Texas Master Naturalist
Rio Brazos Chapter

August 2011 Newsletter

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The central open area, one of the 4 ANC main habitats. Photo: Billy Teels

Swale area. Photo: Billy Teels

Cedar brake. Photo Billy Teels

Wooded ravine. Photo: Billy Teels

ANC Vegetation Survey
By Billy Teels

Although just 74 acres in size, the Acton Nature Center is graced with many different plant species that make it an attractive place to visit any time of the year. Several different habitats are responsible for the rich floral diversity which can be appreciated by walking the Center's various trails. The Crockett Butterfly Trail heads from the Center's parking lot to the windmill, crossing an open area that is dominated by warm-season grasses mixed with scattered juniper and mesquite. The extension of that trail, just beyond the windmill, crosses a swale with soils that are saturated to the surface for much of the year. Seep muhly is the dominant plant species there, along with California loosestrife and a number of different sedges. The central open area occupies the highest point of the property, and from there the terrain slopes away in all directions. Thick stands of juniper dominate these slopes (brakes); however, they contain scattered openings, or barrens, having shallow soils or exposed limestone with little or no vegetation. The Bowie Bike Trail traverses this area over most of its course, virtually encircling the central open area. The Travis Hiking Trail originates near the parking lot and follows a large ravine that eventually flows out of the property to the north. The ravine deepens and widens near the property boundary where it supports a mature stand of hardwoods, including some largest live oaks in the county. Near the ravine is a small seasonal pond that provides an additional aquatic habitat (Figure 1).

For many years the ANC was one of several sites used by the Federal Aviation Administration (FAA) to help aircraft navigate across the region. In addition, the land was leased to private landowners for grazing. According to local sources, the property was grazed continuously for many years without rest or rotation. This practice of over-use set back the native grasses that once dominated the site in favor of invasive plants (e.g., mesquite and juniper) that are now common throughout the property. Grazing was terminated when the property was acquired in 2004. Since then the RBMN has worked to reduce mesquite and juniper and other invasives by periodic cutting and mowing. Today the property contains a rich mixture of grasses, forbs, and woody plants and is considered to be in a state of recovery. However, due to the variety of soils and other factors, not all sites are recovering at the same rate. To document the current condition of the ANC's plant communities and help monitor change in species composition over time, a comprehensive survey of the ANC's vegetation was begun by the RBMN in 2008. That survey was divided into two parts; 1) recording the plant species along permanent 100 ft. line transects, and 2) developing a list and photo record of all plant species that occur on the property.

Project 1: Four permanent 100 ft. transects were established in the ANC plant communities that were considered to have the greatest potential to respond to the current land management practices (e.g., no grazing, and periodic cutting and mowing). In September 2008, RBMN used a point intercept technique to sample the vegetation along each transect, providing an estimate of percent cover for each species for each transect (Table 1).

