Photo courtesy of Special Areas

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Grain, Grass & Growth

February 2016

www.chinookappliedresearch.ca

Ladies Calving Clinic

Body condition – Colostrum – Toes Down/Toes Up – Intervention – Tube Feeding – Bonding! Just a few examples of terms which were discussed during CARA's Ladies Calving Clinic Tuesday, February 2 at the Legion Hall in Oyen.

Calving time will soon be upon us. Although the miracle of birth and the survival instincts of cattle are amazing, calving time does have its complications and can be very stressful. A successful calving season typically requires support from everyone in the family and women play a very important part in many operations during this time of year. To support that participation, the Ladies Calving Clinic was developed to help take some of the stress out of the calving season. CARA's first clinic for ladies was held in Hanna one year ago and the great response encouraged a similar event in Oyen.

The discussions were led by Dr. Cec Ruschkowski and her husband John during late afternoon and evening presentations. The 90 ladies in attendance included experienced cattlewomen, those new to the business of calving and every participation level in between. Some travelled as far as 200 km to learn basic calving principles, dealing with problems as well as tips and tricks to keep calves healthy and reduce the stress during the coming calving season. Following the presentations on calving, everyone had a chance to practice tube feeding a calf, a task which many are uncomfortable with. Many thanks to Simon at the Acadia Colony for bringing the calf in and to John for prepping it.

A delicious supper provided by Lees Catering was enjoyed mid-way through the event and ladies had the opportunity to do a bit of shopping at Steeped Tea (Erika Haubrich); Val Evens's cute hats and headbands; Liz Westerlund's baking and Brianne Regier's wild rags.

Support for the event was provided by Growing Forward 2's Animal Welfare Delivery Agent program. A huge thanks to Dr. Cec and John Ruschkowski for sharing their knowledge and motivating discussion.

Growing Forward 2

Funding update

With the overwhelming applications and limited funding some Growing Forward 2 programs are currently closed until further notice. While Alberta Agriculture won't give a specific date to expect programs announcements, we can let you know which funding programs are currently accepting applications and which are not.

Irrigation Efficiency

This program helps producers invest in new or upgraded low-pressure centre pivot (LPCP) irrigation equipment for their operations, improving the efficiency of energy and water use on Alberta farms. This program has a 40% of eligible cost share for equipment upgrades up to a maximum of $5000; or $15,000 of the eligible costs incurred by the applicant for an upgrade from a gravity or side-wheel irrigation system to a new LPCP system.

The Growing Forward 2 Irrigation Efficiency Program addresses three key industry priorities such as
improved farm resource stability, improved production capacity, and improved public regard. Some examples of eligible projects include:

- pump modifications
- upgrades to high pressure centre pivot systems to LPCP systems
- addition of high efficiency sprinkler nozzles to existing LPCP equipment
- variable rate irrigation system components
- and upgrades of center pivot control panels.

You can complete yours online or hardcopy with assistance from a CARA staff member.

These programs may or may not become available in the future. The following programs are still closed to applications.

Livestock Welfare Producer
For implementing low stress, low hazard environments for livestock, such as upgrading corral systems.

Animal Health Biosecurity Producer
For livestock quarantine pens and rodent control for poultry, for example.

For more information on any of the growing forward 2 programs you are able to call CARA at 664-3777.
To get the most up to date information on program availability please visit www.growingforward.alberta.ca and click subscribe on your favorite programs.

Farm Management Advice Between Generations

From the February 1, 2016 issue of Agri-New

Alberta Agriculture and Forestry (AF) staff recently attended the Farm Management Canada Agriculture Excellence Conference in Regina.
"The young farmer bear pit (under 40), and the young at heart forum (over 40) were very interesting," says Rick Dehod, farm financial specialist, AF, Edmonton. "Conference participants broke into two groups and brainstormed on the top five things they wished that the other generation understood about their generation, and then provided their advice regarding the challenges the other group faced as farm managers."

