SOUTH DAKOTA GRASSLAND COALITION

Grassroots

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INSIDE THIS ISSUE:

Winter Reading: The Wizard and the Prophet By Sandy Smart

As I sit down to write this article it is a balmy 14 °F outside which is much better from yesterday's high of –9 °F. During the short days and long cold nights of winter, it is that time again when I usually decide to catch up on my reading. This year I discovered a very interesting book by Charles Mann published in 2018 called the "Wizard and the Prophet". No this is not a Harry Potter story, but a non fiction biography/ contemporary story about two opposite views regarding agriculture and natural resources and our pressing issue of feeding an ever growing world population. Mann uses these two divergent viewpoints: wizard (scientific technology and progress) and the prophet (impending ecological doom caused by an increasing world human population). The prophet is William Vogt (1902-1968) an ecologist and ornithologist who wrote about the concept of carrying capacity and population control. Mann credits Vogt's ideas with laying the foundation of the modern environmental movement. Vogt understood the ecological principle of cause and effect and complex linkages and interactions which lead to cascading changes to natural resources and eventually to populations. His views are somewhat dark regarding human population control. And that is why Mann labels him as the prophet proclaiming doom if we continue down this path of over population. On the other side of the coin is the wizard. The wizard is Norman Borlaug (1914-2009). Borlaug was from a poor farming community in Iowa and through a series of interesting events earned his PhD in plant pathology, worked in Mexico under extreme conditions, and eventually received the Nobel Peace Prize for is work on dwarf wheat varieties resistant to rust. Mann uses the genius of science to show how we can improve agricultural yields through plant breeding, fertilizing, and sound management practices.

Mann uses the rest of his book to discuss four contemporary issues (Food, Freshwater, Energy, and Climate Change) and the perspective between the two men as a continuum between reducing the human footprint (ecological harmony) and relying on science and technology to solve our way through these issues. I find the continuum quite interesting because it essentially is a similar way we view things at the university. On one hand, we have academic departments working on new technologies in precision agriculture, molecular biology, engineering, computing, etc. (wizards) leading to more food to feed a growing world population. One the other hand, we have academic departments working on monitoring wildlife, soil erosion, water pollution, socio-economic problems, etc. (prophets) leading to a warning of what is to come if the world's population pushes past the carrying capacity.

To me, I find the viewpoints very interesting and realize we have to be somewhere in the middle of this continuum. Science and technology are cool, but I would sure miss the beauty of a native prairie impacted only by a light human footprint. I hope you get a chance to read this thought provoking book, the "Wizard and the Prophet" by Charles Mann.

The Green Side Up by Pete Bauman

Landowner Prescribed Fire Workshops will be offered in two locations in May 2022

A student using the drip torch to apply fire at the prescribed burning workshop at the Oak Lake Field Station (Photo by S. Smart, 2021).

In the November, 2021 issue of Grassroots we discussed the impact that fire can have in relation to the general grassland carbon cycle. Over the next several newsletters we will continue to explore the truths and myths of prescribed fire in this 'Green Side Up' column. However, we are deviating from that format this month to re-introduce you to our Coalition sponsored ***Landowner Fire Workshops*** and invite you to participate in two planned opportunities for the spring season. Please read on and save the dates.

In spring 2021, a collaboration of partner organizations delivered our first hands-on prescribed fire school for landowners. Funding for the school was provided to the SD Grassland Coalition through the NRCS's Conservation Collaborative Grants program. The training was coordinated by SDSU Extension along with experienced fire staff from several other partner organizations. The school was held at the SDSU Oak Lake Field Station in northern Brookings County and focused on the processes of safely planning and executing a prescribed fire. Students were comprised primarily of landowners and agency staff learning side by side with volunteer instructors.

Originally planned as a 2 ½ day 'school' similar to the Grazing or Grassland Management Schools, our fire school had to be modified to three 1-day fire workshops due to complications with Covid-19. This modification worked out surprisingly well for students and instructors, and we are assessing how the upcoming schools might be structured as we understand that multi-day schools can be challenging to commit to, especially in the spring of the year.

Pete Bauman explaining fire behavior concepts in the live fire demonstration (Photo by S. Smart, 2021).

Generally, the workshops focused on key elements of prescribed fire planning and implementation. Morning classroom sessions centered on the basic tenets of planning for prescribed fire and included topics such as: USDA and Farm Bill program rules, weather patterns and forecasts, fire laws, fire use and benefits, hazards, tools and resources, burn unit design, and writing a fire plan. Afternoon field sessions focused on: firebreak

The Green Side Up Continued on Page 6

Social Media: Beyond Your Membership Please Follow, Like & Share

by Kris Miner

Are you connected with the SDGC on social media? Here's how and why it benefits you and benefits our non-profit organization. We are on Facebook, Twitter, Instagram, Mail Chimp & You Tube. These words might seem Greek to some, but to others the use of social media is fluid, easy and comfortable. Here are a few tips and reasons to connect with the SDGC.

