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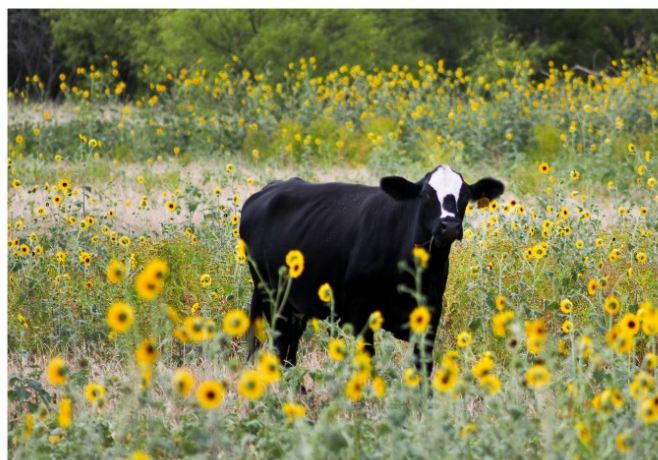
# The Verdant Element

## Inside this issue:

Soil Health Academy	2
Pest Watch	4
Soil OM	6
How to Start Succession Planning	8
Environmental Farm Plan	9
Canadian Agricultural Partnerships	10

## ISOLATING VS. ISOLATION

I think most people are feeling a little COVID fatigue. Between the bombardment of information, the dawn of the second wave and the conflicting and often vague restrictions it can become overwhelming. As a person who is immune compromised, I respect the social distancing and the need to isolate to prevent the spread. However, just because one is isolating it does not mean you need to be isolated. This is not prison and we are not in solitary confinement. Maintaining relationships with phone calls, zoom, skype, facetime, text messages or any other form of contact is vital to our mental health. In the midst of all the technology allowing us to keep connected, perhaps this is an opportunity to explore old fashioned letter writing and having a pen pal. There is an untold joy of receiving something other than a bill in the mail. One can appreciate the time and thought that was put into scribing a note and posting it. Even something as simple as a post card can have a profound effect on someone's day. It is easy to feel isolated being in rural Alberta, and this is especially true for farmers. A letter is a great way to rekindle some relationships, build new ones or strengthen those we already have. I know when I lived abroad, there was something special about receiving a parcel or card in the mail from family back home. It was something tangible that bridged the gaps between phone calls and the day that I would see them again. If you are having a tough time and are feeling isolated help is only a phone call away. The number for the Alberta Farmer Distress Line is 1-877-303-2642



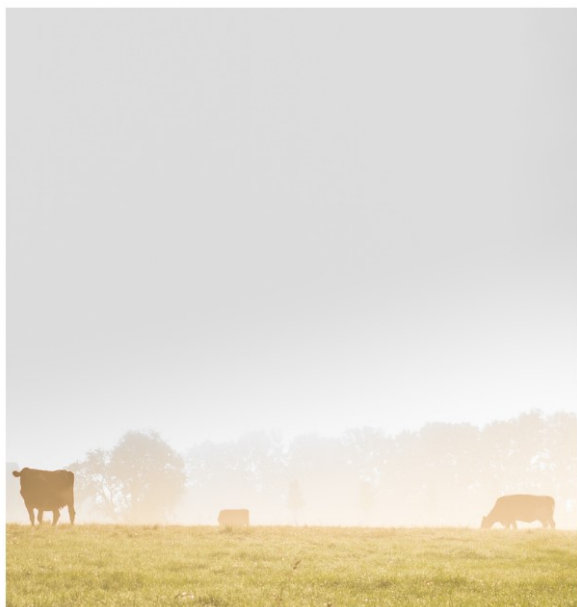
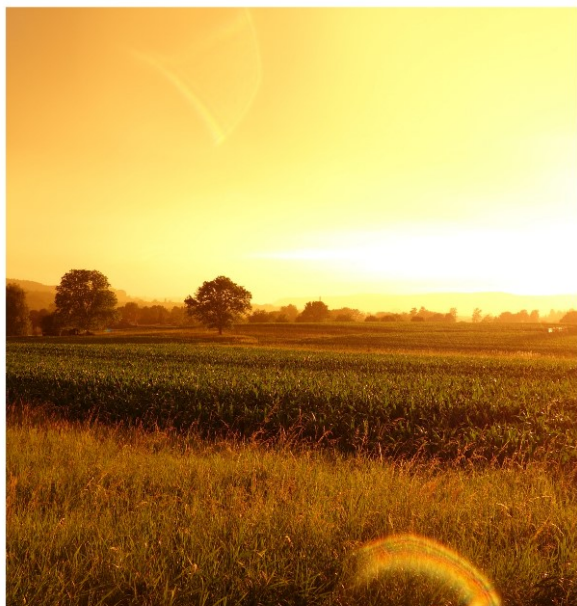
LAKELAND AGRICULTURAL RESEARCH ASSOCIATION