According to the sessions, the top five things the young farmers (under 40) want their parents to know:
5. Make a plan - the younger generation wishes their parents understood their need to get a plan in place. A plan provides some certainty and understanding of outcomes.
4. Entitlement - the young generation wants their parents to know they believe their parents are entitled to a really good retirement. They want to ensure their parents are looked after.
3. Technology - the younger generation wants to try new technology and innovation. There are other ways of doing things!
2. Choice - the partner in the younger generation wants to be able to choose whether to have a career on or off the farm. The in-law could become actively involved in the farm business, but wouldn't have to.
1. Work-life balance - the younger generation wants their parents to know that they'd love to farm, but they also want vacations and time with family.

Top five things the young at heart (over 40) want their children to know:
5. Communicate more and communicate better
4. Figure out your expertise - it's ok to make mistakes. You can't do everything or know everything. Professional's don't know all the answers but seek information and assistance to strengthen those areas that farm managers need assistance in.
3. Farming is a business - you are a family first and you are in the business of farming.
2. Risk Management - start early and don't be afraid. Farming is a risk business; develop your skills and tools to mitigate those risks.
1. Plan both for succession and for the business. Years fly by quickly and before you know it you will be the manager who is looking to slow down or retire.
For more information, visit AF's Farm Manager website at agriculture.alberta.ca/ or Farm Management Canada's resource site.

Contact:
Rick Dehod
780-427-4466

What is Clubroot?

Clubroot is a serious soil-borne disease of crucifer crops in many parts of the world. The crucifer family includes vegetable crops like cabbage, broccoli, and cauliflower as well as field crops such as canola and mustard. In British Columbia, Quebec and Ontario, clubroot is a major concern for commercial vegetable producers. Clubroot is especially problematic because the pathogen persists in soil for many years, and cannot be controlled with crop protection products currently registered in Canada. Clubroot has the potential to be a significant threat to canola production in parts of Alberta.

How much yield loss will clubroot cause?

Research with canola indicates infestations approaching 100% led to 50% yield losses, while 10 to 20% infestations led to 5-10% yield losses. As a rough estimate, the % yield loss from clubroot is about half the % of infected plants.

What do symptoms look like in canola?

The causal agent, Plasmodiophora brassicae Woronin, infects roots causing irregular club-like galls that restrict the flow of water and nutrients to leaves, stems and pods. Visible symptoms on the plant include wilting, stunted growth, yellowing, premature ripening, and shriveled seed. Plants infected early in the growing season may appear heat or drought stressed. Crops that have finished flowering may have symptoms that from a distance resemble sclerotinia stem rot or possibly fusarium wilt. In most cases however, clubroot can be diagnosed with close examination of the root system.

Clubroot Disease of Canola and Mustard has good pictures of infected roots.

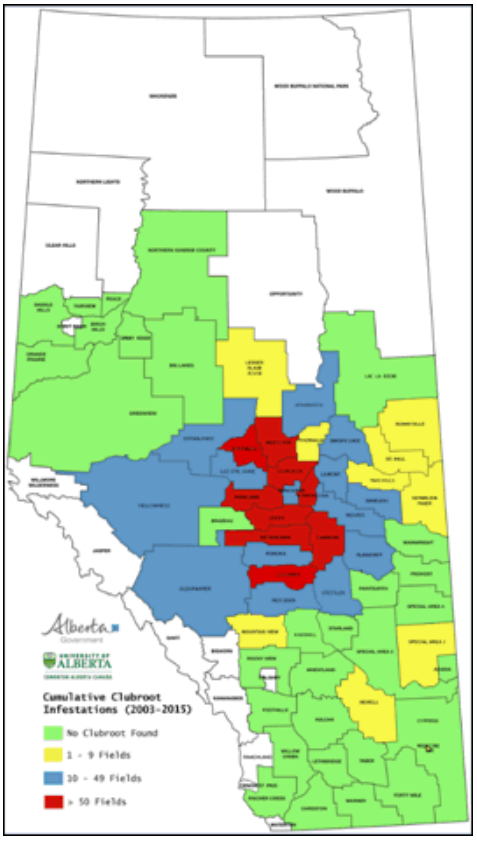
What is being done about the problem?

