

SOUTH TEXAS WILDLIFE



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Restored Native Pasture

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IMPROVING EXOTIC GRASS DOMINATED HABITATS

by Forrest Smith

Research at the CKWRI has consistently documented lower native plant diversity in exotic grass dominated habitats. Throughout South Texas, disking exotic grass monocultures is commonly used to improve native plant abundance for wildlife. On some ranches, as much as 5 to 20% of the acreage is annually disked. While usually

effective at promoting an immediate seasonal response of native forbs, these efforts generally have poor longevity. Often, exotic grasses reinvade and again dominate these sites within a few months to a year. While eliminating exotic grasses and establishing native plant communities in their place have proven difficult with current management options, our research indicates added effort to standard disking applications will greatly increase treatment life and benefit wildlife.

Decades of exotic grass dominance on many sites have resulted in considerable seedbanks of these plants. While exotic grass control

must initially focus on removing existing plants, it is equally important to reduce the exotic grass seedbanks on these sites for any hope of treatment longevity.

We have observed 2 strategies that work well to address exotic grass seedbanks in addition to standard disking treatments. One is adding moldboard plowing to the regime, which buries a large portion of the exotic grass seedbank to depths where it will not readily germinate. The second is killing emerging exotic grass seedlings following several germination (rainfall) events after initial disking/plowing with well timed glyphosate herbicide applications or shallow cultivations. A combination of these 2 treatments in many situations works best to suppress the exotic grass seedbank and prevent quick reinvasion of these sites by exotic grasses.

Beyond controlling exotic grass seedbanks, the second tenant of a successful strategy is to lengthen the

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Editor's Note: Forrest Smith is Project Coordinator for *South Texas Natives* and *Texas Native Seeds* at the Caesar Kleberg Wildlife Research Institute.

By The Numbers

10 number of Texas Parks and Wildlife Commissioners

2,700,000 number of wing beats a hummingbird makes when it flies nonstop across the Gulf of Mexico from the U.S. to Mexico (U.S. Fish and Wildlife Service)

productive window of strip disking, which centers on establishing native plant cover that competes with reinvading exotic grasses. Often, this may require reseeding as seedbanks in exotic grass dominated areas lack sufficient densities of competitive native plant seeds. In the course of conducting more than 40 planting experiments in South Texas over the past few years, we have identified several native grasses that have the ability to rapidly establish and compete with reinvading exotic grasses. Slender grama, shortspike and hooded windmillgrasses, pink and whiplash pappusgrasses, and Arizona cottontop demonstrate the best adaptations for this use. Commercial seed releases of these grasses are now available.

We have also seen strong evidence that stands of these native grasses support much greater native

forb communities than do similarly dense exotic grass stands. We recommend that these competitive native grasses comprise more than 50% of any seed mix being planted in areas formerly dominated by exotic grasses. Other native grasses and forbs should make up the balance of the seed mix.

Improving exotic grass dominated areas for wildlife is not easy. But, in a number of settings, we have documented lasting benefits to plant diversity more than 5 years after application of these kinds of treatments. Considering the time, cost requirements, and the necessity of annual re-disking to promote plant diversity without such efforts, adding exotic grass seedbank depletion and reseeding to standard strip disking may also prove to be a cost-effective alternative to consider. ~



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Compare the native forb abundance of the restored, native grass dominated habitats (left) with stands of exotic grasses on similar soils (right, top-bottom: Kleberg bluestem, buffelgrass). Our research indicates that establishment of native grasses can help limit exotic grass reinvasion, while increasing forb abundance that will benefit wildlife.

CKWRI NEWS

CKWRI Shines at the TCTWS Conference

CKWRI was well represented at the 48th Annual Conference of the Texas Chapter of The Wildlife Society (TCTWS) held February 23–25 in Fort Worth, Texas. Of the 150 scientific presentations at the conference, 49 (33%) were authored or coauthored by CKWRI scientists, graduate students, and undergraduate students.

Two CKWRI scientists were recognized for their professional accomplishments. **Dr. David Hewitt**



TCTWS file photo

Dr. David Hewitt (right), CKWRI's Stuart W. Stedman Chair for White-tailed Deer Research, being presented with the Outstanding Book Award by Alan Cain, President of the Texas Chapter of The Wildlife Society.

received the Outstanding Book Award for his editorship of *Biology and Management of White-tailed Deer*, which was released in 2011 by CRC Press. **Dr. Charles DeYoung** received the prestigious Honorary Life Member Award in recognition of his lifelong service to the wildlife profession including his contributions to teaching and research at Texas A&M University-Kingsville spanning several decades.

The Outstanding Scientific Article Award was presented to **Drs. Stephen DeMaso, Fidel Hernández, Leonard Brennan, and Fred Bryant** from CKWRI and **Drs. William Grant, Nova Silvy, and X. Ben Wu** from Texas A&M University, College Station for their article entitled *A Population Model to*



TCTWS file photo

Alan Cain (left), President of the Texas Chapter of The Wildlife Society, presenting the Outstanding Scientific Article Award to (left-right) Drs. Fidel Hernández, Leonard Brennan, Nova Silvy, and Fred Bryant.

Simulate Northern Bobwhite Population Dynamics in Southern Texas, which was published in the Journal of Wildlife Management in 2011.

CKWRI graduate student **Eric Grahmann** scored big, receiving the Dan Boone Scholarship, 1st Place Award for best poster presentation, and 1st Place Best of Show in the



TCTWS file photo

CKWRI graduate student **Eric Grahmann** (left) receiving 1 of his 3 awards from Alan Cain, President of the Texas Chapter of The Wildlife Society.

photo and art contest. Graduate students also recognized were **Steven Goertz**, who placed 2nd in the graduate poster contest and **William Colson**, who placed 2nd in the photo and art contest in the work related photo category.

