

# THE CEDAR POST

SEPTEMBER 2011

News and Information for the Texas Hill Country

VOLUME 1, ISSUE 1

## VIEW FROM THE FIELD

**Welcome to the Cedar Post!** As an image of neighbors leaning on the backyard rail-fence exchanging bits of information might nostalgically come to mind, so is the intention of your local TPWD biologists and technicians in bringing this newsletter to you. Just as daily conversations touch repeatedly on significant topics, this newsletter will offer information to help you better manage your property, habitats, and animal populations. One thing is certain, we are all resource managers mindful of our individual situations – but we are all in this together. The current drought that rivals that of the 1950's will certainly impact numerous events such as habitat quality and availability, water resources, quail and turkey reproduction, fawn production and survival, antler quality, and small and non-game resources to name a few. Trying times as these make us better conservationists. Landowners involved in management schemes that include monitoring and altering deer numbers, controlling cedar, and managing livestock operations will be better able to endure this drought than those not conserving their resources appropriately. The drought, coupled with devastating fires in some areas, might dramatically alter animal populations in various ways – but all is not lost. When rain does eventually make it back to parched rangelands, recovery is most certain and sometimes in spectacular ways. Until then, your local biologist/technician can help you determine issues for this upcoming hunting season: selective buck harvest, reduce or build doe numbers, supplemental feeding and more.

Our newsletter publication will touch on issues in wildlife management; compile updates on research conducted in the Hill Country; bring you news from our Wildlife Management Areas (WMA's); describe different species of flora and fauna; shed some light on suspicious wildlife activity; inform you of upcoming events and throw in a few other fun topics as well. Just as the Edwards Plateau District possesses a rich diversity from the Llano Uplift and the Balcones Escarpment on the east to the drier limestone formations of the Stockman's Paradise on the Pecos and Devil's River watersheds on the west, so do our unique landowner-cooperators whom we invite to share in this newsletter. We will attempt to have informative articles for MLDP cooperators, Wildlife Tax Valuation applicants, and anyone interested in Edwards Plateau wildlife information. Should you have suggestions for future topics of interest, please give our district office personnel in Kerrville a holler with your request.

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Editors:

Mary Humphrey

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Click on web links found throughout the newsletter to go directly to the associated site

## DEER CENSUS *by Ryan Reitz*

I like to think I can save time by pulling out my pocket knife and turning and twisting that pesky little screw back into place. Truth is, I know I have a screwdriver to fit it, but if I hold my knife just right I may not have to go get it. We all know what happens next - it doesn't work out as planned and I stomp off to the toolbox anyway. Sound familiar? We often make the same unwise choices in deer management. We use tools that are handy, but were developed for use in a different situation. The situation I refer to involves smaller, high-fenced populations of white-tailed deer. There is an irreversible trend in Texas where property size is shrinking and fences are growing taller. A new management scenario is evolving which may generate the need to re-evaluate the management tools available to us.

Regardless of ranch size, white-tailed deer management involves the same basic principles. Population size, sex ratio, recruitment and age structure are all important considerations when making management decisions. To measure these parameters we have a vast array of methods to choose from, but each has its own applicability to specific situations. The suitability of these methods to yield accurate results is critical when managing a small, enclosed population of deer.

TPWD biologists began a 3-year study (2006-2008) to evaluate survey techniques within a 528 acre high fenced enclosure that contained a known population of white-tailed deer. Each year, deer were trapped, marked and relocated to the study site on Mason Mountain Wildlife Management Area during late winter and early spring. Surveys were conducted in August and September of each year, and then all deer were removed afterward to determine the actual population in the enclosure. Many techniques were evaluated which included spotlight, stand (hunting blind) counts, game cameras and helicopter surveys. Each year we compared estimated population results with the actual population of deer and evaluated the time required to perform each method.

### SURVEY METHODS

We conducted traditional spotlight surveys on a predetermined route approximately 45 minutes after sundown. We used 1 driver and 2 observers equipped with 100,000 candlepower spotlights. Spotlight routes were conducted four times in late August, with no bait (corn) present.