The threat of clubroot to Alberta canola growers is being addressed through regulations and research. Clubroot was added as a declared pest to the Agricultural Pests Act in April 2007. Alberta Agriculture and Food is responsible for this Act however, enforcement is the responsibility of the local municipality. Agricultural fieldmen (or appointed pest inspectors) have the power to enter land at a reasonable hour, without permission to inspect for pests and collect samples. The owner or occupant of land has the responsibility of taking measures to prevent the establishment of any pest on land, property and livestock and to control or destroy all pests in the land or property.

Control measures for clubroot are specified in the Alberta Clubroot Management Plan. It is important to understand that these control measures represent an acceptable minimum standard that is to be applied in all municipalities across the province. Municipalities, however, can adopt more stringent standards within their own jurisdictions.

Are there canola varieties that are resistant to Clubroot?

A clubroot resistant canola hybrid could be available to farmers as early as the spring of 2009. Although clubroot resistance could be a great new tool available to canola growers, producers should maintain realistic long-term expectations for how this tool fits into their overall pest management program. Disease resistance tends to break down with time as pathogens adapt to modified hosts, and this is expected to happen with clubroot resistance as well. Clubroot resistant canola, planted on land that is heavily infested with clubroot, will probably lose its resistance very quickly. A one in four year rotation of clubroot resistant canola in conjunction with good equipment sanitation practices should keep the pathogen at manageable levels. This will ensure that genetic resistance is maintained as long as possible and that canola can be a viable part of the production system. It must be understood that every time a resistant variety is grown is one less time that the same genetics can be used successfully in the future.



What strategies can be used to manage clubroot?

- Since there is no real cure for clubroot, prevention is the best management strategy - an ounce of prevention is worth a pound of cure.
- A long rotation between canola crops (1 in 4 years) is the single most important preventative strategy. Fields that have clubroot problems have a history of short (often 1 in 2 years) canola rotations. Lengthening out the canola rotation may reduce profitability in the short-term but the long- term gains will be substantial if the longer rotation prevents clubroot.
- Equipment sanitation. Clean dirt from equipment, including tires, when moving between fields.
- Avoid hay or straw purchases from regions where clubroot is known to occur or if infestation is suspected. Straw and hay could be carrying soil and the pathogen.

Once land is infected with clubroot, management strategies are more difficult and/or expensive

- Canola should not be seeded on infected land for 5-7 years. Research indicates that the pathogen can survive in soil for up to 17 years so a 5-7 year break from canola will not eliminate the problem, but keep the problem manageable.
- The extended rotation away from canola must also include diligent control of species susceptible to clubroot including volunteer canola, weeds in the mustard family, dock, hoary cress, orchardgrass, red clover, red-top, and perennial ryegrass.
- Minimize soil erosion with zero or minimal tillage. Since clubroot is a soil borne disease, the pathogen will move with wind or water-eroded soil.
- There is evidence that liming soils to pH 7 or higher will reduce the longevity of spores in the soil and/or disease severity

Check out the Alberta government website (www.agric.gov.ab.ca) for more information on Clubroot and for a management plan.

Value From Your Soil Test

From the February 16, 2016 issue of Agri-New

Most producers test their soils routinely every fall, after harvest or early in the spring. Information from these tests give you the knowledge to plan the following crop's fertilizer plan. How can you get the most return for this investment in testing? There are several ways to soil sample. The most common method of soil testing is the 0 – 6 inch representative sample. You take 15 – 20+ samples in a field, selecting various slope positions, to try and get a good average sample. From those mixed samples the field sample is taken and sent away, hopefully giving you a good average for the field.

Another approach is benchmarking. That is where you pick one or a few spots in the field, have it located on GPS and come back to that same location for samples every year. It doesn't give you an average but it can give you an idea as to how the field changes in nutrient levels, as long as you've picked a location that is average. That means it is not located at the bottom of the slope or right at the top but somewhere in the middle.

