Forage First

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Spring Returns to the Peace

by Kim Strasky

Thanks to Anne Grover for supplying us with these photos showing signs of spring! In this edition we introduce you to a new director and fill you in on a few events that went on this winter.
We cover everything from range management, livestock genetics, fracturing water tables to buying local seed and information on fencing for wildlife damage mitigation! Many thanks to all our contributors for your enthusiasm to share what you have learned. Hopefully everyone will find something of interest and learn something new. A few new ideas to take you into the new season.
(see page 2 for the list of articles)

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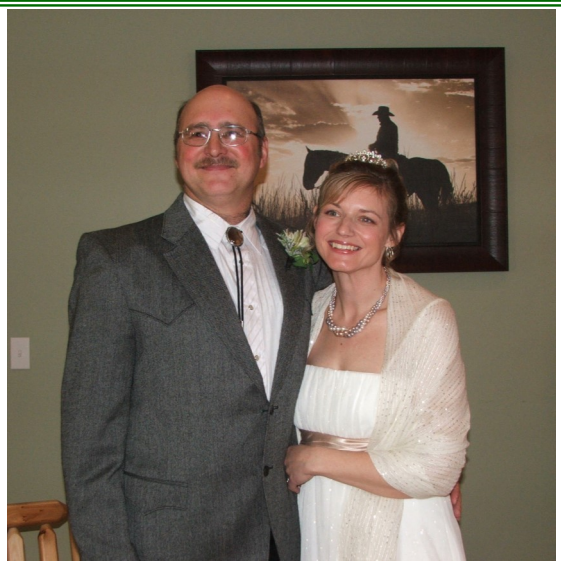

Introducing New Director Darwin Linford

by Sandra Burton

Can you tell us a bit about yourself? How long have you lived in the Peace?
Darwin: I have been in the Peace for over 33 years and my wife Theresa has been here for 5 years. We were married last November and have relocated to a piece of land south of Taylor. Until we can retire to our farm, I work at Spectra in Taylor and Theresa works at Imagine That in the FSJ Mall. Between us, we have 10 children, ranging in age from 10 to 30 years.

Tell us about your plans for your farm?
Darwin: We currently have 150 acres and are trying to rent more. I guess you could say we are in “start up mode”. We eventually want to be self sufficient here. We are getting started with an Environmental Farm Plan, so that we can set up everything properly. We will need some transition years of planting crops like oats to get our land free of brush and weeds. We are thinking outside the box, and want to set up a diversified operation with cattle and sheep. Goats are a niche market in Edmonton and Vancouver, that we are looking into.

What made you join the Forage Association?
Darwin: This group has very good working relationships and I really enjoy the energy of the people when we get together. I like learning about the different forage options and opportunities that are discussed at our seminars and events. There is always information to be gleaned from discussions with other members, for example, the day my neighbor and I came to look at your 3D wildlife fence.

Why did you agree to let your name stand for election onto the Board of Directors?
Darwin: I like to be involved and try to bring enthusiasm to what I commit to. I think as we build up and develop our place, there is a great opportunity to work together. We could set up some demos and trials on our virgin newly broken land. For example, I was reading in a Saskatchewan publication that stated that different species of forages work better with goats and brush control, and we could try those and share that information with our association.

Are there any final thoughts you want to leave our readers with?
Darwin: Forages are under-utilized compared with their potential in this region. I think we have a great opportunity to work together to promote forages better in the Peace River country.

Society for Range Management

by Julie Robinson, Rick Kabzems & Sandra Burton

At the end of January this year, we were lucky enough to attend the Society for Range Management 65th annual meeting and trade show in Spokane, Washington. What an event… and what a trip for that matter! But let's stick to the excitement at the event and you can ask us later about the trip. You may wonder who this "We" is? Locals: Sandra Burton, Richard Kabzems, Allen Dobb and Julie Robinson made the trip and met up with Rae Haddow there, amongst others. Highlights of this 6 day event included Rae Haddow as one of the keynote speakers in the opening session for over 1500 registrants.

Rae Haddow

Rae shared her vision of the future of range and challenged everyone to engage in the communication about the importance of range. She emphasized connecting with youth as the future and encouraged people to reach outside of their boxes and share in the excitement about range, in their own style linking it to their passions. This was a very compelling talk and I think it relates to all of us, our passions for agriculture and all things connecting to it. We all have a role to play in sustaining and sharing the good news about agriculture, so let's get out there and do it!

The conference began Monday with a fantastic speaker, Dr. Scott Burns, Professor of Geology at Portland State University. When we saw a retired researcher in his seventies running up onto the stage, we knew his talk was going to be good. He gave a very engaging presentation describing how the turbulent geologic past presented us with the landscape that we currently see in Spokane and surrounding areas in Washington. This was a great way to be introduced to a new place and has started Sandra and I on the quest to build a presentation that connects Peace River landscapes to people.

Other sessions of interest included a morning spent

talking about the American forage seed industry. They did a great job sharing information about the seed industry from a producer perspective, the processors perspective and linking it to the end users. They explained how long it took a seed grower to produce enough supply for a demand in the market. The seed industry needed a guarantee that the demand would still be there in 3 to 5 years, ensuring that the grower would actually have an opportunity to make money with that species, and that it made sense for the processors to set up for cleaning it.

