



*Innovation, education and regenerative agriculture*

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# GRASSROOTS NEWS & VIEWS MARCH 2021

## Director's Note - Daniel Doerksen

### Howdy folks!

Well, the last few days feel like spring is just around the corner and these mild temperatures sure make life a lot easier. I think we can all agree despite the challenges of COVID-19 the weather has made this winter a lot more bearable with only 8 days of extremely cold temperatures. Its always nice when you start to notice the days are getting longer and those few extra minutes of daylight everyday seem to start to work wonders for mental health and the anticipation of spring.

The mild winter made for better grazing this winter and the feed stacks have not shrunk as fast. While some of our cows have been able to graze right through the winter other groups have had some of the grazing frozen under with the snow in January and then melting only enough of make ice and freezing the feed down. This next week looks like some good melting weather and hopefully we can get rid of the ice and back to grazing.

It's one year now since our lives were all affected by COVID-19. I feel fortunate to live where we do and be in the industry we are in. While lots of people's business are suffering the ag sector continues on. People have to eat. In February, the kids were back playing hockey and while only practices are allowed and there are extra rules to follow its nice to get back doing some of the things we once enjoyed even if it is a little different now. At the time of writing this it would appear more restrictions will be lifted in the coming days and we look forward to getting back to some normalcy in the coming months.

As we prepare for the Foothills Forage AGM at the end of this

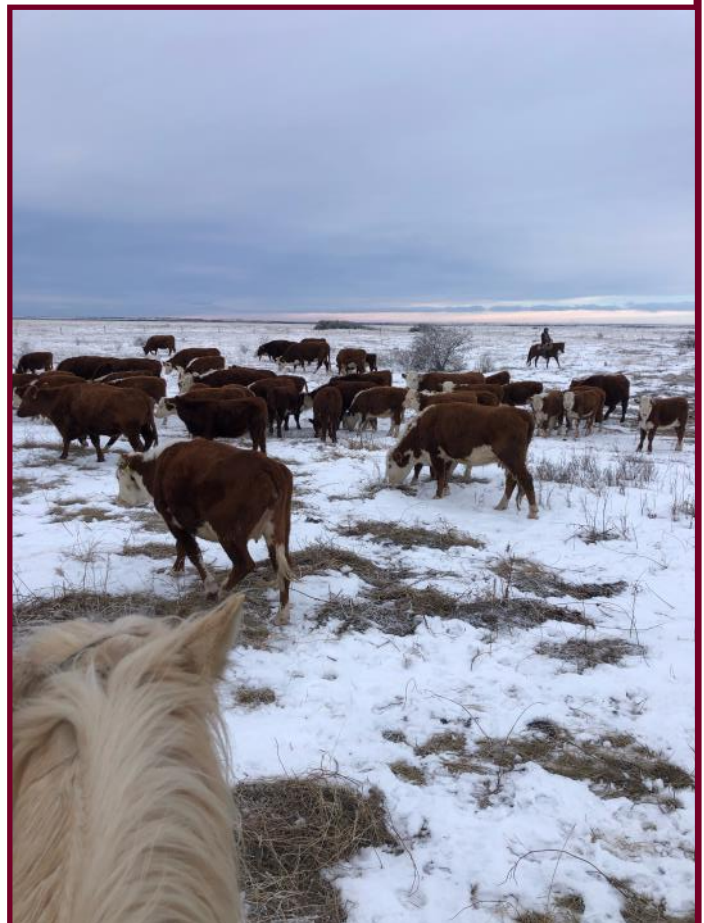
month (page 8), it will be different than years past as we will have to do an online meeting. However, we look forward to a great guest speaker before the meeting and we will still be able to conduct our business. We hope that as we move into spring and summer that the restrictions will continue to be relaxed so we can continue to plan field days and events where we can get together in person.

NO MORE ZOOM!!!

Cheers;

Daniel Doerksen

*Checking the cows at Gemstone Cattle near Gem, AB*



### IN THIS ISSUE

Step-by-Step Strategies for Restoring Western Rangelands	2 & 3
Pollinator Projects; Putting the Buzz in Agricultural Production	4 & 5
Calving season tips & tricks: obstetrics and prolapses	6

# Step-by-Step Strategies for Restoring Western Rangelands



Photo: Sonja Bloom

Invasive plants exploit every environmental angle in their favor. So restoring damaged rangelands in the western United States involves a lot more than just getting rid of bad plants and bringing in good plants.

Since 1990, Agricultural Research Service ecologist Roger Sheley has been refining a process for identifying factors that give the undesirable space invaders their territorial edge—and figuring out strategies for restoring a healthy mix of native vegetation for rangelands in need of remediation.

