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### INSIDE THIS ISSUE:

**New Board  
Member Spot-  
light** 2  
continued

**Pheasant** 3  
**Summit**

**How Much Rain** 4  
**Did You Get?**

**Rain continued** 5

**The Truth of  
Holistic Manage-  
ment** 6

**Thank You** 7  
**Lost Resources**

# Grassroots

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## New Board Member Spotlight - Jim Kopriva

Hello, my name is Jim Kopriva (well actually Gregory J. Kopriva Jr.). I was born in Hot Springs in 1959. I am the second oldest of six children of Greg and Rose Kopriva. I grew up in Rapid City and graduated from Stevens High School. I earned a degree in Agricultural Business and met my wife, Karen, at SDSU. We graduated in 1981 and married in 1982.



I was hired by the Farmers Home Administration as an Agricultural Management Specialist and trained in Flandreau and **Jim Kopriva** became an assistant county supervisor in Miller/Highmore. After 14 months, I was promoted to County Supervisor at Martin October 1983. That office served parts of 4 counties; east half of Shannon, south half of Jackson, west half of Mellette and all of Bennett county. Karen and I sat a trailer house on an abandon farmstead 5 miles east of Martin on the Tuthill grade where it crosses the Little White River. We rented 4 river bottom quarters of grass and started ranching on the side. This was our “first place”, just the two of us, my dog and a handful of cows; it was my idea of heaven. Both our children were born in Martin, Angela in 1984 and Lee in 1986.

I resigned from FmHA in 1986 and hired on with the Blackpipe State Bank there in Martin. Bennett County was very good to us and we met many good people there and were accepted into the community. We were active in the Catholic Church where I served as lector and on the Parish council and treasurer of the Knights of Columbus. In addition to homemaking, Karen has always worked in town. Among other part time jobs, she worked for the ASCS, clerking the sale barn, and at the newspaper and, the last 20 years bookkeeping at the elevator. In 1991, concerned with the school system, we moved to Clark County and bought a farm neighboring Karen’s parent’s farm. Karen’s family homesteaded here in 1880 and have been here ever since. Our children went to school in Clark. They both earned degrees at SDSU and Angela went on to get her Masters at Laramie. Now Angela and her husband Kerry Brown live in Brookings and work at Brookings High School and SDSU.

**New Board Member Spotlight Continued on Page 2**

## New Board Member Spotlight continued



Jim Kopriva conducting a prescribed burn on his native grass seedings in 2011. Jim rigged up his sprayer to aid in applying a wet line to contain the fire (Photo by Sandy Smart).

Lee farms with us, we operate separately together. He rents his own land and owns his own cattle and machinery; but we run together for our mutual benefit.

Our place is 2 north and 2 east of Raymond. We are on the east edge of the James River valley and the west edge of the Coteau Hills. We are completely surrounded by grain farming on all sides.

We run both registered and commercial Black Angus stock cows and calve them later in the spring. We employ artificial insemination and embryo transfer to accelerate our genetic progress as quickly and economically as possible. We hold our annual Twilight Bull Sale the third Thursday of May here on the place. We sell hay and do some grain farming.

We have cross fenced, improved water and sowed good cropland back into native grasses. We have gone full circle from conventional tillage to 100% no till now for 15 years. We employ controlled burning to help establish native grass seedings and to suppress non-native cool season grasses. We plant cover crops for soil benefits, but also for forage and we also graze rented stubble fields to allow native pastures to build up root reserves in the fall.

Our long term goals are to reduce 1) feeding of harvested feed, 2) commercial fertilizer and chemical use, 3) improve our soil, grass and water resources for future generations, and 4) eliminate wind and water erosion and improve water infiltration and generally become less wasteful and more efficient stewards of our resources.

I see native grassland as the ideal crop for much of this land and the main challenge as educating people to use it wisely, and proficiently in a sustainable manner. When done properly we can minimize risk and improve quality of life. Grassland is a great place to raise children, wildlife and livestock.

I want to serve as a member of the SDGC BOD because I believe this organization has a unique opportunity to actually improve the manner in which we utilize our natural resources and ultimately save the planet, save wildlife and feed the world.

## Governor's Pheasant Habitat Summit Highlights Land Use by Garnet Perman

The Ringneck pheasant brings around \$170 million and over 100,000 visitors into the state every year. The interest in protecting this resource was apparent by the large crowd that attended Gov. Dennis Daugaard's Pheasant Habitat Summit on Dec. 6. A distinguished panel representing conservation, research, government policy, tourism, and agriculture gave a wealth of information regarding the various factors that affect the state's pheasant population.