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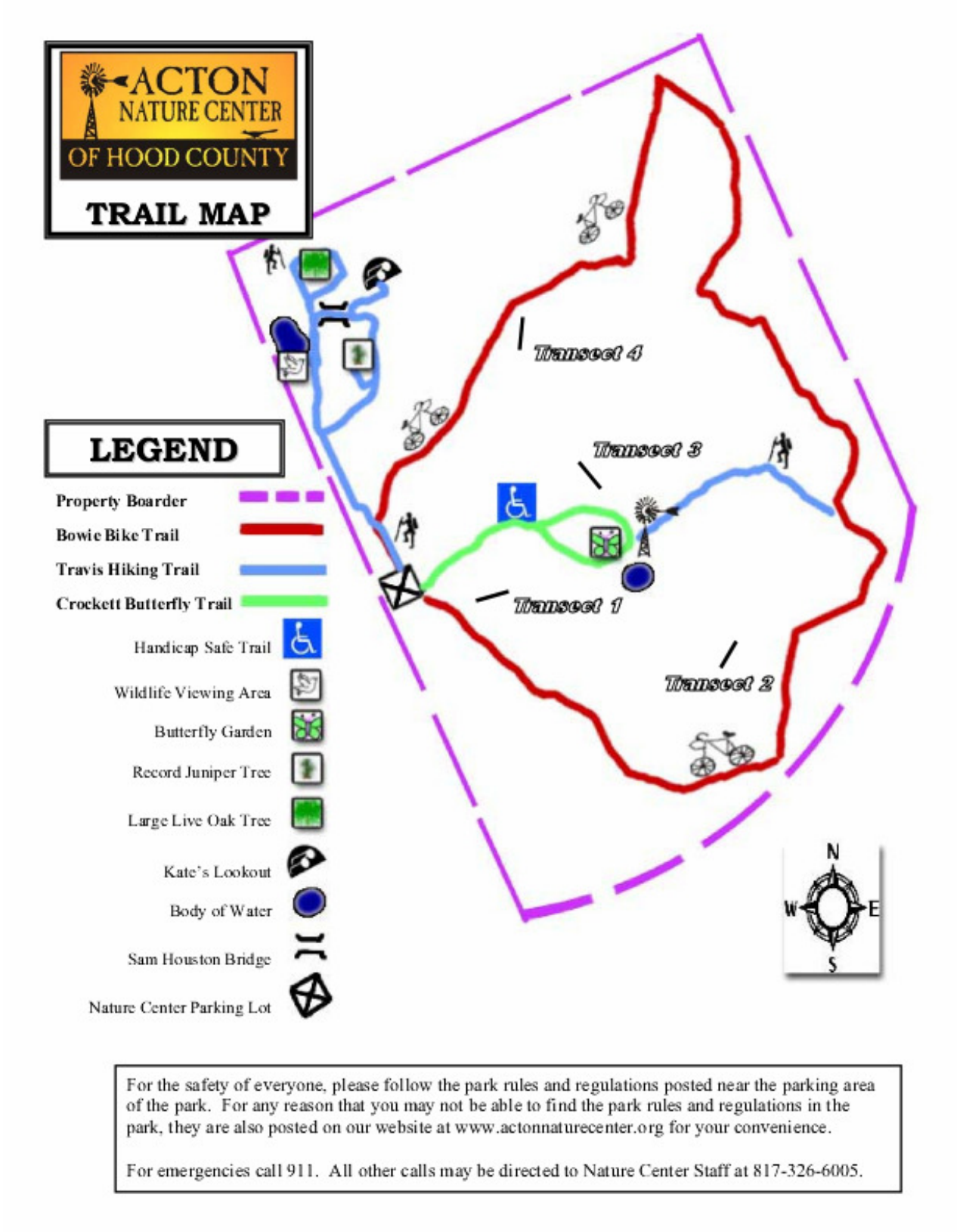
ANC Permanent Transect Locations



For the safety of everyone, please follow the park rules and regulations posted near the parking area of the park. For any reason that you may not be able to find the park rules and regulations in the park, they are also posted on our website at www.actonnaturecenter.org for your convenience.

For emergencies call 911. All other calls may be directed to Nature Center Staff at 817-326-6005.

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Table 1. Percent cover of plant species for each transect. Plant species were recorded when they intercepted (touched) a 100 ft. tape at one foot intervals.

Transect 1. Central open area (less recovered)

Common Name/Scientific Name	%
Side-oats grama (*Bouteloua curtipendula*)	39
Meadow dropseed (*Sporobolus compositus*)	30
Common broomweed (*Gutierrezia dracunculoides*)	21
Narrow-leaf snakeherb (*Dyschoriste linearis*)	20
Japanese brome (*Bromus japonicus*)	8
Rough tridens (*Tridens muticus*)	7
Honey mesquite (*Prosopsis glandulosa*)	7
Ashe's juniper (*Juniperus ashei*)	6
Texas prickly pear (*Opuntia engelmannii*)	5
Longleaf buckwheat (*Eriogonum longifolium*)	5
Spreading fanpetals (*Sida abutifolia*)	5
Prairie sandmat (*Chamaesyce missurica*)	3
Silver bluestem (*Bothriochloa laguroides*)	3
Branched noseburn (*Tragia ramosa*)	2
Crowpoison (*Nothoscordum bivalve*)	1
Texas yellowstar (*Lindheimera texana*)	1
Smartweed leaf-flower (*Phyllanthus polygonoides*)	1
Purple threeawn (*Aristida purpurea*)	1