Using GPS, harvest records and precision agriculture has been gaining popularity lately where you try to correlate the harvest yields to detailed soil tests. This can give a more detailed picture of the ultimate productivity of the soil but requires several years of data to filter out the extremes from weather and vagaries of the crop year.

Different test labs have different procedures and you need to know what applies to your area and soils.

An example of this is the phosphorus test. The accepted, accurate test for phosphorus in the Canadian West is the modified Kelowna test. If your soil test lab is using some other test, it might be better suited to soils in Eastern Canada and may give a misleading result.
Macronutrients are the first thing you focus on from the tests. These are Nitrogen (nitrate), Phosphorus (phosphate), Potassium (potash), and sulfur (sulfate). There can be differences in how it is reported as it is often stated in pounds per acre or parts per million (ppm). If using ppm on a 0 – 6 inch sample, double the ppm to get your pounds per acre.

Micronutrients to look at are mostly just copper (Cu). Amounts below 0.6 ppm may show symptoms of deficiency. Ergot in cereals is linked to copper deficiency but the majority of the time ergot also occurs due to moist, cool conditions at head emergence. There is also a lot of hype promoting boron in

canola. If you feel it might help, try a few test strips in the field and measure the results at harvest. Other than copper, most fields in Alberta do not show any symptoms of micronutrient deficiency and will not provide a yield boost if micronutrients are applied.

Organic matter (OM) is an important gauge of the nutrient bank account in your soil. High organic matter soils are much more forgiving if you cut your fertilizer rates for a year. It can compensate by providing more nutrients if the year is wetter than expected. Conversely, low organic matter in soil leaves it more susceptible to nutrient deficiencies. Very low organic matter leads to structural problems in soil with crusting and poor moisture penetration. OM increases as moisture regime gets wetter so black soils contain more OM than the brown or dark brown soils.

Soil pH is a measure of acidity or alkalinity. It is best at neutral, 7.0 but most crops grow well from a pH of 5.6 – 8.0. Once soils become more alkaline (higher) than 8 or more acid (lower) than 5.5 you start having limited choices for crop type. You can adjust pH with the addition of some bulk fertilizer products but volume needed to change pH usually make it uneconomical.

Electrical conductivity is a measure of how many salts are in the soil. Too saline and you limit what crops will grow and thrive. High salt content in the soil prevents the normal operation of osmosis which is how the plant roots obtain water. An EC of 1 or less is good. More than 1 and some crops do not grow well.

There are other tests and measures provided on some tests but they have limited value for the average producer. Cation exchange capacity (CEC) lets you know how many cations the soil particles can have adhering to it. It is linked to the amount of clay in the soil. High CEC just means there is a lot of clay in the soil.

If you do apply some micronutrients or "special" wonder products, measure and compare the results to assure yourself that these products do add value. Make every fertilizer dollar add to profits and not just costs.

Focus on the information you can use to manage the fertility plan for the coming year's crops. If you need help with interpretation, call the Ag-Info Centre at 310-FARM (3276) you can also give Dr. Yamily Zavala a call at the CARA office for assistance in interpreting the results from the soil sampling. Watch for future development of CARA's Soil Health Lab.