We conducted helicopter surveys in 2007 and 2008 with a privately contracted helicopter pilot and 1 observer. The entire study area was surveyed in the morning and in the evening using transects spaced approximately 200 yards apart. The total deer observed served as the population estimate.

Blind count and game camera survey methods required bait in order to be useful. We utilized 5 spin-cast corn feeders



evenly distributed across the pasture that were programmed to feed in the morning and in the evening. Deer became accustomed to the feeders for a minimum of 14 days before surveys began.

For the blind count method we had 1 observer in each blind recording the number and sex of deer visiting baited sites for 2 hours in the morning and 2 hours in the evening. The blind count estimate was the combined sum of all unique observations during each survey period. We repeated surveys 4 times in the evening and 4 times in the morning. The mean of the 4 surveys served as the population estimate. Since all deer were marked we were able to determine if deer visited multiple baited sites and if observers were able to accurately record only unique deer.

Digital game cameras were operated for 14 days at the baited sites. We analyzed the photographs and determined the number of unique branch-antlered deer and calculated the number of spikes, does and fawns from photographic occurrence as published by Jacobson et al. (1997) "*Infrared-triggered cameras for censusing white-tailed deer*".

For example, we identified 20 different branch-antlered bucks from 3,195 photographs collected in 2007. We counted 1,349 branch-antlered bucks and 64 spike-antlered bucks in the photographs which equaled a .047 spike-antlered buck occurrence or "factor". We applied that factor to the number of unique branch-antlered bucks to estimate the total number of bucks in the population.

$20 * 0.047 = 0.94$  which we rounded to (1 spike)

This method calculated 1 spike in the population and estimated a total of 21 bucks. This process was repeated in a similar manner to determine the doe and fawn population estimate.

**RESULTS**

Our results demonstrated no single survey method was superior in estimating herd density across all 3 years (see table). We observed both underestimating and overestimating of the true population with spotlight and blind counts in the evening (PM). Morning (AM) blind counts, game cameras and helicopter surveys underestimated density in all 3 years. Helicopter surveys ranged from 33-65% accuracy and tended to yield the lowest estimates- except in 2008 when it exceeded camera estimates. Morning helicopter surveys resulted in a slightly higher estimate than evening surveys. Blind counts had an accuracy rate of 53-95% and camera surveys ranged from 51-89%.

<b>Deer Density Estimate Results</b>			
	2006	2007	2008
	<b>Actual = 59</b>	<b>Actual = 63</b>	<b>Actual = 48</b>
	Estimate	Estimate	Estimate
Spotlight	64.3	45.8	68.2
Blind AM	53.3	33.3	45.8
Blind PM	47	43.3	50.5
Camera	30	56	29
Helicopter AM	-	26	31
Helicopter PM	-	21	27

Approximately 1 out of every 7 observations (15%) of deer in blind surveys was double counted (same deer recorded at more than one blind). However, observers were able to identify 99% of deer that had previously visited their bait site. In summary, deer that visited multiple blinds were recorded more than once, but deer that returned to the same blind were not.

For estimating sex ratios, blind counts, particularly in the morning (AM), were most accurate. Spotlight surveys tended to be biased toward does, and conversely the camera survey showed bias toward bucks. Helicopter sex ratio estimates were variable and showed a bias toward does in 2007 and a bias toward bucks in 2008.

Given these results, the time required to conduct each survey method becomes even more important. The two most time consuming techniques were the camera and blind surveys. Although camera surveys took a relatively short time to setup (6 hrs), many hours were required to examine and identify deer in the pictures (160 hrs). Conversely, many hours were required to collect data in the field for blind surveys as 5 observers were needed for each survey (40 hrs), but survey hours for data analysis were few (1 hr). Spotlight and helicopter methods required much less survey effort.

