

The Change on the Rangeland
Kiera Leddy
South Dakota Section
Society for Range Management
High School Youth Forum
2015

The Change on the Rangeland

When you think of an endangered species what comes to mind? Maybe the Giant Panda, the Siberian Tiger, or the Leatherback Sea Turtle? These all come from far away exotic places, but there is something else endangered right before our eyes. It isn't an animal or a bird, or even a particular kind of plant species. What I am referring to is the destruction of our tall and mixed-grass prairie ecosystems particularly in the Northern Plains Region.

I live in an area known as the Prairie Pothole Region in northeastern South Dakota. The Prairie Pothole Region is the core of what was once the largest expanse of grassland in the world, the Great Plains of North America. When the glaciers from the last ice age receded, they left behind millions of shallow depressions that are now wetlands, known as prairie potholes and home to thousands of migrating waterfowl (Ducks Unlimited, n.d.). Within this region is the Coteau des Prairie which is French for Hills of the Prairie. This is also where I live. The Coteau is a plateau approximately 200 miles in length and 100 miles wide extending from eastern South Dakota, to southwestern Minnesota and into Iowa (USGS, n.d.). The Prairie Coteau is the largest remaining tract of native northern tallgrass prairie in the United States with approximately 1 million acres of native grass remnants, this native grassland ecoregion is critical to protect for the survival of native species (The Nature Conservancy, n.d.).

Today, I am going to share with you why rangeland ecosystems are important, what values they provide, and what can be done to protect them.

First, why are rangelands important?

Rangelands are important because 47% of the earth is rangeland; however some estimates were that at one time this was as high as 70% (Heitschmidt and Stuth, 1991). Thirty-six percent of the United States is rangeland with most of this as public land (USDA Research, Education & Economics Information System, 2011). Historically, native prairies made up about 95 percent of South Dakota and were found throughout the state (Hays, 1994). Rangelands ARE important. They are the largest ecosystems in the world and 800 million people make their livelihood tied to grassland/pastureland and rangeland (Food and Agriculture Organization, 2008).

But, there is a change on the rangeland. A study conducted by South Dakota State University researchers found that with the increase of crop commodity prices for corn and soybeans these unique landscapes and ecosystems are being plowed up. Using high resolution imagery and sampling points across South Dakota, the grassland conversion from 2006 to 2012 in South Dakota alone was 1.8 million acres (Reitsma et al., 2014). This supports the research by Wright and Wimberly (2013) finding significant conversion in the Northern Great Plains also known as the Western Corn Belt states of North Dakota, South Dakota, Nebraska, Minnesota, and Iowa between 2006 and 2011. The South Dakota study found that over 1.8 million acres of grassland were converted to cropland over the six year period - this equates to 6 football fields every hour. As a consequence, populations of grassland nesting birds are declining faster than ever. Butterflies such as the Dakota Skipper and the Poweshiek Skipperling are on the Threatened and Endangered Species list. Soil carbon sequestration is at a deficit, and the loss of native grasslands is impacting watersheds. Wright and Wimberly concluded that the conversion of these native grasslands is comparable to the deforestation rates in Brazil, Malaysia, and Indonesia. Once these ecosystems have been destroyed it is irreversible to get them back.

Rangeland which includes native grasslands is valuable. Socio-economic influences currently do not put the same monetary value on an acre of native grassland as compared to an acre of cropland. But, what if we started putting an intrinsic dollar value on the multiple uses they provide? We just may then begin to have society and the agro-economic industry view native grasslands and/or rangelands differently.

Rangelands are of great economic and social importance, because they offer a livelihood to millions of people around the world. In my state, livestock grazing occurs on 53 percent of South Dakota's total land area and it occurs in every county throughout the state (SDACD, 2014).

The intrinsic values rangeland provides include habitat for wildlife which is essential for pheasants and a huge economic boom for hunting in my home state and it is of increasing importance for pollinators. Rangeland provide increasingly important recreational uses such as hiking, hunting, camping,

and mountain biking. Rangelands provide sources for renewable energy. Along the Coteau des Prairie, wind farms have developed and are primarily on the prairie.

Some of our most basic natural resources are mined from rangelands.

Native plant products known as ethno-botany provide alternative medicines. Plants such as Echinacea are used for medicinal purposes and cultural uses such as Native American Novocain.

A modern resource of rangelands is the concept of open space. As our population becomes more urbanized, open space will become more valuable.

How does this loss of prairies affect us? We are currently changing the landscape and it will be irreversible to bring these native plant communities that have developed over a hundred years back on the landscape. Many of these lands had bio-diverse native plant communities in climax condition. We need others to understand the value of biodiversity to protect these vast rangelands of the world. We need others to understand that plant succession is a long-term process, just by re-seeding these lands will not replicate what Mother Nature created since the beginning of time. We lose diverse plant species above ground and the biota in the native soil profile (West, n.d. and USDA-NRCS, 2013). In addition, our existing grasslands are being over-used and potentially degraded, there are not those incidental areas available to provide a chance of rest and recovery to the grazing system. This means proper grazing management by using rotational grazing, deferring grazing to the correct season of use, and proper stocking rate is more important than ever to ensure the rangelands we have stay healthy and productive for years to come.

