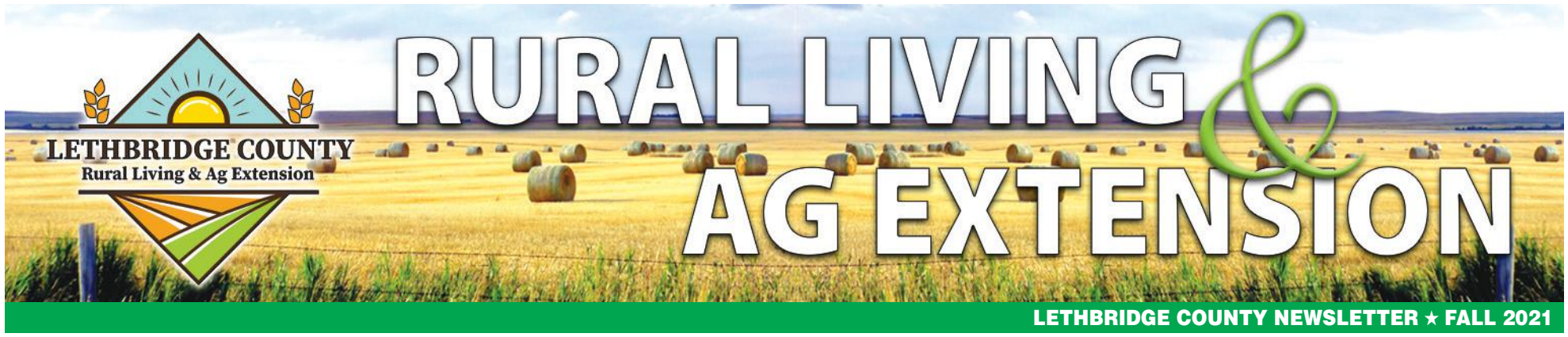


LETHBRIDGE COUNTY NEWSLETTER ★ FALL 2021

Ag Fieldman's Corner

The Agricultural Services Department has had a very busy growing season providing services that benefit local producers. Our work is focused on administering provincial legislation related to:

- Weed Control Act
- Agricultural Service Board Act
- Soil Conservation Act
- Agricultural Pest Act

With this year's drought conditions our programs needed to remain flexible to meet the challenges that come along with a dry season. Some weeds such as Kochia seem to thrive in this environment and extra control efforts by both spraying and mowing were necessary. Pest surveys revealed high numbers of grasshoppers in some areas that the County has not seen for decades. This trend will likely continue should dry conditions persist into next year. Soil erosion remains as a concern and such, Lethbridge County partnered with three neighboring municipalities and Farming Smarter to produce five articles to educate producers on the subject. A Level of Services document was passed at our fall ASB meeting which combined our ASB policies and sets a baseline standard for our services that citizens can rely on.

On this page you'll see statistics reported at our fall ASB meeting, which describe our activities so far this year. Be sure to access the links for more information on specific subject matter.

Sincerely,
Gary Secrist
Supervisor of Agricultural Services

2021 ASB Activities:

- Second cut of all gravel roads underway and focusing on snow trap areas. Hamlets, subdivisions, and paved roads also received a second cut. Roadside spraying done throughout the summer and will continue into the fall in thistle areas.
- Cemeteries mowed and weed whipped twice
- Annual grasshopper survey showed increasing numbers due to dry conditions
- High winds in winter/early spring caused several instances of soil erosion
- Seeding of drains and road construction done (includes rock removal, disking, mowing, and seeding)
- Park, playground, and shop yard maintenance ongoing, including regular equipment inspections
- Organized and acquired plants for donated floating islands in Broxburn Business Park, which will assist with water quality in the ponds
- Set up watering sites within the County's riparian areas for summer/fall use
- Regular reporting as required (Alberta Agroforestry Crop Reporting, Agroclimate Impact Report)
- Equipment rentals have been steady, including Brillion drill, plastic baler, and traps
- Published new Rural Living & Ag Extension newsletter for County citizens and producers

LETHBRIDGE COUNTY

Lethbridge County Agriculture Service Board

#100, 905 - 4th Avenue, South Lethbridge, AB T1J 4E4
Phone: 403-732-5333 Picture Butte ■ Fax: 403-732-4328

GARY SECRIST
Agriculture Fieldman

DEREK VANCE
Assistant Ag Fieldman

MATTHEW WELLS
Class 4 Operator, Agriculture Department

WHAT'S *in this* ISSUE?

Accepting Applications
- Agriculture and Food Sustainability Assurance Initiatives
- Efficient Grain Handling
- Emerging Opportunities
- Farm Technology
- Market Assurance
- Water
- Youth Agriculture Education

Not Accepting Applications
- On-Farm Value-added
- Value-added

If you have any questions, please call 403-732-5333.
https://cap.alberta.ca/CAP/Programs

The voluntary and free Environmental Farm Plan (EFP) helps farmers highlight their commitment to the land. The program covers an entire farm using a self-assessment tool to help the producer identify on-farm environmental risks. At the completion of the program, the farmer has an itemized list of improvements that can be made in their operation. Each EFP expires after a decade, at which time easily renewing the plan through the WebBook will keep the farm's EFP certificate current. The EFP is a useful tool for analyzing a farming operation and guiding improvements as time and resources allow.

Matthew Wells is the local technician who helps farmers implement the Alberta Environmental Farm Plan (EFP) in Lethbridge County. His role as a technician is to assist farmers to complete their EFP using their knowledge of the EFP program, the online WebBook software and the local environment of Lethbridge County. At any time during the process of completing an EFP, your technician is available to help answer questions, especially during the first two chapters and the final stages of approval of your plan. The EFP technicians are trained and willing to help you, so contact them today.

Call Matthew at 403-732-5333.

Development of the Lethbridge Northern Irrigation District

Submitted by: Belinda Crowson

Farmers trying to survive in the arid, windy environment of southern Alberta came up with a few different responses. One solution, which I wrote about in the last newsletter, was strip farming. Others, such as G.W. "Old Man" Pearson, promoted a different answer – irrigation.

Pearson's fight for irrigation in Lethbridge Northern area early in the 1900s. When Frank Oliver, Minister of the Interior, came to Lethbridge with Prime Minister Laurie in 1910, Pearson used it as an opportunity to present Oliver with a petition that encouraged the need for irrigation.

When Oliver later informed Pearson the irrigation project wasn't feasible, Pearson continued the fight and was soon joined by others, including G.R. Marnoch, president of the Lethbridge Board of Trade.

Many more came to recognize the importance of irrigation in the area north of Lethbridge in the years after 1916, when a period of drought and hot dry winds caused soil drifting and poor crops. The project finally started to move ahead and the Lethbridge Northern Irrigation was formally established in 1919. Construction on the district started in 1921, with Pearson breaking the first furrow for the big ditch. It took several years for the canals, reservoirs and headworks to be constructed, and by 1923, the Keho Lake Reservoir and water distribution systems were in place.

In some ways, the construction of the irrigation district was just the beginning. In 1923, there were only 256 farmers in the area and it became apparent more farmers had to be encouraged to move to the area. An advertising campaign was started and there were attempts to recruit farmers from the United States, England and Europe. Much of this didn't work. Then, around 1926, the idea was developed to encourage families to move from dryland farms to the irrigated areas. In 1926, 250 new families came to the area. C.J. Broderick, who worked ten years on the LNID project, described this movement in his manuscript: The Lethbridge Northern Irrigation District Historical Notes.

"The roads were filled with a variety of vehicles piled high with effects. Buildings were moved bodily, some cut in half, others broken into boards and sections. Cattle straggled far in the rear driven by eager-eyed boys and girls. Not foreigners, these people, just a group of Southern Alberta's own folks being re-established."

The newcomers to the area were supported with loans for building materials, feed and seed. Carloads of cattle, dairy cattle and sheep were brought in and distributed. A poultry campaign was offered where a select group of farmers were educated and supported in raising chickens. New crops were introduced, including sugar beets. To encourage farmers to grow beets, over the winter of 1928 farmers from the irrigated area south of Lethbridge who grew beets for the Raymond factory, were sent to the area to meet with local farmers at their homes or in groups at school houses. It worked.

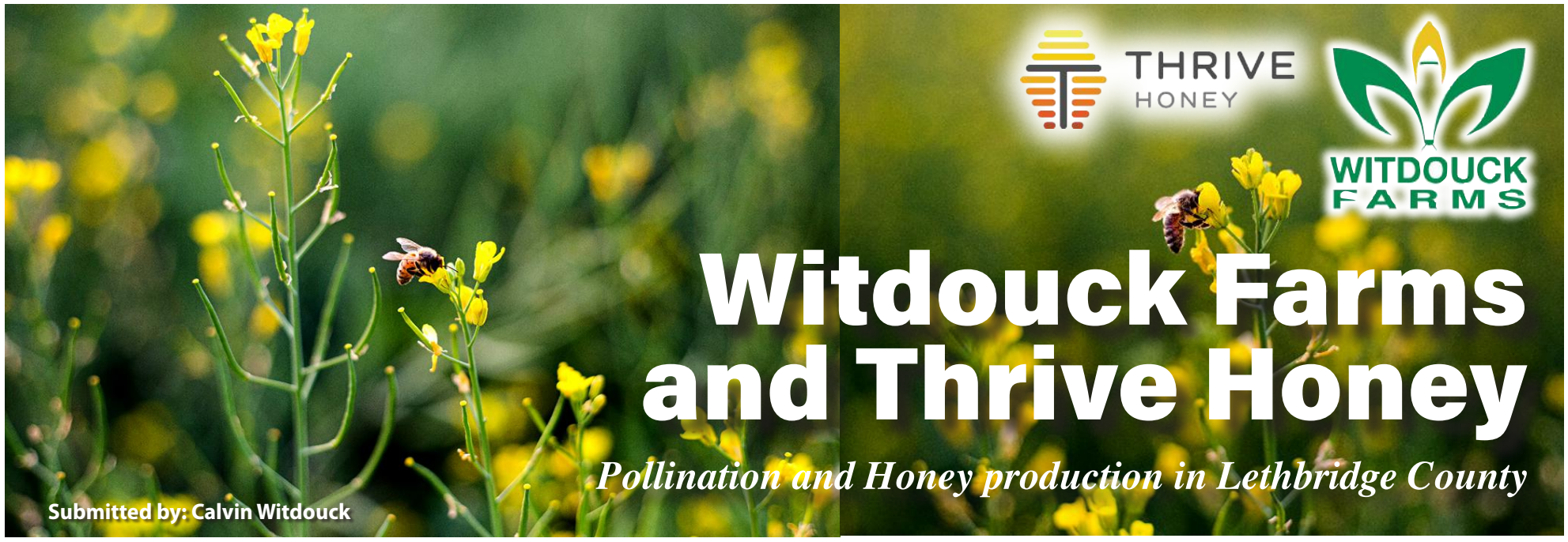
In the spring of 1929, 1200 acres were pledged to sugar beets and the factors were in play to develop the Picture Butte sugar beet factory less than a decade later.