<b>Sex Ratio Estimate Results (Does/Buck)</b>			
	2006	2007	2008
	<b>Actual 1.3</b>	<b>Actual 1.7</b>	<b>Actual 1.4</b>
Spotlight	2.4	2.3	2.4
Blind AM	1.5	1.6	1.3
Blind PM	1.4	1.4	1.3
Camera	0.6	1.6	0.7
Helicopter AM		1.9	0.8
Helicopter PM		4.8	0.8

Simply choosing a tool that is speedy, handy and familiar (remember that pocket knife?) may not be wise when deciding how to survey a property. Although we discovered some variability in all methods, some positive attributes were evident. The camera estimate was effective in capturing buck images and allowed us to identify 98% of branch antlered deer by day 7 of the 14 day survey. Although blind surveys resulted in biased population estimates in any given year, observed sex ratios were more consistent across years than all other methods. These results indicate that perhaps a combination of these two methods may provide the basis for a better way to survey deer on small acreages and that this type of survey becomes increasingly more advantageous as ranch size decreases.

<b>Man-hours</b>	
	<b>Survey Hours</b>
Helicopter	2
Spotlight	27
Blind	41
Camera	166

While an improved estimate may be feasible, our data indicate that complete accuracy and precision may not be possible. Survey limitations need to be thoroughly considered when working with population estimates. Moreover, these estimates should never become the sole reference on which to base deer management decisions. Other factors such as harvest data trends (age, weight and antler measurements) and habitat evaluations should be incorporated into the decision making process. Knowledge of both the limitations in the available tools and the required time investment will assist managers in not only choosing the best survey method for their ranch, but also aid them in interpreting the data they obtain.

*Ryan Reitz is a TPWD biologist at Mason Mountain WMA near Mason, TX*

## FROM THE PASTURE

**Texas Horned Lizard**

by Trey Carpenter

Our state reptile is the Texas Horned Lizard (commonly called the 'horny toad'). Their main food source is harvester ants whose big 3-6' wide circular mound is cleared of vegetation. There are 14 species of Horned Lizards (8 of them in the continental US), and 3 of which can be found in Texas – the familiar Texas Horned Lizard, the Mountain Short-horned Lizard, and Roundtail Horned Lizard. The Texas Horned Lizard is identifiable from the other Texas species by the two rows of horizontal spines on either side of the abdomen and two long horns on the back of the head. Horned Lizards hibernate and shortly after emerging from their winter nap the females lay up to 37 eggs in a 5 to 7 inch deep burrow. Horned Lizards have disappeared from half of their original range due to habitat loss, spread of domestic cats and dogs, spread of imported red fire ants, pesticides/herbicides, and pet trade collection. It has been illegal to sell them or export them from Texas since 1967.



© Max Traweck TPWD (retired)

For more information on horned lizards see:

[http://www.tpwd.state.tx.us/learning/texas\\_nature\\_trackers/horned\\_lizard/](http://www.tpwd.state.tx.us/learning/texas_nature_trackers/horned_lizard/)

*Trey Carpenter is a TPWD biologist stationed in Burnet, TX*

**Blueberry Juniper (Cedar)**

by Evan McCoy

Cedar is known all too well, but probably not fully appreciated. Most of the time this tree is seen in a negative light, but the fact is that all native plants have a place in wildlife habitat. Yes, even cedar has benefits. Cedar is an evergreen and provides excellent cover year around either to elude a potential threat or

to simply escape from summer heat. Deer do not readily prefer to browse on cedar, but they actually take a bite of it from time to time. In addition, the female cedar plant produces the berries which are frequently eaten by various birds and mammals. Cedar also holds a specialized role for the endangered Golden-Cheeked Warbler which builds its nest almost exclusively from the bark. Even though TPWD biologists rightfully make recommendations to control cedar, they rarely suggest eliminating it from the landscape. Animal diversity is dependent on plant diversity. Cedar, in moderation, contributes to a healthy ecosystem.