Chinook Applied Research Association

2015 Highlights:

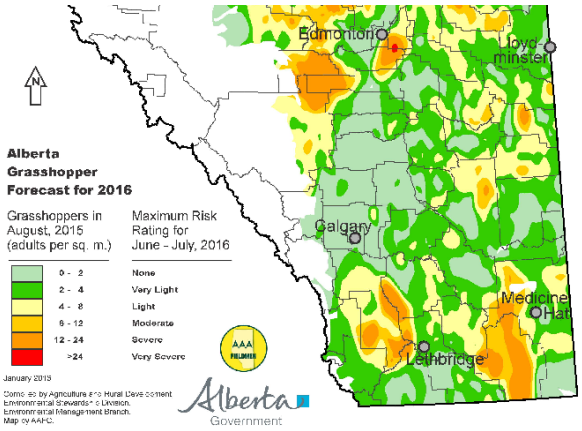
- Weather was the biggest story for agriculture in east central Alberta during 2015
- Several project sites were severely affected by drought conditions early in the growing season while late rains produced good yields at other sites
- Lots of interest from producers in growing cocktail cover crops both for grazing and soil health benefits
- 120 women attended our Ladies Calving Clinic February 23
- Successful Soil Health and Crop Field Day July 24
- Record turnout at Cattlemen Clinic November 17
- Joined ARECA partners in bringing international speakers to our area (Kurt Pate (Cattle Handling), Peter Donovan (Soil Carbon Challenge) and Dr. Christine Jones (Soil Health)
- Support from Alberta's Barley, Canola, Pulses and Wheat organizations helped bring key note speakers to local crop workshops in March (Drew Lerner, Merle Good, Mark Robinson, Lee Melvill, etc.) as well as crop demonstrations and studies to the area
- Promoted International Year of the Soil through 6 Classroom Agriculture Program presentations, Soil Carbon Challenge Field Day, Soil Health and Crop Field Day, ARECA's Soil Health Team and the Western Canada Conference on Soil Health
- Dr. Yamily Zavala opened the Western Canada Conference on Soil Health
- CARA bid farewell to Jesse Williams, Conservation Agronomist and welcomed new Conservation Technician Olivia Sederberg and Lacey Gould (Conservation Agronomist) back on a part-time basis
- CARA purchased various soil health monitoring equipment

2016 Grasshopper Forecast

The risk of economically significant grasshopper populations in 2016 has increased in northern central Alberta and the Peace region.

In some cases the populations in 2015 were very severe. Southern parts of central Alberta is highly variable with several areas that could cause problems in 2016.

The grasshopper risk had been increasing in southern Alberta for the last few years and although populations in southern Alberta are generally lower several areas remain with significant risk, notably in Fourty Mile (and parts of Cypress) and Willow Creek (and western Lethbridge) counties but the overall population in southern Alberta could translate into grasshopper problems if conditions are favorable in the spring.



Areas indicated with moderate to severe risk could experience problems with grasshoppers if environmental conditions favor the hatching and development of grasshoppers in late May through June. Localized factors such as light soils or south facing slopes result in an elevated risk of grasshopper infestations. Conditions in late spring 2016 will determine the extent of the grasshopper problems later this growing season. Infestation levels in individual fields are NOT indicated in this 2016 Grasshopper Forecast Map.

The 2016 grasshopper forecast map is based on adult grasshoppers counts conducted in early August of 2015 by participating Agriculture Fieldmen across the province. These adult counts give an indication of the number of adults at the end of the season that are capable of reproduction and egg laying. Environmental factors can result in higher or lower actual populations than forecast. Individual producers need to be aware of the potential risks in their area and monitor fields in order to be prepared to make the appropriate decisions to implement control measures.

On individual farms, particular attention should be paid to areas that traditionally have higher grasshopper populations. In addition, grasshoppers tend to lay their eggs near areas of green growth in the fall that will provide potential food sources for emerging young the following spring. Areas with early green plant growth such as field margins, fence-lines and roadsides are also areas that will give early indications of potential grasshopper problems.

If insecticides are needed, note label precautions regarding user safety, proper application techniques and instructions to reduce impacts on non-target organisms. It is important to remember that control measures are intended to protect the crops from economic damage and are never successful in totally eliminating grasshopper populations.

For more information on the grasshopper economic threshold, lifecycles, damage assessment , management strategies visit http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/prm15609

Livestock Predation

Special Areas Fieldman Livestock Lesson of the Month

Jesse Williams Special Areas 2 Ag Fieldman

Coyotes are the major source of livestock predation in the Special Areas, and should be a concern for livestock producers as they directly affect your bottom line. In Alberta, coyote predation on livestock is regulated by both the *Agricultural Pests Act* and the *Pest and Nuisance Control Regulation,* which declares coyotes to be a 'nuisance' species. For this reason, Agricultural Fieldman are authorized as inspectors under the act and can carry out the Coyote Predation Management Program (CPMP). There are several control methods that producers can use to minimize predation, particularly this time of year when calves and lambs may be beginning to hit the ground.