Connect with us on Facebook, we currently have a page, that members can like or follow. We have over 2,000 followers and over 2,000 who like this page. You would benefit from giving our page a like or follow. You won't miss out on events we host, events our partners host, and we share related articles. You can find our Mail Chimp direct email messages here as well, like our monthly Amazing Grasslands Videos (also on You Tube). You can subscribe to our You Tube channel and get notified when videos are posted.

Members are automatically signed up for our Mail Chimp distribution, this is our email platform, you'll find a pop up on our website www.sdgrass.org, to be sure you are signed up. If you are a member and not getting our Mail Chimp emails, you can check your spam folder or email me directly to double check, my email is sdgckris@gmail.com.

Benefits of liking us on Facebook, Twitter or following us on Instagram, provides you a benefit of finding out about events early, especially if space is limited, we cap attendance at youth programs and grazing schools. You can provide a benefit to the SDGC by sharing and promoting our posts about events. Spreading the word about our events, also helps our outreach. We have several out of state members supporting our mission to promote practices that sustainable and profitable.

Support & Promote When you like or share something we post on social media, you are helping us share our message. Beyond local producers we want to raise awareness to the needs and reasons we are preserving and promoting grasslands. By reaching outside our typical member, we are raising awareness about the secondary benefits of the Grassland Coalition like increasing plant, animal and insect diversity, clean air and water, these environmental impacts that are far reaching. Anytime we align our mission with a message we are promoting the work of a dedicated and experienced board of directors. Our board members depend on staff to deliver the work they believe in. Our board members are graduates of our programming and have been putting in place the practices. They present at our educational events or help us bring in nationally known speakers & presenters.

Find us on Facebook at South Dakota Grassland Coalition. Our Twitter handle is @sdGrassland and on Instagram we are @sdgrasslandcoalition. Our You Tube Channel is South Dakota Grassland Coalition, and you'll find our Calving Considerations video series and a playlist of Our Amazing Grasslands Videos. We appreciate your support and social media is a free and easy way for our members to assist us and we thankful for every like, follow and share!

Virtual Fencing: A report from NatGLC Conference by Garnet Perman

At last month's National Grazing Lands Conference in Myrtle Beach, SC, one of the best attended workshop sessions was a presentation on virtual fencing presented by Leo Barthelmess who ranches in Northeastern Montana near Malta. The Barthelmess Ranch covers 20,000 acres of hilly terrain. They run 700 cows utilizing 38 permanent pastures and approximately 80 temporary pastures. They flood irrigate about 1000 acres of hay land. Barthelmess started this pilot program involving Vence, a California company in 2018. The Nature Conservancy was also involved as a partner because of the antelope migration and sage grouse population on the ranch.

Virtual fences for cattle require repeater stations that must be in line of sight of a cell phone tower. They convert cell phone signals to radio signals that then transmit to a satellite and then back to a collar on the cow. The collars are battery operated and move cattle by sound and electrical pressure. Management of the virtual fences is via a WEB application which can digitally create and manage herds and virtual fence lines. The program can set a daily or weekly moving schedule, and keeps track of grazing history down to the individual cow. Barthelmess noted that if a cow hasn't moved for several days she's probably dead! The towers are up to 20 feet tall, withstand winds up to 120 mph and are powered by 3x5 foot solar panels. They comprise the main cost which is currently $10-12,000 per tower. Like all new technology, that cost is expected to decrease.

Vence designs collars based on specific species behavior. They started with cattle and are just starting work on sheep. The battery is designed for many climate conditions; tucked in next to the cow they stay warmer and operate even in very cold Montana winters. The company leases the collars at $35 each. Because technology changes so quickly, collars are replaced every year. Batteries cost another $10 each. Barthelmess said they can collar about 100 animals per hour. They are removed when not needed. Programming the collars requires 2-12 hours depending on the grazing plan.

The herd undergoes some initial training with the collars. A 100 meter incentive zone is established with a 50 meter auditory warning. They get about 90% compliance in 5 days with 95% in 7-10 days. The few non-compliant cows that wander outside the "fence" have not presented a problem as they still follow the rest of the herd. Barthelmess still uses an ATV to move cattle in order to save battery, especially in small pastures which use more battery and to do forage observation. If snow cover is 4 inches or more the cows eat snow. He's found he can do more remote grazing where erecting fence can be problematic. They've been able to break pastures into smaller units and target old forage in winter which helps mitigate the program costs. It can be used to establish a corridor for cattle to access water sources. The fence line can be moved 10 feet every 4 hours making it ideal for moving cattle through cover crops.

