GRASSROOTS NEWS & VIEWS

Photo Credit—Alberta Farm Animal Care—Stockmanship School with Dylan Biggs

FOOTHILLS FORAGE AND GRAZING ASSOCIATION

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September 2017

Environmental Coordinator's Note

"The little green frog"

Many of us have seen it and recognize that it stands for *Rainforest Alliance Certified*. For many consumers, that frog represents trust in the product they are purchasing.

http://www.rainforest-alliance.org

There are similar examples of certification programs in other sectors and commodities, such as the Marine Stewardship Council for seafood, the Roundtable for Sustainable Palm Oil, and Forest Stewardship Council certification in paper products. So why not one for beef? I'm excited that the Canadian Roundtable for Sustainable Beef (CRSB) has been working on creating beef's " little green frog" and I hope it will help to build public trust and foster continual improvement for Canadian beef.

Established in 2014, the CRSB is a multi-stakeholder organization that has a vision for the Canadian beef industry to be recognized globally to be economically viable, environmentally sound and socially responsible.

So what does "sustainable" mean? Sustainable beef is defined as an economically viable, environmental sound and socially responsible product that prioritizes the Planet, People, Animals and Progress. Under the three pillars of sustainability: environmental, social and economic, the CRSB has adopted the same five principles of sustainability as the Global Roundtable for Sustainable Beef (GRSB), and is developing indicators under each principle to help define sustainability in beef production and processing as part of a larger verification framework. Underpinning all of the principles is **economic viability**, which is integral to the long-term success of the industry.

The work of the CRSB was kick-started when McDonald's, one of its founding members, initiated a Verified Sustainable Beef Pilot Project in Canada. They developed an initial series of indicators to define beef sustainability, and established verification procedures for sustainable beef operations. When the pilot concluded in 2016, the torch was passed to the CRSB to continue developing a Verified Sustainable Beef Framework for the entire beef sector across Canada.

The framework will consist of four main components: sustainability indicators, verification protocols, chain of custody requirements, and sustainability claims. The indicators identify **what** will be measured to indicate sustainability in beef production and primary processing, and the verification protocols explain **how** compliance with those indicators will be confirmed across the supply chain.

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Environmental Coordinator's Note Continued...

(Continued from Page 1)

In order for producers to become "verified sustainable" they will need to go through an audit process. The Chain of Custody guidelines will outline how the verified sustainable cattle and beef will be traced through the supply chain. The CRSB believes the framework, with a series of sustainability claims, will help consumers understand what sustainability means. The hope is that the claims will be made in places, ranging from farm gate signs to shipping documents and boxed beef, as well as in-store signage coupled with retail branding, restaurant and foodservice menus, and retail packaging.

Initially, there may have been some concern that a "sustainable beef" claim may fragment and create competition in the industry. However, the benefits of on-product labelling will elevate the credibility of the program in the current marketplace.

If you are interested in the resources and programs that were used to create the indicators, please visit http://crsb.ca/producers/.


Photo: Lee Gunderson

What's Next?

The CRSB will be launching the Verified Sustainable Beef Framework on December 7, 2017 in conjunction with the Western Canada Conference on Soil Health & Grazing in Edmonton .

The Foothills Forage & Grazing Association is a proud voting member of the CRSB and is representing producers on a national level. Members of our Board travelled to Guelph in April to participate in discussions on the CRSB and development of the verification framework. As the FFGA Environmental & Communications Coordinator, I am also proud to be a part of the Communications and Marketing Committee for the CRSB. Part of the mandate of the committee is working on the sustainable beef brand and claims as well as the public release process.

The long term goal is that the Canadian Beef Industry will benefit as a whole by proving the sustainability of our ranches and beef processing.

We know we're raising our beef sustainably; now is our chance to prove it.

Rachel McLean
FFGA Environmental, Extension & Communications Coordinator

**Disclaimer: The thoughts and opinions expressed in this article are my own and do not necessary represent the opinions of the Foothills Forage & Grazing Association or the CRSB.*

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Growing Forward 2: Solar Photovoltaics Program Reopens

The On-Farm Solar Photovoltaics Program reopened on July 26, 2017 under the Growing Forward 2 Program.

