Organic Alberta and Holistic Management Conference 2017

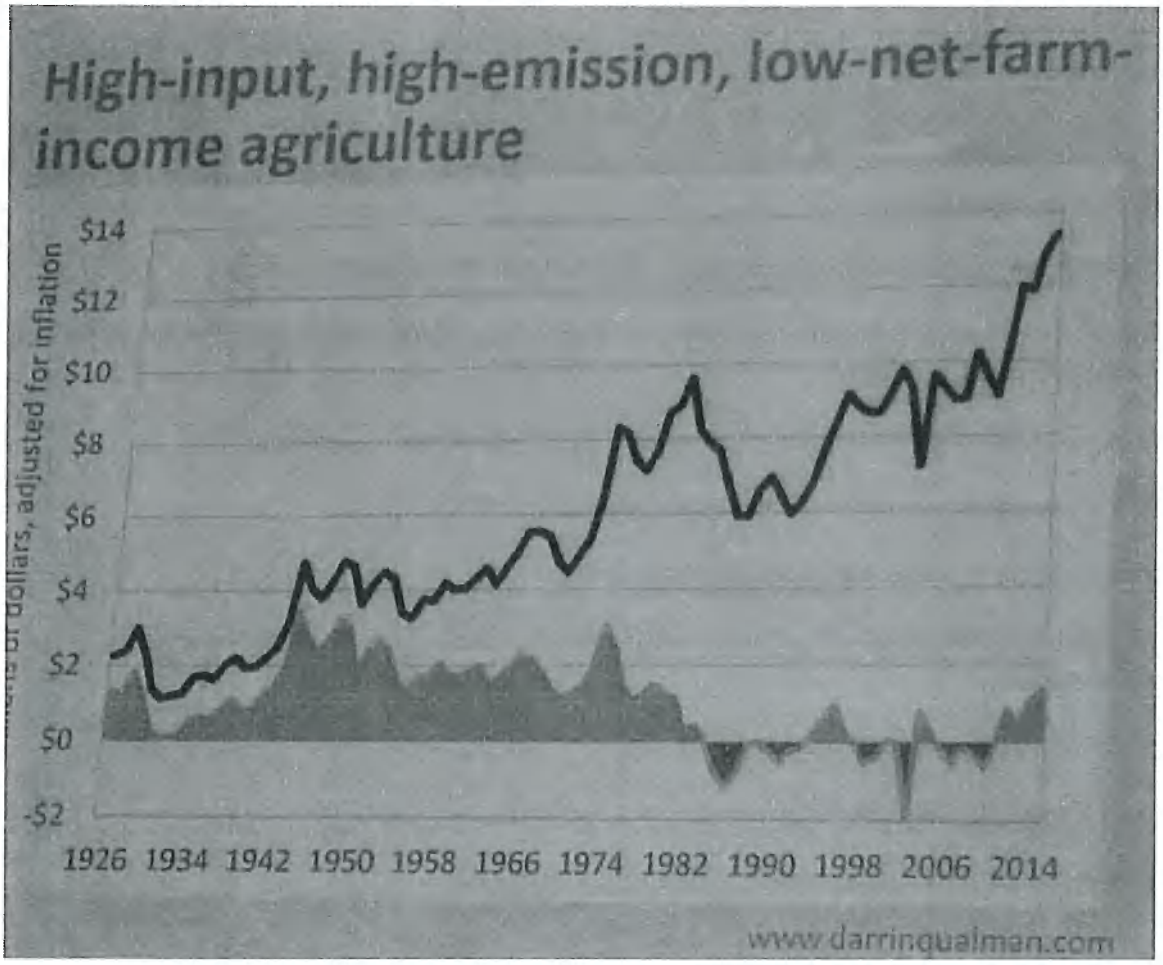
By: MacKay Ross

Agriculture Energy, Greenhouse Gases and Climate with Darrin Qualman

Our civilization predicament, at 2.8% growth in CO2 in the atmosphere per year, we will see a 16 fold increase over todays 400ppm by 2100. Everything was solar powered, low input, net zero emissions until the industrial revolution. 2018 is the 100 anniversary of the tractor. Fertilizer use has doubled every 30 years since the 1950's.

