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Guts and Grasses

By Ned Snyder

My interest in ranges and grasses began belatedly after I had owned ranch and farmland in Central Texas for over a decade. Pretty hills, bottomland along the Middle Bosque River, and some productive farmland as well as worn-out fallow fields compose the property. The first decade or so of my ownership was remarkable only in my poor management. I blamed some of my poor performance on a busy medical practice, but complacency is to blame. I had a rural youth, and I had some working knowledge of livestock but not really the land itself. Like many small-town boys of my generation, the land was where one pursued testosterone-enhanced activities, such as hunting, fishing, and working cattle and goats. I did not appreciate the brittleness of my patch of hills and prairie, nor did I appreciate the nature of the responsibility I had assumed when I acquired the property. I guess I

resembled the doctor who knows diseases and goes to work every day but does not have a clue about the actual lives of his or her patients.

I am fortunate that there was little mesquite on the land, but it was infested with juniper, and I watched these trees multiply like hamsters. I tried bulldozing, but I only ended up with more rock piles and a new growth of juniper and sumac. The grass was usually ribbon high. A favorite author of mine, John Graves, lives in the same series of limestone hills and says our land is worn out because of "too much cotton and too many cows."¹ Nevertheless, at some point I realized I could do better, and I started to commute to classes of the School of Ranch Management at Texas Christian University. My first class on soil was superb, but the second class on grasses was an epiphany. I began to try to visualize what the landscape really looked like 150 years ago.



Photo 1. Forested area before and 1 year after clearing juniper with a tree terminator.

Moreover, I applied what I learned in class to the ranch. Old fallow fields were planted in native grass mixes, and we used a tree terminator to remove the juniper, followed by distribution of native seed. We began intense rapid rotational grazing and better attention to stocking rates.

I have honestly been surprised that this restoration project has worked so well. I have always considered myself a good fixer of the human body, but many things in the country I previously tried to improve mechanically or agriculturally have not been very successful. An old John Deere 730 diesel rests abandoned on the side of one of my restored fields following my failed attempts to replace a clutch and repair a tangled electrical system. When I bought my first piece of land, there was a recently planted pecan orchard as well as a number of grafted native river-bottom pecan trees. My hopes were high for good income and an orchard of tall trees, and I expended a significant portion of my energy and ranch time the first 3 years on the pecans. While we have had some great pecans for Christmas presents and holiday pies, drought, deer, cows, scab fungus, untimely freezes, weevils, and dishonest harvesters have combined to keep the pecan project from anything close to a commercial success. Therefore, the tall grasses, new water seeps, and high calf weaning weights not only are a surprise but somehow even the score with my pecan losses and equipment failures.

Recently, themes in my medical life as a gastroenterologist repeat themselves in my agricultural avocation. While some have linked grasses to history, I have linked them to health and disease. For instance, one of the more significant maladies we see as gastroenterologists is celiac disease. This is a disease caused by a sensitivity of the small intestine to the gluten component of wheat, barley, and rye. It may occur in a prevalence as high as 1 in 125 people in this country. The damage from the gluten causes the villae in the small bowel to shorten and become blunt, and sometimes even disappear. Consequently, people with significant involvement have diarrhea and malabsorption of necessary nutrients such as iron. The strict withdrawal of gluten-containing foods can lead to complete recovery. Interestingly, celiac disease is almost exclusively a disease of descendants of peoples who were wheat eaters. While Europeans and North Africans used wheat as their primary cereal/bread, Asians had rice, and Mesoamericans had corn or maize. Teleologically, celiac disease must have provided a survival advantage to its victims. In a manner analogous to sickle cell anemia, which protected those inflicted from the ravages of malaria, I suspect celiac disease may have provided some protection from parasites like *Giardia lamblia* and hookworm and/or bacterial pathogens such as cholera.