The Ag Fieldman of Special Areas recommend the best practices below to producers battling calf or lamb losses, listed in order of importance:

1. LIVESTOCK HUSBANDRY

The most valuable tool we have against predation is livestock management. By minimizing the conflict opportunities between coyotes and livestock we can create a fairly good defense system against predation.

(A) **Herd Surveillance:** First time calvers should never be left alone in an open range situation as they require much more surveillance as mature mother cows that have seen predation before. The daily (or more often) presence of a herd manager can also considerably reduce conflicts. This is even more pertinent when lambing.

(B) **Corralling at Night:** This may be more practical and important for lamb producers, but can be applied during calving season if necessary. Be sure to observe the livestock's behavior as herds/flocks that are repeatedly attacked by coyotes will show signs of nervousness and alertness.

(C) **Carrion Disposal:** This is HUGE! You should remove all carrion (dead stock) to a designated site away from your livestock. Coyote predation on livestock is a **learned behaviour** so it is imperative that you do not give coyotes an opportunity to develop a taste for your stock, dead or alive. Although it is difficult to bury deadstock in the winter, burial or incineration is ideal. At the very least, keep your dead piles far from your calving or lambing grounds.

(D) **Guard Animals:** According to Alberta Agriculture's Livestock Predation Manual, **guard dogs are the best tool for reducing livestock losses to predators**. The guardian animal should stay with the herd/flock at all times, and will require some investment including training, veterinarian care, feeding and housing. Common guardian animals include dogs, donkeys and llamas.

(E) **Fencing:** Success with this method will be varied and dependant on your situation. Net fences will deter many coyotes, as well as combinations of barbed wire and electric fences. However it is important to remember that the coyote's motivation and past experiences will affect their determination. In other words, if the coyotes know that calves or lambs on the other side of the fence have been an easy meal before, they will dig under any fence to get to them again.

2. SHOOTING & TRAPPING

This is also a very valuable tool in our toolbox against coyote predation and is highly encouraged. In Alberta, *any Albertan resident may hunt coyotes without a license throughout the year on land to which he or she has the right of access, except on unoccupied lands in the Green Areas, where hunting is only permitted during hunting season* (Alberta Environment & Parks). If you wish to trap coyotes, you need to be licensed and should speak with your local Fish & Wildlife Officer for more information. Coyote furs can also be redeemed for money from certain retailers, such as Hanna Building Supplies located in the town of Hanna.

3. POISONING

This is a last resort and should only be used when all other recommendations have been exhausted. Your local Ag Fieldman can issue Sodium Monofluoroacetate (Compound 1080) lethal tablets to be ingested by the coyote with bait, as part of the CPMP program. It is important to note that these pills are very dangerous, and can only kill one coyote at a time, and therefore are not nearly as effective as the above methods of control. If you believe you may be a candidate for 1080 tablets you should contact your Ag Fieldman and they will determine if they are viable option for your operation.

Not sure if it's a coyote? All wolf and cougar possible predations should be reported to your local Fish & Wildlife Officer. They can also help develop a plan to reduce the predation by the species.

Predation- What Species Was it?

	Coyotes	**Wolves**	**Cougars**
Feeding Habit	-pull and tear their meat, creating rough edges. -their bite is not powerful enough to break large bones.	-powerful bite of the wolf usually causes deep damage in the underlying tissue and can crush bones.	-when feeding on the meat, the cougar will chew off pieces, leaving clean-cut edges, different than the rough edges of a coyote who pull and tear their meat.

Predation- What Species Was it? Continued.

