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Celebrating 20 years: Legislative Committee by Sandy Smart

State and federal policies have important consequences for grasslands. The Coalition's legislative committee's main purpose is to provide information to policy makers. Because of our 501(c)6 non-profit status and desire to obtain 501(c)3 non-profit status, the Coalition can not and does not lobby. Some of the most practical ways the Coalition provides information to policy makers is through our membership with Ag Unity, at the state level, and Partners for Conservation, at the federal level. In addition, our attendance at NRCS's State Technical meetings are extremely helpful in providing feedback to them regarding the development and implementation of federal conservation programs. Similar partnerships with USFWS, SD GF&P, SD DENR, and NGOs provide opportunities, when asked, to provide information regarding grassland management impacts on policies related to the Endangered Species Act and Clean Water Act. However, it occurs not only in regulatory ways; a recent emphasis to provide market incentives to support conservation by NGOs and businesses like Walmart and Coca-Cola are looking for groups like the Coalition to provide information on how to best manage livestock while improving grassland health and species diversity.

The purpose of the legislative committee also works in reverse. Coalition board members who serve on this committee, Jim Faulstich, Larry Wagner, and Linda Gilbert, keep abreast of state and federal policies and communicate those policies to the board and its members. This has been especially important during the state and federal legislative sessions when new bills are being introduced into committee. One recent example, is the actual-use taxation policy that would tax land according to its use and not its potential. So if a producer decides to put Class I farm land into grass, he/she would pay pastureland tax rate instead of cropland tax rate. Thus, a producer would not be unfairly penalized when making grassland enterprise business decisions. As a Coalition we can't voice our concern; however, as individual citizens we can contact our representatives and let them know our own opinions of the policy.

This approach is acceptable according to federal guidelines of non-profit organizations. It is a cautious tightrope we walk and we do it with the utmost respect that the law allows. The benefit of being connected to the Coalition is being made aware and informed of conservation policies. As individuals you can make up your own mind whether or not to support policy decisions.



USDA building in Washington, D.C. (www.usda.gov)

Range 101: Rangeland Ecosystems of the World - Southern

Tallgrass Prairie of USA by Sandy Smart

Over the past several years I have been attending the National Land and Range Judging Contest in Oklahoma City, OK. Preparation for the contest involves taking high school 4H and FFA teams to nearby native prairie to practice plant identification for four days prior to the contest. Dave Ollila, Brandy Knutson, and Craig Shryock have been doing this for over 20 years and have been very successful with our South Dakota teams.



Dave Ollila (center) working with South Dakota high school students learn plant identification in Oklahoma (Photo by Shirley Howe, 2018).

The southern tallgrass prairie is quite interesting compared with its counter part in the Northern Plains. One of the first hurdles to overcome is to learn how to identify the grasses and the six bluestems (big bluestem, little bluestem, splitbeard bluestem, silver bluestem, broomsedge bluestem, and Old World bluestem). The next challenge is to identify a dozen or more legumes like lespedeza, clover, dalea, tickclover, indigo, the broadleaf forbs (which is much easier because we have many of the same species) and finally the woodies. In Oklahoma, there are many trees and shrubs that livestock will eat and provide cover for wildlife. For the contest several of the woody plants are triple “D”, meaning desirable for quail food, quail cover, and cattle food. I always joke with the people I’m with from South Dakota that “if we had cattle that needed to eat trees, our pastures would be in rough shape”.

Southern tallgrass prairie has more warm-season plants than cool-season as one would expect. Of the few native cool-season plants, Canada wildrye, scribner panicum, and sedges are prevalent grasses or grasslikes. Common invaders are bermudagrass, downy brome, little barley, tall fescue, Johnsongrass, Old World bluestem, sericea lespedeza, prickly pear cactus, black locust, eastern redcedar, and Oklahoma blackberry.

One of the things that is evident, if you have ever been involved with the National Land and Range Judging Contest, is the bobwhite quail habitat requirements. Bobwhite quail require a variety of food plants (grasses, legumes, forbs, and woodies); they need 25% or more bare ground to access seeds, 30-40% grassy nesting cover, and 20% woody plant protective cover (namely from raptors). In light of the soil health movement, where all the bare ground should be covered by litter, one needs to be mindful of management objectives. Managing for bobwhite quail, some bare ground is necessary. If managing for livestock production bare ground is less desirable. In all my travels, I have come to realize that “one size does not fit all” and local wisdom needs to be considered when developing management strategies. This is especially true in the southern tallgrass prairie.

