



# Grassroots

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## Grazing School Alumni Survey by Andrea Beck and Sandy Smart

The South Dakota Grassland Coalition has hosted an annual two and a half day grazing school for over 10 years. The curriculum, consisting of classroom presentations and hands-on field experience, was developed to target producers interested enhancing their livestock production through better grassland management. Students have completed exit surveys at the close of each grazing school, but no follow-ups have ever been conducted to see how information acquired at the grazing school has impacted the every-day operations of these producers. Are producers taking away the knowledge they gain from the grazing school and implementing it in a practical manner on the landscape of their home operations?

A survey was generated in an effort to evaluate producers' application of concepts and practices learned at the grazing school on their ranchers. Twenty-two multiple choice questions were given, all having the following answer choices:

- Already had decent knowledge and experience prior to attending grazing school
- Yes, learned about the importance of this concept, but have not implemented it yet on my ranch
- Yes, learned about the importance of this concept and have implemented it into my operation
- No, did not learn or did not see the importance of this concept at the grazing school

The simple format created a smooth, quick surveying experience for busy producers. At least one question pertained to each topic covered in the grazing school curriculum. Six optional open-ended questions, regarding the grazing school's impacts on selected management tools and ranch profitability, as well as interest in further grazing school programs. A link to the online survey was sent via email to 176 past grazing school participants, who were given approximately one month to complete the survey.

A 14.2% response rate (25 completed out of 176) was obtained. We recognize that this is quite low for a survey, but nonetheless the insights gained are still worth communicating. The average time required to complete the survey was 7 minutes. Overall response suggests that producers have implemented what they have learned into their operations (Figure 1).

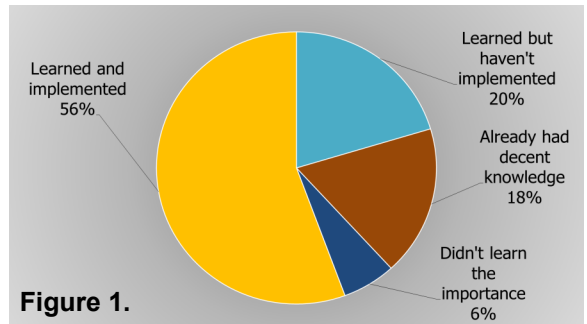


Figure 1.

# Grazing School Survey Continued by Sandy Smart

Fifteen of the 22 multiple choice questions had over 50% of the respondents say that they learned the importance of that particular concept and applied it to their operation (Figure 2). The highest implementation topics are listed in Figure 2.

Concepts with the lowest implementation are listed in Figure 3. Monitoring results and choosing the right techniques were not implemented. Reasons for this could be lack of time to conduct monitoring and a general feeling of not knowing what to do with the monitoring information once obtained. Interestingly, drought was highly implemented on ranches but also had a large number (30%) that still haven't implemented drought strategies. Mineral supplementation was a topic that more people wanted information about as indicated from our open-ended questions.

Lastly, the grazing school has been very successful from our open-ended question about profitability (Figure 4). Sixty-eight percent (17 out of 25) of the respondents indicated increased profitability/productivity due to involvement in the grazing school.

The South Dakota Grazing School has successfully encouraged South Dakota ranchers to incorporate new management perspectives and practices. Even in topic areas where implementation of new practices is less prominent, a large number of producers have recognized the importance of concepts presented at the grazing school, thus indicating that a change in perception towards land management has occurred.

