GREY WOODED FORAGE ASSOCIATION

ANNUAL REPORT 2019-2020

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The Grey Wooded Forage Association is a producer-driven, non-profit society registered with the Province of Alberta on July 13, 1984.

We serve forage and livestock producers in six West-Central Alberta Counties: Wetaskiwin, Ponoka, Lacombe, Clearwater, Red Deer and Mountain View.

Our office is at 5039-45 Street, Rocky Mountain House

Phone: 403-844-2645

Mail: PO Box 1448 Rocky Mountain House, AB T4T 1B1

Web: www.greywoodedforageassociation.com

Business email: office@greywoodedforageassociation.com

Agricultural field services email: field@greywoodedforageassociation.com

COVER PHOTO: Fresh off the truck, a new herd of yearlings dives into the fresh grass on GWFA member Darrell Fipke's place, southwest of Westerose/Brenda Kossowan photo.

MESSAGE FROM THE CHAIR

The 2020 Annual General Meeting for the Grey Wooded Forage Association has had to adapt to the current pandemic affecting the world.

Brenda and Greg had planned a great day of workshops proceeding the formal meeting but because of the current provincial gathering restrictions all that was placed on hold.

Potentially we will be able to meet and have the workshops sometime this coming winter.

In the meantime we will proceed with the virtual AGM.

During the past year we have carried out a number of projects and workshops, as outlined in Greg's report. Brenda kept everything running and came in under budget for the year.

We were concerned over the past year about go forward core funding from Alberta Agriculture because of the change in government and change in focus of the Agriculture department.

We received funding for the 2020/2021 year and I am hopeful that that will continue as long as they perceive we are providing a valuable service to the agriculture community.

Alberta Agriculture has changed the manner in which they fund research. The new model is Rural Directed Ag Research. RDAR is in the process of determining what it is and how it what it will deliver to the industry.

It has initial funding of $37 million per year available for projects over the next few years. Within the next year, as it develops its mandate, we will see how it will deliver this funding. RDAR is definitely a work in progress but I believe it is a positive move forward for the industry with the emphasis on applied research.

We have to be very diligent in continuing to delivering a valuable service to our members.

Providing workshops and field days allows the GWFA to inform our members of new technology available. This knowledge transfer component is critical.

Research is great, but unless it can be translated and applied to our situations it is meaningless. We will continue to do demonstration projects to evaluate the validity of the applied research to our areas.

It has been my pleasure to serve as your chairperson for the past two years.

I am optimistic that we will be able to continue to deliver a valuable service for our members and look forward to the future.

Thanks again,

Gil Hegel

VISION STATEMENT:

"Farming and ranching is successful through progressive and innovative production methods."

MISSION STATEMENT:

"To provide knowledge, tools and resources that build and support a thriving farming and ranching community."

OUR PEOPLE

Founding Board, July 13, 1984

George Reid, Chair	Rocky Mountain House
Wayne Carr	Bluffton
Harvey Sharp	Winfield
Dave Willows	Winfield
Paul Pritchard	Rocky Mountain House
Leon Godkin	Rocky Mountain House
Jim Bauer	Rimbey
Lorne Turner	Eckville

Past Managers/Specialists

Jim Bauer	1986-1994
Kyle Greenwood	1995-1999
Maria Fayyaz	1999-2000
Albert Kuipers	2001-2014
Ginette Boucher (manager)	2015-2018
Devin Knopp (specialist)	2016-2018

2019-20 Board and Staff

Title	Name	Residence	Entry year
Chair	Gil Hegel	Olds	2017
Vice-Chair	Jess Hudson	Bashaw	2018
Secretary	Dallas Jenson	Bluffton	2017
*Treasurer	Alex Neal	Caroline	2019
Director	Greg Campkin	Sundre	2018
Director	Lee Eddy	Innisfail	2019
*Ex-Officio	Maria Champagne	Bluffton	n/a
*ARECA rep	Ken Ziegler	Rocky	n/a
Vacant			
Vacant			
Vacant			
Business Manager	Brenda Kossowan	Leslieville	2018
Agricultural Field Specialist	Greg Paranich	Blackfalds	2018
2019 Summer Technician	Erin Willsie	Caroline	n/a
Bookkeeper	Heather Lyon	Rocky Mountain House	n/a

**Denotes appointed directors who are entitled to vote at board meetings on all but financial motions.*

BUSINESS MANAGER'S MESSAGE

Waiting until the last minute to file my report has proved beneficial in terms of being able to relay some good news, hot off the press.

