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Range 101: Partial Budgeting *By Sandy Smart*

Partial budgeting or cost-benefit analysis is a useful tool to help guide investment decisions in farm businesses. The premise is simply “if I invest in the business will it pay off”. Since most investments take several years to realize the benefit, the time value of money must be considered. I use the internal rate of return (IRR) method to do a cost-benefit analysis. The cost equals the investment expenses (one time expense over the lifetime of the project) and the benefit equals the net annual return (annual revenue minus annual expense). The answer to the equation (investment expense divided by the net annual return) equals the number of years to pay off. Then you look up (Google) in a table of “Present value interest factor of an ordinary annuity of \$1 per period (i) for n periods”; where n=the life expectancy of the project, i=the years to pay off, and the IRR or interest rate is at the top of column heading in the table.

For example, let's say you invest in a rural water pasture tank system to provide a cleaner water supply for cattle in a region where high saline water exists. Research suggests a conservative increase of 0.1 lb/day in average daily gain of steers can be expected drinking clean water out of a tank compared with surface water. If you had a 120 day grazing season and beef is worth \$1.25/lb this would equate to \$15/head. If you had a 640 acre pasture and put a water tank in the middle, the investment costs might total \$12,000 (includes cost of trenching the waterline, the hookup fee, tank, and supplies). Now let's say the stocking rate is 1 Animal Unit Month (AUM)/acre. This would mean you could stock 213 750-lb steers for 4 months (640 acres x 1 AUM/acre / 4 months x 1 steer/0.75 AU). Thus, we would expect an increase in revenue of 213 steers x \$15/steer or \$3,195. The new annual water bill would cost roughly (\$2.50/1000 gal + \$15 monthly charge). If we expect 1 AU to drink 15 gallons of water per day, our steers would drink 640 AUM x 30 days/month x 15 gallons/day x \$2.50/1000 gallons or \$720 + \$60 for a 4 month usage fee for a total of \$780. We might have additional annual expenses with the new water tank such as the float or boards to keep livestock from getting into the tank of \$100/year bringing our total annual expense to \$880. Thus, the net annual return would be \$2,315 (\$3,195 - \$880). So, it would take 5.2 years to pay off (\$12,000 investment divided by \$2,315 net annual return). A project that has a life expectancy of 20 years and only takes 5.2 years to payoff would have an IRR of 18%.

We interpret this project in the same way as if we invested \$12,000 and would expect an 18% return over 20 years. The key to using partial budgeting is to make sure you estimate your investment costs and revenue as accurately as possible. There will always be unforeseen expenses that will decrease the IRR, but it gives you a “gut check” to see if it would pencil out. You are more likely to pull the trigger on a project which brings a 15% IRR than you would one that brings 5%. Also, consider there might be some side benefits that might not be monetized.

South Dakota Grazing Schools Scheduled by Kris Miner

The annual Grazing Schools will once again be held in Wall and Chamberlain South Dakota. The Wall School is scheduled for August 25th – 27th, rooms at Econo Lodge and Ann's Motel have been reserved under a Grazing School block. The training will be held at the Wall Community Center, across from Wall Drug. The ranch experience will be hosted at the Pat Guptill ranch.

The Chamberlain Grazing School is scheduled for September 14th – 18th. We will fill the first half of the week's school and add a second school based on registrations. If you would like to secure a space, please register early. The Chamberlain school will be held at the AmericInn. A block of rooms has also been reserved at this location. The Chamberlain Grazing School Ranch experience will be held at the Charlie Totton Ranch.



2016 SD Grazing School held on Charlie Totton's place north of Chamberlain (Photo by Judge Jessop).

After moving back home, to the family ranch, and researching how to best care for the pasture and prairie grassland, I found the South Dakota Grassland Coalition. The next Grazing School was full, so I had to wait an entire year to attend. The experience of attending was so beneficial. I was able to connect with a group of like-minded people that shared my interest in learning more. The presenters were producers with direct experiences and shared stories of challenges and opportunities. These real-life examples became inspiration and fueled my enthusiasm to implement new techniques, water systems, and to think about my resources and goals.

The experience of being in a pasture to identify plants, dig in the soil, discuss and learn together was eye opening and invaluable. The hands-on portion of the school provides the doing portion, so taking measurements of your forage, and setting up a system with a team is the first practice. You learn the thought process other teams used to set up their systems. You realize that it is not "one size fits all", the knowledge shared is given in the spirit of helping.

