

Eye on Nature



Life's better outside.®

FALL 2010 A publication of the Wildlife Division — Getting Texans Involved

Coastal prairies and marshes

The Texas coast was once home to 6 million acres of extensive prairies—tall grass that reached to the shoulders of horses and an amazing pallet of wildflowers that brought color and nourishment to the wildlife of the area. These prairies were interspersed with a maze of marshes that served as a wildlife nursery and refuge. Today, most of the prairie is gone, and the marshes are bordered with urban development and industry. The wildlife is there, as we will see in this newsletter, but some of the wildlife is raising great concern for the future of our coastal prairies and their associated marshes.

This newsletter looks at some of the unique species found on the coastal prairie and in their associated marshes, from terrapins to kangaroo rats and whooping cranes. For more detailed information on these and other coastal prairie issues, see the e-newsletter at www.tpwd.state.tx.us/publications/newsletters/eye_on_nature/.

Coastal Prairie Conservation Initiative

An Example of Cooperation and Conservation

By Brent Ortego and Arlene Kalmbach

The increasingly threatened coastal prairie is a land that has seen major changes through the development of the area for agriculture, residential development and industry. Lehmann (1941) indicated that 93 percent of the 6 million acres of coastal prairie in Texas had been lost by 1937. Coastal prairie loss continued through the remainder of the 20th century, and Smeins et al. (1991) estimated that less than 1 percent of the coastal prairie ecosystem remained in relatively pristine condition.

Individual conservation groups and agencies attempted to restore the coastal prairie, but the scale of effort required

[Continued on page 2]



The Live Oak Motte,
Page 3

Such a Unique Creature,
Page 4

Gulf Coast Kangaroo Rat,
Page 6

Whooping Crane
Comeback,
Page 8

Habitips,
Page 11

The Back Porch,
Page 12



Sincere apologies to Kathleen O'Connor, whom we mistakenly referred to as Kathleen Zara in the last issue.



DID YOU KNOW?

Native Americans living on the coastal prairie are said to have used the dance of male Attwater's prairie-chickens as a pattern for their ceremonial dances.

Executive Director

Carter P. Smith

Editor, *Eye on Nature*

Mark Klym

COMMISSION

Peter M. Holt, Chairman San Antonio

T. Dan Friedkin, Vice-Chairman Houston

Mark E. Bivins Amarillo

Ralph H. Duggins Fort Worth

Antonio Falcon, M.D. Rio Grande City

Karen J. Hixon San Antonio

Dan Allen Hughes, Jr. Beeville

Margaret Martin Boerne

S. Reed Morian Houston

Lee M. Bass, Chairman-Emeritus Fort Worth

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."

You may view this publication through the TPWD Web site. Please notify us by completing a request form at www.tpwd.state.tx.us/enews/. Once verified, we will notify you by e-mail when a new version of your selected newsletter is posted at www.tpwd.state.tx.us/newsletters/. Your name and address will be removed from the printed version mail distribution list.

FOR MORE INFORMATION

All inquiries: Texas Parks and Wildlife Department, 4200 Smith School Rd., Austin, TX 78744, telephone (800) 792-1112 toll free, or (512) 389-4800 or visit our Web site for detailed information about TPWD programs:

www.tpwd.state.tx.us



© 2010 Texas Parks and Wildlife Department PWD BR W7000-255 (10/10)
In accordance with Texas State Depository Law, this publication is available at the Texas State Publications Clearinghouse and/or Texas Depository Libraries.



TPWD receives federal assistance from the U.S. Fish and Wildlife Service and other federal agencies. TPWD is therefore subject to Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, in addition to state anti-discrimination laws. TPWD will comply with state and federal laws prohibiting discrimination based on race, color, national origin, age, sex or disability. If you believe that you have been discriminated against in any TPWD program, activity or event, you may contact the U.S. Fish and Wildlife Service, Division of Federal Assistance, 4401 N. Fairfax Drive, Mail Stop: MBSP-4020, Arlington, VA 22203. Attention: Civil Rights Coordinator for Public Access.

ADDRESS CHANGES: For address changes, or to be added or removed from our mailing list, please contact mark.klym@tpwd.state.tx.us. We look forward to providing the information you need to understand, appreciate, manage and conserve the natural resources of Texas for the use and enjoyment of present and future generations.