Adapting to the Prairies: Larry Wagner on Ranching in the Great Plains by Kate Rasmussen

Larry and Julie Wagner run a grass-fed beef ranch in the Bijou Hills near Chamberlain, South Dakota. When I asked Larry where his interest in prairie conservation came from, he told me about the time his father planted a trial field of corn in 1958 on the same ranch the Wagner's still live on. Rootworm took hold of the corn and Larry's father planted the ground back to grass by 1959 rather than pouring money into insecticides. "I always hated seeing the corn struggle and die on dry years," he added, "Grass seems to do better with the weather we have here. Grass requires low inputs, low overhead." Larry has carried on his father's passion for the resiliency of native range by running a grass-focused cattle operation while serving on the Grassland Coalition for nearly 20 years.

While Larry has been a long time steward of the land, grass-fed and grass-finished beef didn't catch the Wagner's interest until his wife Julie, a retired veterinarian, began researching cattle management centered on native prairie ecology. She found enough compelling data supporting the nutritional benefits of beef grown on the prairie to talk Larry into raising a "trial heifer." Rather than shifting the entire ranch into a new market all at once, Larry pulled one heifer from his herd and let her run with his cows until she reached finishing weight.



Larry Wagner explaining grass-fed beef (Photo by Kate Rasmussen, 2018).

Larry initially became a believer in making the change because of the quality of the meat in the trial heifer. It's a slow process, he cautioned. Despite the challenges of the venture, the Wagner's began finishing their cattle on grass by implementing a rotational grazing system on the ranch in 1991 and haven't gone back to their previous business model that "had too many inputs, too much fiddling." Both he and Julie like getting out of the "factory mentality" and working closer with the native plants and wildlife. In the last twelve years, the Wagner's have added a retail enterprise to their business. They sell their packaged beef at local farmer's markets and health food stores in the Sioux Falls area.

As Larry showed me around his ranch, I asked if his neighbors showed interest in his grass-focused approach to raising and finishing cattle. He gave a smirk that suggested he'd received plenty of skepticism but managed an optimistic response: "I think season-long grazing is fading out. People are starting to see there is an economic advantage to encouraging plant diversity. People can see there is a difference—especially on the dry years." He joked that more land managers would make prairie conservation a priority if they received a bill in the mail for water runoff and soil erosion. "If they were getting billed for it," he said, "like anything else, they'd see they were losing money." Land managers, he explains, are losing money when they over utilize land: "It can be tough to see, though, especially when there are physical bills to pay sitting in the mailbox."

No matter the means of finishing cattle a producer chooses or the market they sell to, grassland is essential to ranchers and the wildlife they share with the Great Plains. Functioning grasslands not only support rural communities and wildlife, but also stabilize soil, clean air, and filter water. In 2014, more acres of the Great Plains were lost to development than the Brazilian rain forest (Gage et. al.). Most of the Northern Great Plains are

Wagner Continued on Page 4

Wagner continued by Kate Rasmussen

privately owned by individuals in a unique position to slow and reverse the decline of North America's most endangered ecosystem.

Education, Larry believes, serves a crucial purpose in conserving the remaining prairies, which is why he has given so much of his time serving on the Coalition board of directions. "I haven't been to a Grassland Coalition meeting where I didn't learn something new," Larry said. Over the years, he has connected with other ranchers and adapted their successful practices to his own operation. He has enjoyed watching the Coalition grow over the years, forming partnerships and new learning opportunities for members: "If we help one person on a pasture walk, it's been worth it."

Gage, Anne M., et al. "Plowprint: Tracking Cumulative Cropland Expansion to Target Grassland Conservation." *Great Plains Research*, vol. 26, no. 2, 2016, pp. 107–116., doi:10.1353/gpr.2016.0019.

Kate Rasmussen is a freelance writer and ranch hand based near Belvidere, SD.

Top 5 Takeaways from the Lockner Pasture Walk by Kate Rasmussen

1. Water Holding v. Water Shedding Landscapes

Dust storms thick enough to hide semi trucks and flooded roads after heavy rains prompted Dean Lockner to convert his crop ground back to native range: "I really didn't like what I saw. I decided I needed to plant something that held onto water and native grasses are a sponge," Dean said as he and his wife Candice lead the Coalition's latest Pasture Walk. Since converting to rangeland, their topsoil and precipitation have stayed put come rain, wind, and drought.

2. Drought Planning

Droughts are the rule not the exception. The Lockner's found "adaptive" rotational grazing combined with giving pastures ample R&R has allowed their land to better handle drought years.

3. Calving on Green Grass

The Lockner's switched to May calving and haven't looked back. Calving later allowed a more hands off approach to the usually labor intensive season: mother cows harvest their own feed and they've had fewer sick calves.

