



# Grassroots

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### INSIDE THIS ISSUE:

**Range 101 Con-**  
**tinued** 3

**Voices from the**  
**Wilderness** 2-3

**Drought Man-**  
**agement Tips** 4

**The Green Side**  
**Up** 5-6

**Sandhill Cranes**  
**Making SD a** 7  
**New Stopover**

**Grazingland Soil** 7  
**Health: The**  
**Next 50 Years**

## Range 101: Grazing Distribution by Sandy Smart

Last issue I presented the relationship between plant survival and grazing through the lens of the grazing resistance concept. In this issue I will present the concept of grazing distribution. Rangeland vegetation is inherently quite variable based on topography and soils (see photo to right). The factors involved in determining livestock grazing patterns are 1) distance from water, 2) topography, 3) vegetation types, 4) pests, 5) and weather.



Rangeland at the SDSU Antelope Research Station (Photo by S. Smart, 2005).

Livestock are creatures of habit and generally travel paths of least resistance. Steep slopes and few watering points cause livestock to overgraze bottom lands and riparian zones (rivers and streams) or those near stock dams and under utilize other areas. Certain vegetation types such as brush species or noxious weeds (leafy spurge, thistles, etc.) cause under utilization or reduce the amount of forage produced in those areas and result in greater grazing pressure in other areas. Pests such as biting flies in conjunction with hot weather cause livestock to shift their grazing patterns. Cattle tend to respond to prevailing wind patterns to fight flies and will stand along fence lines or in corners during the day time and graze at night. This behavior tends to disappear once cooler temperatures arrive with the onset of autumn.

Livestock management revolves around solving the issue of poor grazing distribution. This can be achieved through developing watering points, fencing, herding, and strategic placement of salt, mineral, or supplements. In some instances a grazing system alone can improve grazing distribution. Researchers in Kansas showed that early intensive stocking (double stocking for half the season) resulted in more uniform use of pastures than season-long grazing. Most producers find that their stocking rate can be increased when water and fencing is developed because they eliminate the overgrazed areas and properly use undergrazed areas.

It is important to note that uneven grazing distribution isn't necessarily an undesirable

**Range 101 Continued on Page 3**

## Voices from the Wilderness by Garnet Perman

Farmers and ranchers make up a scant 2% of the American population, so it is more important than ever that those of us involved in food production be able and willing to speak up for agriculture. The good news is with social media, speaking up is easier than ever. The bad news is that many of us don't know what or how to say what needs to be communicated. I asked people who are involved in the communications aspect of agriculture what their advice might be.

Colette Kessler with the SD NRCS said she learned, "Incident, point, benefit." This amounts to a short answer about what you are doing, the reason behind it, and why the listener should care. For example, if someone should ask you about your fences. Your answer might be something like this: we section off our pastures and intensively graze each section before moving to the next. (incident) This type of grazing helps us be more efficient with the forage we have, improves forage production and makes for healthier soil. (point) Healthy native grassland and soil acts as an air filter for the planet, stores carbon in the soil instead of the atmosphere and contributes to good water quality. (benefit) Another term for a similar answer is the "elevator" speech, a short statement that takes less than a minute to articulate, but explains the situation in a nutshell. Every producer should have one ready for the moment when someone asks, "What do you do?" A well thought out mission statement makes a great elevator speech.

Dr. Buz Kloot, soil scientist with the University of South Carolina, is a passionate soil health advocate. He was in SD in June filming producers about what they are doing in terms of soil health. His comment was that everybody loves a story. A good story has three elements: a protagonist, which would be the producer, some kind of tension-- weather, a financial dilemma, disease or pest problem, and the action of how to deal with it, resolution. An example could be Farmer Bill realizes that he could cut costs and build his soils by running cattle on crop ground, so he leases his corn ground at a very low cost to Cattleman John who is looking for winter grazing opportunities. Farmer Bill saved money on fertilizer costs, improved his resource and also added value by leasing his ground. The next year Farmer Bill doesn't have to purchase as many commercial inputs and the crop yields are better. Cattleman John saved some native forage as a cushion against possible drought or perhaps opened up the possibility of taking in extra cattle. Both enterprises benefit in a way that enhances the quality of their resources, a win-win situation for all. You may think your story isn't much, but somebody else might get just the right information they need by hearing about your experience.

Authenticity helps the listener relate. We've all made mistakes; admit them. It's OK to not know the solution for a certain problem. None of us got to where we are on our own, so give credit to your mentors. Mentors include family members, neighbors, NRCS, Extension, and other agencies, organizations, and ag publications or books. Talking about problems past and present establishes that your operation is still a work in progress, and the importance of continuing education.

