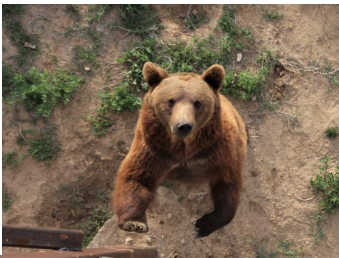


2019

Volume 10, Issue 3



Lakeland Agricultural Research Association



The Verdant Element

THE ABCs OF SOIL HEALTH

Inside this issue:

Silvopasture	2-3
Pest Watch	4-5
Climate Crazy	6-9
Environmental Farm Plan	10
Canadian Agricultural Partnership	11

As fall work is wrapping up, you can step back and assess how the year has gone. The agricultural community in Alberta had it all; drought, flooding, cool temperatures, baking sun, severe winds; overall a challenging season no matter your location. We all know that we cannot control what weather conditions we get, but we can influence soil health, which allows for us to be more resilient and mitigate the situation. Here are the ABCs of soil health:

A - Armoring the soil, having no bare ground

B - Bacteria in the soil are a key for fertility and plant health

C - Cover Crops, to feed the soil, build organic matter and prevent erosion

D - Diversity!

E - Earthworms recycle nutrients and build healthy soil

F - Fungi! Helps bind soil together, improves water infiltration and extracts nutrients for plants

G - Glomalin builds soil structure

H - Healthy soils increase nutrient density in plants and our food

I - Infiltration, healthy soils have higher infiltration and water holding capacity

J - Joie De Vivre, our life force starts with soil health

K - Keeper, we are the keepers of the soil

L - Life, there is an abundance of life within the soil

M - Microbes cycle nutrients, prevent diseases and pests and increase water infiltration

N - Nutrients are needed for plants to grow and be healthy and can be provided by healthy soils

O - Organic Matter is fundamental for healthy soil and increased water holding capacity

Soil Health ABCs...

P - Protozoa release nitrogen that can be used by plants and other members of the food web by feeding on bacteria and other microbes

Q - Quality, healthy soils improve water quality and quantity (through increased infiltration and water holding capacity)

R - Residue armors the soil from heat, reduces erosion and helps build organic matter

S - System, healthy soil helps all the systems (water cycle, nutrient cycle, biological system) work together. It can also stand for Shovel, of which everyone should carry one to look at soil health

T - Tillage damages soil structure and kills the biological system of your soil. Reduced or no-till is best for a healthy soil

U - Urgent need to protect soil health, biodiversity and pollinators

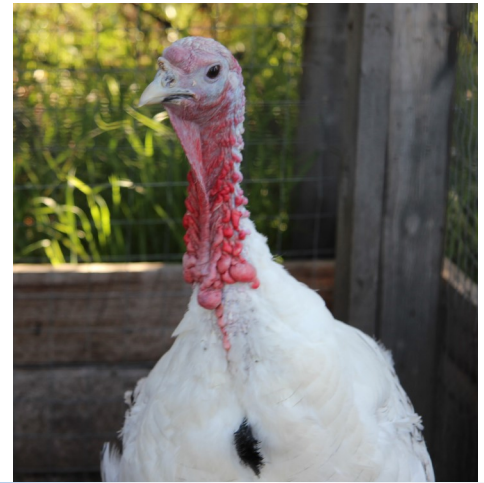
V - Value, healthy soils increase the value to your farm

W - Water, healthy soils improve water quality and quantity

X - Xtreme, healthy soils is more resilient and protects you from extreme conditions

Y - Yield, healthy soil improves yields

Z - Zest for life!



Silvopasture Part 2 -

Agroforestry & Woodlot
Extension Society

As the first article on *Silvopasture* indicated, this agricultural practice has not been used as extensively in Alberta as it has been in British Columbia. Several initiatives were funded in 2010-14 in BC to test the effectiveness of growing trees and forage crops on the same parcel and to evaluate the increase in productivity. These have been in place for between 5-10 years but have not provided a large amount of information to date.

The gains or outcomes of incorporating trees into the agricultural business can be seen in many different ways. *Alley cropping*, a form of *Silvopasture* or treed areas, will provide shelter that will improve microclimates and provide better snow (moisture) retention, reduced wind speeds and thus reduced wind erosion and damage to crops. The treed areas will also provide many benefits to livestock in both winter and summer; as well as screening noises, dust and odours that can be associated with livestock operations. The treed areas lower animal stress and increase feeding efficiencies.

