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Diversity of Perspectives is Key

Jason Pinchback, Program Manager, Texas Stream Team

As the Cypress Creek Project turns its sights on developing a watershed protection plan (WPP) over the next year, we are at a crucial stage. We have been working diligently over the last twenty-two months to develop a formal stakeholder input process, to learn more about the aquifer and watershed, and adapt to new perspectives and information.

A WPP is a framework for implementing prioritized and integrated water quality protection and restoration strategies driven by environmental and community objectives. Through this process, stakeholders are asked to address all of the sources and causes of threats to both surface and ground water resources. Developed and implemented through diverse, well integrated partnerships, a WPP will assure the long-term health of Cypress Creek and the Middle Trinity Aquifer.

The Cypress Watershed Committee is comprised of approximately twenty community residents who have a diverse background and perspective. This group is also expanding

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**CYPRESS
CREEK
PROJECT**



Cypress Creek Project Partners

Strong community ties and partnerships are the backbone of the Cypress Creek Project and will ensure our long term success. Where possible, the River Systems Institute will use existing partnerships to build on their networks, information, and efforts. We gratefully acknowledge the support and dedication of our partners:

- *City of Woodcreek*
- *County of Hays*
- *Guadalupe-Blanco River Authority*
- *Hays Trinity Groundwater Conservation District*
- *The Nature Conservancy of Texas*
- *Texas Clean Rivers Program*
- *Texas Commission on Environmental Quality*
- *Texas State University – San Marcos*
- *Texas Stream Team*
- *Texas Water Development Board*
- *U.S. Environmental Protection Agency*
- *Village of Wimberley*
- *Watershed Science Lab, Texas State University – San Marcos*
- *Wimberley Valley Watershed Association*



Determined Subcommittees Light the Path at Recent Watershed Committee Meeting

By Jared Yeager, Research Assistant, River Systems Institute

The Cypress Creek Project held its third Cypress Watershed Committee meeting on October 21st at the Wimberley Community Center. The agenda included items on various elements of structure within the committee including ground rules and budgeting. However, the committee also set its focus on discussing the end product of the project as well as hearing back from the first round of subcommittee meetings.


What is the end product of the Cypress Creek Project? That was the question on everyone's minds. It was clarified that the final product would be a draft watershed protection plan (WPP) that would include a fully functional Decision Support System (DSS) that could be used by the community when making future decisions.

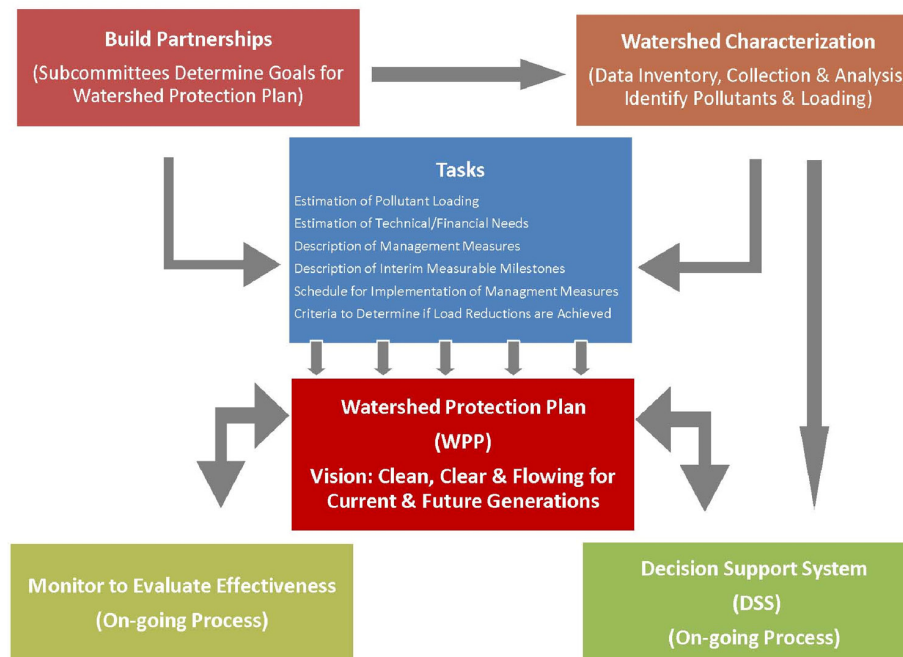
With the end product now established on the horizon, the subcommittees took the floor to discuss the first round of their



