



Jim Gerrish Grazing School—Rachel McLean



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July 2017

Treasurer's Note

Well it's been a great start to a busy summer for Foothills Forage! We're all basking in our lush, green pastures. It's pretty hard not to have beautiful pastures in June in our area and that's why it's the keystone month for pasture management. All the free grass will be gone by mid July and from then until next spring, the quality of our grass is based on the quality of our management.

We just wrapped up a 3 day grazing school with Jim Gerrish in Gem hosted by the Doerksen family. We spent half of the time in the classroom and the other half in the field, learning everything from native range all the way through to irrigated tame pasture.

We learnt about spring grass management during rapid growth periods, how to stockpile for the winter, and how to graze stockpiled forage. We also learnt about permanent and temporary fencing strategies as well as all sorts of water installation types. We had dinner as a group both evenings and got in some pretty good learning and yarn spinning by the fireside to boot!

We had a 2-day soil school with Nicole Masters at the end of May which was fantastic. On the second day we limited attendance and people got to bring soil samples in and do some self-guided soil tests.

In July, we will be volunteering at the Cattle Trail at the Calgary Stampede right away so please stop by and say hello.

We are also having a "Carbon and Forages Field Day" July 19th. Recognition and possible payout for carbon capture is something many people in the beef industry are working on right now, but it's not an easy task for many reasons, some of which will be discussed at the field day.

In addition we have a Stockmanship School with Dylan Biggs on August 9th. Dylan sees and operates his ranch differently than most places so there's definitely going to be some opportunities for learning.

Overall, we've had a year of growth with the association. **Membership has increased 40% since January!** This currently puts us at 238 operations! We're hoping that will translate to a sold out Conference on Soil Health & Grazing in December in Edmonton.

May your electric fence be ever mooving!

Ben Campbell

P.S. We welcomed our third son, William Campbell on Valentine's Day this year. Looks like he's going to have red hair like his brother Henry.

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5 Tips to Develop a Grazing System in Sync with Nature



Photo: Rachel McLean

By 2050, the planet's population is estimated to grow from the current 7 billion to more than 9 billion, while the amount of agricultural land is expected to shrink. Simply put, this means we'll need to produce more food with less resources in order to feed the world. For the beef industry to continue to be part of the solution, it must develop production systems that are more in line to nature.

Beef can play an important role in providing the world a nutrient-dense food that is also sustainable. However, to accomplish this, a beef production system must take advantage of key components that can make it more sustainable, which can be defined as the ability of beef to be produced in sync with nature.

Ranching in harmony with nature is one of the key strategies for decreasing the impacts while increasing the profitability and sustainability of beef production.

Grazing management is key, and is the single greatest

sustainability advantage beef production has to offer, which is the ability of cattle to self-harvest a self-renewing feed source, grass.

The ability of the beef production system to turn grass, a resource unpalatable to humans, into a nutrient-dense food is a unique competitive advantage that is yet to be fully appreciated. For example, it isn't a topic within the sustainability discussion occurring among stakeholders looking for solutions to feeding a growing population while also tackling climate change. Beef can do both because of two unique natural processes at the heart of beef production and grazing.

The first of these is photosynthesis, an amazing process within a plant (such as grass) that turns water and carbon dioxide (CO₂) that the plant takes in from the air, into oxygen (O₂), which the plant releases back into the air and carbohydrate (sugar) which the plant uses to supply its energy needs.

Second, and just as amazing, are the intertwined relationships between soil nutrients, soil microbes and plant roots. Soil isn't just a medium to support plants. Healthy soil is made up of highly complex symbiotic relationships between plants,

microbes and sources of nutrients.

What's more, a healthy soil ecosystem is one of earth's primary carbon sinks.

These are truly miraculous processes that make grazing possible, and give beef production a unique sustainability and competitive advantage.