In your yard site, the treed areas also reduce the amount of energy required to heat buildings and do reduce your home's winter heat loss by diminishing wind velocity and also reduce the amount of energy required to heat confinement buildings. The treed areas are a valuable tool in the fight against climate change. Research has shown that trees are extremely useful in sequestering greenhouse gases. Both fast growing trees like aspen and slower longer-lived trees like white spruce contribute in capturing carbon from the atmosphere. The treed areas are good for the landowner and the wildlife; they are good for the environment as well.

All of the above benefits are obvious but these benefits have not been translated into economics in Alberta so that a landowner can see the dollar value increase to both themselves and other users. There were several small demonstration projects started in Alberta in both Northern Lights County and in Lac La Biche County to evaluate the values of both *alley cropping* and *silvopasture*.

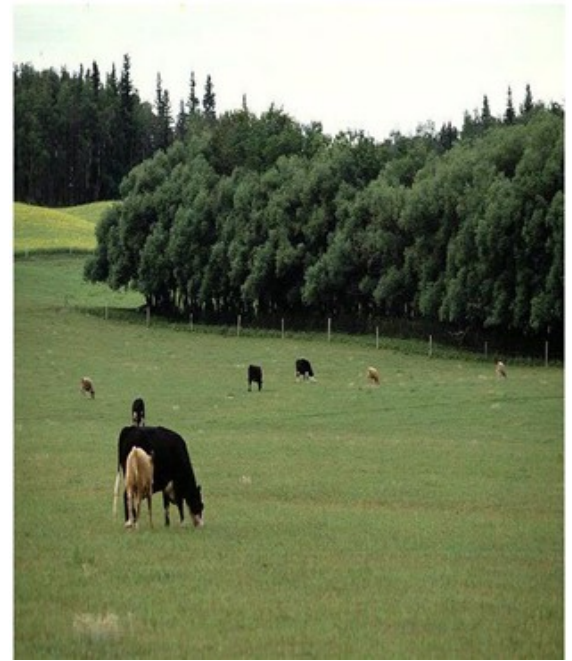
These were started in 2003 and 2004 and were designed and established by many partners, including Alberta Agriculture and the Prairie Farm and Rehabilitation Administration (PFRA-Alberta). The Murdoch Lake projects were designed to include cattle grazing as part of the grass control but were only measuring the results of growing trees (hybrid poplars) together with hay crops. The project site near Manning, Alberta was measured for 3 years from 2009-2011. The results of these measurements indicated a very positive result for the approach. The site in Lac La Biche County was not measured but still remains in place to be used in the future.

In the Murdoch Lake project (near Manning) trees and forage used in the study were Walker Hybrid Poplar and a forage mix including alfalfa, timothy and brome. The measurements showed the following results, with largest amount of biomass production occurring in alley cropping, compared to forage crop alone. The wide alley cropping technique with combined (tree + forage + forage under trees) were 4.33, 3.22 and 5.00, and 5.41, 3.89 and 4.85 ton/ha/yr. in 2009, 2010 and 2011 respectively. As the site matured it definitely demonstrated an increase in productivity for all components. Unfortunately, the measurements were not continued for more years to fully show a continued increase in productivity.

There is a new Murdoch Lake Project in development that will continue the work of the original site, (but will also add-in up to 5 new sites) over the next two years to further the demonstration work. Two of the new sites will be in Peace Country along with three new sites in central Alberta between the Wabamun area to Lakeland Region. The original Lac La Biche site will be used along with the new ones being set-up to further evaluate the *alley cropping* approach on a variety of lands and to demonstrate the increase in the many values to landowners and producers.

The measurements and the results of this Murdoch Lake Study and the additional various sites should become available over the next 5 years. These results will be shared with all landowners and producers by the partners involved (the agricultural research associations and AWES) in the project. This will demonstrate another possible option for agricultural production in northern Alberta, and assist a producer in maximizing the return from their lands.