What kinds of Photovoltaic Systems are eligible?

To be eligible for funding, a Photovoltaic system must be:

- Grid-tied, not off-grid,
- Approved under Alberta's Micro-Generation Legislation,
- Positioned to optimize sunshine and minimize shading,
- Have manufacturer-warranties on: Solar modules, Racking, Inverters and/or Micro-inverters, and
- Installed on a Site ID that has a Distribution Rate Class of Farm, Irrigation, Grain Drying, or equivalent.

How are costs shared?

≤ 100 kW

$0.75/W to maximum 35% cost share of eligible expenses

100.01 kW - 150 kW

$0.56/W to maximum 27% cost share of eligible expenses

Who can participate?

Any resident of Alberta with a Distribution Rate Class of Farm, Irrigation, Grain Drying, or equivalent.

How do I start?

Before submitting an application, you must prepare the following information:

1. Obtain written verification from your Wire Service Provider of the Rate Distribution Class for the Site ID on which the solar PV system will be installed. This verification may be found on your utility bill, or you may need to request it from your Wire Service Provider with the following information:
   - Name of the load customer
   - Legal land description of the service location
   - Site ID of the service location
   - Distribution rate class for the Site ID/Service location as of the month of January 2017 (even if the rate class has changed since January)
2. An approved and signed Microgen Interconnection and Operating Agreement from your Wire Service Provider;
3. A solar PV quote from your Solar Contractor describing the system you will be installing;
4. An electricity bill for one month's electricity (current within the last 24 months).

Program purpose statement

The program provides funding towards solar photovoltaics on Alberta farms. This enables producers to conserve non-renewable fossil fuels and reduce carbon emissions, ultimately reducing the environmental footprint of Alberta's agriculture industry.

The Growing Forward 2 Solar Photovoltaics Program addresses two important industry priorities:

1. Improved environmental stewardship. When producers make investments in clean energy and reduced carbon emissions, they are recognized for their commitment to sustainable practices.
2. Improved energy management. Producers who install photovoltaic systems tend to take a renewed interest in their electricity usage; this leads to additional efficiency investments.

Key Points regarding the new Program Conditions:

1. Retroactive projects will no longer be accepted. If a project has been initiated (ordering or purchasing equipment, equipment delivery, component construction, etc.) prior to the approval of the application, it will NOT be accepted.

2. The grant rate has changed to align more closely with the upcoming Residential and Commercial solar programs. Grant funding is calculated as follows:
≤100 kW: $0.75/W to maximum 35% eligible cost share
100.01 – 150 kW: $0.56/W to maximum 27% eligible cost share
3. In order to qualify for the On-Farm Solar PV grant program, an applicant must have an Electrical Distribution Rate Class that is rated as Farm, or equivalent, as of the month of January 2017. Proof of this rate class will be required, and can be found either on your electrical bill or obtained from your electricity retailer.
4. If you do not have an Electrical Distribution Rate Class that is rated as Farm, or equivalent, please refer to http://solar.efficiencyalberta.ca/ to determine if you may qualify under other provincial solar programs.

For more information visit: http://www.growingforward.alberta.ca/
OR contact FFGA's Environmental Coordinator:
Rachel McLean at rachel@foothillsforage.com or 403-995-9466
OR email AF.FarmSolarPVProgram@gov.ab.ca

Managed Grazing's Effects on Soil Quality & Structure

A long-term southern Wisconsin cropping systems study shows that soils under managed grazing have a number of positive characteristics compared to soils under other cropping systems.

Begun in 1989 with support from the USDA Agricultural Research Service, the Wisconsin Integrated Cropping Systems Trial (WICST) provides data on three cash grain cropping systems and three forage systems on field-scale plots in Columbia County at the UW-Madison Arlington Agricultural Research Station. Researchers Joshua Posner and Janet Hedtcke of the UW-Madison Department of Agronomy analyzed and compared data from these well-established plots that differ in crop rotation complexity and use of purchased inputs.

