The Texas Star

Newsletter of the
Master Naturalist, Hill Country Chapter

TEXAS Master Naturalist™
Hill Country Chapter

INSIDE THIS ISSUE:

July 2009
Volume7, No. 7

JULY MEETING .....Texas Parks and Wildlife Department

Carter Smith, executive director of Texas Parks and Wildlife Department (TPWD), will provide a TPWD progress update and discuss a subject dear to him - conservation.

As executive director of TPWD, Smith oversees an agency of 3,100 professionals in eleven divisions, including Wildlife, Law Enforcement, State Parks, and Coastal and Inland Fisheries. He is the former state director of the Nature Conservancy of Texas and was the first executive director of the Katy Prairie Conservancy where he continues to serve on the Advisory Board. A native of central Texas, Smith developed his love for the outdoors while roaming his family lands. He has a Wildlife Management degree from Texas Tech University and a master's degree in Conservation Biology from Yale University.

Join us Monday, July 27, at 7pm at the **UGRA lecture hall** located at **125 Lehmann Drive** in Kerrville.

PRESIDENT'S MESSAGE ..... John Hueckstead

Smelly Fingers & LMAP

I can't take my left thumb and forefinger away from my nose this afternoon. There's a wonderful fragrance lurking there that even as it disappears into the realm of things imagined has left me a wonderful memory and a huge lesson.

For over a year I was under the impression that I had a small spindly bush of poison oak growing at the base of a mesquite tree not a hundred yards from the house.

When I first found it the fact that I had found a new plant on our place far outweighed the fact that it was poison oak. I would walk by the bush from time to time and think, "I really need to *2-4-D* that thing before it spreads." Partly because of my laziness, but mostly due to my commitment to diversity, I always let it be… safe, comfortable, and non-spreading under its guardian mesquite.

Last week on an LMAP filled with mystery plants I was challenged by the landowner to identify a medium-sized shrub. There were no blooms, no thorns or anything remarkable. Although the triune arrangement of the leaves was vaguely familiar, I could not place it. When I returned home I began sleuthing, *aka* page-turning, through every shrub and tree book I could find. At last I found it. The picture I took on the LMAP was a fantastic match to the picture in *Native and Adapted Landscape Plants*, a publication distributed by the City of Austin. The shrub was fragrant sumac, *Rhus aromatica*.

Lollygagging my way back from the road with the day's mail and the dogs, our path passed the aforementioned poison oak. As I always do when I pass by, I checked the condition of the puny plant hoping it was still holding its own. With the LMAP sleuthing still fresh in my head something began to stir, "Good grief, that's not poison oak. It's… fragrant sumac!"

Now when you think something might be poison oak, your first instinct is *not* to crush a leaf and jam it into your nostrils to see if it has an aroma. Nonetheless, the similarity to what I saw on the LMAP allowed me to steel my nerves and pick a big juicy leaf. I began to crush it between my left thumb and forefinger.

As I said, I have been walking around for an hour with my fingers in front of my nostrils. Thank goodness for a commitment to diversity and for LMAPs.

See photo page 11

THIS MONTH WE HONOR

Milestones	2009 Re-Certification	First Year Certification
Gold 1000 hours	*Salamander*	*Dragonfly*
Virginia de Wolf	Warren Ferguson	Alexis McRoberts
Bronze 250 hours	Robert Keiser	
Priscilla Bailey	Sandra Magee	
Anne Cassidy	Scott Magee	
Bob McKinley	Sharon Rodriguez	
	Charles Smith	

When one tugs at a single thing in nature,
he finds it attached to the rest of the world.
John Muir

Do you know?

TPWD began in 1895 as the Fish and Oyster Commission; the Game Department was added in 1907. 1923 saw the creation of the State Parks Board. They were merged to form TPWD in1963.
http://www.tsl.state.tx.us/exhibits/parks/

UGRA 6th Annual River Clean Up

JULY 25, 2009

Arrive at Louise Hays Park at 8:00 am for registration, instructions, and assignments.

or ⟹

Pre-register to go directly to your assigned Clean Up location.
Forms must be returned to UGRA by July 17, 2009

Awards for the most unusual item and the biggest item.

