County offers tools for land management success

It looks like we are going to be in for a dry season if recent predictions are true. Thank goodness there are a lot of acres under irrigation here in the county. If you have irrigation it sure is nice to help reduce some of the risk that you producers put up with. The nice thing about a dry year is that there should be less crop disease. Unfortunately, that does not mean less weeds and or insect pests. Sound Integrated Pest Management strategies can help control and reduce these. Some of the strategies we use for weeds can be biological controls. We have a great article on black spurge beetles, biological control starting on page 2.

On page 4, I have included some information on the Alberta Agriculture Insect Monitoring Program. It is a way to let producers know whose white truck is in their field and not to sight in their hunting rifles on a moving white truck. The insect monitoring folks always call the producer before they enter any field. We get weekly updates from these insect monitoring folks. The latest update, May 23, mentioned that there has been cutworms reported in some Timothy in Lethbridge County.

Page 5 is an advertisement for the Southern Alberta Youth Range Days 2018, July 10-12th 2018.

On page 6 I have included an article on streambank fencing that was produced by research gathered on the Lower Little Bow River. Lethbridge County assisted with this research program, the location was on the Lower Little Bow. We know that all human activities — whether recreational, commercial or otherwise — influence water quality. Because farming practices interact closely with natural systems, producers and ranchers face increasing pressure to produce crops and raise livestock in an environmentally-conscious manner. Beneficial management practices (BMPs)—farming methods designed to minimize potential negative impact on the environment—are one way of doing so. Have a look at the article and let me know if you have questions.

I have got a lot of calls regarding the new Canadian Agricultural Partnership (CAP) Program since my last newsletter. Please feel free to call me when you get time this summer and I can help you with information.

Page 10 is an Environmental Farm Plan Feature article. At Greener Pastures Grazing Management, a custom grazing operation located south of Barrhead, Alberta, everything from the wildlife in riparian areas to the manure on the pasture to the billions of organisms under the ground are viewed as playing essential roles in the production process. Have a look and see if there are any ideas you can use.

Page 11 is an announcement for the Southern Alberta Grazing School For Women July 24-25th.

The last page, is an advertisement for CFO Extension Services. All of the articles and ads offer sound land management strategies. These ideas offer producers more tools for their toolbox to deal with the day to day activities on the farm.

Have a great summer and may all your precipitation fall where it is needed.

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Lethbridge County Agriculture Service Board

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Agriculture Fieldman

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Kevin Virostek, Foreman/Weed Inspector
Why use *A. lacertosa* for leafy spurge suppression?

The flea beetle, *Aphthona lacertosa* (Coleoptera: Chrysomelidae) is an important biological control agent for leafy spurge, *Euphorbia esula*. In its home range, the beetle occurs from Western Asia to central Europe, areas which have similar climate to Canada. Host range studies indicate that *A. lacertosa* is restricted to a few species related to leafy spurge, none of which are economically important or rare native plants. Beetles have been collected from leafy spurge in Yugoslavia and Hungary, and released on the Canadian prairies since 1990. Beetle populations are widely established in Alberta, Saskatchewan, Manitoba and several U.S. states, including Montana, North Dakota, and Wisconsin. Recent surveys in Alberta indicate that they have successfully reduced leafy spurge densities at many release sites.

How does *A. lacertosa* kill leafy spurge?

Young larvae bore into and feed on small, filamentous roots (these roots have much less milky latex than larger roots). Older larvae feed from the outside on larger roots and root buds to weaken and kill their host. Attacks tend to be concentrated on certain plants, which are killed without leaving root fragments, so that spurge stands are thinned. Adults will aggregate together to feed on and defoliate leaves and stems.

What do the beetles look like?

Adults can be found aggregated on leafy spurge plants. Adults are a shiny metallic black, 2.5-3.4 mm long (about twice the size of an alfalfa seed), equally tapered front and rear with light coloured (light brown to reddish) hind legs. Adults are very active and climb and jump readily. Larvae are creamy-white, except for a brown head capsule, and often in a comma shape. They are approximately 1.5 mm long, with short legs. Positive identification of adults is based on the genitalia the expertise is accessible through Department of Agriculture and Agrifood.

