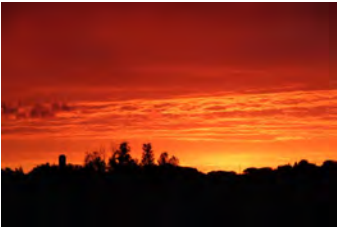


2014

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Lakeland Agricultural Research Association



The Verdant Element

SUSTAINABLE FARMING

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There are hundreds of definitions of sustainable farming. To each producer it will mean something very different. At Lakeland Agricultural Research Association, we describe it as: Sustainable farming encompasses a wide range of practices and principles; combining environmental stewardship with profitability and ensuring that the family farm will be there for generations to come. This is written on the backside of every newsletter and is the basis of my program.

The three pillars of sustainability are: economic; environmental; and social. In theory all the pillars should be balanced, however in reality the economic pillar far outweighs its counterparts. Farming is your business and without a profit you would not be in this industry. However without the environment, your land would not be working for you and allowing you to make that profit. Finding a balance is hard, and in the present climate the social pillar is pushing to address environmental concerns with more consumers wanting organic, locally grown food. People these days want to know where their food comes from and how it is grown, especially since most urbanites are far removed from the family farm. The environmental footprint matters continually more to retailers to appeal to their consumers. The face of farming is changing, and the bottom line is that you will have to change with it.

Recently I had a chance to meet with Greg Sawchuk from Muriel Creek Cattle Company and discuss the changes he has made on his operation and how diversifying has made his operation sustainable.



Water For A Lifetime

Groundwater 101 – Grandma Doesn't Always Know Best

Surprising Myths and Realities about Alberta's Groundwater Reserves

For decades now, a myth has been circulating about Alberta's groundwater reserves. "Imagine a great river flowing underground," my grandmother once told me. "That's where well water comes from."

I have to admit; Grandma was usually right when she told me things about the world and the way things are, but this time she had the story about underground rivers all wrong. "There's a myth out there that Alberta's groundwater flows in underground rivers," says Steve Wallace with the Water Policy Branch of Alberta Environment and Sustainable Resource Development. "For the most part, groundwater moves very slowly through pore spaces, fractures or fissures in rock and soil – more like a complex filtration system than a river."

Understanding the slow moving nature of groundwater is important to rural landowners who use private wells for their main water source, because it has implications when it comes to how aquifers become contaminated and how difficult they are to clean up. It typically takes a long time for contaminants to move within an aquifer or from one aquifer to another. Most often contamination in an aquifer comes from the surface and not from adjacent aquifers. The slow moving nature of these water bodies also makes them difficult to clean up once contaminated. "A contaminated well can be a real challenge to correct," says Ken Williamson, a rural water specialist with the Working Well program. "It's much easier to prevent a problem than to fix one."

The unique way groundwater passes through soil and gravel also affects the chemical and mineral content of the water and its drinkability. Since each aquifer is unique, it is important that periodic water testing be performed to determine the natural chemical and mineral content of the water. This testing can help a well owner determine if a filtration system should be used for household drinking water. Some natural minerals can be harmful to humans and need to be removed by filtration prior to consumption of the water. For example, fluoride is naturally present in most Alberta water and in small amounts it is considered beneficial. But high fluoride levels found in some aquifers may cause dental staining in small children as well as other issues.

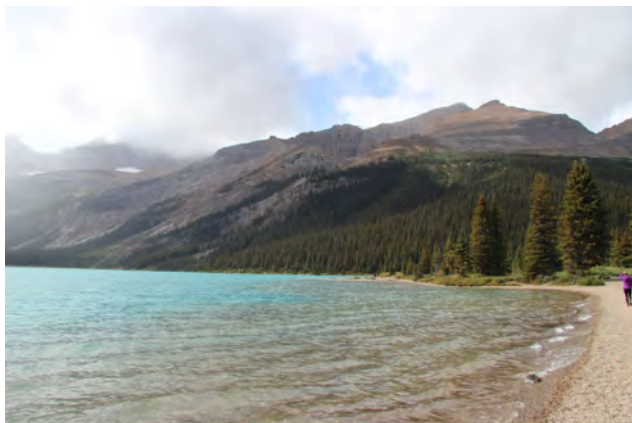
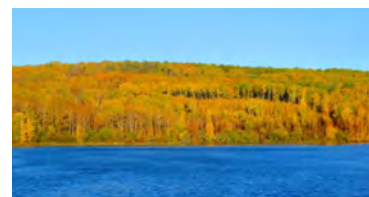
Baseline testing prior to nearby development can be important when changes in water quality are noticed and a landowner suspects it was caused by the negligent actions of a third party. If regular testing has been done, the results can be used to help determine if the water quality was good prior to a particular event or date in time. If baseline testing has never been done, there is no empirical evidence that the water quality has declined.