[Coastal Prairie Conservation Initiative, continued from page 1]

usually resulted in a few hundred acres being restored at isolated locations. The first major habitat restoration efforts started with the formation of the Coastal Prairie Conservation Initiative (CPCI) in 1999. The CPCI focused the resources of multiple agencies in a planned effort to enlarge and connect blocks of existing coastal prairie. The CPCI is a good example of landscape-scale habitat restoration partnerships between federal and state entities, private organizations, and private landowners to foster conservation on the ground at a scale that is meaningful to wildlife populations. The CPCI is a partnership of the Texas Parks and Wildlife Department (TPWD), The Nature Conservancy, U.S. Fish and Wildlife Service (USFWS), USDA Natural Resource Conservation Service, and Grazing Land Conservation Initiative pooling resources to help private landowners to retain family ownership, maintain historic values, profit from agriculture and conserve wildlife while achieving the collective goal of restoring and conserving the coastal prairie. The Landowner Incentive Program was the major funding mechanism through which TPWD participated in the CPCI.

In Texas the Landowner Incentive Program assists private landowners in accomplishing conservation goals through technical and financial assistance. The program got its start in Texas in 1998, then spent some years as a federally supported national program, and is once again a state-run effort in Texas. The program has worked to enhance and protect habitat for at-risk species on over 250,000 acres across the state through partnerships with over 150 private landowners. Much of that conservation effort has been directed at work targeting the fragile ecosystems of the state's natural coastal prairies.

Conservation groups working to restore the coastal prairie recognized the imminent threat to the Attwater's greater prairie-chicken (APC, *Tympanuchus cupido attwateri*), whose range is restricted to the coastal prairie, and historically contained about 1 million individuals on the coastal prairie (Lehmann 1968). APC populations declined as suitable habitat declined due to agricultural conversion, urban and industrial expansion, excessive grazing, invasion of the prairie by woody species, and fragmentation of habitats (Lehmann 1941, Jurries 1979). Wild APC individuals on the coastal prairie declined to near zero in the early 1990s, and the recovery of the species became focused on a captive rearing program to release birds back into the wild (United States Fish and Wildlife Service, 1996).

[Continued on page 10]



Tympanuchus cupido attwateri

There are currently about 90 Attwater's prairie-chickens in the wild. These can be found in three populations along the coastal prairie.



The Live Oak Motte

Important Habitat Emblematic of the Texas Coast

By John Arvin

The Texas coast is mostly without natural forest cover. Where it is not cultivated it is largely coastal prairie with fresh and brackish marshes in the lower areas. Most remaining coastal prairie is used to graze cattle. This open terrain is broken only by groves dominated by coastal live oak. This venerable tree, relatively impervious to the ravages of the coastal environment, often forms rounded groves of various sizes locally known as “mottes.” These result from the live oak’s ability to send up shoots from its expansive root system forming thickets and eventually substantial groves. The oaks in turn provide the shelter that less hardy plants require resulting in a dense, nurturing oasis in the extensive grasslands.

The mottes are particularly important to the millions of migrating birds

that pass through the Texas coastal region twice a year. They are of special importance in the spring when birds arriving from a non-stop flight across the Gulf may be drained of energy from bucking the headwinds and turbulent weather that usually accompany cold fronts. Under those conditions the oak mottes can literally mean the difference between life and death to exhausted songbirds that may have been on the wing for 18 to 24 hours. An oak motte can be virtually birdless during favorable weather for migration—that is, with helping winds and fair skies. Under these conditions arriving migrants appear over the coast during midday and have plenty of reserves to continue flying until they are well inland before landing in the evening. On days with rain, thunderstorms, and strong headwinds,

though, a single oak motte may be an escape hatch, saving hundreds of birds’ lives that otherwise would perish from exhaustion, dehydration, and predation to which their weakened condition renders them vulnerable. Under these conditions the motte may swarm with dozens to hundreds of birds of 30 or more species. With food-producing plants and the insects that feed on them to recharge their energy reserves, and the shelter provided by the interlacing oaks and understory shrubs, these lucky travelers have a good chance to survive and reach their breeding grounds and to complete their life cycles.

Coastal mottes perform an important function in the lives of migratory birds in fall migration also, although

[Continued on page 7]

Such a Unique Creature

By Stan Mays

If you spend any time exploring the brackish saltwater marshes of coastal Texas (warning: bring plenty of mosquito spray) you may, if you are lucky, encounter a seldom-seen native chelonian resident sunning itself on a patch of dry land or perhaps swimming just offshore. This would be the Texas diamondback terrapin, one of the most interesting of our native reptile species.

The diamondback terrapin, *Malaclemys terrapin*, is a small to medium sized turtle found in salt marshes, estuaries, and tidal creeks. Its name is derived from the sculpted appearance of the carapace, which somewhat resembles the facets of a cut diamond. Most aquatic turtles are either strictly freshwater or marine, but not the terrapin. It is unique in being the only turtle species associated with waters of intermediate salinity. Consequently, it has special adaptations to survive in this environment that are not found in other turtles.