4. Questioning Popular Farming and Ranching Methods

Candice, using a large dry erase board covered in sticky notes, showed Pasture Walk goers the unnecessary inputs they've cut from their business over the past few years. She read off the sticky notes—phrases like March calving, crop farming, making silage, etc. scribbled on each—before tossing them in a pile. The sticky notes stood for everything they did before they began asking A.) *why* they managed their operation a certain way and B.) *if* the management practice actually increased profits. After asking these questions, they couldn't justify continuing to operate their place the way they had for years.

Pasture Walk Continued on Page 5

Pasture Walk continued by Kate Rasmussen

5. Stepping Back

“The grass here grew because of what I didn’t do,” Dean said as he spoke on how he rearranged his business to run on nature’s terms rather than the farming mentality he previously relied on. Bugs and forbs in particular benefitted the land more than he’d previously given them credit: “If we just get out of the way, this stuff takes care of itself.”

Special thanks to Dean and Candice Lockner for volunteering their time on the July Pasture Walk. Dean and Candice gave over 40 attendees a glimpse into some of the setbacks and successes they’ve experienced as holistic land managers on their ranch in Ree Heights, South Dakota. Together, they covered topics ranging from grassland pollinators to making sustainable profits. For more information on upcoming pasture walks, visit sdgrass.com.



Candice Lockner explaining their ranching operation
(Photo by Lindsey Palmer, 2018).

Kate Rasmussen is a freelance writer and ranch hand based near Belvidere, SD.

Grassfed Exchange Overview by Garnet Perman

This year’s Grassfed Exchange held in Rapid City in June included tours, cutting edge research presented by the people involved, and plenty of peer-to-peer education. The theme presented by moderator and GF board member Jason Rowntree was “amplify”, meaning to increase or make greater. He noted that 41 states, four Canadian provinces and several foreign countries were represented at the conference. Twenty nine young people were awarded conference scholarships as Herd Fellows. Herd (Cienega Capital, TomKat Foundation, Armonia, and the 11th Hour Project) and White Oak Pastures sponsored the scholarships. Overall, the number of attendees and speakers in their 40’s and younger emerged as one of the most frequently addressed aspects of the conference.

Rainy weather forced modifications for four out of the five scheduled tours, but the response was favorable in spite of the changes. Operations showcased were 33 Ranch, 777 Ranch, Cheyenne River Bison Ranch and Wild Idea Buffalo Company, Guptill Ranch, and Orwick Family Ranch.

General session speakers included SDSU President Dr. Barry Dunn, Dr. Christine Jones, a soil ecologist from Australia, Dr. Fred Kirschenmann, a North Dakota native and well known leader in sustainable agriculture, Dr. Jonathan Lundgren of Blue Dasher Farm, Estelline, SD, Dan O’Brien, author of several books and founder of Wild Idea Buffalo Company from Rapid City, and Nina Teicholz, an investigative journalist and author of “The Big Fat Surprise”.

Dr. Dunn summed up his observations on the historical and future challenges of agriculture, as primarily ethics, entrepreneurship, leadership and the courage of private land owners and policy makers to consider

Grassfed Exchange Continued on Page 6

Grassfed Exchange Continued by Garnet Perman

the long term consequences of short term decisions. The theme of short term vs. long term considerations was echoed by speakers throughout the conference.

Dr. Jones repeated the question, “So why are we doing this?” multiple times during her two presentations, as she contrasted how conventional modern agriculture and regenerative agricultural models affect soil health. She explained how organic and inorganic nitrogen affect soil health and plant response, and the interrelationships between soil organisms, diversity and soil health using different research examples from all over the world.

Dr. Kirschenmann focused on the different ages of agriculture, the current known as the neo-caloric era. He cited a number of different studies and books that indicate the imminent end of this era and the beginning of a new regenerative agricultural era. He said, “The changes ARE coming! We have to have the innovation, courage and spiritual conviction to move in a new direction.”

Dan O’Brien came to the Northern Plains as an endangered species biologist specializing in peregrine falcon restoration. Through that effort, he developed a holistic approach to conservation, and works towards the goal of making the Great Plains appear as it did before settlement. He founded Wild Idea Buffalo Company by harvesting six animals and butchering them on site. The family operation now processes 900 bison a year and markets the meat at a store in Rapid City and on-line.

Jonathan Lundgren credits innovative farmers and beekeepers with changing his career from a USDA research scientist happily working in accepted science to an independent researcher and regenerative production methods proponent. Blue Dasher is a demonstration farm that includes a bee keeping enterprise, cover crop seed production, free range chickens, hair sheep and pastured pork. The goal is a \$2000/acre profit in 2018. He and his team at Blue Dasher Farm have documented a striking correlation between soil organic matter and profit as opposed to field yield and profit.