Well owners have a responsibility to protect their water wells and keep ground water resources healthy and clean for future generations. Understanding the basics of where groundwater comes from is the first step in meeting that obligation.

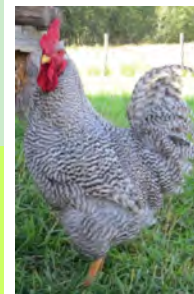
Understand Your Well and Learn How to Manage It

Online resources and community-based workshops offered by the Working Well program provide well owners with the information and tools they need to properly care for their wells. For more information, visit the Working Well website at:

www.workingwell.alberta.ca



Animal health and performance are superior when given access to clean water. Research has shown that when cows have the option of drinking out of a trough or along an unfenced creek, 80% of cows would use the trough. Access to clean water increases animal performance and has shown improved growth in yearlings by as much as 23%.





White cockle is commonly found in hay fields, fence lines and orchards. Leaves are opposite, hairy with prominent veins on mature leaves. There can be several stems per plant growing up to 120 centimeters tall, turning purplish when flowering. The plants are diecious with the flowers having five white notched petals. The male flowers have 10 veins at the base, whereas the female has 20 veins which inflate when the seeds are ripe. White cockle produces large quantities of small seeds that are similar to clover and often are found to be in forage seed.

WHITE COCKLE



White cockle is commonly mistaken for night-flowering catchfly (which is sticky to touch and hairy) and bladder campion (hairless and smooth).

Control: cultivation is not recommended as white cockle can re-sprout from root pieces. Frequent mowing will prevent the plants from producing seed, but white cockle is a perennial, so will continue to grow from the root system. Herbicide

options are usually limited due to occurrence in pastures and hay fields. There is some herbicide resistance with white cockle. Cutting and fertilizing to get grass and other species to compete is another possible control method.



Wild Boar

Originally from Europe, wild boars have easily adapted to prairie climates. An average full grown boar weights in at 90 kilograms and with razor sharp tusks can easily do a lot of damage to the land, wildlife and even humans. These smart creatures nest in dense vegetative areas, and can easily adapt their behaviours to survive, such as becoming nocturnal to avoid daytime hunters. Wild boars are omnivores and will eat everything from grasses and shrubs, small amphibians and reptiles, birds and their eggs, grain crops, even small ungulates such as deer; which all helps them store body fat to keep them warm in the winters.

Originally introduced to diversify the livestock industry, when prices plummeted many hogs were released into the wild. The hog's adaptive nature, aggressive behavior and quick reproductive cycles (can have several litters a year with 6-10 piglets) all cause them to be a serious invasive species.

Many areas including the County of St. Paul have a bounty on wild boars to control or eradicate wild boars at large paying \$50/pair of wild boars ears. For more information on the wild boar bounty visit the Agriculture and Rural Development webpage.



To report prohibited noxious weeds call the Alberta Pest Surveillance System at :

310-APSS (2777)

Pest Watch

Muriel Creek Cattle Company

A Multifaceted Farming Enterprise



In 1998 Greg Sawchuk was a flight engineer in the air force and his wife Tina, a nurse. Taking over from Tina's parent's mixed farming operation just East of Ardmore, they made a huge lifestyle change focusing primarily on family. Today Greg and Tina, along with their six children, run Muriel Creek Cattle Company.

Since starting in 1998 many changes have happened at the Muriel Creek Cattle Company. Today the farm offers a variety of products from 100% grass fed beef, free range eggs, garden veggies in the summer at the farmers markets, solar systems, farm tours and the most recent addition a ranch house.



Greg and Tina took a mixed operation and made the most with what resources they had available. They currently run about 125 cows on 1300 acres. They have about 120 layers of several heritage varieties. They eliminated grain from their operation, which keeps input costs down and utilize their pastures having the cows naturally spread fertilizer. They are fortunate that all of their land is in one block; keeping down fuel costs, and feeding in the winter for 3 days at a time with no bale processor. In the past they have run larger herds, but their current size matches their land base providing adequate grass pastures and hay land.