In terms of diet, the diamondback terrapin can best be described as an opportunistic carnivore. Snails, crabs, shrimp, fish, clams and other items normally associated with a seafood restaurant menu have all been observed being consumed by terrapins.

Diamondback terrapins range from Cape Cod all along the Atlantic and Gulf Coast into Texas. Although there are seven recognized subspecies, only one (*littoralis*) is found in Texas (Ernst et al., 1994), which ranges from western Louisiana along much of the Texas coast to the Corpus Christi area.

For many years, diamondback terrapins were considered a culinary delicacy, which almost brought about the extinction of many populations near metropolitan areas. In the late 1800s there was an active commercial fishery for terrapins in the Galveston area. The resulting overexploitation led to significant population declines,

which eventually led to the demise of this industry.

There have been a number of diamondback terrapin studies on the Atlantic Coast, especially in the northern part of the turtle's range. Unfortunately, very little is known concerning the status of the diamondback terrapin population in Texas. To date, only one study has been completed (Hogan, 2003), which concentrated mainly on surveying nesting areas and terrapin distribution in Galveston Bay. The exact population status is unknown, although it is perceived to be declining due to a number of reasons such as habitat loss from human alterations, nest site disturbances, mortality from abandoned crab traps, and estuarine pollution. A number of animals, such as raccoons, birds, and crabs also routinely raid terrapin nests for eggs. It is estimated that up to one-third of all terrapins accidentally caught in crab traps drown (Wood et al., 1995).

[Continued on page 5]





In the recently approved *Texas Wildlife Action Plan (2005–2010): Comprehensive Wildlife Conservation Strategy* produced by the Texas Parks and Wildlife Department, the Texas diamondback terrapin was classified as a Medium priority species with federal G4 (Uncommon) and state S3 (Vulnerable) status and was considered a species of concern at both the federal and the state levels. In many states where the diamondback terrapin is found, the population status is either unknown or declining (Siegal et al., 1995). In the Action Plan, this species is also categorized as aquatic and has a number of problems listed for its ecoregion (coastal Texas). Distributional studies on its population are among the conservation actions recommended in the Action Plan.

In an attempt to learn something about the diamondback terrapin population around the Galveston Bay area, the Houston Zoo, in cooperation with the University of Houston–Clear Lake (UHCL) and Texas Parks and Wildlife Department, began field work in November 2007 on the diamondback terrapin populations around North and South Deer Islands in Galveston Bay. Each animal collected was measured, sexed, marked by shell notching and injected with a PIT (Passive Integrated Transponder) tag for identification purposes. When possible, blood was drawn for genetic testing. Using the capture and recapture rates it should be possible to estimate the size of this population.

So far, Houston Zoo employees, graduate students from UHCL working under Dr. George Guillen, and volunteers have amassed well over 1,000 hours devoted to work on this study.

Terrapins are collected using two methods. The first is the simple hand capture of the animals as they swim or as they bask on land. In addition, crab traps that have been modified with chimneys (to minimize risk of animals drowning) are also being used.

Habitat preferences for diamondback terrapins are also being quantified. Water and air temperature, salinity, pH, wind speed, cloud cover, substrate type and vegetative cover (on land) are all recorded at each capture. In addition, UHCL graduate students are attaching

acoustic tags to some terrapins to determine their movements within the bay. External radiotelemetry tags are also being used to estimate home ranges, habitat use, dispersal, and other characteristics of this population. Finally, mortality of terrapins due to drowning in crab traps is being estimated during the yearly collection of unclaimed crab traps.

Why collect all this data? The Texas diamondback terrapin is the least studied of all the seven species of terrapins found in the United States. Much remains to be discovered concerning its ecology and natural history. For example, very little is known about the juvenile life stage of a terrapin. Population surveys have been concentrated around the Galveston Bay region. Before a conservation action plan for this species can be implemented, it is important to know as much about the entire Texas population as possible. Population studies of terrapins should be expanded to include all areas of appropriate habitat along the coast of Texas, and basic questions of the population dynamics and demographics should be answered. Only then can we make intelligent decisions that will ensure the survival of this unique resident of our coastal areas.

Stan Mays is Curator of Herpetology at the Houston Zoo.

REFERENCES

- Ernst, C.H., Lovich, J.E., and Barbour, R.W. 1994. *Turtles of the United States and Canada*. Smithsonian Institute.
- Hogan, J.L. 2003. *Occurrence of the Diamondback terrapin (Malaclemys terrapin littoralis) at South Deer Island in Galveston Bay, Texas, April 2001-May 2002*. U.S. Geological Survey. Open-file report 03-022.
- Siegal, R.A., and Gibbons, J.W. 1995. *Workshop of the ecology, status, and management of the Diamondback terrapin (Malaclemys terrapin)*, Savannah River Ecology Laboratory, 2 August, 1994: Final results and recommendations: Chelonian Conservation and Biology vol. 1, no. 1, 240-243.
- Wood, R.C., and Herlands, R. 1995. *Terrapins, tires, and traps: Conservation of the Northern diamondback terrapin (Malaclemys terrapin terrapin) on the Cape May Peninsula, New Jersey, U.S.A.*: International Congress of Chelonian Conservation, 254-256.