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Orange Hawkweed

Hieracium aurantiacum

Alberta Regulation:
Weed Act



Overview:

Orange hawkweed is a member of the Aster Family native to Europe. It is a fibrous rooted, perennial herb with a milky latex in the stems and leaves. Hawkweeds reproduce by seeds and vegetatively by numerous horizontal stolons, and rhizomes underground.² Seeds are produced by apomixis - asexually - as non-native hawkweeds are polyploids (n=9), as opposed to the native diploid hawkweeds.¹ Occasional sexual reproduction occurs.¹

Hawkweeds develop a low rosette of basal leaves before producing a flowering stem. Dandelion-like flowers are borne at the ends of stems. Orange hawkweed is unique among both native and introduced hawkweeds in that flowers are a fiery orange colour. All other hawkweed are yellow flowered and there is one white flowered species.

Non-native hawkweeds exhibit many characteristics of an invasive plant: high seed production and germination rates, asexual seed production, wind-dispersed seed, vegetative reproduction via rhizomes, stolons, and root fragments, and rapid growth.¹ A

few invasive hawkweed species are popular ornamentals. All of these characteristics facilitate rapid colonization and monopolizing of resources. An undetected patch of hawkweed has great potential to become an un-eradicable infestation.

Habitat:

Hawkweeds prefer well drained, coarse textured soils, moderately low in organic matter, in mesic habitats.¹ It can successfully grow under coniferous forest canopy.

Identification:

Stems: Are erect, usually solitary, and leafless or with leaves or with just 1 or 2 greatly reduced leaves.² Stems bear numerous stellate, glandular, and simple hairs. Plants grow 10-60 cm.¹ Stolons are present and hairy.²

Leaves: Basal leaves are oblong/lance-shaped to elliptic, and narrow to a petiole, and 4-20 cm long 1-3.5 cm wide. The upper leaf surfaces bear numerous simple hairs and the lower surfaces bear both simple and

stellate hairs. Leaf margins may be entire or slightly toothed.²

Flowers: Red-orange ray flowers are borne in open, rounded clusters of 20-50.¹ Involucral bracts are lance-shaped, 5-8 mm tall², with numerous stellate, blackish glandular, and simple hairs.¹ Achenes are narrowed at the base, 1.5-2 mm long, with a brownish pappus.²

Prevention:

Learning to recognize hawkweeds from the many yellow-flowered members of the Aster Family is key to prevention. Hairs are an important characteristic of non-native hawkweeds and also in distinguishing between species. Stolons facilitate rapid colonization of a patch of ground. Long term management of hawkweeds requires maintaining healthy forbs and grasses - fertilization of desirable vegetation can result in out-competition of hawkweeds. Re-seed disturbance in areas susceptible to hawkweed invasion.

Control:

continued next page

Orange Hawkweed (Continued)

Grazing: Unknown. Invasive plants should never be considered as forage.

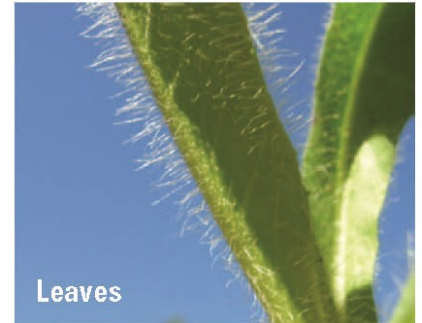
Mechanical: Mowing before flowering will prevent seed production of taller plants but will not inhibit reproduction via stolons and rhizomes. Hand digging of small infestations where all stolons and root can be removed may be effective. Root fragments can generate new plants, therefore any mechanical tilling/cultivation would be ineffective.

Chemical: Hexazinone, 2,4-D, and glyphosate are registered for use on *Hieracium* spp./hawkweeds. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pesticide Management Regulatory Agency. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: The stolon-tip gall wasp *Aulacidea subterminalis* was first released in BC in 2011. Results are pending.³