Vence currently recommends their program for herds of 500 or larger because of the costs. They encourage producers to engage other partners such as neighbors or grants from the NRCS, TNC, BLM, and others. For more information contact Leo Barthelmess at bartrianglea@gmail.com or Vence tech Todd Parker at todd@vence.io or marketing specialist Josh Zimmerman at josh@vence.io.

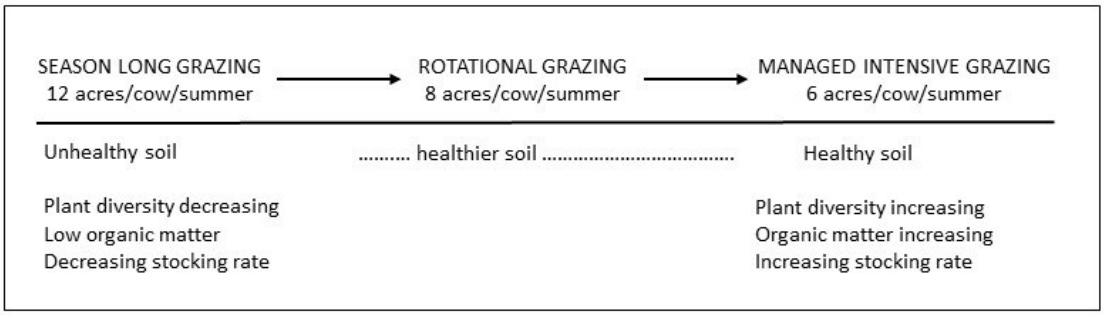
Garnet Perman is a freelance writer and ranches with her husband, Lyle, near Lowry, SD.

Finding the Right Balance: Holistic Resource Management by Dan Rasmussen

In 2022, it is not hard to find a ranch mentor who is feeding the soil to create more productive rangeland. Glenn Elzinga, Bob Kinford, Gabe Brown are just a few of the growing group of `healthy rangeland` advocates. All three mentors practice Holistic Resource Management.

Glenn Elzinga was the featured speaker at the Grassland Coalition annual meeting in December of 2021. His Idaho family ranch has followed the "feed the soil first then increase stocking rates", rule since he bought the ranch in 2005. For three hours Glenn explained how his soil has improved each year. As soil organic matter has increased, water is now staying in the soil longer. "Long rest periods have been the key", Glenn says, "to build soil health on his low rainfall unirrigated range". On the irrigated range, they make 4-6 passes through the pastures each summer while building soil organic matter. His dryland pastures produced above average in 2021 during a low rainfall year.

How do all of us take this information and apply it to our ranches? Consider the line graph showing unhealthy soil on the left and increasing healthy soil on the right. We all fall somewhere on this line.



The key to learning how to increase stocking rates in a regenerative manner is learning how to make pasture soil healthier. This is accomplished by resting the plants after being grazed. By rotating the cattle through pastures the plants are allowed to recover and leave dormant plant matter on the ground for the soil bugs to consume. This process creates organic matter in the soil. Over time, a properly managed rotationally grazed pasture will increase organic matter compared to a season long grazed pasture. This brings us to HRM training.

The Grassland Coalition is putting on a three day school in February titled, "Finding the right Balance". Tara and Joshua Dukart will be teaching Holistic Resource Management (HRM) principles at Drifters Grill in Ft. Pierre. Feb. 15-17. Register by calling or texting, 605 685-3315. More info is available at the Grassland Coalition website, sdgrass.org.

We all have limited resources, so where you are on the line graph is unique to your ranch. Whether it is people, finances, livestock production or the land, where you fall on this line is the result of decisions based on how you apply these ranch resources. Learning how to move to the right on this line graph is what HRM is all about. Once you learn to observe how the land responds to your grazing plan, the plan can be adjusted to increase soil health. Nature will move to a healthier state if we play by her rules. This will mean adjusting management. Holistic Resource Management teaches land managers how to change the ranch management culture in order to play by nature`s rules and increase rangeland production.

In conclusion: Increasing stocking rates must start with healthy soil. This may require a change in the ranch management model and even a change in the ranch culture. HRM is a great way to move forward creating healthy landscapes on your ranch.

Dan Rasmussen is a third-generation cattle rancher living in south central South Dakota. Dan served on the board of the South Dakota Grassland Coalition for 18 years and is currently the education coordinator for the Grassland Coalition.