© Sean Rissel

Gulf Coast Kangaroo Rat

Conservation and Research in Coastal Texas

By M. Clay Green

“Remember to watch for snakes when you are out walking the dunes.” That was the last thing I remember saying to my graduate student, Sean Rissel, moments before we both, walking in unison up a dune at Padre Island National Seashore, stepped on a Western diamondback rattlesnake (*Crotalus atrox*). Fortunately for everybody involved, no persons or snake were harmed by the situation. Earlier that day, I had been thinking about the start of our research on the Gulf Coast kangaroo rat (*Dipodomys compactus*) and thought to myself, where there are rodents, there are probably snakes too. While we did encounter the rattlesnake, our goal out on the dunes of Padre Island was to find Gulf Coast kangaroo rats.

The Gulf Coast kangaroo rat belongs to the family Heteromyidae in the order Rodentia. In Texas, there are 13 species of heteromyids of which five

species belong to the genus *Dipodomys*. The Gulf Coast kangaroo rat occurs throughout most of South Texas, from the fringes of Bexar, Caldwell and Gonzales counties down through the Lower Rio Grande Valley and on the barrier islands, namely Padre and Mustang islands. The species inhabits sparsely vegetated, sandy soils of South Texas and the leeward side of dunes along the barrier islands. Currently, two subspecies of *Dipodomys compactus* are recognized, *D. c. compactus* on the barrier islands and *D. c. sennettii* on the mainland of Texas. While the species is listed as common throughout its range, increased urbanization and development along Mustang and Padre islands is cause for concern for this state and federal species of concern. *Dipodomys compactus compactus* is the only species of rodent listed as species of high concern by the *Texas Wildlife Action Plan*.

The main reason for conservation concern with Gulf Coast kangaroo rats is habitat loss; however, lack of information on the species distribution, resource selection, and genetic structure of the population add to the overall concern for this species. While the overall range of the species is mostly known, information on the distribution of the species within its range is lacking. It is unclear if *D. c. compactus* occurs on barrier islands north of Mustang Island, and little is known about the spatial distribution of the species on North and South Padre Island. Previous studies from Padre Island on rodent diversity suggests that kangaroo rats are only found in small areas and do not occur uniformly along the 130 mile stretch of North and South Padre Island, even where suitable habitat appears to be available. As mentioned earlier, suitable habitat for Gulf Coast

[Continued on page 7]

[Gulf Coast Kangaroo Rat Conservation and Research in Coastal Texas, continued from page 6]

kangaroo rats appears to be sparsely vegetated sandy soils, although the mainland species has been reported on yellow-sand prairies of southeastern Texas and post oak-blackjack oak communities around Bexar County.

The taxonomic history of the Gulf Coast kangaroo rat is complex and not without controversy. In mainland Texas, the geographic distribution of the Gulf Coast kangaroo rat overlaps with that of Ord's kangaroo rat (*Dipodomys ordii*) from Atascosa and McMullen counties west to the Mexican border and south to the Lower Rio Grande Valley. Early research on kangaroo rats in South Texas suggested that all individuals occurring on the Texas mainland were *Dipodomys ordii sennettii* and individuals occurring on the barrier islands were *D. compactus*. Because of the overlapping ranges in mainland South Texas, it has been suggested that potential mixing of specimens or misidentifications between the two species may have occurred that has led to this taxonomic confusion. More contemporary research suggests that while *D. compactus* and *D. ordii* are closely related taxa and potentially comprise a sister clade, they are indeed two

separate species and *D. c. compactus* and *D. c. sennettii* are valid subspecies. Karyotypic data for the Gulf Coast kangaroo rat reveals that both subspecies have the largest number of chromosomes for the genus *Dipodomys* ($2n = 74$); *Dipodomys ordii* has $2n = 72$ chromosomes. While separation between the two species and two subspecies of *D. compactus* appears valid, nothing is known about the overall genetic population structure of *D. compactus* and potential gene flow within and between the mainland sites and the barrier islands. This is critical information that is needed for the barrier islands in the wake of continued development along the coastal dune ecosystem.

