

Society for Ecological Restoration

Texas Chapter



Restoration Field Notes

March, 2015

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TXSER Newsflash

TXSER has added its support to Teaming With Wildlife: True To Texas (TWW: True To Texas), a coalition that promotes collaboration among scientists, businesses, organizations, and land owners to create local solutions addressing the many conservation issues here in Texas. TWW: True to Texas is filling an important niche as a voice for wildlife conservation in Texas and by building support for the Texas Conservation Action Plan (TCAP). For more information on TWW: True To Texas or to add your group's voice to the chorus of wildlife conservation support at: [TWW: True to Texas](#).

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Conference Update

November 13-15, 2015 - Trinity University, San Antonio

We are pleased to announce that Dr. Steven Whisenant, Professor of Ecosystem Science and Management at Texas A&M University in College Station has agreed to be the Keynote Speaker at our 2015 Annual Conference in San Antonio. Whisenant teaches courses on Restoration Ecology; International Sustainability and Community Development; and Leadership, Development, and Management of Environmental NGOs. He has recently returned from Bor, South Sudan where he worked with A&M's Norman Borlaug Institute for International Agriculture serving as Chief of Party for a USAID-funded agricultural improvement project.

Whisenant is author of "[Repairing Damaged Wildlands: A Process-Oriented Landscape-Scale Approach](#)," a book, often found soiled and dog-eared, gracing many of our shelves. Dr. Whisenant will share his thoughts with conference participants on changes in the field of ecological restoration over the last 20 years as well as insights on the links between local restoration efforts and global issues and concerns. We are thrilled that he will be joining us in November!

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Employment Opportunities & More

For up-to-date announcements of positions open in ecological restoration and environmental science, visit our website at:

[Job Postings](#)

We also post a wide range of articles on ecological restoration issues as well as job and volunteer opportunities on our Facebook page at: [TXSER Facebook Page](#)

SAVE THE DATE!!

**Celebrate TXSER's
20th Anniversary**

at our

2015 Annual Conference

**Scheduled for:
November 13-15, 2015**

**On the campus of:
Trinity University
in**

Member Spotlight

Name: Jason P. Martina

City: San Antonio, TX

Affiliation: Our Lady of the Lake University

Briefly describe your ongoing efforts/ interest in ecological restoration. My interest in ecological restoration started in the summer of my freshman year in college when I worked as a conservation technician

at Volo Bog State Natural Area (VBSN), IL. VBSN is one of the last remaining bogs in Illinois and was being invaded by purple loosestrife, an aggressive wetland species, but its spread was partially stopped in the park using biocontrol. Since then I have focused on trying to understand the causes and consequences of invasive species in wetlands, as well as how to control them. Recently, I have begun using Mondrian, an individual based computer simulation model, with colleagues at the University of Michigan and the University of Northern Iowa to model the efficacy of management techniques (mowing, burning, and herbicide application) on the control of cattails in the Great Lakes region, including consequences to C and N cycling. My goal is to start focusing on plant invasions in Texas using both field techniques and computational modeling.

Describe your favorite outdoor activity. My wife and I love to hike and I am really excited about being in Texas (originally from the Midwest) because of all the great parks and natural areas, like Big Bend National Park. We also love the beach so we are thrilled about being close to the Gulf of Mexico.

What is your favorite Texas plant and/or animal?

Favorite animal: Ringtail (*Bassariscus astutus*)

Favorite plant: Snow-on-the-mountain (*Euphorbia marginata*)



Jason Martina in his natural environs.
Photo credit: Kenneth Elgersma

San Antonio, Texas[Like us on Facebook](#) 

Ringtail (*Bassariscus astutus*). Photo credit: Wikipedia.