# SOIL HEALTH ACADEMY

With Gabe Brown, Ray Archuleta,  
Shane New and Dr. Allen Williams

## JULY 19-21, 2021

Through hands-on training from the world's leading experts, Soil Health Academy participants learn how to increase profitability, build resiliency into the land, decrease input costs and improve nutrient density of food and agricultural products. No matter where you farm or what you grow, the Soil Health Academy will teach you how to improve soil health through practical regenerative agricultural principles.



# SOIL HEALTH IS WEALTH

## WHAT YOU WILL LEARN:

- **Principles of Soil Health & Adaptive Stewardship**
- **Properly Test Soils to Reduce Inputs**
- **Restoring Vibrant Ecosystems Through Adaptive Grazing**
- **Making Grazing Highly Profitable & Desirable**
- **Successful Marketing: Strategies for Enhanced Net Margins**
- **Nutrient Management**
- **Designing Cover Crop Mixes**
- **Farm Economics and Whole Farm Planning; and**
- **So much more...**

Cost to attend is:

\$1,600 for two people or \$900 for single registrant

Visit [www.laraonline.ca](http://www.laraonline.ca)

for more information about the event.

For inquiries or to register call (780) 826-7260

or email [sustainag.lara@mcsnet.ca](mailto:sustainag.lara@mcsnet.ca)

# Pest Watch



abinvasives.ca  
info@abinvasives.ca



Last Updated December 2016

## Gypsy Moth

*ALymantria dispar* (L.) Syn. *Porthetria dispar* (L.)<sup>3</sup>

Alberta Regulation:  
Agricultural Pest Act



Natural Resources Canada



Natural Resources Canada

### Overview:

Gypsy moths are part of a group called tussock moths because their larvae bear dense brushes of hairs.<sup>4</sup> Their native distribution is Europe, North Africa, Asia, and Japan. The European race was accidentally introduced to the eastern U.S. in 1868 and spread to Quebec and Ontario as well as western states and then northward along the coast.<sup>1</sup> Individuals of the Asian was race were discovered in Vancouver in 1991 on shipping containers, as well as Washington and Oregon.

Gypsy moths have over 300 known hosts plants including both native and introduced trees/shrubs such as fruits, nuts, and ornamentals. The Asian race has broader host range - also feeds on larch and some cedars and firs - and spreads faster.<sup>1</sup>

In the European race of gypsy moths, only males can fly - both sexes of Asian race are strong fliers. Light can attract the moths over great distances making airports, sea ports, and urban parking lots favoured sites for egg laying.<sup>1</sup> While European race females will lay eggs near their pupation sites, Asian race

females will lay eggs on objects associated with lights.<sup>1</sup> While some countries do inspect ships and cargo containers for pests, the time between inspection and the ship leaving port can be long enough for gypsy moths to lay eggs.

### Identification:

**Adults:** The adult female moth is creamy white with dark wavy lines across the forewings. Males are smaller and have brown forewings with darker markings.<sup>4</sup>

**Larvae:** Are very hairy and 30-65 mm long when mature. Body color is yellow-brown with dense, black mottling. There is a mid-dorsal row of blue and red tubercles (rounded outgrowths).<sup>4</sup>

**European Race:** Females flightless, 1st instar larvae uniform in colour, larvae feed at night and move to resting sites during day, pupates in litter, and eggs are laid near the female's pupation site.<sup>1</sup>

**Asian Race:** Both sexes strong fliers (10-13 km), 1st and 2nd instars variable in colour, larvae feed and rest in canopy, pupates on

foliage, and females lay eggs away from pupation site (can be kilometers away).<sup>1</sup>

### Ecology<sup>1</sup>:

Gypsy moths have one generation per year and overwinter in the egg stage, usually under snow. Hatching occurs mid to late April, possibly extending to the end of May depending on temperature. The small, hairy larvae move up host trees to feed on the foliage. Some larvae disperse to other trees via "ballooning" where larvae are blown about by the wind on long silk threads produced by glands on their heads. This natural dispersal usually advances an infestation by 5 km per year. Feeding persists for 6-8 weeks, dependent on environmental conditions and host condition. Gypsy moth females generally have six larval instars and males five. The earlier instars feed primarily at night while later instars feed around the clock. If foliage is lacking the larvae will disperse along the ground. Around the beginning of July feeding ceases and pupation begins and females and males pupate over an average of 10 to 13 days respectively. The pupal period of a population lasts about a month. Moths be-

# Gypsy Moth (Continued)

gin emerging in July, extending into August. The adults live for several weeks but do not feed. Females attract males with pheromones, after which prolific egg laying occurs into September.