“Killing weeds is like treating a symptom,” says Sheley, who is co-located at Oregon State University’s Eastern Oregon Agricultural Research Center in Burns, Oregon. “So our research has been focused on trying to understand the reason why plants are able to invade and dominate some landscapes and not able to succeed in others. We want to find the cause and then deal with the cause—what has changed in the ecology of the system and how can we change it back?”

Sheley used a range of findings in the literature and years of field research at Burns to develop a decision-making model called “Ecologically Based Invasive-Plant

Management” (EBIPM). The process is a mix of longstanding theories of plant establishment and succession, new ecological principles, identification of variables that contribute to invasive plant management, and actions that can help native plants regain territory lost to invasive vegetation.

Using EBIPM, Sheley was able to increase the chance of restoration success by 66 percent over traditional approaches to invasive weed management. That could be a boon to land managers in the western rangelands, where invasive plants like cheatgrass are fueling wildfires and limiting livestock grazing options.

“Another term for our work is ‘augmentative restoration,’” Sheley says. “In rangeland restoration, not everything needs to be done everywhere. It’s much more effective to change restoration procedures based on what we observe as we move across the landscape.”

## Plant Succession—Not So Simple

Ecologists have often assumed that plant communities almost always follow a succession trajectory mainly determined by climate and unpredictably affected by management activities. For instance, a site would initially be colonized by mosses and lichens, which would help create conditions favorable for the growth of forbs, grasses, and shrubs.

Sheley and his colleagues based their work on another approach that proposed three general causes of plant succession: site availability, species availability, and species performance. This model held that site-specific ecological processes strongly influence plant succession dynamics and that these processes in turn are modified by natural and management-imposed factors that affect plant establishment and

long-term vegetation change. Once these factors have been identified, successional management decisions can be used to coordinate activities that fine-tune the mechanisms and processes influencing plant succession—all of which helps rout invasive plants and restore native grasses and forbs.

Sheley and his colleagues tested their model in Montana’s Kicking Horse Wildlife Mitigation Area at three sites that had varying degrees and types of damage from invasive plants. The first site had been overrun with spotted knapweed, sulphur cinquefoil, and cheatgrass. In addition, meadow voles had disturbed the soil by digging numerous tunnels, which increased the amount of bare ground ripe for infestation.

The second site didn’t have meadow voles or a lot of bare ground, and it did have a substantial native plant population that could help support restoration. But the native plants were already competing with the invasive plants that had moved in.

The third site was wetter, which provided good condition for the establishment of desirable plants. But it didn’t have a significant native plant population that could help jump-start restoration.

## One Step at a Time

The first step in the EBIPM process was to assess each site using the Rangeland Health Assessment protocol, a system already used by many federal land managers for evaluating rangeland conditions and identify the ecological processes that needed to be repaired. For instance, at the first site, the team decided that the major succession dynamic facilitating invasive success was “site availability.” This was the result of several factors—including bare ground, soil surface loss, dry soils,

(Continued on page 3)

On the Cover: Early spring stockpiled forage looking mighty tasty. Photo FFGA

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(Continued from page 2)

and the lack of a native plant population—all of which also blocked the development of a healthy native plant community.

But at the second site, the team determined that “species performance” was the successional process dominating plant establishment and survival, since the native plants at the site were outnumbered by their invasive neighbors. So at this site, management activity needed to promote the success of the native plants over the invasive vegetation.

At the third site, native plant populations were low, which had given invasive plants the opportunity to become established. The researchers decided that both “species availability” and “site availability” were the successional issues that needed to be addressed. Then the team developed strategies that targeted the ecological processes contributing to the successional dynamics at each site. At the first site, they seeded the bare sites with a mix of native plant species and watered them. At the second site they killed the invasive species with herbicides and disked the soil, both of which opened up space for the existing native plants to expand their range. They also lightly disked parts of the third site and then seeded it with a mix of native plants. This site was next to a wetland, so there was sufficient

water available to support the emergence and growth of seedlings.

Sheley and his partners found that seeding and watering at the first site produced the highest native grass and forb density, while at the third site, tillage was key to the establishment and survival of native grasses and forbs. Using herbicides at the second site did not appear to have any significant benefits for the establishment and survival of the native plants.

Still, Sheley thinks that two out of three is a noteworthy success rate for EBIPM. “When we pick and choose how to support site-specific succession processes by repairing or replacing those processes, we can significantly enhance traditional successional restoration,” Sheley says. “It can save land managers time and money, and it also helps lower the risk of unintentionally harming the ecosystem processes when we decide to intervene. This system allows us to integrate what we’re actually seeing—what works, and what doesn’t work—in sustainable invasive-plant management and restoration programs to create predictable and valuable vegetation changes.”