Spring Lake and the San Marcos River: Transformation to Restoration

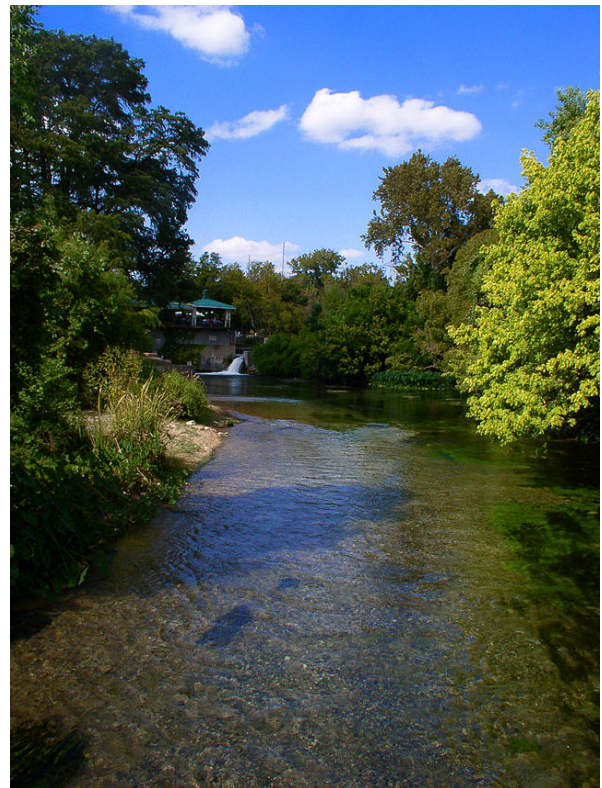
By: Leslie Dietz, Masters Candidate

Department of Biology, Texas State University, San Marcos, TX

On any given day along the San Marcos River, people can be encountered-recreating, researching, relaxing and learning. Realized or not, these individuals are observing one of the most unique river systems in the state.

The San Marcos River emerges from more than 200 springs located in Spring Lake. Located 30 feet below the water's surface, these springs exhibit a quiet beginning that flows into a glorious and dynamic river, emitting 130 million gallons of water per day. Spring Lake, known to many seasoned Texans as the former Aquarena Springs Amusement Center, is thought to be one of the longest continually inhabited sites in North America (Sansom 2013). An archaeological excavation produced artifacts dating to more than 12,000 years ago, providing hard evidence of human inhabitation and use of these springs.

Discovered in the modern era by Spanish explorers in 1691, Europeans settled the area until shortly after Texas won its independence, when the Republic of Texas established Post San Marcos in 1840. In 1845, General Edward Burleson purchased the site and four years later constructed Spring Lake dam, which raised the water level by 3.5 meters over the spring outflows (Kollaus 2015). The property was sold to A.B. Rogers for the purpose of creating a tourist



San Marcos Springs. Photo Credit: Wikipedia

destination in 1926 (Sansom 2013).

The continued anthropogenic influence on this water system has had cumulative and profound effects. Since the establishment of Post San Marcos in 1840, the city has exponentially increased at a rate of 3% over 129 years and was listed as the fastest growing city in the United States in recent years (Kollaus 2015). With the increased human presence and varied use, modifications to the stream morphology have altered plant and animal communities.



San Marcos River

Photo credit: www.texaswildricefestival.org

The San Marcos River was dredged and dammed, with rock and gravel added to form Sewell Park in 1917. A golf course and hotel were added at the headwaters (Spring Lake) in 1928 and the quirky shows of Aquarena Springs began in 1950. From 1944-1970, aquatic vegetation was harvested (up to 700kg/day) and sold so that exotic aquatic vegetation could be cultivated for the same process (Kollaus 2015). Upon acquiring Spring Lake in 1994, Texas State University began to implement restoration techniques to improve habitat and educate the public.

A unique restoration opportunity exists when 170 years of urbanization with numerous artifacts is combined with biological records of 130 years of fish data and historical botanical data. A lengthy stakeholder process resulted in the creation of the Edwards Aquifer Habitat Conservation Plan. This plan outlines a complex and lengthy restoration process for the aquatic system while allowing for low impact recreation: restoration and mitigation for the species of Spring Lake and scientific information and interactive displays to educate the public (EAA 2012).

The current use of Spring Lake is a fraction of what it once was due to the restricted use and access at the spring site, which is designated habitat for seven endangered species of animals and one plant species (Hardy 2014). With the removal of manmade structures, non-native vegetation, native plant propagation and plantings along with riparian reconstruction and restoration, Spring Lake is a worthwhile field trip for young and old to reconnect with a distinctive Texas river.

Today, the Meadows Center for Water and the Environment now inhabits the historic hotel site and engages more than 125,000 people each year to foster outdoor learning and stewardship of these treasured springs. While former attraction "Ralph the swimming pig" is no longer to be found at the springs, glass-bottom boats still operate and a wealth of information can be learned about this unique habitat and its ongoing journey.



Texas Blind Salamander, Photo credit: Greg Eckhardt

Literature Cited:

Edwards Aquifer Authority. (2012). Edwards Aquifer Recovery Implementation Program-Habitat Conservation Plan. Retrieved from www.eahcp.org

Hardy, T., Kollaus, K., Tolman, K., Heard, T., & Howard, M. (2014). *Ecohydraulics in Applied River Restoration: A Case Study in the San Marcos River, Texas, USA*. Paper presented at the 10th International Symposium on Ecohydraulics, Trondheim, Norway.

Kollaus, K., Behen, K., Heard, T., Hardy, T., & Bonner, T. (2015). Influence of Urbanization on a Karst Terrain Stream and Fish Community. *Urban Ecosystems*, 18(1), 293-320.

Sansom, L. (May 2013). The Transformation of Aquarena. *Texas Parks and Wildlife Magazine*. Retrieved from [Texas Parks and Wildlife Magazine](#).