Bringing your pasture maps and getting to sit with those experienced and seasoned in implementing changes is another helpful activity. You get to identify and think about how you could meet goals. The Grazing School was a phenomenal experience. I look forward to attending as an employee of the organization! Hope to see you there!

Register by contacting Judge Jessop at jjessop@kennebectelephone.com or 605-280-0127

The Green Side Up: Alternative Calving Date Workshops

— Community Stone Soup by Pete Bauman



Back in mid-February things were a bit different. It was bitterly cold and we really didn't worry if the person next to us had a little snuffle. April was a different story as warm weather returned and a snuffle sent you running for cover from your neighbor. Regardless of the turmoil of this pandemic, there are still some needs to address in ranch country, and so here we share the game plan for distributing information gleaned from the Alternative Calving Workshops organized by the Coalition which featured the benefits of calving with nature.



What became very clear in these workshops is that human nature drives a lot of what we do. At its best, human nature breeds innovation, but it also creates fear, repetition, habit, and paradigms not easily changed. When it comes to the bovine, she is a naturally functioning animal that has been heavily manipulated to fit human needs. But, her core biology isn't much different than that of her wild cousins. So why would she want to calve in a snowbank? It's a question worth asking, and the answers are complexly intertwined among human influences.

Because of this complexity, no single person or event can explain our decades-old shift toward calving out of sync with nature. Conversely, no single person can provide a perfect recipe for returning to a calving program that is in sync with nature that fits all individual ranch situations.

Thus the stone soup analogy. If you recall, the folktale centers on a traveler who gets the townsfolk to help him make a pot of soup. Individually, none of the people have all the ingredients necessary. But collectively, they each contribute something to the pot, and the end result is a delicious meal. The stone was simply the catalyst that instigated a paradigm shift. So too were these workshops.

And so went the three days of calving discussions. No single presenter had all the answers, but all shared a common vision and goal centered on improving profitability, relationships, and animal and human health while reducing in labor, stress, inputs, and disease. Every ranch and situation was unique, yet when compiled they created a clear path toward successful transitioning toward the goal.

For those able to attend one of the sessions, there was a great deal of specific information shared by the panelists. Concurrently, we interviewed 27 individuals who have switched to a later calving date in sync with nature. We challenged them to share anything and everything that could help someone else make the switch. We are now working on packaging those interviews into a collection of videos that will be made widely available in the coming months. We really didn't see this coming, and you have your Coalition board members to thank for having the insight to capture these people on camera.

Stay tuned as we process this information in both print and video form. The result will be a wonderful stone soup with real answers, real coaching, and real strategies for success.

Ranching During the Covid-19 Pandemic by Garnet Perman

How has Covid-19 impacted management practices as producers finish out spring and look ahead to summer and fall? We asked several producers how the pandemic has influenced their plans.

Jim Kopriva and his son Lee are the workforce at Kopriva Angus. Their annual bull sale was scheduled for May 7 and like many sales it is a community social event with a big feed. Jim feels it's important for buyers to be able to inspect prospective breeding stock in person. He's made that opportunity available, but for the first time ever made provision for the sale to be online. The cost to set up video is extra but the upside is that more prospective buyers from farther away can participate online. "The social end of it will be gone," Jim said.

As far as the social distance aspect, they see family but otherwise stay close to home, leaving for groceries and farm business. Church is online. Jim's wife, Karen, works at a local potato chip factory that takes extra precautions with employees. She worked for a couple weeks from home because of a possible exposure.

Jim's banking background gives him some insight into the long term aspect of the livestock business. "The system was broken before and it's really a problem now," he said. "The impact on the rural economy will be hard."

Brett Nix, SDGC chair said that Coalition events such as the Bird Tour and Rangeland Days scheduled for June have been cancelled. Others such as the Leopold Tour are on hold. Check the Coalition website for schedule changes.

Their family re-evaluated their ranch management plan two months ago so they can get themselves into the fall hoping for better prices. "That was a really good move for us. It lifted a burden knowing we had a plan," Brett said. Nix's put their bred animals into one herd and went to grass. They did the same with their stockers. Both herds rotate every 2 ½ days. This arrangement worked well for them in the very dry summer of 2012, so they were confident in their ability to conserve grass for this grazing season which is a concern for their central SD operation.

