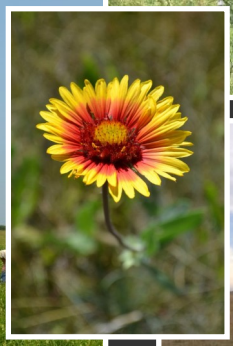
FOOTHILLS FORAGE AND GRAZING ASSOCIATION

2014 Annual Report



Foothills Forage & Grazing Association

2014 Annual Report

PO Box 5145 High River, Alberta T1V 1M3
Office: Upstairs at the Highwood Auction Mart
Phone: (403) 652-4900 Fax: (403) 652-4090
Email: cassie@foothillsforage.com
Website: www.foothillsforage.com

Foothills Forage and Grazing Association encourages a profitable and regenerative forage industry by providing an information network for southern Alberta producers.

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Mission Statement

Assisting producers in profitably improving their forages and regenerating their soils through innovation and education.

Vision Statement

We envision a global community that respects and values profitable forage production and healthy soils as our legacy for future generations.

2014 Board of Directors

President:
Ian Murray
Acme
(403) 546-0022

Vice President:
Sean LaBrie
Didsbury
(403) 335-8189

Treasurer:
Brian Rodger
Acme
(403) 546-2186

Directors

Tamara Garstin
Longview
(403) 333-0376

Morrie Goetjen
Cochrane
(403) 863-7484

Wayne Robinson
Mossleigh
(403) 934-4083

Andy Hart
Claresholm
(403) 625-2060

Manager
Laura Gibney
(403) 652-4900

Phil Rowland
High River
(403) 652-7288

Stan Wiebe
Linden
(403) 888-7797

Interim Manager
Cassandra Kirkpatrick
(403) 652-4900

Graeme Finn
Crossfield
(403) 312-2240

Chelsea Cunningham
Sundre
(403) 638-8335

Chairman's Report

2014 was a very good year for FFGA. It saw change, growth, strategic planning, and of course a host of events that we were very proud to put on.

We started the year off with our biggest international AG. trip ever. Two separate trips travelled to Argentina to experience agriculture in South America. Apart from an unfortunate bout of stomach illness on the first trip, by all other accounts it was a huge success!

Shortly after the trips, Laura informed us that she was expecting, and would be taking maternity leave in September. The challenge was on to find an interim manager for the association while Laura was away. It had been my hope with this process that we would be able to find someone who would be able to manage the day to day business for the year Laura was off, and then stay with us and allow us to grow our association to two staff, and be able to take on more projects and extension activities. With luck we were able to find Cassie and bring her on in June, allowing Laura three months to be able to train her, and allow us a bit of an insight as to what we might be able to do with a bigger staff.

We were able to put on some tremendous events in 2014, both on our own, and as part of our direct involvement with ARECA. A personal highlight of mine from my entire time with FFGA was the opportunity to host Jim Gerrish for a night, and then host a pasture walk with him and around 50 attendees the next day. Other highlights included presenting Gabe Brown and Christine Jones to speak on cover cropping and regenerative agriculture.

Events such as these highlight the importance of Foothills Forage being a member of ARECA, the Agricultural Research and Extension Council of Alberta. Together, the 9 associations that make up the group in ARECA are able to co-ordinate efforts to bring in speakers or undertake research that no one organization would be able to do on their own. Jim Gerrish for example was hosted at 5 different locations, as was Gabe Brown, and Christine Jones spoke twice, across both ends of the province. Efforts such as the Western Canadian Grazing Conference, and the new Western Canada Conference on Soil Health this December are all examples of how our organizations are working together to bring producers the most up to date, and sometimes, most out of the box thinking we can find.

Also tied to our involvement in ARECA is our main source of funding, the Agriculture Opportunity Fund, provided by the Government of Alberta through Agriculture and Rural Development. In July, several years of advocating on behalf of the ARECA members paid off, when we were asked to be on a conference call with Agriculture Minister Olson as he announced the doubling of the AOF fund from $1.5M to $3M. With this increase in funding came a vote of confidence in what our organizations have been doing, along with direction from the province that they would like us to do more. A supplemental fund was created for the 2014 year, and we made an application based on doubling our existing budget and increasing the scope of FFGA. All ARECA associations went through a standardized strategic planning process with David Irvine to help shape the future of each organization, and help determine the vision going

forward as to how we were going to fulfill the government's mandate of filling in the gaps with regards to extension in Alberta.

In what turned out to be a very stressful and hectic application and approval process, we applied to increase the staff to 2, with the creation of a demonstration co-ordinator and a multi-media extension person. Plans were that once Laura returned from maternity leave, she would return to her manager duties and Cassie would become focused on our environmental side, delivering EFP training and helping producers with Growing Forward applications. With the current "Challenging Economic Times" the province is facing, the future of this new level of funding is uncertain. We have been given some assurance that the original $1.5M is still in place, but there is no guarantee of any of the additional funds. We are awaiting the decision as to how much we will be funded for the next three years, and building budgets accordingly. I am quite confident that we will, in fact, be able to grow to a full time staff of 2 this summer, but growing to 3 at this point looks unlikely. We are looking at different options to be able to provide a new level of service to our membership.

To our sponsors, both county and corporate, we appreciate your involvement with us, as well as your financial support. In many ways we consider you to be partners in what we do. As Foothills Forage continues to grow, we hope we can find new and better ways of working with you.

Thank you to Wayne Robinson for his 6 years of dedication to our board, as he has reached the end of his term as a board member. Thanks also to Chelsea Cunningham, who has found herself in other parts of the country, and is unable to continue her position. FFGA appreciates what both of you have brought to the table!

This marks the end of my second three year term on the FFGA board. I would like to thank everyone for the opportunity to have sat with such a wonderful group of people, and to thank the board for their confidence in me to be their chairman for the past three years. To Laura and Cassie, you have both been a pleasure to work with and are a true asset to the association. I have learned a tremendous amount from my time on the board, and look forward to the opportunity to be a part of it again one day.

Sincerely,

Jan Murray

Chairman, Foothills Forage and Grazing Association

Manager's Report

Mother Nature threw some interesting conditions at us in 2014. The year began with a record accumulation of snow which caused many producers to have to adjust their winter feeding program to adapt to these challenging conditions. The first day of spring brought several inches of snow. By May there was enough moisture available to provide a good start for the forages. In September, Southern Alberta was blanketed with 4 to 12 inches of heavy snow that flattened a lot of crop and swath grazing. This provided an opportunity for producers to try different grazing methods as they tried to salvage as much as possible. It was an exciting fall as cattle prices were at an all-time high, making it the best year some have seen in the industry in 20 years! With the year ending on a high, we hope the industry will remain strong for years to come.