Let's Keep Our River Clean



ADVANCED TRAINING ..... Your chance to learn more

- Please be aware that the newsletter's publication schedule does not allow mention of all AT and volunteer opportunities. Watch your email for announcements and check the master lists and calendar on the chapter's website at grovesite.com/tmn/hcmn.

NOW ACCEPTING APPLICATIONS

The chapter is accepting applications for the 2009 class.

Talk with friends and family in Bandera, Gillespie, Kendall, and Kerr counties about becoming a Texas Master Naturalist.

Some of our best prospects come from your referrals.

Email Julie Clay or call 830-896-9576 to receive an application or visit our website at grovesite.com/tmn/hcmn.

Applications must be postmarked by July 17.

Classes begin August 26, end November 18, and meet on Wednesdays from 8:30am to 1:00pm.

Summer is here and so is extreme heat! Beware of heat related illnesses!

What is Heat Stress?

When the body is unable to cool itself by sweating, several heat-induced illnesses can occur. Heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death.

Factors Leading to Heat Stress

High temperature and humidity; direct sun or heat; limited air movement; physical exertion; poor physical condition; some medicines; and inadequate tolerance for hot workplaces.

Symptoms of Heat Exhaustion

- Headaches, dizziness, lightheadedness or fainting.
- Weakness and moist skin.
- Mood changes such as irritability or confusion.
- Upset stomach or vomiting.

Preventing Heat Stress

- Know signs/symptoms of heat-related illnesses; monitor yourself and coworkers.
- Block out direct sun or other heat sources.
- Use cooling fans/air-conditioning; rest regularly.
- Drink lots of water; about 1 cup every 15 minutes.
- Wear lightweight, light colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, or heavy meals.

Symptoms of Heat Stroke

- Dry, hot skin with no sweating.
- Mental confusion or losing consciousness.
- Seizures or convulsions.

What to Do for Heat-Related Illness

- Call 911 (or local emergency number) at once.

While waiting for help to arrive:

- Move the person to a cool, shaded area.
- Loosen or remove heavy clothing.
- Provide cool drinking water.
- Fan and mist the person with water.

FOUR COUNTY FACTS

BANDERA

U.S. Representative
Congressional District 21
Congressman Lamar Smith

State Senator, Senate District 19
Sen. Carlos I. Uresti

State Representative, HouseDistrict73
Rep. Doug Miller

Texas State Board of Education
SBOE District 1-- Mr. Rene Nunez

GILLESPIE

U.S. Representative
Congressional District 11
Congressman Mike Conaway

State Senator, Senate District 24
Sen. Troy Fraser

State Representative, HouseDistrict73
Rep. Doug Miller

Texas State Board of Education
SBOE District 5--Mr. Ken Mercer

KENDALL

U.S. Representative
Congressional District 21
Congressman Lamar Smith

State Senator, Senate District 25
Senator Jeff Wentworth

State Representative, HouseDistrict73
Rep. Doug Miller

Texas State Board of Education
SBOE District 5--Mr. Ken Mercer

KERR

U.S. Representative
Congressional District 21
Congressman Lamar Smith

State Senator, Senate District 24
Sen. Troy Fraser

State Representative, HouseDistrict53
Rep. Harvey Hilderbran

Texas State Board of Education
SBOE District 1-- Mr. Rene Nunez

Chapter Funding

I have overseen the HC TMN treasury for over a year and thought members may be interested to know about our expenses and how we fund our chapter and its mission.

Our largest expense is funding the new class training each year. The amount charged each class applicant is carefully budgeted to be certain that all expenses are covered by the application fee.

The chapter must also budget for operating expenses to cover room rentals for meetings and special projects sponsored by the chapter. Last year we sponsored signage for Fredericksburg Nature Center, Kerrville Schreiner Park Wildlife Water Guzzlers, and a sign for a native garden maintained by HC TMN volunteers in Fredericksburg.