"Over here, I think I found some tracks and several burrows," said Sean. Sure enough, as we topped the dune and walked down the leeward side of the dunes of Padre Island, we saw many burrows with the characteristic tracks of a five-toed, kangaroo rat. Sean Rissel, a graduate student in the Wildlife Ecology Program, Department of Biology at Texas State University, initiated his field research in the spring of 2010 on Gulf Coast kangaroo rats. His main research goals are to estimate the distribution

and abundance of *Dipodomys compactus compactus* within Padre Island National Seashore and to examine the macro- and microhabitat variables associated with the occurrence of this species. Sean is conducting live-trapping surveys and ear-marking of kangaroo rats on the dunes of Padre Island to obtain estimates of occupancy and abundance. He is also taking ear notches from individuals captured to use for future genetic analysis comparing individuals on North and South Padre Island and individuals from sites in South Texas. Like the rattlesnake that continues to elude us after our first encounter on the dunes, answers to the long-term outlook of Gulf Coast kangaroo rats on the barrier islands elude us still. However, it is our belief that the much-needed attention now being paid to Texas' only rodent species of high concern, the knowledge gained from Sean's research and others will provide the information needed to better manage this species in the face of increasing habitat loss and changing climates.

Dr. Green is an assistant professor in the Department of Biology at Texas State University in San Marcos.

[The Live Oak Motte: Important Habitat Emblematic of the Texas Coast, continued from page 3]

it is not quite as dramatic as the role they play in spring. Southbound birds have a more leisurely migration, moving down the continent in a series of relatively short hops, stopping off for periods of time where resources are bountiful to fatten up. More birds take a path around the Gulf through Texas and Mexico in fall than in spring, so when they reach the coast the mottes act as their stepping stones. For those that do make an overwater flight the motte is a last chance to "top off the tank" and be in peak condition for the crossing. The late summer/early fall period is one of plenty when fruit-bearing trees and shrubs, nectar-producing native flowers, and insect populations peak.

Coastal live oaks are tough and can stand up to most of the extremes of nature, including hurricanes. Indeed, they help stabilize our coasts against such catastrophic events. However, they are not only attractive to migrating birds and other

organisms for which they provide food and shelter; they also make attractive sites for people who want a little place on the coast where they can spend weekends and summer vacations. Many of the finest examples of coastal mottes have become home sites or RV parks. Others have succumbed to development of huge industrial plants which find coastal access vital to the movement of their raw materials and products.

Live oak mottes thrive on some of our public lands, where they have been protected. Well-developed mottes can be seen at Goose Island State Park and at Aransas National Wildlife Refuge on the Central Texas coast. San Bernard National Wildlife Refuge and the Candy Abshier Wildlife Management Area at Smith Point on the upper coast have some well-developed mottes also. According to historical accounts most of the live oaks on Galveston Island were planted in the early 20th century. One of the saddest results

of Hurricane Ike's fury on the natural environment is the loss of hundreds of huge, century-old live oaks that formerly lined the streets of Galveston. The city was a virtual man-made oak motte.

Oak mottes are a very important habitat in our coastal environment. They should be valued, protected, and encouraged wherever they occur. Live oak acorns drop in the early fall, often in profusion. They begin to germinate soon after falling, so the acorns can be collected and planted right away to provide a source of seedlings for expanding existing mottes or creating new ones. The young trees grow relatively rapidly if provided with supplemental water. Why not think about establishing a motte in a suitable coastal area? It can be a great project for a local birding club, native plant association, or other nature-oriented group.

John is the research coordinator at Gulf Coast Bird Observatory in Lake Jackson.



Whooping Crane Comeback

Amanda Diaz

In a true testament to the success of wildlife conservation, the whooping crane returns to the Central Texas coast every year to winter. It was merely decades ago when only 15 of these magnificent birds were left in existence at Aransas.

This federally endangered species is on a long road to recovery. In 1860, an already depleted population of about 1400 whooping cranes existed in North America. Further habitat loss and increased hunting contributed to a cataclysmic 99% loss of the population by 1941. It is from these remaining 15 birds that the species has repopulated.

To ensure the survival of the species, biologists attempted to introduce whooping cranes to other environments apart from the naturally migrating flock. A non-migratory flock was placed in Florida starting in 1993 along with an additional migratory flock started in 2001. A multi-partied group called the Whooping Crane Eastern Partnership created a migratory flock by using ultralight aircraft to teach young whooping cranes how to fly from Necedah National Wildlife Refuge in central Wisconsin to western Florida. As of September 2010, this flock had 96 whooping cranes migrating in the eastern U.S. While these flocks have made significant progress, they are not self-sustaining and the non-migratory reintroduction in Florida has been stopped. They currently do not provide the safeguards needed for species recovery.