meetings. The committees reporting included Water Quality, Water Quantity, Economics, Education/Outreach, Land Stewardship, and DSS/Technical. The presentations given by the subcommittee chairs demonstrated that they had a very successful and productive first round of meetings. Subcommittees

such as Water Quality and Water Quantity were already identifying current impacts and sources, while looking for potential solutions. The Economics subcommittee was in the process of reaching out to more local businesses and developers to get a different angle on water economics. The Land Stewardship subcommittee discussed their upcoming open forum for each focus group. Education and Outreach are hard at work developing a survey to get a pulse on the local communities' watershed I.Q. And the DSS/Technical subcommittee is pushing forward and tweaking the DSS model to reflect more economic inputs.

The Cypress Watershed Committee set its next meeting for late January, and with clear goals and determined subcommittees the Cypress Creek Project is well on its way to maintain a clean, clear and flowing creek. 



Cypress Creek Project

The goal of the Cypress Creek Project is to ensure that the long-term integrity and sustainability of the Cypress Creek watershed (located in Hays County, Texas) is preserved and that water quality standards are maintained for present and future generations.

The project consists of two phases. Phase One (2008-2010) seeks to define the current state of the watershed, gather input from community stakeholders, and develop a science-based tool for local decision makers. Knowledge gained from this three year project will create opportunities to develop a watershed management plan.

Phase Two (2010-2012) will involve the development and implementation of a watershed management plan. A watershed management plan approaches water quality and watershed issues by recommending strategies that address more than one watershed and community concern.

The River Systems Institute, through strong Cypress Creek community partnerships, is facilitating this project. The project is paid for by grants from the Texas Commission on Environmental Quality and the Environmental Protection Agency Region VI. River Systems Institute, Texas State University, and numerous project partners are providing substantial funds to achieve project success.

A Local Perspective: Sam Rivers

By Mary Waters, Project Coordinator, River Systems Institute

Sam Rivers grew up in Austin Texas, fishing and swimming in Shoal Creek, a water body that is intermittent today. He fears this scenario for the future of Cypress Creek.

Sam has lived in the Cypress Creek Watershed since the 1990's, when he bought a house on the hill, overlooking the valley towards the creek. When he got word of the plan to build Winter's Mill Parkway in his view-shed, he sold the house and took up residence closer to the creek. Nowadays, he lives in the former mess hall of Camp Waloa, an all girls camp on Cypress Creek in the 1940's and 50's.

Sam runs two cattle ranches that belong to his father, one in Llano County and one in McMullen County. Since the 1960's,

Sam and his family have worked to replace mesquite and ashe juniper (also known as cedar) with native grasses. Sam says the biggest challenge in Central Texas agriculture today is lack of moisture. He has deep wells on his ranches to keep the cattle watered.

When he is not cattle ranching, Sam is exploring the Hill Country swimming holes. He frequents Barton Springs, Comal Springs, the San Marcos River, and Cypress Creek between the RR12 downtown crossing and the Plum Creek tributary inflow. The bypass construction not only changed his living arrangements, but also what he saw while swimming underwater. As soon as ground was broken for the new road, sediment from the construction entered Cypress Creek via the tributary

Plum Creek. Long familiar fish and schools of fingerlings disappeared throughout the road's construction. According to Sam, the smooth rocky bottom was replaced with a thick layer of sediment, which can still be seen today. In recent years, some fish have returned but not to the numbers they used to be.

The serious impact of the construction of one road segment has left him with a skeptical attitude. "I don't think the Creek is going to be here in ten years, at the rate we're going," he said. Sam plans to put his knowledge and passion to work by serving on the Land Stewardship Subcommittee for the Cypress Creek Project's stakeholder input process.