What is the life cycle of *A. lacertosa*?

Adult emergence is staggered and starts on the prairies about the third week in June and the beetles disappear by beginning-to-mid August. The adults aggregate strongly, often on certain plants in a stand. They mate shortly after emergence, and females lay between 200-300 pale yellow eggs (0.7 x 0.4 mm) throughout the summer, in small batches underground near the stems of spurge plants. Eggs hatch in 2-3 weeks, and newly emerged larvae burrow into roots. Larvae pass through 3 moults before they pupate. Larvae will feed throughout the summer, and spend the winter as mature larvae in small chambers they construct in the soil. In the late spring when soil temperatures are warm enough, larvae will pupate in the soil chamber, and then emerge from the soil as adult beetles. There is one generation of beetles per year.

What habitats are best for *A. lacertosa*?

*Aphthona lacertosa* will tolerate a fairly wide range of environmental conditions. It does best on uncultivated agricultural soils. It is adapted to extreme winter and summer temperatures. The beetle prefers protected, mesic-dry to moist sites with loam to clay loam-textured soils. *A. lacertosa* will do well in areas where spurge co-exists with a well-developed herbaceous community (i.e. tall grasses and/or shrubs mixed with spurge), especially on south-facing slopes.
What kind of results can be expected after beetle release?

It will take at least 3 years before noticeable areas of dead spurge plants become apparent. Beetle populations will probably be sparse the first couple of years, and will increase in size thereafter. However, after 1 or 2 years, if beetles are successfully established at the site, adult beetles should be visible around the release point, and feeding damage on stems may be apparent. In addition, there may be a reduction in the number of flowering spurge shoots, usually in a 1 to 5 meter radius around the release points. Grass and other vegetation may have increased in response to the reduction in spurge growth. It is important to note that the beetles will not eradicate spurge populations, nor will they provide a “quick fix” to a spurge problem. They provide sustainable, long term control and reduce spurge densities in many habitats. There are some areas such as under a tree overstory where the beetles are known to be less effective. Once beetle populations become established, they are an inexpensive, self-propagating, effective method for suppression of leafy spurge populations.

Can the area around the release point be mowed?  
Herbicide applied?

Not directly at the release point. Mowing or applying herbicide will eliminate food source for the beetles and they will not establish. If you wish to mow or apply herbicide, choose areas where spurge is isolated in smaller, newly established patches. Herbicide edges where the spurge infestation is growing. The goal in this case is to limit seed set and spread. It is best to leave a buffer area of at least 10 to 50 meters around the release point so that beetles have a chance to establish.

Can beetles be moved?

Once beetle populations are well established (after about 3-4 years) beetles can be re-distributed to other suitable sites. Use sweep nets to collect adults on warm days from late June to mid-July. Release in groups of 2000 beetles (approximately 20 mL) on moist loam to clay soils where competing vegetation is taller than the spurge. Release flea beetles on the margins of dense infestations and allow the insect to work into denser stands as the population builds.

For further information, please refer to the following link: https://wiki.bugwood.org/uploads/leafyspurgebiocontrols.pdf or phone the Lethbridge County ASB for more information.
This program is coordinated by Scott Meers, Insect Management Specialist with Alberta Agriculture and Forestry and his technician, Shelley Barkley.

There are seven main surveys. Pea leaf weevil, cabbage seedpod weevil, diamondback moth, bertha armyworm, grasshoppers, wheat midge and wheat stem sawfly. In addition we will be doing several smaller surveillance surveys including a survey of the new canola flower midge. This survey will concentrate in central Alberta and up into the Peace River region.

