

Native Seeds and Right-of-Way Restoration:

What Every Landman Should Know

By Colleen Schreiber

In the minds of many, South Texas is a mystical land, and for many hunters, it's "the" go-to place for big bucks and bobwhite quail. Because the Texas Gulf Coast and the Rio Grande Valley are in the path of one of the most critically important flyways for migrating birds, South Texas is referred to as a birder's Mecca. It's also home to many species of grassland birds, and the last vestiges of habitat for the endangered ocelot are found in the Rio Grande Valley, primarily in Cameron, Willacy and Kenedy counties.

This highly diverse landscape that is home to so many native plants and animals is one reason South Texas is known as "the last great habitat." Another reason is because South Texas still has extensive and contiguous tracts of wildlife habitat.

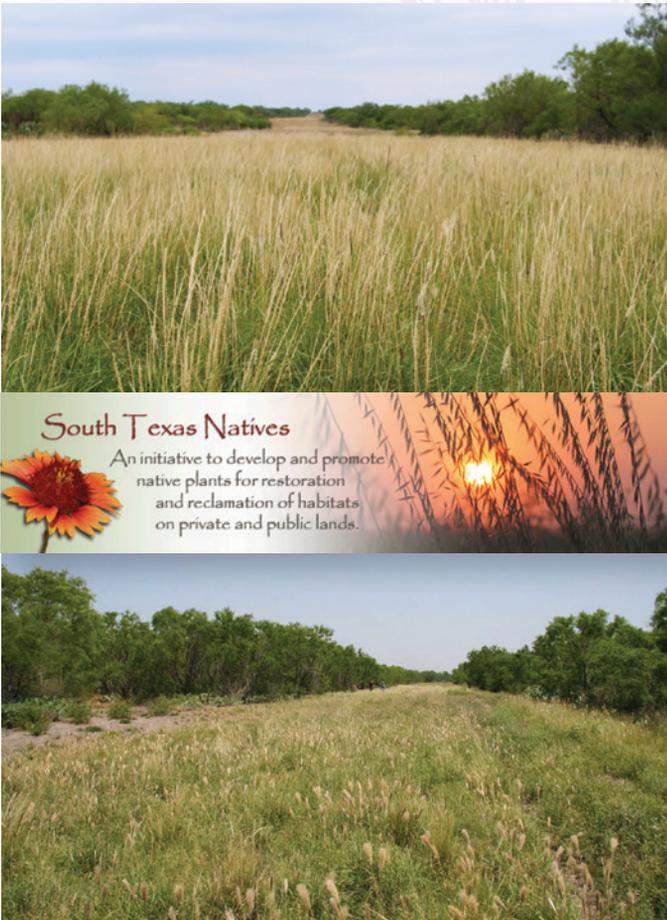
The South Texas of old has changed and continues to change in part because of the ongoing energy boom. The huge shale play throughout the state, particularly the Eagle Ford Shale in South Texas, without a doubt put Texas in a much better economic position compared to many other states, and from that perspective it cannot be viewed as anything but positive.

The Eagle Ford play, which is estimated to encompass a little over 12 million acres of prime South Texas wildlife habitat, however, is changing the face of South Texas. Wildlife and outdoor enthusiasts are most concerned about the loss of native plant communities and the introduction of non-native grasses as a result of mineral development. Additionally, the fragmentation of the native habitat is a very real concern. The footprint on the landscape that pipeline projects, well pad locations, road infrastructure and additional development pressure — from trucks to people — is significant.

The Caesar Kleberg Wildlife Research Institute, a world-class wildlife research facility headed by Professor Fred C. Bryant since 1996, works diligently to restore and enhance the vestiges of this last great habitat as the boom continues.

"My staff and I wake up every morning worrying about wildlife," Bryant said. "If it walks or flies in South Texas, it is probably on our radar screen."