Greenhouse gas emissions; from livestock has barely changed in 30 years, from Nitrogen fertilizer has doubled, for farm eqipement (tractors etc.) has been stagnant. It is Nitrogen fertilizer that is driving Agricultural Greenhouse Gas emissions up. Atmospheric Carbon is rising 100x faster than any time in 800,000 years, and hasn't broken the 300ppm ceiling in 120,000 years (the last ice age). Agriculture doesn't produce GHG, agricultural inputs create GHG emissions. The future is low input (low/no synthetic fertilizer), hence low emissions agriculture.

Even if the Paris Climate Agreement is met, the planet will still warm 3.2'C. Alberta will warm 6.4'C, 2'C increase in global temperature is the perceived dangerous temp, we are ¾ of the way there.



Follow the energy and material flow to see what's really happening, following the money creates a fog.

Efficient Nutrient Management presented by Joanne Thiessen Martens

The 5% from the soil that plants need are like the bucket of bolts that hold a combine together, the other 95% comes from the air/water. Without plant available nutrients from the soil the plant will not produce nutrient rich food.

Concentrate on managing nutrient cycles.

Nitrogen fixation in the form of legumes every 2-3 years. 2 year rotation maximum to start a new field. Always consider what is physically being removed from the field (seeds [low amounts/acre], hay [high/acre], livestock [low/acre] verses what is being put on(compost, manure, micro nutrients, etc).

Organic Phosphorus levels from 5-10ppm in the soil will grow plants, however 10-60 ppm is best.

Sulphur 10 lb/acre for good growth (ppm?).

?are the microbes in organic systems carbon staved?

Ensure healthy soil biology by adding adequate nutrients and using good management, will grow above average yielding crops.

Compost has a side effect of boosting nutrient uptake by plants.

Key message; "Support/feed soil biology."

BMP for Managing Weeds in Organic Farms

Recommend a 1.5x seeding rate over conventional; crowd the weeds out and form complete canopy.

Rotary hoe or tine harrow early (tine harrow with seed rows up to 4x without yield loss), Mid row cultivation works best at mid growth, after canopy forms (Combcut?).

Leafed and semi leafed peas grown together show a 10-15% yield increase, intercropping will help.

Rod weeder works well, were cheap to purchase, not recommended in Gray Wooded soils.

Plow green manure crop that has excessive high weed pressure, win/win.

Corn stalk shredder, to beat down weed tops or to mulch green manure 1-2x during the season to prevent seed production, then work to the soil.

Sweet and red clover will require shredding 3x a year.

6-7 mph light tine harrow (up to 4x), bury the weeds.

Green manure plow down of oats at milk stage, plowing at doe stage is too late.

Organic Grain and Beef Integration with Joanne Thiessen Martens and Ben Stuart

Livestock allows better usage of forages from a field's rotation. Livestock excrete 90% of grass/hay that they consume and urinate 75% of the water consumed which is then microbe and plant available. Crops that follow grazing (of Green Manure or stubble grazing) always yield higher.

Grazing builds resilience and regenerates soil faster. Remember 1% SOM = 1" of water retention.

Be flexible, weed issues are food for livestock. Only remove weeds mechanically as a last resort.

Green Manure costs $168/acre, so look for ways to recoup costs. Custom grazing during summer has a $1.10/day/head potential, till in Green Manure and livestock waste which has a $30/acre value.

Grazed Green Manure Report Card

Crop	Biomass	N fixation	Flexible	Palatable
Pea-oat mix	A	A	C	A
Hairy vetch	A	A	A	B to D
Black lentil	C	C	D	D
Soybean	C	B	C	A
Cocktail mix	B	B	C	A
Sweet clover	B	B	B	A
Red clover (in rye)	B	C	A	A
Italian ryegrass	C	F	A	A
Fall rye	B	F	B	A to F

Farm Scale Compost Tea

Use boomless nozzles to avoid plugging.

Producer used products from Surrey BC which are blended compost mixed for maximum biological variety. The food one puts in the compost will depend if bacteria or fungi grows in the tea.

Don't need lots of compost but it must be good, 1lb will make 100 gallons of tea (?) applications are 10-20 gallons/acre. Recommended 4-5 applications a year; 1 pre seeding, 2-3 in crop and 1 post-harvest.

Using as a seed treatment has shown measurable benefits. After tillage application to replenish soil life.