Other important items such as memorial gifts, speakers gifts and honorariums, and an allowance for items that can't be anticipated must also be included in the chapter budget.

We do not ask members to pay dues, so how is money generated to fund operations?

Funds for projects and other items would not be possible without member donations. Many officers and committee members also donate their expenses. The biggest boost to our treasury is the chapter's share of profits from the Down by the Riverside Plant Sale. The shirt sales fundraiser chaired by Gracie Waggener was also helpful.

Our chapter is seeking 501(c)(3) non-profit status to make donations tax deductible. We will keep you posted when the paperwork is complete. In the meantime, donations are always appreciated. Be assured that the Board of Directors practices careful oversight whenever money is spent.

Thanks to members for all you do.

Martha Miesch, treasurer

MAGUEYS IN MAY

by Steve Lowe

While the month of April is florally linked to the emergence of the Easter Lily, May welcomes another flowering lily, the *Agave* or maguey (ma-gay) in Spanish.

Along with Y*ucca*, these dominant landscape specimens are sometimes referred to as "woody lilies" and are botanically kin to other true lilies. However, to most of us, *Agaves* look more like succulent cactus or artichokes on steroids.

Another common name for magueys is "Century Plant" referring to its latent flower habit. They are monocarpic, flowering only once, so it may seem like a 100 year event. Most species require no more than eight to ten years to mature and send up a mast-like flower spike. For some reason, perhaps our recent drought, I have noticed more magueys blooming this year than ever before.

Agaves are native from the southwest United States to Mexico and Central America. Over 200 species are known ranging in size from ten to twelve foot giants to pot-sized dwarfs. Most are easily grown in sunny xeric conditions with good drainage. In Texas, only four to five species are thought to be native.

Magueys have been valued and transplanted by man prior to historic cultivation. Young plants form basal shoots which can be broken off and transplanted. Carbon dating has suggested maguey processing for food, drink, and fiber by pre-Columbian settlements in Sonora and Arizona. Prior to colonizing Mexico's Central Valley, Aztecs consumed aquamiel (honeywater) and the fermented, pulque. Later, the Spanish refined the process to produce mescal and tequila. These beverages are extracts from the terminal leaf bud. Of greater economic importance, sisal, the fiber from the leaves, was found to make the finest rope known before synthetics. In the 1800's, *Agave sissalana* was exported to East Africa and the Philippines to expand its cultivation base.

Agaves make fine landscape subjects, keeping two design basics in mind:

1. Scale and placement – most species will grow to considerable size and are armed with potentially dangerous spines. Place them away from high traffic areas, removed from pets and children. Spines can be clipped with stout pruners.
2. Select species for cold tolerance or plan to shelter tender subjects.

Plants suitable for landscapes:		Plants useful as container subjects:
A. americana (several varieties)	*A. parryi (several varieties)*	*A. attenuate*
A. bracteosa	*A. salmiana*	*A. bracteosa*
A. filifera	*A. scabra*	*A. demettiana*
A. harvardiana	*A. schidigera*	*A. geminiflora*
A. lechuguilla	*A. striata*	*A. ocahui*
A. lophantha	*A. victoria-reginae*	*A. parrasana*
A. neomexicana	*A. weberi*	*A. schidigera*
A. ochahui		*A. victoria-reginae*

After The Fire

by Myrna Langford

The prescribed burn that escaped and spread through several ranches, including our ranch, occurred April 3, 2009.

Several times each week I walk the burned hill to observe the ecological effects of the fire and the progress of regeneration. My family is used to explaining my whereabouts by saying, "She's probably on the hill again." The progress is quite fascinating and in my mind it reinforces our TMN training.

Severe scorching of oaks on Langford property.