Given the massive changes that the South Texas ecosystem is undergoing, one of the institute's primary focuses is ensuring there are native plants available on the commercial market to restore the native habitat. The first step in that effort is to abate the proliferation of non-native grasses like Guinea grass, Lehmann's lovegrass, Bermuda grass, buffelgrass and a host of Old World bluestems. Imported decades ago during the early part of the 20th century, these grasses played a crucial role at a time when cattle production was



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NATIVE SEEDS

the primary income for most ranchers. Throughout the 20th century, these grasses were staples of reseeding mixes recommended by the Soil Conservation Service, now the NRCS, for erosion control, pasture and hay production. They served a purpose for that era, and they did so amazingly well. Times definitely changed, however, and today on many South Texas ranches, wildlife contribute as much or more to the bottom line than livestock. This trend is not exclusive to South Texas; the same is true for many other regions of the state.

A monoculture of non-native grasses is not healthy for wildlife. For example, CKWRI documented significant declines in bobwhite quail densities on sites dominated by non-native plants when compared to sites with native plants.

Likewise, CKWRI research also shows that seeds and insect abundance is significantly lower on sites

dominated by non-native grasses versus sites dominated by native plants. That's important because seeds and insects are critical components of the diet of bobwhite quail. All grassland birds, like the quail, are impacted by the proliferation of non-native grasses.

So what constitutes good wildlife habitat? In two words: "native plants." According to Forrest Smith, director of CKWRI's South Texas Natives, "native plants" is where it all begins.

"When we talk wildlife habitat, we talk native habitat because that's the natural and normal place for our wildlife to exist," Smith explained. "If a property has mostly native plants, it at least has the potential to support a broad array of wildlife species. Where non-native grasses dominate, some wildlife species will not persist, or if they do, they will be there in far fewer numbers."

So what can be done to stop the spread of non-native grasses? The simplest solution is to stop planting them.



Caesar Kleberg Wildlife Research Institute South Texas Natives

An initiative to develop and promote native plants for restoration and reclamation of habitats on Private and Public lands.

Restorative Seeding Information for the Eagle Ford Shale:

<http://www.ckwri.tamuk.edu/research-programs/south-texas-natives/restoration-seeding-information-for-the-eagle-ford-shale/>

Selecting seed mixes for specific areas of South Texas:

<http://www.ckwri.tamuk.edu/research-programs/south-texas-natives/seeding-recommendations/>

Details on each of the native seed releases developed:

<http://www.ckwri.tamuk.edu/research-programs/south-texas-natives/plant-releases/>

STN Power Point Presentations

<http://www.ckwri.tamuk.edu/research-programs/south-texas-natives/publications/oral-presentations/>

The commercial dealers of native seeds that are adapted for South Texas are Douglass King Seed Company and Pogue Seed Company.

The Native Seed Program expansion project into West and Central Texas is called Texas Native Seeds. Currently they are collecting seeds throughout these new areas and are doing evaluation and selection projects in order to make a number of native species available to consumers. The points of contact for each area are located in Stephenville and Alpine, respectively. The first new seed releases for use in West and Central Texas are scheduled to be made in 2014.

The central Texas point of contact is Mia McCraw, mia.mccraw@tamuk.edu. The west Texas point of contact is Colin Shackelford, colin.shackelford@tamuk.edu.

The website for the Texas Native Seeds Project is <http://www.ckwri.tamuk.edu/research-programs/texas-native-seeds/> and includes a map of the active work areas on the homepage.



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Fortunately, there is a gradual change in the recommended seeding mixes. It's as much of an awareness issue as it is an education issue. CKWRI's STN is leading the charge on both fronts.

STN's mission is to develop and promote native plants for restoration and reclamation of native habitats on public and private lands. Now over a decade old, the initiative came about in large part because South Texas landowners interested in restoring native habitats were not able to find seed sources endemic to the South Texas area. The Texas Department of Transportation, which is under mandate by the Clean Water Act to use native seeds in highway revegetation projects, faced the same dilemma.

Today, however, this is no longer a problem because STN developed and released more than 20 native grass species and forb seed sources adapted to the South Texas environment to commercial seed companies. As a result, large quantities of these native seed mixes are now available on the commercial market, with an estimated seed supply for up to 40,000 acres of annual restoration plantings.





While the cost of these native seed mixes decreased significantly, it is still two to three times more costly to use than non-native grasses, like buffelgrass or Bermuda.