Even though subsoil moisture remains adequate from last year, much of the central and northern parts of the state sorely needed topsoil replenishment. Moisture from mid-January through April was considerably below normal. Nix's drought plan kicked in on May 8 but timely rain on May 4th saved them from needing to market animals at current prices.

Nix has had extra help this spring as their youngest sons went to school on-line in the mornings and helped with ranch work in the afternoon. Their adult children help on the ranch occasionally but they have tried to keep as much distance as possible. They utilize Facetime and Zoom to talk to adult children, grandchildren and in-laws.

"We have so many things to be thankful for," said Nix. "Last spring would have been brutal under these circumstances. They've also taken advantage of a slower schedule to overhaul the ranch office and catch up on "someday" tasks.

Ranching during the Covid-19 Pandemic Continued

Ranching During the Covid-19 Pandemic Continued

Bill Aeschlimann from southeastern SD is a retired sheep man, but still has a pulse on the industry. The sheep market was already in a slump as a result of changing trade terms with China. When restaurants, especially on the coasts shut down, 50% of the lamb market was lost. The timing of the pandemic surge over Passover week, a peak time for lamb consumption, also added to the wreck with families not gathering for traditional meals. In the Detroit area a large Middle Eastern population is unable to purchase lamb because a packing plant has shut down.

Aeschlimann was part of the 160 member Mountain States Lamb Coop which recently declared Chapter 11 bankruptcy. In some cases coop members are being paid when lamb that has been processed and frozen is sold. In spite of the difficulty, Aeschlimann is hopeful, "Farm folks are resilient. We deal with uncertainty all the time."

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

South Dakota Ag Land Trust by Tony Leif

Hello Grassland Coalition members!

My name is Tony Leif and a couple months ago I was offered an incredible opportunity to become the Executive Director of the South Dakota Agricultural Land Trust. On the first day of April, I embarked on this new professional venture.

While my education and background are primarily in natural resource management, I spent the better part of my career with SD Game Fish and Parks working closely with our state's agricultural partners. I found that opportunities for true success in resource management in South Dakota only became a reality when those efforts were made in collaboration with our state's agricultural community.

The SD Agricultural Land Trust is a relatively young organization in our state and it exists due in part to the leadership and assistance the Grassland Coalition. Your efforts along with those of the SD Cattlemen's Association, SD Conservation Districts, and SD Farm Bureau Federation help the Trust form and become a non-profit corporation this year.

The Trust is an organization founded and guided by South Dakota farmers and ranchers. We seek to sustain and perpetuate working lands conservation on our state's agricultural lands. With your help and that of the Trust's Board of Directors, we will promote the sustainability of farms and ranches for the benefit the land-owners who steward them today and tomorrow and help protect the natural resources they provide.

Exciting times lie ahead for the SD Agricultural Land Trust and I am thankful for the leadership of your coalition in forming the Trust and for the challenging opportunity to be the Trust's Executive Director. Your continued support along with that of our other three sponsoring organizations and our Board of Directors is critical to our success and I look forward to striving to meet the mission and goals of the SD Agricultural Land Trust with you.

Regal Fritillary by Daniel Kim



Regal fritillary. The regal fritillary is a large showy butterfly, historically found only on large, relatively intact native or restored grasslands from the Rocky Mountains to the east coast. Regal fritillaries spend the winter hibernating as tiny caterpillars covered by prairie vegetation. In spring, the caterpillars find young violet plants, their only source of food, and eat and grow for 100 days before forming a chrysalis. In June and July, the adult butterflies emerge. Males emerge before females, so most regals seen after July are females laying eggs across the prairie. The eggs hatch a few weeks later and the cycle begins again. Regal fritillaries usually spend their entire life cycle within a single grassland area, but may move over 10 miles if they don't encounter large wood lots or expansive paved areas.