Observations

At this point, I've observed some burned flora and woodies to be vigorous, abundant, and seemingly coming back better than before. The rains were timely. I'm struck with how easy it is to see each plant when surrounded by black ash rather than the usual camouflage of leaf litter and logs. The returning plants include groves of buckeye, tickle tongue, wafer ash, legumes, milkweed, and the rare endemic Hill Country silverbush. The stands of eastern gamma-grass in the burned ravines are especially visible as are other native grasses which are highly adapted to fire.

Tree root sprouting and recovery begins immediately with the rains.

Grasses are highly adapted to fire.

I have not yet seen any unusual forbs or flame leaf sumac and Texas redbud, species favored by fire. Once black forms on the landscape are now root-sprouting hawthorn, Carolina buckthorn, agarita, and persimmon. We had regularly cut cedars and the few remaining trees were killed.

The large trees did not fare as well. We turned to Bill Armstrong, consultant and retired Kerr WMA burn specialist, for management advice. According to Bill, most of the species had budded-out prior to the fire. Spanish oaks are easily killed by fire after root reserves are depleted following budding. Live oak, Lacey oak, escarpment black cherry, Texas ash, and cedar elm are hardier and may re-leaf or root-sprout following the top kill that resulted from bases girdled by the fire. Other plants were severely scorched on one side. Root systems on the scorched side will weaken and these trees will be more susceptible to high winds. Damaged and weakened plants could be more vulnerable to insect damage. Bill tells us the rate and degree of recovery is highly dependent on weather conditions. Without tall trees, the overall appearance of the land is expected to change to a shrubby landscape – the typical and documented scene of the early 1800s - a result of frequent fires.

Hawks, tanagers, flycatchers, woodpeckers, and deer have been spotted. I plan to watch the wildlife more closely. During the fire we noticed the sky was solid with hawks and were afraid that some nests were destroyed. This may be true, but the real reason, I learned, is that the hawks were taking advantage of the disturbed rodents. Bill said he once had a bobcat following him as he burned an area in order to easily capture "dinner."

Needs

As TMNs we have learned that fire releases nutrients tied up in living and decaying plants, in effect fertilizing the soil. This has been emphasized by Bill, Dusty Bruns, and other specialists. Bill recommended that we continue to control grazing as livestock and deer prefer to graze or browse on these fragile burned areas creating intense pressure on new growth. We will install solar fencing around this "additional pasture" created by the burn for five to seven years to re-establish root systems and plan to cage selected trees to protect root sprouts from deer browsing. *Greatly* reducing deer population is advised.

TFS contract helicopter brings 900 gallons of water on each trip.

Existing fences that were burned or cut by the fire crew will be repaired. We must also reshape the steep bulldozed fire breaks to prevent erosion – this problem is one of the most critical issues resulting from the fire.

Opinion

The land will be improved, but we are sorry the uncontrolled fire has killed many trees. Liability insurance may cover most expenses for fence repairs, but does not provide coverage for tree loss. David questions why there is no restitution for natural resources when restitution exists for agricultural resources? Weather conditions and immediate post-fire monitoring procedures were less than ideal. It is our opinion that Texas Forest Service (TFS) fire crews and equipment used (bulldozers, water helicopters, and slurry and spotter planes) are immensely important and should be supported in legislative funding requests. We also believe TFS must follow guidelines in careful use of equipment, even in emergency situations.

The Langfords will continue to be involved in good land management practices working with related government processes and legislation - the responsibility of all. First-hand we've seen how proper burn procedures save lives, property, and natural resources. We thank chapter members for their continued support.

Invaders of Texas
a Citizen Science Program to Detect and Report Invasive Species

Do you want to help stop the spread of invasive species?

Volunteer "citizen scientists" are trained to detect the arrival and dispersal of invasive species in their local areas.

The premise is simple. The more trained eyes watching for invasive species, the better our chances of lessening or avoiding damage to our native landscape.

Now anyone can now become an Invaders of Texas Citizen Scientist with our Voyager Program!

The new Voyager Program is for those who have wanted to join but have not been able to attend a training workshop.
The Voyager program consists of 8 online training modules. Once completed, you will be able to enter data into the Early Detection database.