Leaf & Stem

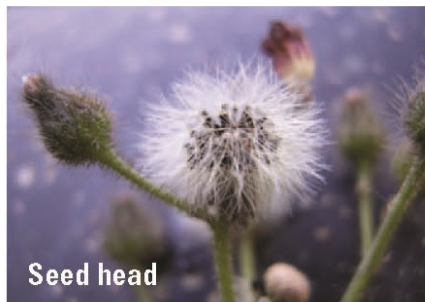


Leaves



Seeds

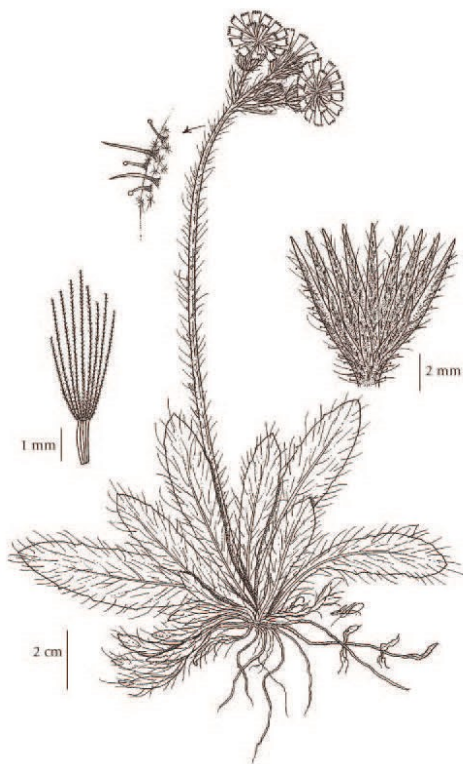
Alberta Sustainable Resource Development



Seed head



Seeds



Stem

C. Roche

REFERENCES

- 1 Wilson, Linda. Key to Identification of Invasive and Native Hawkweeds in the Pacific Northwest. British Columbia Ministry of Forests and Range, Forest Practices Branch, Invasive Alien Plant Program.
- 2 *Hieracium aurantiacum*. Electronic Atlas of the Flora of British Columbia. <http://ibis.geog.ubc.ca/biodiversity/eflora/> Accessed October 26, 2014.
- 3 Target Invasive Plants and Biocontrol Agents Undergoing Screening. BC Ministry of Forests, Lands and Natural Resource Operations. <http://www.for.gov.bc.ca/hra/plants/biocontrol/screenagents.htm#Hawkweedcomplex>. Accessed June 10, 2014.

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

310-APSS (2777)



abinvasives.ca
info@abinvasives.ca

Climate Crazy

There is no escaping the climate debate. It is on the TV, radio, newspapers and is incessant on social media. Whether you are a climate crusader or non believer, this is a hot issue that has emotions running rampant. This seems to be a topic that has no middle ground; lacking common sense and putting everything to the extremes. The senseless protests, which serve to enrage more people than engage with them, such as the blocking of the Walterdale Bridge in Edmonton for early morning commuters, or the doomsday predictions that are bombarding the public. This serves no purpose to create effective change.



Canadians are very privileged. We live in a place that is as close to carbon neutral as possible. Canada has a relatively low population rate and millions of hectares of trees and grassland to act as a carbon sink. Our oil and gas sector are villainized, but do people really think that the environment would be so much better without it? Long before development began in the Fort McMurray area, bitumen was leeching from the ground and entering our waterways naturally. Products that we use in our everyday lives are also created from that industry, and are hard to imagine living without. Winter is a very real thing in Canada, and I appreciate that my furnace turns on and heats my house. I also have a wood burning stove. We harvest our own lumber from trees that have died, it is a renewable resource. For those that say that I am polluting by burning wood; fire is a natural process that renews our forests and helps control forest diseases such as mistletoe, and pests such as the pine beetle. The border between the boreal forest and the parkland has been in constant flux (more so before it was settled) via fire.

So is our climate changing? The simple answer is yes. The climate has been changing long before there was 7 billion plus people on the earth; and it will continue to change long after my generation was here. We like to believe that the world is static; that the seasons come and go and there is little variance year to year. But Mother Nature is far from static. Evolution is the one constant we can all believe in. We know that there was an ice age; that global temperatures have fluctuated and species have gone extinct. Alberta was once located close to the equator and had a tropical climate, a far cry from where we are today. Continents have shifted, lands have been created and destroyed. Dinosaurs were once plentiful and now all we have left to admire are their bones. Species have been adapting for centuries, some a bit better than others, but we all adapt to survive. It is a shame that with today's knowledge that species are still going extinct, but I would not say that it is due to climate change. Rather, it is due to habitat loss, the human introduction of

invasive species, and poaching (mostly due to misguided medical remedy beliefs) or over harvesting. It makes me so incredibly sad to think that my children may never get to see a rhinoceros in the wild, or a piping plover here in Alberta.