FFGA had another productive year which showed further growth and development of the association. In June, I was hired as interim manager to cover for Laura Gibney who went on maternity leave in September. Having both Laura and I in the office for the summer allowed FFGA to take on additional activities and planning for the association. 2014 marked the final year of another three year grant agreement with the Agriculture Opportunity fund; this along with the continued support of our corporate sponsors and several of the counties and MDs in our region enabled FFGA to continue to expand our programs. We also had additional funding come in from the Alberta government which was greatly appreciated as it allowed us to deliver more programming and extension to producers in Southern Alberta.

In 2014 FFGA continued to deliver a strong program that included fourteen events with an attendance of over 950 producers, five demonstration trials, and our monthly *GrassRoots News & Views* newsletter. We brought in some great speakers including agriculture leader and Nuffield Scholar Brenda Schoepp, low stress cattle handling expert Curt Pate, grazing expert Jim Gerrish, soil health pioneer Gabe Brown, ground cover and soils ecologist Christine Jones; as well as hosting a producer sainfoin tour and two International Agriculture Tours to Argentina! Our Winter Bale Grazing and Weevils on Canada Thistle projects continued in 2014, and we initiated a brassica forage rape demo site as well.

Communication is a large part of FFGA's program with our monthly newsletter *GrassRoots News & Views* reaching over 300 people. The monthly newsletter has been a great way to keep in touch with our members and partners, letting them know what we have going on as well as providing extension material. We have continued to expand our reach by staying active on social media through our Facebook page, Twitter account, and through our website (www.foothillsforage.com). Over the past 6 months we have over 60 new Likes on Facebook, 130 new Followers on Twitter, and continue to have over 300 visitors to our website monthly. We even had a few producers who heard of an event we were hosting solely through Twitter! We recognize the role social media has in staying connected with the next generation of forage and beef producers, and hope to expand our multimedia program in the future.

FFGA will continue to focus our growth and development in a direction that is relevant to producers in Southern Alberta. We look forward to continuing to host our International Agricul-

ture tours as this gives an opportunity for producers to learn from industry leaders and apply at a local level back home in Alberta.

I have thoroughly enjoyed getting to know FFGA's board of directors. I have never met a more enthusiastic group and truly appreciate their dedication to FFGA. FFGA's board is a key factor in our successes and growth as we move forward and we would not be where we are today without this group of hard-working, innovative individuals.

It has been a true pleasure over the past 9 months working with the staff members within AR-ECA, the other member associations, the provincial government, and the counties we work in. I am continually impressed with their dedication to producers to Alberta. With such an energetic, knowledgeable, and committed team I believe there will be many great successes in the future!

Sincerely,

Cassandra Kirkpatrick

Manager, Foothills Forage and Grazing Association

A year in review...

Message from ARECA

2014 saw rapid and dynamic change at ARECA. A new Board structure was implemented which was needed, and will help propel ARECA forward in the coming years. The funding from AOF has doubled from 1.5 million to 3 million dollars. We are extremely pleased with this substantial and much needed increase in funding. This is a great opportunity for our member associations to grow, and bring wages and benefits up to industry standards. This will help to retain and attract excellent staff which is key to our member associations' successes, that ultimately leads to a more profitable and sustainable agriculture industry.

Caption: ARECA Chair Bill Gaugler and Vice Chair Ian Murray talk with Ag Minister Verlyn Olson about delivering information to Alberta farmers.

There were many changes at ARECA in 2014. We have a new office in Leduc; we also have a lot of new staff members. Janette McDonald has joined us as our new Executive Director, Colleen Hensel as our new Executive Assistant, and Ileana Berezanki served as our intern Communications Manager. Early in 2015, Paul Watson joined Ashley Steeple to complete our Environmental Farm Plan team. Paul will serve as Director and lead our Environmental Farm Plan. The new ARECA staff along with the Board of Directors and member association managers and their staff have really pulled together to create one harmonious and energetic team.

We would like to thank our partners at the provincial government for seeing the need, and believing that ARECA and our member associations are the best way to deliver applied research and extension to Alberta farmers.

We would like to take this opportunity to thank all the staff and Directors, and Chairmen, for their dedication and service. It has taken a lot of energy and commitment from everyone involved with ARECA over the years to get us to the present.

We believe that ARECA's great success and challenges lay ahead. All the changes and team building that have occurred in 2014 will help drive ARECA and our member associations' success in the future.

Bill Gaugler, Chairman

Janette McDonald, Executive Director

ARECA Teams

ARECA Agricultural Research and Extension Council of Alberta

AREC A Forage & Livestock Team

Back Row: Akim Omokanye (PCBFA), Vicki Heidt (BRRG), Albert Kuipers* (GWFA), Stacy Pritchard (PCBFA), Dianne Westerlund* (CARA), Nora Paulovich* (NPARA)*

Front Row: Cassie Kirkpatrick (FFGA), Christine Buchanan—Chair (GRO), Alyssa Krone* (LARA),*

Sabrina Westra (MARA)

Missing: Monika Benoit (PCBFA)

ARECA Crops Team

Back Row: Jacob Marfo (MARA), Eric Neilson (BRRG), Manjit Deol (BRRG), Yamily Zavala (CARA),*

Kaitlin McLachlan (PCBFA)

Front Row: Jesse Williams (CARA), Tom Fromme—Chair (NPARA), Monika Benoit (PCBFA)*

Missing: Michelle Holden (GRO)*

*Planning Team Member

Foothills Forage & Grazing Association Events

Ladies Livestock Lessons Winter Retreat

The year kicked off with Ladies Livestock Lessons where 40 ladies gathered at Olds College to network, learn, and share ideas on ranching in Alberta. The enthusiastic group covered a wide range of topics from a presentation by Nuffield Scholar Brenda Schoepp on Women in Agriculture Around the World and Market Update, a hands on demonstration with Dr. Corrine Eliason on Calving Health, Farm Incentive Programs and Growing Forward, and Weed Management with Livestock with Mike Roberts. It was a great opportunity for seasoned ranching women, new entrees into the industry, and Olds College students to come together to network, learn, and share.

Agricultural Tours to Argentina

In January and February, FFGA hosted two 15 day international tours to Argentina with 30 travelers on each tour.

Our trip couldn't have started nicer. Leave Calgary when it's in the minus double digits and land in Buenos Aires, to that warm, moist heat, and off to the hotel to resume the comfortable habit learned on past trips of sipping an ice cold beer. Argentina didn't disappoint – cold, big bottles of nice smooth ale.