Author: Ann Perry, ARS.  
Article can be found in the February 2012 edition of Agricultural Research Maga-

zine. [https://digitalcommons.unl.edu/usdaagresmag/index.html#year\\_2012](https://digitalcommons.unl.edu/usdaagresmag/index.html#year_2012)

*This research is part of Crop Protection and Quarantine, an ARS national program (#304) described at [www.nps.ars.usda.gov](http://www.nps.ars.usda.gov).*

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# Pollinator Projects

## Putting the Buzz in Agricultural Production

### The value of pollinators and the benefits of establishing pollinator projects on your farm

The pollinator species that live on your farm are not limited to just bees, but also include butterflies, moths, beetles, and birds. These species are so important, they play an essential role in plant reproduction and seed production for many of our food crops. Many of these species are also considered pest suppressing and can help to control insect pests. The economic value of the services that pollinators provides to Canadians is in the billions of dollars each year.

When considering plant species for your pollinator project, it is important to include many different species to ensure that there are flowers blooming from May to October (or as long as possible). It will also be important to manage grazing rotations carefully (ie. single pass, late season) to maintain forage production and the function of your project.

Pollinator projects can be established on marginal farmland such as field edges, corners, eroded lands, hill tops, saline areas and riparian streambanks. Pollinators will often benefit from having a nearby water source (i.e. wetland) and winter habitat can be provided in shelterbelts or ecobuffers that could also include flowering species (ie. Saskatoon, Lilac, Chokecherry, or Prickly Rose). Avoid disturbing the soil in your project area as many as 80% of insect pollinators burrow in the ground.

**If you build it, they will come.** Alberta studies show that the number of pollinator species will increase once a project has been established.

Visit [www.awes-ab.ca/publications/native-pollinator-friendly-plants](http://www.awes-ab.ca/publications/native-pollinator-friendly-plants)

### Forage species selection, establishment & management

There are benefits of both native and agronomic plant species for a pollinator project, native plants may have a more beneficial relationship with pollinators, whereas agronomic species will have a more palatable cost-benefit. Which species you choose will depend on your goals, budget and time commitment.

Establishment can be difficult due to spring moisture deficits and competition from weeds. It will be important to deal with any weed issues in advance of seeding. Consider planting bunch grasses or other non-aggressive grasses to diversify your forage species, and especially if planting bloating legumes. Although native species don't require fertilizer, it will benefit the agronomic species. Soils that are deficient in Phosphorus will hinder seedlings establishment. Once established (in a biodiverse mix) legumes will be better able to liberate unavailable P from the soil.

### Funding options for pollinator projects

The Wheatland Agricultural Stewardship Program (WASP) will fund pollinator projects on agricultural land at 50% up to \$5000.

ALUS Wheatland provides annual financial support to producers, applicants to the WASP program are eligible for up to \$300/acre/year.

**For more program information contact**  
Sarah Schumacher Ph:403-333-6943 or  
[Sarah.Schumacher@wheatlandcounty.ca](mailto:Sarah.Schumacher@wheatlandcounty.ca)

**ALUS**





## Agronomic Species

These nitrogen fixing plant species have potential for managed grazing and also benefit pollinators



Species	Characteristics	Grazing Management
Sainfoin <i>Onobrychis viciifolia</i>	Good establishment, early bloomer and also good for late season grazing because of leaf retention. Not tolerant of salinity or saturated soils, shorter lived than alfalfa.	Excellent high quality and high yielding forage (~30% protein), non-bloating, can reduce bloat when grown with alfalfa. Requires longer for re-growth after grazing.
Purple Alfalfa <i>Medicago sativa</i> Yellow Alfalfa <i>Medicago sativa</i>	Long lived with deep taproots, tolerant of drought and wide variety of moisture conditions.	Excellent forage value, requires careful management to reduce the risk of bloat. Graze yellow blossomed species early and lighter (1/3 removal) and it will have a long blooming period and regrowth yields close to most other alfalfa varieties.
Alsike Clover <i>Trifolium hybridum</i>	Short lived (but a 2 year establishment will increase plant longevity), not tolerant of drought conditions, but will tolerate standing water and waterlogged soils.	Do not graze if there are black spots on the leaves, fungi can cause photosensitization in cows and horses, also potential for bloat in cattle. Best used for grazing.
Bird's- Foot Trefoil <i>Lotus corniculatus</i>	Good establishment, short lived (1-3 years), good tolerance of drought, salinity, heavy clay soils and can tolerate standing water and saturated soils.	Good for grazing, palatable, fair for haying, 20-25% protein, lower production compared with other agronomic species. Potential to become invasive but can also be outcompeted by aggressive grass species.
Red Clover <i>Trifolium pratense</i>	Hardy but short lived, poor tolerance to salinity and dry soils.	Good protein and palatability, good for hay, grazing and silage. Requires careful management to reduce the risk of bloat and fungus.
Cicer milkvetch <i>Astragalus cicer</i>	Long lived and tolerant of a wide range of conditions, but can be difficult to establish (may take 2 growing seasons).	Non-bloating, good for late season grazing because of leaf retention, requires careful management; overgrazing will cause this species to decrease but there is also potential for it to become invasive.