So do we need to change? If we know better we should do better. I love to travel, which allows me to appreciate how privileged I am. I have been to Vietnam, in towns where everything is covered in a dusting of coal, to cities where the smog is so thick it is hard to breath. Cambodia, where plastics are relatively new, and with no method of disposal are left any and everywhere, where eventually seasonal flooding washes it into the rivers and then to the ocean. Africa, which in many places just piled the garbage and then burned what was not salvageable. To Canada, where in Quebec and Brit-



ish Colombia, it is perfectly acceptable to dump raw sewage into our water ways. Our oceans are struggling with over fishing, removal of key species (sharks and whales), and plastics, so many plastics. We have paved roads (Anthony Henday), and placed sub-divisions on some of the best soils and micro-climates suitable to food production. We have removed wetlands and eroded headwaters and then cry foul when flooding occurs. We have introduced invasive species and are shocked when our native species start to struggle to compete for habitat and food resources. There are still so many people that do not have access to safe water and food. Wildlife species are struggling to survive, but so are many humans.



To those that bang their chest and proclaim that we need to completely cut [Canadian] fossil fuels out are doing so out of twisted ideology. Our resource development is the most socially responsible and of the highest environmental standards globally. For Eastern Canada to demonize our resources, yet willing to take fossil fuels from countries with human rights violations, and low environmental standards is absurd. Renewable energies have progressed remarkably in a short time, but are not always the salvation that people think. I am a huge fan of solar. It has incredible potential in Alberta, and a huge array of uses. It is reliable, but does need a backup for those times where we don't get to see the sun for several days. The panels themselves last decades and are low maintenance. And best of all they work amazing in the winter due to cold temperature efficiencies and the additional UV ray capture of the reflection on the snow. I am not a fan of wind turbines. These gigantic beasts still require a large amount of fossil fuels to be manufactured, are impossible to repair if they break, require mass amounts of concrete to hold them up, and kill thousands of birds every year. I used to live in Denmark and wind turbines were everywhere, and looking at the broken, nonmoving windmills portrayed a giant flagship of wasted resources. Electric vehicles have their place, but will not be making a presence in my garage any time soon. Mostly because the range is not sufficient to be able to be useful in the rural setting. The nearest charging point (other than the one that I would have to install at my home) is 300 kilometers away. And if everyone was to make the transition over to electric our current infrastructure would not be able to handle the power supply required. Also don't forget that we all like paved roads to travel, which require fossil fuels to build.



Urban sprawl has played a huge part in species loss, habitat fragmentation and water quality degradation. If people were so concerned with the environment then they would start to infill city centers and live in higher density housing. They would push for developments not to be built in a wetland, reduce their insatiable consumerism, demand that products come with less packaging, and realize that the world is neither their garbage nor disposable. Instead of protesting, preventing people from going to work and inciting anger they could create change through meaningful actions. Protect and improve the environment that surrounds them. Volunteer for a shoreline clean-up, or pick up garbage that is scattered along roadways and parks. Recycle properly, which includes sorting and cleaning the containers. Reuse more. Join a weed pull to stop the spread of invasive species. Don't let it loose, unwanted pets (such as goldfish) do not belong in our environment to become an invasive species. Join a watershed group and help restore wet-



lands and riparian areas; do something as simple as plant a tree. Join a citizen science group, to learn and collect meaningful environmental data.

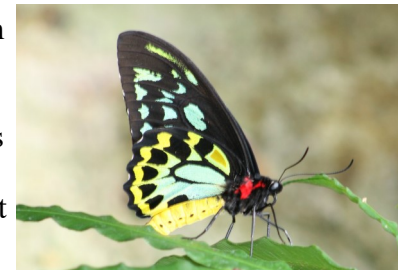
Be responsible. Every person's actions compound, and every single action (or no action) does have an impact. Take the time and get educated so not to hitch your horse on the bandwagon of climate extremists. Do not just hit the "share and like" button spreading misinformation.