By the end of 1930, close to a thousand farmers were living in the Lethbridge Northern district and their growing water need was in turn supported when the storage capacity of the irrigation district was expanded in 1930 with the construction of Park Lake Reservoir.

Within a decade or so of its beginning, the LNID was starting to dramatically change the area north of Lethbridge.

Photos courtesy of Galt Museum and Archives

Top: Automobile stuck from rising water in Keho reservoir, 1923. Bottom: LNID sod-breaking ceremony at Sauder's Camp on Albion Ridge in 1921. George Old Man Pearson is holding the reins, and Lieutenant Governor Robert G. Brett is holding the plow. In uniform is Superintendent R. W. Pennefather, Royal Canadian Mounted Police (R.C.M.P) and to his left is Premier Charles Stewart.



Witdouck Farms and Thrive Honey

Pollination and Honey production in Lethbridge County

Submitted by: Calvin Witdouck

Lethbridge County has established itself as a great location to be for the largest agriculture food companies and manufacturers in the world, canola seed companies are no exception. Many factors come in to play when these businesses decide where they should locate their facilities, some of the reasons why they are here is, irrigation, experienced seed growers, availability of pollinators, growing conditions, educated work force, attractive area to live and work, reasonable tax base and good infrastructure. Canola Seed is grown throughout all the irrigated areas of Southern Alberta and most of the seed produced is brought right back here to Lethbridge County for cleaning, treating, bagging, and distributing from the state-of-the-art facilities that these companies have built right here in the county.

Pollination is an integral part to the canola and alfalfa seed production that takes place in Southern Alberta each year. Witdouck Farms has been pollinating various crops in western Canada for many years. We manage and supply 2 types of pollinators to the area, Leafcutter Bees and Honeybees, we have been using Leafcutter bees since the late 1980s and expanded with Honeybees about 20 years later. Canola and Alfalfa seed are the 2 main crops needing pollination in Southern Alberta but there are various other niche crops that require their services as well. There are many different types of pollinators throughout the world, and some do a better job on certain plants or working environments than others.

Most people in Southern Alberta would know where leafcutter bees are pollinating because of the orange shelters (tents) you see in various flowering fields around the area. Leafcutters are a very safe and efficient pollinator

Honey Bee

Honey Bee

Leaf Cutter Bee

that work extremely well on Alfalfa and Canola seed production under warm to hot and dry conditions, they are the preferred pollinator of alfalfa seed around the world. Leafcutters are a small bee about the size of a house fly, they congregate as a group in their shelter but are solitary nesters, with each female having their own nesting holes. They do not travel far distances and will work flowers closest to their nest which is why we need to place them within the field and not just on the outside borders. They are a friendly little bee and do not sting or cause anaphylactic shock.

A Leafcutter bee's purpose is to produce a new generation of larvae, at the end of each season all the bees that were put in the fields for pollination will have perished and we collect the larvae and save for the following year. So, the crops that need pollination are used as the source of "cell" building material for their offspring. The female bee will fly from its nest in the tents to the field of flowers and cut pieces of leaf material or flower petals and return to its nest to place them in a hole, once they have done that, they will collect nectar and pollen and place it in the cell and lay an egg in it and cap it off with more leaf material. In doing this whole process they are pollinating the crop by transferring pollen from one plant to another which allows it to produce seed.

For Honeybees, the main goal is to maintain healthy hives for pollination and the ability to produce as much honey as mother nature allows. Honeybee colonies are alive throughout the whole year so the health of the hive is essential to their survival, we will make constant visits throughout the season to each location to check the hives, they are in those small square boxes you see in the corner of many fields during pollination. Honeybees can start flying in slightly cooler temperatures compared to Leafcutters so you will notice them out quite early in the spring. Honeybees are located on permanent sites where they can be ready in the springtime to pollinate all the various fruit trees and flowering plants in the backyards of the farms, towns, and cities. Early spring is a critical time for honeybees as they come out of winter, the bees look to find pollen sources to feed their hive from almost any plant they find. Any bee habitat in the county that has early flowering plants from trees, shrubs, flowers and dandelions in the ditches or pastures to flowers in the gardens, they are all very important to carry them through

Leaf Cutter Bee

until the flowering seed crops are ready to use them to pollinate. At the end of June and early July honeybee colonies from all over Western Canada are delivered into the canola fields of southern Alberta that require pollination, early August they are returned to there regular location until it happens again the next year.

Throughout the Summer we are busy collecting honey from the hives and packaging it up to sell. Next time you want to try some local honey give us a call @ Thrive Honey 403-738-4395. Alberta is the largest producer of honey in Canada and is known around the world for its high-quality, a lot of this honey comes from Lethbridge County.

FOOTHILLS FORAGE & GRAZING ASSOCIATION

– Innovation, education and regenerative agriculture

The Foothills Forage & Grazing Association, (FFGA) is a non-profit producer driven group that addresses issues, ideas, and innovations for forage and livestock producers in south central Alberta. The board of directors is currently made up of 11 volunteer forage producers from across the FFGA region. FFGA brings producers together by finding profitable and regenerative ways to produce forages and livestock.

We work with government and industry to keep producers up-to-date with innovations in the industry which FFGA then applies at the grassroots level in cooperation with producers. FFGA strives to bring practical information and production strategies to producers by hosting demonstration projects, events and workshops, hands on days as well as networking with like-minded producers and sharing information through our monthly newsletter and social media.

Formed in 1972 by a group of intrepid forage & livestock producers, FFGA is the oldest Forage Association in Alberta. We are part of a group of non-profit Applied Research & Forage Associations across the province who work collaboratively to drive competitiveness and profitability in Alberta's agriculture Industry. This coverage is essential in helping producers access relevant and practical agriculture research solutions to become more competitive globally.

We always welcome new members and look forward to meeting you at one of our many events. To learn more about membership, browse upcoming events or to learn more about FFGA in general please visit us at www.foothillsforage.com

FOOTHILLS FORAGE AND GRAZING ASSOCIATION

recycle bale wrap & silage plastic in Lethbridge County

Agricultural producers in the Lethbridge County area can drop off bale wrap and silage plastic, free of charge, at county waste transfer stations.

cleanfarms

Cleanfarms is piloting a manual compacting system that compresses these plastics quickly for storage, handling, and transport to recycling facilities. Locally designed and manufactured by Full Circle Plastics of Nobleford, Alberta, the compactors are accessible at each transfer site.

Scan to find a collection site & learn more.

Silage plastic

1. **Shake & lay flat** – Remove debris (spoiled silage, mud, ice); shake the plastic as you lay it flat.
2. **Fold into 4' lengths** – Fold the flat sheet of plastic into lengths that are roughly 4' wide.
3. **Fold into 4' squares** – Fold the 4' lengths into 4' squares to fill the base of the compactor evenly.
4. **Return** – Bring your folded sheets to a Lethbridge County collection site and lay them flat in a manual compactor.

Bale wrap

1. **Cut** – If needed, cut the bale wrap into manageable pieces.
2. **Shake** – Shake to remove large pieces of debris (hay, mud, ice).
3. **Fold** – For ease of storage, you may want to fold the plastic into manageable 4' square pieces.
4. **Return** – Bring your loose or folded bale wrap to a Lethbridge County collection site and lay it evenly across the base of a manual compactor.

Spread plastic evenly to make a recyclable bale.

Use one compactor for silage plastic and another for bale wrap.
Transfer station attendants are on-site to help with compactor use.

Cleanfarms.ca

403.942.6012 | 877.622.4460
info@cleanfarms.ca *@cleanfarms*

Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

Given the current COVID-19 situation, please call ahead to transfer stations for drop-off instructions.

GRAZING IN A DROUGHT

Small Tweaks Can Make a Difference

Submitted by:
Norine Ambrose, Cows and Fish

I was recently asked "What do you recommend for grazing riparian areas in a drought?" Similar to a lot of management, planning ahead and having contingencies in place, before, during and after drought, is the best way to build resiliency, but that ideal is not always possible.

