

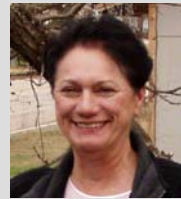
Meet the TRA Board



Sue Watts – President

Sue Watts is a native of West Texas, who earned her doctorate in Ecology and Evolution from Rutgers, by studying nitrogen cycling in different types of wetland ecosystems. Currently, she is helping develop research programs within the Pathology and

Emergency Medicine programs at the Texas Tech University Health Sciences Center in El Paso. She has previously worked as an instructor and visiting research scientist at UT El Paso and the Center for Environmental Resource Management. She is participating in several projects that will lead to the enhancement or re-establishment of lost and damaged riparian communities along the Rio Grande. She is on the board of the Paso del Norte Watershed Council and a member of the International Boundary and Water Commission's Rio Grande Citizens' Forum. She played a primary role in the development of a Biological Management Plan for the Rio Bosque Wetlands Park in El Paso.



Sari Moyer – President-Elect

Sari Moyer's life has taken many paths. She has worked as a human resource director, a comptroller for a large law firm, and a contracts manager for federal, state and local contracts. She is now in graduate school at Texas Tech, pursuing an interdisciplinary degree in Environmental Evaluation.

In addition to owning property on the Llano River, Sari is an avid kayaker and outdoors person and has had a lifelong interest in restoration and preservation. She is a member of the Austin Paddling Club, the National Wildlife Federation, the Native Plant Society of Texas and several environmental associations. She has more than twenty years experience serving on boards, including the St George's Episcopal School Board, the Child Care Management Advisory Board for the State of Texas, LCRA Llano River Advisory Panel, and the Mason County Chamber of Commerce. At the moment, Sari is pursuing the idea of a demonstration project with Texas Tech Junction and TRA.



Kevin Anderson – Past President

Kevin Anderson can truthfully say he was born into an interest in riparian ecology since his life literally began at a riverside: Riverside, New Jersey. He grew up on the banks of the Susquehanna River in Pennsylvania, and as a teenager lived on a farm and raised purebred

Angus. University took him into teaching and a Master's degree in philosophy. He served in the Peace Corps from 1990-92 in Hungary.

His professional work with riparian systems began in Hungary where he helped create the Upper Tisza Foundation, a Hungarian organization working to support ecological research and to protect the Tisza River in northeastern Hungary. Work on his doctorate in Geography at the University of Texas brought him to Hornsby Bend on the Colorado River. It is here that he runs the Center for Environmental Research for the City of Austin Water and Wastewater Utility, with the mission of research and education about urban sustainability and ecology. He also serves on the board of the Texas Society for Ecological Restoration. Kevin chairs the Administration Committee.



Peter McKone – Communications Coordinator

Pete McKone received his B.S. and M.Ag. in wildlife and fisheries sciences from Texas A&M University and has spent the 14 years since graduation in the environmental field, working on a wide range of wetland and riparian projects. His work experience includes

wetland creation projects in northern New England, riparian restoration, enhancement and creation in the grasslands and timberlands of Texas, and an assortment of interesting projects in a range of ecoregions across the country.

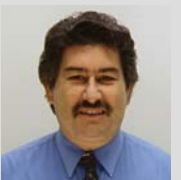
Although the majority of his past efforts have been involved with compensatory (i.e., mitigation) restoration projects, he has also worked with cities and local groups to develop wetland and riparian restoration projects that include public education components, user safety considerations, and waste cleanup efforts. His current duties include managing the ecological services group for Carter & Burgess, a national firm headquartered in Fort Worth, Texas, and assisting the interagency North Texas Stream Team in presenting stream restoration workshops throughout Texas.