On the morning of our June 11 Annual General Meeting, I received a voice mail from Yellowhead MP Gerald Soroka's Ottawa office announcing that Grey Wooded Forage Association will receive a grant to help us pay one student under the Canada Summer Jobs program.

We had missed out on the original opportunity under the annual Youth Employment and Skills Program, which covered 80 per cent of our summer student's wages and benefits in 2019. Because of that, the board had to reconsider our summer employment needs and decided to limit the costs to hiring casual help for field work. This new grant, generated by the federal government's covid-19 relief effort, enables us to offer full-time work to the candidate who was hired for the casual position.

A good team that works well together has been an essential element in GWFA's efforts to push forward on applied research, field demonstrations, events and conferences.

Our team in 2019/20 included three key characters whose individual talents made us all look good.

GREG PARANICH
AG FIELD SPECIALIST

HEATHER LYON
BOOKKEEPER

ERIN WILLSIE
SUMMER TECHNICIAN

Greg joined GWFA in the fall of 2018 to assume the position previously held by Devin Knopp and updated to more accurately reflect his duties as agricultural field specialist. He brings to the table a wealth of experience as a former agricultural fieldman and certified crop advisor. Greg's work in creating and managing workshops has been a real bonus in bringing new faces to our membership and bringing back a few whose memberships had lapsed in recent years.

This year, we are creating virtual events to help cover the KTT (knowledge translation and transfer) gap that exists because of covid-19 restrictions. Our hope, of course, is that we will be able to resume gatherings later in summer or shortly thereafter. Our priority will be to host a signature event that had originally been planned as part of our Annual General Meeting.

This event will be held at Westerner Park in Red Deer, with scheduling to be worked out once they are allowed to resume normal business.

Heather, who works under contract to keep our books in order, has been instrumental in keeping our accounts up to date, making sure bills are paid and working with the treasurer to ensure that the business manager is up to date and on budget. Her wisdom has been instrumental in our ability to toe the line.

2019 was a difficult year with a budgeted shortfall that required a series of withdrawals from our savings account. Thankfully, the previous board and manager had the foresight and fortitude to hold back some savings to ensure that the association would remain viable in case our normal funding sources were to fall short.

We anticipate some excess revenue this year, which will be used to cover that shortfall and we are pursuing alternate revenue sources to ensure that our assets are always healthy enough to cover a funding drought. One resource we hope to tap is an application for Charitable Status, which would allow us to pursue additional endeavours including ramping up our efforts to gain public trust. We are considering membership in the Canadian Roundtable for Sustainable Beef, to which we belong by default as a member of Agricultural Research and Extension Council of Alberta. Direct membership may help improve our knowledge base and our public image as we address animal care, soil health and carbon sinks.

Erin came back to GWFA for a second year as a summer intern, tasked with multiple duties in the office and in the field. Equally comfortable with a paint brush or a software update, Erin brought insight, compassion and a generous spirit to her job as the person responsible for doing everything that Greg and I were unable to accomplish on our own. She helped organize events, backed Greg up in the field, made contact with lapsed members, looked after our web page and social media and helped renovate the office that was badly in need of reorganizing and a coat of paint. Erin continues with GWFA on a casual basis, updating our website as required.

Now that restrictions on covid-19 are starting to lift, we hope you will take the time to drop into our office during business hours and have a coffee and look around. Please call ahead though—there are days when we are all out on other tasks. You can find our contact information on Page 2.

Cheers!
- Brenda Kossowan

Special Thanks to our FRIENDS AND PARTNERS

Collaboration is truly the key to GWFA's ability to provide high-calibre research and events to its members and the broader agricultural community. Our involvement with ARECA, AFIN, ALUS and AFAC puts us at the table with people who share the values upon which GWFA was built and who are dedicated to ensuring that those values are maintained. Our partners in ARECA and Red-Bow work with us to develop research projects, host events and share resources that help us provide the timely and reliable information to the livestock and forage community.

ARECA

The Agricultural Research and Extension Council of Alberta is made up of eight applied research and forage associations throughout the province, including GWFA. It is our gateway to research funding, group insurance, political influence and provision of the Environmental Farm Plan.