**Voices continued on Page 3**

## Voices Continued by Garnet Perman

Visuals are helpful. Bryan Jorgenson has a shovel. Pictures impact people more than words on a white background in a power point. A picture (especially one with kids and/or animals) and a short statement about it on social media or a website garners a larger audience than just a statement. Lyle Perman includes two or three take away points at the end of his talks to emphasize why that story was worth telling.

Don't be afraid to share your experience. Grass management is still a relatively new discipline. Our fields and pastures are the practical laboratories. Each grass manager's story is an important part of a larger whole that needs to be heard.

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

## Grazing Distribution Continued by Sandy Smart

outcome if other objectives such as managing for wildlife or diversity are the main focus. Case in point is the patch-burn grazing system. This system deliberately uses the effect of a recent burn to attract livestock to graze on the burned patch. The result is a shifting mosaic of short, medium, and tall vegetation throughout a landscape. This management technique is thought to be more beneficial for maintaining a greater diversity of bird species than if it was managed more evenly for livestock production.

There is quite a bit of science behind how and why livestock graze unevenly at a plant, patch, and landscape scale. It involves not only the abiotic (topography and soil) and biotic (plant) interface, but the social interactions of the individual grazers in the herd. At the plant or even the tiller (single shoot) scale, animals often make choices based on plant maturity and grazing resistance (avoidance or tolerance mechanisms discussed in previous issue). At the tiller scale, biting rate and bite size is determined by the vegetation amount and architecture (how it is presented). This concept is easily demonstrated in the 'graze like a cow' demonstration that is often presented at the SD Grazing School. Participants clip vegetation of various heights for 60 seconds and place it in a bag. The point is to calculate how much time it would take a cow grazing this type of vegetation to meet her daily dry matter intake requirements. In short vegetation it takes much longer to gather her daily demand compared with taller vegetation. At the patch scale, livestock tend to find their favorite places to graze. This may be in part due to the area having a higher foraging efficiency (optimal bite rate and bite size) and being more nutrient dense than other surrounding vegetation. These areas could be caused by soil and topographic differences that the animals figure out or can be modified by their own grazing or someone else's (like prairie dogs). At the landscape scale, distance from water and topographic features largely determine where livestock spend their time grazing.

One of my favorite things to do is to watch animals graze. I am fascinated by the differences between how cows and yearlings graze. We've probably all had experiences where we take time to stop and observe what our livestock are eating. Next time you are checking cattle or fixing fence, take time to see what and how your livestock are grazing. You might gain some new insights about your grazing management.

*Sandy Smart is an Extension Rangeland Management Specialist and Professor in the Department of Natural Resource Management at SDSU.*

# Drought Management Tips

by Pete Bauman

Given the dry conditions across the region, SDSU Extension, the SD Grassland Coalition, and others are encouraging producers to think critically about their pasture and forage resources. Those who have initiated drought plans in the past are finding that the planning process really pays off when making both small and large adjustments due to drought. Not all plans will look the same, but all should focus on trigger dates and/or conditions assessments, which help remove much of the guesswork when making decisions.

For drought planning assistance or guidance, visit SDSU igrow (<http://igrow.org/>) or contact any member of SDSU Extension's livestock team at your local regional center or contact the SD Grassland Coalition <http://www.sdgrass.org/> or visit the National Drought Mitigation Center at <http://drought.unl.edu/Planning.aspx>

Below are some example comments provided by a Rick Smith, producer near Hayti, SD (Hamlin County) who is now moving through the various stages of *his* drought plan.

"I'm already in phase three of drought targeting plans.

Phase #1: May 1st selling of coming yearling steers and small heifers that I usually keep until July to keep up with cool-season grass.

Phase #2: June 20th selling of any cows or heifers that had lost their calf or weren't going to calve.

Phase #3: Slowing down the rotation with expectation of only grazing remaining pastures once. Going forward, further plans are to:

- 1) Assess number of days of available grazing forage on hand now to determine either a destocking of pasture rate or begin of feeding date.
- 2) Monitor protein content to determine if or when protein supplement may be necessary for existing maturing forage.
- 3) Arrange for creep feeders August 1 or before to assist early weaning of calves.
- 4) Keep evaluating harvested forage and potential harvest of corn silage acres to meet winter needs.
- 5) Use performance records of past calf crops and current ones to identify cull cows for either direct sale to sale barn or 60 day grain fed feedlot sales.