Agriculture is shockingly misunderstood. The average person is roughly three generations off the farm, and the public trust is vanishing. Advertising is a huge component of why our farms are being attacked. Unclear labelling between "natural", "organic", "certified organic", "free range", "free run", "gluten-free", as well as the liberal use of "GMO" scattered about is enough to give the most savvy consumer pause. It really irks me when I go to the liquor store and gluten free wine is being sold. All wine is gluten free. The "Non-GMO" label is also one that really bothers me. All foods to some effect have been modified. We have bred plants for characteristics that we desire as well to reduce our

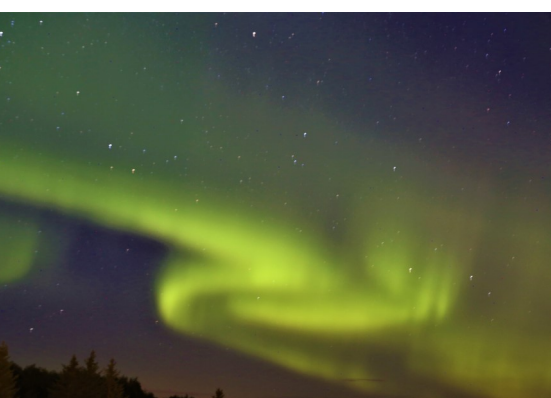
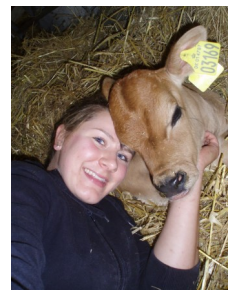


environmental impact. Bananas for instance are a prime example as they used to have huge seeds, but no one bats an eye at them being a GMO. Papayas were all modified so that they became resistant to fungal disease. Don't get me wrong, people can choose to buy whatever product they like; however the labelling needs to be correct and properly understood. But I digress, back to the climate issue; cows are the poster child for climate change. These poor creatures have become the scapegoat for climate disaster. We seem to conveniently forget that there are millions of horses in North America alone as well as over a hundred million household pets, all consuming resources and defecating out in nature as well. In the 1800's there were an estimated 30 million bison across the plains. These creatures were instrumental in the ecological function of the grasslands. Much the same way that sustainable grazing practices are. Is a plant based diet a way to reduce greenhouse gases? There is no disputing the fact that cows, and other ruminants, produce methane. However, they do provide a benefit to the ecosystem with cycling nutrients, increasing soil biology and vegetation productivity (with proper grazing management). Pasture lands provide habitat for wildlife, a sanctuary for biodiversity, and a refuge to pollinators. If we were to switch to plant based diets, the number of acres of cropland would have to increase, as well as the fact that the amount of equipment used would increase, along with pesticides and insecticides (with tighter rotations). Monocultures (which would be used to have adequate production) are not a healthy ecosystem and would have other negative environmental impacts. As

well, modern agricultural practices have deteriorated soil health (disturbance such as tillage (common on organic operations), fertilizers, pesticides, monoculture), making foods less nutrient dense than they were decades before. "A Kushi Institute analysis of nutrient data from 1975 to 1997 found that average calcium levels in 12 fresh vegetables dropped 27 percent; iron levels 37 percent; vitamin A levels 21 percent, and vitamin C levels 30 percent. A similar study of British nutrient data from 1930 to 1980, published in the *British Food Journal*, found that in 20 vegetables the average calcium content had declined 19 percent; iron 22 percent;