Here are five tips to develop a sustainable grazing and forage system that is in sync with nature:

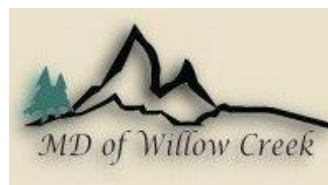
1. Calve in harmony with green grass

Calving in harmony with green grass minimizes hay feeding, and can increase weaning rate and general herd health. In practical terms, this generally means calving around the same time as the local populations of wild ruminants such as deer, elk or antelope.

2. Extend the grazing season to decrease or eliminate feeding of purchased and harvested feeds

This takes advantage of cattle's ability to "self-harvest" grass, a renewable feedstuff. This can be done by filling forage gaps with grazable forages and by applying changes in grazing management, resulting in a tremendous positive effect on the bottom line.

Thank you for your support!



3. Develop a cowherd that is capable of high reproduction efficiency on a forage-based system.

Today's cattle genetics are not all the same, and the genetics currently found in many cowherds are not capable of producing a marketable calf year after year within a high forage based system.

Changing cowherd genetics to match a management strategy that is in sync with nature is a critical consideration.

4. Use holistic grazing tools to improve efficiency.

Improving grazing management by applying the principles of adaptive holistic grazing leads to greater ranch sustainability and economic viability. Most leading ranches use some form of rotational grazing based on a grazing management plan that focuses on grazing grass that is prepared to endure the rigors inherent with grazing. Utilizing a rotational grazing program that mimics the movements of the historic herds of herbivores is key to ranching in harmony with nature.

5. Stop using your grandfather's forages; we have better genetics available.

Modern forage genetics provide varieties of grass that are

much better able to endure management intensive grazing, with better yields, higher nutritional levels, and improved persistence.

Stop using your grandfather's forages – many of the grass varieties used in forage system today are 50- to 70-year-old genetics, even though much better varieties are available.

Grazing systems in sync with nature rely on providing cattle within a high forage system, which should include high quality forages to maintain efficient production.

Ranching in harmony with nature requires a heightened reliance on well managed grazing to fill the nutritional needs of the cowherd. The basis for the sustainability of the entire beef production system, is the capacity to harvest grass, a renewable source of feed, and turn it into a nutrient dense food. A ranch can contribute to the beef industry's sustainability by improving its grazing management to be more in sync with nature.

Weech is a consultant and adviser on sustainable agricultural projects.

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Source: http://www.beefmagazine.com/pasture/5-tips-develop-grazing-system-sync-nature?utm_content=buffer9d991&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

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Should Beef Have a Barcode?

Traceability. A current agriculture buzz word, especially when discussing the beef industry. As producers we are constantly told that consumers want to know more about where their food comes from. Should we use our existing national traceability system to deliver this information and how much information is too much?

Narrowing down which information is important is an even greater challenge.

I have spent the last two years visiting beef exporting countries and important markets for Canadian beef to dig deeper into this subject. My studies took me to Argentina, Australia, Brazil, China, France, Hong Kong, Ireland, United Kingdom and Uruguay. I spoke with all aspects of the industry and saw many fascinating things; from consumer purchasing methods in China, full processing plant traceability in Northern Ireland to barbecue methods of South America. I learned that each culture sees beef through very different eyes. Each beef exporting country has a traceability system; export markets and the potential for disease outbreaks have demanded them. There are commonalities among the systems but each is unique. None of them are perfect, nor could they be replicated in another country with the same success. Beef production is as varied as the methods of preparing beef around the globe. There is no cookie cutter answer to these questions but we must focus on the need to continually strive to differentiate our product. Canadian beef remains a high quality niche product on the global marketplace. The industry should not try to compete on price nor should we forget that we are selling a high quality, high value product.

The majority of consumers want to know where the beef comes from and that it is safe. Period. Safe is defined by food safety legislation in each country and export product is always labeled with a country of origin. Other attributes are for most often seen in a smaller niche market centred in North America and growing in other countries.

Canada has an excellent system but I fear that we will need to amplify our efforts in the future to remain competitive.