AFIN

The Alberta Forage Industry Network provides common ground for organizations and businesses involved with growing grass, from providing turf for golf courses to orchestrating research for hay producers.

ALUS Canada

Alternative Land Use Services Canada is a Weston family initiative aimed at helping agricultural producers protect and preserve wildlife habitat along the rivers and wetlands on and adjoining their properties. ALUS operates in three of the counties that GWFA Serves: Red Deer, Lacombe and Mountain View.

AFAC

Alberta Farm Animal Care is a producer-driven animal welfare group, founded in Alberta and a model for the rest of the world. AFAC aims to help producers take the best possible care of their livestock and operates a 24-hour emergency line that people can call during a crisis involving livestock, such as a collision, fire or other calamity on the farm.

Red-Bow Agricultural Partnership

Named for the two river basins that it intersects, Red-Bow was formed between a group of counties and agricultural associations in Central Alberta to host seminars aimed an improving economic and environmental sustainability. Red-Bow hosted Ladies Livestock Lessons near Cremona on January 18 and Ranching Opportunities at Olds College on February 13.

AGRICULTURAL FIELD SERVICES

INTRODUCTION

The Grey Wooded Forage Association has adopted new mission and vision statements as shown on Page 3. When I reflect on these statements, I review our activities for the past year and check how we met these objectives. I am confident that our efforts have moved us along the path to our goals to benefit our members and agricultural communities. Our 2019/20 projects and extension activities have embodied our Association's Vision and Mission in being progressive, innovative while providing knowledge and tools for our Members to improve their production methods.

We have had a successful series of collaborations with our area County Agricultural Service Boards, associated organizations, and industry. Our connections with Alberta Agriculture and Forestry have always been solid resources and staunch supporters. Both of our worlds have changed with the government reorganization of that Department. Although the connections still exist, we have had to recalibrate some of our mutual alliances to achieve the same results. We will have to shift to networking technology in the new order, but change has always been the constant in modern agriculture.

Looking forward, we have robust programming in place for our activities. We will have a continuation of some projects as well as some new directions. The extension program, now referred to as Knowledge Translation and Transfer (KTT) will continue to actively bring informative workshops and field days to benefit our producers. Your feedback and input are very valuable in our planning successful events. Here is an outline of some things to come.

I would like to thank the Members who supported us with their participation, ideas and positive feedback to help make us better. The support of our Board, our Partners, and Sponsors is vital to making all the moving parts work a productive manner, and I want to recognize them for that.

- Greg Paranich

PROJECTS

HARDY ALFALFA continued into its sixth year with Darren Bruhjell and Lacombe Research and Development Centre staff collecting plot data this summer to be shared with Grey Wooded Forage Association at forage-themed seminars.

DEB AND DOUG SKEELS

In 2013, the Grey Wooded Forage Association and Agriculture and Agri-Food Canada, supported by the Beef Cattle Research Council, Alberta Beef Producers and Alberta Agriculture and Forestry, embarked on a joint alfalfa demonstration project at the Skeels farm, southeast of Rocky Mountain House. This project originated from discussions within the GWFA regarding the lack of longevity of alfalfa stands in the West Country.

Research has been supported and completed by Lacombe Research and Development Center. Clippings are taken in July and September. Alfalfa types are planted in strips width wise and grazed by cattle length wise. Each plot has a grazed and a non-grazed subplot.

Stand production estimates were also measured using a rising plate meter and cover estimates were taken prior to clipping. Plant height data is measure by quad mounted sonar unit and Normalized Difference Vegetation Index (NDVI) data is measured by quad mounted sensor.

Maps were generated to illustrate any differences between the plots and their grazed/ non-grazed portions.

The maps had not been published in time to be included with this report.

POLLINATOR This project was a continuation of coordinating seed mixes from Syngenta to the ongoing cooperators to continue to establish and grow pollinator friendly plots. The plots were verified and documented for level of establishment. ARECA (Agricultural Research Council of Alberta) has partnered with Syngenta and the Soil Conservation Council of Canada to bring Grey Wooded onto this international project. Operation Pollinator is an initiative created to establish pollinator habitat on farmland to enhance the biodiversity of our environment. The Seed Mix given by Syngenta includes: Timothy, Coated Alsike Clover and Wildcat Double Cut Red Clover, Yellow Blossom Sweet Clover, Phacelia, and Coated Bruce Birdsfoot Trefoil. All Participants are given seed mix in the Spring and plant late May. Site inspections occur in July to make sure seed has been planted and the stand is growing. Successful plots increase pollinating species throughout farms and help grow crops and surrounding habitat. All seed mixes have been checked for any possible harmful weed species. Seeds are inoculated and mixed in a 22-pound bag.