Kenneth Mayben – Vice President

Ken Mayben is a 1975 graduate of Texas A&M University with a B.S. in Agricultural Engineering. The USDA, Natural Resources Conservation Service has employed him for 29 years in various engineering positions across the state, from the lower Rio Grande Valley to North Texas, including three years in the

Texas State Design Section in Temple. He is currently serving as a Zone Engineer, providing leadership for the Weatherford Zone (which covers 51 counties in North and Central Texas) and as a member of the NRCS state engineering team, providing direction for field engineering activities in the state. In 2002, he designed and supervised construction of the first NRCS stream restoration project in Texas. He also serves as the fluvial geomorphologist on the interdisciplinary, interagency North Texas Stream Team. The Team works with units of government, consultants, and developers to educate and suggest environmentally sensitive design alternatives for stream modification. (See the most recent edition of *TRA Stream Lines* for more information on the Stream Team.)



Michael Gonzales – Treasurer

Mike Gonzales has been a lifetime resident of San Antonio, Texas, where he works as an Environmental Services Department Manager for the San Antonio River Authority. By training and education he is an aquatic ecologist, specializing in fish communities. He holds

an M.S. in Aquatic Biology and a B.S. in Biology/Chemistry. Michael has been employed with SARA since 1982 and has over 25 years experience working in various environmental disciplines. He provides management oversight of the SARA Regional Water and Wastewater Laboratory and stream water quality monitoring and assessment efforts. In addition, he administers and serves as project manager for the San Antonio River Basin Clean Rivers Program and Total Maximum Daily Load projects. Michael also represents SARA on various environmentally related, regional, community, civic and interagency boards and committees, including Texas Water Conservation Association, American Fisheries Society, and Salado Creek Foundation.

Meet the Board continued on page 3.

A Listserv Primer

The Riparian Listserv is a service of the University of Texas, created to encourage the exchange of information on riparian issues among the citizens of Texas. You do not need to be a member of TRA to subscribe. Notices about recent riparian research, conferences, training, and activities are posted daily. The listserv also provides a forum for finding, sharing, and discussing riparian-related information and issues. TRA member business is generally conducted through a membership email list and snail mail.

To subscribe to the Riparian Listserv, send an email to: listproc@lists.cc.utexas.edu. Leave the subject line blank. In the body of the email, type: SUBSCRIBE RIPARIAN your first name your last name (for example: SUBSCRIBE RIPARIAN JOHN DOE). Soon afterwards, you should receive an email response confirming your request and providing general listserv information.

To receive listserv postings in a daily digest instead of receiving individual emails for each posting, send an email to the address above, leaving the subject line blank. In the body of the email, type: set RIPARIAN mail digest.

To remove yourself from the Riparian listserv, follow the instructions for subscribing, except in the body of the email, type: UNSUBSCRIBE RIPARIAN. Again, a confirmation email will be sent when your request has been processed.

To post messages to the listserv, direct your email to riparian@lists.cc.utexas.edu.

Please remember: When using the listserv, please be courteous to other users by not pushing the "Reply" button after viewing a message unless you want your reply sent to everyone that subscribes to the service.

That's about it! We suggest saving this primer for future reference. If you have questions, or encounter problems using the Riparian listserv, email Kevin Anderson at: kevin.anderson@ci.austin.tx.us. Happy riparian reading!

Newsletter Basics

This is now our third edition of *TRA Stream Lines*. It is our hope that this newsletter will become a means of orienting new members and updating existing members to the developments and activities within our organization. I am sure that *Stream Lines* will evolve with the TRA, and I welcome your comments and suggestions for improvement, topics, and features (as long as you're nice). I also hope that you will contribute ideas, articles, and calendar entries for future issues.

We plan to publish this newsletter biannually, in the winter and the summer; the deadlines for submittals will be November 1st and May 1st, respectively. I encourage you to submit articles on topics you find interesting, but please be sure to make your submittals ahead of the deadline so that the newsletter can be printed on schedule. I will always edit articles for clarity and space constraints. Please send submittals (text as .doc files and images as .jpg files) and comments to Emily Schieffer at 214-741-7777 or eschieffer@lopezgarciagroup.com. Thanks!