Our first visit was with Nicolas Lotrecchiano with the Argentina Cooperatives Association which was founded in 1922. Nicolas gave us an interesting overview of the beef industry in Argentina including a long rich history of wealthy ranchers developing a quality of beef that is recognized world wide. He also explained the huge drop of growth in the beef industry due to the freezing up all beef exports by the Argentina government in 2005 due to the fear of driving up beef prices to a cost the local people could no longer afford. The export was reopened but is limited by government restrictions. Nicolas's message was that the industry continues to be full of potential. Our next stop was the Canadian Embassy. A terrific presentation was given by a fellow Canadian who told us in very clear language of the corruption faced by the Argentine people at the hands of the Federal Socialist Government. It was a sentiment shared by all that we encountered and was repeated regularly. Argentina has been under the rule of

we heard, the country has been called one of great potential, and has had that designation for roughly 3 generations. The country does not allow imports, without some form of reciprocal export, and goods that do make it to the marketplace must be assembled in Argentina. For example, there are no iPhones as Apple will not set up a factory there, but Blackberry did. The same holds true for cars, trucks, tractors, etc. The Socialist government does provide, and education is free, including University. Most people that we met had Bachelor degrees, at minimum, and Master's degrees are not uncommon. We were also told that most farmers/ranchers belong to some sort of organized co-op. A surprising number that popped out regarding beef was that with a population of over 42 million people, they have an average beef consumption of 150 lbs/person, compared to Canada's average of 40 lbs annually.

Armed with this knowledge we were off to the Liniers Livestock Market, but we were not there at sale time so there was really not much to see. Following that, we were off to our first ranch. We were introduced to owner, Ricardo Orazi, a couple of his gauchos, and some very nice looking black and red Angus cattle. He toured us around his property, and proudly told us of the strong influence of Alberta genetics that have been introduced to his cattle by way of purchased semen from the Hamilton Ranch. As is standard on most South American farms/ranches, Ricky does not live in the country, but rather Beunos Aires. He commutes out to his ranch and stays in his family's amazing villa style home, and has extra housing for his ranch manager and gauchos. His cattle are raised on tame grassland (with lots of thistle), but as the bulls near sale date, they are put onto standing Sorghum to graze, and supplemented with corn silage, for a final gain of up to 3 lbs/day.

By this time in the trip, the 'Great Sickness' had hit. Our numbers were dwindling as some of our brave crew became bed ridden with unmentionables, but ever the troopers, onto the bus we went as we changed locations. There was a sausage factory on the way to our new location that was blamed for some of the sickness, and none of us will ever look at a salami and cheese tray the same again.

Mar del Plata is a beach town full of millions of people. It is the ultimate destination of the Argentineans. It is a beautiful city and the day at the thong beach held a lot of wonder for our wrangler and cowboy hat clothed representatives. It was a great home base while we were off on day trips, and our sickies were able stay behind in various states of recovery.

Our next ranch host was Javier Salemme, who also runs black and red Angus. His land comes with intricate family history; a split, prosperity, demise, all the workings of a great story. Javier has been given the opportunity by his family to turn this ranch around and is doing so with a great attitude of serving the needs of his customers. He is trying to establish a name for himself, and clearly works very hard on the ranch, also while still living in Beunos Aires, a mere 6 hour commute away. His property is very beautiful, and boasts 7 miles of coastline (as seen only by Graeme).

Our next stop was the charming farming town of Tandill. We enjoyed the shops and food of this city and bled the bank machine dry. Here we were given a great presentation by one of the farming Co-ops, as well as a tour of KWS seed research station. We were given some more insight as to the realities that farmers/ranchers here face. For example, when a farmer markets his Soy crop, the government takes

President Cristina Fernandez de Kirchner since taking over after the death of her husband in 2007. She has 2 more years to her term and it is feared that she will not last that long and the rule will go to the hands of the current leader of the army, once again returning the country to a dictatorship. Repeatedly 30% off the top. The farmer then pays all his input costs, and if there is any profit left over, the government takes another 30%. Another example was the introduction (roughly around 2005) of a 15% duty on the export of beef, which essentially killed the export market. Subsequently, there followed a reduction in the Argentine cattle herd. Remember that consumption number? This means that all marketed beef is currently used domestically. (Although the explanations were unclear, Foot and Mouth controls were happening around the same time and may have had an impact on the export market as well. We were told that the current protocol for control of FM is mandatory vaccination. If a rancher cannot afford vaccine, it is provided).

We spent a very nice afternoon at Cabana Santa Ana, a criollos horse ranch. Here we were treated to discussion of the genetics of this standard working horse, most commonly used in the pampas, and a few of our brave souls even had a

chance to ride a lovely little mare. All commented that she was a bit rough; the saddle also seemed to take a little getting used to. Along the journey we were treated to gorgeous scenery of fields full of sunflower, soy, and sorghum. The Pampas boasts an average yearly rainfall of 40 inches.

Also on this leg of the journey we visited a very large feedlot, which seemed to run in a similar fashion to those found in North America. However, the struggles facing Argentina were repeated again. "The Government makes the rules, the Government changes the rules, therefore, there are no rules", as said by the feedlot manager. It was interesting to see a loading chute system fashioned in the Temple Grandin style. It was a hot day and we soon found ourselves on to further locations.

We had a quick overnight stop in a wee town called Saladillo, and the following morning a few hour's drive found us in San Antonio de Areco. It was a very sweet little town with a traditional square in the middle, and a beautiful cathedral style church. More gaucho shopping here, and then off to our Gaucho Party and lunch.

Our final few days took us back to Beunos Aires where we reconnected with the pub down the street, and our remaining few sickies had even more time to recover. We very much enjoyed the city tour and learning even more of the history of Argentina. Specifically were the information of the current government, and the story of Eva Peron. A final treat was our Tango Show. Anticipating a tacky American style show, we were very pleasantly surprised with a great meal, and a show that puts any other to shame. With that it was off to bed and make ready for the journey ahead. I'm not even going to comment on the flight home.... (46 hours). On the plus side, we did get to see Rio from the airport. A huge thank you to all who participated. It was, as always, a true pleasure.

As we have watched prices climb since last fall and are seeing record prices for yearlings this spring I am reminded of a quote by Dr. Gordon Hazard "You cannot throw a brick so high that it won't come back down". With that I sign off on my final Directors Note as I am finished my 2nd 3 year term on the board and must step down in March. There are a total of three spots open on the board at our upcoming AGM so if you are interested come on March 18 to the meeting at the Highwood Auction Market.