It was remarkable to see how many people were employed in the US working in agricultural research, extension and promotion. For example, they had whole branches of government involved in native plant breeding and registration. In comparison there are only half a dozen people in Canada operating from 1 or 2 research stations that have any involvement around that specific topic.

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SRM con't

The States is fortunate enough to have one department buying 80% or more of the seed for the reseeding of federal land, and yet, there were still communication breakdowns. Apparently changing recommended seed mixes for federal land every 2 years is too fast a turnaround for growers to keep up, or want to keep up!

There was a good session on aspen. Apparently in some parts of the United States, it is considered to be endangered. At that point a professor from University of Alberta piped up that "if like the wolves, they wanted us Canadians to send more aspen down, we'd be more than happy to". Several chuckles were elicited but only from us north of the border. The Americans present did not seem to find the humor in exports of Canadian wolves.

One of the overarching themes of this conference was connecting research to end users. For me, this means, "how do I get my producers excited about things like new tools for remotely assessing range health and about doing inventories?"

After much thought and conversation with friends over some "value added agricultural refreshments" while listening to (once) local vocal talents such as Allen Dobb, we decided this might be best achieved through conduits such as ourselves. So as an action item from this conference, I (Julie) am going to try and bridge the gaps by sharing with producers practical applications of these tools.

Applications of these tools will help producers to better understand how good inventories can lead to more effective grazing and better/healthier grass production. Using these tools to augment grazing rotation and management will benefit the producer, and the land.

This conference gave us many new ways to look at agriculture in the Peace, and enhanced our knowledge of range and forages. Sandra would like to thank the Forage Directors for supporting her request to participate and Julie is excited to get to the 2013 conference. Rick is not sure he advises anyone to ever get into a truck headed out "for adventure" with Julie and Sandra; and advises that "spirited ideas" are best examined under the light of the next day before agreeing to them.

Bill Wilson and Julie Robinson helped facilitate a lively discussion on forage re-vegetation of disturbed land at a Forage Directors spring meeting.

Comment from Bill Wilson who attended the recent SCCC AGM.

"The highlight of the recent AGM for the Soil Conservation Council of Canada was the well deserved recognition of former Senator Herb Sparrow. He had such a big impact on conservation farming in Canada. He started promoting soil conservation in the 1980's when there was virtually no conservation tillage.

Now there is such widespread adoption that we consider it standard practice. He was a great politician with a vision and used his influence for positive change. He made it all happen. It was an honour to be present when he was recognized into the Soil Conservation Hall of Fame."

Thanks very much to Peace River Agriculture Development Fund (PRAD) whose continued support of many of our events is much appreciated.

Applying Genomics on the Ranch

by Keith Carroll

P.R. Forage Seminar in Taylor February 21, 2012.
I'm wondering why a hillbilly hobby farmer is being asked to comment about applying anything on the ranch but here goes.... Tom Lynch-Staunton is a sales person for Livestock Gentec, University of Alberta - seems like a nice young fella. Maybe I just needed an afternoon nap but I wondered why he doesn't go back to that beautiful family ranch in southern Alberta. Or if his heart is stuck on sales, try selling something easier like fridges to penguins.

After John Basarab from Lacombe Research Station gave his presentation, I started to see a possible connection, but it'll take me a while to explain. John's research has debunked the conventional wisdom that selecting for rate of gain will automatically select for feed efficiency. This wisdom was based on the incorrect assumption that maintenance requirements, adjusted for size, did not vary significantly among individuals. (I think we should keep in mind that feed efficiency is not the only reason that average daily gain has been important but Alberta Agriculture claims that a 5% improvement in feed efficiency could have an economic effect 4 times greater than a 5% improvement in only average daily gain.)


John Basarab

So what have John and co-workers found about feed efficiency? Residual Feed Intake (RFI) or net feed efficiency is the difference between an animal's actual feed intake and its expected feed requirements for maintenance and growth. RFI is the variation in feed intake that remains after the requirements for maintenance and growth have been met. Considerable variation exists among animals within breeds or genetic strains. This variation suggests that substantial progress can be made in RFI since the heritability of the trait is about 40%.

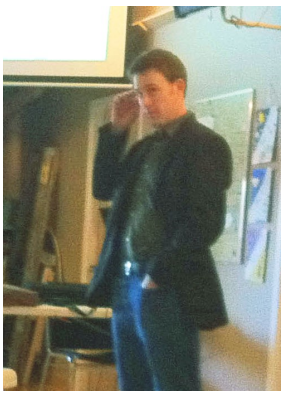
John's research, backed by similar research in Australia, shows that selection for low RFI can have significant results:

- Lower maintenance requirements of the cow herd by 9 to 10%
- Reduce feed intake by 10 to 12 %
- Improve feed conversion ratio by 9 to 15%
- Lower methane emissions by 25 to 30%
- No effect on average daily gain or mature size
- Slow gain in empty body fat by 4% but still grade A, AA, or AAA
- Lower weights of liver, stomach, and intestines
- Have no effect on distribution of 9 wholesale cuts
- Improve calf-weight-per-cow feed intake by 15%

What causes the variation in RFI or Residual Feed Intake? John has a couple of theories. Maybe it has to do with animals having high RFI losing more energy as heat. Also, he has recently learned that animals with high RFI tend to produce more free radicals, resulting in more "leakage" of energy across cell membranes. Deryle Griffith appeared to understand this – I don't really. (Should we think about putting antioxidants like red wine or blueberry juice in the waterers?)

