

The Power of One: Texas Stream Team Volunteer's Efforts Help Protect a Houston Area Stream

By Andrea Tantillo, Houston-Galveston Area Council

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 initiation of best management practices (BMPs) being implemented by two waste water treatment (WWTPs) 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 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 WWTPs, 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 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 WWTPs were discharging high levels of chlorine into the creek. The TCEQ includes allowable chlorine levels in all wastewater discharge permits. Many permits also require the removal of chlorine before effluent reaches a stream. While the use of chlorine is a viable method for treating waste water before returning it to the stream, an excessive amount of the chemical can be detrimental to the ecosystem.

"Excessive chlorine sterilizes that segment of the stream 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."



Luis Stuart (left), Texas Stream Team Volunteer, looks on as TCEQ Investigator Kim Laird (right) collecting a sample from Spring Creek.

Since Stuart's initial complaint, both companies have instituted BMPs 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 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.

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"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. 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.

Texas Stream Team is a network of trained volunteers who monitor water quality. Currently, over 1,400 Texas Stream Team volunteers collect water quality data on lakes, rivers and streams throughout the state. Volunteers complete three phases of training using a test kit that measures physical and chemical parameters in water.

If you are interested in the Texas Stream Team program or to become a certified Water Quality Monitor in the H-GAC Region, please contact Tompkins at kristi.tompkins@h-aac.com



Kim Laird (left), measures a sample with a high chlorine residual from Spring Creek under the watchful eye of Luis Stuart (right).

For more information on the **Texas Stream Team** go to
<http://txstreamteam.rivers.txstate.edu/>