FFGA Vice-Chairman,
Alex Robertson

Alex Robertson, Ricardo Orazi, and Blaine Treloar

Ranching Opportunities 2014

Ranching Opportunities 2014: *Ideas and Opportunities for Growing Your Business* was a hit with 150 students and livestock producers attending this annual one day event at Olds College in February. This years event gave attendees the opportunity to discover new ways to manage livestock, explore options for marketing their product, and learn about the challenges and achievements of successful ranchers. Trevor Wallace with ARD kicked off the day with a discussion on the Value of the Back End and Manure Management. This years three "hands-on" breakout sessions included a Livestock Handling Demonstration with Jennifer Woods, Beef Information Exchange System (BIXS) with Holly LaBrie, and Analysing Your Forage Quality with Grant Lastiwka and Barry Yaremcio. Attendees could select 2 of the 3 options to attend. After lunch a producer panel featured three producers and one panel expert who discussed pros and cons of different calving times and strategies. Thersea Dietrich from People Talking Market Research Services wrapped up the day with a presentation on 'What Do Consumers Want?.' Ranching Opportunities also features a Tradeshow which is an opportunity for producers to meet local organizations, businesses, industry groups, and other key con-

tacts.

Annual General Meeting

FFGA's Annual General Meeting was held on March 18, 2014 at the Highwood Auction Mart and featured guest speakers Dr. Surya Acharya who provided an update on the new Mountain View Sainfoin variety and Rich Vesta who shared his future plans for the Harmony Beef plant and marketing beef into the EU. Laura Gibney also provided a recap of the 2014 Ag Tour to Argentina. At the AGM the board said good-bye to Alex Robertson and Rod Vergouwen who had both served two, three year terms on the board, as well as thanking Travis Lundberg for his time on the board over the past 2 years. Alex served as Vice-Chairman of the association for 2 of his 6 years. Thank you to Alex, Rod, and Travis for their ideas, energy, time, and leadership while they were on the board. Sean LaBrie, Morrie Goetjen, Tamara Garstin, and Andy Hart were elected to the board and we have enjoyed the ideas and input they contribute. Following the AGM the board had a quick board meeting where Ian Murray was re-elected as Chairman, Sean LaBrie was elected as Vice-Chairman, and Brian was re-elected as Treasurer– Secretary.

Stockmanship Clinic with Curt Pate

Curt Pate has been conducting demonstrations and clinics on stockmanship, colt starting, horsemanship, and safety for more than a decade. His abilities conducting both horsemanship and stockmanship demonstrations along with his ability as an effective communicator have made him a sought after clinician both on the national and international scene. His experience incorporating effective stockmanship principles supports a "for profit" mindset and focuses on highlighting the increased economic benefits of handling stock correctly. In addition, he recognizes the growing public scrutiny surrounding livestock production and the impact that improved livestock handling practices create for the cattle industry. Curt did not disappoint! The morning was spent in a classroom session where Curt explained to 24 attendees how to understand and utilize cattle behavior to effectively work with and move cattle. In the afternoon, Curt gave a handling demonstration moving yearlings on foot in the indoor arena and the outdoor pens at the Okotoks Agriplex.

Pasture Walk with Jim Gerrish

FFGA partnered with several other ARECA associations to bring Jim Gerrish of American Grazing Lands Services LLC, Idaho, to Alberta in July. Jim is an internationally known expert on forage livestock systems and his research encompasses many aspects of plant-soil-animal interactions and provides a foundation for many of the basic principles of management intensive grazing. Jim gave pasture walks across Alberta and attendees found his knowledge, experience, and practical approach to grazing management to be refreshing. The day started off in the Acme area with a pasture walk at Ian Murray's high

legume pasture. After lunch, the group of 50 headed to the Thurn Grazing Demonstration Sites for pasture walks at the Crested Wheat site, Native pasture site, and Riparian pasture site. Attendees learned how to develop a management plan for the revitalization of dryland native and tame pastures and utilizing riparian pastures.

Southern Alberta Women's Grazing School

The 11th annual Southern Alberta Grazing School for Women was held at the end of July in Pincher Creek and surrounding areas. It was a beautiful warm 2 day school with over 60 women in attendance! It was a fun couple of days in which participants enjoyed the beautiful weather, stunning back drop of the Canadian Rockies, and the hospitality of Bloomin' Inn hosts Francis and Colleen Cyr. The Bloomin' Inn was the perfect place to host the event as it is a working cattle and sheep ranch (along with a few chickens!) and dried flower farm. Grazing principle and riparian health were the main focus of the event but there was also discussion on invasive plants, plant identification, carnivores and ranching, range health assessment, and stories from local women involved in ranching and agriculture.

Producer Sainfoin Tour

At the end of August, 22 attendees spent the day traveling around the Lethbridge, Fort Macleod, and Stavely area learning about incorporating Sainfoin as part of a profitable grazing system. First the group traveled to the Lethbridge Research Centre for presentations from Dr. Alan Iwaasa and Dr. Edmund Sottie, from AAFC-SPARC, on their research on utilizing Sainfoin for pasture grazing in Western Canada and touring the research plots at the Centre. In the afternoon, the group traveled to grazier Dr. Bill Newton's sites located West of Fort Macleod and grazier Gary Brown's site near the Pine Coulee Reservoir to learn how they are successfully grazing Sainfoin in their pastures. Grant Lastiwka joined us for the day to speak on the program background and economics of grazing legumes. Incorporating Sainfoin in a grazing system has gathered a lot of interest and excitement as it is a bloat free legume and reduces bloat rates by 98% in Sainfoin/Alfalfa pastures that contain 25% or more Sainfoin. Sainfoin offers several options and flexibility in grazing systems and has proven itself to be a viable option in southern Alberta.

Harvest Sunlight: Feed the Soil with Gabe Brown

FFGA partnered with several other ARECA associations in October to bring Gabe Brown from Brown's Ranch located in North Dakota to Alberta. Gabe is one of the pioneers of the current soil health

movement that focuses on regenerating our resources. Along with his wife, Shelly, and son, Paul, he owns and operates a diversified 5,000 acre farm and ranch that focuses on farming and ranching in nature's image. Gabe gave an excellent presentation to 50 attendees in Vulcan describing how they integrate their grazing and no-till cropping system, which includes a wide variety of cash crops with multi-species cover crops and all-natural, grass-fed beef, poultry, and sheep. FFGA is looking forward to traveling to Gabe's unique operation in the summer of 2015, and welcoming him back to Alberta for the Western Canada Conference on Soil Health in Edmonton December 2015. The Brown's Ranch website is http://brownsranch.us/

Building Soil—Creating Land with Dr. Christine Jones

In keeping with our focus on soils, FFGA partnered with several other ARECA associations to bring Dr. Christine Jones from Australia to Alberta. Dr. Jones is an internationally renowned groundcover and soils ecologist who works with landowners to implement regenerative land management practises that enhance biodiversity, maximize photosynthesis, increase soil biological activity, sequester carbon, activate soil nutrient cycles, improve water holding capacity and infiltration, increase productivity, and create new topsoil. Dr. Jones presented in Rycroft on November 3, and then headed South to present to 112 attendees at Olds College on November 4. The presentation covered Soil Carbon: Getting the basics right; Linking Carbon, Nitrogen, and Water Cycles; and Re-activating Soil Forming Processes. FFGA is looking forward to welcoming Christine back to Alberta in the summer of 2015! Christine's website is: www.amazingcarbon.com