Greg attributes much of their success to a "stacking of enterprises". The first large change on the operation was introducing direct marketing. Before BSE and the drought, Greg paid attention to the large price discrepancy between the auction price and the store and decided to capitalize on those margins. They decided that grass finished beef was the direction that they wanted to take and changed their genetics from a Simmental x red angus to all British breeds for better finish on grass producing a very lean beef. They developed their customer relations and produced a product that they are proud to serve to not only their family, but to their customers. They chose not to become certified organic (as the extra cost did not provide enough return, and also did not change the product's nutritional value) but instead consider themselves customer certified. "Educating consumers is very important. We have an open farm policy where customers, friends and family can come and see how the animals are raised. People call and ask questions all the time" says Greg. Consumers today are far removed from where their food comes from; and given the opportunity to see how and where their food is grown provides a great benefit not only to the consumers themselves but the farmer as well.

The second enterprise Muriel Creek Cattle Company endeavored was agro-tourism. For three years they hosted a farm festival, having over 1200 people visit their operation at a time. The festivals were very successful, however also extremely stressful with months of preparation. They also regularly host school tours with classes from kindergarten all the way to grade 12. Of course when the kids are little, they are more interested in the animals, but in high school you can talk to them about genetics, nutrient cycling, sustainable agriculture and green energy. All the tours are based around the curriculum. Over the years, the small animal collection has been growing steadily with donations. Most of the llamas,

donkeys, sheep, goats and rabbits have been donated to Muriel Creek Cattle Company over the years. Biosecurity comes into question when you have this abundance of people entering your property. This is managed through the fact that they do not offer walking tours. Everyone is transported by a wagon pulled by a tractor. Only the small animals are handled and the public is not allowed in the large animal zone. An important consideration is the human security. Making sure when entering and exiting that people wash their hands at the hand-wash station or use hand sanitizer is essential. As a nurse, Tina is influential in the safety briefing; talking to the kids and adult visitors about the things they can't see like E-coli and why after



Growing Forward 2 provides programs and services to achieve a profitable, sustainable, competitive and innovative agriculture, agri-food and agri-products industry that is market-responsive, and that anticipates and adapts to changing circumstances and is a major contributor to the well-being of Canadians.

GROWING FORWARD

The On-Farm Stewardship Program made changes to the funding list, as of November 28th, applications for the following projects/expenses can no longer be submitted:

- Portable Shelters and Windbreaks
- Improved Manure Storage
- Fuel Storage
- Chemical handling systems
- auto boom height
- low-drift nozzles (with the exception of pulse-width modulation systems)

Most of these projects that the ARD dropped from the funding list have been funded for over 10 years. The ARD is continuously evaluating the program and based on discussion with producers and industry, it was concluded that these projects could be removed from our incentive list because they are considered common practice and do not require additional promotion through the Growing Forward program. This change is only for the On-Farm Stewardship Program.

Growing Forward Stewardship Programs

Program Area	Eligible Costs	Cost Share
Riparian Area Fencing and Management	Permanent fencing (controlled access or exclusion): <ul style="list-style-type: none"> • Permanent barbed/electric fencing systems • Construction materials and supplies. NOTE: all materials must be new materials and not materials on hand • Labour and equipment will be paid at a 1:1 ratio to materials expenses. (NOTE: refer to section 7.4 in the Terms and Conditions); Purchase and planting of native trees and shrubs and/or native or non-invasive introduced species of grass and legumes; Seed and seeding operation for revegetation; Cultural weed control systems and mulch	70% to a funding maximum of \$50,000
Year Round / Summer Watering Systems	Deeply buried, shallow buried, or surface pipeline installation used to distribute water within a pasture and protect a water body/water source; Portable watering systems; Year-round watering systems; Troughs, stock tanks, plastic tanks (or similar water storage); Frost free nose pumps; Pumping systems; Power sources such as solar panels, windmills etc. And other electrical supplies; Plumbing materials	50% to a funding maximum of \$30,000
Wetland Restoration	Earthwork related to construction or plugging of old drains; Engineering consultant fees for design and construction; Re-vegetation costs (seed plantings etc.); Applicant's equipment use at custom rates; In-kind labour at set program rates (\$25/hour)	70% at funding maximum of \$50,000
Livestock Facility and Permanent Wintering Site Relocation	Construction costs to rebuild an equivalent facility or adequately sized facility in a more suitable location; Plumbing, electrical, fence lines, feeding areas, shelter/wind protection; Earthwork; Engineering design and fees (if applicable); Tear down and removal costs of the old livestock facility; Re-vegetation costs of the old site; Applicant's equipment use and in-kind labour	50% at funding maximum of \$50,000
Used Oil and Lubricant Storage	Double wall steel storage tank design expressly for the temporary storage of used oil and lubricants that have a ULC or CSA approved stamp or plate indicating it is for that purpose (ULC-652)	50% at a funding maximum of \$2,000
On-Farm Water Management	Wells (including test drilling, new pump and well casing, electroseismology test, disinfection of new well); Dugouts (including aeration, fencing and floating intakes); Dams (including intake and fencing); Spring Development; Water tanks/storage/cisterns for low producing wells or as part of a permanent water supply; Buried pipelines Special projects include: Specified water conservation measures (purchase and installation of water use meters, well depth meters for agricultural use of water, well decommissioning by a certified contractor, well pit conversions by a certified contractor; Tie-ins	Various funding levels, refer to the terms of reference