Recommendations coming from my research are:

- ◆ Enhance and expand Product of Canada guidelines and investigate the opportunity for an independent organization to oversee and promote the brand on all commodities
- ◆ Track greater data through our national traceability system and by requiring additional information such as a date of birth assigned to every tag
- ◆ Have a functional national

database to trace value added data and enhance it based on specific branded beef programs needs. As an unified industry continue to work with foodservice and retail outlets to ensure information they present to consumers is verifiable and accurate

- ◆ Enhance and expand regional Eat Local programs to encourage consumers to source local products and get to know the person behind the food
- ◆ Redesign labels on beef products and packaging to provide additional information to consumers
- ◆ Ensure beef producers in Canada understand how important traceability and consumer trust is and the keep that trust.

*By: Nuffield Scholar,
Cheryl Hazenberg*

The full report is available on the Nuffield Canada website, www.nuffield.ca under Scholars and Research.

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In Search of Fescue



No story about ranching would be complete without mention of two elements, generically unrelated yet closely coupled to ranching's origin beginning in the late 1800s and its dominating role into the 21st century. Old texts and oral history serve as background.

One component is an ancient grass that provided year-round nutrition for millions of bison through the centuries; the other, a weather phenomenon unique to the eastern slopes of the Rockies — the chinook.

The richness of rough fescue, a nutritious perennial bunchgrass, remains the source of extended grazing into late fall and early winter for many ranches. Fescue's existence became the lifeblood of many foothills ranching operations. Fescue, by nature, is much more than a simple bunch grass. In the words of Sarah Green, Mount Sentinel Ranch, in an article titled *Ranchers Explain Pasture Strategies* (2012): "Our fescue grass is like gold. You have to be careful with it. Fescue grasslands have to be managed in a certain way."

Sometimes called prairie wool because of the woven pattern it forms in dense mats when dry, the hardy grass cures on the stem and retains much of its nutrition above ground after maturity. The above-ground cache of protein and energy sustains both domestic and wild grazers and limits ranchers' feed costs. Clay Chattaway of the Bar S

Ranch, west of Nanton, depends on fescue grasslands. Preservation of native range remains the primary reason ranchers tailor grazing management practices to individual operations. Many ranches across the foothills do not provide additional feed until March and April, and then only to keep cattle out of pastures during a vulnerable growth period.

Grazing management, including care of riparian areas of the watershed, along with conservation of wildlife become passions. Without proper care, grass invaders like timothy and tame grass, weeds and brush encroach upon natural range challenging rough fescue and other native grasses, limiting winter feeding capability.

Gains on properly managed fescue can reach four pounds per day.

The chinook belt along the face of the Rocky Mountain foothills in southwestern Alberta incorporates significant tracts of remaining fescue prairie. Warm summers and mild winters characterize the chinook climate with mean annual temperatures of approximately 3.5 C. Summer temperatures hover around 14 C and winter temperatures around -8 C. Annual precipitation ranges between 400 and 450 mm. The grassland community is dominated by rough fescue with lesser quantities of Parry's oatgrass, June grass, and wheat grass. Forbs are abundant and often include yellow bean, sticky geranium, bedstraw, and chickweed. Drier sites have an increased amount of needle-and-thread grass. Moist sites along stream banks, north-facing slopes, and seepage sites support shrub

communities dominated by snowberry, rose, saskatoon, and silverberry. White-tailed deer, pronghorn antelope, coyote, rabbit, ground squirrel, sage grouse, elk, moose and duck are common in the region.

Outside interest in the importance of fescue prairie is exemplified by work conducted through organizations like the Glenbow Ranch Park Foundation. With assistance from Shell Canada, the foundation established the Shell Foothills Fescue Research Institute at the Glenbow Ranch site adjacent to Cochrane. According to the foundation, rough fescue is part of this endangered ecosystem. The 1,435-hectare Glenbow Ranch Provincial Park encompasses one of the largest remaining areas of native grasslands in the province. The institute's research effort is aimed at determining how fescue can assist in land reclamation. As well, they plan to promote the use of fescues for lawns near the park because they require next to no water.

Rough fescue was designated Alberta's grass emblem on April 30, 2003, due to the efforts of another environmental steward, the Prairie Conservation Forum. Three species of rough fescue: northern rough fescue (*F. altaica*), mountain rough fescue (*F. campestris*), and plains rough fescue (*F. hallii*) are symbolic of Alberta's natural diversity as you move from the plains to the foothills, and into the mountains.