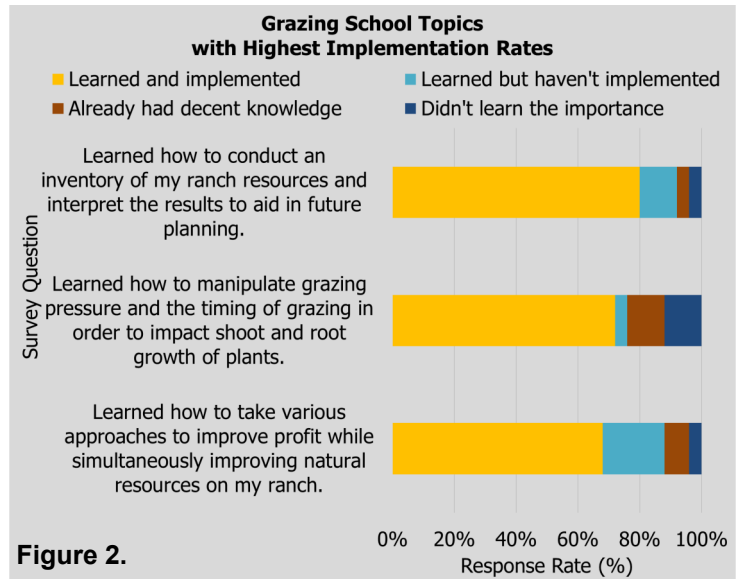


Figure 2.

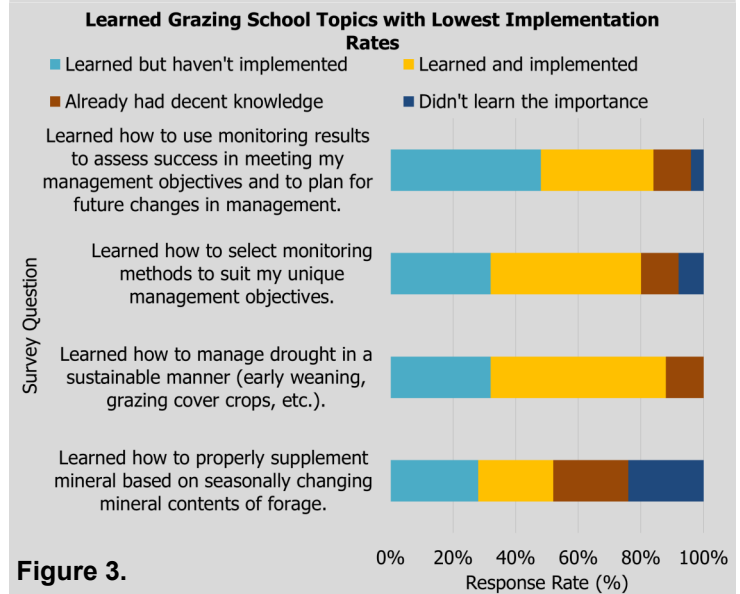


Figure 3.

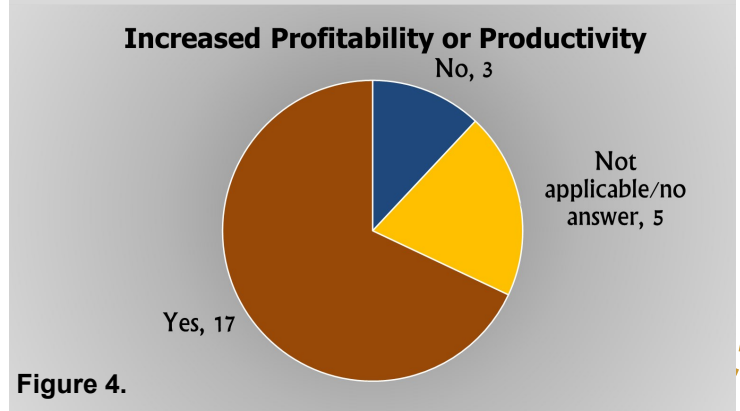


Figure 4.

## SDSU Range Team Competes at SRM Meeting in St. George, UT by Sandy Smart

The SDSU Range Judging Team participated in the Undergraduate Range Management Exam (URME) and Plant Identification competitions at the 70<sup>th</sup> Annual Society for Range Management meetings in Saint George, UT Jan 29<sup>st</sup> – Feb 2<sup>th</sup>. The URME Team placed 7<sup>th</sup> out of 24 teams and the Plant ID Team placed 10<sup>th</sup> out of 23 teams. Alex Mergen and Andrea Beck placed 8<sup>th</sup> and 13<sup>th</sup>, respectively out of 190 contestants in URME.