The pea leaf weevil survey, is conducted in late May and June and will be carried out throughout Alberta in 2018. This survey is done by counting the number of feeding notches on 10 plants in of 5 locations in the field. We work along the headland and do not enter the field at all. **If you have a pea field that we could survey please contact us at the email provided at the bottom.**

Bertha armyworm (June/July) and diamondback moth (May/June) surveys are pheromone based and are conducted by cooperators. Traps are placed on canola field margins and checked weekly. Results are tabulated by cooperators, Trap counts are entered by cooperators using a web based reporting system and automatically reported via our web page. We are always looking to fill holes in our monitoring system. If producers or agrologists wish to participate, we welcome their assistance and will provide all needed supplies.

Cabbage seedpod weevil survey is done at early flower by taking a set of 25 sweeps with a sweep net. The number of cabbage seedpod weevils, lygus and diamondback moth larvae are reported. In addition we have a reporting tool which agrologists can report the cabbage seedpod weevil numbers they are finding.

The grasshopper survey is carried out by agriculture fieldmen (during early August) in their county each year. The results are tabulated by Alberta Agriculture and Forestry. This is the most heavily utilized survey of the seven we coordinate.

Wheat midge and wheat stem sawfly surveys are carried out after harvest each year. The sawfly survey involves assessing the percentage of sawfly cut stems in 4 locations, 1 meter long, in each field. This survey is done in the traditional wheat stem sawfly area of southern Alberta and eastern central Alberta. Wheat midge is surveyed in all wheat growing areas of Alberta. This survey involves taking soil cores and washing overwintering larvae out of the soil. From this a forecast is prepared on the risk of midge populations the next year. **If you have a wheat field that we could survey please contact us at the email provided at the bottom.**

We never drive in fields, rather parking on the roadside and walk in. We ALWAYS use sterilized boots or boot covers when entering fields and any tools that are used (ie soil sampler etc) are sterilized between fields. Our field entry protocol can be found on our website.

Agriculture Fieldmen receive a year-end report for their county. Any producer that volunteers a field (or fields) will also get a year-end report from our program on what was found.

The program email is bugs.r.us@gov.ab.ca
Insect monitoring/information website: www.agriculture.alberta.ca/bugs-pest
Southern Alberta Youth Range Days 2018

July 10-12th 2018
Ages 13-18
Families are welcome!

Location:
Rangeview Ranch
(Cardston County)

Trail riding, river sports, grasshoppers, birds and much more!

The Southern Alberta Youth Range Days program is an interactive event for youth, and families, interested in learning about rangelands, watersheds, wildlife, and other topics related to natural resource management. Youth from all backgrounds including farm and ranch, city, acreage or town, are welcome to attend.

Registration link is available at www.mrwcc.ca

Cost: $75 per participant

For more information contact: youthrangedays@gmail.com or
Stephen Bevans (Cardston County): 403-634-9474
Kandra Forbes (MRWCC): 403-647-4306
Streambank Fencing in Southern Alberta

An analysis of the benefits and costs

Minimizing the impact of cattle on water quality and the health of riparian (riverbank or streambank) areas requires careful grazing management. Fencing with off-stream watering is one management option producers and ranchers use to improve or maintain the health of riparian areas and water quality.

All human activities—whether recreational, commercial or otherwise—influence water quality. Because farming practices interact closely with natural systems, producers and ranchers face increasing pressure to produce crops and raise livestock in an environmentally-conscious manner. Beneficial management practices (BMPs)—farming methods designed to minimize potential negative impact on the environment—are one way of doing so.

When considering streambank fencing as a BMP, several factors must be taken into consideration: potential benefits to water quality and riparian habitat, the cost of the fencing and off-stream watering and possible additional costs/benefits to the producer and the public at large. This fact sheet reports on a study in southern Alberta that highlights the choices, impacts and uncertainties surrounding the decisions involved. Research findings from this watershed may also be applicable to other semi-arid prairie landscapes with similar climate and soils.

Installing cattle exclusion fencing along streambanks is commonly thought to improve water quality, or at least prevent further water quality degradation, and can improve riparian health by:

- reducing or preventing direct deposits of manure and urine
- increasing riparian vegetation to create a natural buffer to help filter surface runoff, sediment and nutrients from adjacent grazed areas
- eliminating physical damage and compaction of the soil structure caused by over-grazing and trampling

The effectiveness and costs of using streambank fencing (including a fenced stream crossing and off-stream watering) are being investigated in the Lower Little Bow River Watershed, northeast of Lethbridge.