Transect 2. Swale area

Common Name/Scientific Name	%
Seep muhly (*Muhlenbergia reverchonii*)	40
Common broomweed (*Gutierrezia dracunculoides*)	38
Sand spikerush (*Eleocharis montevidensis*)	33
Narrowleaf sumpweed (*Iva angustifolia*)	31
Rough tridens (*Tridens muticus*)	19
One-seeded croton (*Croton monanthogynus*)	9
Branched noseburn (*Tragia ramosa*)	6
White tridens (*Tridens albescens*)	4
California loosestrife (*Lythrum californicum*)	4
Buffalograss (*Buchloe dactyloides*)	2
Illinois bundleflower (*Desmanthus illinoensis*)	2
Silver bluestem (*Bothriochloa laguroides*)	2
Pruple threeawn (*Aristida purpurea*)	2
Snow on the prairie (*Euphorbia bicolor*)	2
Smartweed leaf-flower (*Phyllanthus polygonoides*)	1
Texas bluestar (*Amsonia cilliata var. texana*)	1

Transect 3. Central open area (more recovered)

Common Name/Scientific Name	%
Little bluestem (*Schizachyrum scoparium*)	87
Side-oats grama (*Bouteloua curtipendula*)	24
Trailing ratany (*Krameria lanceolata*)	19
Heath aster (*Aster ericoides*)	10
Narrow-leaf snakeherb (*Dyschoriste linearis*)	5
Western ragweed (*Ambrosia psilostachya*)	3
Silver bluestem (*Bothriochloa laguroides*)	3
Ashe's juniper (*Juniperus ashei*)	3
Lindheimer's panicum (*Panicum acuminatum*)	2
Common broomweed (*Gutierrezia dracunculoides*)	2
Stiff greenthread (*Thelesperma filifolium*)	2
Prairie threeawn (*Aristida oligantha*)	1
Texas vervian (*Verbena halei*)	1
Half-shrub sundrops (*Calylophus berlandieri*)	1
Purple threeawn (*Aristida purpurea*)	1

Transect 4. Cedar brake area

Common Name/Scientific Name	%
Tall grama (*Bouteloua pectinata*)	48
Seep muhly (*Muhlenbergia reverchonii*)	24
Engelmann's sage (*Salvia engelmannii*)	16
Ashe's juniper (*Juniperus ashei*)	12
Purple threeawn (*Aristida purpurea*)	10
Hairy grama (*Bouteloua hirsuta*)	5
Narrowleaf sumpweed (*Iva angustifolia*)	2
King Ranch bluestem (*Bothriochloa ischaemum*)	2
Showy prairie clover (*Dalea compacta*)	1
Pasture heliotrope (*Heliotropium tenellum*)	1
Fall witchgrass (*Digitaria cognatum*)	1

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With the composition and relative cover of plant species recorded at each of the permanent transects, a benchmark is now established against which future change can be measured. RBMN plans to duplicate the 2008 efforts every third year to document the rate of change and recovery.

Project 2: Beginning in March of 2008, RBMN have perused the ANC at least once per month to develop a list and photo record of the all plant species that occur on the property. Over that time, the entire ANC has been searched as thoroughly as possible to make the list as comprehensive as it can be. To date, over 360 different plant species have been found, with the list still growing. An ANC plants data base has been developed to make the list more accessible to users, and to provide a ready reference to help naturalists and the public identify plants at the ANC and elsewhere in the area. That data base is currently housed on the RBMN website. The data base contains two lists in Excel format, one (Cumulative Species List) arranged alphabetically by scientific name and the other (Cumulative Species List-family) with species listed alphabetically by plant family. Both lists contain one of the accepted common names for each species and follow the scientific nomenclature of *Shiner's and Mahler's, Illustrated Flora of North Central Texas (1999)*. Another feature of the website displays digital images that were taken at the ANC of every species in the data base. Many of the species have more than one image included due to difference in seasonal appearance of the plants (e.g., plants in flower or fruit). Currently, the image base contains over 1300 photos representing over 360 species. Robert O'Kennon and staff of the Botanical Research Institute of Texas (BRIT) met in late July with RBMN naturalists Gary Hinds and Billy Teels at the ANC to botanize and review the list for its inclusiveness and correctness. Changes in the list are expected to be made yearly as corrections are made and new species found.