CANADA THISTLE STEM MINING WEEVIL The goal of this project was to establish a population of Canada Thistle Stem Mining Weevil to control Canada Thistle in riparian or other environmentally sensitive areas where the use of herbicides, mowing and grazing cannot occur. The project is used to gain insight into the length of time it takes for a single cup of weevils to establish a population suitable for Canada Thistle suppression and how many need to be released to establish given a colony density. This project includes two smaller project designs for monitoring and establishing. The monitoring project looks at a single test area over four years where one cup of weevils was released. The establishment project has four sites in a test area with changing weevil amounts within the same stand to test effectiveness of different population number to start.

Data are collected in July where test plots have plantstand counts and weevil evidence checks completed. Thistles are cut open to look for Weevil larvae or proof of their presence by darkened interiors. Weevils are a biological control to be used in locations where farmers are unable to use pesticides or other methods of controlling the thistle.

Weevil plot evaluations and larvae counts were conducted in July on the Medicine River sites (2), as well as the established Sundre and Mountain View County (office) locations. We did a follow up in August to document thistle damage evidence.

Observations:

The collected data on Weevil information showed no significant differences in population establishment and persistence between the 1, 2, or 3 cup releases. The thistle control, although statistically not significant (low plot numbers), did seem to show an advantage to the 2 cup release population levels. Of note, in a wet year, there were a notable incidence of Canada thistle deaths in the plots from fungal disease, as well as the weevil activity.

Conclusions:

The expectations with the use of the stem mining weevils for Canada thistle control should not be compared to conventional methods of weed control. It is a slow process and limited to supporting a slow growing insect population.

The weevils would be expected to migrate away (no incidence to show that to date) when the target weed population was not high enough to sustain them, but the weeds would still be present to persist.

In sensitive environmental or difficult to access areas, biological control with insects could be a preferred, but low impact option for weed control.

LORELEE GRATTIDGE FROM MOUNTAIN VIEW COUNTY ASSESSES A WEEVIL SITE

THE TEAM FROM GREY WOODED FORAGE ASSOCIATION AND CLEARWATER COUNTY ASSESS TEST PLOTS AT THE COUNTY'S DEMONSTRATION SITE, NORTH OF ROCKY MOUNTAIN HOUSE.

SUSTAINABLE ANNUAL FORAGES Livestock producers are looking to enhance their immediate feed supply shortfalls, and regular feedstocks with annual forages. Typically, they turned to annual cereals for stored forage as silage or greenfeed but were also looking to extend the forage value from those same acres. Recent years have introduced several atypical annual forages into the industry including annual grasses, brassicas, and annual legumes. All offering varying degrees of forage and soil health benefits. Attempts to incorporate these forage products to boost traditional annual forage production have had varied levels of success and failure. This project attempts to discover the most successful management practices to intercrop annual forage mixtures with cereal silage. The Grey Wooded Forage Association and Partners developed and demonstrated sustainable practices for producers to gain knowledge for optimum intercropping profitability. Annual Forages Intercropped with Cereal Silage plots were seeded to variable rate barley strips June 6 and cross seeded with 4 blends of alternative forage mixtures June 10. On June 17, we "planted" two pairs of undies for the "Soil Your Undies" challenge, to be unearthed as part of our follow up soil workshop in the fall. We examined intercropping benefits of forage yield, feed quality, and feasibility of extended forage season management. Forage yield, feed quality, post-harvest regrowth, and soil improvements were measured. Evaluation of cereal seeding rates and their impact on overall stand establishment, species success, weed control, and post-harvest performance were documented. Demonstration of annual species in various separated intercropped mixtures were conducted. Informal in-field tailgate sessions were held to discuss emergence and establishment, weed control and stand competitiveness. Pre-silage forage production, and soil health indicators were observed. A primary large-scale Field Day was hosted (West Country Ag Tour, August 20/19) by Clearwater County to discuss all project parameters being measured and observed in the project.

A soil health feature event could not follow up on the Soil Your Undies demonstration along with a Soil Researcher's commentary due to inclement weather in September and later unavailability of Soil Researcher.