This Research Brief compares the results of the plots under managed grazing with dairy heifers to other cropping systems (see Table 1 for the cropping systems). In the WICST managed grazing plots, heifers with a starting weight of about 500 pounds were grazed from May to October after being acclimated to pasture for a few weeks each spring.

The pastures, seeded in 1992, included red clover, smooth bromegrass, timothy and orchardgrass, with biennial overseeding of red clover and 40 lbs N/a/yr as commercial fertilizer applied in June or August, depending on forage availability.

To compare soil quality under the six systems, Posner and Hedtcke modeled and measured a suite of soil properties. They found some interesting differences between the systems in terms of erosion potential, earthworm counts, water stable aggregates, soil carbon, and the Soil Quality Index.

Findings from modeling

Soil conservation.

Using the Revised Universal Soil Loss Equation 2 (RUSLE2), Posner and Hedtcke modeled soil erosion losses under the six different cropping systems over 18 years. In addition to estimating soil erosion loss in tons per acre, RUSLE2 generates a Soil Conditioning Index (SCI) which measures soil structure and organic matter changes, with positive values reflecting a gain in soil carbon and organic matter and negative values implying a loss.

RUSLE2 also calculates the Soil Tillage Intensity Rating (STIR), an indication of the frequency and intensity of machinery passes that may oxidize soil organic matter, destroy soil structure and increase compaction and the potential for erosion. STIR ratings can range from 0 to 200 with values less than 30 being ideal. **Erosion estimates for managed grazing at 0.2 t/acre, largely due to the initial seeding phase at establishment, were much lower than all other cropping systems.**

The managed grazing system also had excellent ratings for SCI at 1.46 and STIR at 15 (see Table 1).

Findings from measurements

Earthworm counts.

Earthworms promote soil health and soil structure through feeding, burrowing and mixing.

Higher numbers of earthworms are correlated with soil quality factors such as improved infiltration, aeration and nitrogen mineralization. In the WICST project, researchers collected topsoil dwelling earthworm counts from 1999 through 2001 on all six cropping systems. **Earthworm counts were significantly higher in the three forage rotations (including managed grazing) than in the cash grain systems** (Table 1).

The number of earthworms in the managed grazing system did not differ significantly from the other two forage systems, both of which are alfalfa-based systems that incorporate manure and have a two - or three-year forage phase.

Continuous corn had the fewest earthworms by far, while the no-till cash grain system had significantly more earthworms than the other two tilled cash grain systems. Posner and Hedtcke found that the use of manure as fertilizer and perennial forage stands of longer duration lead to higher earthworm counts than annual crops, and soils under no-till annual crops showed higher earthworm counts than those under annual crop systems with tillage.

Water-stable aggregates.

Soil particles that bind together tightly are more able to withstand the destructive forces of tillage and water or wind erosion than loosely bound particles. At the Arlington WICST plots in 2008, researchers measured these water-stable aggregates (WSA) in the surface eight inches of the soil with a wet-sieving method. **The managed grazing system had a significantly higher percentage of WSA than the other cropping systems,** particularly in the surface two inches of soil (Table 1).

Soil carbon.

Increased soil organic carbon (SOC) levels can improve soil structure, reduce erosion and increase soil fertility.

The soils at Arlington developed under tallgrass prairie and oak savannah communities, which allocated carbon to below-ground fine root biomass deep...

Table 1.

Soil variables on WICST at Arlington Research Station for six long-term cropping systems*

	Modeled (4% slope, 150-ft. length)			**Measured** (linear contrast, p<0.05)		
Crop rotation	Soil erosion tons/ac	SCI (-2 to +2)	STIR (<30 is ideal)	Earthworms system mean, #/sq yard (1999-2001)	% of Water stable aggregates (2008)	Change in Soil Organic Carbon (1989-2009) over 3-ft soil profile (ton C/ac)
CS1 All years - corn	1.5	0.27	165	23[c]	77.8[c]	-17.8[a]
CS2 Yr 1 - strip till corn Yr 2 - no till soybeans	1.1	0.63	22	103[b]	74.2[c]	-6.2[b]
CS3 (Organic) Yr 1 - corn Yr 2 - soybeans Yr 3 - winter wheat/red clover	3.6	-0.36	185	54[c]	66.5[c]	-5.8[b]
CS 4 Yr 1 - corn Yrs 2,3,4 - alfalfa	2.0	0.44	71	125[a]	80.9[b]	-3.1[b]
CS 5 (Organic) Yr 1 - corn Yr 2 - oats/alfalfa Yrs 3,4 - alfalfa	2.7	0.17	120	129[a]	79.8[b]	-5.6[b]
CS 6 All years - managed grazing dairy heifers	**0.2**	**1.46**	**15**	**157[a]**	**88.9[a]**	**-0.3[b]**

Values with different letters within each column were statistically different from each other

...into the soil profile.