Excerpts from “Cypress Creek: Past, Present, Future”

By Jack Hollon, WVWA, HTGCD

The summer of 2009 was an extraordinary time: temperatures brutally hot, day after day above 100 degrees, and DRY. South-central Texas appeared on the country’s “Drought Monitor” maps for most of the year as a prominent red and brown splotch, indicating “extreme” or “exceptional” drought, the most severe of five stages. This hot summer followed twenty dry months, Oct. ’07 through May, ’09.

We somehow survive heat and drought, as did our forebears, but what is different now is the impact of our huge numbers and consumption on available water supply, to mention only one resource. The 1950s scattering of wells, many pumped by windmills, have been replaced by deeper wells with powerful electric pumps. There are over 6,000 such water wells in Western Hays County, a vastly different situation.




For a first-hand look, and to better understand this impact, I made a survey of Cypress Creek on Aug 24. Blue Hole was closed to public access. There was no flow in the Creek or from Jacob’s Well. From midsummer on, the Creek had morphed into a series of stagnant pools, many covered with algae and scum, alternating with long muddy or dry stretches.

Most pools contained surviving fish, turtles, frogs, and countless smaller critters that hunker down to wait for wetter times. Nature is patient that way. Many trees, even a few along stream banks, have shed leaves early. For some this is an act of conservation and survival; others will die.

The consequences of drought and pumping have brought us to a critical time, as we take stock and plan for our future here. It has been painful to look at Cypress Creek and allow this reality to sink in. Something fundamentally important is changing. It is depressing. Some would avoid the issue. Call it the price of progress.

But we have a responsibility to this place. Much is at stake. The importance of this extraordinary creek and the great spring that normally supplies it cannot be swept aside. Jacob’s Well and Cypress Creek are treasures that long ago placed this area on the short list of special places in Texas.

For the full article, please [check here](#). 

New Water Quality Monitoring Stations


By Nick Maulding, Intern, Texas Stream Team

Cypress Creek is about to get a little more hi-tech! As the new Cypress Creek Project intern I have been assisting the Texas Stream Team this semester in installing three new water quality-monitoring stations in the Cypress Creek watershed. While the US Geological Survey has stations of their own on the creek, the project’s will specifically monitor varying levels of suspended sediments, *E. coli*, nitrates, and phosphates during rain events. These indicators can play a crucial role in determining the health and condition of a watershed.

The stations consist of a large yellow, metal box (about 2ft X 2ft X 3ft) which is attached to a white metal platform. The sampler inside the box connects to plastic tubes running through gray electrical conduit for protection from the elements. After hearing that the yellow boxes looked rather unattractive, we have decided to camouflage the stations to make them less of an eyesore.

Currently one station is installed off of Loma Vista and ready to gather samples, while two other stations should be operational within the next month.



The second station will be located by the Woodacre Bridge that crosses Cypress Creek about one hundred yards upstream from Jacobs Well. The Project is currently looking for a location to install the third station. If you are interested, please email txstreamteam@txstate.edu. 

Science Corner - Cypress Creek Project partners with USDA-ARS to develop Decision Support System

By Adrian Vogl, Watershed Science Lab, Texas State University-San Marcos

The Cypress Creek Decision Support System development effort has received a boost from a new partnership that has been formed with the USDA Southwest Watershed Research Center (SWRC) in Tucson, AZ.

In June 1997, the United States Environmental Agency (EPA), National Exposure Research Laboratory (NERL), Landscape Science Program and the United States Department of Agriculture – Agricultural Research Service (ARS) entered into an Interagency Agreement to develop tools for assessing the environmental risks that often come with development and changing land management.