Water Conservation In the 78th Legislature

Water received significant attention during the 78th Legislative Session. The House and Senate considered over 35 water-related bills, a number of which make changes in water conservation law. The new legislation is aimed at increasing conservation efforts, which is one of the primary ways the State's regional water planning groups, established by Senate Bill 1 (SB1) in 1997, intend to meet future demand through the year 2050. SB1 created 16 regions in the State and required each to develop a water plan for meeting its projected need through 2050. In May 2002, the regional plans were compiled into the State water plan, titled *Water for Texas – 2002*.

"In this Legislative Session, the 78th Legislature made an effort to promote water conservation through the planning process and in the everyday activities of water supply, water distribution, and water use," stated James Kowis, a water issues consultant based in Austin. For example, water supply corporations may now create and enforce water conservation practices and prohibit excessive or wasteful potable water use to ensure that conservation goals are met. In addition, groundwater conservation districts now have the explicit right to set aside or acquire funding to develop facilities necessary to meet water conservation goals.

As the State water plan moves toward implementation, the Legislature has ensured that water suppliers receive the assistance they need in achieving conservation goals by requiring the Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB) to work together to develop water conservation programs to assist water suppliers increase conservation efforts and meet higher conservation goals. These two agencies also must establish goals and programs that water suppliers may use as models in preparing drought contingency plans to decrease water use during shortages and drought. The Legislature also took steps to encourage homebuilders to install graywater capture and reuse plumbing in new construction projects to offset potable water use for residential gardening and lawn-watering.

Statewide water conservation goals are the focus of a particularly important bill that provides guidelines for the creation of a Water Conservation Implementation Task Force. The task force will be responsible for reviewing regional and state water plans, evaluating how to implement the plans' water conservation strategies, and conducting a cost/benefit analysis of the strategies by November 1, 2004.

"The significance of this legislation is that it gets competing interests at the planning table at the same time," stated Kowis. The task force will consist of representatives of the TCEQ, Texas Department of Agriculture, Texas Parks & Wildlife Department, State Soil and Water Conservation Board, TWDB, regional water planning groups, federal agencies, municipalities, groundwater conservation districts, river authorities, environmental groups, irrigation districts, industries, institutional water users, professional organizations focused on water conservation, and higher education.

The Legislature mandated creation of another group, the Study Commission on Water for Environmental Flows, to get competing interest groups to work together to develop an environmental flows program for statewide implementation. The 15-member commission must present its report by December 1, 2004, and will include representatives of the TCEQ, the Texas Parks and Wildlife Commission, municipal water supply agencies and/or river authorities, resource protection agencies, the Senate, and the House of Representatives.

This article contributed by Mike Gonzales for the San Antonio River Authority. For information about regional water planning, access the TWDB website at <http://www.twdb.state.tx.us>.



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TRA Stream Lines

The Official Newsletter of the Texas Riparian Association

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A Word from our New President

Greetings Riparians! Happy 2004!! First of all, I want to thank last year's board for the hours and hours they have devoted to TRA--Mike Mecke, Kevin Anderson, Ken Mayben, Nancy Charbeneau, Sari Moyer, Heather Venhaus, Lindi Clayton, and Bill Asquith. A sampling of their accomplishments: Heather took on the job of collecting dues and organizing our membership; Nancy spear-headed the development of our brochure and our website; Lindi and Bill provided input and shared their expertise on many issues and projects. Thanks to Sari for taking care of the finances (from setting up a bank account to working on non-profit status) and to Ken for developing a riparian resource bibliography and for sharing his experience and expertise. Mike and Kevin have provided outstanding leadership and their passion for all things riparian is contagious. Theirs are hard shoes to fill, and I'm very glad they are both around to provide guidance and direction. Special thanks go to several other TRA members who are not on the board but who have contributed much to the organization: Kathryn Nichols, Marta Newkirk de la Garza, and the NPS, who have provided funding and special support for the development of the logo and website, and Emily Schieffer, who edits the newsletter. Heartfelt thanks to all of you--TRA would be just a good idea without your efforts!