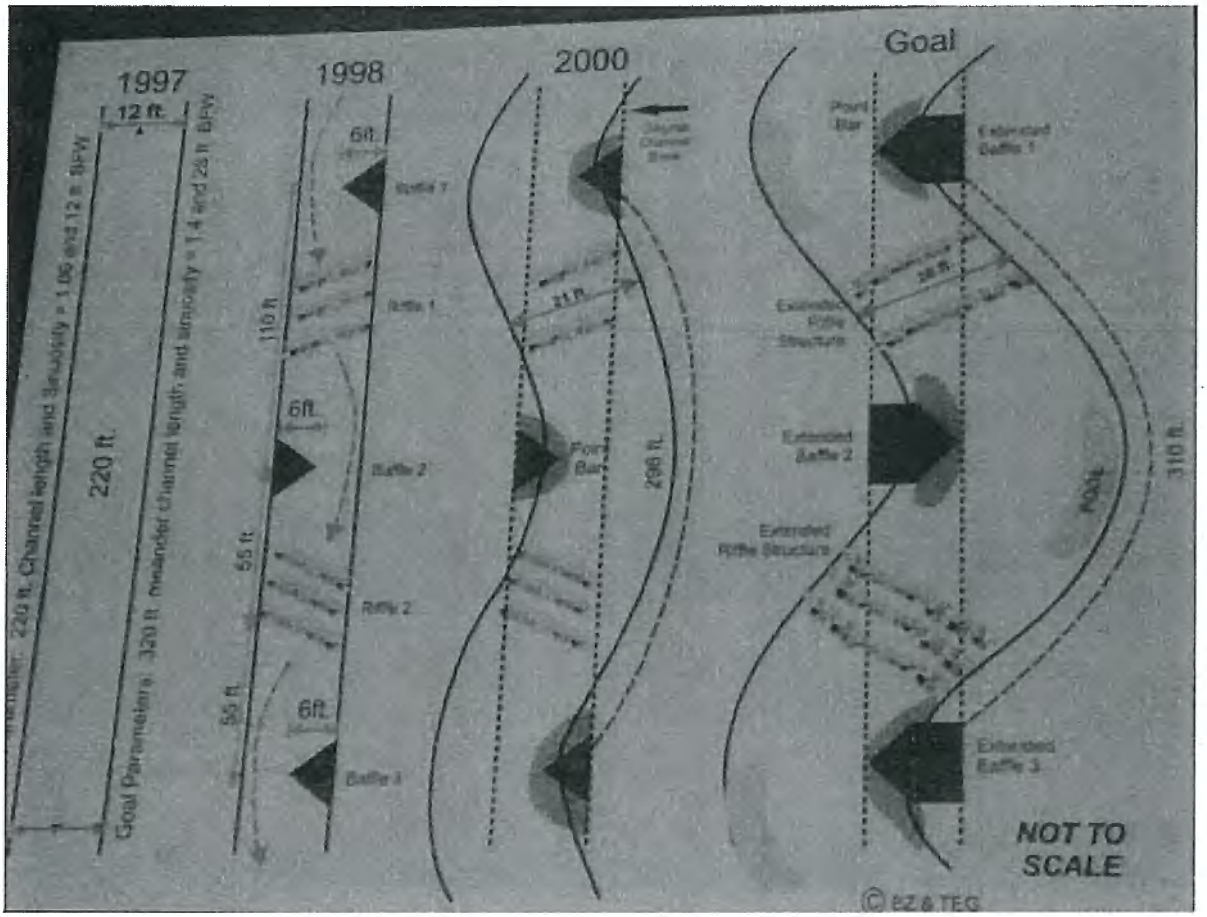
Generally fungi is the most lacking in agriculture soil. One cannot over apply compost tea. What can the forest teach us? No fertilizer and random water. Build soil that works the same.

Quivira Organization presented by Courtney White

A Sierra club member who wanted cooperation and change , who met a holistic management rancher that joined the Sierra club looking to show the environmentalists there was a way.

Grazing is important, areas left without grazing for years are less healthy than properly/holistically grazed.