Experience tells me that purchasing forage during a drought is seldom a profitable solution, but early is better than late. Sending cattle to others to feed either on pasture or in a feedlot isn't viable for commercial cows."

*Pete Bauman is an Extension Range Field Specialist in Watertown, SD.*



# The Green Side Up: 2016 Bird Tour

by Pete Bauman

The 10<sup>th</sup> Annual SD Grassland Coalition ‘*Birds: At Home on the Range*’ field tour was held in May at the Bad River Ranch near Ft. Pierre. The “Bird Tour” as it is commonly known is organized by a dedicated group of volunteers who not only support the Coalition, but who also have a keen interest in birds and working landscapes. Family-owned working ranches have been the mainstay of the bird tour from its inception, and the Coalition’s goal for the tours has always been to bring ranchers, wildlife professionals, and wildlife enthusiasts together for a fun and educational event that highlights the fact that abundant wildlife and profitable ranching can go hand in hand.

For the 10<sup>th</sup> anniversary, the planning team pursued a slightly different model than in previous years. Instead of a working cattle ranch, the 2016 tour was held at a working bison ranch, namely the Bad River Ranch owned by Ted Turner. While some initially questioned breaking from the tradition of hosting the tour on a cattle ranch, it was decided that a working bison ranch of the magnitude of the Bad River Ranch would offer a very unique opportunity. At just over 140,000 acres and with the largest bison herd in the country, the Bad River Ranch reflects yet another important part of our grassland heritage. While the bison industry in South Dakota is a relatively small portion of our overall livestock footprint, we do in fact harbor the largest bison industry in the United States.

Dusty Hepper, current manager of the Bad River Ranch, along with former ranch manager Tom LaFaive worked closely with the planning team to create a unique experience for all. Hepper is a South Dakota born buffalo cowboy who sees the value in understanding the intricacies of the entire ranch ecosystem, and he welcomed the opportunity to host the event on the ranch. Hepper shared a great deal about how the Turner Ranches operate while LaFaive’s take added a great deal of local natural history. Not only did their participation provide a chance for attendees to learn more about the bison industry, it also helped educate all involved about the dedication that Mr. Turner has to grasslands, wildlife, and our western heritage. That dedication was reflected in the staff and mission of the Bad River Ranch.

Day 1 of the tour found the group of about 70 gathering in near 100-degree heat in the ranch workshop where they listened to Hepper, LaFaive, and other invited speakers discuss ranch history, bison management, grassland bird ecology, and bird identification. After supper the group loaded into pickups and a flatbed trailer for the long, slow, uphill climb out of the Bad River valley and onto the open South Dakota prairie. The heat subsided and the group was treated to a truly special evening of perfect light, perfect temperature, and abundant wildlife that harkens back to the open vista scenes common in *Dances with Wolves*. Along the journey we viewed many birds common to the mixed grass prairie as well as some unique species not previously seen by many of the participants such as sharp-tailed grouse, marbled godwits, common nighthawks, a rattle snake, prairie dogs, burrowing owls, and a very proud greater prairie chicken. As the sun set in the open western sky we returned to the ranch and a short night of sleep.



Bad River Ranch near Ft. Pierre (Photo by P. Bauman, 2016).

# The Green Side Up Continued by Pete Bauman



KC Jensen, SDSU Ornithologist, mist netting a robin (Photo by P. Bauman, 2016).

Every Bird Tour is a unique experience, and the 2016 tour was no exception. As a Coalition, our focus is the grassland resource. The annual Bird Tour provides a great opportunity to dispel myths about ranching for those who may never otherwise get the chance to visit a working ranch. We'd love to see more of our ranching members join us for these events. What better way to rub elbows with and positively influence those individuals - especially teachers and educators - who we rely on to help the next generation understand our grassland heritage.

Day 2 started at 5:30 am with donuts, coffee, and a plan to get some early birding in before the heat of the day. Where the evening before focused on the bird life of the open grasslands, the morning session focused on the great variety of species making the woodlots, hayfields, and riparian areas of the Bad River valley their home. As participants moved around to various stations that showcased bird mist netting and banding, plant identification, nest dragging, and bird watching they were again treated to some very unique bird life including grassland and woodland birds, waterfowl, raptors, herons, and wild turkeys. Oriels, yellow-billed cuckoo's, catbirds, and a nest of red-headed woodpeckers were some of the favorites of the morning session.