Since the amount of carbon that can be sequestered in the soil is highly related to land management, there is a great deal of interest in using agricultural soils to sequester atmospheric CO2. Analysis of SOC levels in all of the six WICST systems at Arlington in 1989 and 2009 showed that other than the managed grazing system, most systems lost SOC throughout the three-foot soil profile.

While the managed grazing system sequestered carbon in the top foot of the soil (4 ton/a), these gains were offset by losses at deeper levels (-4 ton/a), with the result of no net gain.

Looking at all of the cropping systems, both no-till practices and the inclusion of perennial pasture and hay crops reduced SOC losses, but neither practice resulted in C sequestration over the entire soil profile. **The greatest loss of SOC occurred in the continuous corn system.**

The significant C sequestration in the surface soil in the managed grazing system is the result not only of the volume of root biomass in that system, but also the nature of that biomass.

The below-ground biomass of perennial grass systems like the WICST managed grazing system is dominated by fine roots and root hairs that have greater surface area than large roots typically found under corn and soybean fields.

(Continued on Page 6)

(Continued from Page 5)
These fine roots help maintain root-derived C and are thought to play a key role in the long-term stabilization of SOC. Longer-term monitoring of SOC in WICST will provide further insight.

Soil Quality Index (SQI).

The SQI integrates several physical, chemical and biological properties to arrive at a single measure. These properties include **water stable aggregrates, bulk density, total organic carbon and microbial biomass**. The higher the SQI, the better the soil is able to perform the functions necessary for its intended use.

Measured in 2008, the surface two inches of soil in the managed grazing system had a SQI of 96, which was significantly higher than all of the other cropping systems, which had an aggregate average of 87.

This study shows that managed grazing can have a positive overall effect on soil in comparison to other typical cropping systems in the Upper Midwest. The features of managed grazing that contribute to these results include its lack of tillage, the diversity of perennial pasture plant communities and their associated below-ground carbon inputs, and its re-integration of livestock/manure inputs back onto the land.

For more information, contact: Janet Hedtcke, UW Agronomy Department, 608-265-2948, jlrieste@wisc.edu, wicst.wisc.edu
Source: http://www.cias.wisc.edu/wp-content/uploads/2013/01/ciasrb90final.pdf

Low Cost Winter Feeding Workshop

November 16, 2017 ~ Fort Macleod, AB

MD of Willow Creek

FOOTHILLS FORAGE AND GRAZING ASSOCIATION

Featuring Jim Bauer and local producers on their winter feeding systems. Topics will include: winter grazing strategies, bale grazing, swath grazing, standing grazing, and stockpiling grass.

Register: https://winterfeeding.eventbrite.ca

FFGA Partner's Upcoming Events

Agri-Tourism and Farm Direct Marketing Bus Tour

September 11, 2017 ~ Spruce Grove, AB
For more information contact Colin Gosselin at:
780-968-3518 or colin.gosselin@gov.ab.ca

Certificate in Regenerative Soil Systems ft. Nicole Masters

October 24, 25, 26, 2017 ~ Strathmore, AB
For more information contact Daryl Chubb at:
1-403-836-2202 or daryl@intergritysoils.com

Public Trust Summit by the Canadian Centre for Food Integrity

September 18-20, 2017 ~ Calgary, AB
For more information or to register visit:
https://www.eventbrite.ca/

Getting into Farming: Information Session for the Aspiring Farmer

October 26, 2017 ~ Airdrie, AB
For more information or to register call the Agriculture and Forestry Ag-Info Centre at: 1-800-387-6030

Rebuilding Spent Pasture: Four Years in Photos

In 2008, Allen Williams bought additional acreage to expand his farm in northeast Mississippi (Figure 1). He applied Adaptive High Stock Density grazing methods over the next four years and documented the changes to forage conditions and soil health.