Stream management; eroding streams (duration of flow is unimportant) are straight, narrow and fast. Desired streams are meandering, wide and slow. Book on stream mitigation, "Let the Water do the Work" by Bill Zeedyk



Key message; Do not build deflection or rock beds taller than 1 rock high.

jcourtney white.com

The Impact of Carbon Farming. By Richard Teague

Energy capture is the number one pursuit, followed by water retention, encouraging mineral availability, and creating Community dynamics/diversity.

Flexible stocking to match forage yield, whenever possible.

Long recovery periods 1graze a year might be too long, but 2 a year is probably too short.

10 years AMP (Adaptive Multiple Paddock) goes from 1% carbon to 10%, 1"/hour water absorbed to 8"/hour, 4x the forage production. Recommended one day or less of grazing per paddock.

Another speaker extolling that grazing cover crops results in net gain across all metrics.

High soil carbon and biological activity will result in equal yields to conventional and can/does exceed conventional yields.

(My note) No-till, high diversity, cover crops, livestock, long rotation.

Net sequestered carbon in livestock on continuous grazing is slightly net, AMP almost 10:1 sequestered vs emitted. 1 ton/hectares/year sequestered carbon is break even, AMP runs 3 ton/hectare/year.

Distance to water? 500 m from corner of pasture to water. Walking gains nothing.

Getting Youth/New Farmers on the Farm, hosted by Young Agrarians Alberta

"...the intention with which I farm goes well beyond the fences that border my farm."

"Agrarian apprenticeship" handbook is a valuable resource for those looking to host apprentices.

Lots of farmers are looking for successors; poll suggested 74% of farm land may be sold in the next 10 years.

"New agrarian immersion experience", "Registered apprenticeship in Organic farming." Are two programs available.

Holistic Management part of the Conference.

Look at recovery of pasture first, not last in planning.

10,000 BC the world was approximately 8 billion hectares in forest, 5 billion hectares in rangeland. Today the world is close to 3.5 billion hectares in forest, 4 billion hectares in rangeland, 1.5 billion hectares in crop and 4 billion hectares in desert.

The ocean is holding 38000 Gt (Gigaton)of carbon, the air has 4000 Gt and the soil has 2800 Gt historically soil held 3390 Gt.

The sun puts 342 watts per m2 onto our planet, 339 watts bounce back and out. The more we hold in the atmosphere or in soil (desert, bare soil) the hotter the planet gets. Residue reflects solar energy, keeps soil cooler. Think of soil litter like our skin and the protection to our bodies it provides. Day time temps aren't changing much it's the night time staying hot held in by haze, bare soil creates haze that holds that heat.

Increase energy retention with; closer row spacing, wider leafed plants, longer growing season (spring snow cover to fall snow cover).

Diversity is key, the Arctic/desert compared to rainforests, what produces the biomass/food?

Green House Gasses; 7:1 methane to carbon, but for every 1 kg of methane production 20 kg of carbon went into the soil under an AMP grazing system.

142 bushel/acre corn crop compared to 108 bushel/acre county average yield on holistically managed farm in North Dakota owned by Gabe Brown.

It's all management, livestock can be a tool for destruction or complete regeneration.

2% increase in SOM in 5 billion hectares over the world would get atmospheric carbon back to 300 ppm!

Extended grazing tips.

Be economically and environmentally regenerative.

Use/plant diverse species; plants that mature every couple weeks, diverse livestock to graze differently.

Diverse mixes in silage, cut a couple weeks earlier than normal, then graze regrowth in fall or swath graze.

Graze standing crop/stockpiled forage till full winter, then start swath grazing.

Electric fence weaning; anyway to eliminate changes/stressors other than weaning.

6' silage piles in the field and electric fence, move as needed to feed and keep from freezing, keep other feed/roughage available. One producer is moving away from silage but keeping some as a good "bank" of feed.

Another producer was bale grazing with silage pit, moving toward swath grazing felt it was cheaper.

All agreed despite its benefits, corn grazing had the highest cost, everyone was doing alternatives.

2-3 crop years then 5-6 years of forages in crop rotation.

Pays neighbours, 0 .50$ a day/pair on stubble if he has to do the fencing. 0.35$ a day if there's no water available.

Many are trying to lower grass fed cost to make the long finish time compare to feed lot higher cost/shorter time, are getting close, and able to have slaughter weight at 29-30 months of age.

New Farmers/Succession Planning.

Always get 3rd party advice. Everyone must be at the table every time, including 3rd party whenever anyone feels they are needed.