In the immediate needs of trying to feed your cows, how can you reduce impacts and keep your pasture as healthy as possible? The most important thing to remember is that applying the four grazing principles still applies: balance supply with demand (leave enough behind); provide effective, growing season rest for plant regowth; plan livestock distribution (don't let the cows make all the decisions and hang out in their favourite spots); and avoid vulnerable times (spring, when plants are just starting to grow and soils are moist and compactable or late season, when livestock start to seek out woody plants for their nutritional value). If you push the distribution, timing, intensity or duration of grazing beyond the sustainable level of any pasture, then you might have some negative impacts that you will need to address in the coming years. If your 'take half-leave half', is more like take 85%, then the pasture will have little residual material to protect your soil from heat, hold water, or resist erosion. As a result, your production may be reduced and soil may be at increased risk of erosion—you will need to work on rebuilding plants and putting insulating ground cover back. If the pasture is heavily used in the fall or winter, and the willows, which hold the streambanks together, are severely browsed, you might need to avoid late season use in coming years to allow them to recuperate. Rebuilding these lost pieces is important for water quality, biological diversity and water storage.

Riparian areas, those moist shore, streambank and floodplain areas next to waterbodies, are often a place of stockpiled or abundant forage, producing from two to ten times as much forage as their adjacent non-riparian pastures. More and more producers are fencing off riparian areas to exclude livestock, enhance management control, improve water quality and provide fish and wildlife habitat; often, these areas will be emergency forage. Even riparian pastures which are intended for regular use, may get more intense use in a drought.

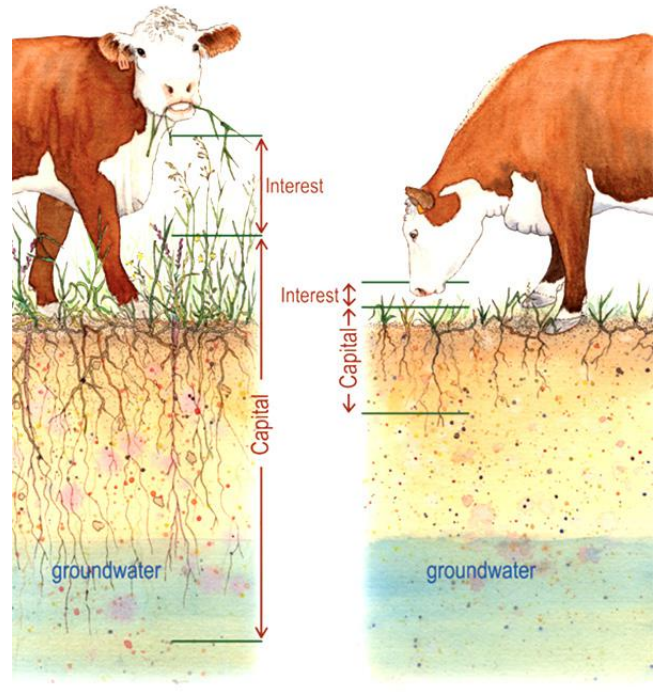
When you graze riparian areas, how can you reduce negative impacts? Off-site watering systems are a tool to improve distribution and reduce cattle lingering at the water's edge. Research shows about 80% of drinking by cattle occurs at the trough, instead of the waterbody, without a fence. To maximize its livestock distribution value, put the trough as far from the waterbody as you can. When grazing, waiting until moist soil areas are drier, or even frozen, can reduce hoof shear and prevent compaction, which could take many years to heal. If you provide plants rest from grazing in a drought, and plants have stopped growing because it is too dry, then they are not getting any rest, just as if it were winter and they were dormant. Providing rest in the subsequent seasons will be critical to minimize long-term impacts. Also consider how your livestock behave—having several gates means you can alter your entry and exit points and change loitering areas. Plan your next grazing period with these items in mind.

You cannot make it rain, but you can store scarce rainfall and snowmelt when it is available to create the best pasture possible. Start planning for the next drought now, by implementing practices that add resiliency wherever you can. Carryover (litter) and current season growth (future litter) are needed so you have the right stuff to help act as a sponge in the future, build soil nutrients and provide habitat. Just like the grass needs moisture to grow, your cattle need water to drink - but how can you increase water? Healthy riparian areas store more water, which can move back into the channel, but storing water by supporting "nature's engineers" is an option too. Beavers are a "love 'em or hate 'em" topic, but in this drought, water in beaver ponds has been a lifeline for many producers—providing both drinking water and increasing adjacent soil moisture for more plant growth.

Many years ago a cow-calf producer said to me "I'm not married to my cows." He knew there would be tough decisions at times and that he could rebuild his herd faster than he could repair damage to his pastureland, as he managed for healthy soil and grass. Whether that meant selling cows, buying feed or working with his neighbours to use up crop residue, he focussed on maintaining the land so it would not lose future productive capacity. This land stewardship ethic benefitted his operation long-term, making him more sustainable, while also benefitting water quality, wildlife and water storage. Even small tweaks to distribution or timing can be make a difference.

Photos submitted

HEALTHY IMAGES: *(Three pictures from left) Riparian areas produce abundant forage, compared to adjacent uplands, so keeping them healthy is an important for drought resiliency.*
UNHEALTHY IMAGES: *(The rest of pictures) With additional rest, both native and non-native plants have re-vegetated the previously exposed soil. Physical alterations to the floodplain and streambanks are visible.*



Magpie & Skunk Traps available

The Lethbridge County Agriculture Service Board (ASB) has magpie and skunk traps for use. Traps are free to use for County residents. ASB staff will deliver and pick up the traps as they become available. Please note that staff will not empty the traps, and the person borrowing the trap will be required to dispose of any magpies or skunk caught in the trap.

Traps can be booked by calling the
Lethbridge County ASB at (403) 732-5333.

Clubroot in Alberta

Clubroot is a serious soil-borne disease of canola, mustard and cole crops, and is a declared pest under Alberta's Agricultural Pests Act. It is not a new disease in Canada or Alberta for cole crops. However, since its discovery in the first canola field near Edmonton in 2003, it has spread to a number of counties in Alberta. Clubroot continues to spread and is a significant concern for Alberta producers.

Visit the following link to access further information on Clubroot and how you can help in preventing the introduction/reduce the spread of Clubroot in your fields.
https://www.alberta.ca/clubroot-pest.aspx

The Recycling Council of Alberta Launches Introduction to On-Farm Composting Guide

The Recycling Council of Alberta (RCA) has developed a guide for farmers, ranchers, and landowners interested in learning more about composting organic material from surrounding communities for use on their farms. The Introductory Guide to On-Farm Composting provides operational information from one farm that is already successfully processing community organic waste, as well as other suggestions and considerations for anyone interested in starting a similar operation.

Composting is the process by which materials biodegrade through the action of naturally occurring microorganisms. The resulting compost is used as a soil amendment to provide organic matter and nutrients for soil.

The Guide follows a case study of Central Alberta's Stickland Farms that has been processing food scraps and biosolids into nutrient-rich compost for its fields. It includes links to key documents and regulatory requirements, a site layout and overview of each processing area, benefits and challenges with different processing methods, tips on how to manage odour, and a summary of key nutrient benefits.

The benefits of composting extend far beyond the crop field. Through the diversion of organic waste from landfills, composting helps lower greenhouse gas emissions, replenish soils, revitalize water sources, and foster food security.

"We have traditionally looked at composting as a solution to a waste management problem. That approach is fraught with issues because we need a place for the resulting materials to go. Through this project, we looked at compost as a resource and where it is best used – on farms. Compost improves the soil and is a valuable resource for farmers," remarks the RCA's Executive Director, Christina Seidel.

"Composting is the ultimate example of a circular economy in a natural system," adds Christina. "The materials such as food scraps and yard waste generated in our communities can return to the soils to provide value to the environment."

There are approximately 2.2 million tonnes of organic waste sent to landfills each year by Canadians (Love Food Hate Waste, 2019). If Albertans diverted their food scraps to be composted, there would be an estimated 238 thousand tonnes of CO_2 emission savings annually — the equivalent of taking 52 thousand passenger vehicles off the road each year.

The Guide establishes basic information about setting up an on-farm composting operation, including the regulations to follow, and processes for managing organics. By applying compost, farmers can reduce the use of synthetic fertilizers, increase crop yields, and improve overall soil quality.

"Organic matter is extremely important to the health of our soils," shares John Paul of Transform Compost Systems, a key consultant on the project. "There are nutrient benefits along with the life compost creates within our soils. Compost balances pH, increases water retention and adds disease resistance through the formation of a healthy community of microbes."

The Guide is available on the RCA website, along with two webinars titled "Introduction to On-Farm Composting" and "Alberta On-Farm Composting Operators." The RCA has also launched a podcast with more details about the project and the overall benefits of compost. Learn more today at recycle.ab.ca.

This project was made possible by the Government of Canada and the Government of Alberta through the Canadian Agricultural Partnership.

What makes Alberta Farmers the Sweetest?

SUGAR BEETS!

We have just finished sugar beet harvest here in Southern Alberta. Many of you may have seen the trucks piled high with them moving from the field to the receiving station to be processed. Sugar beet farming is in the blood of many Southern Alberta farmers. The industry started on July 10, 1901, with a contract obtained by Jesse Knight, the Canadian Northwest Irrigation Company, and the Alberta Railway and Irrigation Company to purchase 226,000 acres of land to build a sugar beet factory in Raymond. It was slated to be open in 1903 and was secured with a pledge of $50,000. However, conditions were difficult, and the crop wasn't profitable so after 12 years and many concessions on taxes, the factory closed and was moved to Cornish, Utah.

However, Alberta farmers are persistent, and they knew they could grow sugar beets. In 1923, two boards of trade in Raymond and Magrath, courted the Utah-Idaho sugar company to build a plant in Alberta. Due to international restrictions over business ownership, a new company called Canadian Sugar Factories was born. In 1930 it was sold to the British Columbia Sugar Refining Company Limited. An additional plant opened in 1936 in Picture Butte and a third factory in Taber was built in 1950. Beets were growing across Southern Alberta!