Finally, what can we do to protect our rangelands and grasslands? We can educate others about the importance of these unique ecosystems. We need to tell our story about how grassland ecosystems are important for grazing livestock, they hold the future for unique prairie grassland birds, insect populations, and for pollinators that will help feed our world like the Dakota skipper, and bumble bees. We need to support groups like the Society for Range Management and the Grassland Coalition to promote and educate others about the importance of rangelands. We need to bring our message to the table and talk to Congressional and State Legislators about legislation. Currently there is a provision in the 2014 Farm Bill

called Sod saver that will slow the conversion of native sod by denying crop insurance for a period of five years on any native grassland converted for crop production (Claassen et. al., 2011). While this provision was debated to be passed nationwide, it currently covers only six states in the Prairie Pothole Region including my home state of South Dakota (National Sustainable Agriculture Coalition, 2014). We need to keep sharing the importance of this rangeland ecosystem to protect the remaining rangelands.

In closing, we all know our story. We understand the importance of rangeland, the values it provides to us and our livelihood, the importance of it as an ecosystem for all the other plants and animals that rely on it. Now we need to share our story. We need others to know the intrinsic value rangeland has and once this resource is gone, we cannot recreate it. I'd like to close with a well-spoken Native American proverb. "Treat the earth well: it was not given to you by your parents, it was loaned to you by your children. We do not inherit the Earth from our Ancestors, we borrow it from our Children."

- Tribe Unknown

Works Cited

- Claassen, R., Carriazo, F., Cooper, J.C., Hellerstein, D, and Ueda, K. (2011). *Grassland to Cropland Conversion in the Northern Plains: The Role of Crop Insurance, Commodity, and Disaster Programs*. Economic Research Service. No. 120, USDA. Retrieved from www.ers.usda.gov
- Ducks Unlimited. (n.d.) *Prairie Pothole Region*. Retrieved from <http://www.ducks.org/conservation/prairie-pothole-region>
- Food and Agriculture Organization. (2008). *Are Grasslands Under Threat?* Retrieved from http://www.fao.org/ag/agp/agpc/doc/grass_stats/grass-stats.htm
- Hays, M. (1994). *South Dakota Prairies* fact sheet. Retrieved from <http://www3.northern.edu/natsource/HABITATS/Sdprai1.htm>
- Heitschmidt, R. and J. Stuth (eds). 1991. *Grazing Management: An Ecological Perspective*. Timber Press
- National Sustainable Agriculture Coalition (NSAC). (2014). *2014 Farm Bill Drill Down: Conservation – Crop Insurance Linkages*. Retrieved from <http://sustainableagriculture.net>
- Reitsma, K.D., Clay, D.E., Carlson, C.G., Dunn, B.H., Smart, A.J., Wright, D.L., Clay, S.A. (2014). *Estimated South Dakota Land Use Change from 2006 to 2012*. SDSU Department of Plant Science. pdf.
- SD Association of Conservation Districts (SDACD). (n.d.) *Grazing Systems*. Retrieved from <http://www.sdconservation.org/grassland/managing/systems.html>
- The Nature Conservancy. (n.d.). *The Prairie Coteau Landscape*. Retrieved from [http://www.nature.org/ourinitiatives/regions/northamerica/united states/southdakota/the-prairie-coteau-landscape.xml](http://www.nature.org/ourinitiatives/regions/northamerica/united%20states/southdakota/the-prairie-coteau-landscape.xml)
- USDA-NRCS. (2013). *Rangeland Soil Quality – Soil Biota*. Fact Sheet from USDA-NRCS North Dakota.
- USDA, National Agricultural Statistics Service (2012) Quick Stats 2.0. Retrieved from http://nass.usda.gov/Quick_Stats/
- USDA, Research, Education & Economics Information System. (2011). *Rangeland Stewardship and Health*. Source Oregon State University, retrieved from [http://portal.nifa.usda.gov/web/crisprojectpages/0215990-rangeland-stewardship-and-health....](http://portal.nifa.usda.gov/web/crisprojectpages/0215990-rangeland-stewardship-and-health...)
- USGS. (n.d.). *A Tapestry of Time and Terrain: the union of two maps – geology and topography*. Retrieved from <http://tapestry.usgs.gov/features/38coteau.html>

West (n.d.) *Biodiversity of Rangelands*. An Issue Paper Created by the Society for Range Management.

Wright, C.K., and Wimberly, M.C. (2013). Recent Land Use Change in the Western Corn Belt Threatens Grasslands and Wetlands. *Proceedings of the National Academy of Sciences of the United States*, 110(10), 4134-4139. Doi:10.1073/pas.1215404110.