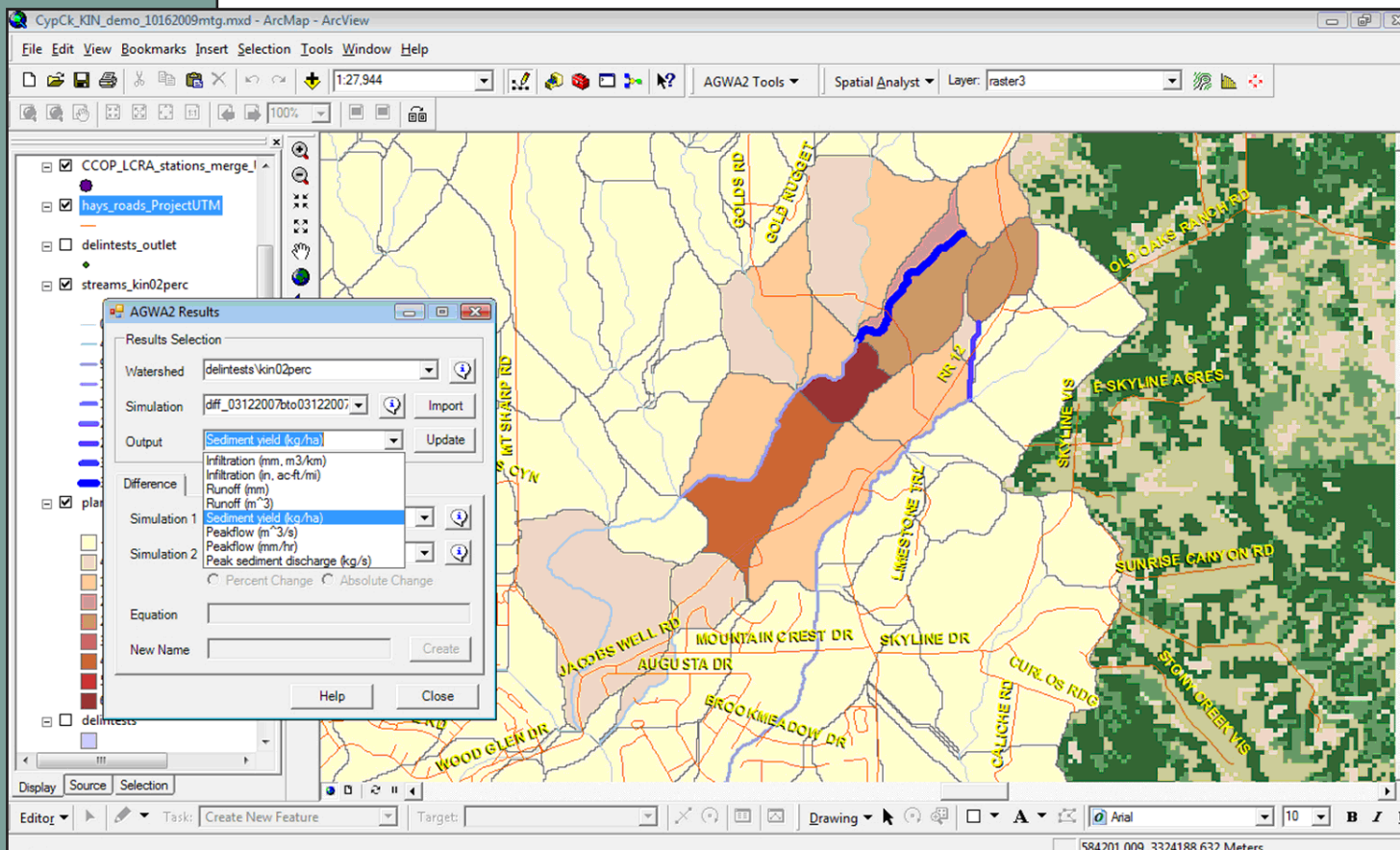
The result of this agreement is the AGWA system, a computerized tool that uses widely available data to run hydrologic models and show results in a way that is easy

to understand and interpret. These models enable decision-makers to look at both short- and long- term consequences of their planning decisions, to evaluate likely outcomes of land changes, and to rank different areas in a watershed based on vulnerability. It was designed to be easily applied by managers and scientists. AGWA has been tested and validated in a wide variety of watersheds, ranging from the deserts of south-east Arizona to the forested hills of upstate New York, and is continually being improved through the work of SWRC, partner agencies, and researchers across the country.

Researchers at the Cypress Creek Project are using AGWA as the basis for the Cypress Creek Decision Support System (CCP DSS). The hydrologic models are being set up with local data and information on land uses and soil types to tailor them to the needs of the Cypress Creek.