Keep in mind, attachment leads to expectations and older generation has to let go.

Paradigm shifts are required, change is the only constant. Party taking over the farm will run into lots of changes to preconceived plans too.

Relationships are key (the farm is not worth more than the family), personalities must be acknowledged, accepted, 3rd party help before and during, and even after.

Holistic Management motto; Plan, monitor, control, plan again.

Taking HM course together, everyone involved in the farm. Look for course that is 1-2 days at a time spread out over weeks.

Like a cover crop; HM group needs a purpose and a plan, diversity is good monoculture is bad, you need unity, with a right sized group there will be someone who knows "a guy", everyone has a role, you need a leader/chair, worst thing we can do is ostracize people.

Creating the rural urban regenerative, agriculture conversation.

$5 dollar coffee doesn't faze people, but $3 dollar organic carrots are too expensive. Perceived value.

Consumers need to feel (more) part of the products they are buying and the benefits those products represent.

We must concentrate on building the emotions connected to the food. Give the experience and your emotion (your awe) connected to the experience of producing the food and how much you enjoy eating the food.

Emotion and speech; the tone (emotion) has to project the joy and comfort of the product.

Benefits of Holistic Management. Presented by Don Campbell

HM is a decision making process. Decisions to care for people, land and make money.

HM is a movement not an organization.

HM financial planning; always plan for the future, set out profit(pay yourself), sort expenses and spend wisely, monitor monthly at the minimum.

Set the goal of half of the expense of an operation (cattle, crop, etc.) as the income. Achieving this will be almost impossible, consider 25% income goal, bump it up 5% each time you get close to the goal.

Shift your paradigm; you must focus on the land first not the profit from the commodity.

Double your lands ability to produce, will increase net profit 4.3x, makes 50% income look achievable.

The common vision for the operation cannot be overstated. Everyone must buy in and contribute.

(Again)Get help with inter generation transfer.

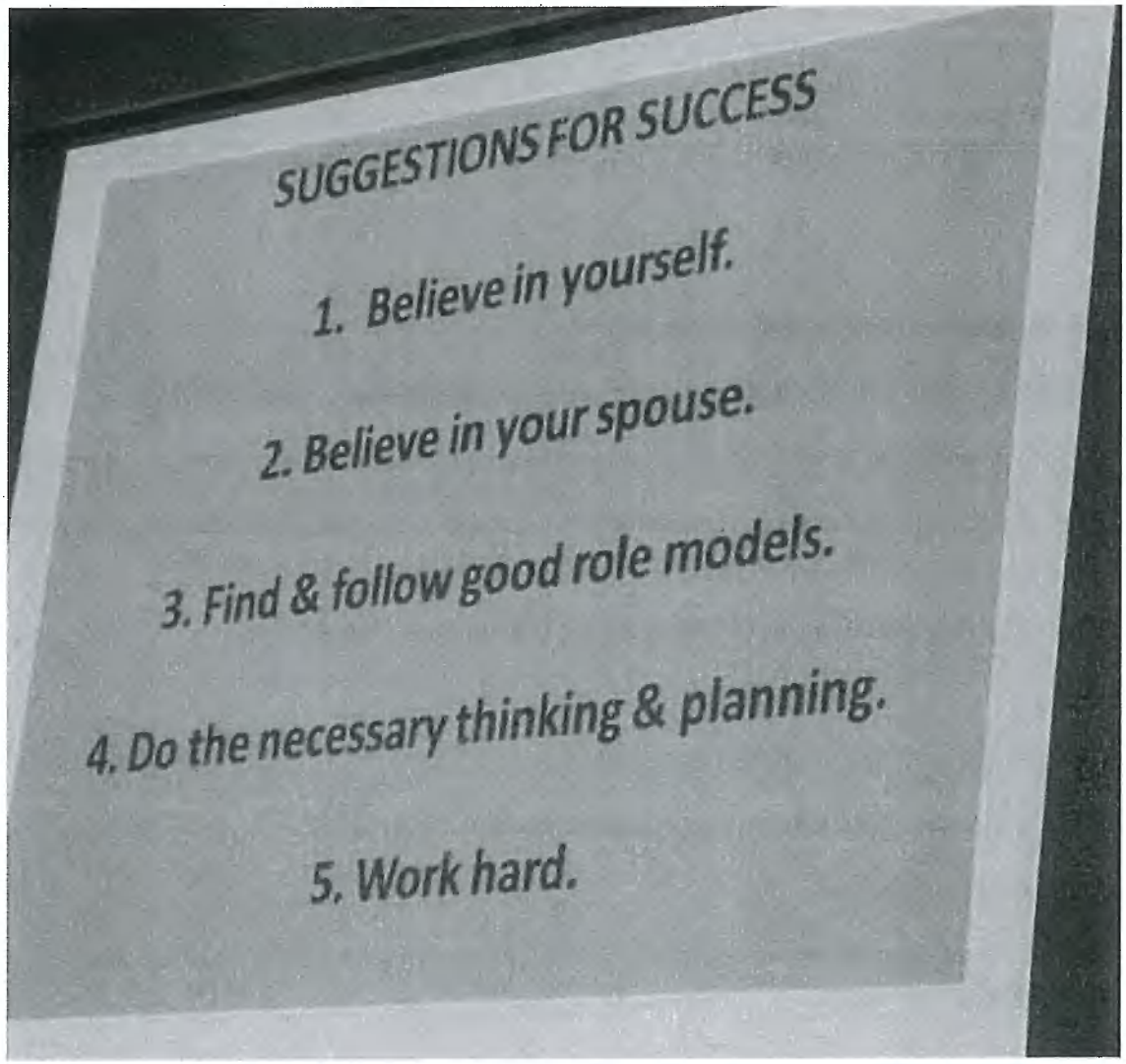
Communication; ask, understand, then reply. Consensus, not vote, those who hold out must present reasons, and the "farm family" must communicate and mitigate.