The Mindful Conservationist

By: Jill Nokes, Hill Country Land Trust, Austin, Texas

In this essay, I hope to share some lessons about restoration that we, as new landowners in Llano County, have learned over that past 6 years. In our efforts to help our land recover and improve, we have tried to combine science-based strategies with personal "place making" efforts that provide satisfaction in the short term, and fuel commitment over the long haul.

Overview: The rigorous structure of scientific inquiry offers guidance to the average landowner, but I have found that outcomes are more successful when protocols take into consideration the personal experience of working on the land. Many new landowners discover that they are more successful when they plan their projects within a psychological framework that continuously connects them to what inspired them to buy their property in the first place. Typically it's some aspect of scenic beauty such as a high vista, live water, or other appealing landscape feature that draws people into land ownership. Yet after the deed is signed it's not long before questions arise: "What am I seeing? What is it supposed to look like? Where do I start first? What is the best tool and method? How long does it take, what does it cost, and what are reasonable expectations for success?"



**Onward through the fog with pick ax in hand.
Photo credit - Stanley Farrar**

First, Do No Harm: The most powerful tool a landowner can employ is patience. Taking time to learn one's property, to develop an intimate relationship over several climate cycles, to devote time to just being present in the landscape will offer owners knowledge beyond price. Patience helps landowners avoid common mistakes such as hasty extensive clearing or wasteful spending on "beautification" projects that yield few ecological benefits. Investing time to slowly observe changes in the land will help landowners refine their questions and goals, essential for successful planning.

Foster Place Attachment: I'm often amazed by landowners who, when showing me a fantastic feature such as a steep box canyon, don't have even a rough trail to reach it by foot. It may be obvious, but making even temporary paths help



Seed Islands. Photo credit: Stanley Farrar

develop a sense of scale and a way to recognize landmarks, to easily notice seasonal changes, and to monitor results of different projects such as seeding or clearing. Engaging the family to designate place names on aerial maps is another simple but powerful tool to encourage exploration, discovery, and deep knowledge of place. Access to "sweet spots" such as a riparian corridor or wooded lot can offer relatively easy initial "low hanging fruit" projects such as removing juniper from beneath the canopies of a few large trees. These kinds of small-scale projects are

good ways to begin to get a feeling for the work involved while also providing the instant satisfaction of seeing positive change after a few hours.

Your Teachers Are Waiting: I've also been amazed by the abundance of experts, aficionados, and agencies that are out there to help landowners seeking information and advice. If folks remain curious and open-minded, they will discover plenty of experienced people eager to answer questions in ways the Internet alone could never match.

Set Reasonable Goals: Its easy to get overwhelmed and distracted by the innumerable projects needing attention on ones property, but setting clear goals will help the landowner more effectively distribute resources of time, effort, and money. Examples proposed in this simple planning exercise below may help some articulate their values and intentions, whether they are doing the work themselves or hiring help.

I. Objectives: Identify those higher aims that reflect the larger landscape and your stewardship legacy.

Example: To assist in the recovery and enhancement of the landscape in a steady, incremental way that encourages greater diversity of wildlife and plants, increased resiliency during drought cycles, and higher functioning of natural systems.

II. Goals: Aspirations specific to your property

Example:

1. The recovery and enhanced diversity of native grasslands.
2. Improvement of woodland habitat, especially along riparian corridor.

III. Strategies: Going about the plan by following integrated steps

Example:



Jill and Jack Nokes, with 4-footed friends, inspect a Cedar Elm enclosure. Photo credit: Stanley Farrar

1. Efforts will be focused on a series of discrete zones, each over a three to five year period. Results will be evaluated each year before expanding to a new area.
2. White brush, prickly pear, Mexican persimmon, and tasajillo will be selectively removed where they encroach and compete with the high value hardwoods along the riparian corridor. Certain areas will remain untouched for wildlife cover.



Jill and the burn pile. Photo Credit: Stanley Farrar

IV. Tactics: Add as many specific details as needed. For example, seed lists, chemical names, dates, etc. Provide a timeline, and decide how you are going to decide if your methods have been effective.

Example:

1. Use tractor, chemical, and hand clearing to reduce prickly pear coverage. Compare results.
2. Re-sprouting mesquite and lotebush will be controlled with herbicide.

Having a plan on hand will help the landowner focus attention

and resources on smaller, discrete areas and also provide opportunities for "course corrections" if the strategy or climate cycle has affected outcomes. It will also help when a sister-in-law asks if she can bring over her unwanted llamas or geriatric donkeys because "you have so much room." If conservation-minded owners have articulated the objectives for their precious piece of earth, they will quickly recognize which actions serve the land - and them - best.

A Heartfelt Thanks to the Following Organizations for their Generous Support of our 2014 Conference!!



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monthly updates and quarterly newsletters with articles and notices about regional events that allow you to connect to the local restoration community.

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