© Evan McCoy TPWD

*Evan McCoy is a TPWD biologist stationed at the Kerr WMA*

**MLD PERMITS** by Mike Krueger

The 2011-12 MLDP season opens October 1<sup>st</sup> for levels 2 & 3. Now is the time to make preparations for this year's season. In summary, the requirements for participation include:

- Operating under a TPWD-approved wildlife management plan.
- The accomplishment of a minimum number of habitat management practices, depending on the permit level.
- Submission of current year deer population data. Coordinate with your local TPWD wildlife biologist/technician regarding such things as acceptable census techniques and effort, type of data to provide, and suggested deadlines for submission of data to ensure timely issuance of permits.
- Collection of complete harvest data from every deer harvested. Your biologist/technician can provide a log to record harvest data, or one can be found on the TPWD MLDP website. Remember that participation in the MLDP program requires the submission of harvest data by no later than April 1, 2012. You can submit your harvest data online into the Texas Wildlife Information Management Services (TWIMS) or to your TPWD biologist/technician.

MLDP issuance will again be internet-based through TWIMS and permits mailed from TPWD Austin headquarters to the landowner, or designated agent, or your cooperating TPWD biologist/technician. TPWD field staff will not have MLDP's in their possession. You will need to plan accordingly to have permits issued in a timely manner from Austin, so let your cooperating TPWD biologist/technician know your permit needs at least 14 days in advance of when you will need them. Complete details of the MLDP program can be found on the TPWD website at:

[http://www.tpwd.state.tx.us/business/permits/land/wildlife\\_management/mldp/](http://www.tpwd.state.tx.us/business/permits/land/wildlife_management/mldp/)

*Mike Krueger is the TPWD District Leader stationed in Kerrville, TX*

## IN A NUTSHELL

### Rattlesnake Myth by Mary Humphrey

An oft-heard myth these days suggests that rattlesnakes are not rattling before striking. The popular presumption is that lightning-fast evolution is naturally selecting for snakes with the defense behavior to remain quiet and undetected. This is thought to be a result of either humans killing all the rattlers that rattle before striking or feral hogs discovering and eating the noisy vipers and leaving the quiet ones alone. Another theory is that rattlesnakes and bullsnakes are interbreeding and producing a hybrid without rattles – looks like a bullsnake (no rattle), but is venomous like a rattler.

Truly, rattlesnakes have not changed much at all – mostly they are relatively docile animals that don't rattle much anyway. TPWD biologists and scientists in herpetological academia agree with Michael Price, Director with the San Angelo Nature Center and team leader of an expedition that studied rattlesnakes in 2009 across west Texas, New Mexico, and the Mexican states of San Luis Potosi, Coahuila, and Nuevo Leon who said that of over 300 rattlesnakes encountered during various times of day and night less than 10% ever rattled at research assistants. He also refuted the feral hog assumption by stating, "there are very few feral hogs in Mexico". Regardless of a snake's tendency to rattle you should always be cautious of the aggressive ones that may strike.

*Mary Humphrey is a TPWD biologist stationed in Sonora, TX*



© Max Trawcek TPWD (retired)



© Evan McCoy TPWD

### Fuzzy Cactus by Evan McCoy

This white fuzzy spot found on the state plant of Texas, the prickly pear cactus, is actually a protective secretion of the cochineal scale insect that feeds on pear cactus pads. As added protection the insect produces an acid (carminic acid) to discourage predators. This acid is deep red in color and can be seen if there is injury to the insect or its eggs. The acid was once used as dyes by Native Americans and Aztecs. As much as 7 million pounds of dye were produced each year at the height of cochineal production in the 1870's. Cochineal production could peak again and replace current synthetic red dyes that have been found to pose potential health risks.

### Venison Recipe by James Rice

This recipe is easy to follow and sure to please!

You will need 2 to 3 pounds of venison steaks, chops or a roast cut into 1" thick steaks.

The marinade: Get a gallon plastic sealable bag and combine ½ Teaspoon powdered meat tenderizer, 1 Teaspoon liquid smoke, 2 Tablespoons fresh lemon or lime juice (can substitute concentrated), and 1 Cup water or cola.

Place meat in the bag, close, and place in the fridge overnight.

The dry rub: Combine these seasonings and mix well – 2 Tablespoons salt, 2 Tablespoons course ground pepper, 2 Tablespoons paprika, 2 Tablespoons brown sugar, 2 Tablespoons granulated garlic, 1 Teaspoon onion powder, 1 Teaspoon crushed parsley flakes, 1 Teaspoon five spice powder, 1 Teaspoon celery seed, ½ Teaspoon cayenne pepper and ½ Teaspoon hickory smoke salt.