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Francis Gardner, a longtime rancher and environmental steward of foothill rangelands said, "There is a spirit to this land." Fescue typifies the spirit.

Moving east, the beauty and resilience of mixed-grass prairie is captured in the amazing diversity of species. Over 150 species of plants, each adapted in its own way to the extremes of temperature, variation in precipitation, effects of fire, consequence of grazing, topography, and nature of the soil determine the mix of plants. In areas with well-drained soils, drought-tolerant grasses such as western wheatgrass and blue grama may grow within metres of areas dominated by little bluestem, a grass requiring more moisture. It is impossible to calculate the value of prairie species and what they may hold for future crops, medicines and other products (Nature North.com).

Native rangelands originally covered about 61 million hectares, but now only occupy about 20 per cent of its natural habitat. With the exception of extreme southeastern Alberta, the grasslands of southern Alberta are located in the South Saskatchewan River watershed, which comprises just four per cent of Alberta's land area. As much as 40 per cent of the headwaters of the South Saskatchewan River basin are located on private land — including many of Alberta's ranches.

Fescue prairie occupies a moister environment than mixed grass prairie and has a greater abundance of species. On average, fescue prairie produces twice as

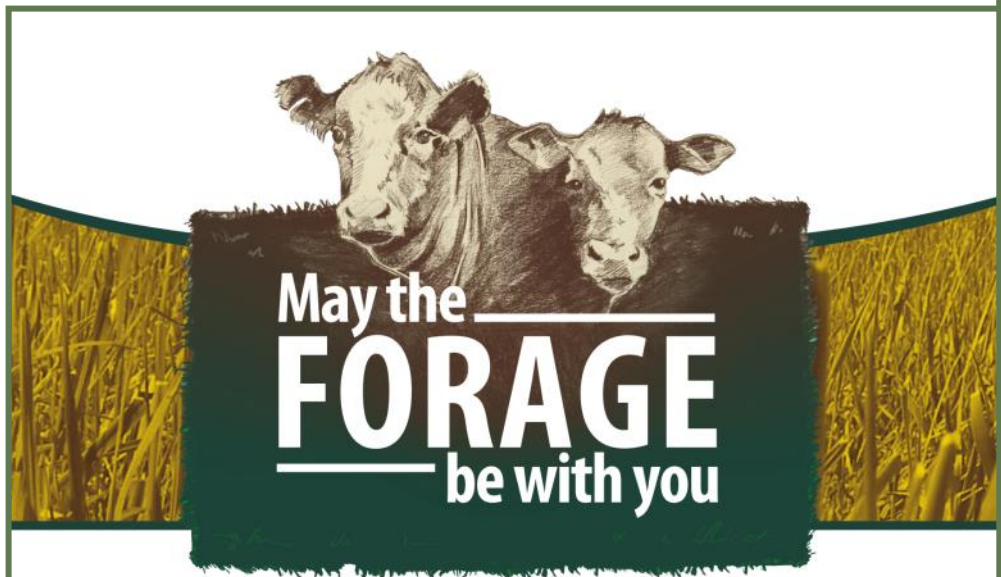
much forage as the most productive mixed grass prairie. It can be found on isolated hill complexes of the Milk River Ridge, Cypress Hills, Touchwood Hills and the Manitoba Escarpment. Fescue prairie is the prominent grassland in the Aspen Parkland, except in southeast Saskatchewan and southwestern Manitoba where mixed grass prairie

shares aspen groves. Once extending over 255,000 square kilometres in the Prairie provinces, less than five per cent of the original fescue prairie remains.