So how to select for feed efficiency? John claims that you can't look at frame size or even breed, although "growthy" looking young stock and "easy keeper" appearing adults – the ones that tend to carry a little more flesh through the winter - tend to be more efficient, all other things being equal. Animals that are efficient while growing are efficient also as adult cattle and progeny of efficient cattle are more efficient than those of less efficient cattle. My understanding is that cattle that are efficient on a grain ration are also efficient on a forage ration, although John made it clear he believes it's important to select breeding stock that have been raised and fed under conditions similar to what you will be providing. Agriculture Canada has generated the first North American expected progeny differences for RFI on bulls from an Olds College test. Cattleland Feedyards near Strathmore now has facilities to test bull calves or replacement heifers for RFI. Their million dollar facility has capacity for 320 head so I'm thinking use will be limited to a few purebreds.

This brings us back to Livestock Gentec. The Bovine Genome project at University of Alberta is presently identifying genetic markers for RFI that are intended to have commercial application to aid in selection programs. Tom estimated the cost for this gene testing will be $20 per head – might make sense some day even for hillbillies to look for this information, at least when buying a sire.


Tom Lynch-Staunton

Soil Conservation Pioneer Nominated to Canadian Conservation Hall of Fame

by Glen Shaw, SCCC Executive Director

Saskatchewan sustainability pioneer, Senator Herb Sparrow, has been honored for his lifetime of leadership in soil and water conservation by the Soil Conservation Council of Canada (SCCC). Sparrow was inducted into the Canadian Conservation Hall of Fame in Ottawa, March 21, 2012.

"Few people have made a greater personal commitment in their life to maintaining the quality of Canadian soils and water than Senator Herb Sparrow," says Don McCabe, SCCC president, who presented Sparrow with his award. "The Soil Conservation Council of Canada is considered the face and voice of soil conservation in Canada. Senator Sparrow would be one of the most recognized and honored people in that effort."

Sparrow, who has been a businessman, farmer and rancher, lives in North Battleford, Sask. Born in Saskatoon in 1930, he acquired a farm and a fast food business in North Battleford. In 1968, at age 38 he was appointed to the Canadian Senate and served for 37 years. At his retirement, he was the longest serving member of the Canadian Senate.

As Senator, Sparrow served on a number of Senate Standing Committees and chaired the Standing Committee on Agriculture and later the Standing Committee on Agriculture, Fisheries and Forestry. He chaired the committee that produced a report on the state of Canada's soils entitled "Soil at risk, Canada's Eroding Future." That report led to the formation of SCCC, the Eastern Canada Soil and Water Conservation Centre and the Canadian Conservation Hall of Fame.

He has received many awards. He was the first president of SCCC and today is an Honorary Life Member. He is an Honorary Life Member of the Agricultural Institute of Canada, and an Honorary Member of the Soil Science Society of Canada. He has been acknowledged by the Soil Conservation Society of America, has received the United Nations Environment Program Leadership Medal and Certificate of Distinction for Soil Conservation.

He received an honorary doctor of science degree from McGill University and was inducted into the Saskatchewan Agricultural Hall of Fame. In 2008 he was awarded the Order of Canada and in 2011 received the L.B. Thompson Conservation Award from Agriculture and Agri-Food Canada.

Sparrow has been a long-time active player in his local community, serving as alderman for eight years and receiving many community service awards. His most recent act of community service was to personally provide funding to help keep a homeless shelter open in that community.

Don McCabe (left) & Herb Sparrow (right) .

The Canadian Conservation Hall of Fame was established in 1990 by SCCC to recognize the contributions of Canadians to the conservation ethic in Canada, says Glen Shaw, executive director of SCCC.

"Nominees for induction can be farmers or those directly employed in agriculture or soil conservation related activities, but also scientists, extension workers, educators, writers or anyone who has made a significant contribution through their dedication to promoting conservation. Their accomplishments and contributions may be on a national, provincial, regional or local level."

SCCC is a leading player in National Soil Conservation Week, held this year April 15-21. Information on current soil conservation efforts including acknowledgement of several "soil champions" will be highlighted on the SCCC Web site at www.soilcc.ca.

"Saluting the efforts of a few of the many producers who have adopted more sustainable soil management practices is important," says McCabe. "Many people take a risk to implement or promote new practices not commonly accepted at the time. That leadership is a reason for continual progress in sustainable management systems we have today."