Honey Mesquite
By Billy Teels

One of the most common woody plants of Texas prairies is honey mesquite (*Prosopsis glandulosa*). Today mesquite occupies 50-60 million acres, or about three-fourths of Texas grasslands, and is considered to be one of our most costly invaders. Marcy, who surveyed pre-settlement lands in Texas and eastern New Mexico in the 1850s, documented the occurrence of mesquite along streams and in uplands where it grew as scattered trees resembling a peach orchard. According to most, what has increased since then is not so much the range of mesquite, but its density. Sparse stands of mesquite, like those that occurred historically, generally do not interfere with normal farming or ranching practices, nor do they deplete the water table drastically. However, thick stands use water extravagantly and compete directly with grasses, thus reducing the amount of forage available for livestock.

If there ever was a plant adapted to grazing it is mesquite. Although not particularly fond of the leaves, livestock readily consume the sweet, nutritious pod that contains beans that are so hard that about 50 percent of them pass through the digestive system unharmed, only to be deposited on the ground with a large amount of natural fertilizer. Once planted in this manner, mesquite beans can sprout at once if conditions are right, or can lie dormant for as many as 40 years before the right set of conditions occur. After the seedlings emerge, grazing reduces grass competition which helps nurture the seedlings and stimulates growth. Overgrazing helps further by eliminating fuels that are necessary to carry fire, the main factor that helped keep mesquite in check historically.

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Permanent transect locations have been established within the ANC habitats to record changes in plant cover. Permanent features, such as the ANC bluebird boxes and water towers, are used to align transects and physically mark their location. Photo: Billy Teels

Carrie McLaughlin and Henry Bogusch conducting the point intercept plant sampling technique in fall of 2008. Photo: Billy Teels

The creamy-yellow flowers of honey mesquite hang in dense racemes often covering the entire tree. Photo: Billy Teels

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Once mesquite is established it is very tough to control. It has a taproot that is renown for its length (usually 25-65 feet), growing seemingly as deep as necessary to reach the water table. There are even documented reports of mesquite taproots being as long as 175 feet. By contrast, the roots of oaks and hickories are only 3 to 7 feet in length, and deep-rooted tall prairie grasses (e.g., big bluestem and switch grass) reach depths of only 10-12 feet, far short of that needed to compete successfully with an established mesquite root. Perhaps the biggest advantage that mesquite has over its competitors is its ability to re-sprout. Many mesquite growing points are located beneath the ground and are activated when the above-ground parts of the plant are damaged. Most re-sprouting plants develop into multi-stemmed bushes that occupy more space than the original plant. Attempts to control mesquite (e.g., cutting, mowing, chemicals, and even fire) have frequently resulted in the formation of dense, shrubby thickets that are commonly more detrimental to forage production than the original stands.

With all of its drawbacks, mesquite has many endearing qualities as well. For example, the mesquite pod was a staple in the diet of Southwest Indians. Pods were ground into meal and made into bread, or mixed with water to form a sweet drink (atole), which when fermented produced a weak beer. Mesquite bark was also used to make a poultice for treating wounds. The gum exuded from mesquite bark was used as candy, glue for mending pottery, and as a black dye.

Today mesquite is used as a landscape plant in many parts of the Southwest. Although a naturally growing mesquite tree has a wild, rangy appearance, pruning can create a lacy, delicate ornamental. Mesquite can grow up to 30 feet in height, with spreading crowns up to 40 feet broad. The branches are crooked and arched, and covered with a dark, rough bark.