By: Dr. Ron Clarke

Source: [https://](https://www.canadiancattlemen.ca/2017/06/05/in-search-of-fescue/)

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Understanding Counterproductive Human Behaviours & How They Affect Cattle Handling

Cattle have herd instinct. Bunch quitters are made, not born. If we are adequate with the pressure we apply and precise with our movements and position, cattle are very happy to be in a herd. In fact they would rather join and follow the herd than leave it as long as the herd is a safe place to be. Have you ever observed how quickly a bunch of cows will leave a pasture through a gate that was accidentally left open? Then you have seen how powerful herd instinct and movement can be. It starts with one cow finding the open gate and rapidly progresses to the point where the pasture is empty — without any help from us. Yet if it was our intent to move them out the gate quite often it would be a lot more difficult. Why is the gate more difficult to find and get through when people are added to the equation? It is these counterproductive human behaviours that undermine our best intentions.

We evolved as predators and we tend to behave like predators when we work cattle. Predators want to circle, they want to get behind to close the distance, and when cattle run predators want to chase and at least control if not capture. Human predator instinct and behavior is very strong. Our instinct is so strong that it commonly overrides our powers of logic and reasoning. The majority of problems we encounter working stock are a result of letting our instinctive behaviors and urges guide us with regard to where we position ourselves and how we pressure the stock. Almost invariably we end up pressuring at a position, at a time and in a manner that is counterproductive.

An example of this is our behavior when we get cattle close to

our destination be it the gate, the corral, the barn or the back of the stock trailer. The closer we get the more pressure we instinctively want to apply. Just when the animal is right at the threshold is when we feel the strongest urge to rush the cow slap, poke, or prod her to make sure she goes. Whether she goes or not we communicate to her that the closer she gets to where we want her, the more pressure she'll experience, or in other words the more unsafe her life becomes. We teach her unintentionally that these are not safe places to be. Even if we do get her this time we usually have done a good job of training her not to want to go there again.

We create negative associations with the crowd tub or the corral gate or the creek, or the bridge, or the squeeze chute and then we assume that the cows don't want to go there because they are afraid of ____ [fill in the blank]. We do a good job of making "the right thing difficult and the wrong thing easy".

Don't conclude that it is wrong to pressure cattle at gates or the back of the stock trailer, it isn't, but we need to learn where, when, and how to pressure, to get the job done in a way that will make the cow easier to handle the next time not more difficult, that will communicate to her that where we want her is safe enough that she can handle it without having to panic and run off. Ideally we want to shape it up so the cow is given the choice and we are able to let her choose on her own to walk into the barn for example. More importantly we need to teach our cattle to



respond to pressure appropriately and get them responsive to pressure before we ask them to do things they may not want to do.

Another example of counterproductive instinct is sorting at a gate or in an alley. How often have you had an animal coming down the alley or to the gate that you don't want to let by, so you step across in front of it and step forward to stop it and as you do it speeds up?

Then you start yelling and waving your arms and stepping forward more and it charges past you, eyes closed, full speed ahead.

Years ago that cow would have gotten an old hockey stick right across the bridge of the nose. We do a good job of training her that the next time when she eventually decides to muster up the nerve to come by us again she makes darn sure she is going 30 miles an hour. We certainly aren't training her to walk by us. I would much rather sort cattle at a walk than cattle that feel they have to run. When you step into a cow coming down an alley and you get more speed from the cow she is telling you that stepping into her is only going to get you more of what you don't want. She is also telling you that your best chance of stopping her is to backup there-by gaining position and releasing pressure. Stepping back, away from a cow to stop her is not an instinctive reflex, but if you can learn to do it, you can be much more effective.

Working single animals is one of the more challenging jobs. Many people have such difficulty with this that they no longer even attempt it. They will leave an animal of theirs in the neighbor's herd all summer until the cattle come into corrals and can be sorted and the animal loaded on a trailer to be taken home.

A common scenario is driving a single steer down a fence-line toward a gate. We typically get right to the gate when the animal veers off the fence and away from the gate. Let's say the fence is on the left as

we are facing the gate. In that case when the steer veers away from the fence it will be going to the right. Our instinctive response is to try and cut the steer off by angling up toward the steers head in an attempt to cut it off to turn it back towards the gate. Because our position /angle of approach is pinching into the shoulder or neck we almost always get more speed. Even if we do get a turn as opposed to the steer just running by us the speed pushes the animal so hard back to the left that we are seldom able to get another turn back to the

right. It is just like over-steering a vehicle on gravel or an icy road, we can easily lose control.