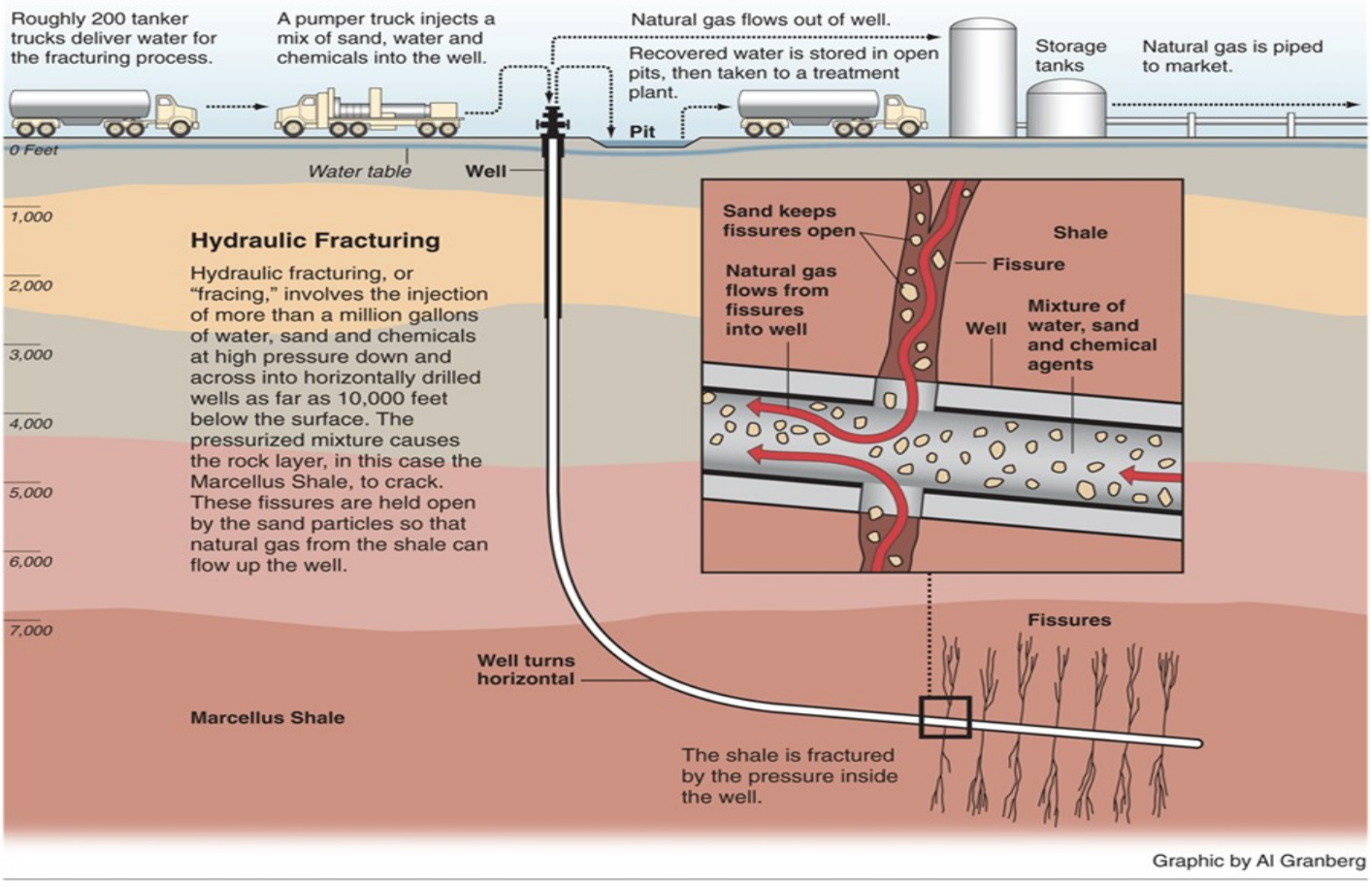
Fracturing Water Tables

by Julie Robinson

This spring the BC Waste Water Association hosted a workshop on fracturing. This was a two day workshop attended by over 60 people from both local and international locations. It focused on couple of pieces that were relevant to producers in the area: one the fundamentals of hydraulic fracturing and then discussion about fresh water sources in the BC peace.

As most of us are aware who are living in this area there has been much development in the non conventional shale gas plays in our region.

There are 3 major areas of development within the Montney Play including Tomslake/ One Island Lake/ back of Bear Mountain, another being Sunset/ Farmington/ Groundbirch area, and the third Beryle Prairie/ Farrell Creek/ up the Haystack. The Beryle Prairie area being a tighter play and therefore requiring more water for fracturing according to Oil and Gas Commission (OGC) staff who presented at the seminar.



Fracturing con't

So the basics of hydraulic fracturing as I understand; for those of you who know more (until this workshop that was just about everyone) I apologize for any inaccuracies; hydraulic fractures use water to suspend proppant during injection. WHOA, what's all this lingo! Proppant – used for conductivity at in-situ stress – usually some type of sand. Injection in this instance is talking about once the main vertical drill and horizontal well is drilled, water slurry (including fresh water, sand, antimicrobial solution, hydrochloric acid, and scale inhibitor) is pumped down the hole and put under extreme pressure. The surrounding area eventually gives way perpendicular to the weakest pressure. (*See diagram on previous page.)* Each fracture can use between 1,000 and 5,000 m^3 (220,000-1,100,000 gallons) water there are typically 20 fractures per well.