The natural migratory flock wintering in Texas has seen the most growth, totaling 263 whooping cranes in spring

2010. These cranes travel twice a year an astounding 2,500 miles from Wood Buffalo National Park in the boreal forest of Canada to the Texas coastal prairie of Aransas.

The success of the whooping crane is encouraging but the species has endured many struggles, most recently a devastating South Texas drought in 2008. The fragile coastal ecosystem became an inhospitable environment for wildlife, namely the blue crab. This crab is the main staple of a whooping crane's diet, with an adult crane able to eat as many as 80 blue crabs in a day.

Due to the severe drought and reduced inflows, the salinity levels in the bay and marshes skyrocketed, rendering a depleted supply of marsh life for the cranes to feed on. The birds began scouring the surrounding habitat for sustenance, forcing them onto uplands. The hardships resulted in multiple deaths during the 2008 winter season. In an effort to thwart further loss, an emergency feeding plan was put in place. Whole-kernel corn was distributed between 13 game feeders throughout the Aransas National Wildlife Refuge beginning in January 2009 and continuing until the birds migrated in April.

Despite ongoing efforts to supply the whooping cranes with food, a total of 23 birds were lost during the 2008-2009 winter season, the largest population decline ever seen at Aransas.

Fortunately last winter, the drought ended and the whooping cranes required no assistance in finding nourishment. Rainfall in South Texas starting in September 2009 revived the coastal prairies, wetlands and marshes allowing the cranes to recover from the previous harsh winter.

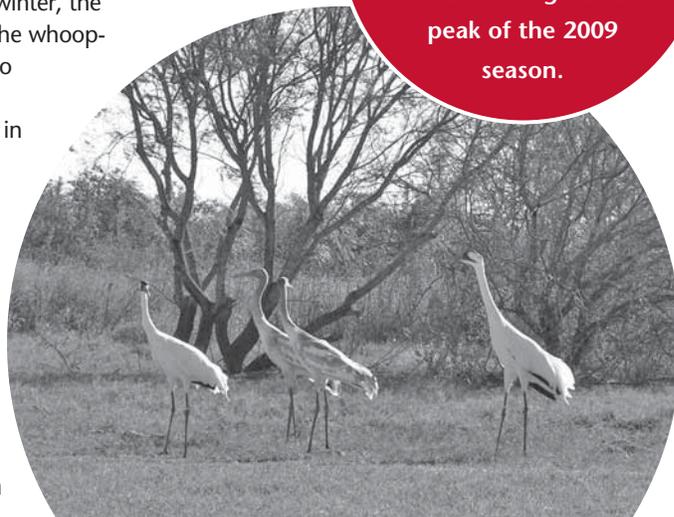
This year's nesting season saw a high success rate with 46 chicks fledged from a record 74 nests in Wood Buffalo. Here in Texas, blue crab populations have rebounded and lower salinities have revitalized the marshes so the whooping cranes are expected to fare well in the coming winter. The total of whooping cranes in the wild and in captivity, all located in North America, currently numbers 536.

The current whooping crane population is spread out over 65,000 acres of salt marsh along a 36-mile stretch of the Texas coast. To reach a down-listing target of 1,000 cranes, an additional 125,000 acres of crane habitat needs to be protected. This habitat includes upland areas next to the marshes, some of which are threatened by development. A major conservation effort is urgently needed to further protect coastal marshes and prairies to allow the whooping crane to continue its remarkable comeback.

Amanda Diaz is with the United States Fish and Wildlife Service at Aransas National Wildlife Refuge.

DID YOU KNOW?

There were 264 whooping cranes at Aransas National Wildlife Refuge at the peak of the 2009 season.



© Vicki Swann



All of the whooping cranes at Aransas National Wildlife Refuge migrate each year from Wood Buffalo National Park in Canada's Northwest Territories.

[*The Back Porch*, continued from the back page]

We can realize these same benefits from fire today by employing this tool under certain parameters or prescribed conditions. Prescribed burning is one of the most cost-effective tools a landowner or manager has in his or her toolbox if interested in brush control, increasing plant diversity, and increasing grass and plant nutritional value. Price the cost of herbicides and application to control brush or other invasive species. Price the cost of mechanical means, such as dozer work. The cost to create fire breaks, equipment to conduct a prescribed burn, and manpower makes prescribed burning a comparatively cheap alternative.

The key is knowledge of the safe parameters or conditions in which to implement a prescribed burn. Although a fire escaping is always a huge concern, with today's increased population, smoke management should also be foremost on the minds of landowners initiating a prescribed burn.