A diverse group of community stakeholders have been working closely with researchers to identify ways that decision-makers can use the DSS and to make it most useful for dealing with the kinds of issues that the Wimberley Valley faces every day.

In addition to the basic AGWA package, the final CCP DSS will include tools that are tailored to the needs of local communities. Plus, many of the tools that are developed for the Cypress Creek watershed will be incorporated in future releases of AGWA, making them available to other communities throughout the country.



Joint Meeting with the HTGCD and Cypress Creek Project

By Kristina Tower, Research Assistant, River Systems Institute

On October 1st the Hays Trinity Groundwater Conservation District (HTGCD) hosted a joint meeting with the Cypress Creek Water Quantity and Water Quality Subcommittee. Doug Wierman, president of the Hays Trinity Groundwater Conservation District Board, presented a summary of the HTGCD's process for developing the required Desired Future Conditions (DFC) for their region within Groundwater Management Area #9 (GMA #9). A DFC is a quantitative description of the condition of the aquifer.

Once the DFCs are set for each aquifer within GMA#9, the Texas Water Development Board is required to identify the maximum amount of water that can be withdrawn while attaining the DFCs, this amount is called Managed Available Groundwater (MAG).

One of the major obstacles for developing DFCs is that majority of residential wells are exempt from permitting so the HTGCD uses an estimated withdrawal value of 330 gallons per day per well. This accounts for about 42% to 58% of the current Managed Available Groundwater.

As this region experiences burgeoning urbanization, the increase in the demand for water has created a concern for future allocation of resources. If the number of exempt wells increases at rate of 2% per year (a low growth estimate), then by 2033 the estimated withdrawals from exempt wells could be as high as 95% of the available groundwater.

Groundwater is the sole-source of drinking water for a large portion of people within Central Texas. The majority of base flow for Cypress Creek comes from Jacob's well which is fed by the Middle Trinity Aquifer. It is important now more than ever to manage our finite available resources wisely. HTGCD has undertaken the arduous responsibility of managing these resources for our benefit. While the future of water within the region is uncertain, we can rest assured that the HTGCD is qualified to assess this issue.



Diversity...

(Continued from page 1)

by nominating members to help serve on one of the five subcommittees. These subcommittees include: Water Quality; Water Quantity; Land Stewardship; Economics; Education and Outreach; and Decision Support System/Technical.

People in the Cypress Creek watershed want to protect their natural resources. We are not undergoing this process to develop a nice report that will sit on a bookshelf somewhere. Instead, if done well this decision making framework (our WPP) will aide leaders in the community towards achieving healthy sustainable growth. To do this we must have a diverse

group of people with myriad perspectives participating.

We welcome additional subcommittee membership from the agriculture, business, development, and related commerce industries to help build diversity in our approach. If you are from one of these related areas and you are interested please contact me at (512) 245-9148 or JP30@txstate.edu.



Watershed Steward Workshop

By Drue Koegler, Intern, Texas Stream Team

On October 22nd the AgriLIFE Extension hosted the Texas Watershed Steward Workshop at the Wimberley Community Center. The daylong event emphasized the importance of proper watershed stewardship to protect the water, air, and biodiversity in a watershed and ensure the sustainability of the water resource for generations to come. Some of the topics covered were watershed impairments, techniques to improve watershed function, and community-driven watershed protection and management. At the beginning of the event everyone was given AgriLIFE Extension's *Texas Watershed Steward Handbook: A Water Resource Training Curriculum* (<http://agrifilebookstore.org>) publication number B-6203. The handbook provides background information as well as detailed topical explanations. The workshop did an excellent job of taking a great deal of information and funneling it in a way that could be understood and retained. Thank you, AgriLIFE Extension for helping spread knowledge on the health of watersheds. ☞