Your hours in the field observing and reporting destructive invasive species within your local chapter's area count toward volunteer hours with the Texas Master Naturalist Program.

To get started, please visit http://texasinvasives.org/invaders/become.php.

For more information about invasive species in Texas visit www.texasinvasives.org.

Project ID CC-10-A Project Coordinator Phyllis Muska, 830-864-5747

The Butterfly Theater

Kerrville – Schreiner City Park

Project KR-01-B

by Cathy Downs

The Butterfly Theater at Kerrville - Schreiner Park was designed and installed in 2000 by the Friends of Kerrville – Schreiner State Park. Much has happened since 2000. The park is now a city park and the friends group disbanded since it was established to support a state park. Ernest Tremayne was responsible for the vision, design, and installation of the garden and the irrigation system. Sadly, he passed away in 2008.

The garden is approximately 104 feet square and is enclosed by a deer proof fence. A fire ring with seating sits in the center of the garden and is used by scouts and other interested parties. A circular raised bed separates this area from the remainder of the garden. A circular crushed granite pathway further separates this area and allows for viewing the garden on all sides.

The vegetation is almost entirely Hill Country native plants - trees, shrubs, annuals, and perennials. Nectar and larval plants have been donated by Texas Master Naturalists, the Native Plant Society of Texas, local nurseries, and private citizens. Milkweed species, used for data collection, are marked by orange flags. In addition to the butterfly population expect to see a variety of birds, including hummingbirds, drawn to the habitat.

In 2006 the garden was certified as a Monarch Way Station by the Monarch Watch Program, an educational outreach program based at the University of Kansas. A group of volunteers began to collect data for the Monarch Larval Monitoring Project in 2007. This citizen science project, sponsored by the University of Minnesota, involves volunteers from across the United States and Canada in monarch research by collecting data on larval monarch populations and milkweed habitat.

The Butterfly Theater provides several volunteer opportunities:

- The garden is maintained by a group of dedicated volunteers and native plant enthusiasts. This group prunes shrubs and trees, weeds flower beds, collects seed, digs and propagates new plants, and contributes to overall design. Workdays are Thursdays, usually beginning after 8 a.m. and continuing two to three hours. Volunteering with this group provides a great opportunity to learn about identification, care, and cultivation of native plants while contributing to the maintenance of the garden as a whole.

- The MLMP meets on Thursdays at 9:00 a.m. Volunteers in this group collect data on milkweed, monarch larvae, and monarch eggs. Data is electronically sent to the University of Minnesota where it contributes to research conducted on monarch population health and movement.

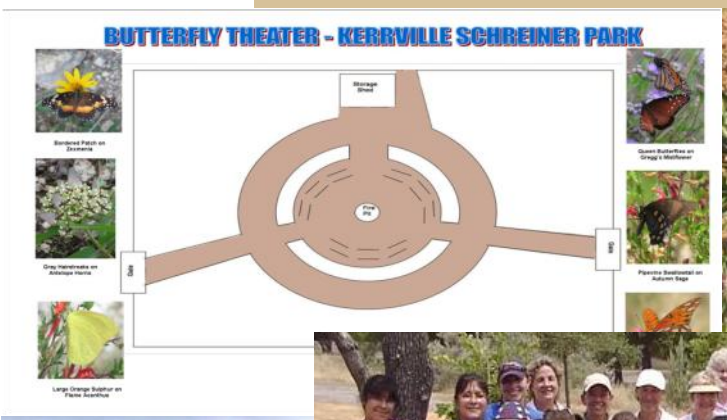
- The garden is historically included in the North American Butterfly Association (NABA) annual July 4th Count for Kerr County Circle. Volunteers count type and number of butterfly species for submission to the NABA database.