## Economic Impacts:

Defoliation by gypsy moth larvae reduces growth and can cause mortality of deciduous trees and shrubs. Associated costs include; reduced timber harvesting, hazard tree removal, and possibly tourism as well in destination-city parks.<sup>1</sup>

## Environmental Impacts:

Rare, native deciduous trees and shrubs already vulnerable to alien insects and urbanization are threatened by gypsy moth feeding.<sup>1</sup>

## Sociological Impacts:

Hairs of the caterpillar contain histamines which can induce skin rashes or respiratory problems in some people. Tree mortality in urban areas negatively affects both aesthetic and property values.<sup>1</sup>

## Prevention:

Monitoring is the best way of preventing gypsy moths from becoming established in Alberta. Gypsy moths are considered quarantine pests by the Canadian Food and Inspections Agency (CFIA). Annual gypsy moth surveys are conducted in Alberta by using pheromone traps.<sup>3</sup>

## Control:

**Chemical:** There are a number of restricted and commercially available products registered for use on gypsy moth. Restricted products require applicator certification. Always check product labels to ensure the product is registered for use on the target species in Canada by the Pest Management Regulatory Agency. Consult your local arborist, Agricultural Fieldman or Certified Pesticide Dispenser for more information.

**Biological:** The biological insecticide *Bacillus thuringiensis kurstaki* (Btk) is consumed by the caterpillars and releases a toxic protein in the digestive system. The accidentally introduced 'small wasp' is parasitic on gypsy moth eggs.<sup>2</sup>



Larvae

Natural Resources Canada



Birch Defoliation

Natural Resources Canada



Pupa

Natural Resources Canada



Pupation

Natural Resources Canada



Egg Masses

Natural Resources Canada

## REFERENCES

- 1 Hemble, L. and Stewart, A.J. 1994. Gypsy Moth, Forest Pest Leaflet. Canadian Forest Service. ISBN 0-662-21581-8
- 2 Gypsy moths. Government of Canada. Accessed July 8, 2016.
- 3 Gypsy moth. Natural Resources Canada, Government of Canada. <https://11dcf.nrcan.gc.ca/en/insects/factsheet/9506>. Accessed: July 8, 2016.
- 4 Ives, W.G.H. and Wong, H.R.1988. Tree and shrub insects of the prairie provinces. Canadian Forestry Service. Government of Canada. p. 127.

# Soil Organic Matter: Putting Your Soil to Work For You

Death by 1000 paper cuts. Could it happen? Perhaps. In essence it is what we have been doing to our soils. A little tillage over here, some synthetic fertilizer over there. A sprinkle of monoculture, a dash of disease pressure due to lack of crop rotations, and a hint of a broken water cycle. Often we are trying to use a Band-Aid solution for symptoms, when we really need a surgeon to remedy the root of the problem.

All soil is a combination of sand, silt and clay, along with water and air. What differentiates your soil is your organic matter and your biology. Without organic matter you will be lacking the biology, and without the biology you will have problems with dealing with organic matter such as your cropping residue. Talk about chicken and the egg. Organic matter is a huge factor in addressing poor functioning soils and will usually buffer out your “sins” to the soil. However years of repetitious practices that damage our soils, will eventually lead to death by 1000 cuts.

Soil organic matter (SOM) naturally in Alberta ranged from 1-17% (the 1% is found in the mountains where soil formation processes are just starting out). In our Lakeland region naturally they should be well over 10%. However if you look at the soils here now, the average producer (and this might be a high optimistic estimate) is 4%. Why is SOM important you may ask... it is because these plant, animal and microbial residues that comprise SOM plays such a significant role in the physical, chemical and biological characteristics of soil.

Physically SOM ‘glues’ the soil particles together to enhance aggregation, improve aeration, water infiltration and prevents compaction. It also increases the soils resistance to erosion from wind or water. An extra 1% of SOM results in an extra 1 inch of stored water in the soil.