The purpose of this study is to determine the impacts on water quality, rangeland health and riparian health of excluding cattle from the river, and to determine the BMP's costs and benefits for cattle producers. Results of this ongoing study are currently based on observations from 2004 to 2009. Research is conducted under a national Agriculture and Agri-Food Canada (AAFC) program called Watershed Evaluation of BMPs (WEBs). The environmental results of the first six years of this study have been published (see footnotes 1, 2 and 5 on pages 2 and 4). The study continues to assess the impact of this BMP on riparian areas and water quality over an even longer time period.

Farming in the region is diverse and includes: cow-calf pairs grazing on native rangeland, intensive confined feeding enterprises, dryland and irrigated cropping and intensive row crop operations. The pasture land in the study area is comprised primarily of loamy soils with some soil salinity, and overlays a dominant geology of coarse gravel and sand with minor silt beds. Long-term annual precipitation in the area averages 380 millimetres (15 inches).

The width of the Lower Little Bow River ranges from approximately 8-9 metres (26-30 feet) and the depth from about 0.5-1.0 metres (1.6-3 feet). River flows vary during the summer, depending on rainfall and irrigation return flows and irrigation withdrawal. Several water quality parameters in the river (e.g. sediment, nutrients, E. coli) frequently exceed water quality guidelines.
What is the Watershed Evaluation of Beneficial Management Practices (WEBs)?

A long-term research program initiated in 2004 by Agriculture and Agri-Food Canada, WEBs evaluates the economic and environmental performance of BMPs at a small watershed scale. To gain a regional perspective, this information is being scaled up to larger watershed areas using hydrologic models.

WEBs findings are helping researchers and agri-environmental policy and programming experts to understand how BMPs perform and interact with land and water. This knowledge will also help producers determine which BMPs are best for their operations and regions.

WEBs studies are conducted at nine watershed sites across Canada. These outdoor living laboratories bring together a wide range of experts from various government, academic, watershed and producer groups. Many valuable findings have emerged, and research continues at all sites.

How were streambank fencing and off-stream watering studied in Alberta?

An 800-metre (2,625-feet) stretch of barbed wire fencing was erected in a straight line along both sides of the Lower Little Bow River in 2001. The fence is between 40-80 metres (130-260 feet) from the meandering river’s edge (Figures 2 and 3). The fencing created a cattle-excluded area of approximately 10 hectares (25 acres), comprising both riparian zone and upland pasture rangeland.\(^1, 2\) Cattle were able to freely graze in the remaining 184 hectares (455 acres) of pasture. An off-stream watering source was provided on either side of the river to supply drinking water for cattle. The cattle stocking rate during the study period ranged from 0.4-0.5 animal unit months per hectare. This rate was at or lower than recommended guidelines for pastures in poor condition.

Water monitoring sites were established both upstream (control) and downstream (BMP impact) of the fenced-off area. Sampling occurred weekly from April to October and monthly in the winter from 2004 through 2007. Samples were analyzed for sediment, nutrients and bacteria. Because natural runoff events can be sporadic during the summer grazing months in this semi-arid watershed, rainfall simulations to mimic runoff events were applied in both the cattle-excluded pasture and the grazed pasture from 2005 to 2007.

Rangeland health was assessed within the upland cattle-excluded (fenced) and grazed upland pastures in 2007.\(^3\) Five criteria were evaluated: ecological status, plant community structure, litter abundance, site stability and noxious weeds. Sampling of selected vegetation and soil properties of upland pastures was conducted from 2005-2007. As well, a riparian health assessment of the river, riverbank and adjacent riparian zone was conducted before and after BMP implementation (2001, 2005 and 2009) using eleven vegetation, soil and hydrology factors.\(^4\) The rangeland and riparian areas were then classified into one of three categories based on percentage health scores: healthy, healthy but with problems and unhealthy.