In spring, the tree is adorned win an abundance of creamy-yellow flowers rich in pollen and nectar. Bees are attracted to the flowers from which they make a clear, sweet honey; thus the name honey mesquite. In summer, bean pods, approximately 6 inches in length develop from the flowers. Both livestock and wildlife relish the pods. Cattle, horses, sheep, goats, mules, and burros eat large quantities of the ripe fruit, often removing all of the pods for as high as they can reach. The pods and seeds are an important part of the diet of mice, kangaroo rats, woodrats, ground squirrels, cottontail, skunks, quail, doves, prairie dogs, jackrabbits, raccoon, coyote, white-tailed deer, and wild turkey, just to name a few species.

Firewood is the primary use made of mesquite by man. The wood is easy to split, is dry and heavy, ignites readily, and produces intense heat. Since the 1980s, the use of mesquite wood in the barbeque industry has grown steadily, with products such as chips, chunks, sticks, and charcoal briquettes sold nationwide. There has also been an increased interest in using mesquite wood in the manufacture of furniture and handcrafts. Woodworkers like mesquite because it is strong and hard, yet easy to work with, and because it has unique color and grain patterns that make the finished product attractive to most consumers.

Mesquite flowers develop into seed pods about 6 inches in length. The seed pods are at first green and later turn tan upon ripening. Photo: Billy Teels

Texas Stream Team volunteers Cathy Crocker, Karen Langdon, Maryann Mathews, and Joe Langdon becoming familiar with water testing procedures at the Langdon Ranch in Hood County. Photo: Jim Crocker

Jim Crocker performing tests on Fall Creek water at the Langdon Ranch. Photo: Cathy Crocker

Texas Stream Team
By Jim Crocker

Texas Stream Team is a network of trained volunteers and partners working to gather information about the natural resources of Texas and to ensure that information is available to all Texans. Volunteers are trained to collect information that can be used to make environmentally sound decisions. Established in 1991, Texas Stream Team (formerly Texas Watch) is administered through a partnership between Texas State University, the Texas Commission on Environmental Quality and the Environmental Protection Agency.

Fourteen members of RBMN attended the Texas Stream training held May 7th at Camp El Tesoro. Members learned the proper testing procedures for monitoring water conductivity, dissolved oxygen, pH levels and E.coli levels. All members completed the training and were awarded certificates of achievement.

The required equipment and supplies were acquired during the month of June, and testing began in July with three teams at four sites. Each site will be tested once a month. Monitoring sites are Fall Creek and Brazos River at Camp El Tesoro, Fall Creek at Langdon Ranch and Squaw Creek at Somervell Training Center.

Team leader Weldon Hatch and members Ken and Kenneth Coy are monitoring the Camp El Tesoro sites. Team Leaders Joe and Karen Langdon test Fall Creek at Langdon Ranch with the help of members Jim and Cathy Crocker and Maryann Mathews. Squaw Creek team leaders are Dave and Wendy Moore with help from members Ken and Kenneth Coy and Gary Hinds.

All data will be gathered and sent to the state for evaluation. Texas Stream is asking for one year's worth of information prior to issuing a report on the project, with emphasis on consistency of testing and reporting.

I was part of the team testing at the Langdon Ranch July 23rd for our first monitoring day. Thanks to the excellent reference material and with a little teamwork, we were able to complete all testing. We had a great time working as a team and a special thank you to Karen for the excellent lunch.

Butterfly Garden Update
By Linda Diehnelt

In the spring of this year, there was an interest in revitalizing the existing butterfly garden at Acton Nature Center. A local landscaper visited with us and came up with a plan incorporating some walkways throughout the garden and she also gave us some suggestions of native plants to add. We immediately went to work putting down the pathways with crushed granite that we had on the site. A number of our master naturalists turned out to get in on that fun. We had some donations of plants either purchased or dug up from the gardens of our members. Some of Malea's home school group assisted in getting them put into their new home in the butterfly garden. We planted Lantana, Salvia greggi, purple coneflowers, flame Acanthus, Zexmenia, and several other sages. Labels were placed on some of the plants to encourage visitors to become familiar with our natives.