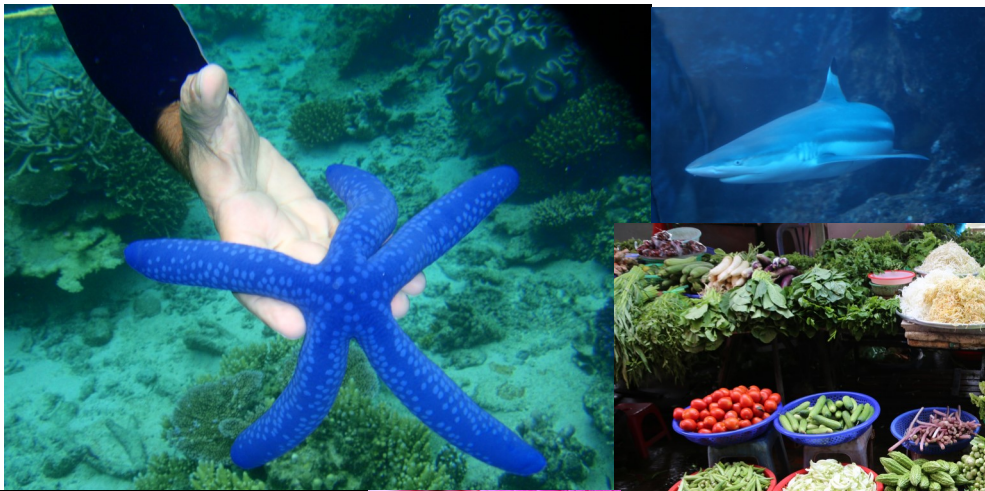
and potassium 14 percent. Yet another study concluded that one would have to eat eight oranges today to derive the same amount of Vitamin A as our grandparents would have gotten from one." (<https://www.scientificamerican.com/article/soil-depletion-and-nutrition-loss>) These nutritional losses mean that we would have to eat an increased quantity of food in order to meet our nutritional requirements. Thus requiring more farmable acres and reducing the amount of natural areas such as the rainforest and boreal. More carbon in the atmosphere can



support a larger plant biomass as plants need CO₂ to grow.

So if we really do care about our environment, perhaps we all need to start with one small action. As farmers we can make a huge difference, perhaps add a cover crop to your operation, or try intercropping. Focus on improving soil health, which allows for increased carbon sequestration, increased water infiltration, improves biodiversity, AND increases the nutrient density in the food that you are producing. Protect water quality by adding an offsite watering system, or maintaining/creating a buffer. As humans, stop littering and dispose of your waste properly. On September 28th, six (which included myself) Moose Lake Watershed Society volunteers cleaned up random dumping in the watershed and were able to fill 2 dumpsters in just over 2 hours. Try to reduce the amount of plastics in your life. **Reuse or repurpose.** Instead of just disposing items, if it is gently used, still in good working order, or if that sweater that looked fabulous in the store but looks hideous at home, think of donating it to one of the several charity run second hand stores in the area. Not only will those items be given a second chance it helps to support well deserving charities to provide services to people in need. Try to shop local, buy fruits and veggies from nearby producers instead of a product that needs a passport. Plant a tree or plant that is appropriate for our area. Support local environmental efforts, as these are the boots on the ground that can be effective for protecting the environment and creating meaningful change.

Whatever your viewpoint, actions have meaning and consequences. Take a moment to enjoy all the miraculous wonders that the Earth has. We all could learn and explore, to have a better understanding and form a passion for this place we call home. Perhaps Joni Mitchell said it best, "Don't it always seem to go, that you don't know what you've got 'til its gone. They paved paradise and put up a parking lot."



Environmental Farm Plans

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, online 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 Kellie at the LARA office at 780-826-7260

Effective April 1, 2018, producers will need to have an EFP completion letter dated within the last 10 years to be considered current and eligible for cost-share funding with the Environmental Sustainability and Climate Change programs of the Canadian Agriculture Partnership (CAP). That means, for example, if you apply in September 1, 2018, your EFP will need to have been approved on or after September 1, 2008 to be considered for current funding.

Riparian Health Assessment

The riparian zone is the interface between the upland and a water course. A healthy riparian area: traps and stores sediment; builds and maintains banks and shorelines; stores water; recharges aquifers; filters and buffers water; creates primary production and much more!

A riparian health assessment is a tool designed to evaluate the site and can provide a foundation to build an action plan and identify priorities.

If you would like a FREE Riparian Health Assessment conducted on your property or more information please call Kellie at 780-826-7260 or email sustainag.lara@mcsnet.ca

CANADIAN AGRICULTURAL PARTNERSHIP

The Canadian Agricultural Partnership is a five-year, \$3 billion federal-provincial-territorial investment in the agriculture, agri-food and agri-based products sector set to begin in April 2018, and is the successor of the 2013-18 Growing Forward 2 partnership. In Alberta, the Canadian Agricultural Partnership represents a federal - provincial investment of \$406 million in strategic programs and initiatives for the agricultural sector.

Currently accepting funding applications is the Environmental Stewardship and Climate Change program and Farm Water Supply.