The Montney Play is not as tight as the Horn River Play (north Fort Nelson) therefore less water is required for each fracture. So, in this area, the typical use of water per wellsite would be 10,000-30,000 m^3 (2,200,000-6,600,000 gallons). In 2011 there were over 600 wellsites in the BC Peace drilled. Some companies are working towards recycling 20-40% of their water now. Meaning that last year oil and gas hydraulic fracturing activities used 6-18 million m^3 (1.3-4 billion gallons) of water or with possible recycling and reuse less 20-40%. Whoeee - that's a lot of water!

This lead to discussion about sources of this water. Allan Chapman, Hydrologist from OGC indicated this would only be 3% of the total surface water flow in our region. Our table had further discussion that it wasn't entirely about volume but more-so about timing and location of where this surface water and ground water is being extracted. We had a side bar conversation about producers selling access to dugout water, which was not included in the above volume of water available. There was also discussion about upcoming revisions of Water Act including a component about licensing some specified size of dugouts to make sure agriculture producers where able to continue their operations but enable licensing of larger water storage areas. Still much more discussion to be had on that.
Adrian Hickin also from OGC and speaker from Geoscience BC shared information about ground water monitoring that is ongoing in our region. They are improving the online information about aquifers and wells available to the public . (see web link #1 below)

Water Users	**Millions of gallons/yr**
Domestic Ag use	11
Beef	280
Bison	44
Sheep	7
Horse	37
Grain Spraying	5
Forage Seed Spraying	2
1 Well site - 20 Hydraulic Fractures average in Peace	4.4
600 well sites 2011 activities avg. in Peace	2,640

There is quite a lot going on in our region working to establish some baseline information about our aquifers, recharge rates, source areas, high risk aquifers etc. There was an extensive start made on this last summer a report was published by Geoscience BC "Aquifer Classification Mapping in the Peace River Region for the Montney Water Project" (see web link #2 below)

After some more discussion with colleagues at the meeting we discussed the possibility of hosting a "Water Well 101" to give an overview to ranchers on this topic. Also to discuss what is being done and what they can to do to help protect themselves and be informed about this critical topic.

1. http://www.env.gov.bc.ca/wsd/data_searches/wrbc/index.html

2. http://a100.gov.bc.ca/appsdata/acat/documents/r23247/aq_class_peace_riv_re_june_2011_1308845969283_d0546dd6b5818f205e6a3613d94555e8b28a4ee32529a427b4d1ac6b05311258.pdf

Why Local Seed 3rd in a series

Compiled by Talon Johnson, Dave Wuthrich and Mark Mittelstadt

This is the third instalment in a series of articles and forage facts about sourcing local seed. It all started with the discovery that a local livestock producer, Glenn Hogberg, purchases the seed for his cattle pastures from local seed plants. After an intriguing interview and obtaining Glenn's seed tag, I set out to become more informed about the advantages of using local seed in our hay fields and cattle pastures.

I started by interviewing Glen Mielke, the owner of Peace Country Seed. Some of the Hogbergs' pasture seed mix had been purchased from this grower. I also crossed paths with a bromegrass seed grower, Bob Noble, from Manning, AB and interviewed him as well. The natural next step seemed to be to research what seed tags and seed certificates could reveal to producers and seed plants.

Upon discovering that bags of seed, whether a mix or single kind, could be traced right back to the growers, I decided to follow the seed tag. Taking all the information I received from Glenn Hogberg, I contacted Glen Mielke at Peace Country Seed and Janet Roy at Peace River Seed Co-op to discover if Glenn's seed mix really did come from the Peace Region. Here is Glenn's seed tag as a reminder of the different kinds in the mix:
From tracing Glenn's pasture mix, I learned that many of the forages came from the Peace Region.

Hogberg Pasture Mix
40% Peace Country Alfalfa
20% Orchardgrass
15% Smooth Bromegrass
15% Meadow Bromegrass
10% Timothy

Those that did not (for example, several alfalfas) came from other regions with similar climates to ours (i.e. northern Saskatchewan).

Upon discovering that most of the seed came from producers we know very well, I decided to interview some of them and get some insight into why and how they grow their forages.

Following are two of the interviews:
1. timothy seed grower, **Dave Wuthrich**, and
2. smooth bromegrass grower, **Mark Mittelstadt**.

The **timothy** from Hogbergs' Pasture Mix originated from **Dave Wuthrich's operation in Cecil Lake, BC.** The Wuthrichs have been in the Cecil Lake area since 1968. In 2001 Dave, his wife Karen, daughter Gillian and son Miles took over and continue on the 5000 acre pedigreed seed family farm.

How long has your family been growing forage seed? And why do you include it in your crop rotations?

Dave: Ever since my dad started farming in '68 we have grown forage seed. It works well for crop rotations and helps to spread the workload during harvest. At one point it was worth a lot of money but not very much anymore, so most of our land is seeded into cereals.

How much of your operation is currently dedicated to forage seed production?

Dave: We currently only have 270 acres of Alma timothy and 400 acres of creeping red fescue and will not be seeding any forage seed this year.

What kinds of forage seed do you choose to grow and why?