Figure 1

In Northeast Mississippi in the heart of the Black Belt prairie, a farm consisting of approximately 1,000 acres was acquired in the fall of 2008. The farm had had been completely mismanaged and was choked with weeds and brush with little perennial forage base. Cattle were stocked on the place during the winter of 2008-2009 and bale grazing was implemented to start the soil building process.

During the first grazing season of 2009, spring-calving cows were grazed at high stock densities of 100,000 lbs. /ac and higher with daily and even multi-day moves in order to stimulate soil biology and to control prolific weeds. Cattle primarily consumed weeds such as ironweed, ragweed, pigweed, and thistle, along with grazing perennial forages (Fescue, Bermudagrass, Dallisgrass, Johnsongrass,) that were growing sporadically throughout the farm (Figure 2).

Stocking densities were high so the desired trample would be

Figure 2

accomplished. No mechanical or chemical intervention was applied and no seeding or over seeding was done. The purpose of the grazing method was to stimulate the latent seed bank to provide "reseeding". Each grazed paddock received extended rest periods of 90 days or greater before re-grazing. Cattle quickly learned to readily consume all plant materials in front of them and would strip the leaf material from ironweed and ragweed (Figure 3).

Figure 3

Cow/calf pairs grazed the farm all through the warm season grazing period the first year with no loss of animal performance and no supplementation other than mineral. High stock density/short duration grazing was applied through the next four grazing seasons. Changes in soil organic matter (OM), soil microbial population, water infiltration rates, and plant species diversity were significant (Figure 4). No seeding or interseeding, mechanical or chemical intervention was performed throughout the four year period.

Figure 4

At the end of four warm/cool season grazing cycles (4 years), soil OM increased from 1.5% to 4.2%, water infiltration rates increased from 0.75 inches/hour to over 4 inches/hour, forage species diversity improved from 3-4 major forage species to more than 24 species, forage DM production increased from less than 1,500 lbs. /ac to over 4,000 lbs. /ac (Figure 5).

Figure 5

Source: http://pastureproject.org/pasture-management/re-building-spent-pasture/

Photos: Allen Williams

Native Forages Offer Resilience Against Mother Nature

Native forages are making a comeback with cattle feeders who are looking for a way to work with — not against — Mother Nature. "Native species complement tame forages," said federal research scientist Alan Iwaasa.

"When used with tame species, native species have merit and can be used quite effectively if you have the land base in our grazing systems in Western Canada."

Native species make for "a more sustainable and resilient forage," but are sometimes taken for granted, Iwaasa said during a Beef Cattle Research Council webinar. "The remaining western grasslands for Canada is estimated to be only about 11.4 million hec□tares, compared to around 61.5 million hectares we used to have (in 1995)," he said, adding Alberta's total grassland area is now about 5.6 million hectares.

"A large majority of the grasslands has been lost."

That loss is partly due to increased cropping, but also because of a rise in tame forages. Cattle feeders often think they can get better daily gain for less money with tame forages, but that's not always the case, Iwaasa said.

"The relative merits of native versus tame forage species for use on rangelands and on pastures have really been a controversial topic," he said. "Sometimes, there is a lot of extreme emotion in these areas. I just want to find the best forage that will work for that particular producer."

Like tame forages, grazing native species comes with a range of benefits, including improved biodiversity, soil health, and increased soil organic carbon. And they have good feed value.

"Native pastures can provide a really excellent forage resource and good animal performance," said Iwaasa. "Animals can really do quite well on these native pastures. Forage production with native species is often comparable or better than certain tame species."

Hardy and productive

Part of the reason for that is the longevity of native species. "Native forage pasture systems are sustainable and long lived, and that's something that's very enticing for producers. They're able to seed it and then have a productive stand for a long period of time. Once you get them established, they can be there for a generation."

Native forage species are also well adapted to extreme weather.