Control of our instinctive predator urges and behaviors is critical to success with stock. You should always know why you are positioned where you are, why you are pressuring when you are, and why you are changing position when you do.

By: Dylan Biggs

Catch Dylan in Champion, AB at our one day Stockmanship School!

Source: dylanbiggs.com

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“Once people are aware of and in control of their counterproductive instinctive human behaviours then they are ready to learn a new set of cattle handling skills that will enable them to get the job done in a calm, controlled, safe and efficient manner.” - Dylan Biggs

- ◆ Herd movement for success
- ◆ Positioning and human impulse, asset or liability?
- ◆ Getting control of direction and speed
- ◆ Dealing with obstacles
- ◆ Going through gates
- ◆ Processing, loading, and scales
- ◆ Eliminating run backs
- ◆ Sorting in alleys and pens
- ◆ Working singles in a pasture
- ◆ Getting into the corral
- ◆ Moving cow/calf pairs
- ◆ What to expect at home
- ◆ Settling after a move



Carbon & Forages

Field Day

Featuring:

Dr. Barry Irving

*APO/Manager Research Stations, Agricultural, Life & Environmental Science,
University of Alberta*

Carbon capture & forages—the current research in Alberta

Grant Lastiwka, P.Ag

Forage/Livestock Business Specialist, Alberta Agriculture & Forestry

Pasture management, forages, carbon, and connecting the dots.

The big picture and why measuring carbon isn't easy

Dianne Westerland

Manager, Chinook Applied Research Association

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Creating an Awareness of Forages

How Can I Improve My Tame Pasture?

Plant Population

Desirable plant species vary with site, grazing animal, and intended use. Encourage productive, well-adapted plant species by cross fencing to control overgrazing and patch grazing, increasing rest periods during the growing season, varying timing of grazing, and managing soil fertility. If fewer than six productive plants per square foot are present, you may need to reseed.

Plant Density

Maximize forage production by maximizing ground covered by productive, adapted forage plants. Less productive plants compete for light, water, and nutrients, limiting overall forage production.

Appropriate plant density varies with forage species present and environment. For example, bunch grasses will have more bare soil than creeping rooted grasses, and dry environments more bare soil than wetter environments.

Plant Vigor

Vigorous plants produce more forage. Plant crowns should have actively growing shoots to provide regrowth after grazing. Vigorous forage plants need to rest and recover from grazing during the growing season. Ensure adequate soil nutrients are present to support forage growth.

Legumes Present

Legumes fix nitrogen and contribute nitrogen to forage grasses. Thirty percent or more legumes in the forage stand may eliminate the need for nitrogen fertilizer. Manage pastures to maintain legume populations by ensuring phosphorus, potassium, and sulfur requirements are met, selecting long-lived, hardy legume species

and varieties, and managing grazing periods.

Weeds and Brush Present

Weeds and brush reduce forage production and restrict livestock access to forage. Managing for vigorous forage plants increases competition and may reduce brush cover. Time controlled rotational grazing may also reduce weeds and brush. However, you may also need to use herbicides in combination with grazing management to control problem brush and weeds.

Ground Cover

Appropriate litter (dead and decaying plant material) levels and soil organic matter improve the water holding capacity of soil, improve water infiltration, reduce evaporation, and return nutrients to the soil. Appropriate litter levels vary with environment, site, and plant species present. For example, bunch grasses will tend to have less litter than creeping rooted grasses. Litter from productive tame forages in higher rainfall areas breaks down rapidly in the soil. Improve ground cover by enhancing desirable plant production and vigor, allowing litter to accumulate, and winter feeding on pastures.

Soil Damage

Reduce soil damage by reducing bare soil present. Increasing plant density and vigor and increasing the litter present will reduce soil damage. Grassed waterways and managed buffer zones along streams and rivers will help reduce soil erosion. Hoof action on bare soil (especially heavier soils) when



they are damp can result in soil compaction and a breakdown in soil structure, which will reduce plant growth.