Several of last year's board will continue on this year in new capacities. Sari is now serving as our president elect. Kevin is the immediate past president and will be working on expanding our membership. Ken now is our vice-president and will be coordinating education projects. We also have several new board members. Pete McKone is our new communications coordinator. Mike Gonzales is our new treasurer. Larry White, Fran Gelwick, and Bobby Hernandez are our board members-at-large. You can read more about each of our board members in their biographies on pages 2 and 4. Thanks to all of you for agreeing to share your experience and resources with TRA this year.

One primary goal for this year is to sponsor and/or conduct more workshops than we have in the past two years. Education and outreach are essential parts of our mission and we want to expand that role this year. Some events already scheduled include a riparian restoration essentials workshop at the Lady Bird Johnson Wildflower Center in May and a short course on restoration and management of riparian corridors at SMU in May (see page 4). Another workshop focusing on restoration along the South Llano River in Junction is being organized for this spring or fall. Updates will be published in the newsletter and the listserv.

As we begin this year, TRA is entering a new phase of existence, as the organization becomes decentralized. The founding energy, centered around the Austin-San Antonio area, is beginning to spread across the state. Because our organization is expanding, the board alone can't keep this organization alive. It will take effort from all members--all of you sharing your knowledge--to continue to grow and strengthen TRA. Each of you know what is happening in your area, what is working and not working. Tell us about your successes and failures, policy changes, and other issues you have identified. Share your knowledge by writing a short article for the newsletter or by giving a talk at a workshop. If a workshop is scheduled in your area, please step up and help with organizing the event and getting the word out to your colleagues. Every effort helps! Please let me or any of the board know about your ideas and concerns. I'm looking forward to working with you and for you this year.

Sue Watts (susan.watts@ttuhsc.edu)

River Corridor Project Update

As reported in the last TRA newsletter, the Austin-Bastrop River Corridor Project began in February 2003 as a small meeting about riparian gravel pit restoration. It quickly grew, however, into a much larger project concerned with the impacts of development and the restoration opportunities along this rapidly urbanizing stretch of the Colorado River. The project has taken another big step forward with the help of the Society for Ecological Restoration (SER).



Participants broke into working groups to consider design options for the river corridor at three different scales: a 15-mile corridor, a 2-mile corridor, and a small riparian nature preserve.

SER chose the River Corridor Project as the focus of a design workshop for its annual international conference, which took place in Austin in November 2003. The purpose of the design workshop was to practice what SER preached at the conference: the importance of collaborative restoration projects between ecologists, governmental representatives, urban planners, landscape architects, engineers, and citizens. The River Corridor Project already had this kind of diverse participant profile. SER board member Steve Patterson and TRA past president Kevin Anderson coordinated planning for the design workshop and were helped by staff from the City of Austin Parks and Recreation Department, UT School of Architecture, and TRA members.

The workshop began with a pre-conference field trip along the river corridor with 20 SER participants, who saw the whole stretch of the river on which the workshop focused. A few days later, more than 70 people from 16 states and several countries participated in the day-long design workshop. The first two hours were given to overview presentations about the river corridor, including a GIS presentation by Dr. Barbara Parmenter on historical growth patterns of Austin. Participants then broke into working groups that spent four hours analyzing design options for three different scales of the river corridor.

River Corridor Project Update continued on page 4.

For more information, contact Kevin Anderson at 512-972-1960 or kevin.anderson@ci.austin.tx.us
 Or check us out on the web at our soon-to-come website.

Membership Update. The Texas Riparian Association is an all-volunteer, nonprofit organization dedicated to encouraging healthy riparian systems in Texas. The TRA's efforts in education, research and healthy watershed management are possible largely through the funds provided by members like you. Please consider joining us or renewing your membership today. Thank you for your support!

Yes, I want to become a member of the Texas Riparian Association and help to encourage healthy riparian systems within Texas!

