbert	Diane Katzianis	Susan Moczygemba	Dan Rivas	Jay Vasquez
Kele Anyanwu	Neal Denton	Nekia Godfrey	Brian King	Ernesto Monte	Sha Robinson	Tahmeena Veerjee
Sharon Armstrong	Elias Diaz	Carol Green	Rita King	Sam Moody Wong	Sabra Rock	Annette Venegas
Sandra Baker	Michelle Disbro	Yi-Fu Han	Mitchell Klett	James Mosley	April Rolark	Gerald Veteto
Sara Baker	Haydee Dominguez	Ashley Hanson	Drue Koegler	Joanne Murphy	Cindy Ross	Antonio Villarreal
Chloé Bland	Misty Downing	Roman Hargrave	Emma Kypuros	Miguel Nieto	Bryan Ruiz	Christina Walker
Lyn Boehme	Sam Drew	Leanne Harper	Julia Leckbee	Linda O'Brien	Rolando Ruvalcaba	Julianna Wallace
Paulette Boudreaux	Stacy Duckett	Annelise Harris	Sheri Legan	Jake O'Connor	Carlos Sanchez	Kathleen Ward
Sarah Bourgeois	Brenda Duke	Lyndse Haught	Carol Leibl	Earlene Papp	Mary Scarborough	Bonnie Warnock
Natalie Brewster	Jana Earwood	David Hayes	Kenna Leonhardt	Amber Peak	Janette Scott	Chelsea Washmon
Kate Brook-Davidson	Steve Ebner	Robyn Hernandez	Debbie Loftus	Tina Pereboom	Desserae Shepston	Denise Weatherford
Carita Chapman Thomas	Sandra Elms	Amber Hickey	Alfredo Losoya	Jason Peterson	Raquel Silva	Hugh Whitted
Amy Hoke	Pam Enderby	Pamela Hohman	Sandra Love	Robert Peynado	Cathy Silvas	Shawna Wiebusch
Carolina Chavez	Tracy Estrada	Amy Hoke	Diana Howard	Kristine Pineda	Linda Simpson	Marsha Willis
Mayra Chavez	Guy Falzarano	Angie Lucas	Jena Hugon	Cassandra Plack	Mamta Singh	Rosalind Witcher
Charles Ciruti	Steve Farrell	Christina Lutz	Jena Hugon	Jimmy Presley	Lexi Slade	Brian Witherell
Karah Coco	Kendra Flenniken	Mary Luxton	Marilyn Hunt	Kay Lynn Price	Debra Springston	Ramos Zarate
Joan Coffey-Wray	Sara Flusche	Cynthia Maguire	Nen Huynh	Reneé Province	Alice Stolfa	Malaxi Zermeno
Patricia Collier	Sherl Ford	Kara Manglicmot	Caitlin Iliff	Ana Maria Rabago	Sara Swearingen	Kathy Zickefoose
Rebekah Compton	Christopher Fritel	Ricardo Martinez	Bernadette Jaime		Kristen Swensen	
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