After marinating the venison overnight, drain and blot dry. Then tenderize with a fork or multiple blade tenderizer. Sprinkle your prepared dry rub on both sides of the meat and massage in. Grill over coals to medium rare to medium, being careful to not over-cook which makes for a very dry piece of meat! When done, brush with melted butter and serve with your favorite sauces.

*James Rice is the Regional Interpretive Specialist for TPWD*

## FIELD NOTES

News and Information from our Wildlife Management Areas

In each issue of The Cedar Post we will be providing an article with news and information from our Region 2 Wildlife Management Areas (WMA's). These three areas, the Kerr WMA, Mason Mountain WMA and the Muse WMA collectively make up the Edwards Plateau Ecosystems Management Project (EPEMP). These sites, owned and operated by the Wildlife Division of TPWD, were obtained for the purpose of providing a land base on which to conduct scientific investigations involving wildlife species and management activities in Central Texas. These areas not only serve as our experiment stations, but also as demonstration sites that enable the general public to have a firsthand look at the results of various management practices recommended by our biologists. In future issues we will be providing updates on the latest research, management techniques, meetings and publications pertaining to wildlife management in Central Texas. In this current issue we wanted readers to become familiar with their local WMA's and what each has to offer.

***Donnie Frels, Project Leader for EPEMP***

### KERR

The Kerr Wildlife Management Area (KWMA) consists of 6,500 acres located at the headwaters of the Guadalupe River. The Area was purchased in fee title by the State of Texas in 1950 under the Pittman-Robertson Act using Federal Aid in Wildlife Restoration Program funds. At the time of purchase the KWMA was overgrazed by livestock and heavily dominated by blueberry juniper (cedar) which resulted in poor range health. White-tailed deer was the initial management focus, but a holistic approach was taken that resulted in improved habitat for all wildlife. Several tools were carefully implemented. Cattle grazing was applied in an intensive rotational system that worked to improve wildlife habitat. Cedar was selectively cleared in order to promote plant diversity and abundance. Deer populations were reduced to the lands natural carrying capacity. The KWMA realized the tremendous benefits of prescribed burning in 1979 and was one of the first in the Hill Country to incorporate fire back into the natural system. All of these practices helped to shape the landscape and remain an integral part of the present management operation.

In addition to this habitat management program, the KWMA also maintains the only penned deer research facility owned by TPWD. Constructed in 1974, this 16-acre facility has been used in a series of progressively complex research projects designed to investigate the effects of nutrition and genetics on antler and body development in white-tailed deer. Presently KWMA is constructing an enclosure for developing, evaluating, and demonstrating feral swine control techniques.

The Area boasts a diversity of wildlife typical of the Edwards Plateau (EP) as well as healthy populations of more rare species. Bird watchers come from all over the world to see endangered songbirds such as the black-capped vireo and golden-cheeked warbler. The Kerr WMA also supports a well managed, native deer herd which exhibits exceptional antler quality. The public can apply for hunting opportunities, simply drive through and tour the area on their own or attend one of the scheduled tours and educational programs offered throughout the year.



## MASON MOUNTAIN

Located in the Llano Uplift, Mason Mountain Wildlife Management Area (MMWMA) was a working exotic game ranch before TPWD acquired the tract in 1997. Soon after acquisition TPWD began reducing the exotic and native animal populations to desirable levels. Today, 6 species of resident exotics provide excellent opportunities to study the effects of African ungulates on local habitat and interactions between exotic and native wildlife. The resources of MMWMA are dedicated to research concerning the ecology of the Central Mineral Region and its application to wildlife management on private lands. Area biologists have conducted research projects investigating diets of exotic species, deer breeding behavior, deer census techniques and the re-introduction of the javelina.