PROJECT PARTNERS: Clearwater County Ag Service Board, Grey Wooded Forage Association, Benalto Ag Services (fertilizer). Performance Seed (cover crop seed), Challand Pipeline Ltd. (Brillion seeder).

DATES AND RATES, 2019 COVER CROPS

1. Soil tests taken April 23.
2. Plot area cultivated and fertilized with 24N, 3OP, 3OK, 19.5S on June 3.
3. Barley was seeded north/south on June 4 at 5 different rates. The recommended rate for barley for forage purposes using the Alberta Ag. calculator for Trey barley was 160 lbs. per acre, which we used for the 100 per cent rate.
4. Other plots were seeded at 25 per cent, 4O per cent, 50 per cent and 112 per cent.
5. Two plots were left unseeded of barley
6. The cover crop cocktails were seeded east/west across barley strips on June 10 using a Brillion seeder.

SUSTAINABLE ANNUAL FORAGES *(continued from previous page)*

7. *Nitromax mixture* of clovers seeded at 16 lbs acre; consisting of 50 per cent Frosty berseem, 50 per cent Fixation balansa Clover, 20 per cent Kentucky Pride crimson clover.
8. *Performa Complete mixture* seeded at 11 lbs/acre; consisting of 30 per cent Meroa Italian Ryegrass, 20 per cent Berseem Clover, 15 per cent Balansa Clover, 15 per cent Dwarf rape, 10 per cent Dwarf Kale, 5 per cent Driller Radish and 5 per cent Purple Top Turnip.
9. *Money Ball mixture* seeded at 15 lbs/acre; comprised of 3O per cent Kentucky Pride Crimson Clover, 30 per cent Dwarf Kale, 40 per cent Meroa Italian Ryegrass.
10. *Hat-Trick mixture* seeded at 11 lbs/acre; comprised of 33 per cent Annual Ryegrass, 33 per cent Frosty Berseem Clover and 33 per cent Driller Radish.
11. *Mayhem mixture* and seeded at 15 lbs/acre; comprised of 11 per cent Annual Ryegrass, 18 per cent Frosty Berseem Clover, 13 per cent Driller radish, 10 per cent Kentucky Pride Crimson Clover, 13 per cent Dwarf kale, 23 per cent Meroa Italian Ryegrass, 5 per cent Balansa Clover, 5 per cent Dwarf Rape and 2 per cent Purple Top Turnip.
12. The Nitromax and Performa Complete mixtures are commercial premixes provided by Performance Seed. The Moneyball and Hattrick mixtures were devised by Grey Wooded Forage Association and Clearwater County partners based on the single species strip performance from 2018 (dry year), and the seed was also provided by Performance Seed. Moneyball is a combination of the top 3 annuals from the 2018 yield performers, one each of annual grass, legume and brassica groups. Hattrick was a combination of the same 3 groups but species were selected as our "personal favourites" to see if the data vs the eye would prove differences. Mayhem mixture was all the left-over seed mixed together.

The cold dry spring delayed emergence some of the legume and grass species, in favour of the brassicas (turnip, radish, kale). When the rains did come, the stands all responded to the needed moisture with the brassicas having an unexpected dominance over the plots. Later season advances of the legumes and grasses in the mixtures were hampered by the height dominance of the radish and turnip competing for sunlight, especially in the mixtures of higher per cent brassicas. The lower stature kale was not as overly competitive. Mixtures without brassicas were able to develop better, in the barley combinations as well as the open stands without barley.

Yield samples were collected (1/4-meter square) to compare biomass across selected plot mixtures using the 100 per cent barley as the 100-comparative index. The samples were taken across each of the cover crop mixtures from the pure stands 0 per cent barley, with 25 per cent barley, and 50 per cent barley mixed stands. Result averages were:

100 per cent Barley/0 per cent cover crops: 100

Cover crop mixtures/ 0 per cent barley: 148 ave Performa Complete mix highest 209

Cover crop mixtures/25 per cent barley 123 ave Nitromax and Mayhem highest 133

Cover crop mixtures/50 per cent barley 109 ave Nitromax highest 117

All cover crop mixtures have better biomass yields than barley alone and increased as barley component decreased. Based on a single year's demonstration, barley competition could be contributed to the yield results, however, given the high rainfall during the growing season, available water could also be a contributor to cover crop growth performance. Feed quality analysis samples were compared across the same group. When comparing the vast array of detailed measurements, we focussed on 3 main traits important to forage quality for nutritional comparisons, being Total Digestible Nutrients (TDN), Crude Protein (CP) and Neutral Detergent Fibre (NDF), compared on a dry matter basis. Shown here, for ease of comparison, are group trait averages and significant outliers from the average.