Name _____ Affiliation (if any) _____

Address _____

Phone (work/home) _____ Phone (cell/pager) _____

Email _____

Please check one of the following annual membership categories:

- | | | | |
|---|------|--|-------|
| <input type="checkbox"/> Member | \$20 | <input type="checkbox"/> Business Member | \$50 |
| <input type="checkbox"/> Student Member | \$10 | <input type="checkbox"/> Sponsoring Member | \$150 |
| <input type="checkbox"/> Government or
Non-profit Member | \$35 | <input type="checkbox"/> Life Member | \$300 |
| | | <input type="checkbox"/> Sustaining Member | \$20 |
- (add to cost of any other membership category)

I would like to serve on a committee! My first choice is:

- Administration (finances, incorporation, by-laws, membership)
- Program (agendas and logistics for conferences, workshops, seminars, meeting planning)
- Outreach (educational materials- except programs- including newsletter, website, brochures)
- Research & Demonstration (library, database, demonstration projects)

Please make checks payable to the Texas Riparian Association and mail with this form to:

TRA c/o Center for Environmental Research
 2210 S. FM 973

For more information on membership, contact Kevin at kevin.anderson@ci.austin.tx.us

Austin, Texas 78725-7103

Using Plants for Erosion Control

Urbanization is frequently seen as a cause of many complex environmental issues. In the context of riparian communities, urbanization can begin a spiral of negative consequences by simultaneously increasing impervious cover and encroaching upon floodplains. The expansion of impervious cover decreases the overall amount of infiltration taking place within a watershed and increases both the quantity of runoff draining to local streams and the speed with which it reaches the streams. At the same time, development within floodplains can reduce the floodplains' storage capacity, leading to increased flooding in surrounding areas. Greater energy associated with higher flood volumes can result in more rapid erosion and incising of the streams' banks. In fact, riparian researchers have recently shown that "the majority of sediment in rivers is not coming from upland watersheds (which had been the Conventional Wisdom), but rather from eroding and unstable banks, channels, and floodplains" (Nelle, 2004).

The response to this erosion by municipalities and transportation agencies has typically been an engineered approach, such as armoring the eroding banks with gabions and riprap, or simply channelizing the stream. As riparians, we believe that the natural character of a stream need not be lost while addressing these concerns. Recognizing this, many people are looking at re-vegetation projects to solve erosional "problem spots" along various streams. In general, plants control erosion in three key ways:

- **By decreasing sediment transport** – Roots bind soil particles and, along with stems, add roughness, which slows the velocity of runoff, allowing particles to drop out of the stream of water or to resist being picked up in the first place.
- **By increasing infiltration** – Roots add pore space and soak channels, increasing the amount and duration of infiltration.
- **By intercepting rainfall and reducing splash erosion** – When raindrops hit bare soil, the impact breaks apart stable soil aggregates, collapses pore spaces, splashes soil particles downslope, and allows the particles to float and plug remaining pore spaces. The result is surface crusting and compacted soils, which not only increase runoff, but also make it more difficult for seeds to establish.

The characteristics of various plant species allow them to play a number of roles in re-vegetation projects and should be considered when developing a plant or seed mix for a site. For example:

- **Climate adaptation** (e.g. temperature, rainfall) and **Soil adaptation** (e.g. drainage/texture, nutrients) Knowing which species are adapted to the local conditions can give a re-vegetation project increased flexibility. For example, a quick-growing annual that is not adapted to local conditions can provide quick cover and erosion protection for a season or two before dying out and allowing the local seed bed (or slower-growing species from the planted seed mix) to grow in.
- **Biomass production, Growth habit, and Height** The type of roots a plant has dramatically (and predictably) affects its ability to hold soil in place. Plants with thick, deep roots or with short, wide, prostrate roots usually work best—shallow, fine, creeping root systems can impede infiltration. The height and growth habit of a plant can also play an important role. Vegetation that is thick and close to the ground (e.g. grasses) intercepts rainfall and checks overland flow more effectively than taller, sparser vegetation (e.g. trees).
- **Nitrogen fixation** Beginning a project with a soil analysis is often beneficial. If the soil is found to be low in nitrogen, species that can fix nitrogen should be planted. It is generally best to wait a growing season or two after planting to evaluate whether chemical fertilizers will be needed.
- **Other traits** (e.g. palatability, dormancy, growth rate, longevity, seedling vigor, cost of seed) These traits can likewise be important, given the conditions, goals, and budget of a particular project.