If you are interested in learning more about prescribed burning or trying to incorporate burning in your habitat management toolbox, there should be some prescribed burning workshops/seminars available in your area over the course of this winter. Texas Parks and Wildlife, the NRCS, and Texas AgriLife Extension promote this tool for habitat management and range management, and there should be local education/training opportunities. Over on the west side off my "back porch," there is the Coastal Bend Prescribed Burn Association that puts on educational trainings and actual prescribed burning opportunities. You can find more information at www.prescribedburn.org/. Additionally, you can call the TPWD District 7 office in La Grange, TX at (979) 968-6591.

David Forrester is the District Leader for District 7 working out of La Grange.

[*Coastal Prairie Conservation Initiative*, continued from page 2]

Conservation professionals began informally working together in 1999 by piecing together funding sources and target acreages to make the work less expensive to the landowners while positively impacting habitat on a landscape scale. Conservation groups formalized the CPCI with signed agreements between organizations in 2003. Regulatory relief in the form of federal Safe Harbor programs (http://library.fws.gov/Pubs9/safe_harbor_agree.pdf) were obtained from the USFWS, which assured landowners they would not incur any additional regulatory restriction if they improved their land for endangered species. Extensive efforts were made to demonstrate to landowners that the recommended practices would improve the profitability of their ranch and natural resources while at the same time preserving historic values.

The CPCI was successful in treating encroaching, invasive brush and improving infrastructure of ranches on 80,000 acres of private ranch land and made progress to connect isolated blocks of coastal prairie. A program to release APC back into private lands within the coastal prairie began in 2007 (Ortego et al. 2009).

The CPCI is successful because conservation groups were able to pool resources to meet common goals and objectives with willing landowners. The CPCI provided cost-share assistance and technical expertise to improve coastal prairie habitat important to prairie wild-

life while increasing ranch profitability. Prairie-chicken management had to be compatible with the goals for the ranch whether the landowner had an interest in the APC or not. The landowners would not tolerate additional regulatory burdens to benefit APC, and the Safe Harbor reduced those concerns. Above all, the conservation effort needed to be accomplished without altering the landowner's lifestyle, privacy and history. Today more than ever, these critical

coastal prairies face continuing threats, but with partnerships like the CPCI we continue to see the progress and rewards of these restoration and conservation efforts.

Brent Ortego is the diversity biologist with the Texas Parks and Wildlife Department, working out of Victoria. Arlene Kalmbach is the Landowner Incentive Program coordinator with the Texas Parks and Wildlife Department, working out of Lincoln.

REFERENCES

- Jurries, R. W. 1979. *Attwater's Prairie Chicken*. Texas Parks and Wildlife Department, Federal Aid Series No. 18, Austin, TX.
- Lehmann, V. W. 1941. *Attwater's Prairie Chicken, its life history and management*. USFWS, North American Fauna Series 57.
- Lehmann, V. W. 1968. *The Attwater Prairie Chicken, current status and restoration opportunities*. North American Wildlife Conference 33:398-407.
- McKinney, L. B. 1996. *Forty years of landscape change in Attwater's Prairie Chicken habitat within the coastal prairie of Texas*. Thesis, Texas A&M University, College Station, TX.
- Morrow, M. E., R. S. Adamcik, J. D. Friday, and L. B. McKinney. 1996. *Factors affecting Attwater's Prairie-Chicken decline on the Attwater Prairie Chicken National Wildlife Refuge*. Wildlife Society Bull. 24:593-601.
- Ortego, B., M. Wagner, T. Anderson, W. Harrell, and C. Carter. 2009. *Engagement of Texas private landowners in conservation*. Proc. International Partners in Flight Conf. 4: 491-492
- Smeins, F. E., D. D. Diamond, and C. W. Hanselka. 1991. *Coastal prairie*. Pages 269-290 in R. T. Coupland, editor. *Ecosystems of the world 8. A-natural grasslands-introduction and western hemisphere*. Elsevier Press, New York, New York, USA.
- United States Fish and Wildlife Service. 1996. *Attwater's Prairie Chicken species recovery plan*. Region 2, Albuquerque, NM.

Habitips

Simple things you can do on your land to enhance wildlife value.