2017 Range Club, Plant Identification and Undergraduate Range Management Exam Team  
 Back row (left to right): Jonathan Champion (RC, URME), Tate Nafziger (RC, URME), Andrea Beck (RC, ID, URME, UR), Alex Mergen (RC, ID, URME). Front row (left to right): Heide Becker (UR), Andrea Collins (RC, URME), Shyanne Seidel (RC, ID, URME), Katlyn Beebout (RC, ID, URM), Ella Woroniecki (RC, ID, URME), Dr. Sandy Smart (RC Advisor), Dr. Lan Xu (Assoc. Prof. Natural Resource Management)

RC = Range Club, ID = Range Plant Identification, URME = Undergraduate Range Management Exam, Undergraduate Research = UR)

In addition to the student competitions, Andrea Beck and Heide Becker presented undergraduate research in the general poster session. Andrea's poster entitled "South Dakota Grassland Coalition Grazing School: Assessing Impacts on Rancher's Perspectives and Practices" was co-authored by Sandy Smart, Pete Bauman, and Judge Jessop. Heide's poster entitled "Will Climate Change Affect Inter-Specific Competition Between Native and Invasive Grasses Through Seed Germination?" was co-authored by Lan Xu, Jack Butler, and Brent Turnipseed. Pete Bauman, Jameson Brennen, Pat Johnson, Sandy Smart, and Lan Xu also gave research presentations from their latest work.

## South Dakota Rancher Explores Sustainable Livestock Fly Control

by Marie Flanagan, NCR-SARE Communication Specialist reprinted from NCR-SARE "Profile from the Field"

Linda Simmons is a cattle rancher from Twin Brooks, South Dakota. Beef and sheep producers in northeastern South Dakota depend largely on native rangeland, and there are several species of flies that can cause serious economic losses there. Several years ago, Simmons experienced a failure with her feed-through insecticide plan.

"We had a terrible incident of failed insecticide control of flies one year after using feed-through insecticide for two years," recalled Simmons. "The third year was a sudden failure in mid-season when calves were still young. We built a corral as fast as we could in order to have a vet come and treat all 70-some pairs. Every calf required an injection of antibiotics to save their eyes, and many needed their eyelids sewn with dissolving stitches to save an eye. We were lucky that none ended up blind after treatment. The cost was around \$5,000; that is unsustainable from any point of view."



Calves learn how to walk through a fly trapping box on Linda Simmons' ranch in South Dakota. Photo by Linda Simmons.

Simmons was concerned that perhaps her use of pesticides had resulted in pesticide resistance, as well as a reduction in populations of beneficial insects, such as dung beetles. Knowing that strategies for fly control are more effective when adjacent pastures and feedlots are included, Simmons worked with the producers who were adjacent to her land and received a \$21,287 NCR-SARE Farmer Rancher grant to experiment with various reduced-pesticide fly control systems to help to conserve beneficial insects, especially the dung beetle.

Cattle manure is a popular breeding ground for flies and is an incubator for gastrointestinal parasites—a single manure pat can generate 60–80 horn fly adults. Dung beetles are particularly helpful because as they consume the manure, it becomes less available to host flies and parasites. In fact, fly populations have been shown to decrease significantly in areas with dung beetle activity (Thomas, 2001).

In order to reduce their dependence on pesticides, which can be harmful to beneficial dung beetles, the project organizer implemented a variety of strategies, including rotational grazing. They also built nzi [EN-zee] flexible cloth fly traps ('nzi' is the Swahili word for 'fly') and a trial of Willis Bruce's "Walk Through Horn Fly Trap" using plans from the University of Missouri. To their knowledge, neither of these types of traps had been used on beef cattle at pasture in Northeastern South Dakota before.