In 1963 and 1977 the Picture Butte and Raymond factories closed, and the processing of sugar beets was amalgamated into the Taber facility. The name of the "Canadian Sugar Factories" was no longer relevant so it was changed to the "Alberta Sugar Company". Nowadays the beet sugar grown in Southern Alberta is packaged under the Roger's Sugar brand as Taber is the only sugar beet refining facility left in Canada. Our farmers in Southern Alberta are the sole source of 100% Canadian Sugar.

Currently there are close to 200 farm families that are growing sugar beets on 28,000 acres. This will be refined into over 120,000 tonnes of sugar representing 8-10% market share of the total sugar consumed in Canada. The remaining 90% is brought in as raw cane sugar from countries like Brazil, Vietnam, and Guatemala and then refined in Vancouver, Toronto, and Montreal.

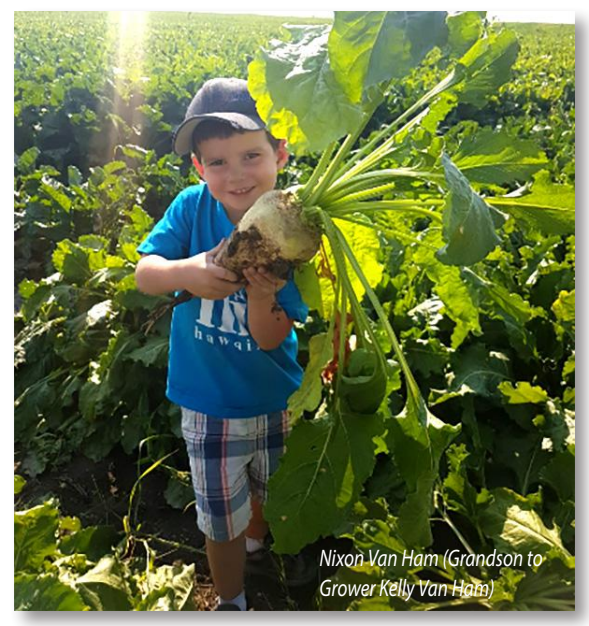
As a non-profit Marketing Board, the Alberta Sugar Beet Growers has a vision to ensure a sustainable industry that is progressive and innovative exists for future generations. While you may think sugar is just used for creating that sweet treat, there are a variety of other uses that the refined sugar and its byproducts are used for. Including feeding bees in both spring and fall, use of molasses in alcohol production, and the feeding of the pulp to the livestock industry. Further to that, ASBG is investigating additional uses including plant-based proteins, renewable fuels, and biopolymers as potential options for expanding the number of acres grown. There is an appetite to grow more sugar beets.

The recent irrigation expansion announcement from the Government of Alberta has great potential for the sugar beet industry as all the sugar beets are grown "under wheels". Sugar beets love hot days, cool nights, and water. Due to this the growing conditions in Southern Alberta are ideal. To try to maximize this investment from the government, the sugar beet growers are working on the creation of a Domestic Sugar policy. A policy like this would help prioritize the production of sugar made from sugar beets over that of imported cane sugar from the other countries and provide value across the whole supply chain including farmers, refiners, and service providers such as trucking companies that work in the industry. Canada is one of the only major trading nations that does not have a domestic sugar policy in place, which puts sugar beet farmers at a disadvantage to farmers in other countries who are highly subsidized. We hope to rectify that with this policy.

If you want to support your local sugar beet farmer, look for the Roger's Sugar bag in your grocery store and for a black stamp on it (not the UPC code) that starts with 22. If it does, that is sugar made from your Southern Alberta beet farmers and is 100% Canadian, something we can all be proud of!

Photos courtesy of Sergei Belski

Nick (Father) and Dirk Devries



Nixon Van Ham (Grandson to Grower Kelly Van Ham)

Recipe: Chocolate Crackle Cookies (From lanticrogers.com)

Ingredients - Dough:

- 1 1/3 cups dark or semi-sweet chocolate chips
- 1½ cups Rogers natural granulated sugar
- ½ cup Salted Butter
- 2 eggs
- 3 tbsp milk
- 2 tsp vanilla extract
- 1 ¼ cups all-purpose flour
- ½ cup cocoa powder
- 2 tsp baking powder
- ½ tsp salt

Ingredients - Coating:

- 3/4 cup Rogers Granulated Sugar (approx.)
- 3/4 cup Rogers Icing Sugar (approx.)

Directions - Dough:

1. Melt chocolate chips in a bowl until smooth. Cool slightly.
2. Beat sugar with butter in a large bowl until well combined. Beat in eggs, one at a time. Beat in milk, vanilla. Beat in melted chocolate.
3. Whisk flour with cocoa, baking powder and salt in a separate bowl. Mix flour mixture into sugar mixture until a sticky dough forms. Chill for 15 minutes or just until firm enough to roll.
4. Meanwhile, preheat oven to 350°F (180°C). Line baking sheets with parchment paper.

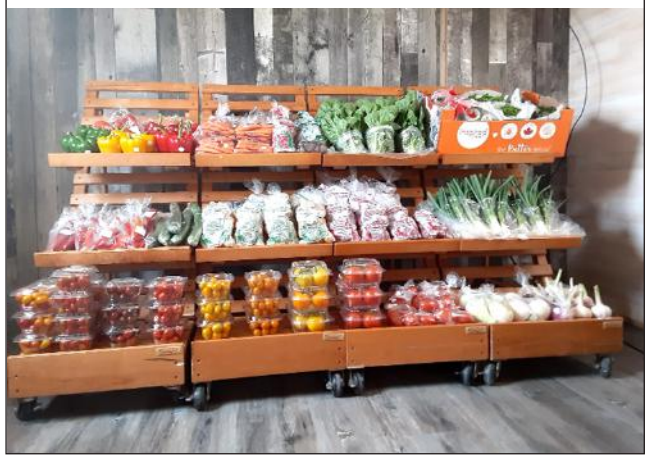
Directions - Coating:

1. Pour granulated and icing sugars in two shallow bowls.
2. Roll 1-tbsp portion of dough into a ball and roll immediately in granulated sugar to coat, place on prepared baking sheet. Repeat with remaining dough and granulated sugar, placing balls 2 inches apart.
3. Re-roll each ball in icing sugar and return to baking sheet. Bake, in batches as needed, for 12 to 14 minutes or until just set (don't overbake).
4. Cool completely on baking sheets.

Roots & Fruits

Hello all, from your new local county quick stop – Roots and Fruits. We are Albert and Angie Ploeg and are located 6 miles North of Coaldale on the busy Hwy 845 corridor. I grew up along this highway and have seen over the past 30 to 40 years how busy it has become. My husband and I recently thought of a way to take advantage of this and on the flip-side, help others along the way with it. We can provide our customers with some bare necessities, but also some unique items to make the road to and from work more exciting! We are conveniently located right along the highway so it is a quick turn in- grab- and turn out stop. We also live in an area rich in resources, making our store source local products, a win-win all around.

Roots and Fruits is a self-help store which runs on the honor system. There is the option of debit/credit or cash. This has worked well so far with very little glitches. We like meeting our customers when we happen to be in the store, but if we don't see you, we always appreciate your support and get to know you through what you buy. We offer a wide variety of fresh produce, some fruits, preserves (jams, honey, salsa, spaghetti sauce, BBQ sauces, pizza sauce), and also spices, blends, and coming soon, loose-leaf teas. One of the biggest challenges is to keep produce at its freshest before it sells, but we are starting to get a feel for what our customers buy and enjoy meeting each ones needs. Of course, with the changing seasons, our product will change also, Winter will bring new and exciting items again. What is my favorite item? Cinnamon Honey, our one item not local. Sourced from Manitoba, only because we haven't found anything comparable here. Our hours are Monday-Friday, 7-7, and Saturday, 8-4. Come and Enjoy! Follow us on Instagram @rootsandfruits2021



Lethbridge County Business Sporlight

We are Case and Herma Van Garderen. In 1999 we emigrated from the Netherlands to Canada together with our three children. We began farming north of Picture Butte Alberta in 2001, and in a couple years were able to begin growing grass seed. As time went on, we started to think about different ideas and approaches for our family farm which would allow us to bring a diverse aspect to growing our crops. During these years we were blessed with five more children who are all very included in the family farm.

Why: After 4 years of grasseed, we have to grow 2 years a different crop before we can grow grasseed again.

In those years, we tried out several crops and every time it became the time to sell it, we ran in all kinds of situations that after the crop was sold my husband never felt really satisfied and said he might as well just grow feed for the feedlots around us. I kind of jokingly offered to start selling the good wheat he grows and there the first seed for this adventure was planted.

I have been a stay-at-home mom all these years and helped with all kinds of jobs on the farm. 4 years ago, our youngest child was fulltime in school, I felt kind of lost. What am I to do now?

We had a bin full of hard Red Spring Wheat and a bin with Spelt Grain. A young baker heard about it and was wondering if we would start stone-milling so she could offer breads, baked with local grown and stone-milled flour. After some consideration we took the step forward and purchased our first small stone-mill.

That same year we went to the local farmers market to let the people know about our products.

This way I came in contact with so many new people and I loved the contacts I made and explaining what we are doing and selling.

I love my new "job", it gives me lots of joy to do this.

What: The year the gras seed is plowed, we have a "clean" field to seed. This way we don't need to spray the grains we grow for the mill. We have Hard red spring wheat, Hard White spring wheat, Red Fife, Spelt, Buckwheat and Rye (just combined)

We only sell grains we have grown ourselves. We are not officially organic but try to grow it the same way. After cleaning we store them in small bins, beside the mill, ready to be used!

We sell mostly our products in flour, but we also sell the grain kernels for consumption.