Regal fritillary populations are in trouble. Historically regal fritillaries spanned 33 states, 5 provinces and the District of Columbia and was once common from the Rocky Mountains to the Atlantic shore. Today all east coast populations are gone, while the remaining populations inhabit only 16 states, many of which have limited available habitat. The Great Plains represents the last large population reservoir for regal fritillaries. Regal fritillary numbers have decreased as native prairies and grasslands have changed to cities, row-crop agriculture, and due to shrub/tree encroachment. Grasslands next to intense agriculture may lose forb diversity from herbicide drift resulting in fewer violets for caterpillars and fewer nectar sources for adults. Persistent insecticides and drift from row-crop agriculture may also present a problem. Many native prairie patches are now so small and isolated that their regal fritillary populations are at risk of disappearing from one or more years of poor breeding conditions.

Managing for regal fritillaries. Burning and grazing HELP regal fritillaries because these actions conserve prairie vegetation, but too much of either maybe harmful. For small pastures, spring burns may destroy all caterpillars and host plants, while extreme overgrazing may prevent the growth of nectar sources for adults and may not leave enough litter for caterpillars to survive the winter. Healthy native prairies are associated with diverse grassland bird communities because they provide a variety of vegetation structure without too much bare ground nor rank vegetation. These same prairies are ideal for regal fritillaries.

Regal fritillary surveys. Over the next two summers we plan to look for adult regal fritillaries on under-surveyed prairie landscapes in the western counties of Kansas and South Dakota, and eastern counties in Wyoming. Well-managed private lands likely harbor this butterfly, and we're looking for landowners with moderate to large tracts of native prairie who are willing to allow regal fritillary surveys on their property. The surveys will involve technicians walking a 100 m transect line followed by a simple vegetation analysis. They will count all flowering nectar sources near and note changes in prairie quality (based on native plants and nectar sources) along the central transect line. Finally the technicians will search the best looking habitats on site, free of time constraints, to increase regal detections.

Products. We will produce a brief report for each land owner including the dates and results from the line transect surveys and opportunistic observations occurring during the work. The final project report will document any new records for counties or public lands, and the data will also be used in a range-wide species status assessment report for the regal fritillary. Any data released to the public will obscure survey locations on private lands unless expressly authorized by the land owner.

For questions, please contact Daniel Kim (605)–224-8693 ext234(O), 308-380-9327(C), or daniel_kim@fws.gov

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- News from the SD Section of the Society for Range Management

By: Emily Helms

Excellence in Range Management: Dennis and Jean Fagerland



The SD Section of the Society for Range Management (SRM) gives Excellence in Range Management awards to agricultural operations across the state every year. The objective of the Excellence in Range Management Award is to demonstrate to the public and other rangeland managers outstanding examples of rangeland management which result in long-term health and sustainability of the range resource while providing efficient production of livestock, water, wildlife, esthetic values, recreation, and other non-commodity values. This award is given to an operation in one of the four geographic areas of SD, annually. Nominations can come from SRM members or other partners.

Dennis and Jean Fagerland were the 2019 Area I Award Winners. They were nominated by Judi Schulz, Soil and Water Conservation Society member. The Fagerlands own a crop and cattle operation in Marshall County near Langford, SD. Dennis and Jean have long been proponents of conservation. Their operation includes native rangeland, seeded pastures, hayland, and cropland. Through different projects, they have planted cropland back to grass for more grazing acres and installed water and cross-fence to facilitate better grazing management. They've also installed fabricated windbreaks and renovated shelterbelts for improved winter protection of their cattle. They have been a long-time user of cover crops in their cropping rotation, and they use these for early spring and fall grazing opportunities.

Their grazing management includes early season use of U.S. Fish and Wildlife lands, then weekly rotations through their pastures. Rotational grazing promotes many livestock production benefits for their operation including increased weaning weights, higher breed-back percentages, an increased number of cattle settled in the first cycle, and less foot rot and pinkeye occurrence. Their grazing management also promotes great wildlife habitat. Turkeys, grouse, pheasants, and deer can be found across their operation throughout the year.

Dennis is also an Earth Team volunteer for the Marshall County NRCS, as well as a Voices for Soil Health with the SD Mentoring Program. He's a strong advocate for soil health and is always willing to chat about issues with fellow producers.

As part of the Excellence in Grazing Management Award, Dennis and Jean will host a tour of their operation this summer. Check the Society for Range Management: South Dakota Section Facebook page for more details.





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Calendar of Events

Event	Date	Location	Contact Person	Phone
SD Grazing School	Aug 25-27	Wall	Judge Jessop	605-280-0127
SD Grazing School	Sep 14-18	Chamberlain	Judge Jessop	605-280-0127

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