Water is obviously an integral component of riparian systems. Due to increasing urbanization, it is also becoming a potentially damaging one. Employing wise planning guidelines, which outline appropriate types and methods of development for various areas and provide protections for natural resources, including re-vegetation efforts, is crucial in protecting the long-term health of riparian systems. As urbanization shows no sign of slacking, such tools should prove to be increasingly valuable.

This article contributed by Emily Schieffer. Sources: Nelle, Steve, 2004. "Riparian Notes." Note Number 2. NRCS, January 2004. and Walker, David, 2003. "Use of Plant Communities for Erosion and Sediment Control." Presented at the SER International Conference. Austin, Texas. November 2003.

Using Native Plants

The decision to use native plants in a re-vegetation project is an important one because of their inherent value in restoring and maintaining native ecosystems. However, native plants have many other benefits, as well. Among these are:

Ecological compatibility. A genetically diverse, species rich plant community has a greater capacity for adapting to environmental change than does a monoculture. Natives are important for the long-term success of re-vegetation projects.

Adaptation to local conditions. Some who have used native plants in projects observe that, for all the talk of adaptation, native plants often seem difficult to establish. This apparent contradiction is likely due to the fact that many native plants are perennials, adapted for longevity, while annuals, including many "weed" species, evolved to sprout early and grow quickly, since one growing season is all they get. Because of this difference, perennials are slower to emerge in the spring (which helps to guard against a late frost) and have lower seedling vigor (to reduce competition between sprouting individuals and their "parents") than do annuals. Taking this difference into account, it is still true that plants that are adapted to the local environmental conditions will fare better than others.

River Corridor Project Update, continued from page 1...

The workshop resulted in a wealth of ideas, drawings, and maps that will help shape the project as it moves forward. Also, now a network of interested folks send TRA information on similar projects in the States and abroad. It was great practice, too, for similar workshops that will take place with the local community this year with the support of the National Park Service – Rivers, Trails, and Conservation Assistance Program staff in Austin. In the next few months, TRA will finish compiling GIS data for the whole Austin-Bastrop corridor. With this data, TRA will identify high priority sites for restoration and key factors impacting the corridor. The TRA will continue to play a lead role in the project.

For more information on this project, contact the author at kevin.anderson@ci.austin.tx.us.



Meet the Board, continued from page 2...



Larry White – Member at Large

Larry White was born in Oklahoma and raised in Arizona, with a love for the outdoors and wild places. He holds an M.S. and a Ph.D. in Range Management, with a minor in Botany and an emphasis on plant-soil-water relationships. He has worked for the Arizona State University Poisonous Animal Lab, conducted research on Pinion juniper for the Agricultural Research Service, fought fire for the US Forest Service, and worked as a Range Advisor for the Kenyan government. Larry has spent much of his career in education, teaching with the University of Florida, the Texas Agricultural Extension Service, and most recently, Texas A&M, where he developed the capstone course for Rangeland Ecology and Management majors, "Ecosystem Management," and emphasized ecosystem management in extension programming. As he prepares for his retirement at the end of January, Larry says he is looking forward to working closely with others to improve management of upland and riparian ecosystems.

Frances Gelwick – Member at Large

Born in Kansas, Fran Gelwick has spent most of her professional life in Oklahoma and, more recently, Texas. Since earning an M.S. in Biology from the University of Tulsa in 1987, she has worked primarily for universities, teaching and conducting research. After completing her Ph.D. in Zoology at the University of Oklahoma in 1995, Fran began working as an Assistant Professor in the Department of Wildlife and Fisheries Sciences at Texas A&M University. Her specialty is fish ecology and aquatic ecosystem functioning. Fran also serves as a faculty mentor at the university's Undergraduate Mentoring in Environmental Biology Program.