The environment is becoming a more prominent issue. It is a large factor in marketing agriculture and food products in today's global markets. Consumers are demanding more transparency and are demanding high quality and safe products. Reputation of food safety is critical to retain and gain access to domestic and international markets.

Environmental Farm Plans (EFP) provide a tool for producers to self analyze their operation and identify environmental risks, current standards, areas for improvement and also highlight what they are doing well.

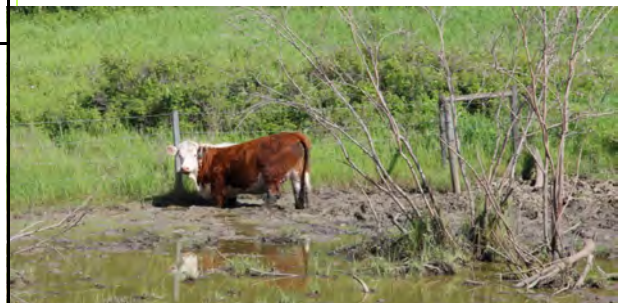
Having a completed EFP allows producers to access different funding opportunities, such as the Growing Forward Stewardship Program. It is also useful in product branding that demonstrates specific environmental standards.

The EFP Process

An EFP can be completed through workshops or one-on-one session(s). The EFP first identifies the soil and farm site characteristics. Following this, the producer completes only the relevant chapters that apply to their operation; such as wintering sites, fertilizer, pesticides, crop management etc. Upon completion the EFP is submitted to a Technical Assistant for review. Once reviewed the EFP will be returned along with a letter of completion.

The EFP is a living document and should be reviewed and updated periodically.

If you wish to complete an EFP or have any questions regarding EFP please contact the LARA office at 780-826-7260



Stuck in the mud? Consider an offsite watering system.

ENVIRONMENTAL FARM PLANS

MURIEL CREEK CONTINUED

touching the animals that they need to practice good hygiene. Greg estimates that between the festivals, school tours and customer visits that over 10,000 people have visited the farm.

The third enterprise is solar design, sales and installation assistance. While Greg was working on the air weapons range he used solar energy and wanted to use it on their farm. He was frustrated when trying to implement solar on his farm as most places would just hand you the book and just took your order with no assistance to designing a system. After taking several courses on solar energy, Greg is now able to design systems to suit

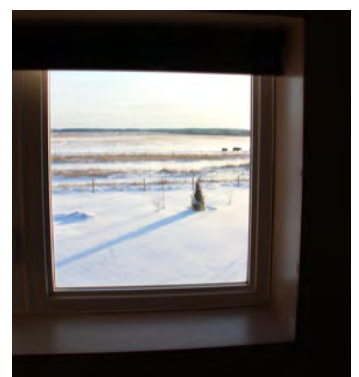
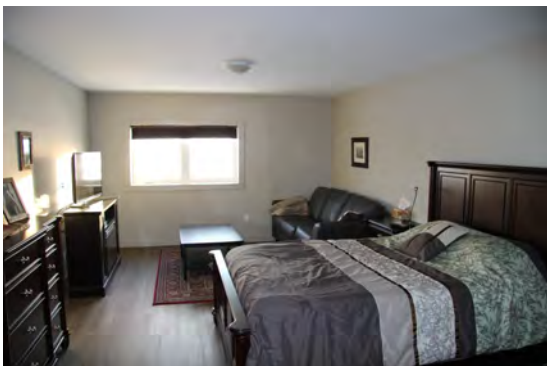


your needs. "Solar is not the answer to everything, but it does make you money when the sun is out." Solar panels cost about 1/6 the price from 15 years ago. More farms should look into solar, as it can be a business write off and the return on investment is 5-6%, which is more than banks are paying these days. Over the years, Greg and Tina have experimented with different forms of renewable energy from water pumping to electricity generation to solar-thermal water heating. There has been a learning curve over the years for Greg. Some of the things they tried they probably would not do again, such as placing solar panels on the roof. The first winter with them up there Greg ended up having to build a scaffold to climb up and shovel off the panels as it is a dangerous endeavor to climb on a metal roof to reach the panels. He also notes that it is easier to start a system from the ground up then to renovate a current system