Ms. Teicholz talked about how her research in nutrition led to the discovery that the USDA dietary guidelines relied on biased and/or suppressed science, especially the areas regarding meat and vegetable fats. A vegetarian for 25 years, she is now a proponent of meat and animal fats. Her book, “The Big Fat Surprise” details her 10 year investigative efforts. Some of the points she made were 1) Saturated fats do not affect cardiovascular health, 2) Eating cholesterol does not elevate blood cholesterol, 3) Low fat diets don’t work, and 4) Saturated fats do not cause cancer, but research indicates a correlation between vegetable fats and cancer.

A producer panel and numerous peer education workshops covered a wide range of topics and facilitated enthusiastic interactive learning among the attendees. Coalition members will appreciate that Dan Rasmussen, a long time SD Grassland Coalition board member, was named the Grassfed Innovative Producer of the Year.

Garnet Perman is a freelance writer and ranches with her husband, Lyle, near Lowry, SD.

Targeted Grazing Dalmation Toadflax with Sheep in the Ft. Meade Recreation Area by David Ollila

Using funds from a Sustainable Agriculture Research & Education (SARE) Grant along with financial support from the USDI – BLM’s Belle Fourche, SD Field Office, we conducted a targeted grazing exercise on an invader weed species known as Dalmation toadflax. SDSU Extension, USDI-BLM, SDGFP and Doug and Carol Pavel (local producers with grazing experience) cooperated in the project. Our goals included the following:

- 1) determine the effectiveness of timed grazing on Dalmation toadflax infestations;
- 2) develop planning protocols to make the grazing application “scalable”; and
- 3) learn and identify logistical considerations to successfully apply a grazing treatment.

Dalmation toadflax [*Linaria dalmatica* (L.) Mill.] is an introduced, invasive, deep-rooted perennial forb, growing up to three feet tall. It can spread by seed or lateral roots. The overall form of the plant is narrow and upright, with multiple stems growing from a single woody base. Snapdragon-type yellow flowers are found along the stalk of each stem. Mature plants can produce up to 500,000 seeds which remain viable in the soil for up to 10 years. The leaves are pale green, waxy-rubbery, dense, alternate, and heart-shaped; the upper leaves clasp the stem. It contains a white latex fluid which can be “off putting” to cattle and wildlife. Good range management with a diverse and healthy native plant community will help prevent the spread of toadflax since it is most competitive in sparsely vegetated monoculture areas. Chemical control of toadflax can be difficult. The waxy leaves make it necessary to add an oil-based or silicon surfactant to the herbicide mix. Biological control methods such as stem weevils and targeted grazing with sheep/goats can be used to suppress and reduce infestations.

In preparation for the targeted grazing project, a portable solar/battery energizer and electric fencing system was acquired and 25 yearling Rambouillet ewes without lambs were trained to respect the fence boundaries. A slatted side 24’ stock trailer provided portable housing and nightly containment if weather or predation posed a threat. Connected to the stock trailer was “common area of 12 -8’ sheep panels and included a floated water tank which was served by a 250 gallon transfer tank on a trailer. The “naïve” sheep (who had never grazed Dalmation toadflax) with an average weight of 140 lbs were introduced to an infested allotted area on May 22nd.



Sheep grazing Dalmation toadflax infested rangeland. Protective stock trailer and portable corral in the background (Photo by Dave Ollila, 2018).

The results of the project were similar to others who have conducted targeted grazing activities. This effort met our objectives with the understanding that a “trained herd” can be developed to effectively graze Dalmation Toadflax. The portable electric fence system allows for specific areas to be targeted. By addressing the logistics, targeted grazing could be economically feasible if scaled up to a longer targeted grazing duration and to a larger band of ewes that would support the employment of a Herder and dogs. The herder and dogs would concentrate the sheep on the infested area and provide protection from predation.

Tours and explanation of this project, its limitations and potential applications were provided to participants of the SD Professional’s Range Camp and also the Grassfed Exchange tour to Northwest South Dakota. The presentations have created additional dialogue with public range managers as well as ranchers to conduct larger target grazing activities.

Dave Ollila is an Extension Sheep Specialist located in Rapid City, SD.



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Calendar of Events

Event	Date	Location	Contact Person	Phone
Grassland Management School	July 25-27	Watertown	Pete Bauman	605-882-5140
Summer Pasture Walk, Phil Jerde	Aug 7	Reva	Randy Holmquist	605-730-0550
Minnehaha Co. Summer Grazing Workshop	Aug 17	Crooks	Deron Ruesch	605-330-4514 ext 3
Grazing School	Sep 10-14	Chamberlain	Judge Jessop	605-280-0127
Summer Pasture Walk, Gary Howie	Sep TBD	New Underwood	Randy Holmquist	605-730-0550

Please remit any comments, suggestions, or topics deemed necessary for further review to: Sandy Smart, SDSU Box 2170, Brookings, SD 57007, alexander.smart@sdstate.edu, (605) 688-4017