Why stone-milling?

It is an ancient way of grinding the grain kernels into flour.

The process keeps the grain cold. The cool grind preserves the full nutrition and the best taste of the flour.

We sell the whole product, all parts of the kernel are still in your flour, what makes it a true whole wheat flour. Full of healthy nutrients as Calcium, Iron, Vitamin B6, proteins and fibre. The flours are unbleached and do not contain, any additives or preservatives.

Where: We live 10 miles north and 1 mile east from Picture Butte in Southern Alberta

Why do we keep doing this?

After 4 years of milling, we came to a choice, keep it how it is, stop with the mill or try to grow and offer even more products to the people.

We chose the last option. We have bought a bigger milling stone; we are working with more businesses to expand our selling options. We ordered a dehuller so we can start selling oats and buckwheat grouts. We hope this machine arrives at the end of September and we can have it up and running by November.

My husband is the one who takes care of the milling, and he really likes to make a good product and I take care of the packaging and selling.

We hope we can establish a little business in our farm business, what we can keep doing even into our retirement.

Some facts:

- All our own products
- All nutrients and vitamins come from the grain
- Stimulated by the Dutch windmills
- Fresh milled flour
- No additives
- Non-GMO products
- No chemical use
- Small farm business
- Your bread will have a real grain taste
- Full of fibre

Cleaning Water through Natural Processes

– *Floating Islands and Phyto-remediation*

What is a Floating Island?

The floating islands associated with cleaning water are simply a floating platform that allow plants to grow on the water surface with their roots reaching down into the water. The reason we use floating islands is situations where water levels fluctuate too much for shoreline plantings to be effective, or in cases where the treatment requirements are too great for the amount of shoreline plantings that are possible. A good example of this is dugouts that get drawn down, storm water ponds with fluctuating levels, and mine settling ponds that have inlets and outlets that allow water to simply transit through the pond with low retention time. In these cases, increased treatment area is necessary. An effective floating island will have a platform with a growing medium that effectively promotes both vascular plant growth as well as microbial growth in the growing medium. The floating island is all about the plants and what they do, not the island itself. A good island is simply the growing location of the plants that do the real work.

A Canadian Solution to a World-Wide Problem

In Alberta we have home grown technology with a patented floating island design developed for our climates by GP Restoration Solutions Inc. and Tannas Conservation Services Ltd. These islands are developed for cleaning up contamination in stormwater ponds, agricultural water, and settling ponds. These constructed islands are built for flexibility and to maximize plant and microbial growth using organic growing mediums. They are interlocking allowing easy movement from one location to the next yet interlock to create large islands. In addition, they do not have foam that can be broken apart by wildlife leading to the degradation of island and contamination of the water but instead the floatation has a hardened case for durability with all natural growing mediums such as peat, hemp and coconut fibres. These unique islands have been used in mining, storm water facilities, research programs as well as dugouts.

Sterile is Not Good

Open sterile ponds with no living organisms are not natural and do not result in clean water. Instead, these ponds gather nutrients, metals, hydrocarbons, and other contaminants over time and concentrate them. Contaminated water can become toxic and kill plants and animals. However, wetlands are known to be nature's filter and many of the plants and micro-organisms that naturally occur in wetlands are specialized in cleaning up excess nutrients and other contaminants that enter the wetlands. Harnessing this power allows us to passively clean our water so we can use it for other purposes.

The plants and bacteria within the island become food for larger organisms and many of the common contaminants found in water are naturally used by plants and micro-organisms in their own growth. This in turn becomes food for other organisms and an entire food chain can end up built off of these floating islands. Testing of specific contaminants becomes important as some contaminants need to be removed (heavy metals) while others (nutrient loading) can be allowed to naturally be removed in the food chain. As we design each project, we look at the most natural and passive way to remove contaminants from the water.

Plants installed on floating islands should be specifically chosen for their capacity to remove specific common contaminants within these ponds. In agricultural settings the main contaminants are related to manure and fertilizers (nitrates, ammonia, phosphorus, sulfate and potassium). Not all plants are the same and each native species has unique requirements for growth. Utilizing this information about each plant it is possible to significantly increase the efficiency of a floating island by choosing the most appropriate species for the local environmental conditions. Currently Olds College and Tannas Conservation Services Ltd. are conducting research into the removal of these common nutrients from ponds at feedlots and dugouts. In our controlled Greenhouse depletion studies, we have been able to effectively remove nitrogen (20-45%),

phosphorus (77-84%), and potassium (27-45%) from water. In additional mining research we have been able to remove up to 35% of selenium transiting through settling ponds and over 90% removal in greenhouse trails. This critical research being conducted at Olds College will allow for us to effectively select the most effective native plant species for phytoremediation both on floating islands and shoreline installations. The best preforming species include Carex atherodes, Juncus balticus, Carex aquatilis, and Typha latifolia. Depending on the environmental conditions of the ponds being treated different species should be selected to adapt to the unique growing conditions of each location. The use of native wetland plants from western Canada to treat contaminated water has significant potential for agriculture, municipalities and industry. Although there is an initial installation cost, the long-term costs are generally low with this type of passive water treatment system.

Future Potential:

Currently GP Restoration Solutions Inc. is testing nesting islands for geese and there is a potential for nesting platforms to be incorporated into floating island systems to provide nesting habitat while directing birds not to nest on the treatment islands. These islands are found in our installation in the City of Lethbridge as well as at Cremona AB and Didsbury AB. Other future uses may be incorporating the islands into gardening platforms and for ornamental uses while still cleaning water. We have focused our island design so that they are built and planted at our facility and simply have to be launched on site to minimize complicated installation requirements.

Steven Tannas PhD. P.Ag
President: Tannas Conservation Services Ltd. / GP Restoration Solutions Inc.

BISON

– A Bright Future –

Submitted by:
Terry Kremeniuk Executive Director,
Canadian Bison Association

Millions of bison roamed the plains of North America that were driven to near extinction in the late 1800s. Through the dedication of bison producers, conservationists, First Nation leaders, and government officials, the North American bison herd has been restored to nearly 500,000 head. Almost 200,000 of these bison are on Canadian ranches, federal and provincial parks, First Nation communities, and on land owned by non-government organizations supporting the growth of the bison herd. This bison recovery is one of the greatest conservation stories in recent history.

Although bison roamed the plains of North America for centuries, the Canadian commercial bison industry is scarcely 50 years old. Bison evolved over centuries in our diverse climate and topography. They have many advantages when compared to other livestock. Bison live long productive lives with many cows producing calves for 20 years or more. They do not require artificial shelters and calving rarely requires human intervention. Winter feed requirements are less than those of cattle as their metabolism slows during extremely cold temperatures. They are economical foragers and do very well with adequate pastures and fresh water. They are hardy animals and are disease resistant. Although sturdier facilities are required to handle bison, with a good understanding of the animal they can be handled efficiently.

Photos provided by Turtle Valley Bison

The Lethbridge area is an important part of bison history, the commercial bison industry, and the Canadian Bison Association. In March of 1982 a group of some 100 visionaries met in Lethbridge, Alberta for the inauguration of the Canadian Buffalo Association. "The growth in numbers of buffalo owners in the past few years has been tremendous and the need was felt for a national organization to promote and market buffalo and buffalo meat" stated Morris Johnson in the April 1982 edition of the World of Beef and Stockman's Recorder.

On March 6, 1982, the Canadian Buffalo Association held its first sale hosted by Perlich Brothers Auctions. Prices averaged $875 for 1981 heifers and $775 for 1981 bulls. Two-year old heifers averaged $1,370 with the top two-year old bull selling for $1,450.

In 1982 it was estimated that there were about 175 bison producers in Canada. Of those producers 54 became members of the Canadian Buffalo Association. Membership grew steadily and fluctuated as the industry evolved. Today there are 565 members. The 2016 census (the 2021 data will be available in 2022) reported 119,314 bison on 975 Canadian farms. Of these, 445 bison producers with 54,907 bison or about 46% of the national commercial herd are in Alberta – many of them being in Southern Alberta.

About one-third of the bison produced in Canada are processed in Canada – a majority in Alberta with the remainder being exported for processing in the United States. Bison processed in Canada serves the domestic, European, and the US markets. Some Canadian bison is processed in the U.S. and is returned for the domestic market.

Farm gate marketers continue to play an important role in serving local markets. With the consequences of COVID-19, many consumers reached out to local producers to ensure a supply of red meat. This has increased the bison processing for local markets.

Bison is a truly North American red meat with a nutritional profile that fits in perfectly with today's trend for a healthier, more natural diet. Canadian Bison are raised without the use of growth stimulants, sub-therapeutic antibiotics, or animal by-products. And because Canadian herds are remarkably healthy and disease free, they seldom require treatment. They spend much of their life grazing on forage - some producers finish their bison on grass while others finish on grains.

Bison meat contains the "essential fatty acids", linoleic (omega - 3) and linoleic (omega - 6) fatty acids. These substances are necessary for us to eat but cannot be made in our bodies and are thus, commonly lacking. Their function is to assist the formation of cell membranes, aiding in the production of hormone-like

compounds, and participating in immune and visual processes. Omega 3 fatty acids have been shown to help fend off Alzheimer's disease and reduce the likelihood of heart attacks.

Bison meat is a great natural source of bio-available iron. The high iron content in bison meat helps boost energy and increase endurance by improving the blood's capability to transport oxygen and carbon dioxide to and from body cells. Bison has what most nutrition conscious people want, lots of iron and less fat.

Bison tastes great as well. Today, more than ever before, a growing number of people are experiencing the sweet richness of bison meat. Becoming increasingly more popular in restaurants and dinner tables, bison is regularly part of a memorable eating experience.