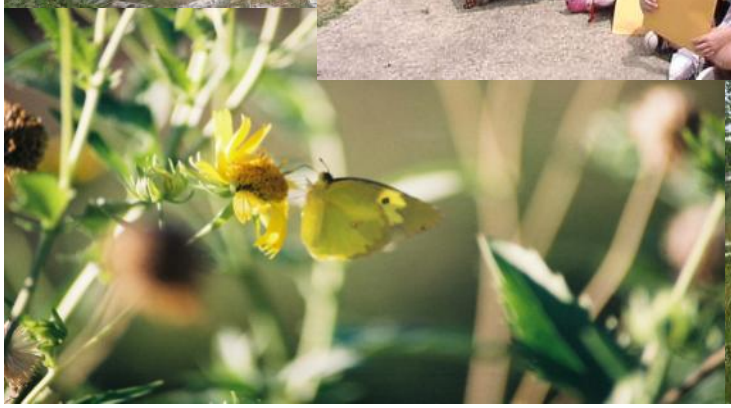
For information on volunteering at the Butterfly Theater email Cathy Downs at mzdowns@hctc.net or call 830-377-1632.

For more information on the MLMP contact Ginny de Wolf at dewolf@ktc.com or 830-896-2545.

To volunteer for the NABA count email Cynthia Johnson at carljohn@ktc.com or call 830-895-5173.

THE BUTTERFLY THEATER, KIDZ CAMP, AND VOLUNTEERS





Check it out

http://www.cocorahs.org/

Community Collaborative Rain, Hail and Snow Network

"Volunteers working together to measure precipitation across the nation."

A terrific resource for precipitation maps and info.

Chapter member Myrna Langford is a volunteer observer from Kendall County.

You can help, too.

Sign up as a CoCoRaHS Volunteer Observer.

MAKE YOUR RESERVATION NOW

October 9, 10, 11

Wild Country Retreat

at Guadalupe River State Park

Make your reservations at Guadalupe River SP for our fantastic chapter camp out.

There are campsites with water for tent campers, campsites with water and electricity to accommodate recreational vehicles and trailers, and walk-in tent campsites with water in the area.

Drinking water and sanitary facilities are provided at the picnic and camping areas. Restrooms at the water or water and electricity campsite areas have showers.

Check availability/make reservations for Guadalupe River S.P. here.
You can also make e-mail reservations, fax reservations or phone reservations.

GO AHEAD - RESERVE YOUR CAMPSITE TODAY!

Email Gracie Waggener or Cathy Downs for more information.

Through MY Lens

2009 Photo Contest

Capture your life in Boerne Parks through photos...

Photographers of all ages and areas are welcome!

- ★ Best Overall - $300
- ★ Faces of Boerne - $150
- ★ Landscape, Structures, Wildlife - $150
- ★ Community Events - $150
- ★ Athletic Events - $150

Entry Deadline: 12/31/09

What do you see through YOUR lens?

Download entry forms & information here

Contact Boerne Parks and Recreation
830-249-9511 or tbellos@ci.boerne.tx.us

Plan to Attend

Texas Master Naturalist
Annual Meeting and Advanced Training

October 23-25th, 2009 Mo-Ranch Hunt, Texas

Help out

Volunteer needs at the annual meeting

Volunteer needs include assisting with check-in, AT room monitors/hosts, Texas AgriLife Bookstore help, and more.

Capital Area Chapter members to lead Silent Auction

Anyone can gather donations.
Proceeds support partial scholarships to the event and speaker fees.

Think about it

Sponsors/Organizers for evening campfires

Campfires may be sponsored by individuals, one chapter, or a group of chapters. Typical cost is $25.

Sponsors/ Committee Chair for Sunday devotional

7-7:30 am, devotional or inspirational time for those wishing to participate.

Contact Michelle Haggerty at mhaggerty@ag.tamu.edu for more information.

Fragrant sumac, *Rhus aromatica*

Thanks, Roger!

Our thanks go to Roger McRoberts.

Roger contributed his 2008 class tuition refund to the chapter.

If you would like to support the chapter with a donation contact Treasurer Martha Miesch.

From Tom Collins

I photographed a very dark Bordered Patch along side some very typical Bordered Patches at Riverside Nature Center while conducting our weekly fauna census.