WEBs studies are conducted at nine watershed sites across Canada. These outdoor living laboratories bring together a wide range of experts from various government, academic, watershed and producer groups. Many valuable findings have emerged, and research continues at all sites.

**Figure 2. Schematic diagram of streambank fencing with cattle crossing**

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What effect did streambank fencing have on water quality?

The focus of this BMP was not necessarily to improve water quality, but to determine if excluding cattle from waterways with fencing could prevent water quality degradation by cattle. Specific water quality parameters measured included: turbidity, sediment, dissolved oxygen, temperature, chlorophyll-a (an indicator of algae), nitrogen (N), phosphorus (P), E. coli and fecal coliform bacteria.

The study found that streambank fencing was successful at preventing further degradation of water quality in terms of the amount of nutrient (N and P), and sediment loading, and that the cattle crossing did not contribute to water quality degradation downstream. The impact of the fencing BMP on other water quality variables was less clear.

The rainfall simulation trials detected less runoff from the cattle-excluded pasture than from the grazed pasture. There were no significant differences in runoff volume or water quality between the two pastures during the first year of the study, which was also the year with the highest rainfall. However, differences were observed in years two and three, suggesting that the fenced-off area does provide a buffer zone that reduces nutrient runoff in certain years, with the amount of nutrient runoff likely related to yearly climatic changes.

What effect did streambank fencing have on pasture and riparian health?

**Rangeland health of upland pastures**

“What's very interesting is how much we learned about the entire ecosystem of the area during this study,” says Dr. Jim Miller, the AAFC research scientist leading the Lower Little Bow River WEBs project. “We found that this ecosystem approach of studying streambank fencing by examining riparian and rangeland health, river water quality, soil and vegetation properties and rainfall simulation runoff allowed for a better understanding of the effect of the BMP on the environment—compared to just studying one of these components.”

Dr. Miller and his team found that six years of fencing (from 2001 to 2007 when the rangeland health assessment was conducted) improved the score of the cattle-excluded upland pasture from 55% to 72%. This increase was due to improvements in ecosystem status, plant (or ecological) community structure and abundance of plant (or crop) litter.

**Vegetation and soil properties of upland pastures**

Streambank fencing also significantly improved several aspects of local vegetation and soil properties in the cattle-excluded pasture—such as vegetative cover and standing litter—in all three years of the health assessment study. The fenced-off area had fewer patches of bare soil, improved live-plant area and reduced soil compaction in the latter two years. These improvements seemed to protect the soil surface from water erosion and acted as a buffer for potential contaminants. On the other hand, excluding cattle did not significantly impact other aspects of vegetation and soil, such as the chemical properties of surface soil.

**Riparian health**

The first riparian health assessment following implementation of the BMP showed that riparian health increased after four years of fencing. However, a follow-up assessment in 2009 showed the health of the fenced-off riparian area had declined from 'healthy' to 'healthy but with problems'. This decrease in riparian health was due to an increase in invasive plant species and possibly the residual effects of soil compaction caused by cattle on the ability of preferred trees and shrubs, such as willows, to establish along the streambank. The results of the riparian health assessment would have been more favourable had the assessments stopped after four years, emphasizing the merit in long-term evaluations. The study will continue to monitor future changes in types of riparian vegetation, including weeds, to improve our understanding of the BMP’s impacts over the long term.

![Figure 3. Excluding cattle by fencing off the riparian area and adjacent upland riparian pasture preserved water quality downstream.](image-url)
Economic considerations

Costs
The costs of conventional fencing could act as a barrier to the adoption of this BMP by cattle producers. Fencing costs in this project were estimated at $2/metre ($0.67/foot) or $2,000/kilometre ($3,225/mile) for a standard four-strand barbed wire fence installation.

It is estimated that streambank fencing, with its immediate reduction of available pasture area and added costs, could cause a 2-7% decrease in farm cash flow. However, the practice may result in benefits (largely unquantified to date in this study) that could partially offset the costs.