Meet the Cypress Watershed Committee

by Mary Waters, Project Coordinator, River Systems Institute

Gordon Linam was born in Victoria, Texas. He currently resides in Wimberley and has so for the past 19 years with his wife and two children. Gordon serves as the Stream Assessment Team Leader in the Texas Parks and Wildlife Department River Studies Program stationed in San Marcos. Gordon received his education from Texas A&M University (B.S. in Wildlife and Fisheries Science) and New Mexico State University (M.S. in Fishery and Wildlife Science). He has been employed with Texas Parks and Wildlife for 22 years and has worked on water quality and quantity issues in nearly every river basin in the state. Some of the major projects that he has been associated with, to name a few, include: development of a regionalized index of biotic integrity for Texas streams; fountain darter population and habitat study on the Comal River; and major water quality studies on the Trinity River and Rio Grande. Gordon is very excited to be a part of the Cypress Creek Project, serving on the Watershed Committee, Water Quality Subcommittee, and Decision Support System/Technical Subcommittee. ☞



Earl Nottingham, © Texas Parks and Wildlife Department

Empowering the Public: Education & Outreach Subcommittee

By Drue Koegler, Intern, Texas Stream Team

The Cypress Creek Education and Outreach (E& O) Subcommittee was formed to provide an in-depth study on effective education and outreach methods for different audiences in the Cypress Creek watershed. The goal of the subcommittee is to empower the public to choose sustainable behaviors through the removal of behavioral barriers. The subcommittee is made up of a variety of members, from elected officials to concerned residents, and is studying the Environmental Protection Agency's proven guide for watershed outreach campaigns along with the E&O campaigns of nearby impaired watersheds. The information derived will ultimately provide the Cypress Watershed Committee with the proper information to move forward with the development of the Cypress Creek's uniquely preventative Watershed Protection Plan.

Please visit <http://www.cypresscreekproject.org> for more information about the CCWPP and this subcommittee. ☞

What You Can Do In Your Watershed – Impervious Cover

By Hayat Qurunful, Research Assistant,
River Systems Institute

Most people do not think twice about the implications that sidewalks, parking lots, paved roads, and tennis courts have on the environment, but each of these areas of impervious cover do indeed affect the hydrologic cycle. In nature, rain that falls to the ground filters through vegetation, roots, dirt, and rocks before it joins the groundwater. In contrast, rain which falls on impervious cover, such as parking lots or streets, is unable to be absorbed, and washes to the lowest point carrying the fertilizers, oils, sediments and residue that were on the surface with it.

A healthy watershed can withstand 5-10 percent impervious cover, but most urban areas have over 30 percent. Numerous studies have shown that as development increases in a watershed, so does impairment to the watershed in the form of diminished water quality, biological degradation, stream bank instability and reduced species diversity. Studies conducted by the Center for Watershed Protection indicate that the occurrence of one-hundred year floods double in watersheds containing more than 20-30 percent impervious cover.


There are a number of measures homeowners and developers alike can take to help protect our watershed, while still meeting their needs. Instead of using conventional concrete to create parking lots,

About the River Systems Institute


The River Systems Institute at Texas State University - San Marcos has a mission to develop and promote programs and techniques for ensuring sustainable water resources for human needs, ecosystem health, and economic development.

Headquartered at the Texas Rivers Center, the Institute overlooks San Marcos Springs and Spring Lake, the headwaters of the crystal clear San Marcos River.

The Institute develops and promotes holistic approaches to the management of river systems. It is dedicated to studying, preserving, and interpreting the remarkable aquatic system that surrounds it as well as systems across the state, the nation, and the world. The Institute provides opportunities for faculty and students from a range of disciplines to engage in scientific research and to address major water management issues in Texas and beyond.

In addition to its own programs, the Institute oversees Aquarena Center and Texas Stream Team. 

sidewalks and driveways, pervious or permeable concrete can be used. Pervious concrete generally contains a 15-20% void for water flow, and this makes all the difference in water being absorbed back into the ground rather than turning into stormwater runoff. For those planning a home or remodeling project, it would be wise to keep pervious concrete and other pervious groundcovers in mind, especially if living along the creek or river.

Additionally, bioswales can be used to help remove pollution from surface runoff. Bioswales are landscape elements that use drainage and planting strategies to channel water into an area with native plants, where it can filter and recharge before entering the groundwater. 



Contact Information

Learn more about the
Cypress Creek Project:
www.cypresscreekproject.org

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