Fresh and frozen bison products are more available than they have ever been. You can purchase bison from you're a local farm gate marketer or from most major retail chains. You can get more information about "where to buy" from the Canadian Bison Association website at www.canadianbison.ca

FALL UPDATE

from the Lethbridge Northern Irrigation District (LNID)

This irrigation season, seems like it has rapidly gone by with not a lot of glitches, even with all of the external challenges. The District Office door is still locked; however, the District continues to be available by appointment to assure that the District accommodates any matters the Water Users may have.

The District's construction crew is underway, actively installing Phase 2 of the 3,200 acre gravity pipeline project, known as Lateral H1 and the plan is for the construction and installation to be completed by January 2022, weather and ground conditions permitting. The second gravity pipeline project called Lateral J1 with approximately 2,900 acres is planned to commence in January 2022, and as well, be ready for irrigation in the Picture Butte area for the irrigation season. It is rewarding to be able to eliminate a number of on-farm pumping systems and utilize gravity pressure to run the irrigation systems.

The District continues to move forward with its Capital Project Plan as well as maintain the existing infrastructure and in doing so, continue to gain efficiency in delivering irrigation water.

The District is now accepting applications, until December 31, 2021, for the purchase of Water Rights (irrigation acres) on parcels with existing irrigation acres. Application forms and information can be found on the LNID website at www.lnid.ca.

On a financial note, the District has now added the Royal Bank of Canada (RBC) and the TD Canada Trust to the existing list of payment options.

The District's Annual General Meeting is planned for November 23, 2021, 1:30 p.m., at the Coalhurst & District Community Centre; subject to the COVID-19 restrictions. Please contact the District Office or check the District website in advance to confirm that the planned meeting will still occur. If you would like a copy of the 2020 Annual Report, you can view it on our website at www.lnid.ca, or contact the District Office for a copy.

The Board and Staff at the LNID wish all Water Users a "Happy & Joyous Holiday" and we look forward to working together in the New Year!

Fall Construction by SMRID in Lethbridge County

The St. Mary River Irrigation District tendered out 2 pipeline projects in Lethbridge County for construction in the fall and winter period of 2021 / 2022. In total, 24 km of pipe will be installed by local contractors with a total budget of $18.85 M to complete the supply and installation. The District has accessed stimulus monies through the Alberta Irrigation Modernization Program with the Province contributing 30%, the Irrigation District 20% and the remaining 50% financed through the Canada Infrastructure bank through a long-term, low interest loan.

These modernization projects conserve water and improve conveyance efficiencies by eliminating losses from seepage and evaporation, as well as water that is tailed out at the end of canals.

SMRID's Jail Lateral pipeline is located just east of Lethbridge Research Station and will rehabilitate approximately 4.8 km of concrete lined canal. The existing canal liner was in a deteriorated state and required immediate repair or replacement. A smaller pipeline, Chin 2-2 was also included as part of the project, with LW Dennis being awarded the job and scheduled to start work immediately after water is shut off in early October. In total approximately 9 km of IPEX pipe ($1.4 M value) was ordered for the Jail Lateral pipeline project, manufactured by IPEX at their facility in Edmonton.

The Whoop Up Lateral canal is located southeast of the Lethbridge airport and replaces approximately 12 km of earth lined canal. This is one of the SMRID's older systems and also is in a deteriorated state and is need of repair or replacement. SMRID is also including a smaller, adjacent system as part of the project (Main Canal Lateral 7) so in total we are replacing approximately 14 km of canal. Main Canal 7 also has canal with concrete liner that is damaged and contributing to seepage losses. Approximately 15 km of pipeline is being installed ($3 M value), also ordered from IPEX pipe. The project has been tendered but not yet awarded to a contractor. Engineering for the Jail Road and Whoop Up Laterals is being completed by Wood Engineering.

In addition to these 2 projects, the last phase of the Cameron Lateral pipeline is also being worked on concurrently by MPE Engineering and if the design can be completed, the SMRID would also like to do an additional 5-6 km of rehabilitation on that project this winter.

Executive Director's Message

Farming Smarter

Innovation is hard

Particularly to define

Submitted by: Ken Coles,
Farming Smarter Executive Director

Ken and Trevor calibrating a plot sized Valmar to apply Edge and fertilizers. Photo by Ken Coles, Farming Smarter Executive Director

You know Farming Smarter for its field-tested work, its agronomy research, its custom trials, and its farmer extension efforts. We're proud of what we do, and we know where we're going. But as any business leader knows, sometimes it pays to stop and really look wholistically at your organization. This summer, we invested effort into articulating Farming Smarter's reason for being and our operating mandate.

We wanted to clearly define our direction and our role in both agriculture and the research community. Alongside our ultra-busy, farmer-centric, project-based efforts, we spent time – in fact, a whole lot of time – developing a clear and purposeful Brand Promise: our promise to you as producers about the work we do on your behalf and our definition of Farming Smarter as an organization.

Because of our roots, people typically think of Farming Smarter as an applied research organization. In the early years, partially due to our smaller capacity at the time and partially because government better funded pure and academic research, we truly were an applied research organization: our projects tended to be relatively small and entirely production and extension related.

Today, however, our goals, projects and investment go far beyond applied research. We still prioritize farm-applicable and practical projects, but our primary goal centres on helping farmers innovate to best meet the changing realities of farming now and into the future.

As we worked through developing our brand promise, we ran up against a challenge: exactly what is innovation? I have a love/hate relationship with the word innovation. On the one hand, it's become an overused word that, in many cases, has lost its meaning. On the other hand, we knew– if we could just articulate it correctly - it describes a critical part of Farming Smarter's culture.

There's an interesting YouTube video about innovation where the presenter compares a high-tech robotic dog to a living, breathing mule. At first glance, she says, the robotic dog seems much more innovative: after all, it's complicated, tech-based and new. But, she then points out, the mule is functional by nature; it requires no high-tech programming or parts; its ongoing operation requires only some green grass and water; and anyone can work with and gain value from it. In fact, the mule is an incredible innovation of nature that can likely out-compete the robotic dog in almost every trial.

I absolutely agree with her point. True innovation isn't just doing something in a new way or inventing something to change for the sake of change. It's doing something in a new way that brings benefit.

For us, innovation is creativity and a belief that new ideas and new technologies can bring improvement, grounded in great science applied at a grassroots, gritty, relevant level. Our goal is innovation that is usable and valuable; practical and meaningful.

We hope that our clearly articulated brand promise helps us redefine our image in the eyes of producers, the research community, the broader public and – yes – amongst funders too.

Farming Smarter: Building and Inspiring a Culture of Innovation in Western Canadian Agriculture

Farming Smarter exists to drive agriculture innovation at the farm level. We attract a community of passionate innovators and provide agronomic testing, scientific knowledge, and the right connections for them to succeed.

Innovation drives us, not profit. This makes us a trusted source for regional adaptation of profitable and resilient crops, cropping systems and agronomic practices. Farming Smarter instills a culture of innovation and takes a bottom-up approach that is gritty, practical, and achievable. As a flexible organization we take chances, break the rules and encourage failure so we can learn. We adapt and excel at innovation development and adoption. This is crucial to keep farmers competitive and viable in a complex and dynamic environment.

Innovators can rest easy knowing we scan the world for new and old ideas that may apply locally. When they turn to us, they are confident our information is grounded and relevant. We love agriculture and offer our community informative, safe, and enjoyable experiences. They feel part of a diverse community who enjoy learning, networking, and bouncing ideas off each other.

Innovation is hard and about long-term results. We invite anyone interested in agriculture innovation to work with us and together we can change the way people farm.

Soil Erosion Articles

Written by Farming Smarter

Scan using your phone and enjoy!

Yes, Blowing Soil Breaks A Law – August 11/21

Economics of Agricultural Blow-Dirt – August 25/21

Dollars Blowing in the Wind – September 8/21

Don't Blow Good Neighbour Relations – September 22/21

Tillage is Problematic on the Prairies – October 6/21

HARVEST TIPS

from Broxburn Vegetables

Submitted by: Daniella de Jonge, Marketing Manager at Broxburn Vegetables & Café

You have successfully planted and cared for your garden, and it is now filled with beautiful fruits and vegetables that are ready to be harvested. Harvesting a garden is not quite as simple as just removing the ripe fruits and vegetables from the plants. It takes careful planning and a knowledge of when your fruits and vegetables are ready to be harvested.

The first aspect to consider before harvesting is the growth cycle of certain fruits and vegetables and how often they can be harvested. Everbearing fruits such as strawberries and raspberries can be harvested many times throughout the summer months and even into early fall! They will continue to produce fruit until the plant freezes in the fall. After it freezes, these plants will stop producing fruit until the next summer.

Vegetables such as tomatoes, peppers, cucumbers, broccoli, and beans will also produce several times over the course of the summer. After it freezes, these plants will need to be removed from your garden. Fruits and vegetables that can be harvested several times throughout a season are referred to as a "cut and come again" product and are a great way to keep an endless supply of fruit and vegetables in your home throughout the growing season.