Cow-Calfenomics: Seizing Opportunities in the Alberta Cow-Calf Sector

Cow-Calfenomics is championed by Alberta Agriculture in partnership with ABP, AFSC, and FCC. The ARECA Forage & Livestock Team also help in planning and delivering this provincial event. This year there were six events, the one FFGA was involved in was in Medicine Hat on November 25 and had a great turnout with 60 attendees. Generally FFGA is involved in the Lethbridge event; however we felt by attending the Medicine Hat location we would have the opportunity to connect with producers outside of our region. The day was spent hearing from various speakers on Meat and Cattle Fundamentals for Herd Planning, Linking Pasture Systems to Optimize Beef Performance and Profit, Transition Tactics, The Cost of Bred Heifers, Managing Prosperity in the Beef Industry, A Helping Hand; HR strategies for the ranch, and A producer's perspective; Innovative business models.

FFGA Strategic Planning and Needs Assessment

With the new 3 year AOF application quickly approaching, ARECA and its member associations across the province felt it was a good time to meet with David Irvine for a day on strategic planning and a

needs assessment. David Irvine is a local speaker, author, and mentor based out of Cochrane who FFGA has worked with over the years. David has developed a reputation for putting on inspiring and thought-provoking programs on authentic leadership, accountability, building strong relationships, and balanced living. David spent one day with the board of directors, managers Laura Gibney and Cassandra Kirkpatrick, and ARECA Executive Director Janette McDonald in Airdrie. David did a great job of leading the group through a needs assessment of the association and a foundation to revise our mission and vision statements, along with a list of key priorities for the direction we are going. It was great to see the group come together, bond, share, and learn! Thank you to the board of directors for all the time and effort they put into the organization and for taking a day out of their busy lives to work through this process together!

Great leadership cannot be reduced to technique or title. Great leadership comes from the identity and integrity of the leader. - David Irvine

Western Canadian Grazing Conference & Trade Show

From December 9 to 11, 300 attendees gathered in Edmonton for the Western Canadian Grazing Conference & Trade Show which is organized by ARECA and its member associations. This years theme for the biennial conference was "Going Beyond Sustainability" and featured keynote speakers Judith Schwartz, author of Cows Save the Planet, Dr. Diane Knight, and Joshua Dukart. The conference also featured a Producer Panel on Transitioning Yearlings to Pasture and the Challenge of Grazing Yearlings. There was several Select-A-Sessions which included The Value of Grazing Management

Foothills Forage & Grazing Association Demonstration Projects

Winter Bale Grazing Demonstration 2011 - 2015

Producer Co-operators: Sean and Holly LaBrie

Background

In 2011 FFGA and producer co-operators Sean and Holly LaBrie started a bale grazing demonstration site near Didsbury, Alberta. When Sean and Holly bought this land the pasture had been severely over grazed. In an effort to increase pasture health and productivity they decided to bring in hay, green feed, and straw bales and feed them on the pasture during the winter months. Each summer FFGA collects forage clippings of the treatments to measure yield and production, as well as do feed tests for analysis on forage nutrients. In the fall soil samples are taken and analyzed for soil nutrient content. The objective of this project is to look at the effects of winter bale grazing on plant community, productivity, and soil quality on the pasture over several years.

Since the trial started, Sean and Holly have seen huge improvements in pasture productivity, as well as saving time and costs spent feeding each week. The 80 acres that was turned into the bale grazing program was sectioned into four paddocks. Prior to the trial they could graze for 3-4 days on each 20 acre paddock. In 2013, they grazed 100 cow-calf pairs on the four paddocks for 12 days. In 2014, they grazed for 20 days with 130 pairs with plenty of litter remaining. Feed testing has shown more total digestible nutrients, more protein in the available grass, and an increase in organic matter. The soil has been rejuvenated from animal waste and the feed by placing the bales where the nutrients are needed most. Bale grazing has huge economic, environmental, and personal benefits to the producer.

Implications of Bale Grazing and Nutrient Release by Dennis Laughton, Dennis Laughton Consulting

As we walk through the pasture where the bale grazing demonstration is located, we can easily see that the residue from the straw and hay bales is in various stages of decomposition. From the perspective of the soil, the rate of disappearance all comes down to the carbon to nitrogen ratio of the residue.

Carbon to Nitrogen ratio (C: N) is a ratio of the mass of carbon to the mass of nitrogen in any particular substance. For instance, a C: N of 25 means that there are 25 units of carbon for every 1 unit of nitrogen in any particular substance. This example applies to alfalfa hay.

Carbon is important because it is the energy producing factor while nitrogen is needed to build tissue. Soil microorganisms have a C: N ratio of approximately 8:1. They need to obtain enough carbon and nitro-

gen from their environment to maintain that ratio of C: N in their bodies. These microorganisms burn carbon as a source of energy. Some carbon stays in their bodies and some is lost as carbon dioxide from respiration. To maintain this 8:1 ratio, a microbes ideal diet is substances with a 24: 1 ratio (16 C for energy and 8 C for body maintenance).

If mature alfalfa hay residue C: N ratio 25:1 is on the soil surface, the soil organisms will consume it very quickly. Whereas if wheat straw, C: N ratio 80:1, was exposed to the soil surface a very different scenario has to evolve. With all this extra carbon the microbes have to glean additional nitrogen from the soil. Soil microorganisms have the ability to immobilize soil nitrogen that would otherwise be available to the crop. This can put the crop in a nitrogen deficient situation especially in the spring when it is most needed. This situation can be temporary. Since the life span of a microorganism is rather short, a few minutes to a few hours, its body will mineralize and the protein portion will return to the soil as nitrogen. Is the nitrogen then plant available? Answer, not if there is still an abundance of straw in the vicinity. The straw decomposition could be aided by spreading a small amount of nitrogen fertilizer on these sites preferably just before a rain since we want the N in contact with the soil.

Another consideration is a crop such as immature alfalfa hay, C: N of 13:1, or vetch at 11:1, were part of the feeding system we would in a position where the microbes would be in nitrogen rich condition thus releasing the excess N for immediate plant use. All immature plants have a lower ratio due to less lignification.

Although it is the C: N ratio that governs the rate of decomposition of organic matter all other nutrients are released in this process of mineralization.