Nutrient Cycling

Ensure soil nitrogen, phosphorus, potassium, and sulfur levels are adequate through fertilization, applying manure, or winter feeding on pastures. Grazing livestock recycle large amounts of nutrients through manure and urine. Ensure nutrients are spread back onto pastures by fencing livestock out of trees, limiting loitering areas near water, and cross fencing to get more uniform distribution of manure across pastures.

Severity and Uniformity of Use

Overgrazing reduces forage plant vigor and production and can lead to a reduction in desirable forage species and an increase in grazing tolerant plants. Patch grazing may result in under-utilization of the forage resource. Cross fencing, rotational grazing, and ensuring water is available nearby will help you get more uniform use.

*Reference:
Alberta Agriculture & Forestry
Agdex: 130/10-1*

More Soil Organic Matter Makes More Rain



New satellite data shows just how important is plant-soil evapotranspiration and how it lasts longer than once believed.

Some meteorologists say up to half of the rainfall on a continent comes from the evapotranspiration of plants and soil. This implies a huge reward for better soil management.

To be contrarian, I say meteorology has similar problems to economics as a science. Neither discipline can truly control enough variables to make a good measurement of the effects of a single happening, therefore they can only use scientific principles to imply those results.

Nonetheless, I'm going to agree in this case that the amount of soil organic matter and therefore the amount of moisture present in the soil has huge effect upon plant health and therefore upon plant transpiration. Therefore, across large expanses it should have huge effect upon moisture put back into the air and upon rainfall.

Another way of measuring all this was drawn to my attention recently. It's a year's worth of satellite data on worldwide soil moisture [4]. It began with the launch in 2015 of a

NASA satellite called Soil Moisture Active Passive (SMAP). It is designed to provide globally comprehensive and frequent measurements of the moisture in the top two inches of soil every two to three days. SMAP's first year of observational data has now been analyzed and scientists on the project say it is

providing some significant surprises that will help in the modeling of climate, forecasting of weather, and monitoring of agriculture.

Apparently, this top level of soil preserves a "memory" for weather anomalies, more so than had been predicted from theory and earlier, disparate measurements. The researchers' use of the word "memory" refers to the persistence of effects from unusually high or low amounts of rainfall. Contrary to most researchers' expectations, it turns out that these effects persist for a matter of days, rather than just a few hours.

They say on average, about one-seventh of the amount of rain that falls is still present in that topmost layer of soil three days after it falls — and this persistence is greatest in the driest regions.

Researchers also say the data also show a significant feedback effect that can amplify the effects of both droughts and floods. When moisture evaporates from wet soil, it cools the soil in the process, but when the soil gets too dry that cooling diminishes, which can lead to hotter weather and heat waves that extend and deepen drought conditions. These things were

known true at the micro level, meaning they have been measured with soil thermometers and moisture meters, but had never been quantified on a large scale.

I'll remind you this is from depleted soil, which today is the standard the world over. What if we were dealing with healthier soil, with higher organic matter?

Let's think about what could happen if we raised the organic matter significantly and across large areas. Since science tells us a 1% increase in soil organic matter holds at least 20,000 gallons of water in each acre of soil, that suggests my home state of Oklahoma, containing 44.7 million acres, could hold at least 894,694,400,000 gallons more water in the soil after each rainfall event of one inch or more. We can multiply that by the number of one-seventh from the SMAP satellite data. That means seven days after that one-inch rainfall event, Oklahoma's soil would still have an extra 127.8 billion gallons of water the plants could continue to use for evapotranspiration, thereby further moistening the air and increasing the potential for more rainfall.

This is exciting because it strongly suggests grazing and farming that builds soil is not only directly beneficial to those practicing it for higher yields, lower inputs, more profit and more drought resiliency, it also appears it helps make more rain for everybody.

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FFGA MISSION & VISION STATEMENTS

Mission: Assisting producers in profitably improving their forages and regenerating their soils through innovation and education.

Vision: We envision a global community that respects and values profitable forage production and healthy soils as our legacy for future generations.



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