Barley 100 per cent: Outlier traits from Average

TDN 65 per cent CP 10.7 per cent NDF 50 per cent

Cover Crops only/0 per cent barley:

TDN 62.7 per cent CP 14.9 per cent NDF 50.1 per cent TDN: Moneyball (68); CP: Moneyball (16.1), Hattrick (15.7); NDF: Money ball (42.3)

Cover Crops/25 per cent barley: TDN 64 per cent CP 12.7 per cent NDF 50.0 per cent TDN: Perf Complete (65.7), Moneyball (66.9); CP: Perf Complete (13.2), Moneyball (13.2); NDF: Perf Complete(47.6), Moneyball(46.7)

Cover Crops/50 per cent barley: TDN 65 per cent CP 12.2 per cent NDF 49.5 per cent DN: Mayhem (62.1); CP: Nitromax (13.9), Hattrick (11.3)

SUSTAINABLE ANNUAL FORAGES *(continued from previous page)*

Observation

TDN average remained about the same across all groups with Cover crops only/0 per cent barley being a bit lower. Moneyball was the exception in 2 trials being higher.

CP averages showed the most variance across all groups. Significantly higher average in the Cover crop only group, and Barley 100 per cent the lowest. Performa Complete and Moneyball mixtures being well above the average in the Cover crop/25 per cent barley group.

NDF averages remained stable across all groups. Mixtures being notably lower in the groups included Moneyball in the Cover crop only group, and Moneyball and Perf Complete in the Cover crop/25 per cent barley groups.

Conclusions

In 2019, this demonstration showed that the use of annual cover crops can be beneficial when incorporated into an annual forage program. Used either for grazing, stored forage or swath grazing potential in terms of yield (biomass) production and meeting nutritional needs for cattle, cover crop mixtures have the potential to enhance the traditional cereal only annual forage production. Further investigation of cover crop annuals performance across another growing season, and their interaction with other annual forage crops (forage peas, triticale, barley) will be conducted in 2020.

Fall soil samples were taken as part of the GWFA's participation in the *Soil Health Benchmark Sampling* project to give further details on the influence of cover crops on soil benefits.

Using annual cover crops to achieve soil health benefits is a practice that has generated a lot of interest.

There is a wide range of soil benefits we can get from these groups including:

- Nitrogen Fixation
- Scavenging micronutrients from deeper soil layers
- Enriching Soil Organic Carbon (SOC) & Organic Matter (OM)
- Livestock Forage
- Prevention of soil erosion
- Conserving soil moisture
- Soil hydration and aeration
- Hardpan breakup
- Reduced soil compaction
- Habitat restoration
- Bee/Pollinator/Wildlife mixes
- Phytoremediation
- Biofumigant/nematode control

Soil Health Benchmark Sampling is a Province wide collaboration between Grey Wooded Forage Association and several other Associations in Alberta in a four-year soil health project.

Based on specifications of the Chinook Applied Research Association soil lab in Oyen, soil parameters are measured from various soil types and management practices to establish a baseline of data for future comparisons.

The project's goal is to monitor, soil nutrition, organic matter, electrical conductivity, texture, bulk density, and water infiltration rate.

Initial soil cores are taken from each site, which is then revisited two years later.

The objective of the re-visits and re-sampling is to help producers monitor the impact of their management practices on that particular site. This information will also be helpful in identifying problem soil areas and in developing recommended management practices for particular soil health issues.

The procedure for sampling sites for this project is much more involved, detailed and precise as compared to a traditional soil sample collected for a standard fertility recommendation. The sampling process per location can take over 3.5 hours, involving several procedures and data recording on site.

A summary of the sampling protocol is shown here.

Protocol Summary for Soil Health Benchmark Sampling

1. *Site Selection:* It is important to select an area which is representative of the field. Random penetrometer measurements will be done in those areas to determine sampling depth to be used. Each soil sampling core site is marked with a GPS.