**Fly Control Continued on Page 5**

## Fly Control Continued by Marie Flanagan

“Bruce’s ‘Walk Through Horn Fly Trap’ works well and it doesn’t require much labor to use,” reported Simmons. “It works so well we didn’t even have to place it where cattle use it every day. A few treatments a year headed off any need to treat with insecticides. This summer flies were even easier to control using it. I only needed it twice. It’s going to make me lazy!”

Simmons reported that the 30 ranchers and land managers who attended their project field day proved that a lot of producers value dung beetles in the rangeland ecosystem for their contribution to the whole. She hopes this project will help promote a northeastern South Dakota method for monitoring and managing both fly pests and dung beetles for long term profits on livestock.

Over the course of this project, Simmons realized that there was a need for a planning and assessment guide for cattle and sheep raisers to do their own pest and beneficial insect monitoring. She developed a manual, “A Dung Beetle’s Place on Your Ranch”, for looking after dung beetles by reducing pesticides, using non-chemical controls, and using chemical controls carefully and thoughtfully.

“This summer a friend of mine called me for fly control advice because of the project,” she said. “Unfortunately, he was already in the middle of a bad fly outbreak, and I am definitely not a veterinarian or expert on pesticides; that’s why I like the non-pesticide controls. They aren’t fraught with mistakes and don’t require any more expertise than teaching the cattle to walk around.”



The image on top depicts a a beef cow before walking through a horn fly trap. The middle image depicts an animal after one pass through the horn fly trap. On the bottom, a fly trapping device is painted a specific shade of blue; researchers in Florida found the flies’ color preference by using behavioral tests that determined which color a fly was most likely to travel toward (Koehler and Pereira, 2012). Photos by Linda Simmons.

## Is it Time to Manage for Climate Change Yet? by Garnet Perman

Climate data from the last 100 years shows that on the Northern Plains, the trend in average temperature is warmer, particularly since the 1970s. Regardless of what you might believe about the causes of the temperature increase, producers in SD have seen a measureable increase in the growing season. According to Laura Edwards, SD state climatologist, the interval between frost free dates has lengthened by about 10 days over the last 40-50 years. Late and early frosts will still occur, but the trend toward a longer frost free season is expected to continue.

Other recorded trends include an increase in moisture, especially in the spring and fall. Eastern SD, particularly from the James River Valley to the Minnesota border averages about 20% more moisture than they did 50 years ago. Western South Dakota hasn't seen that much of an increase, but the trend is towards more moisture.

Edwards noted that climate variability factors such as El Nino will continue to affect temperature and moisture on a year to year basis, although the impacts may be greater than they used to be. An example would be the strong El Nino and corresponding warm winter and severe summer drought South Dakota experienced in 2012.

So, what do those trends mean for grass managers? SDSU Beef Specialist Julie Walker says, "Don't be in a rush to get to grass." Grazing too early runs the risk of stunting cool season grasses, and also depletes moisture reserves in the soil. "An early spring might be an opportunity to get grass to recover," said Walker. On the other hand, early grazing could help knock down some undesirable cool season grasses such as Kentucky bluegrass.

Grass tetany is also a concern, particularly where there is an abundance of new growth and little old growth. Combat that situation with high magnesium salt in a mineral supplement.

Walker also mentioned that lactating cows need enough dry matter so they can consume enough nutrients. Of particular concern would be cows that calved in late February or early March. Peak energy demand is 60 days into milk. "You need to make sure the ration is balanced when biomass is limiting," she said.

Water quality is usually not an issue in the spring because dams and dugouts are full. A trend towards more spring moisture will only help water resources. Another potential concern is that warmer winters could bring an increased wildland fire risk.

Both Walker and Edwards said that having a good management plan along with knowing local climate data will help the producer make good decisions for his/her specific operation. The Co-CoRahs website is a tool for learning local trends, as well as the U.S. drought monitor and other information available on-line. Edwards said, "We don't have to come up with new ways of managing extremes. We already have the tools."