"It's difficult to envision a selection of tame or introduced grasses that could provide the same tolerance and ability to adjust to changing environmental conditions from one extreme to another," said Iwaasa. "I don't think any of us doubt the fact that we're having lots of changes occurring in our environment. This is where we need forage species that can really be adapted to these sometime extreme environmental conditions."

In an ongoing study that started in 2001, researchers compared complex and simple native forage mixtures to evaluate the productivity of different native species. And while the complex 12-species mixture performed roughly the same as the simpler seven-species mixture, the native species had "quite stable" dry-matter production of roughly 1,000 kilograms per hectare over the course of the study.

Photo: Lee Gunderson

"These native species do perform quite well, and the production was able to maintain over a number of different environmental conditions," said Iwaasa. "Although they don't have large amounts of production like some of our tame species, the native grasses can weather the storms — the different environmental conditions — and they can give you some consistent forage production, even in very dry or very wet years."

But seed costs and availability can vary for native species, so careful planning is important.

"Too often, I've heard producers questioning the ability to actually establish native species," said Iwaasa. "There is a protocol you have to follow. You do have to have some weed control, get the land prepared, and make sure you have good native seed.

"There's not a magic bullet. But it is possible."

By: Jennifer Blair
Source: https://www.canadiancattlemen.ca/
This article was originally published on the Alberta Farmer Express.

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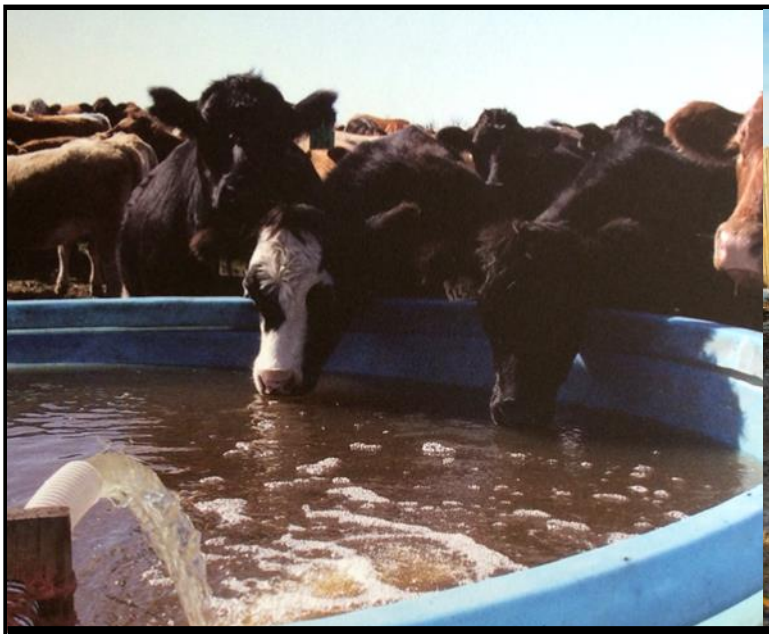

Photo: Lee Gunderson

Off-Site Waterers & Watershed Management

October 19, 2017

Featuring:

Off-Site Watering Systems

Marvin Jackson

Choosing a watering system, troubleshooting, the pros and cons to different systems, and FAQ.

On-Farm Water Management

Joe Harrington

Watershed management, water wells, long-term water management plans, wetlands, and more!

The day will also feature speakers from Cows and Fish on riparian fencing, Ducks Unlimited on their forage and wetland restoration programs, and Alberta Environment on the new Wetland Policy.

Standard Community Hall ~ 150 Yorick Avenue ~ Standard, AB (30 min NE of Strathmore)
9:30 a.m.—3:00 p.m. ~ Includes both field and classroom sessions
$15/members, $20/non-members (lunch included)
Register online at: https://offsitewaterers.eventbrite.ca ~ Questions? Call 403-995-9466

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Forages & Grasslands: How They Contribute to Preservation of Biodiversity

In the earliest theoretical literature on market economy, land is often cited as the only real source of wealth as it was the sole element in the equation that yielded a lot more than what it took in. Former President of the United States Franklin D. Roosevelt was once quoted as saying: "A nation that destroys its soils destroys itself."