Carbon to Nitrogen Ratios of Organic Materials

USDA January 2011

Wheat Straw	80: 1	Barnyard Manure	20: 1
Oat Straw	70: 1	Legume Hay	17: 1
Corn Stover	57: 1	Beef Manure	17: 1
Rye Cover Crop	37: 1	Young Alfalfa Hay	13: 1
Pea Straw	29: 1	Hairy Vetch Cover Crop	11: 1
Mature Alfalfa Hay	25: 1	Ideal Microbial Diet	24: 1

Forage

Dry Matter/ Sample Date	Control	Hay 2011	Hay 2012	Hay 2013	Straw 2011	Straw 2012	Straw 2013
Aug. 2011	2030.0	2707.0			3595.0		
Aug. 2012	1246.0	2672.0	2280.0		2565.0	1353.0	
July 2013	1817.0	3277.0	2743.0	1746.0	3313.0	3028.0	855.0
Aug. 2014	1356.0	1998.0	1820.0	2213.0	2355.0	1891.0	500.0
Average OM %	7.3	7.7	8.7	8.9	7.7	8.3	9.5

Yields (lbs. / ac.)

Bale grazing is improving the forage yields in some instance to almost double that of the control. The straw 2013 site seems to be the ex-

Soil Analysis October 2014

0-6 inch depth

	Control	Hay 2011	Hay 2012	Hay 2013	Straw 2011	Straw 2012	Straw 2013
Organic Matter (%)	7.10	7.90	9.70	10.10	7.90	8.30	9.50
Nitrate (ppm)	<2	<2	<2	<2	<2	<2	<2
Phos (ppm)	<5	<5	<5	7.00	7.00	6.00	<5
Potassium (ppm)	238.00	250.00	291.00	247.00	307.00	374.00	199.00
Sulfate (ppm)	6.00	4.00	9.00	9.00	6.00	5.00	20.00
Copper (ppm)	0.50	0.60	0.80	0.70	0.60	0.80	0.80
Iron (ppm)	66.00	48.00	40.00	30.00	83.00	51.00	31.00
Manganese (ppm)	5.90	4.70	5.80	4.40	6.60	5.60	4.50
Zinc (ppm)	2.70	2.50	2.20	2.00	3.40	2.10	2.00

When the soil samples were taken in October, plant growth was finished and soil mineralization had slowed down. There is virtually no nitrogen or phosphorous remaining in the soil and K is at 50 – 75% of an expected ending level. The crop used all the N & P that was mineralized. The question is, could more hay be produced if a fertilizer blend is added to the program and at what rate would it be most cost effective? In cropping situations post- harvest residual levels expected would be 10 – 30 N and 15 – 35 P.

In the future a simple fertilizer application across the site could help answer that question.

Oat and Barley Swath Grazing Comparison to Oat, Barley, and Pea Swathes 2013 - 2015

Producer Co-operators: Brian and Theresa Rodger

Background

In June 2013 producers Brian and Teresa Rodger, near Acme, seeded oats, barley and peas for swath grazing as a winter feed source for their cows. Due to weeds they ended up spraying one of the fields which eliminated the peas in that field. This provided an excellent opportunity for a demonstration. In September FFGA and Brian took samples of the swathes for feed analysis as well as collecting soil samples before touring the site in October. We then went back and collected soil samples for comparison on May 1, 2014 to see if having the peas in one field and not the other had an impact on available nitrogen in the soil.

Observations

Table 1: Swath Feed Samples

	Oat & Barley	**Oat, Pea & Barley**
Dry Matter %	51.2	80.4
Crude Protein %	11.6	12.9
Ca %	0.33	0.56
K %	2.2	1.9
Mg %	0.16	0.17
Na %	0.11	<.10
P %	0.31	0.46
Cu ppm	9	7
Mn ppm	57	40
Zn ppm	23	21
N ug/g	273	169

Table 2: Soil Samples

0-6"	**Oat & Barley**	**Oat, Pea & Barley**	**Oat & Barley**	**Oat, Pea & Barley**
N	8	5	29	31
P	26	21	29	28
K	413	449	418	461
S	24	4	7	7
Ca	2490	2680	2550	2430
Mg	315	266	307	262
Fe	96	70	9	99
Cu	0.5	0.5	0.8	0.9
Zn	2.8	2.6	2.7	2.3
B	1.4	0.9	1.1	1
Mn	25.4	14.7	16.3	18.1
Cl	3	3	5.7	5.6
pH	6.2	6.6	6	5.8

This past winter was not a good year for swath grazing. There was a lot of snow that drifted and froze in the Acme area making it impossible for the Rodger's front wheel assist tractor to get through. The cows wouldn't dig through that hard, deep snow so Brian and Teresa had to start supplemental feeding. Every year has different challenges and Brian feels the grazing days they got off of their swathes this year are not an accurate representation of the available feed due to the snow and supplemental feeding. The pea barley and oat combination did provide a higher yield than the straight oat and barely mix but there were more weeds that came in this spring.

Soil Quality

Soil is a living system that represents a finite resource that is essential to life on earth. It forms a thin skin made up of mineral and organic matter on the earth's surface. It develops slowly and is influenced by parent materials, time, climate, and living organisms.

Soil quality is mainly an indication how well it performs the functions that we want it to. Soil quality can be influenced by the land use decisions made by its stewards. In agriculture our thoughts immediately turn to crop production. Some of the key functions include:

- Water holding capacity
- Water and air movement
- Providing nutrients for the crop
- Nutrient cycling

Hosting the biological life forms that aid nutrient mineralization

Soil organic matter is a very important to soil quality since it affects both the physical and chemical properties of the soil. It improves soil quality by influencing water and air movement, water infiltration rate, water holding capacity, soil structure, bulk density, tilth and nutrient holding ability. Organic matter provides nutrients as well as binding them as a reservoir for future use. It also helps bind soil particles together, reduces surface crusting, stabilizes soil aggregates and reduces both water run-off and soil erosion.

Providing the crop with a complete and balanced nutrient package, according to its needs, not only improves the yield but also has a direct effect on the soil organic matter component. As the root grows it is a continuous process of shedding dead tissue as new cells grow. The root tip consists of specialized cells, containing glomalin, which sloughs off to make the movement through the soil easier. This material adds to the organic content of the soil. Old roots die as new roots are established. In a swath grazing scenario both the left behind plant material and the manure from the animals add to the organic content and the nutrient of the soil.

Water and air movement through the soil is accomplished through the channels caused by decaying roots as well as those caused by burrowing insects and worms. Worms through their castings help bind smaller soil particles into larger stable aggregates.

Soil Compaction can deprive crops of water and nutrients even in a situation where moisture and nutrients are in adequate supply. Roots cannot absorb water and nutrients if air is not available to them. Compacted soil also make root penetration more difficult, limiting their ability to access, phosphorous, potash and certain micronutrients that are immobile and must be sought out by the roots. To prevent soil compaction swath grazing animals should be removed when the ground starts to thaw.