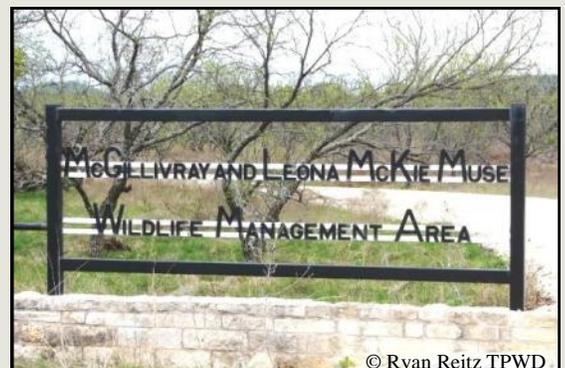
© Mark Mitchell TPWD

The Area is situated on the boundary between the Central Mineral Region and the Edwards Plateau, and as such, a variety of wildlife habitats are represented. About two-thirds of the Area consists of granite-derived soils supporting a community of post oak and blackjack oak. The remainder of the Area is dominated by live oak and Texas oak on limestone-derived soils. The topography of the Area is rough, with steep canyons, caliche hills, and granite outcrops. An 8-foot fence to facilitate scientific investigations encloses the Area. Deer populations are maintained at approximately one deer to 12-15 acres, substantively lower than much of the Hill Country.

MMWMA provides both guided and unguided public hunting opportunity for native and exotic game. Exotic species include kudu, gemsbok, scimitar-horned oryx, waterbuck, and sable. There are also 540 acres of public dove hunting land open during September with sunflower and wheat planted in suitable soil sites. Educational programs are held periodically.

## MUSE

The Muse WMA is located 15 miles northeast of Brownwood, TX in Brown County. The 1,972 acre area is considered to be in the southern Cross Timbers and Prairies ecoregion, although the majority of the area is encompassed by a large ridge of limestone rising above the prairie floor. There is a diversity of plants, but the dominant vegetation communities are oak-juniper woodlands, post oak-mesquite flats, and small creeks with hardwood bottoms.



© Ryan Reitz TPWD

The area was donated to TPWD by Leona and McGillivray Muse in 2000, making it the newest wildlife management area. Since its acceptance, work activities have centered on infrastructure development and baseline wildlife inventory collection. In a short period of time, TPWD has completed construction on a headquarters office/maintenance building and a navigable road system, and is in the early stages of construction on several other improvements. In 2008, the area began hosting public deer hunts and experiencing excellent success for both youth and adults. Recently, the WMA staff has developed supplemental water stations and has conducted prescribed burns to improve habitat.

## ON THE HORIZON

### **Kerr Wildlife Management Area 1<sup>st</sup> First Friday Tours**

When: Friday September 2 and October 7, 2011, 1-5 pm

Cost: Free

Where: Kerr WMA

For more information contact Kerr WMA at 830-238-4483

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### **Why Hunting is Good for Habitat and Deer**

When : Thursday, October 13, 2011 6-7:30 pm

Cost: Free

Where: Cibolo Nature Center (CNC) Boerne, Texas

Register/FMI: CNC 830.249.4616 or through their website [www.cibolo.org](http://www.cibolo.org)

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### **SHORT COURSE: Habitat Management for Landowners with Existing Wildlife Tax Valuation**

**Water & Woodland Management for Wildlife** *plus* Q&A with Regional Appraisal District representative

Friday, November 11, 2011 9 am-12:30 pm

#### **Streamside Management**

November 19, 2011 9am-5pm

Cost: \$30 for Members \$35 for non Members (Includes Lunch)

Where: Cibolo Nature Center Auditorium (CNC) Boerne, Texas

Register/FMI: CNC 830.249.4616 or through their website [www.cibolo.org](http://www.cibolo.org)

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### **Wildlife Tax Valuation Seminar (small property owners)**

#### **Session 1: WTV History and Update on the Law, Overview & Property Inventory**

Saturday, January 14, 2012 9 a.m.-1 p.m.

#### **Session 2: Management Practices & Habitat Assessment**

Saturday, January 21, 2012 9 a.m.-2:30 p.m.