Currently, all operations that Muriel Creek Cattle Company conducts compliments each other. Which lead them to their latest project, The Muriel Creek Ranch House. Greg took notice that industry is booming and accommodations can be hard to find. To take advantage of the current accommodation crunch and to build capital at the present time to expand the agro-tourism side of the operation in the future, the

Muriel Creek Ranch House was built. This 5600 square foot bed and breakfast was designed from the ground up around the sun. The farm influence and passive solar design create a beautiful, welcoming homey feel. The large open common space is comfortable, with calming views of cattle grazing in the fields. It is the first near zero energy Bed & Breakfast in Canada. Every aspect of this building had thought put into it from the materials to design. The concrete floors and timbers absorb heat during the day from the sun through large southern windows. With the use of heat-loss calculations, all the windows are different depending on the location and size of room and the walls are a foot thick with insulation. The Ranch House uses 10% of the energy that a traditional same sized house would use. The Building is powered by 40 PV array panels and three solar-thermal exchangers to heat the water for domestic hot water and in-floor heating. On cloudy days there is an indoor wood boiler, which comes from Germany, to efficiently heat the water and also provide ambiance in the sitting room. Excess electricity produced during the day goes back onto the grid. The building is also plumbed to

be capable of capturing grey water from the showers, filtering and chlorinating the water, and reusing it in the toilets. This building is considered near zero or net-zero, as to get the last bit of efficiencies would be too costly with little return. For the first year of operation of the Muriel Creek Ranch House only had a 20% vacancy, but is fully booked for the next year by one company.



MURIEL CREEK CONTINUED

Not everything they have tried has been met with success. For 10 years the farm also produced pasture chicken and turkeys in the summer months, but the price margin on them was so low that they have decided against marketing pasture poultry. Like the rest of the agriculture industry, one of the biggest challenges behind weather is price variability. “We still sell some cattle at auction, but if not for direct marketing we would have been out of cattle during the peak of BSE. It was a saviour to get the extra dollars on each animal. With prices so high this year it is pretty even between selling at the market and farm sales” says Greg, “we don’t overly promote ourselves; we get a lot of online business with many long-term customers. Hosting school tours and farm festivals has provided free advertising in a way”. Location also is a huge factor. Muriel Creek Cattle Company is located along highway 28 with approximately 6000 vehicles travelling past every day.



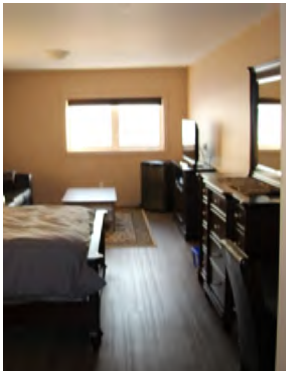
The overall goal of the Sawchuk’s is for Muriel Creek Cattle Company to become a destination farm to visit. Greg notes “there is always a risk by having an open farm policy as anything can come in such as a disease. But the value of having people come to the farm outweighs the risk. You certainly can’t hide anything. It is also a way to get people interested in agriculture and come into the industry. To bring new people into farming we need to sell them on the lifestyle”. Muriel

Creek Cattle Company is a way for Tina and Greg to spend time with their kids as they grow up.

“Farming allows me to decide what I want to do each day. I get to sit and share all my meals with my wife and kids” says Greg, “it was a good lifestyle change”.

For more information on Muriel Creek Cattle Company visit their website at <http://www.murielcreek.com>

Pictures include: PV Solar panels; bedrooms, kitchen and common room in the Muriel Creek Ranch House; German wood boiler; utility room; southern exterior of the Ranch House with panels on the awning



Lakeland Agricultural Research Association

*Kellie Nichiporik
Box 7068
Bonnyville Alberta
T9N 2H4*

Phone: 780-826-7260

Fax: 780-826-7099

Kellie Nichiporik

E-mail: sustainag.lara@mcsnet.ca



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**WISHING YOU AND YOUR FAMILY A
MERRY CHRISTMAS AND A
WONDERFUL NEW YEAR!
HOPE TO SEE YOU AT SOME OF OUR EVENTS
IN 2015!**

Farmer Appreciation Night

February 6, 2015

Glendon RCMP Hall

Doors Open at 5:30 pm

Dinner at 6:30 pm

Entertainment to follow

All Farmers Welcome!

Pre-registration is required.

Space is limited.

780-826-7260