Potential benefits
Research elsewhere has shown that providing access to clean water, as with an off-stream watering source, may result in higher water consumption and cattle weight gains compared to lower-quality water accessed directly from the river. Access to higher-quality water may also lead to a decrease in herd health problems. And providing access to off-stream watering, with or without fencing, may result in increased grazing and pasture utilization.

The economic analysis conducted by Dr. Carlyle Ross, the AAFC lead economist on this project, suggests that as little as a 3% increase in utilization or productivity of pasture land could offset the cost of a new off-stream watering system (referred to earlier) but may be insufficient to offset the cost of the fencing. The WEBs study also showed that fencing was effective in shifting manure nutrient distribution away from the river bank to the off-stream watering sites where the nutrients can benefit pastures and soils. This WEBs study has yet to examine such on-farm benefits in detail, and the possible off-farm (public) benefits of the BMP have not yet been assessed.

Alternative practices
An alternative BMP—off-stream watering without streambank fencing—was also tested in this watershed and was found to be more cost-effective than fencing. However, in such a semi-arid area, this BMP only slightly decreased the frequency of cattle entering the river and was not as effective as streambank fencing at protecting and regenerating riparian vegetation. As a compromise, streambank fencing might be targeted to more ecologically-sensitive or more severely-degraded stream reaches, with the less expensive and less-effective off-stream watering without fencing BMP applied in less critical areas.

Another alternative to total cattle exclusion is periodic, short-term grazing of the riparian pasture to achieve a balance between using the forage resource and protecting water quality. This practice may also help to control the invasive plant species that entered the cattle-excluded pasture after several years of fencing, but should only be used when the riparian zone soil is dry enough to prevent compaction and damage to the soil by cattle.

Natural resources equal wealth on 'all-natural' farm

For custom grazer Steve Kenyon, every form of life on the land plays a role in successful production.

At Greener Pastures Grazing Management, a custom grazing operation located south of Barrhead, Alberta, everything from the wildlife in riparian areas to the manure on the pasture to the billions of organisms under the ground are viewed as playing essential roles in the production process. To Kenyon, this is the definition of "all-natural" farming — capturing the value of the land's natural resources without resorting to chemicals, commercial fertilizers or other inputs.

"Running an all-natural farm requires a recognition of the biodiversity of the land," says Kenyon. "If I can capture that biodiversity, I save money. Take dung beetles for example. Every farm has them, but chemicals and commercial fertilizers eventually kill them off. But they play a huge role in breaking down manure and recycling the nutrients in the soil. That means they help me save money on input costs in the short term and help sustain the soil over the long term."

The key is choosing the farm management practices which preserve the soil's natural assistants to production. For Kenyon, that means avoiding the use of chemicals, preserving riparian areas on his land, good wintering site management and, above all, continual learning.

The payoff of these efforts sometimes comes sooner than expected. "You start seeing the savings when you don't get a manure hauling bill in the summer because you've already managed your manure by wintering your cattle. And the benefits you get from maintaining shelter for wildlife go on forever."

Riparian areas — drought insurance

Kenyon is not a purist when it comes to taking his riparian areas out of grazing. "I don't fence them off 100 per cent because there's a lot of production in riparian areas," he says. "If you never graze them, I think you waste them, so I let the cattle hit them once or twice a year."

Riparian areas can also be an insurance policy against dry years, says Kenyon. "In a year of severe drought, a riparian area that is protected and well taken care of will get you out of a bind. In 2002 I had to put the cattle on my riparian areas four times because of drought — the areas always quickly recovered."

Proper management of riparian areas is the key to grazing that not only sustains but improves the properties of the area, says Kenyon. "I use a short grazing period with a high stock density," he says. "Basically, I get them in, I get them out, and by a month and a half later you would never even be able to tell they had been in there because the grass will be so overgrown."

Wintering site management

Kenyon wanted to better disperse cattle throughout his land, and that required fencing for shelterbelts, windbreaks and portable panels. Shelterbelts provide a natural windbreak, play a role in recycling nutrients in the soil and provide a habitat for wildlife. He sees shelterbelts as providing protection to his acres in production.