Nitrogen, after swath grazing it is not unusual to see an increase in soil test N. If a single urine spot is included in the sample an increase in soil test N is expected. With peas, fixed nitrogen goes to the production of protein and only after the peas are mature (physiological maturity) does any residual N remain for the next season. Another benefit of peas is that their fibrous root system can leave the top soil in a rich condition.

Phosphorous in soils moves between three, perhaps four pools of varying availability. The numbers in all soil tests are moderately low with 40 ppm a desirable working number. Phosphorous serves as the instrument of energy exchange in plant, animal and human cells.

Potassium activates protein synthesis and is required for enzyme activation. It also acts to make plants more water use efficient and resistant to freezing. Alfalfa is a heavy user of potassium.

Sulfur is required for protein synthesis. N + S = protein. Sulfur is also instrumental in the efficient use of nitrogen. It is also highly variable in soils due to sulfate being water soluble and very mobile. At the Acme site sulfur is extremely low in 3 of the 4 samples.

Calcium is essential for cell wall development and the structure that binds cell walls together. It also controls the rate of water uptake and transpiration. Our soils are calcareous in nature and large amounts are naturally present.

Magnesium is the nutrient at the center of the chlorophyll molecule and directly governs the rate of photosynthesis. This activity also translates into CO_2 fixing and control of several respiratory enzymes. There seems to be a slight reduction between September 2013 and May 2014, more likely a soil variability issue since during that time period soil biological activity has been at a minimum.

Iron is essential for the formation of chlorophyll and photosynthesis. It is also the activating element in several enzyme reactions. Alfalfa and forage grasses have a significant need for iron. Iron is usually present in the soil as a sulfate and has a lack of uniformity in the soil as seen particularly in the May O/B sample.

Copper is another important enzyme activator and has an important role in plant reproduction. Lack of copper is associated with ergot. Copper from plant source also has an effect on the animal's immune system. Low soil copper is considered to be 0.4 – 0.8.

Zinc is involved in the transformation of carbohydrates into sugars and regulates sugar consumption in the plant. This soil has adequate amounts of zinc.

Boron is a non-metallic element that plays a major role in plant reproduction. It plays a role in cell differentiation and development in the meristematic tissue. The boron content is considered adequate.

Manganese plays a role in carbohydrate consumption for energy as well as the use of nitrogen in the production proteins. The soil test numbers show an adequate level of manganese.

Chlorine in the soil at low levels has a fungicidal effect suppressing root diseases. It has no known use in the plant despite there being many chlorinated organic compounds.

Soil Samples versus Feed Samples by Lee Eddy, Blue Rock Animal Nutrition Ltd.

TABLE 1 – Plant Samples (Oat, Barley, Triticale Swathgrazing field)

Acme AB Sept 2014

Results	Field A - Seeded Field A	Field B Seeded – Seeded Field B
Dry Matter %	55.9	47.3
Crude Protein %	**9.3**	**10.4**
Ca %	**0.21**	**0.24**
K %	1.53	2.46
Mg %	0.1	0.13
Na %	0.013	0.083
P %	**0.26**	**0.25**
Cu ppm	4	3
Mn ppm	51	71
Zn ppm	26	22

TABLE 2 - Soil Samples (Oat, Barley, Triticale Swathgrazing field)

Acme AB October, 2014

0-6" ppm	Field A - Seeded Field A	Field B – Seeded Field B
N	**18**	**12**
P	***18***	***31***
K	433	451
S	6	6
Ca	**2490**	**2230**
Mg	229	219
Fe	110	140
Cu	0.7	0.8
Zn	3.7	3.7
B	1.2	1.2
Mn	25	39.1
Cl	3	3
pH	5.9	5.7

Often I get asked: If you have taken soil samples do you still have to take feed samples? My response is yes that you still have to take feed samples. Feed sampling will tell you what nutrients you will have to supplement for optimum animal productivity. It is an indication of what the cattle are actually eating. Soil sampling will tell you what nutrients you need to add to the soil for optimum plant productivity.

The tables above are from soil and feed samples taken from a Foothills Forage Grazing Association Member's field in 2014. Crop species are the same except for when they were seeded; Field A seeded June 4, 2014 and Field B June 24, 1015. What I would like you to notice are the rows in both tables, for Nitrogen (N), Crude Protein, Calcium (Ca) and Phosphorous (P) highlighted in yellow.

Soil Phosphorus versus Plant Phosphorus

First let's take a look at the soil samples in Table 2. We see that there is a significant difference between Field A and B in the soil phosphorous levels. The Field A having 18 ppm and the Field B having 31 ppm . It would be natural to assume that the plant results in Table 1 would show a similar trend, with Field B plants showing significantly higher levels of phosphorus. This is not the case. WHY? The Field A and Field B plants contain basically the same amount of phosphorus. It could be reasonably assumed that there was more phosphorus in a soluble form, therefore more available to the plants in Field A versus Field B. With respect to cow requirements, both Field A and B phosphorous levels would be considered adequate for maintaining a cow. Phosphorous in soils moves between three, perhaps four pools of varying availability. The numbers in the soil tests are moderately low with 40 ppm a desirable working number. Phosphorous is used to exchange energy in both plants and animals cells.

Soil Calcium versus Plant Calcium

The calcium levels in the soil are not significantly different between Field 1 and Field 2 and the same trend is shown in the plants. What is important to us here is the calcium phosphorous (Ca:P) ratios in the plant results. In cattle nutrition we need to keep the Ca:P ratio between 2:1, and 7:1. In both fields, the plants have a Ca:P ratio of less than 1:1. From a nutrition perspective I would advise to supplement calcium and increase the ratio to a minimum of 2:1 to avoid the potential of downer cows. In this case, the downer cows could not be revived using injectable Cal/Mag but would more likely die from phosphorous toxicity. I have personally seen this with 50% of the downer cows dying slowly from excess phosphorus. This is a long term effect, so ensuring that you have proper mineral supplementation well before calving is important. The Ca:P ratio is not defined for soils. Calcium in the soil must be in soluble form to available to the plant. In the soils from both fields there seems to be a very high amount of calcium present with enough soluble calcium for plant growth but not enough soluble calcium in the soil to be available for plant calcium to be high enough to be adequate for animals.