**Grass Species Companion:** Bunch grasses or non-aggressive grasses, discuss locally appropriate options with your seed supplier

## Native Plant Species

Native plant species that benefit pollinators and have potential for managed grazing

Species	Characteristics	Grazing Management after flowering
Milk Vetch <i>Astragalus canadensis</i> , <i>Astragalus americanus</i>	May do better in moist soils, <i>canadensis</i> has good, but slow establishment. Both are nitrogen fixing.	Good grazing potential. Short lived, overgrazing will cause this species to decrease. Other milk vetch species may be toxic to livestock.
American Vetch <i>Vicia americana</i>	This is an early successional species, establishes better with moisture, tolerates medium to coarse soils. Used for soil stabilization and erosion control. Nitrogen fixing.	Good to excellent grazing potential, palatable with 20% protein. Overgrazing will cause this species to decrease.
Hedysarum spp. <i>Hedysarum americanum</i> , <i>alpinum</i> , <i>boreal</i>	Tolerant of poor soils and a wide variety of conditions. Nitrogen fixing.	Fair to excellent grazing potential, overgrazing will cause this species to decrease.
Sticky Purple Geranium <i>Geranium viscosissimum</i>	Good to excellent establishment, palatable. May establish better in moist soils. Actively mycorrhizal.	Overgrazing will cause this species to decrease.
Fireweed <i>Epilobium angustifolium</i>	Tolerant of a wide range of soil and moisture conditions (including alkaline).	Fair to good grazing potential, high in nutrients and palatable from summer to fall (more palatable earlier in the season). Overgrazing will cause this species to decrease.
Purple Peavine, <i>Lathyrus venosus</i> Cream Colored Peavine, <i>Lathyrus ochroleucus</i>	Not really considered a prairie plant, its has creeping rhizomes and establishment can be difficult.	Excellent grazing potential in the summer, very Palatable and up to 30% protein. Overgrazing will cause this species to decrease.
Tufted White Prairie Aster <i>Aster ericoides</i> Showy Aster, <i>Aster conspicuus</i>	Grows well in moist open prairie. Actively mycorrhizal.	Good grazing potential. Overgrazing will cause this species to decrease
Northern Bedstraw <i>Gallium boreale</i>	Grows well in moist open prairie. Actively mycorrhizal.	Excellent grazing potential. May increase with overgrazing.

**Grass Species:** Include native or agronomic bunch grasses or non-aggressive grasses that are good for grazing, suggested species such as June Grass, Canada Wild Rye, and Plains Rough Fescue (which is rhizomatous but not aggressive).

**Note:** These species may be difficult to source, there are many other native species that benefit pollinators, we have only included the species that have potential for grazing.

**References:** Alberta Agriculture (2009) Alberta Beef Forage Manual; Alberta Agriculture (1996) A guide to using Native Plants on Disturbed Lands; Agriculture and Agri-Food Canada (2018) Sainfoin for Western Canada; Alberta Agriculture (2016) Alberta Range Plants and Their Classification; Majak, W. (2008) Stock-poisoning Plants of Western Canada; Grant Lastiwka. **Photo Credit:** Sonja Bloom, FFGA



# Calving season tips & tricks: obstetrics and prolapses



Stock Photo

Calving season is officially here for 2021 and with it comes the joy of new birth as well as the challenges of potentially difficult calving's and prolapses. In this article I'm going to go through a few tips for when intervention is required and what to do if you need to assist.

The majority of cows will deliver their calf on their own in a short period of time. However, when the first stage of labor has been going on for more than 6 hours, i.e. the cow is restless, showing maternal behavior or tail kinked sideways it could mean that she has a uterine torsion, or a breech calf (only the bum is presenting) in which case no feet will show from the vulva and you should call your vet.