Tony Lief, a director with the wildlife division of SD Game Fish and Parks, presented a very informative historical review of the pheasant in SD. "Long-term numbers depend on habitat. Short-term fluctuations turn on weather," he said. Most telling were the numbers he presented regarding the number of acres available for conservation and the corresponding response of the pheasant population. In the 1930's, some land was simply abandoned due to hard economic times and remained idle into the 40's because of WWII steel and labor shortages. Pheasant numbers reached their historical peak of 16 million in 1945. The Soil Bank program of the late 1950's took land out of production for conservation purposes and pheasant numbers responded accordingly. In the early 1960's, the pheasant population approached the 1940's high. In the 1970's then US Sec. of Agriculture Earl Butz espoused a "farm fence row to fence row" policy. Pheasants soon nosedived to their lowest numbers since the population was established state wide. In 1985 the Conservation Reserve Program was established. Pheasants rebounded as habitat increased, ensuring the state's reputation as a pheasant hunter's paradise. In 1999 conservation programs expanded to include wetlands. Pheasant numbers reached a recent high of nearly 12 million birds in 2007. Since then historical trends have held true. The pheasant population has followed a steady decrease in CRP and native grassland acres. Drought and untimely snow storms exacerbated the trend in 2013.

How much habitat has been lost? Dr. Barry Dunn, Dean of SDSU's College of Agriculture, cited three studies. Research done by Wright and Wimberly between 2006-2011 using satellite imagery showed a 1.3 million acre conversion from grassland to cropland. A study by Farm Bureau using the same methods showed a net conversion of just over 2 million acres. An unfinished study by Dr. David Clay and Kurt Rietsma using aerial photography of 3200 quarter sections in nine regions from 2006-2012 shows extrapolated results similar to the FB study. The three regions that have been completed show an average grassland conversion rate of 10.75% per county. Dr. Dunn emphasized the complexity of factors influencing land use decisions including technology, economics, global food demand, the average age of SD producers (55+), and government policy.

According to David Nomsen, Governmental Affairs VP for Pheasants Forever, for the first time in two decades, less than 1 million CRP acres were available for pheasants to nest in. Nomsen, along with many wildlife biologists, considers this well below the threshold level of 1.25-1.5 million acres necessary for sustaining a world-class pheasant population. Nomsen also acknowledged the importance of keeping livestock on the landscape stating that 65% of pheasants come off non-CRP land. Several speakers talked about the unlikely availability of more government conservation dollars in the near future, making land use decisions by current producers even more critical for pheasants and other wildlife.

Following a speaker's panel, attendees were divided into small groups to brainstorm about solutions aimed at boosting the pheasant population. A long list of all the ideas is posted on the GF&P website. On Jan. 7, the governor announced the formation of a 13 member work group that will examine the numerous suggestions put forth by the summit's participants and form some practical policies to deal with the issue.

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

# How Much Rain Did You Get?

by Rick Smith

Land managers have the ability to control moisture the moment it interacts with our soil. Just like a faucet you turn on or off, we make management decisions to our land for water to infiltrate or run off. If infiltration is limited, we or someone downstream have to deal with the increased runoff and its consequences. What are those consequences? First, we erode the top and best soil on our own land and deprive our plants from moisture and nutrients they would have used. That's our loss. Second, we send excessive amounts of water, soil and nutrients onto downstream land, rivers, lakes and oceans to their ecological detriment. That's someone else's loss. Third, we overwhelm and damage our infrastructure of roads, culverts, dams and bridges, when we just don't control the moisture as it lands on our grasslands and croplands. That's everyone's loss.

In explaining how to increase your infiltration rates and corresponding moisture availability for forage production, let's begin by understanding how soil processes work.

The first step in improving infiltration is to eliminate bare soil surfaces. Bare soil is not a natural covering of earth, but only exists when something or someone creates it and nature hasn't had time to re-cover it with growing vegetation or plant litter. Some promote that the plant litter forms a physical barrier that slows the horizontal movement of water, allowing more time for infiltration. I won't disagree, but surface water shouldn't be moving horizontal at all and infiltration is much more than just holding water on the surface until it seeps into the ground.