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

## Cedar and Steel: a Day in the Life of a Young Rancher by Kate Rasmussen

A day spent fencing on our family's ranch in South Dakota usually begins with a one-sided conversation with my dog and ends with tired arms pulling a handful of hopeful ticks out of my hair. The perks of the job include trekking long distances across the prairie, scrambling through badlands to string barbwire, replacing old posts, and sidestepping crabby rattlesnakes.

A significant portion of fencing involves tearing out old cedar posts that were set in place by my dad when he was my age. I have a ritual of smelling each one where they've splintered off next to the ground before replacing them with new steel posts. Every once and a while I come across a gem of a post that was set by my great-grandfather in the early days of the 33 Ranch. I consider it a privilege to breathe in an earthier version of the sweet, spicy cedar aroma that he would have smelled after using his axe to form a post out of a nearby tree.



Kate Rasmussen, 2016 World Wildlife Fund Intern.

Over the years, these axe-cut posts have stood as silent sentinels during the shift from conventional grazing to rotational grazing on our ranch. Traditional methods, which can leach the land of nutrients over time, keep cattle browsing on one pasture all season long. In rotational grazing, dividing fences have been added so that cattle can be moved often during the growing season. The goal is to quickly guide the herd across the land, allowing cattle to only clip each plant once in a pattern that mimics native grazers such as bison and antelope. Most importantly, it gives grazed vegetation ample time to recover. This also encourages an increase in a plant's underground energy stores and provides cattle with a steady diet of fresh, nutrient-dense plant growth.

It has taken over a decade of rotational grazing on our family's ranch for diverse plant communities to return to areas that were historically grazed all summer long. Pastures that were whittled down to introduced, non-native plants like brome grass have slowly returned to a healthy mix of native species like big blue stem and leadplant. Although the connection between wildlife and agriculture may be difficult to see, ranchers like my family seek to understand the prairie dynamic so that we can work with the land rather than against it.

Sustainable ranching is truly a rare type of business. Our long-term survival on the ranch directly correlates with the quality of wildlife habitat in which it's held. Healthy prairie ecosystems grow fat cattle, fat cattle grow stable ranches, and stable ranches grow wildlife havens. If we take care of the land, it will continue to take care of us. While there are many hurdles young ranchers face as the next generation of land stewards in the Northern Great Plains, we have an important role to play in the future of North America's most endangered ecosystem. I am not attached to this land because of who it belongs to, but because I belong to it.

*The following piece was written by summer WWF intern Kate Rasmussen to offer readers a glimpse into the life of a next-generation rancher from the Northern Great Plains, one of the largest remaining intact grasslands in the world. These grasslands are dependent on grazing animals, and these days, cattle are an important part of that equation. WWF is partnering with organizations such as the South Dakota Grassland Coalition in support of ranching families and grassland managers like the Rasmussen family. Without their land stewardship, many of our nation's intact grasslands would be converted to cropland and other uses, posing a serious threat to this disappearing ecosystem. Ranching operations in this vast region not only contribute to thriving rural communities, they also provide for clean water, soil carbon storage, and havens for grassland bird species and other wildlife.*



Sandy Smart  
Box 2170, ASC 219, SDSU  
Brookings, SD 57007

## Calendar of Events

Event	Date	Location	Contact Person	Phone
National Land and Range Judging	May 2-4	Oklahoma City, OK	Dave Ollila	605-569-0224
Professional Range Camp	June 7-9	Sturgis	Dave Ollila	605-569-0224
Bird Tour	June 16-17	Lemmon	Judge Jessop	605-280-0127
Rangeland Days	June 20-21	Wall	Lesa Stephens	605-279-2451 Ext. 3
Leopold Conservation Award Tour	TBD	TBD	Judge Jessop	605-280-0127
Pasture Walks	TBD	Various Locations	Judge Jessop	605-280-0127

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](mailto:alexander.smart@sdstate.edu), (605) 688-4017