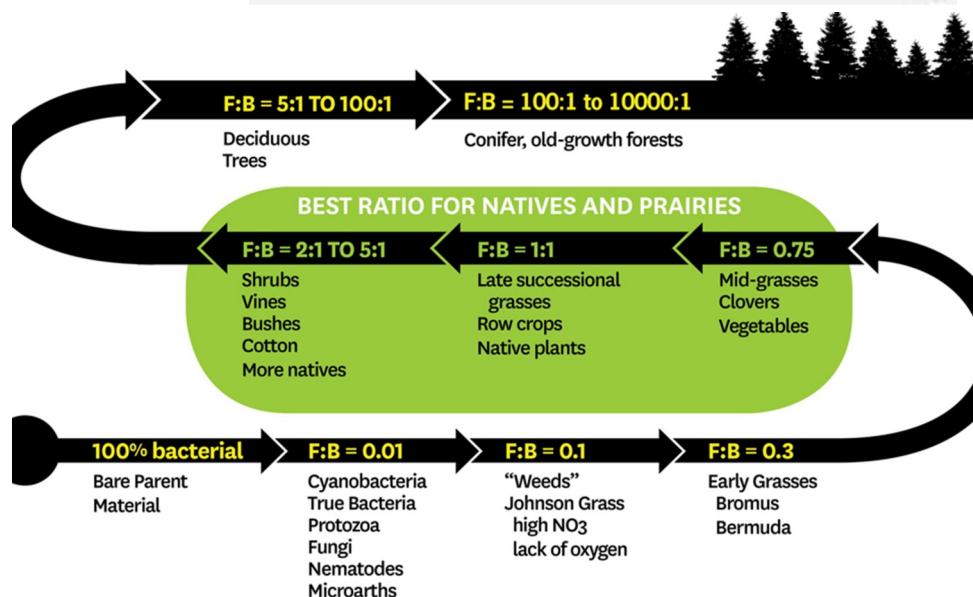
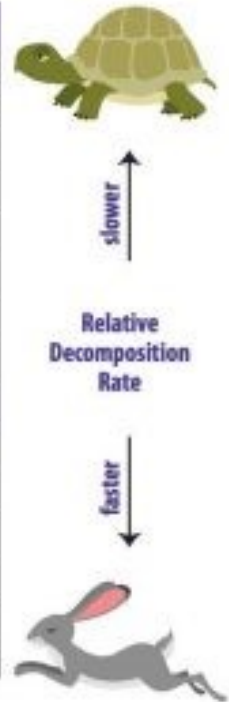
Chemically it maintains high surface area and the ability to hold and release nutrients through the CEC (cation exchange capacity) systems. It will absorb pollutants and is an important sink for carbon. And above all it buffers soil pH; which is a driver of nutrient availability and the form the nutrients are in.

Biologically it provides food to the soil food web, feeding the microbes, nematodes and others that increase our soil health.

Many may say that they need to do some heavy harrowing or tillage of some form due to the fact that they need to manage their residues. You do not have a residue issue (well you do but not in the way you

**Table 1.** Carbon to nitrogen ratios of crop residues and other organic materials

Material	C:N Ratio
rye straw	82:1
wheat straw	80:1
oat straw	70:1
corn stover	57:1
rye cover crop (anthesis)	37:1
pea straw	29:1
rye cover crop (vegetative)	26:1
mature alfalfa hay	25:1
<b>Ideal Microbial Diet</b>	<b>24:1</b>
rotted barnyard manure	20:1
legume hay	17:1
beef manure	17:1
young alfalfa hay	13:1
hairy vetch cover crop	11:1
soil microbes (average)	8:1

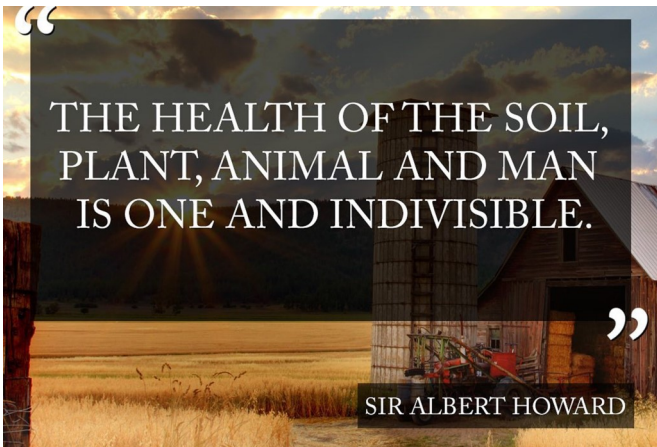


Deciduous Trees      Conifer, old-growth forests

**BEST RATIO FOR NATIVES AND PRAIRIES**

- F:B = 2:1 TO 5:1**  
Shrubs  
Vines  
Bushes  
Cotton  
More natives
- F:B = 1:1**  
Late successional grasses  
Row crops  
Native plants
- F:B = 0.75**  
Mid-grasses  
Clovers  
Vegetables