Dave: We usually grow timothy and fescue, but have grown other forages such as tall fescue, alfalfa and clovers. We have had good luck maintaining our forage crops, especially the timothy. We had one field seeded into Bottnia II timothy 20 years ago, as it was a good variety at the time, and we just had to work that field up last year. Not because of yield issues but because the trees were starting to grow in. We would just burn it every two or three years as early in the spring as possible, and it would still produce a seed crop that year that was usually better than the previous year. Along with really good establishment, burning also helped with weed control. Burning was even effective in cutting chemical costs as we did not apply chemicals for seven to eight years.

Do you have any establishment and growing hints for forage producers, especially given that we may have drier conditions this spring?

Dave: Well if I could make it rain I would! Perhaps seeding timothy crops in lower fields to try and make sure they get the water they need. Other than that there is nothing else I can suggest.

Why Local Seed continued from previous page

The **smooth bromegrass** included in the Hogberg Pasture Mix comes from **Mark Mittelstadt's operation in Fairview, AB.** Mark and his dad partnered in their family farm in 2002. Now, as of last year, Mark and his wife, Shanti, have taken over the 1000 acre cereal and forage seed farm.

Has forage seed always been integrated into your operation and why do you include it?

Mark: For as long as I can remember, Dad always included it in our crop rotations. I started paying more attention to what we were growing in my early teens. We have always included some forage seed whether it was fescue, timothy, smooth brome or meadow brome. The advantage to including some forages in our crop rotations is: it helps to split up harvest and therefore disperse the workload.

Now that you have taken over the family farm, will you continue to include forage seed in your crop rotations?

Mark: Definitely, I will continue to include it in our operation. Most likely I will stick with the bromegrass as it is what I am most familiar with and know how to grow and manage. I like how it disperses our harvest and how well we can utilize all of the crop. After the seed is harvested, we then hay the field to use the rest of the plants. We keep about 10 head of cattle around and can feed them the hay we make.

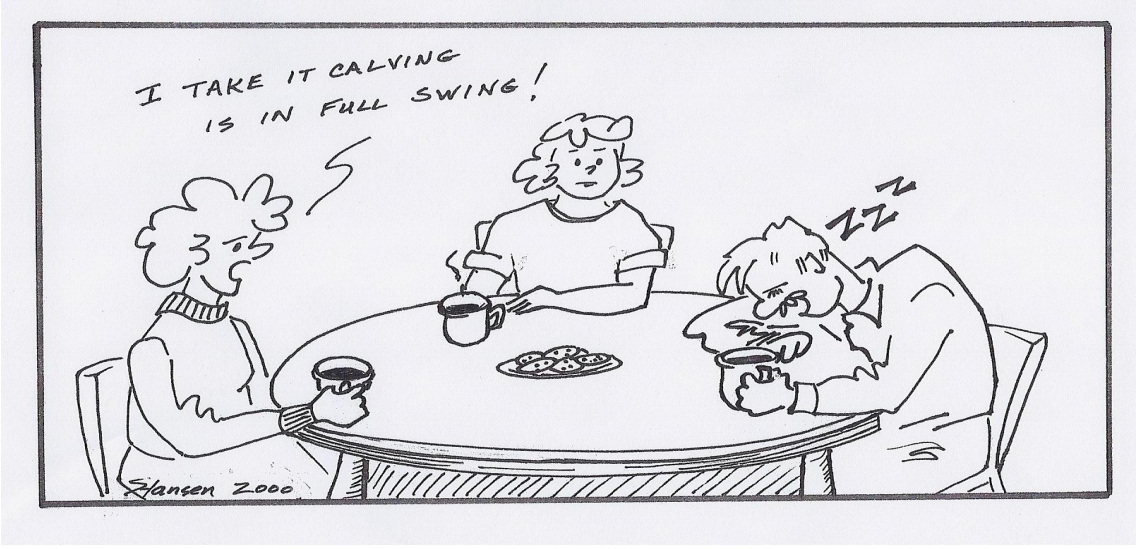
How much of your land is in forage seed production?

Mark: Since we have a smaller operation of six quarters we only work up half a quarter, approximately 80 acres, to put into forage seed production. We can also only grow one kind and variety of forage because we do not have enough area to separate the seed crops from one another. Right now we have about 80 acres in Carlton smooth bromegrass Ideally, I would like to expand our operation another four quarters and then I would be able to include more forage seed for rotations.

Do you have any establishment and growing hints for forage producers given that there may be drier conditions this spring?

Mark: I am not sure if this is anything special or not, but we start by seeding our grain crops to get them into the fields first. Then we wait for a good rain before we seed our bromegrass crops. After the rain, we seed the brome very shallow, to the point where we are almost just dropping it on the ground, and then go over the field with our harrow packers. This works well if there is very little straw left on the field, so our harrow packers do not plug up and leave straw piles all over the field. As I said, I don't know how vital this is, but it works well for us, and we usually get good establishment.

In conclusion, growing and utilizing local forage seed seems to be important to many producers in the Peace Region and there are a lot more considerations than I realized.