Bare soil creates a severe thermal reaction problem, when exposed to sunlight, it can get hot, and when exposed to cold, it cools or even freezes deeper than covered soil. These spikes of hot and cold variability within a season and within a day prevent soil microbes from thriving near the soil surface. Which brings us to the biological driver that controls infiltration. These are the microbes that recycle plant nutrients, make openings to the soil surface, create the soil airspaces to store water and provide the glue to make a durable soil structure. You can imagine this structure like the girders and open framework in a Missouri River bridge or the rafters in your pole barn. It gives strength, is open and provides an immediate "sub-surface place" for water. Hardened, compacted, microbial dead soil has no airspaces and thus no storage space for water.

Healthy biologically active soil is capable of holding 2 inches of water per ft or in excess of 12 inches for healthy deep rooted grasslands to a 6 ft depth. For the diverse multispecies microbe population to build that soil structure requires that they have the surface insulation just to survive thermally, while consuming nutrients contained in decaying litter, roots, trampled live plants, and even dead or living other microbes. Ultimately, some microbe species pair up with the living plants to exchange excess or needed nutrients for mutual benefit. For this intricate web of soil dwelling microbes living, reproducing, expanding and exchanging to flourish, demands an externally disturbance free sub-surface zone. Something our native grasslands have enjoyed for thousands of years, while internally mass transportation, migration and recycling of nutrients is occurring.

**Rain Continued on Page 5**

## Rain continued

Another advantage of covering soil with litter is to prevent the direct bombing of raindrops, which pulverize exposed surface soil particles until the process seals the soil surface to any possible infiltration. Just having grassland does not necessarily eliminate all bare soil. To gain 100% cover of grassland soil usually requires living plants, plant litter and grazing management.

As you may surmise, the practice of tillage for a weed clear row crop, are about as anti-soil cover and anti-infiltration as one can get. It creates bare soil, destroys the microbe network populations, shatters water holding air spaces and compacts underground, what the rain can't pulverize on the top. Bare soil from tillage prevents water from entering the soil by eliminating a soil structure; causing water to run off, erode the soil surface and then pond up on the lower reaches of the terrain. This results in a need to install tile lines or ditches to remove the ponded excess water and contained nutrients, while the rest of the field suffers from lost moisture and nutrients.



Soil erosion by water begins when a raindrop splash dislodges soil particles (NRCS Photo Gallery Image).

I'm aware that some soils in South Dakota are perceived more difficult to manage for infiltration than others and it's true that if one is just measuring an absorption rate of soil or how fast water seeps through the soil there are differences in soil types. However, infiltration rates are determined by how many channels and connected open spaces have been created by microbes and roots and how much water can be held by the available soil organic matter, while absorption is due to slow capillary action, which is the main mode of action in tillage fields. That's why I've observed that in virtually every one of these 'hardpan soil type' areas around the State where an inch rain may sit on the surface for hours, days or has already runoff, an adjacent road ditch, which was torn up, mostly cleared of the original topsoil, compacted, reshaped and left to grow back to grass and undisturbed microbes, sucks in all the precipitation that falls on it plus the road's runoff. Infiltration: It's not the soils, it's the management!

In our grassland and no till cropland situations, it is clear that our production depends on infiltration and we can best improve it by enhancing an active soil biome. Do whatever it takes to get that soil covered up. It's an opportunity to get better use of a limited resource. It won't make more rain, but at least you can say, "I got it All".

Next time, grassland litter management.

*Rick Smith is a farmer/rancher near Hayti, SD and the Lake Poinsett Watershed Coordinator. He can be contacted at 605-886-6513*

## The truth about Holistic Management by Randy Holmquist

The recent TED (technology, education, design) talk by Allan Savory has created quite a buzz with over one million viewers watching on You Tube. His talk was very inspirational for people all over the world, many of whom had never heard of Savory. After spending some time reading comments on Savory's presentation, many people that had previously believed that domestic livestock were destroying our planet, admitted that they were convinced that Savory had a viable solution to the desertification of the world's grasslands or at least they were open to his ideas. Although I am all for the exchange of ideas and keeping an open mind on both sides of an issue, I was appalled by the blatantly rude criticisms from several well known ecologists and range scientists from prominent universities around the country. As a practitioner of Holistic Management I am somewhat biased in my opinion, but some of the comments by the scientists were either taken completely out of context or just plain false.

The partial answer for the criticism of Holistic Management is in the two schools of thought on scientific discovery. They are both science, but one investigates how each part of a system operates and the other investigates how a system operates as a whole. The study of individual parts in controlled environments (reductionist science) fails to adequately describe complex biological systems. Adaptive management to each individual environment with consistent monitoring meets these criteria through Holistic Planned grazing, while all grazing systems and rotations, including short duration grazing will fail.