Our hats are off to those representing CKWRI at the TCTWS conference and congratulate those that were recognized for their efforts. ~

Consider giving a tax-deductible donation to CKWRI

SHOULD Wii GO TO ECOLOGY CAMP?

by Scott E. Henke

Did you ever wonder how animals got their names? Or how certain species got to the United States? What if you got lost in the wilderness, could you find your way home? If you came across tracks or scat, could you identify the animal that left them?

You could if you attended the Ecology Camp sponsored by Flint Hills Resources (FHR) and the Texas State Aquarium. Every summer for the past 5 years, I have conducted an ecology camp for youths on the Wildlife Preserve of FHR property in Corpus Christi, Texas. The camp was developed to promote outdoor skills and environmental education.

In the past, kids would roam in the woods, climb trees, and explore their environment. They would learn outdoor skills as a Boy Scout or go camping. Unfortunately, the days of hiking and exploring like in ‘Old Yeller’ seem to be a thing of the past. Today’s youth are more in tune with technology and virtual reality than actual reality.

As a way to offset the lack of outdoor education, 1-day ecology camps for junior high and high school-aged kids are conducted each week during the summer. Participants learn about wildlife, habitat requirements, animal behavior, animal sign, and wildlife history. They also learn orienteering, trapping, and animal immobilization techniques.

Editor’s Note: Dr. Scott Henke is a Research Scientist at CKWRI and Regents Professor and Department Chair of Animal, Rangeland, and Wildlife Sciences at Texas A&M University-Kingsville.

To determine if campers gained wildlife knowledge, they were given a pre-test before the camp, a post test immediately at the conclusion of the camp, and again at 3 months after the camp ended. A total of 123 children participated in the camps during the summer of 2011. Prior to camp, kids had a cursory knowledge of their environment. Average overall score on the pre-test was 35 out of 100. Overall score on the immediate post test and 3-month post test improved to 90 and 76, respectively. Providing hands-on experience and fun stories was the catalyst required to make kids enthusiastic about learning wildlife ecology.

Below are several examples of what you would learn at the Ecology Camp. Try the quiz and test your knowledge skills.

1. How did this bird come to live in the United States?



Courtesy of Joseph Valks

2. How did this animal get its common name?



© David Hewitt

3. What made this track? Hint: the track is about 1 1/4” wide x 1 1/2” long.



© Kim A. Cabrera

Here are the answers.

1. The bird is a European Starling and was deliberately introduced into the United States. You would think that because a species was intentionally introduced, there

Did You Know?

Monarch butterflies migrate from the central and northeastern United States and Canada to the fir forests in the central mountains of Mexico. (1997 North American Conference on the Monarch Butterfly)

Nutria breed year-round and young can swim within 24 hours after they are born. (A Field Guide to Mammals of North America North of Mexico, F.A. Reid)

was a good biological reason for the introduction. Not always! The American Acclimatization Society wished to introduce to the United States every bird species mentioned in Shakespeare's plays. One particular member, Eugene Schieffelin, has been credited as the key player for bringing starlings to America. In 1890, about 100 starlings were released in Central Park of New York City. By 1950, starlings were found coast-to-coast and considered a major avian pest.

2. Most have probably guessed the animal is a coyote. One story as to how the coyote got its name comes from the Lewis and Clark Expedition. One of the tasks asked of Lewis and Clark was to collect animal specimens for the Smithsonian Institute. Of the species sent, the prairie dog and coyote were missing identification tags when they arrived, but the tags were eventually found.

Advisory Board

The Advisory Board of the Caesar Kleberg Wildlife Research Institute provides leadership in all aspects of our work. We are indebted to them for their commitment to CKWRI and its mission.

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According to some notes from the expedition, a coyote was considered a dog found on the prairie, hence, a prairie dog. Prairie dogs live in family groups called 'coterie.' The word coyote was derived from coterie. However, back at the Smithsonian, the found tags were switched, and as they say, the rest is history.

3. The track was made by a canid species, which has symmetrical right and left halves. Cat tracks are not symmetrical. Dogs have round tracks, while coyotes and foxes leave an oval-shaped track. Typically, the nails of the

middle 2 toes of a red fox and coyote leave marks in the soil, while gray foxes typically do not leave nail marks because they have retractable claws like a cat. The track is oval-shaped with no claw marks, so most likely it was made by a gray fox.

So, how did you do on the quiz? If you got all 3 questions correct, then you most likely played outdoors as a kid. If you got 2 questions correct, then you probably saw 'Old Yeller' numerous times. If you got only 1 question correct, then you may wish to attend our Ecology Camp for a refresher course. If you did not get any answers correct, then put down your Wii and go outside and explore your surroundings. We will see you next summer! You will be surprised how fascinating the outdoors can be. ~

What Do They Eat?

Western coachwhips mainly consume "small mammals, birds, bird eggs, lizards, snakes, amphibians, and carrion." (<http://www.wildlifenorthernamerica.com/Reptile/Western-Coachwhip/Masticophis/flagellum-testaceus.html>)

Texas pocket gophers are vegetarians; they forage on roots of grasses such as *Paspalum*, *Cynodon*, and *Cenchrus* and roots, stems, and leaves of *Helianthus*. (<http://www.nsr.ttu.edu/tmot1/geompers.htm>)

Visit our web page at
<http://www.ckwri.tamuk.edu>



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