Fencing: Wildlife Damage Mitigation

by Shelley Kirk

Fencing wildlife: damage mitigation and knowledge sharing: a preview of information to come

A couple of months ago the Peace River Forage Association asked if I would like to participate in some of the projects going on regarding wildlife damage mitigation research and I jumped at the chance to become involved (in fact, I would like to take this opportunity to thank Sandy, Julie, Talon and Bill for including me on their team because not only is the work interesting, but the people involved are supportive and, most importantly, enjoyable to work with!).

The first project that I have been working on involves reviewing some of the literature available on fencing (particularly 3-D electric fencing) and animal behaviour. I am currently in the midst of summarizing much of the documentation I've found which includes peer-reviewed articles and studies, extension documents, fencing guidelines and anecdotal information collected previously by the PRFA.

While running through much of the information out there, I've noticed that some areas (such as the efficacy of various types of fencing) have been extensively researched while other areas (such as the specific impacts of snow depths on an animal's ability to breach a fence) are not so widely documented. In such cases as the latter, it seems that anecdotal information collected could make a difference to knowledge sharing and transfer, particularly within local areas with similar conditions and factors affecting agriculture and wildlife activity.

However the knowledge is collected, be it through organized academic studies or informal stories around a familiar kitchen table, we can be certain that the gathering and sharing of information will likely only enhance our ability to respond to the challenges posed within the wildlife-agriculture interface.

With that in mind, as you read on about the specific topics which I am currently researching, please feel free to jot down any relevant experiences of your own as I would enjoy hearing about them and could potentially use your practical knowledge (being a fencing novice myself) within my review and in the upcoming forage facts.

Though this review is still open to alterations, I've broken the document up into some basic topics and, with the help of those mentioned previously, have received clarification on the types of information people have been looking for specifically. The article will aim to provide a discussion on the following: types of wildlife fencing available, including a brief review of conventional methods followed by a more in-depth look at 3-D electric fencing and its costs and benefits; the importance of timing, placement, setup (including gates/wire heights and the importance of seasonal effects, i.e. snow) and, importantly, maintenance of the fencing; and how animal behaviour and motivation will factor into the efficacy of the fencing. From these topics it is hoped that some practical and useful forage facts can be at the ready for anyone considering a new fencing project or wanting to update a current fencing situation.

Perhaps as you sip your coffee, tea or hard-earned beer and mull over the review or forage fact you've pulled up on the PRFA website you'll think to yourself, "Hmmm, I'd like to learn a little more about this certain topic or this study". With that in mind, the aim of this project is also to provide everyone access, within the PRFA website, to the bulk of the articles and documents used to compile this review where copyrights allow. Fortunately, many of these documents can be found on the internet using a basic search engine, such as Google. Below I've highlighted some sample articles of interest and the citation information for those wanting to get a jump on their own fencing research this spring.

Article # 1

Kahru, R 2004, *Fencing guidelines for wildlife (revised version),* Habitat Extension Bulletin No. 53, Habitat Extension Services, Wyoming Game and Fish Department, Wyoming.

This article contains information on 'friendly' fencing for wildlife as well as exclusionary fencing. It discusses a variety of fence designs including the eight foot woven wire, eight-wire slant, 3-D, fifteen-wire fence as well as various fence designs to exclude predators. It contains useful diagrams of these fence types as well as construction recommendations including information on end and corner bracing, line posts and spacing, gates, wire types, attachment and tension and proper grounding. Within the appendix is a useful summary table on fence designs for both big game passage and exclusion.

Article # 2

Thompson S, Jonkel J & Sowka P 2009 *Practical electrical fencing resource guide: controlling predators*, Living with predators resource guide, Living with Wildlife Foundation, Montana.

Fencing: Wildlife Damage Mitigation con't

This document discusses electric fencing as a means to deter predators and specifically focuses on bear, wolf, coyote and mountain lion exclusion designs. It considers and elaborates on the planning and components of electric fencing as well as design types for different predator exclusion (both temporary and permanent).

I have included this document largely as a guide for electric fence setup (given that the electric fence component section may be quite useful for someone new to electric fences or someone looking for design ideas) as the document discusses energizers and joules required, wire types, post types and grounding (both all hot and hot/ground systems). The document also goes into detail on a variety of uses and designs for electric fencing, unwelcome mats and setups which may prove useful to some producers.

Article # 3

VerCauteren, KC, Lavelle, MJ & Hygnstrom, S 2006, 'Fences and deer-damage management: a review of designs and efficacy', *Wildlife Society Bulletin*, vol. 34, no. 1, pp. 191-200

This article summarizes the available scientific literature on fencing in order to determine which types are most effective in excluding white-tailed deer, thus preventing deer damage, in a variety of situations. Deer damage in this article refers not only to crop damage and loss, but also transportation collisions, disease transmission and environmental degradation. This review discusses types of fencing available as well as various aspects of fencing design, including level of protection required, ability and motivation of deer to penetrate, behavioural characteristics of deer, economics, and potential negative effects of fencing.

Not only does this article provide a good overview of fencing for deer damage prevention, it also contains valuable background references for those wanting to look further into specific topics of interest, for example, deer behaviour. Furthermore, the document contains a useful table summarizing major fencing types and their associated efficacy for preventing deer damage, average construction costs, and longevity and maintenance standards.