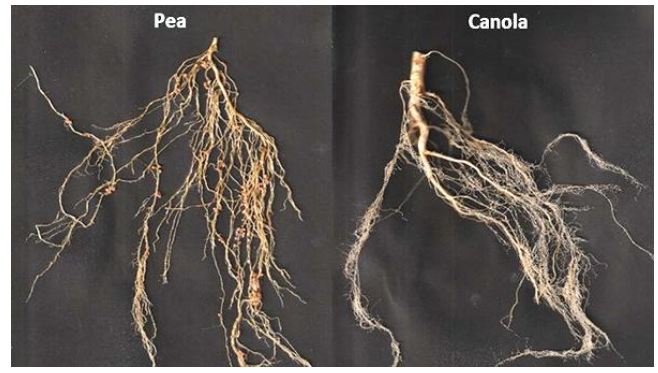
As the beginning of fall approaches, it's time to start watching the forecast for that first frost! In Southern Alberta, the first frost is on average any time between mid September and mid October. Some fruits and vegetables perish immediately after it freezes, but others may be able to survive a mild frost and can be harvested afterwards. Fruits and vegetables such as zucchini, cucumbers, and raspberries typically do not survive the first frost. You should plan to do the final harvest for them in the days prior to the frost. If the forecasted frost is mild, you might consider covering your plants overnight to provide them with an extra layer of protection. If they survive the first frost, the growing season for those plants could be extended meaning a greater yield of vegetables!

Fruits and vegetables such as kale, broccoli, cabbage, cauliflower, and strawberries often survive the first frost, depending on its intensity. Since strawberry plants at the end of the season are often quite bushy, the strawberries hidden underneath the leaves may be sheltered from the cold when it reaches 0 degrees, -1, and sometimes even -2. The key factor in determining their survival is the length of time the temperature was below zero. If the temperature was below zero for only one or two hours during the night, and the following day is warm and sunny, the strawberries will likely survive. If the temperature reaches -3 or -4 and remains cold for several hours or the entire night, the strawberries will not survive.

Similarly, Brassicas such as broccoli, cauliflower, cabbage, and kale will likely survive a couple degrees below zero before needing to be harvested. Some vegetables such as kale like the low temperatures and will become sweeter if they are harvested after it freezes! Keep an eye on the forecast at the end of the growing season and plan which fruits and vegetables should be harvested first.

After all of your fruits and vegetables have been harvested for the year, the last step to consider before the winter is preparing your soil for the next growing season. Soil preparation is essential, as it is the bed that provides the vegetables with nutrients and leads to healthy plant growth. Healthy plants need soft, rich soil to allow the roots to soak up the nutrients. A lack of soil preparation leaves next year's crop with a hard and rocky bed of soil, which will make it more difficult for the roots to grow and collect nutrients. Start your soil preparation by removing any rocks and dead plants from your garden. Next, loosen the soil using a rototiller or shovel. Your soil should be loose on the top eight to twelve inches. This will allow more room for the roots of next years crop to grow. Finally, add organic matter into your soil. This can be done by adding either manure or compost matter into the soil. Manure and compost matter are both filled with nutrients and are an excellent fertilizer. A rototiller is a great tool to help mix the organic material into the soil. Soil preparation is key to growing a healthy garden, and receiving a bountiful harvest!

Intercropping Pulse and Oilseed Crops in Southern Alberta



Above: Pea has thick roots with pink N2-fixing nodules, while canola has a tap root with fine secondary roots.
Left: Intercropped lentil is an understory plant.

Submitted by: Eric Bremer, Western Ag Innovations

Intercropping is growing two or more crops in the same field at the same time. It is more complicated that growing one crop at a time, but has potential benefits due to synergies between crops and increased plant diversity.

We conducted field trials on intercropping of pea (AAC Lacombe) and lentil (CDC Impulse) with either canola (PV 200 cl) or yellow mustard (Andante) for three years in southern Alberta, under both dryland and irrigated conditions.

The oilseed crops were seeded through the primary openers while the pulse crops were seeded through the side-band openers. This allowed both crops to be seeded at optimum depth and in close proximity to each other.

As the oilseed crop was expected to be more aggressive, the seeding rate for intercropped oilseed was reduced to 10, 30 or 75% of monocrop treatments, while the seeding rate of the intercropped pulse crops was maintained at 75% of monocrop treatments. Nitrogen fertilizer was applied at 0, 45 or 90 lb N/ac. The N fertilizer at 45 lb N/ac rate was isotopically labelled so we could compare the competitiveness of the different crops for soil and fertilizer N.

When grown by themselves, pea took up as much fertilizer N as canola or mustard, but lentil took up only about 2/3 as much. However, when intercropped, canola took up 5-fold more fertilizer N than pea and 11-fold more fertilizer N than lentil. Mustard was less competitive than canola: intercropped mustard took up the same amount of fertilizer N as pea and 5-fold more fertilizer N than lentil. Oilseeds were also able to take up more soil inorganic N from below 2 feet when present at that depth. Competitiveness for N reflects root growth: oilseeds (especially canola) have fine roots that rapidly proliferate in topsoil and taproots that reach the subsoil, while pulse crops have thick roots that proliferate more slowly (especially lentil).

However, pulse crops can also obtain nitrogen from the air through a symbiosis with rhizobia bacteria that are present in root nodules. Pulse crops obtained an average of 73% of their N from the air when grown by themselves with no added N. This increased to 84% when intercropped.

Crops also compete for water when intercropped. Again due to more rapid root growth, canola was able to out-compete pulse crops for water and was more dominant under drought condition when it had a sufficient supply of N. Under drought conditions, oilseed and intercrops were able to deplete soil moisture below two feet slightly more effectively than pulse crops grown by themselves.

Finally, crops compete for sunlight when intercropped. Pea plants intertwine with oilseed plants and are able to effectively compete for sunlight, but lentil are an understory plant and only able to effectively compete for sunlight when the oilseed crop was sparse or very deficient in N.

Due to the competition for nutrients, water and sunlight, two crops grown together will usually each yield less than when grown separately. However, overall productivity may be increased due to complementary growth habits. In our study, intercropping increased overall productivity by as much as 60% when N was strongly limiting oilseed yields. When compared to standard practice (N-fertilized oilseeds, no N fertilizer for pulse crops), overall productivity was increased by an average of 10% with reduced N fertilizer requirements. The profitability of this practice will depend on relative yields (which depended on relative seeding rate, N fertility and moisture stress), crop prices and input costs.

More than 10,000 acres of pulse-oilseed intercrops are currently grown at field scale in Saskatchewan and Alberta, primarily to reduce input use and costs, improve soil health and increase profit. The most common intercrops are pea with canola or mustard and flax with chickpea or lentil. Prior to seeding an intercrop, a system to quickly and reliably separate seed should be procured and tested as seed types vary in moisture content and storage requirements while the speed of harvest should not be compromised. It is also critical to select crops and cultivars that will be ready to harvest at the same time based on local conditions. For southern Alberta, we found that the pea cultivar we used was better matched for maturity with yellow mustard than canola, but still had some shatter losses in the final year of the study. Lentil was better matched for maturity with canola and mustard, but was not as easily separated and was not as competitive for water or light. Weed control requires consideration due to reduced herbicide options, but concerns may be partially offset by increased weed competitiveness from diverse growth habits. As with any large change in crop production practice, successful adoption will require time and effort.

Emergence of a canola–pea intercrop. Pea was seeded through the sideband opener.

Pea and mustard plants are similar in height at flowering.

Tree Information for Southern Alberta

Visit our website at https://www.lethcounty.ca/p/agricultural-services-topics-and-tips or scan the QR link right for videos on the importance of shelterbelts on rural properties, and how to establish them. Articles include: Design and Establishment of Trees and Shrubs for Southern Alberta, Tree Salt Tolerant Species, Trees for Southern Alberta, Wood Wide Web "Healthy Roots, Healthy Trees", Fall Tree Planting, Fall Tree Watering and Impacts of Field Windbreak Removal.

Information provided by Yard Whispers. Presentation and articles completed by Toso Bozic:

Toso Bozic P. Ag
ISA Certified Arborist
CERT ID: 5356A
Phone: 780-712-3699 • bozict@telus.net • www.yardwhispers.ca or www.attsgroup.ca

Tree Cutting within the County

Crews will start tree cutting along County roadways beginning in the month of November.
If you see them, please be courteous, slow down, and give them plenty of space to work. Thank you!

Wonders of Haskap

Submitted by: Nevada Alde, Vitalaberry Farms

Haskap berry – an interesting name for an even more interesting fruit. Whether it tastes like a raspberry, a blueberry, or wild huckleberry, most will agree that the haskap is uniquely delicious. And for those that have not heard of haskap berries before, they're also referred to as honeysuckles or honeyberries. However, haskap seems to be the most common. They're a deep blue with crimson flesh, have an elongated shape, and dangle from their bushes.

They're being referred to as a "superfood" because of the nutritional value and significance of the berry. For instance, haskaps have a higher concentration of vitamin C than apples and blueberries combined, and higher levels of antioxidants than most common fruits. In fact, a study was conducted by a group of nine scientists in which they tested different compounds between raspberries, black currants, and haskaps (the blue honeysuckle). It was concluded that haskaps had a higher level of potassium (K) and phenolic compounds – a high percentage of polyphenols equals a high antioxidant level (Lefèvre, I., et al. 2011, 164). And for those that are unfamiliar, antioxidants protect the body from cell damage caused by free radicals. Free radicals are linked to things such as cancer and inflammation (Ware 2018).

Further, expert Dr. Bob Bors, the head of the Fruit Program at the University of Saskatchewan, confirmed haskaps' cultural and medicinal significance dates back centuries.

"Although not many know what haskaps are, they are not a new berry. Groups and individuals, like the Japanese Ainu people, depended on their medicinal properties for centuries before others textually recorded their existence." He said.

After all, this berry is known to prevent things like heart disease, eye disease, arthritis, and organ disorders – to name a few. And by textually, Dr. Bors is referring to the Ainu peoples recorded uses of haskap being passed down orally before they had a written language. It is said that the Ainu people are the ones that gave the berry the commonly used name, "haskap." (Fu, et al. 2011, 12).