Stage two labour is defined as the first appearance of the water bag, to when the calf is delivered. In a normal cow this usually occurs within 2 hours – if no progress has occurred in this time frame, she should be examined.

At this point ideally one puts the cow in a maternity pen or squeeze to work on safely. Be patient and careful when handling cattle during labour. Even the nicest cow on a normal day can turn aggressive when she is moved; hormones are sky rocketing and she is uncomfortable. Once the cow is restrained wash her vulva with soap and warm water then put on long obstetrical gloves.

Enter the vulva and advance to where you feel the calf. Normally, you will find 2 front legs and a head. You can put calving chains on both front legs and remember to place the first loop above the calf's fetlock (ankle joint), then make a half hitch in the chain and place it below the fetlock. This will reduce the risk of fracturing the calf's leg when you are pulling.

When deciding how hard to pull use the 275 lbs. rule of thumb (when the cervix is completely dilated). 275lbs is roughly the pulling capacity of one large strong person,

or two smaller people. You should be able to pull the calf's shoulders into the pelvis by hand. The knees should be visible, without slipping back in once you have let the tension go. If you achieve this you should be able to pull the calf by hand or with a calf jack. Being a smaller person myself, I find the use of calf jack incredibly helpful but use it carefully and with respect. When pulling the calf don't rush, pull when the cow pushes. If the calf is coming normal presentation and you cannot engage it this far or the legs are crossed and the head will not engage into the pelvis a C-section will likely be required.

If the calf gets hip locked when it is three quarters of the way out try rotating the calf in order to give you a bit more space between the calf's pelvis and the cow's pelvis. If the calf is quite dry or tight apply lubricant around the calf to allow it to slide easier. Tangled legs may also happen with twins or a weirdly positioned calf so try and identify if you have front or back legs and make sure they are from the same animal before you start pulling.

Once the calf is out; if it's been a tough pull and is having difficulty breathing put it in calf recovery position (upright on its chest (sternal) with its hind legs tucked up underneath it). You can stimulate it by tickling its nose with straw and vigorously rubbing it.

Check the cow does not have a twin inside (even if it has a large calf always check) – with clean gloves and also make sure the cow has colostrum in her udder.

With a difficult calving – calves often are a bit slower to get up and suck therefore tubing them with a some commercial colostrum or milking out the cow and tubing/ bottle feeding for the first feeding is a good idea.

Occasionally a cow will prolapse their uterus post calving typically following a difficult calving though it can happen when they calve on a downward slope or if

they are an overweight/unfit cow. A uterine prolapse will only happen post calving in comparison to a vaginal prolapse that will most commonly happen before calving. The uterus appears as a large fleshy red mass with the buttons (or cotyledons) attached to the outside. It is very important not to move the cow very much after this happens since movement will often result in tearing of the tissue or the uterine artery. Call the vet out to your farm rather than hauling into the clinic for these cases. If the uterus can be replaced quickly and it is not damaged most cows will have a good prognosis.

Delivering calves can be a very rewarding experience and your intervention can often save lives. Stock your calving supplies before the season starts, keep your barn/handling facility clean and be ready to assist. Have your vet's phone number handy and keep your trailer ready/cleared out of the snow bank. We are very happy to assist you with your calving needs but can help out more producers/get to your calving sooner if you have the ability to haul into our clean/well lite and heated facility.

May new life be abundant and the joy of seeing a new calf try its legs out for the first time never cease to amaze you! Wishing you all the very best for a safe and prosperous calving season!

Author: Dr. Crista Harder. Original article found at <https://www.dawsoncreekmirror.ca/opinion/calving-season-tips-tricks-obstetrics-and-prolapses-3510178>

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# Pollinator Projects

## Putting the Buzz in Pasture Management Webinar

**March 31st 10:00am**

### Learn more about

The value of pollinators and the benefits of establishing pollinator projects

Identifying locations for pollinator projects on marginal lands

Forage species selection, establishment, management & longevity

Funding options for pollinator projects

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*Grant Lastiwka, Forage Specialist &*

*Luke Wonneck, Agroforestry Project Specialist*

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**MARCH 23, 2021 | 1 PM - 3:30 PM**

- **Ryan Boyd, Nuffield Scholar: 1 PM - 2 PM**
- **Business Meeting: 2:15 PM - 3:30 PM**
- **AFSC Update**

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**\*\*Please note, you must be a member in good standing to vote during the Business Meeting. Memberships can be purchased online at [www.foothillsforage.com/membership](http://www.foothillsforage.com/membership)\*\***



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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.

This Publication is made possible by our major funder—Alberta Agriculture and Forestry.



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