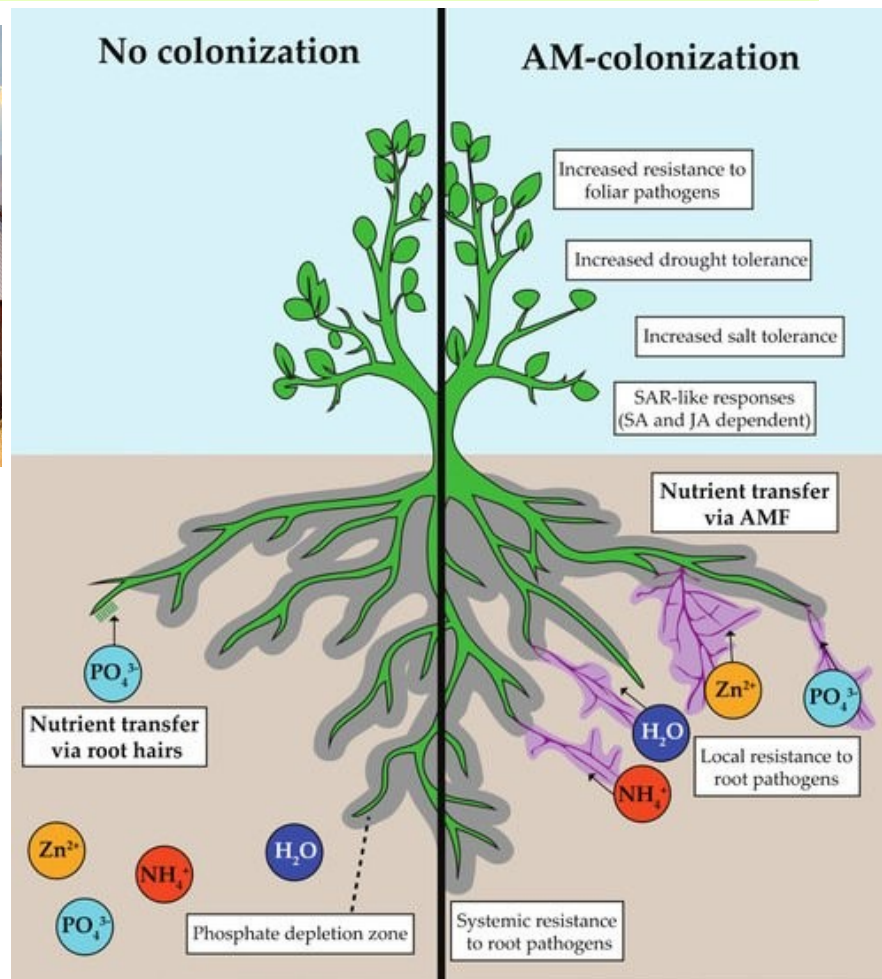
- 100% bacterial**  
Bare Parent Material
- F:B = 0.01**  
Cyanobacteria  
True Bacteria  
Protozoa  
Fungi  
Nematodes  
Microarths
- F:B = 0.1**  
“Weeds”  
Johnson Grass  
high NO3  
lack of oxygen
- F:B = 0.3**  
Early Grasses  
Bromus  
Bermuda