In General

- Monitor grazing pressure on rangelands and move livestock accordingly
- Continue controlling feral hogs
- Preserve brushy fence rows, shelterbelts and critical wildlife cover by fencing
- Order survey kits for Texas Nature Tracker programs such as Hummingbird Roundup and Texas Horned Lizard Watch

November

- Monitor use and condition of key vegetation going into winter
- Move livestock off of fall food plots for wildlife
- Order spring-planted annual seedlings
- Construct brush piles needed for winter cover
- Begin developing winter prescribed burn plans
- Disk fire lanes as needed
- Clean up leaf litter within your firewise defensive zone

December

- Prepare fireguards for prescribed burning program
- Disk in proximity to woody cover to provide habitat interspersion for game birds
- Get prescribed burn equipment ready
- Strip disk to encourage native food resources
- Focus on providing travel lanes and cover for birds

January

- Prepare fireguards for prescribed burning program
- Disk in proximity to woody cover to provide habitat interspersion for game birds
- Get prescribed burn equipment ready

- Strip disk to encourage native food resources
- Focus on providing travel lanes and cover for birds

February

- Conduct prescribed burns as needed
- Begin planting annual seedlings—perennials should be planted in fall
- Monitor turkey flocks
- Conduct mechanical brush control as needed
- Disk wetland areas to encourage moist soil plants as needed
- Look for early spring wildflower blooms—mostly gold colored flowers
- Hummingbird migration begins
- Repair and install nestboxes for the nesting season

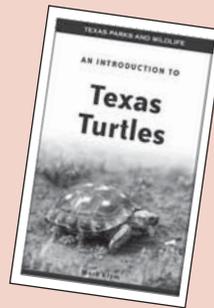
March

- If trained begin trapping brown-headed cowbirds
- Plant native grasses, forbs and legumes
- Conduct prescribed burns as needed
- Watch for developing wildflower blooms
- De-water flooded areas to encourage wetland vegetation

April

- Monitor grazing to provide nesting cover and plant diversity
- Clean and store prescribed burn equipment
- Develop a checklist of birds you see in various locations—note habitat use
- Continue trapping brown-headed cowbirds if trained
- Protect turkey roosts in areas with limited numbers of large trees
- Continue monitoring wildflower blooms

Wild Stuff!



Introduction to Texas Turtles booklet

Send an e-mail request to mark.klym@tpwd.state.tx.us

Hummingbird Wheel

This 10" full-color identification wheel is a helpful reference to keep nearby when you watch the hummingbirds. Sixteen hummingbird species are featured, all of which have been documented in Texas! For each bird, the wheel tells you its range in North America, habitat type, and distinguishing features of both males and females.



Send \$11.95 (shipping and handling included) to Texas Hummingbird Roundup, 4200 Smith School Road, Austin, Texas 78744.



Show Your Support for Wildlife!

Help protect native non-game species like the Horned Lizard with the purchase of the Horned Lizard license plate. The cost is just \$30*, with \$22 going directly to benefit the conservation of wildlife diversity in Texas.

Order online today and get your plate in just two weeks!

www.conservation-plate.org/nature

*In addition to regular vehicle registration fees



The Back Porch

Coastal Prairie and Post Oak Savannah

By David Forrester

My “back porch” is basically the Coastal Prairie and Post Oak Savannah country west of Houston, east of Victoria, and south of Austin. This is one of the many areas of the state that has experienced and continues to experience intense habitat fragmentation due to urbanization, brush encroachment, introduction of improved grasses, invasive plant encroachment, and more and more people on the landscape. As a result, we have seen a lot of the native habitat disappear (at the worst) or experience alterations (at the best). There are very few examples left out there of what the native Coastal Prairie or native Post Oak Savannah used to look like.

We as state biologists work with a lot of landowners interested in preserving or enhancing what native habitat they do have. There are numerous recommendations or suggestions that can be made depending on the condition of the habitat and the goals of

the landowner. Our recommendations run the gamut. Some situations call for the complete re-establishment of native grasses. Many times the landowner may need to alter the stocking rates and grazing intensity on his/her property. In almost every situation, however, there is a recommendation to introduce fire as a management tool.

Most people think that fire on the landscape is a bad thing. Fire can destroy homes, livestock, fences and structures. When most people look at an area that has been burned, they see a blackened picture devoid of vegetation or wildlife. Most of us see the sad baby bear, a tear tracking down one cheek, and hear “only you can prevent forest fires.” There are no doubts a wildfire that threatens home and welfare is something we want to avoid, but there are some awesome benefits that can be realized from prescribed fires.

Most of Texas evolved with fire as part of the natural system. Many of the plants

around us respond favorably to periodic fires. Before Europeans became dominant on the landscape, periodic fires kept the prairies open, and brush species were not nearly as abundant as they are now. Fire consumed the thatch that develops on the prairie grass landscape, exposing the bare soil underneath to sunlight, thus promoting the germination of different annuals. There was also a fertilizer effect on the grass, making it much more palatable and higher in quality.

This is not just a tool for those interested in wildlife management, but livestock producers can benefit from it also. As mentioned above, all grasses respond favorably to certain fires, whether it is native grasses or improved pastures. Palatability and protein content can increase in grasses after a fire. There are numerous studies showing the increased protein content of forage post-fire and the increased gains in livestock-grazing forage after a burn.

[Continued on page 10]