HM is and has to be a work in progress.

HM's four legged stool. Finance, production, marketing, people.

Don's favorite quotes; Circumstances reveal character not make it. Become a better person, make better decisions, be successful. Go home and strengthen family relationships. Find and follow good role models.

How you respond to the events of this year will dictate if this is the best year of your life.HM works, continue doing it, or start today.



Cows, Crops, Culverts & Fish: Heart River Watershed Restoration Plan Update
May 4, 2017, Nampa, Alberta

By: Garry Candy

Seminar was held in the Nampa and District Museum which has a very excellent indigenous and pioneer display.

The first speaker was Kerri O'Shaunessy: Cows and Fish is a non-governmental organization that helps landowners, municipalities and communities gain an understanding of how riparian areas keep a landscape healthy and increase productivity for the benefit of ranchers and farmers.

Kerri explained that a riparian area is recognized by the waterloving plants along wetlands, streams, lakes and sloughs. These plants are different depending on the type of water way that they surround.
They are ecologically and economically important because they:

- Filter runoff water improving water quality
- Trap and store sediments and protect banks from erosion
- Are a habitat for fish, wildlife, waterfowl and plants
- Provide shelter and forage for cattle, sheep, goats etc.

Trees, grasses and shrubs protect against erosion due to their deep binding root system. As the riparian area degrades, adverse results can include: algae blooms, decrease in water quality, loss of recreational activity and loss of wildlife in the area. The Arctic Grayling has been gone from the Heart River for the last 50 years. A well managed riparian area provides cold, clean water for fish and good forage with slough grass. In regards to crops, a healthy riparian area can reduce salinity in the field as well as trapping nutrients and chemicals from field runoff. There will be reduced erosion, increased soil moisture due to seepage, deep fertile soil and increased productivity due to increased pollination. It is recommended that these areas surrounding creeks, streams, lakes, etc. be kept in their natural state and minimize compaction by providing a buffer zone between the riparian area and cropping. In terms of cattle there needs to be a balance between need and forage supply. In sensitive areas, feeding should be delayed until nesting seasons are over. Directing cattle to other areas by providing salt and an alternate water supply is very beneficial as well as rotational grazing allowing the grasses to recover before end of season. Allowing a one to five year rest to the area can bring a riparian area back to original depending on amount of damage.