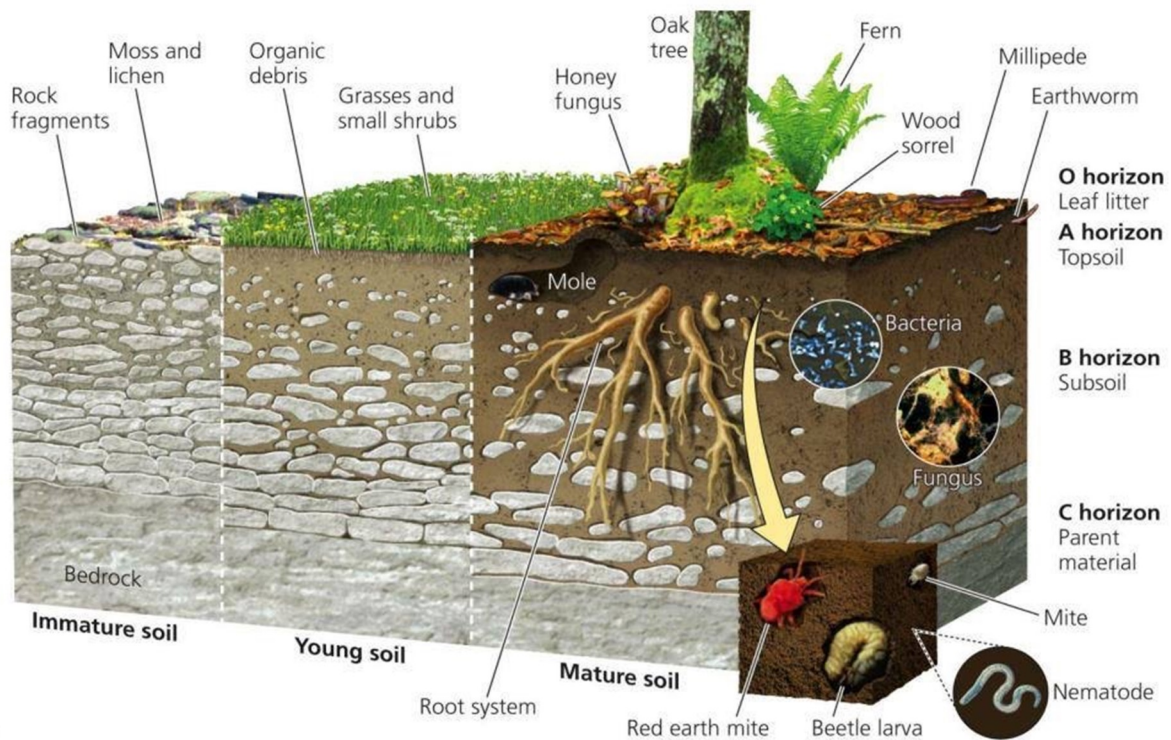
think), you have a biology issue as well as the wrong carbon to nitrogen ratio (refer to table 1) which affects the time it takes to decompose crop residues.

When you look at soil formation processes, a healthy, productive and well developed soil has functioning biology. The soil also evolves from a bacterial dominated soil to a fungal soil. All the 'sins' of the soil favor a bacterial dominated soil that supports a flourishing weed population as well as synthetic fertilizer dependant system. And at the end of the day this leaves you with high input costs and less profit in your pocket.

If you support a system that is biologically diverse with a good F:B ratio, where arbuscular mycorrhizal fungi thrive, you can access the nutrients available in the environment, have a healthy crop that is resistant to disease and pests and place more dollars in your pockets. And at the end of the day all your hard working microbes, fungi, nematodes and soil biology that are accessing your soil nutrients for you, only required to be paid in a little organic matter and plant sugars.



## Soil Formation Over Time



# How to Start the Succession Planning Conversation

Elaine Froese *Canola Digest October 2020*

Farm families are stuck when it comes to getting folks to the kitchen table to talk about timelines for transition of labour, management and ownership of the farm. As a farm family coach over the past 8 months of the Great Pause, many young farmers have reached out looking for tips to get their parents to talk about what the future holds for generation one and generation two.

Understand that procrastination and conflict avoidance are the root of the issue for farm families being stuck.

**Act.** Decide that you are no longer avoiding the tough conversations. Are you willing to be the driver to call the family together to meet? The first step is to decide that you will no longer accept silence from your parents or siblings. Listen to Dr. Henry Cloud's audio book on Boundaries, and his book Necessary Endings. Both are powerful motivators.

**Think.** Talk to yourself first about what you really want. Then check out the same issues with your spouse. If parents are not in agreement as to what they each want for future roles on the farm, then you will have to work hard to negotiate a more workable vision for generation one. Be clear about your intent, "why" this is so important for you to get talking and discovering your future now. Say..."My intention is...."

**Ask more powerful questions** to kick-start the conversation." Do you remember what it felt like when you first owned land? I am curious if we could sit down and explore ideas on how I can get some equity before April 2021 on this farm. I want to be more than an employee." Dates are targets to aim for; certainty of agreements and timelines is what you really want.