While celiac disease is a problem in a sense caused by grasses, it also reminds me of what happens to the land when grasses are inadequate. Instead of the tall grasses catching and filtering the rain and adding it to the soil and springs and aquifers, there is basically malabsorption and diarrhea with the water sluicing and slithering away with resultant

erosion and dry creeks. Grasses are like our villae, and if they are shortened or absent, the land has a problem.

My research interests concern fibrosis or scarring in the liver. When the liver is injured by long-term alcohol use or diseases such as chronic hepatitis C, scar tissue or fibrosis develops as a response to the chronic inflammation. This leads to an interference with the flow of blood from the portal venous system, which brings blood from the digestive tract to liver. The portal vein and its tributaries carry the products of digestion to the liver, where they are altered and metabolized for further use or excretion. If one has cirrhosis (which is advanced fibrosis), much of the portal blood is shunted around the liver in collateral blood vessels and denied that first, beneficial passage through the liver. Most of the complications of cirrhosis relate to this shunting process, which is known as portal hypertension. I actually think of portal hypertension whenever I see a large stand of juniper combined with an eroded grassless gully swirling with brown water after a rain. In a manner analogous to what happens in the diseased liver, the water bypasses absorption by the soil and wastefully is shunted with its stolen topsoil and nutrients to creeks that function like the collateral blood vessels.

The consequences of abusive practices are a common theme in both my ranching and my medical life. My medical work often deals with patients with liver disease from alcohol or chronic hepatitis C, which frequently results from past drug abuse. We are also finding a specific type of liver disease called nonalcoholic fatty liver disease among the obese. While the previous marginal lands that were plowed and planted and the pastures that were overgrazed were done so innocently, the resultant short inferior grasses and fallow infertile fields are a consequence of a relative abuse. Better grazing techniques, reseeding of pastures, and removal of juniper and mesquite with the resultant growth of medium and tall grasses can partially heal diseased land. We do not do as well with sick livers, but we are beginning to find ways to halt and perhaps improve fibrosis, and of course we have liver transplants for some of the lucky failures.

An area that medicine and at least some range enthusiasts may disagree about is in regard to the use of nonindigenous plants or parts. In medicine, we do not hesitate to replace worn-out heart valves or abused hips with metal prosthetic parts. We also freely take antihypertensives and statin medications to alter the blood pressure and cholesterol that our genetics and lifestyle have presented us. On the other hand, introduced grass and plant species in general have been more of a problem than benefit, and in my own experience, native grasses like Indian grass, little and big bluestem, switchgrass, and side-oats grama are the best bets in our area. Klein grass (*Panicum coloratum* L.) was planted on my place before I began the restoration, and we have included it in the seed mix that has been thrown on the reclaimed areas. Its deep roots have served it well through the hot summers, and I am very fond of it. While purists may frown, I find it a benefi-



Photo 2. Hillside after clearing with a tree terminator and 1 year later.



cial nonnative addition, just like new hips and pharmaceutically restored low cholesterol counts.

“Holistic” is a term that has been used frequently in the past decade to relate to practices in both medicine and land management. After a discussion of Allen Savory’s theories in my grasses class, I obtained a copy of his book *Holistic Management*.² Subsequently, I have learned that holism is a philosophical concept termed by J. C. Smuts in 1926 to mean the entirety of an organism and that it implies a teleological purpose that cannot be explained by laws governing its separate parts.³ While holism when applied to the human species has come to be synonymous with humanistic and psychosocial approaches to health care, it has been further trivialized to a code word for alternative and nonscientifically proven forms of medicine.⁴ So it actually took my grasses class and books on land management for me to realize the true meaning of a phrase commonly used in medicine. I like the actual meaning of “holism” much better.

I know this sounds trite, but the healing of the land and the body have much in common. Smuts’s ideas about the

whole being greater than the sum of the parts and the concept of no boundaries can be applied to the health of both the land and the human body. Perhaps the disciplines of medicine and range management can learn from one another.

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