Soil Nitrogen Versus Plant Nitrogen

Looking at the nitrogen soil levels, we see that Field A has higher levels of nitrogen than Field B. Again it would be natural to assume the relationship would be the same in Table 1 with the plant protein being higher in Field A. Similarity to the phosphorus results, the soil nitrogen relationship does not carry onto the plants. Field A has 9.2% protein and Field B has 10.4% protein. Either level of protein is adequate for maintaining a cow. Field B was seeded, 20 days later than Field A. Younger, immature plants will show higher levels of protein so it would be likely for Field B to have a higher protein level than that of Field A. In general as most plants grow the nutrient levels in the plant will peak just before flowering. At this time the plant will start utilising these nutrients to produce seed. Once the seed is developed and matured annual plants die and will have very little in the way of nutrients left in the residue. In perennials plants a majority of the nutrients remaining flow down to the root with a minimum of nutrients left in the above portion of the plant. Perennial plants after the seed is gone move nutrients from the leaf area to the root and leaf portion is left a minimal of nutrients.

Now why are we not seeing a solid relationship between the soil sample results and the plant results? There are many factors that come into play determining the amount of nutrient uptake of plants from the soil. The primary factor is how much each nutrient is in a soluble state in the soil and is available for the plant. The solubility of the nutrient is determined by the pH, moisture, temperature/climate, organic matter, humus and interactions. The second major factor is the plant itself. Younger plants have higher

nutrient levels than older plants. In addition, different plant species will utilize mineral at different rates and amounts. For example cereal forages will contain higher levels of phosphorous than grass or legume forages grown on the same land.

You would not formulate nutrients for animal feed from soil sampling results or determine what fertilizers to add to the soil by using feed sample results. Every crop, whether grass, legume or cereal has specific characteristics. Soil sampling is the best way to identify the shortfalls in your soil to ensure that you can optimize plant productivity. Sampling will help you identify low pH, nitrogen and mineral levels that are present in the soil. Talking to an agronomist will help you make the decisions that you need to make for fertilizer application. What soil sample results will not do, is tell you what supplements your cattle require. This is where feed testing is crucial. We are able to determine the shortfalls from the feed tests done. As a nutritionist, I would advise this producer to supplement his cattle with the following nutrients that are deficient in the plants: Calcium, Magnesium, Zinc, Copper, Manganese, Zinc and Salt.

Information is power in this industry. So go out and arm yourself with information that will help you make effective decisions on your farm!

Biological Control of Canada Thistle 2012 - 2017

Producer Co-operators:
Rod & Beth Vergouwen
Phil & Pam Rowland

Also known as *Hadroplontus litura*, the stem mining weevil was introduced from Europe to Canada in 1965 and to the USA in 1970 to feed on Canada thistle. It is a biological control agent that attacks Canada thistle stems and rosettes. The weevil restricts its feeding to this weed and a few close relatives. It attacks rosettes of Canada Thistle in early spring, before the thistle bolts.

The weevil has a single generation each year. The adults spend the winter in the soil (generally in the upper 5cm). They emerge in early spring as the first thistle rosettes begin to appear. The adults are present for several weeks, mating and feeding on young foliage of the Canada thistle; unfortunately, adult feeding appears to have little adverse effect on weed vitality. Even at high densities, the adults are difficult to find in the field, as they fall off the host plant when disturbed and remain motionless on the ground where they are well camouflaged. They also spend much of their time on or near the ground. When ready to lay her eggs, a female weevil chews a hole (1/10" in diameter) in a thistle leaf on a young rosette, generally in the main vein. She turns around and lays one to five eggs in the hole. When the larvae hatch a week or so later, they tunnel through the leaf in the lower stem and root collar; when several larvae are present, the main vein turns black from the tunnelling and, several days later the leaf dies. In the stem and root collar, the larvae mine the pith; they avoid the vascular bundles, however, and hence generally do not cause the stem to die during the growing season. In early summer when they have fed fully, the larvae emerge from the thistle shoot through small exit holes that they chew near or just below ground level. They work their way into the soil, and enter the pupal stage in which they transform into adults. After two to three weeks, adults emerge from the soil in late June and July and feed on the thistle foliage until heavy frost occurs in fall. They may feed intensely at high densities, with attacked leaves bearing many small feeding punctures.

The weevils tend to aggregate in dense patches of Canada thistle and upon release at new locations they spread slowly and at the same time, level of infestation at the sites of release slowly increase. Larval mining does not prevent vigorous growth of attacked thistle stems under favourable conditions for the weed. Female weevils tend to lay their eggs in early developing stems; and these stems generally grow taller than those developing later in the season. Consequently, under otherwise favourable conditions for thistle growth, stems mined by weevils are generally taller on average at the end of the growing season. When attacked by only one or two weevil larvae, vigorous thistle stems are often able to kill these larvae by surrounding them with gall tissue. But when the weevil attacks a Canada thistle growing under less favourable conditions, the weevil can adversely affect weed vigor during the growing season. Initial field studies in Canada suggested that weevil feeding may also aid in the spread of the thistle rust, but this was not confirmed in subsequent research. However, weevil feeding may allow a variety of other micro-organisms to enter the thistle stem, with adverse conse-

quences for the thistle: field studies in Montana indicated that underground parts of stems are much more subject to winter kill if the aboveground stem is attacked by weevils during the growing season. It is presently unclear how effective the weevil will be in causing decline in thistle densities. Fluctuation in thistle density could not be consistently associated with varying levels of weevil attack in field studies performed in Canada. But ranchers in Montana have reported sharp declines in Canada thistle in some instances, apparently associated with release and subsequent population build-up of weevils. Research to date suggests that population reduction of the thistle is unlikely until the weevil reaches high numbers and infest a very high percentage (90-95%).

FFGA is participating in a regional trial set up by ARECA. In 2012, 58 dishes (each containing 105 weevils individuals) were released into controlled sites from Lethbridge up to the Peace Country.

Objectives of the project are:

a) Determine if the weevils work, and if native populations can be established in Alberta.
b) Determine if weevils are a cost effective method of Canada thistle control.
c) Determine if additional weevils need to be added to a site in consecutive years following initial release.

The success of *Hadropontus litura* on suppression of Canada thistle will demonstrate:

a) Use of biological control as an alternate means of pest control
b) A possible reduction in chemical use
c) Weed control in sensitive areas where other traditional methods are not able to be utilized.

FFGA has been working with producers Rod and Beth Vergouwen and Phil and Pam Rowland since the release of the weevils on September 7, 2012, to determine whether the weevils are developing local populations or not. One site is located near Strathmore and the other near High River. Both had a minimum of 50 Canada thistle plants. At both locations there is a control site with no application of weevils several feet from the weevil site for comparison.

When monitoring the sites throughout 2014, the presence or absence of weevils was inconclusive at both sites. It can take years before an insect can catch up with an exotic weed species, with Canadian field studies indicating a spread on average of 90 m in 6 years with results varying regionally. Infestation can be slow to expand in the first few seasons. Further training to identify damage and presence of the weevils would be beneficial. We will continue to monitor the sites for larvae, weevils, and the health of the thistle stand over the next few years.

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