

## Invasive Exotic Grasses are Reducing the Diversity of our Native Habitat

I have written numerous columns on one aspect of exotic plants or another, trying to make the case that exotic species are detrimental to our native habitat and flora and fauna. And there is a valid case to be made that any non-native plant growing here is taking up the space, water, and nutrients from a native plant and therefore reducing the diversity of native plants in our habitat.

But there is a difference between non-natives like crape myrtle, and rosemary and even St. Augustine lawn grass, which are not invasive and plants that are invasive. (Yes, St. Augustine is a poor choice for a lawn grass in an arid area like this, but it can't grow successfully here without man's help and thus is not invasive in the Hill Country.)

An invasive species is one which escapes cultivation and propagates on its own into other areas, usually crowding out native vegetation and taking over an area. Things like Chinaberry, ligustrum, Arundo donax (giant reed), KR bluestem, Kleberg bluestem and the other "old world bluestem cousins", buffelgrass and Guinea grass all fit the definition of invasive.

A recent article in Texas Wildlife on this subject caught my eye. Forrest Smith, of the Caesar Kleberg Wildlife Research Institute of the Texas A&M University-Kingsville, wrote an article entitled "Are Arthropods the Canary in the Coal Mine?"

Arthropods include insects, spiders and crustaceans that have external shells and segmented bodies. Smith described several studies in South Texas in which researchers counted the numbers of arthropods as a measure of the biodiversity of the area, and compared the numbers found in native grass pastures to those found on sites containing exotic grasses.

In one study, the researchers found 60% more arthropods in native sites than in sites containing exotic grasses, and, perhaps most surprisingly, the amount of grass cover ascribed to the exotic grasses was less than 20%. In another study the researchers found 73% less forb cover on sites containing more than 25% exotic buffelgrass. In yet another study, the number of species of arthropods on native grass sites was found to be ten times that found on sites with exotic old world bluestem grass.

Because of the nature and growth habit of most exotic grasses, they take over bare ground between native bunchgrasses and prevent the germination of native forbs (wildflowers), which in turn are necessary for many species of insects to live. In fact it works both ways, some species of forbs need a certain species of insect to pollinate them and some species of insects need a certain species of forb for their larva to feed on.

So when the invasive grass chokes out the forbs, the greatly-reduced number and diversity of forbs affects the insect populations and diversity, which in turn further reduces the number of forbs.

But the effects don't stop there. In fact that is just the beginning. Without the forbs, ground-nesting birds like turkey and quail, plus dove and many other prairie birds, will lose a vital food source. Without insects most all types of birds will have a hard time raising their young as even seed-eaters and hummingbirds need insects for protein. Lizards, amphibians and small snakes also live on insects. Higher up the food chain the predators of the quail, dove, sparrows, lizards, toads, etc., are also deprived of their normal food source.

Back in January I wrote a column about invasives we had observed in two South Texas National Wildlife Refuges last December, saying, "invasive grasses, buffelgrass and Guinea grass, are taking over vast areas and completely crowding out native grasses and forbs. In many affected areas, these grasses have formed a tangled, two foot high monoculture of grass with larger shrubs being the only other vegetation. These areas are useful habitat for very few species of birds, mammals or other animals."

The ranchers who planted these grasses, because they are somewhat more productive as forage for cattle, may not have intended that the grass escape into the wildlife refuges, but it did. Now the cattle raisers are left with good cattle forage but poor wildlife habitat, including deer habitat, and the wildlife refuges are now also poor habitat.

This is the danger that Smith was referring to in his reference to reduced arthropods as being like the "canary in the coal mine". And it is going to be hard for us to get back to the "fresh air" of native habitats.

Until next time...

Jim Stanley is a Texas Master Naturalist and the author of the books "Hill Country Landowner's Guide" and "A Beginner's Handbook for Rural Texas Landowners: How to Live in the Country Without Spoiling It". He can be reached at [jstmn@kctc.com](mailto:jstmn@kctc.com). Previous columns can be seen at [www.hillcountrynaturalist.org](http://www.hillcountrynaturalist.org).