"If a particular bird species is the predator of the grasshopper, the birds need a habitat so you can use them to cut down on the grasshopper populations," he says. "They don't feel safe if they're out in the middle of nowhere unprotected."

Kenyon's goal is to turn 40 percent of every quarter into dedicated shelterbelt as a long-term investment in his operation. "The treeland and bushland is not for production. It's for protecting the rest of the land," he says.

The use of portable panels has made the wintering process easier. "When we're swath grazing at a site away from the farm, we need some way to manage the cattle. With the panels, I just stack them up six at a time on an old drill transport, move them to another site and set them up. That's a huge benefit — having those portable facilities is a great way to disperse manure across the land, especially considering that we don't have all of our land in one block."

Kenyon’s solar powered, portable watering system has also presented a great advantage to his wintering program. "I don't have a good well here, so I can't use a pipeline. I have to rely on dugouts and creeks, and to transport the solar system to access them was a process that could take hours," he says.

"I had to do something. I thought back to an old rock picker that was sitting on the farm back in Saskatchewan. It even had a bucket on it that could work as a trough. Now it only takes 15 minutes to move it. I leave a hose at every site so all I have to do is pull the pump out of the water, disconnect it, set up the rock picker and go."

It's also proven itself a very cost-efficient solution. "A rock picker costs $75, while buying a trailer from the solar panel company complete with a trough costs $3,500. And it only took me a few hours to put it together."

The only drawback is that the 150 gallon trough does not have much reserve capacity. "But if it gets too low I can always gravity feed to a bigger trough, which I'm already set up to do."

A thirst for learning

Underpinning all of these efforts is a desire for lifelong learning. He and his wife Stacey are constantly budgeting for seminars, books and courses. It was in that same spirit that he developed an Environmental Farm Plan (EFP), a free, confidential assessment of an agricultural operation's environmental strengths and weaknesses.

"There are a lot of things about the EFP program that are plain common sense, but it opened up my eyes to things I never thought about before."

For more information on Riparian Management and Environmental Farm Plans call Dwayne Rogness.
JULY 24th-25th

2018

SSTAVELY COMMUNITY HALL

TOPICS INCLUDE

Grazing Principles & Practices
Utilizing Electric Fencing
Verified Sustainable Beef Program
Range & Riparian Health
Hands-on Plant ID
Ranching Women

Registration Deadline
July 17th
Cost:$100.00

Link to Register:
2018sagsw.eventbrite.com

To Register Contact:
Kristi Stebanuk
(403) 382-0927
kstebanuk@cowsandfish.org

“Grazing Schools for Women”
Confined Feeding Operations (CFO) Extension Services

CFO Extension Specialists with Alberta Agriculture and Food (AF) provide technical expertise to livestock producers, consultants, municipalities, and other interested parties. CFO extension services ensure Alberta’s livestock industry grows in a competitively and environmentally sustainable manner.

Working in cooperation with the Natural Resources Conservation Board (NRCB), Approval Officers and Inspectors, AF CFO Extension Specialists provide clients with information and tools to support the NRCB application process. They also provide clients information on the regulatory requirements of the Agricultural Operation Practices Act (AOPA) and other relevant legislation.

**What services are available?**

Extension services are available to anyone requiring information about the technical requirements and application process for existing, new and expanding CFOs in Alberta.

For producers and their consultants, additional services will be provided specific to the application process.

**Extension staff assist clients with the following:**

- Assist with determining if a permit is required.
- Understanding the application process and regulatory requirements.
- Collecting information to determine potential site risks and initial site evaluation.
- Providing information on management options to meet regulatory requirements and address potential site risks.
- Directing clients to information and tools to help complete the application process.

**Referral service**

CFO Extension Specialists can refer clients to people with other areas of expertise to help them make decisions about their operation.

**How can services be accessed?**

AF CFO Extension Specialists provide services across the province and are located in Morinville, Red Deer and Lethbridge.