Adam Norris : Mighty Peace Watershed Alliance – spoke of importance of restoration of fish habitat remarking that it is land use that dictates the impact on water. Need to identify the issues: with erosion, runoff and accumulation of sediment and presence of pesticides, fish eggs do not hatch. The Mighty Peace Watershed Alliance along with partners: Alberta Environment and Park's Fisheries Association, Peace Country Beef and Forage Association, Smoky Applied Research and Demonstration Association and the Village of Nampa obtained a grant from the Environmental Damages Fund for the purpose of restoring the Heart River Watershed. The need is to address fish access through a weir and culvert repair as well as encouraging offsite watering. Beavers also play an important part in maintaining water quality, levels and flow. They are looking at the Grimshaw Gravel Site next providing culverts to connect to the water channel and encourage cropping setbacks and bank stablilization by:

- Expanding the riparian buffer
- Encouraging and planting native grasses, shrubs and trees such as willows

Jen from Peace Country Beef and Forage Association illustrated the 3 acre wetland enhancement undertaken with the cooperation of the landowner with a large cattle herd that grazed in the area in summer. The area was fenced to provide it with a rest period. Off site watering was provided and after a period of time, future grazing may be possible without damaging the site.

The Peace Country Beef and Forage Association Vegetation and Habitat Enhancement project was undertaken west of Nampa to increase wetlands and encourage waterfowl nesting and prevent cattle from grazing as it is a travel corridor for ungulates. Two berms were built to increase the wetland to 4 acres. Saplings and shrubs were planted and aspens cut down to promote suckering.

A Representative from ALUS (Alternate Land Use Services) from Northern Sunrise County was also present although she was not one of the speakers. However, she (Becky) encouraged participants to invite her to their municipalities to speak about ALUS and funding available. Works with landowners to set riparian areas aside and provides up to 50/50 grants to help cover crops as well as an ongoing per acre amount for the years the landowner agrees to keep the area maintained. They are working towards providing carbon offset payments.

The following is from the Alus.ca website:
ALUS helps farmers and ranchers restore wetlands, reforest, plant windbreaks, install riparian buffers, manage sustainable drainage systems, create pollinator habitat and establish other ecologically beneficial projects on their properties.
Here are a few examples of the kind of projects ALUS funds, with the kind of ecosystem services they provide:

- ALUS helps fund projects for expanded riparian buffer zones that provide critical wildlife habitat and improve water quality.
- ALUS helps fund projects for new, enhanced or restored wetlands that improve water quality and can protect communities against spring flooding and offset the impact of droughts.
- ALUS helps fund projects for new, enhanced or restored native prairie that enhances natural grazing, haying options, and critical habitat for species at risk.
- ALUS helps fund projects for pollinator hedgerows that provide habitat for native bees which in turn pollinate our agricultural crops and wild plants.
- ALUS helps fund many other types of projects that produce valuable ecosystem services.

Communities that are part of this effort include: Lacombe County, Northern Sunrise, Lac Ste. Anne, Wetaskiwin-Leduc, Red Deer County, Parkland County, Mountain View, Flagstaff, Brazeau and Vermilion River.

This was a very excellent presentation and very informative.

Submitted by Garry Candy

Surface Rights Workshop

Worsley, Alberta
March 29, 2017
By: Brian Harcourt

Speakers..Michele Del Colle, Fiona Leblanc, Angela Boraditch...

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Surface Rights Board--310 0000 (780 427 2444)
CAPP..(Canadian Association of Petroleum Producers) 1 403 267 1100.
Orphan Wells Ass...1 403 267 6416
www.orphanwells.ca or 1 855 297 8311

If you have "any" problems, call these people!!!

Solar Systems

Westmark Hall
March 15, 2017
By: Brian Harcourt

Speaker...Ron Harlan..

If you decide to look into a solar system,there are over 140 contractors in Alberta.
Go to--solaralberta.ca/directory/solar providers.
Solicit several quotes!!
A single phone call could answer most of your questions.
They will offer more information anyway.
You will be asked for info on your previous power bill,

make sure they don't "just" divide the KWh by the number of days of your bill, to come up with an electricity price, this is not the correct way.
One feature of a contractors presentation should be to offer to come to your residence to check out the site in order to offer a price.
Ask for the number of systems they have installed.
Ask for references.
Do they have a PV, (Photovoltaic) " installation certificate" for their company.
Length of time in the business.
Warranty.
Proof of insurance.
Proof of Workers Compensation.
Require a "complete" contract.
A solar system will add value to your home whenever you decide to sell...