The Green Side Up Continued by Pete Bauman

design and preparation, fuel types, understanding weather, burn techniques, safety, equipment, and hands-on fire demonstrations and skills.

We understand the topic of fire can be very divisive and it is important to discuss fire in the appropriate context. First, we are instructing students on prescribed fire planning, not wildfire response. The difference is simple. Prescribed fire is *proactive* and is intentionally planned and executed as per a legal written plan (prescription) and executed only under certain parameters that are pre-determined with the purpose of mitigating problems before they arise.

These parameters address physical site preparation and conditions, human resources, tools and equipment resources, weather, goals, and a host of other considerations that must be met *before the planned ignition occurs*. Wildfire, on the other hand, is *reactive*. Personnel and equipment can be pre-planned for response, but the when, where, and how related to fighting wildfire must be addressed *after the unplanned ignition*.

Joe Blastick with The Nature Conservancy explains the different tools used to control prescribed fires. The Prairie Coteau Habitat Partnership helps provide equipment for training and outreach such as the Landowner Prescribed Fire Workshops (Photo by S. Smart, 2021).

A person's opinions on fire are either shaped by experience or influence and can be positive or negative or based on truth or myth. In reality, fire is a process that shaped the ecology of the North American Great Plains and its role in that regard should be recognized.

The Coalition will continue to host prescribed fire trainings over the next few years as funding allows. For the upcoming spring, we will be hosting the school in two different location. The first will be a return to the Oak Lake Field Station planned for May 25th while a second opportunity is being planned for the Mitchell area for May 27th. More information on both events will be forthcoming, as will more articles in this space that address fire-related questions. Next month look for an article on how fire use relates to plant community composition and 'armoring' the soil by keeping it covered.

C O RN E R - *News from the SD Section of the Society for Range Management*

SD Section Annual Meeting by Emily Helms

Excellence in Range Management Area III Award Winner: Rohrbach Cattle Ranch

Rohrbach family; Jadon, Jonathan, and Sheena (Photo by Heidi Becker)

The 2021 Area III Excellence in Range Management award winner is the Rohrbach Cattle Ranch. The ranch is owned and operated by Jonathan and Sheena Rohrbach along with help from their son Jadon. The ranch is located in the heart of the prairie pothole region, where ducks greatly outnumber cattle on a per acre basis.

The ranch was started in 1923 by Jonathan's grandparents. Most of the operation is native prairie, with less than 400 acres of tilled land. This cow-calf operation is located near Roscoe, SD in Edmunds County.

Their goals and objectives include restoring the land to its pre-Lewis and Clark glory, making a profit with low inputs, drought-proofing the land, and keeping residue to reduce evaporation. They work towards accomplishing their goals through focusing on rest and recovery, controlling flies through grazing management, increasing plant diversity, integrating livestock on cropland, and conserving moisture for drought years.

The Rohrbachs have been able to intensify their rotational grazing system through cross-fencing and water development. They've also transitioned some of their hayland to grazing lands as well. Through their rotational grazing, they've been able to increase plant diversity in their pastures. They rotate through their pastures quickly – moving cattle every 7 to 10 days – which allows the cattle to stay ahead of the flies. In fact, they haven't had to treat for flies in the past 8 years. Additionally, they have noticed an increase in their dung beetle population. Their change in management has also enabled them to increase stocking rate.

The Rohrbach Cattle Ranch was nominated by Eric Rasmussen, District Conservationist in Ipswich, SD. The Rohrbach Family was featured in the Grasslands Planner and have an "Our Amazing Grasslands" video; just search "Our Amazing Grasslands Rohrbach Family" online to watch!

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Calendar of Events

Event	Date	Location	Contact Person	Phone/email
HRM Workshop	Feb 15-17	Ft. Pierre, SD	Dan Rasmussen	605-685-3315
2022 Grassfed Exchange	May 18-20	Ft. Worth, TX	Pete Bauman	Peter.bauman@sdstate.edu
Landowner Fire Workshop	May 25	Astoria, SD	Pete Bauman	Peter.bauman@sdstate.edu
West River Grazing School	June 21-23	Wall, SD	Dan Rasmussen	the33ranch@gmail.com
Young Producers Ranching for Profit School	July 12-15	Huron, SD	Dan Rasmussen	the33ranch@gmail.com
East River Grazing School	July 26-28	Marvin, SD	Pete Bauman	Peter.bauman@sdstate.edu

Please remit any comments, suggestions, or topics deemed necessary for further review to: Sandy Smart, SDSU Box 2140B, Brookings, SD 57007, alexander.smart@sdstate.edu, (605) 688-5503