Terry Doyle, a regional expert and member of the Lepidopterist Society, has pointed out that the almost black Bordered Patch is a sub-species of the Bordered Patch, Chlosyne lacinia crocale (W.H. Edwards 1874) which is found much farther west – Mexico, New Mexico, Arizona, and Utah. There has been a lot of discussion going on about this butterfly – we are waiting to hear from some of the professional lepidopterists. What little research I have done shows this sub-species is a desert dweller – perhaps an omen to our Hill Country.

Terry asked me to try to capture it, and if time permits I will see if it can be relocated. RNC is always good for a surprise – digital cameras should be a requirement for all folks doing census work.

We added a butterfly sub-species and a dragonfly (Halloween Pennant) on the same day to our checklist. A new moth photographed has preliminary identification as Catocala maestosa - Sad Underwing . A fun day…

RNC Fauna Census Project

Over the past two years the Texas Master Naturalist project documenting the fauna found at Riverside Nature Center has revealed the importance of this small urban nature center.

Of particular importance are the 76 species of butterflies plus one sub-species found at RNC.

Of the 76 species documented during the project period, five species are county records.

The most recent find of a sub-species of the Bordered Patch, Chlosyne lacinia crocale *(W H Edwards 1874)*, illustrates that citizen science projects play an important role in advancing our knowledge of local fauna and flora.

There is no better way for a naturalist to develop and enhance field identification skills and protocols than to participate in census work.

I would like to invite anyone interested in learning and assisting in this project to contact me.

Tom Collins
RNC Fauna Census Project leader
830-634-3236

Chlosyne lacinia crocale

The Back Porch

Water and wildlife in the marketplace

by Matt Wagner

Texas contains nearly 200,000 miles of streams and rivers. Thirteen of the state's 15 rivers flow through metropolitan areas supplying water for more than 22 million people. Twenty percent of those people depend on a single river: the Trinity.

To supply water for people while balancing the needs for wildlife, positive things must happen on the landscape - 95% of which is in private hands.

Consider the relationships of desert fish in a West Texas riparian area, migratory waterfowl dependent upon our playa lakes, endangered salamanders in hill country springs, and the majestic whooping crane whose existence depends on fresh water flows to our bays. These are only a few examples of the fundamental relationship between free-flowing water and wildlife. We could name many, many more.

Each scenario depends on the fate of raindrops as they journey from sky to sea. A raindrop has three options once it reaches the earth's surface: It can flow across the ground, it can seep into the ground, or it could evaporate. The direction and rate of flow is directly influenced by managers of the land. Rain captured by a vegetated surface seeps downward and makes the grass grow. This in turn kick-starts the life cycle for millions of insects forming the base for a pyramid we call wildlife diversity.

As water continues its downward course past the root zone of grass, wildflowers and trees, it is stored in vast underground basins called aquifers. The Ogallala Aquifer covers parts of 8 states. Ninety-six percent of the water from the Ogallala is used for irrigated agriculture. Some landowners are leasing or selling their groundwater rights to water companies. Under this scenario, the amount of water pumped to grow cotton could be transferred to an urban area because of market demands. There are many questions: what are the impacts to agricultural economies, the farming life style, and alternative land uses? Would the land ultimately revert to short grass prairie?

The Edwards Aquifer is in the news again. During the last legislative session, pumping limits were raised to over 500,000 acre feet per year. Scientists, policymakers, and lawyers are struggling to balance the water demands of a rapidly expanding human population with environmental flows for eight endangered or threatened species including two salamanders, two fish, three invertebrates, and a plant.

But the issue is not about salamanders and cave bugs. It is about the lifeblood of river systems that support a multi-million dollar tourism industry, sustains our bays and estuaries rich in marine life, and meets the demands of a swelling human population.

An acre-foot of water equals 325,851 gallons. At my home in Austin, that amount of water would cost $2,110.65 on my monthly water bill. The economic value of that same amount of water to fish and wildlife cannot be measured. What would the people of Texas be willing to pay for free-flowing rivers and the myriad of life depending on them?