#### **Session 3:, Application Procedures, & Putting It All Together**

Saturday, January 28, 2012 9 a.m.-1 p.m.

Cost: Members \$80/person and \$100/couple, non-members \$100/person and \$125/couple.

Where: Cibolo Nature Center (CNC) Boerne, Texas

Register/FMI: CNC 830.249.4616 or through their website [www.cibolo.org](http://www.cibolo.org)

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### **Cowbird Training and Certification to Control Cowbirds**

February 24, 2012, 3:30 p.m.-5:30 p.m.

Cost: Free

Where: Cibolo Nature Center (CNC) Boerne, Texas

Register/FMI: call 830-249-6887 to register or email [Rufus.Stephens@tpwd.state.tx.us](mailto:Rufus.Stephens@tpwd.state.tx.us) .

Please include name, phone number and number of attendees in email.- registration is required!

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### **Gillespie County Land Use Expo**

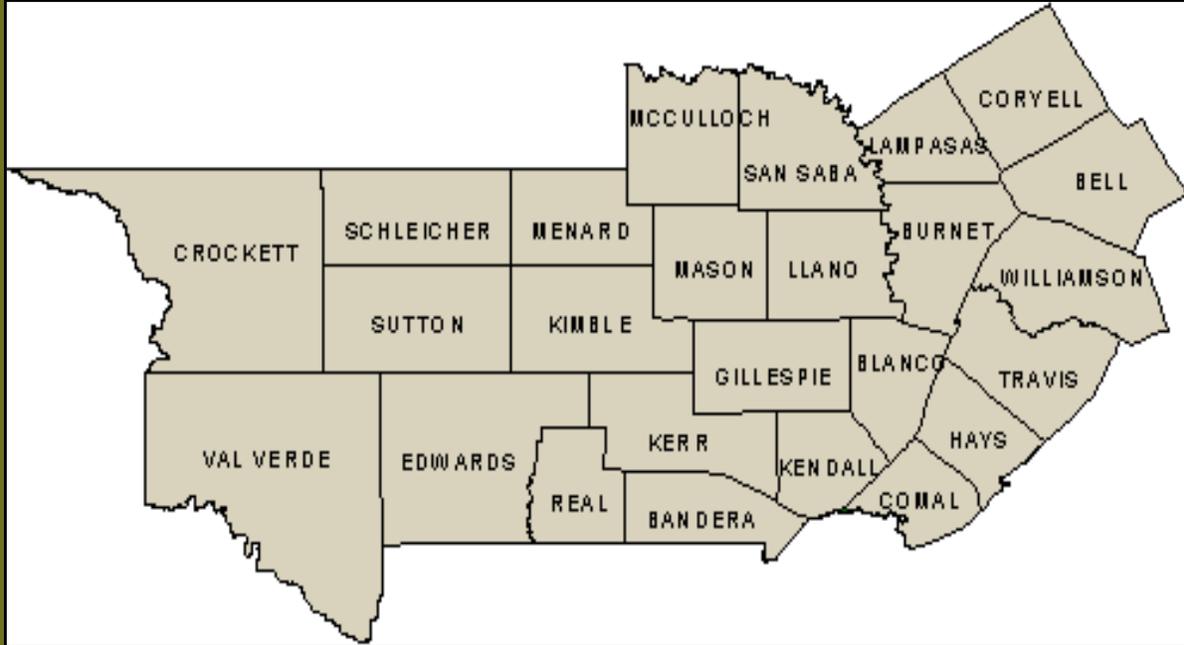
When: September 17th, 2011, 8 a.m.-4 p.m.

Cost: Free (includes lunch)

Where: Hanger Hotel Conference Center in Fredericksburg, Texas

Mandatory RSVP by Sept. 12 - Robert Edmonson 830-868-7949 - [www.texasconservation.org](http://www.texasconservation.org)

# HILL COUNTRY WILDLIFE DISTRICT



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**TEXAS PARKS AND WILDLIFE DEPARTMENT MISSION STATEMENT**

*"To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations."*

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[www.tpwd.state.tx.us](http://www.tpwd.state.tx.us)

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