To consider this thought of adaptive management, maybe we need to back up a little and define Holistic Management. As we think about Holism the fact that we are only talking about grazing in our definition is in itself wrong and reductionist. Holistic Management is a framework for decision making that accounts for the triple bottom line (social, environmental, and financial). The framework for decision making includes the holistic goal, tools, an understanding of the ecosystem processes and the testing guidelines. Without going into details about each of these steps in making decisions, the process offers us a way to move toward what we want, not in reaction to what we don't want. A farm, ranch, business, or even families (households) can successfully use the holistic decision making process.

The thousands of people around the world that are practicing holistic management all have different individual goals. Success or failure in their decision making is based on observation and monitoring of these decisions based on their individual goals. The only way to quantify the results of their decision making is to consider case studies as a whole. The mob grazing study in South Dakota and Nebraska is an example of learning from several different operations that manage in very different ways. The producers in this study vary in topography, plant communities, average rainfall, type of livestock and especially their individual goals. If the producers in the different project sites were required to manage exactly the same, mob grazing could be proven scientifically to fail. Since we understand the concept of managing exactly the same in different environments is ludicrous, we also realize that reductionist science is not the appropriate way to discover truths about complex biological systems. No two grazing plans are ever the same even on the same property two years running. Holistic Management does not permit replication, which is why many range scientists reject the results. Let's get out there and tell our story.

*Randy Holmquist is a rancher and certified Holistic Resource Management educator*

## Thank you: Outgoing Board Member Ellen Reddick by Sandy Smart

The Board of Directors would like to extend their appreciation for the many years of service that Ellen Reddick has given to the SDGC. Ellen joined the Board early on after the SDGC formed nearly 16 years ago. Ellen has played a vital role in outreach education. She has hosted pasture tours and has brought in Holistic Resource Management (HRM) speakers to the region. Ellen's ranch was one of the sites for the first Bird Tour held in 2007. Last summer Ellen organized a workshop by Gerald Fry to talk about genetic animal selection procedures. In addition, Ellen has spent countless hours 'manning' the SDGC booth at various events such as the Black Hills Stock Show and HRM workshops. She also represented the SDGC on other boards that she served on.



Ellen served as Secretary/Treasurer from 2002 through 2012. In 2013, the Board reorganized the committee structure and Ellen volunteered to sit on the Education Committee and was elected Vice-Chair of the Finance Committee. Most recently, Ellen helped raise funds for the Dave Pratt workshop entitled "The Other Side of Disaster" aimed at giving hope and ideas for those that were affected by the devastating October 2013 blizzard.

Please extend a well deserved "thank you" the next time you see Ellen.

## Lost Resources: Dave Willis by Sandy Smart



Dave Willis, Distinguished Professor and Department Head of the Department of Natural Resource Management at South Dakota State University passed away suddenly on Monday, January 13th, 2014 in Sioux Falls. Dave was 58 and is survived by his wife Susan of 32 years and three children. Dave was a fisheries biologist, well known scientist and educator. Dave loved his profession, especially the people side as he established a multitude of relationships with people, especially as an advisor to more than 50 graduates students.

In 2011, the Department of Wildlife and Fisheries merged with academic programs of ecology and environmental sciences from the Department of Biology/Microbiology and range science from the Department of Animal and Range Sciences. Dave played an instrumental role in bringing these disciplines together under one roof. Dave proceeded to be "all in" in his new duties that included outreach to grassland managers through the cooperative efforts between SDSU and SDGC. My first encounter with Dave was when the Department of Animal and Range Sciences went through its 5-yr outside review. Dave guided us through that planning process and I was immediately impressed with his leadership giftedness. Recently, Dave was working on hiring an additional grassland ecologist in our department. That effort will continue and Dave was really looking forward to strengthening South Dakota's research and education base in grassland management. I will especially miss my daily email exchanges with my former supervisor. Dave always included "smiley faces" to make you feel at ease. I interpreted that as an "electronic pat on the back" or "thank you". Dave was awesome with people and knew that people were any organization's greatest strength. Dave will be greatly missed. Rest in peace friend!



Sandy Smart  
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## Calendar of Events

Event	Date	Location	Contact Person	Phone
Sheep Day at BH Stock Show	Feb 6	Rapid City	Judge Jessop	605-280-0127
Ag Fest Legislative Day	Feb 11	Pierre	Judge Jessop	605-280-0127
NRCS State Technical Meeting	Feb 12	Huron	Kathy Irving	605-352-1205
Leopold Nomination	March 7		Judge Jessop	605-280-0127
Ag Day Festival	March 22	Sioux Falls	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