**Document.** Covid has been a reality check for the farmer who said "Elaine if I get sick and die, the farm will be in chaos." Get a will, an enduring power of attorney, and guardians for your children. Make sure your executor is fully informed. As you go through the succession planning journey you will change the estate plan (your will), but get a will now! Lawyers can work with you virtually, and witnesses can sign digitally.

**Be curious.** Stop telling yourself that it's "disrespectful to your parents" or greedy to ask for what you need for your young family. Come from a position of "I am curious Dad, how do you want your role to change on this farm as you age. I am seeking a way to build my own equity. What are you needing?"

**Face fears.** Address the bull in the middle of the room, what I call the undiscussabull. Parents are afraid of failure, loss of wealth, conflict with the non-farm heirs, and loss of identity or purpose as they age. Love does not read minds, so ask gently and graciously "What is hard for you to talk about? I am here to listen and understand." Watch "Finding Fairness in Farm Transition" on my YouTube channel as a great discussion starter. Download the "Key Challenges" part of the Farm Family Toolkit as a checklist [www.elainefroese.com](http://www.elainefroese.com)

**Collect data.** Know what you need for family living, and where your income streams are coming from. Have financial transparency between the generations. Share the amount of debt you





are willing to service or transfer to the next generation. Do understand how much debt you are willing to sleep with, and what you are willing to buy out. Some assets will be gifted, but young farmers need to be clear about how much debt they can service. Have your accountant, lender or farm business advisor confirm the viability of the operation, knowing cash flow, and the number of families the farm can support.

**Prepare your ideal business plan for the farm.** What is your vision? On our farm Generation 1 wants to slow down but still be active in the decision making process, and Gen 2 wants to build more efficient systems.

**Explore what if?** What if we block time once a month for 2 hours to talk about our succession journey? Stress the importance and benefits to all generations. Dr. Kohl's research showed that farms with regular meetings were 21% more profitable.

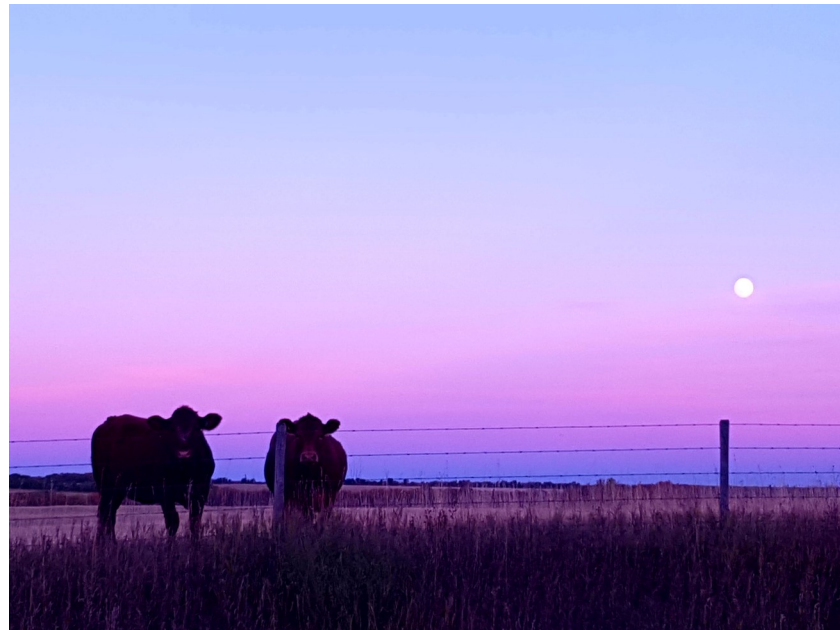
**Meet.** If the thought of meeting scares you, then hire a 3rd party facilitator to prepare each person for the meeting. In 2020 these meetings are done on zoom. Advisors have seen many creative solutions, they can keep the conversation safe and respectful

**Buy a flipchart, and find a stuffie toy.** You need a visual spot to land ideas and process thoughts. The toy is your talking stick for folks to speak at the meeting without interruption. As you record notes on the flipchart use smartphones to capture the pages when the meeting ends, and you have action steps recorded for the next meeting. Simple yes. Life-changing. Yes!

**Explore residence options.** Housing is a big source of conflict. Promises are made to switch houses, then things change or a sibling comes to live close to generation one. Be really clear that you understand the timelines and expectations for the residence needs of all generations. If mom wants to move and dad wants to stay put things will be stuck for a long time.

**Copy success.** Conflict resolution is a business risk management strategy. Share the stories of good transitions knowing you are not alone in your current struggle, but the hard work is worth the reward of a workable succession plan to create certainty for everyone's future.