In addition to development of the native seeds, STN is now the “go-to” group for “how-to” advice on native plant restoration. Officials developed an easy-to-use, land-manager-friendly restoration handbook that enables land managers to make better decisions, which will hopefully give them a better shot at making restoration happen successfully on the ground. Another valuable tool, STN’s website contains a variety of how-to information, seed mix suggestions and planting tips. During peak planting periods in the spring and fall, the website typically generates two to three calls a day from individuals asking for guidance or seed mix recommendations.

As for the restoration process itself, Smith said there is no catchall recommendation for site prep. One thing to know, he said, is that non-natives can and will out-compete the native species if their seeds are present in the soil at equal or greater numbers than native seeds. Thus, it’s important to eliminate or reduce the population of non-natives as best as possible prior to reseeding.

Segregating the topsoil from the subsoil and putting them back the way they came out might seem insignificant and nitpicky, but it is perhaps one of the most critical

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aspects for a successful reclamation project on a pipeline right of way. Drainage and runoff, slope and topography are issues that also need to be considered and addressed.

“If you turn that topsoil topsy-turvy and put the topsoil at the bottom and the subsoil at the top, I don’t care what else you do, you’re not going to be able to reclaim or restore that surface,” Smith said.

Knowing the site, soils and existing vegetation communities and picking the right mix of species are as important as site preparation. Having a mix of species that complement each other and are adapted to the specific restoration site is important not only because a diversity of plants is better for wildlife, but also because a mix with early, mid- and late successional plants makes for a better functioning system, one that hopefully has a better shot at keeping



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the non-native grasses at bay and one that functions in dry and wet time periods. Having a mix also helps deal with the inherent soil diversity present in South Texas.

Smith likens restoration to triage.

“In an attempt to stop anything else bad from happening to the site, we first apply a Band-Aid. The idea is to fill up the gaps (that is the bare ground) with some early successional native plants. If we don’t get the soil covered quickly, a plant that we don’t want will come in.”

Smith often recommends the use of cover crops such as sorghum, millets, wheat or oats for a period after disturbance before the native seeds are planted. Cover crops help prevent erosion and help rebuild soil structure — and they are cheap.

Finally, on large reclamation projects, Smith recommends some advance planning prior to the completion of exploration and drilling operations. Simple estimates of acres impacted and the amount of native seed mixes needed should be specified and ordered upfront with companies that sell Texas Department of Agriculture certified native seeds. Douglass King Seed Co. in San Antonio and Pogue Agri Partners in Kenedy are two companies that produce and sell STN certified seeds.

STN’s efforts sparked a native plant restoration revolution not just in South Texas but throughout the state. In fall 2010, CKWR’s STN, private landowners and the Texas Department of Transportation initiated a new collaborative — Texas Native Seeds — to make native seeds available for restoration in Central and West Texas as well.

TXDOT also made significant changes to its specifications for roadside and highway rights of way, which today call for 100 percent native grass seed mixes for parts of South Texas. The agency is considering doing the same for the rest of Texas.

Despite the progress, there is still much more to be done. Supporters of the revolution are now calling on oil and gas

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companies to make reseeded with natives a standard operating procedure, unless a landowner chooses otherwise.

“Wildlife are largely reliant on native plant communities,” Smith said. “That’s the community they evolved with; it’s the community they do best in. It takes good native habitat to support good wildlife populations, and if we can’t restore disturbed habitat, there will be less wildlife because in the end there will be less habitat.

“We need to keep the really good wildlife habitat places that are still out there intact because these native rangelands are the wildlife factory. They are vital to the very survival of our native wildlife populations,” he added.

“And the land,” he stressed, “is at the heart of every operation. We’re not making any more land; we have to get better at caring for the wildlife habitat that remains.” 

About the Author

Colleen Schreiber is a full-time staff writer for *Livestock Weekly*, an industry trade publication in business since 1949.

More information about native plant restoration and the other programs of the Caesar Kleberg Wildlife Research Institute may be found at www.ckwri.tamuk.edu, www.ckwri.tamuk.edu/research-programs/south-texas-natives and www.ckwri.tamuk.edu/research-programs/texas-native-seeds.

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