Dr. Bors pointed out that Japan is not the only area these berries are native to. As they thrive in northern boreal forests, they were also discovered in Russia, Poland, and most provinces in Canada. Each geographical area produced a different variety of haskap. Japan and Russia had larger (and for the most part, sweeter) berries than Canada did. Dr. Bors believes this may have to do with elevation gain and pH in the soil. And with the Fruit Program, it became possible to crossbreed different haskap varieties to create better tasting, larger, and more durable haskap berry bushes.

"In Canada, the berries were small and bitter. In Russia, the bushes grew tall, but the berries were sour. Japan had long, plump, and sweet haskap berries with a shorter bush. I saw the opportunity for crossbreeding." Dr. Bors said.

He wanted a bush that grew tall enough to be mechanically harvested, and berries that were juicy and sweet. And since starting with the Fruit Program in 1999, and beginning to crossbreed in 2001, Dr. Bors and his team have produced and released ten different varieties – the Indigo Treat being a favorite from the series.

However, despite the haskap being a hardy plant, its adaptability only goes so far. So, it may be able to survive harsh winters, but particularly rainy areas will not suit the haskaps' needs.

Slowly, the haskap community is expanding and different developments and studies are performed and shared. More people are interested in planting orchards or a few plants in their backyards. And for those that do not wish to grow their own plants (which can be purchased from places like Haskap Central Sales), Western Canada has plenty of orchards where u-pick is available during their harvest season in June-July. In fact, Vitalaberry Farms has approximately 12 orchards, and they aren't the only ones. Plenty of opportunities to pick and enjoy haskap berries. People use them to make jams, toppings, pies juice, and much more.

Haskap growers express their gratitude to those who have been willing to give this berry a try and encourage everyone to talk about it and to learn more. They love seeing the conversation grow and cannot wait to see how far this berry will reach.

Southern Alberta drives ALBERTA'S CANOLA ECONOMY

As the province's canola industry has developed, southern Alberta has taken on greater and greater importance. We asked two canola leaders how the region punches above its weight.

ALBERTA CANOLA PRODUCERS COMMISSION

Back in 1989, canola was a promising crop looking to break into the big leagues with then-dominant cereal crops like wheat and barley. Growers were intrigued by the crop's potential and wanted information on how best to grow and sell it.

That same year, the Alberta Canola Producers Commission opened for business. At the time, the Commission's mandate reflected producers' practical, on-the-ground concerns.

"A lot of the early focus was on research – improving the crop and making it more adaptable to grow," says Ward Toma, General Manager of Alberta Canola today. "There was also some work in market development – just getting the word out about cooking with canola oil."

Kevin Serfas

Jump forward 32 years, and it's clear that canola has far exceeded any expectations people might have had in the late-'80s.

"I think even a lot of farmers don't truly understand the economic impact of canola," says Kevin Serfas, Turin, Alta. farmer, Chair of Alberta Canola and elected Director of Alberta Canola's Region 9 (southwestern Alberta). "For example, many people don't know that close to 100% of all canola seed grown in Canada is grown in southern Alberta under irrigation."

If there's no canola seed, there's no canola production, full stop. According to Toma, the canola seed crop alone is worth $400 million annually.

Today, canola is by far the highest revenue-earner among crops for Alberta farmers. Sales of commercial canola – that is, the crop grown from the seed -- often surpasses $5 billion per year in Alberta. That's more than the sales of Alberta's next two top-earning crops of wheat and dry peas -- combined.

Depending on the year, southern Alberta now accounts for 20% or more of provincial canola production. Call it $1 billion per year, give or take, and that's not counting seed production.

"Research into improved tolerance for dry growing conditions has been a big factor," says Toma. "At one time, dryland farmers tended to prefer mustard over canola. Now, canola is grown throughout southern Alberta, all the way to the U.S. border."

To turn canola into the canola oil used for cooking, it needs to be crushed. The James Richardson International plant in Lethbridge can crush 700,000 tonnes of canola seed per year. From seed to crop to crush, then, southern Alberta has it covered.

As the canola industry grows, policy-making must keep pace

Research is still a top priority for Alberta Canola. In 2020-21, the organization committed more than $900,000 to new projects, many of them multi-year in nature. With that new money included, Alberta Canola currently has a research portfolio of $7.7 million. This research is funded by canola growers via a per-tonne checkoff when they sell their crop into the market.

That said, other priorities have emerged for the organization.

"We do a lot of work in getting into schools, reaching teachers so they can educate their students about modern agriculture, and canola in particular," says Serfas. "We have culinary events that highlight how chefs and home cooks can use healthy, versatile canola oil. Farming has also become more politicized, so we need an active government relations program."

Alberta Canola works with other canola organizations – both provincial and national -- to serve growers while getting the best bang for the buck. One example is a close working relationship with the Canola Council of Canada (CCC). This includes financial support for CCC's Crop Production & Innovation Team to connect growers with up-to-date agronomy information and best production practices.

In Alberta Canola's early days, members of the organization's Board of Directors developed policies, managed messaging and worked with governments. Over time, as policy issues multiplied and became more complex, Alberta Canola took a different approach.

"Now we have full-time policy staff who are hip-deep in all the most important issues of the day," says Toma. "Our Directors establish policy direction, and staff do the heavy lifting."

Serfas's six years of Board and Chair service ends early in 2022. He's proud of the work done for Alberta canola growers on his watch. Looking to the future – of his own farm and the province overall – Serfas sees great opportunity.

"I have huge confidence in the future of agriculture in Alberta," he says. "We are one of the few industries that's done well despite COVID over the past 18 months. Our land resources are finite. You can't make new farmland, at least not without environmental damage. All in all, these are exciting times for the agriculture industry."

Looking for More?

As this newsletter is the beginning of a new journey for Lethbridge County's ASB, please feel free to reach out to us and tell us how we did. If there's information that wasn't shown or that you'd like to see more of, email us at mwells@lethcounty.ca and let us know!

We'd love to hear from you!

Top left Hawk Release. Top right: Assembling islands. Meddle: County crews assembling floating islands. Bottom left: Lethbridge College Students Picking Knapweed. Bottom right: Field Day.

By: Matthew Wells,
Lethbridge County ASB Class 4 Operator

Welcome, one and all to the Rural Living & Ag Extension Newsletter!

The holiday seasons are upon us! Having just finished Halloween, Christmas is all but just around the corner with the New Year shortly after. I for one love this time of year as we transition from creepy ghouls and vampires to the mysteries and magic of Christmas. An exciting time if I say so myself!

It's crazy to think 2021 has almost come and gone. Sitting here now, it's hard not to reminisce what the year brought us. For many, it's one to forget. For others, it was simply a trying year. I too found it to be a struggle at times, but that's not what I want to focus on. Focusing on the negative does no good for anyone. Instead, lets reminisce on all the good! For us in the ASB Department, we were able to participate in some great activities that I wish to share with all of you here!

As many saw on the Lethbridge County social media page, through the generous donation of Richard and Velisha Paskuski, floating islands were introduced to Broxburn Pond during the beginning of summer. Native plants were purchased from K&S Growers and planted on the islands. Fencing on top of the islands were added so no waterfowl or muskrats can disturb the plants until they are fully matured. Seeing it as a potential remedy for controlling the nutrient load instead of the use of chemicals, the County purchased 4 more islands from GP Restoration Solutions, installing them in mid-September. Anyone interested will now see 8 islands floating within the Broxburn storm pond. It's nothing short of exciting, and something the County will continue to invest in into the future!

During the month of August, a juvenile Swainson Hawk was found by county crews, alongside the gravel road edge north of Monarch. Notifying Birds of Prey Centre in Coaldale, Colin Weir was kind enough to drive all the way out and pick up the juvenile hawk. Colin informed us that many juveniles get hit by oncoming traffic during this time as they have not yet learned how to fly and are in training to find food and fend for themselves. It was an eye-opening experience and a stewardship activity, to meet Colin and learn about some of the wildlife we are fortunate to have throughout the County. Birds of prey perform an important rodent control function not only in the summer, but also during the winter months when we are visited by northern species like Rough Leg Hawks and Snowy Owls from the arctic. If you find a bird that has been harmed or may be a juvenile, the Birds of Prey centre which is a charity relying on donations, tries to answer calls after hours, and even year round when they are closed for visitors. These birds can be dangerous if not handled correctly so it is recommended to contact them if you come across any species of hawk, falcon, eagle or owl that is in need of help. Colin can be reached by phone or text at 403-331-9520 or by email through their web-site at www.burrowingowl.com. Later in the fall I was fortunate to meet Colin again so I could release the hawk back to the wild before it's winter migration to Argentina!

This year, both Cows and Fish and Lethbridge College students utilized the County riparian site located along the 845 to further develop their skills in identifying plants and performing riparian and upland health assessments. As a stewardship activity, the college students helped in picking a patch of knapweed on the site. An activity that would normally take an individual two hours, was completed in ten minutes! As an integrated weed management control, its often one that doesn't get utilized as it can require the most work. However, when one can get a helping hand, it can make all the difference in the world! We appreciate the help and hope to see the riparian site utilized more next year!

Mid-September, ASB organized an outdoor Field Day for folks located along the Oldman Watershed. It was a huge success as members from Cows and Fish, Multisar, Oldman Watershed Council and Alberta Invasive Species Council presented to the public, informing them of funding opportunities, off-site watering systems available, the importance of riparian areas, and strategies one can implement to improve and preserve a riparian site. It was a joyous occasion, with food provide by Oldman River Bison Co. and great discussions from all who came. The County would like to thank Harley Richards, Jackie May, Ken Mackintosh and Jean Mackintosh for hosting the event on their property. It was an amazing time and something we look forward to continuing into the future. If anyone would like to join the Oldman Watershed Group, please feel free to call the ASB Department.

As I look back at the successes of this year, I look forward to what the new year will bring! Till next time!

Look for us again come first week of March.