As the morning grew hot and the birds retreated to the shadows, the group reconvened back at the shop for more information on ranch management with a wildlife-first mentality by Hepper and LaFaive while volunteers helped the youngsters in the crowd construct bird houses to take home.



Chuck Pyle, USFWS, helping kids build a wren house (Photo by P. Bauman, 2016).

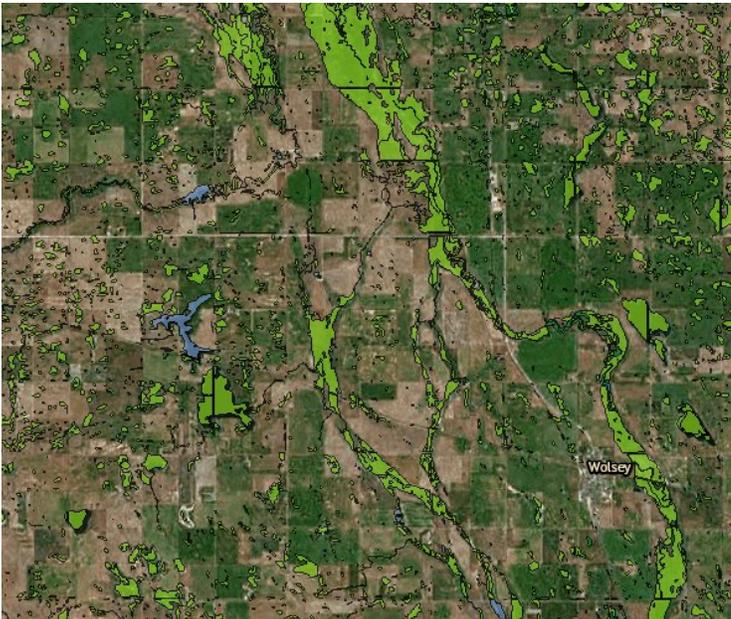
*Pete Bauman is an Extension Range Field Specialist in Watertown, SD.*

## Sandhill Cranes Making South Dakota a New Stopover by Sandy Smart

Sandhill cranes are famous for making their annual stopover in the Platte River Valley in southcentral Nebraska. However, a new shift in their stopover patterns are emerging for this iconic bird. Loss of habitat, climate change, and anthropogenic factors have caused a significant amount of Sandhill cranes to make their annual stopover near Wolsey, SD. This region consists of a mixture of pasture, cropland, and wetlands (light green color on map). The cranes have been stopping over in this region for the past few years while they make their annual journey from their wintering grounds in south



Sandhill Crane (Photo by USFWS).



Wetland map of Wolsey region of South Dakota National Wetlands Atlas)

Texas to their spring breeding grounds in Canada. The stopover is generally about two weeks long where the birds replenish their energy eating a variety of things such as insects, roots, aquatic plants, amphibians, and grains from cultivated crops.

This change in the cranes' migratory pattern can be attributed to producers in our region "doing the right things" to make this stopover a safe place for them. The right mixture of grassland, wetlands, and cropland should be celebrated. Make sure to look for the cranes next March-April in this area.

## Grazingland Soil Health: The Next 50 Years by Sandy Smart

A couple of weeks ago I attended a two-day grazingland soil health workshop in Fort Collins, CO sponsored by USDA-ARS (Agricultural Research Service), NRCS, and National Institute of Food and Agriculture (NIFA). About 60 researchers, land managers, conservationists, and grant sponsors were in attendance from all over the USA. The first day was devoted to discussing the current state of the science on the subject from intensively managed pasturelands in the eastern USA to extensively managed rangelands in the west. On day two the participants broke out into small groups to tackle concepts that ranged from methodologies to measure soil health to what we would like our grazinglands, research institutions, technical service providers, and educational systems to look like in the next 50 years. It was a tall task, but the participants came away with new enthusiasm and a plan to embrace strategies to integrate soil health concepts into grazingland research, conservation, and education. Expect a series of journal articles to come out next spring. I will keep you up to date.



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## Calendar of Events

Event	Date	Location	Contact Person	Phone
Happy Cow Bus Tour	July 29	Clear Lake/Brookings	Pete Bauman	605-880-6542
Nebraska Grazing Conference	Aug 8-9	Kearney, NE	<a href="http://grassland.unl.edu/current-conference">http://grassland.unl.edu/current-conference</a>	
Grassland Restoration Workshop	Aug 30	Ponca, NE	Pete Bauman	605-880-6542
SD Grazing School	Sep 12-16	Chamberlain	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