Article # 4

Walter, DW, Lavelle, MJ, Fischer, JW, Johnson, TL, Hygnstrom, SE & VerCauteren, KC 2010, 'Management of damage by elk (*Cervus elaphus*) in North America: a review', *Wildlife Research*, vol. 37, pp. 630-646.

This article contains a very broad and thorough overview of elk management including both lethal and non-lethal methods. In summary, the authors discuss the advantages and disadvantages of a variety of practices such as regulated hunting, sharpshooting and aerial gunning, fertility control, translocation, fencing, repellents, hazing and harassment and habitat management. Preference is noted for the use of a variety of these management techniques (used in conjunction in a timely and cost-effective manner) depending on the situation at hand as well as on public perception of the control method(s). Limitations and further research areas are also commented on.

This article contains a fantastic overview of elk damage management and also is a great source for further reference to areas where more information can be gathered. It does contain a section on behaviour as well as fencing which provides some commentary useful to the 3-D fencing wildlife review, though more information will be gained on behaviour and fencing placement from this article as opposed to 3-D fencing design itself.

The first three articles are available on the internet, however the last article on elk may only be available if you have access to a specific database (for example, I found this article through the University of Calgary library databases). It is these types of articles, not readily accessible otherwise, that we hope to have available on the PRFA website once copyright permission challenges are resolved.

I look forward to continuing my research within the area of wildlife damage mitigation and fencing and hope that you too are looking forward to the information that will be more readily available in the near future. Again, if you do find that you've got an experience or two to share on any of the topics mentioned above please feel free to contact the PRFA.

Dylan Biggs

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Come out to this exciting clinic and learn to move your cattle with less stress for you and your cattle!

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Lunch included both days

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BRITISH COLUMBIA CATTLEMEN'S ASSOCIATION

84th ANNUAL GENERAL MEETING

MAY 31; JUNE 1, 2, 2012

POMEROY SPORTS CENTRE & FORT ST. JOHN CURLING RINK

Theme: "TOWARDS A HEALTHY FUTURE"

For more information see: www.bccaagm.com

Registration must be received in full by April 15TH, to be eligible for the Early Bird Prize: *Free Couple Registration (Value of $300.00)*

Registration includes:

Thursday:	Registration opens at 5:00 pm with Welcome Reception & Trade Show starting at 7:00 pm
Friday:	Breakfast, Lunch, BBQ, Auction & Entertainment Business Sessions, Trade Show, Companion Tour
Saturday:	Breakfast, Lunch, Banquet and Dance Business Session, Education Day, Trade Show

REGISTRATION OPENS AT 5:00 PM THURSDAY, MAY 31st - POMEROY SPORTS CENTRE

Send Registration form and fees to : BCCA Convention 2012
4 - 10145 Dallas Drive, Kamloops, BC V2C 6T4
Phone: 1-877-688-2333 Fax: 250 573 5155 Email: beverett@kamloops.net

NORTH PEACE APPLIED RESEARCH ASSOCIATION

Peace River Forage Association of British Columbia

2012 Summer Tour to Manning, AB

Fri, June 8 & Sat, June 9, 2012

from 7:30 am Fri in Dawson Creek (BC time) OR from 7:30 am Sat in Manning (AB time)
Meet at Northern Lights College in Dawson Creek OR at NPARA Research Farm south of Manning

Topics to include:

* Spraying out alfalfa trial with Calvin Yoder & forage corn cp barley trial with Bart Lardner
* Michael Scott's innovative rotational grazing systems with cattle, goats & hair sheep
* Twin Rivers Colony with feedlot, intensive grazing, pipeline water & geothermal heating
* Agroforestry grazing project at Murdoch Lake & ecobuffer/shelter belt plantings near Manning
* Winter wheat fungicide trial, Agrotain/ Agrosol trials & Agrowplow demo
* NPARA trials of legume, grasses, cereals, peas & flax varieties
* Growers' bromegrass seed fields in the Manning area

Registration Cost:
Both Days: $150 each for members *(includes accommodation, 2 lunches, 2 suppers & transport)*
$200 per couple for members *(includes accommodation, 2 lunches, 2 suppers & transport)*
$180 each person for non members or $250 per couple for non members

Sat Only: $30 each for members *(includes 1 lunch, 1 supper & transport)*
$55 per couple for members or $45 each for non members

To sponsor or for more information contact:
Sandra or Chris at 1 877 630 2198 or Nora at 780 836 3354

PRFSA

2012 Peace Region Forage Seed Summer Tour

Meet at Forage Seed / BCGPA Research Site, North of Fort St. John, BC

Thursday, June 28, 2012 from 9:30 am - 3:30 pm (BC time)

Topics to include:

⇒ Peace Grass Seed Testing Trials
⇒ Weed Control Trials
⇒ Insect Issue Updates
⇒ Re-vegetating Disturbed Sites Demos & Discussions
⇒ Growers' Grass Seed Fields in the area

Registration Cost: $20 for members *(includes lunch, tour & transport)* or $30 for non members

To sponsor or for more information contact:
Sandra or Chris at 1 877 630 2198 or Calvin at 780 864 3879

Peace River Forage Association of British Columbia