How we manage land today still remains one of the most important issues in maintaining our ability to cultivate it and continue to produce food for the ever growing population.

In managing the land, however, less can be more, as in the case of forages and grasslands.

As the modern agricultural practices involve quite a number of mechanical and chemical inputs in the production process, these elements can, paradoxically, deprive the soil of some (or all) of its diversity while helping increase the yield and quality of the crops it is seeded with.

"A tame forage stand can have as few as one species and as many as 20. Native grasslands can have as few as 10 species or as many as 150 or more," says Karin Lindquist, a Forage-Beef Specialist with the Ag- Info Centre of the provincial government.

"Croplands are, 99 per cent of the time, going to have only one species present-a monoculture, if you will."

Clearly, that statement speaks for the vital function of forage and grasslands in sustaining the biodiversity the soil naturally possesses.

However, that is not the only positive environmental benefit that grasslands and forages serve.

"Grasslands are covered in perennial vegetation, or vegetation that covers the soil surface 12 months of the year. Croplands only have vegetation that covers the soil surface for about four months out of 12," says Lindquist.

"There is more litter present (on grassland), so a lot more vegetation is covering the soil surface. This is very important for erosion control from wind and water."

There are quite a number of other services that grasslands and forages offer to the environmental sustainability, according to Lindquist.

These include protection of the integrity of the soil, maintenance of unfettered natural cycles of water, nitrogen and carbon and increased water holding capacity of the soil, among many others.

However, while the value of protecting the biodiversity and natural cycles of the soil is almost universally appreciated, the soil itself doesn't generate income or support livelihoods. So the primary goal of maintaining forages and grasslands is and will remain feeding livestock.

And that does mean forages/ grasslands need to be managed and should not be left off to be looked after Mother Nature only.

The management decisions, though, are more than just simply deciding whether the land is to be used for crop production or haying or as forage stand.

Lindquist says producers should carefully weigh a number of important factors before making a final decision on how to make the best use of their land. These factors include soil type and its characteristics, topography, accessibility to the area, type of vegetation present or the types of plant communities present (treed areas or grassland areas), climate (precipitation and even evapotranspiration rate), presence of endangered/threatened/rare species (plants or animals) and potential for improvements to the landscape by way of presence of weeds, eroded areas, forage yield, etc. *(Continued on Page 12)*

Forages & Grasslands: How They Contribute to the Preservation of Biodiversity

Photo: Lee Gunderson

(Continued from Page 11)

"You can have an area with flat land and good soil, but the plant community there needs grazers much more so than hay equipment," she adds. "Then those grazers are going to take precedence over that haying equipment."

There are even more subtle details to be taken into consideration in deciding what will roam over your acreage as Lindquist explains:

"There are a wide variety of species, both native and tame, that are not adapted or not suited for haying. Low-growing plants get missed by the knives of the haybine, but not the hungry mouths of cattle and sheep. Tame grasses like Meadow Brome (Bromus biebersteinii) are ideal as pasture plants, as are native grasses like Sheep's Fescue (Festuca saximontana) and rough fescue. Other species are sensitive to the impacts of the tractor wheel, like Moss Phlox (Phlox hoodii) or biological soil crusts made up of a variety of lichen and fungi. It may seem odd to read this, but these organisms tend to recover better after a long period of rest after being impacted by hooves than being impacted by vehicular rubber tires. The reason may be because these ruminant animals stand on four "pegs," in a manner of speaking, that have a sharper impact to the surface with a smaller surface area of coverage, rather than the rolling, smooth impact to the surface like with a typical tire that has a larger surface area."

And not least to be counted as a major factor in forage/grassland management is the time. There is a time for grazing, there is a time to give a rest to the land to allow plants to recover and these times never come in a recurring rhythm as they should be decided in connection with other factors, including moisture levels and weather conditions, among others.

"If you look after land, the land will look after you," says Lindquist.

"It is our duty to make sure that these lands will continue to be both productive and ecologically healthy--diverse, productive, biologically active--because we need them for our survival, just as the plants and the animals also need those lands."

By: Mustafa Eric,
Media Coordinator
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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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