**Build your binder.** Or use Google documents to organize the many plans you need to talk about: lifestyle income, legal, accounting, meeting action plans, business plans, coaching communication, estate, loans, etc. I have created a "Life" binder with passwords info, and Maggie Van Camp's Because I love you List. The binder is a great place to jot down your dreams, thoughts, and frustrations as you create solutions for the life you've always wanted on your farm. Email me [elaine@elainefroese.com](mailto:elaine@elainefroese.com) for binder tabs, and the Because I love U list.



The likelihood of in person events in the next few months is probably the same as winning the lottery. However, we wish to provide you with information all the same. If you have any ideas for webinars, online socializations or desire for publications to address certain topics, the staff at LARA would like to hear from you. Please either give us a call or email us your thoughts. Normally January to April we have many in person workshops, but our methods may have to look a little different for the time being.

# 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**

## 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](mailto: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:

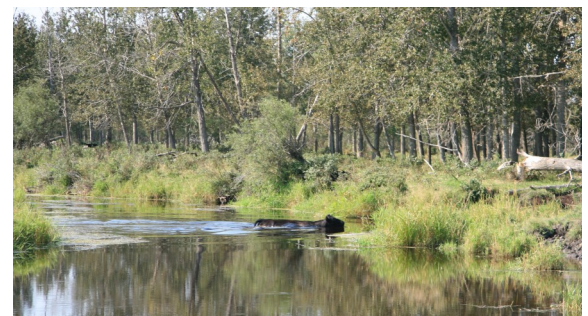
Riparian Area Fencing and Management	Permanent fencing and potentially cross fencing	Funding Maximum: \$75,000 Cost Share: 30% or 50%
Year-Round / Summer Watering Systems	Portable or permanent systems that are not in your yard site	Funding Maximum: \$50,000 Cost Share: 30% or 50%
Watercourse Crossings	Construction materials needed for watercourse crossing in accordance with the Water Act	Funding Maximum: \$10,000 Cost Share: 30% or 50%
Riparian Management Strategies - OPEN	Activities which are not explicitly ineligible and which can be shown to meet or exceed the program goals. Potential projects include: pond levelers for beaver management, riparian buffer establishment, native prairie management, grazing management consulting, wetland restoration	Funding Maximum: \$100,000 Cost Share: 30% or 50%
Relocation of Livestock facility or confined wintering site	Relocate a livestock facility that poses a significant risk to water quality or the environment, and properly remove the existing facility	Funding Maximum: \$100,000 Cost Share: 30% or 50%
Improved Land Application of Manure	To adopt technologies that result in more efficient nutrient use and decrease nutrient loss through run-off and volatilization. Eligible costs include: load cells, flow control meters, on the go nutrient analysis technology, compost turners and much more.	Funding Maximum: \$100,000 Cost Share: 30% or 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% or 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.

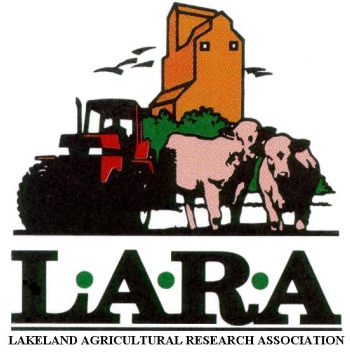
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Sustainable farming encompasses a wide range of practices and principles; combining environmental stewardship with profitability and ensuring that the family farm will be there for generations to come.



[Follow Us on Twitter! @LakelandARA](#)

[Like us on Facebook: https://www.facebook.com/LakelandARA](https://www.facebook.com/LakelandARA)

**Have you checked out the LARA Youtube channel??**  
If you missed a webinar that we have hosted you can find it there.  
Current videos include: the Soil Health Webinar Series featuring Gabe Brown, Ray Archuleta and Dr. Williams.

**WWW.LARAONLINE.CA**

### 5 Ways to Break the Barriers of Mental Health

- 1) Mental health is different for us all. Recognize the signs of people withdrawing from activities, acting out of character or drastic changes to their lifestyle.
- 2) Say what you see. Do not be afraid to ask them how they feel.
- 3) Show you care. Our actions can have more of an impact than our words.
- 4) Listen. You do not have to have the answers or give advice, but be present and a active listener.
- 5) Your role. Be kind to yourself and others. Support within your means and don't be afraid to ask for help.

Wishing you  
and your  
families a Very  
Merry Christmas  
and a Happy New  
Year!