We didn't anticipate this heat and drought we are now experiencing when we put in our new plants. But we have had such a supportive and willing group of volunteers who make sure our plants aren't getting too thirsty. With lots of love and care this summer, they are doing well. We do have the occasional critter that stops by to nibble on some of the plants. They seem to especially enjoy our purple coneflowers.

Then next phase of our project will be to trench a line for water so that we have easier access within the butterfly garden. Right now we have to deal with lots of long water hose. We also hope to add a few more plants/trees this fall.

A gaze in wide wonder at one of the butterfly garden's focus species during the children's planting day this spring. Photo: Billy Teels

Occasionally, creatures other than butterflies drop by the butterfly garden. The ANC is a sanctuary to all wild things big and small. This female western diamondback was safely captured and transported elsewhere on the property by Ken Coy. Photo: Bill Diehnelt

ANC Fun Run participants Eliza and Jake Balmuth not only ran the race, but operated a home-made baked goods stand in the vending area afterwards, from which all proceeds were donated to the ANC. Photo: Billy Teels

ANC Fun Run
By Tammy Smith

The third annual Acton Nature Center Fun Run was held on June 11, 2011, and again it was another huge success. To help sponsor the run, over $14,000 was raised from Acton area businesses. With expenses totaling slightly over $6,000, more than $8,000 was given as a donation to the ANC. One hundred eleven runners and walkers participated in this year's event that was held in good weather and on trails that were in excellent condition thanks to the care and preparation by the RBMN. RBMN volunteers were also there during the race to help participants keep on track with the route, and assist in case of an emergency. Race times were measured by RunTime Racing Services, with results available almost instantly. Ages of participants ranged from 7 to 88, and individual and team prizes were awarded to the winners by age categories. Several vendors offered entertainment and refreshments as the awards were being presented after the race. What a wonderful way to help the ANC!

2011 RBMN Training
By Robert Theimer

The 2011 class has completed their training and the students are starting their volunteer hours to become certified. This class was somewhat unusual because the class had several teachers, some observers, and a couple of previous students that wanted to refresh their basics. The class was joined by a student from the Cross Timbers Chapter to make up a missed class and she was satisfied and happy about the level of the instructor's knowledge (Billy did a wonderful job of presenting the aquatic class).

The instructors felt that this class was very receptive and participated fully in the activities. The Saturday classes continued to be a positive both with the students and the presenters. We had a few last minute shifts and substitutions for instructors and Dennis Reger stepped in to help with the soils presentation. The field exercise in field biology presented by Curt Decker was given on a hot day but well received by the students. Note that the hot days in April and May are now considered cool in light of the present heat wave.

The students are Ashlie Averyt, Jeremy Averyt, Tammy Clark, Karen Hennegan, Diane McCracken, Irene Nute, and J. W. Sessums. The observers were Tammie Averyt, Charlie Averyt, and Maryann Mathews.

The instructors again liked the Saturday format because of the more relaxed pace and the fact that the students were not already worn out from a day of work or school, or with the teachers both. The Training Committee will continue to use the Saturday format/schedule for future classes. We would like to thank the Hood County Development District and the Acton Nature Center for their support for the classroom and field experience. We also want to thank our partners Fossil Rim, Dinosaur Valley State Park and Luminant for their continued support.
If you want to see some of the activities from the class we now have a photo archive of the class put together by Tammie Averyt. The pictures are on the Rio Brazos Website and give a good pictorial history of the class activities.

Proud winners of the male team competition, youngest age group. Photo: Billy Teels

Robert Theimer, Gary Hinds, and Henry Bogusch with the 2011 class on the botany field trip. Photo: Tammie Averyt

RBMN Training Leader Robert Theimer explaining soil properties to 2011 class members. Photo: Tammie Averyt