Bobby Hernandez – Member at Large

Bobby Hernandez is a Community Planner with EPA Region 6 and a member of the North Texas Stream Team. He has over 30 years of land use planning experience with local, state, regional, and federal government. He has a Master of City Management Degree and is a Registered Environmental Manager with the National Registry of Environmental Professionals. Prior to working at EPA, he was a Community Planner and Natural Resources Manager with the Air Force Center for Environmental Excellence, with responsibilities in water permit monitoring and compliance, environmental site assessments, site remediation, facility siting, air, noise, and land use compatibility, and historic properties. In his current job, he regularly consults with municipal governments and is responsible for establishing agenda topics for public information seminars across the state, which are regularly attended by federal, state, and local government, private sector engineering and environmental consulting firms, and the general public. He lives in Dallas and enjoys hunting and fly fishing with his wife Sandra, a Registered Nurse and staffing consultant for health care providers.

Calendar of Riparian Events

March 10-12. Texas Water Conservation Assoc Annual Convention. The Woodlands, Texas. <http://www.twca.org/meetings/annual/index.html>

April 1-4. Global Forum on Water: Bringing Together Art & Science. Sponsored by FotoFest, Shell Center for Sustainable Development, and Rice University's Center for Sustainable Development. Houston, Texas. <http://www.fotofest.org> and <http://www.ruf.rice.edu/~cses/water.html>

◆ May 17-19. Riparian Restoration Essentials Workshop. Lady Bird Johnson Wildflower Center, Austin, Texas. www.wildflower.org

◆ May 19. North Texas Stream Team annual short course "Restoration and Management of Riparian Corridors." Dallas, Texas. Contact Bobby Hernandez at 214-665-7234 or hernandez.bobby@epa.gov

July 24-28. Soil and Water Conservation Society Annual Conference, "Headwaters of Conservation." St. Paul, Minnesota. Contact Nancy Herselius at (515)289-2331 or nancy.herselius@swcs.org

◆ = Events co-sponsored by TRA.

Riparian Restoration Essentials

Date: May 17-19 8am to 4pm

Price: \$460 (Wildflower Center members, \$430)

Materials and lunch are included, but after April 26th there will be a \$50 late registration fee.

Location: Lady Bird Johnson Wildflower Center, Austin, Texas.

TRA is a co-sponsor of this three-day workshop, which will focus on the basics of stream processes, inventory techniques, assessment of stream condition, restoration strategies and applications, and design and construction issues, with an emphasis on incorporating stream mechanics, natural channel geometry, and stability concepts into restoration projects. One third of the course will be applied to riparian plant identification using the numerous wetland plant species found at the Wildflower Center. This workshop is designed for conservation districts, state and local resource agencies, watershed civic groups, and others interested in watershed management with a need for technical and field exposure to stream management and restoration principles. The course will be taught by Keith Bowers, a landscape architect who has planned, designed, and managed more than 200 ecological restoration projects throughout the U.S., and David Mahler, a pioneer in Central Texas wetland installation who has designed and built many of the water features at the Wildflower Center. David is a member of the TRA.

Restoration and Management of Riparian Corridors

Date: May 19, 9am to 4pm

Price: free (parking is \$5)

Location: Southern Methodist University campus, Dallas, Texas.

TRA is a co-sponsor of this one-day short course, which aims to familiarize attendees with various methods of restoration used to address the natural evolution of stream channels and the deterioration of riparian corridors brought about by accelerated surface runoff in the urban environment. Stream Team workshops are regularly attended by municipalities, home owners groups, university students, natural resource agencies, and environmental consultants. The talks, which will focus on the following topics, are suitable for both professional and interested lay audiences: fluvial geomorphology, bioengineering, riparian ecology, and the use of restoration techniques relative to Section 404 permitting.