Funding Opportunities Stewardship covers projects such as:

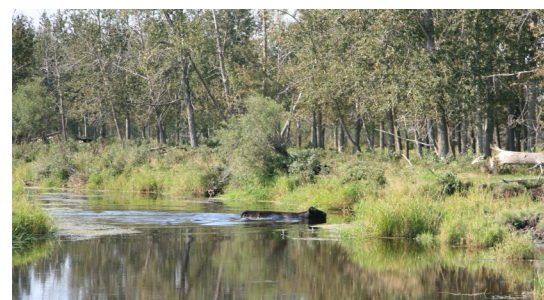
Riparian Area Fencing and Management	Permanent fencing and potentially cross fencing	Funding Maximum: \$75,000 Cost Share: 30%, 50%.
Year-Round / Summer Watering Systems	Portable or permanent systems that are not in your yard site	Funding Maximum: \$50,000 Cost Share: 30%, 50%.
Watercourse Crossings	Construction materials needed for watercourse crossing in accordance with the Water Act	Funding Maximum: \$10,000 Cost Share: 30%, 50%.
Grazing Management Strategies or Innovative Solutions	Consideration will be given to projects that provide solutions to improve grazing management. The projects must meet the objectives of Environmental Stewardship and Climate Change Program and significantly improve the grazing management performance of an operation.	Funding Maximum: \$100,000 Cost Share: 30%, 50%.
Manure and Livestock Facilities Management	Construction of surface water management system; engineering assessment; improved storage facilities; relocation of livestock facility; improved land application; manure and livestock facilities management	Funding Maximum: \$15,000 - \$100,000 Cost Share: 30%, 50%.
Agricultural Input and Waste	Improved pesticide management; improved nutrient management (sectional controls); plastic rollers; shelterbelts; wetland assessments	Funding Maximum: \$7,000 - \$15,000 Cost Share: 30%, 50%.

More Information On Funding Opportunities

For more information on these funding opportunities go to: <https://cap.alberta.ca/CAP/index.html>

Call the LARA office to set up a time to go over funding possibilities and for assistance with the application forms.

Please note that applications must be approved prior to work being done or purchases made to be eligible for the funding.



Stuck in the mud? Consider an offsite watering system.

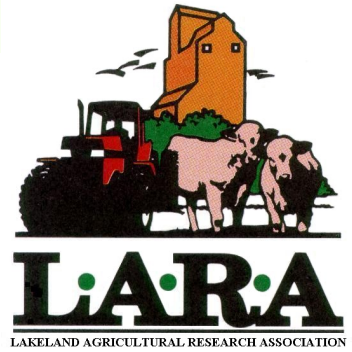
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Sustainable farming encompasses a wide range of practices and principles; combining environmental stewardship with profitability and ensuring that the family farm will be there for generations to come.



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WWW.LARAONLINE.CA

Beaver Options

Beavers elicit very extreme emotions from people; they either love them or hate them. Especially on wet years such as this, they can cause issues with landowners due mostly to flooding. However there are more than two

options for dealing with Canada's iconic rodent, other than hunting/trapping and blowing up the dams. Several co-existence tools can be utilized to help mitigate the issues that they can cause on the landscape such as flooding and the removal of valued trees.

To protect our property's higher valued trees, mixing paint with sand and painting the bottom few feet of the tree will prevent them from taking a bite out of your tree. Or else, placing chicken wire to create a barrier around the trees can also work. For short term discouragement you can make your own deterrent using different spices such as cayenne and spread it around, which would prevent the beaver from chewing on your trees.

Beavers are attracted to the sound of running water and are compelled to stop the flow of water, which is why they frequently plug culverts. Building an exclusion fence with angles that are not natural for the beaver to be able to create a dam can protect the culvert and ensure the continual flow of water. For the beaver dams themselves, the installation of a pond leveller device can lower the water levels, while maintaining enough water for the beavers to survive the winters in their lodges and be able to preserve their food caches. Pond levelers are a simple device which involves placing a large diameter pipe (the size is dependent on the type and size of the water body) through the beaver dam at a depth that will lower the water to an appropriate level. The pipe extends about 30 feet in front of the dam and is secured below the water level and is caged with hog panels that allow for fish passage. The beavers are unable to find the "leak" in their dam, and the water level will be maintained. These devices have been successfully used in this area. For more information on these devices, please contact the Lakeland Agricultural Research Association. Funding and resources are available for landowners wishing to install these devices on their lands.