Abundant, clean water in Texas is a public by-product of functioning ecosystems driven by private landowners. Placing a market value on this service is our greatest challenge as the debate surrounding limited water supplies intensifies. There are no easy solutions, but everyone has a stake in the outcome. Part of the solution lies in sacrificing the status quo for the greater good. And in the end, it is the people on the land that determine the fate of a raindrop, and we'll need to consider them in the economic equation as well.

Matt is the director of the Wildlife Diversity Program working out of Austin.

This article appeared in Eye on Nature Spring 2009 - a publication of the Wildlife Division - TPWD
Reprinted with permission








Chapter Picnic
at
James Kiehl
River Bend Park




KERRVILLE NABA FINAL RESULTS

11 Observers found 30 species and 203 individuals in the Kerrville NABA Count.

The species total and individual count was about the same as 2006 and 2002.

There were no outstanding finds.

The Marine and Ceraunus Blues were repeats from 2002, but not seen since the count was restarted.

Hairstreaks and Skippers species and individuals were low.

Thanks to all who braved the heat, bugs and my persistent call to "let's move on."

Tom Collins, compiler

OBSERVERS

Cathy Downs
Cynthia Johnson
Sandra Magee
Scott Magee
Sandy Peña
Kevin Pillow
Pat Ritter
Donna Scofield
Gracie Waggener
Harriet Warren

Email editor for complete count data.

From Cathy Downs

Final submitted NABA count for Boerne.
Thanks to all who participated!

NABA Count Date 6 20 09

	CNC	BCL	WR	JKP	Tot
SWALLOWTAILS					
Pipevine Swallowtail	26	1		3	30
Black Swallowtail		1			1
Giant Swallowtail		2	1		3
Spicebush Swallowtail	1				1
WHITES					0
Checkered White		1	6	1	8
SULPHERS					0
Southern Dogface			1		1
Large Orange Sulpher	1	2		2	5
Lyside Sulpher	1	1		5	7
Dainty Sulpher	2	1	2		5
HAIRSTREAKS					0
Gray Hairstreak	1	1	2	1	5
BLUES					0
Reakirt's Blue	6	1	4		11
BRUSHFOOTS					0
Gulf Fritillary	1	1	1		3
Variegated Fritillary	1				1
Bordered Patch			1		1
American Lady	1				1
Common Buckeye	2	2	3		7
MILKWEED BUTTERFLIES					0
Monarch		1			1
Queen	1	5	5	2	13
SPREADWING SKIPPERS					0
Northern Cloudywing	1	1			2
Common/White Checkered		1	1		2
GRASS SKIPPERS					0
Clouded Skipper	3				3
Fiery Skipper	1	1	1	3	6
Sachem	1		1		2
Nysa Roadside Skipper	1				1
NEW BUTTERFLY!					0
Theona Checkerspot			1		1
TOTAL	**51**	**23**	**29**	**17**	120
TOTAL ALL SPECIES	**25**				
TOTAL ALL QUANTITY	**120**				

CNC = Cibolo Nature Center
BCL = Boerne City Lake
WF = Wiedenfeld Ranch
JKP = James Kiehl Park

TEXAS Master Naturalist™

Hill Country Chapter

Lindheimera texana: Texas Star

Hill Country Texas Master Naturalist
P.O. Box 293972
Kerrville, TX 78029-3972

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VISIT OUR WEBSITE!
grovesite.com/tmn/hcmn

We meet the fourth Monday of each month (excluding December) at 7:00 pm at Riverside Nature Center
150 Francisco Lemos Street in Kerrville.
Our meetings are open to everyone.

Texas Master Naturalist mission:

To develop a corps of well-informed volunteers to provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities.

The Texas Star newsletter is a monthly publication of the Hill Country Chapter of the Texas Master Naturalist program.

News, comments, information, and ideas are always welcome.

Please contact Kristie Denbow, editor, denbow@gvtc.com.

TEXAS Master Naturalist™

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