	Coyotes	Wolves	Cougars
Small Animal Attacks	-new born calves are generally attacked at the flank with the abdomen ripped open and internal organ eaten. They may also bite the calves on the top of the back. -the hindquarters and flanks are the target area for attacks on older calves, but there may also be damages at nose, neck, shoulders and tail. -in lamb predations, over 70% are killed by throat attack, which reveals many tooth punctures and much tissue damage and hemorrhage. Very young lambs are often bitten at the top of the skull.	-6 to 9 month old calves are the most common livestock prey of wolves. Lambs or other smaller animals are also attacked. -bites to the head, neck, back, flanks and hindquarters are common. Crushed skulls, severed spine and disembowelment are observed. -lambs are usually attacked at the throat, similar to coyotes but damage will be much more extensive.	-small calves, lambs or goats are usually killed with a bite to the top of the head, severing the spinal column.
Large Animal Attacks	-coyotes rarely attack adult cattle, preferring calves under one month old or lambs.	-focal point of wolf predation on mature cattle are hindquarters, including tail, thighs and rectal area. However the face, front legs, flanks and upper shoulders may also be attacked.	-larger animals are killed by leaping onto the back or shoulders of the animals and biting their neck. Claw marks are usually evident on the shoulders, neck and back. -blood, heart, lungs, liver and kidneys are usually eaten first through an opening behind the ribs.
Kill Site	-prefer to kill in the open near bush or under cover of a hollow, ravine or other rough terrain -only the head, skeleton and hide will be all that remain. Unlike wolves, coyotes cannot break and consume larger bones. -scattered bones, stomach contents and wool/hair are often all that remains at a coyote kill site.	-may carry or drag small prey away to be eaten, or may totally consume their prey at the site. -bones are often chewed and broken. -hides and other soft tissues are eaten.	-attacks generally occur in or near cover, allowing the cougar to approach within striking distance. -confined livestock are often attacked. -hides and other soft tissues are eaten.
Carrion Feeding	-it is often hard to determine if a newborn calf was killed by a coyote or if it was dead, then fed on by a coyote. However, feeding coyotes will usually begin with entry into the abdomen.	-wolves readily feed on carrion, especially during the winter months when food is scarce.	-cougars won't typically eat carrion, unless no other prey is available.

Local Fish & Wildlife Offices:

Hanna (403) 854-5540 Oyen (403) 664-3614 Provost (780) 753-2433

Alberta Environmental Farm Plan

The Environmental Farm Plan (EFP) is a free, confidential, and voluntary self assessment tool that allows agricultural producers to evaluate their current farm practices. On completion, each producer has an action plan to address areas of environmental risk.

The Alberta Environmental Farm Plan (AEFP) program began in 2003 and has been delivered by the Agricultural Research and Extension Council of Alberta (ARECA) since 2013.

- Since 2009, just shy of 2,000,000 acres of Alberta agricultural land has been covered by an EFP
- Approximately 13,000 Alberta producers have contacted AEFP about the program (24% of registered Alberta farms)
- Over 8,000 producers have completed their EFPs and received letters of completion
- The Potato Growers of Alberta was the first agricultural industry group to require its members to complete an EFP
- Lakeland College was the first Alberta post-secondary institution to complete an EFP

Benefits

- Access to funds, e.g. Growing Forward 2 program
- Increased operational efficiency
- Reduced farm costs (inputs) resulting in increased profit
- Expanding markets: many major purchasers require producers to have an EFP
- Reduction of risk, leading to better production and leaving a healthy farm for the next generation

For more information visit: www.albertaefp.com

Our 2015 Project Reports will be available in mid March for our CARA members. For those who prefer a digital version, please let us know. If you are able to pick up your report at the office to save mailing costs, it would be appreciated.

More of a Digital Person?

If you would like to receive this newsletter via email, please contact Olivia at cara-3@telus.net

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Membership Form

ARE YOU A CURRENT MEMBER OF CARA? A membership ensures you are on the mailing list to receive all reports, monthly newsletters, and admission discounts at CARA workshops/seminars. To become a member or renew a membership, simply complete the form below and send along with the appropriate fee.

Name: _____

Address: _____

_____Postal Code_____

Phone: _____

Fax: _____

Email: _____

Enclosed is: ___$20.00 1 year membership
___$80.00 5 year membership

Would you like to receive the annual report on a computer memory stick ____ Yes
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____ Yes I would like a receipt ___ No receipt please

Please add me to CARA's email contact lists_____Crop
_____ Forage/Livestock

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