2. *Compaction Readings:* penetrometer readings will be taken at several random sites measuring compaction depths at 200 and 300 PSI. If at 300 PSI, 70 per cent or more of the readings are at greater or equal to six inches, then 0-6 core depth samples will be taken for that benchmark. If most of the 300-PSI readings are from 0-6 inches, then samples will be taken at 0-3 inches and 3-6 inch core sample increments for that benchmark area.

3. *Collection of soil samples*:

   a. The representative field sample area will be about 30m by 30m.

   b. GPS recording will be taken at each site of core sampling.

   c. Crop residue and debris is removed from surface sampled.

   d. Collection of eight cores at selected depth in random (zig zag) pattern.

   e. Metal sleeves driven by rubber mallet or wooden block used for soil core sampling

   f. Composite samples for each 0-3 and 3-6, or 0-6-inch samples will be mixed and labelled into Ziplock bags and stored in cooler for shipping. These will be used for physical indicators (wet aggregate stability, active carbon and initial biological assessments, C:N ratio).

Soil Health Benchmarking *(continued from previous page)*

g. *Field history for each location* will be recorded for submission with samples.

4. *Infiltration Procedure:*
   a. Selection of 3 sites (out of the 8 core sample sites) for infiltration procedures.
   b. Surface residue is cleared and insert 4" diameter ring to 2" depth.
   c. Firm soil around inside of ring preventing infiltration down cylinder wall
   d. Using plastic wrap lining, pour 206 ml inside 4 "ring (1" depth).
   e. Simultaneously remove plastic liner and start timer to record length of time for water to
   infiltrate until the soil surface starts to glisten.
   f. Stop timer and record data for each of the 3 sites.
5. *Bulk Density (BD):*
   a. Bulk density core samples are taken at the same site locations as the water infiltration.
   b. Using the 4" ring, a sample is taken using the full 3" depth of the ring.
   c. Each site BD sample is collected and labelled into separate zip lock bags.
   d. Information entered on the field data sheet for each sample.
6. *Future Biological Assessment*:
   a. Follow up 2 years after the initial sampling, core samples are collected and shipped to
   the Lab for analysis for biological assessments.
7. *Shipping:*
   a. Each location has all bags related to that sample site are packaged in one large Ziplock
   bag, and shipped to the Lab in cool storage via overnight courier.
   b. All site and data information are packaged and labelled for each location submission.

In 2019 there were 21 locations sampled from 10 Producers. Sampling was delayed through the year due to very dry and hard ground conditions early spring and turning into wet to saturated soil conditions throughout most of the summer. The frequent rains prevented proper sampling and water infiltration assessments. The sampling frustration was equal to that of many producers trying to make hay for the same reasons. September snow and poor field conditions moved most of the 2019 sampling to late September and through October. Samples sent to the CARA Lab were delayed in analysis due to a work overload at the lab. Results were just recently (late May/20) received and distributed to the participants. A follow-up webinar with the participants and the CARA Lab Soil Researcher, Yamily Zavala, will review the program, process, results and recommendations to achieve an improved soil health score. This project will be conducted again in 2020 with a target of 40 locations taken from June to August, weather permitting.

Regenerative Pasture Technology applied to demonstrate forage restoration techniques and options in depleted pasture along the Red Deer River near Sundre. In this project, a field analysis procedure was developed to assess range and forage situations and make practical recommendations for producers to implement. The protocol consisted of:

Field Location and maps to identify topography, water courses, fence lines, roads and improvements.

Management History of the land to understand the traditional and historic use and development.

Situation/status of the current management cycle in the cow calf business involving breeding season management; feeding cycle throughout the year from spring calving, summer pastures, and winter feeding practices; use of stored feed (hay, swath grazing); calving season interval and duration; nutrient cycling and manure management; herd performance in yield and profitability.

Producer Objectives for areas of improvements as identified by the rancher, included such areas as improving forage utilization and quality (increase production and introduce legumes into pasture), extending grazing duration (early spring and later fall capacity), improve infrastructure to accommodate power fencing and watering sites for better grazing management.]

Pasture Walk and Observations entailed noting level of litter (areas excessive to devoid), patterns of selective grazing (overgrazed to overmatured stands), identify high fiber cow patties reflecting forage usage; evaluating existing fence condition, pasture cell size and design, watering sites and locations; reviewing "home grounds" winter feeding sites/ practice, spring calving and grazing (before cows move away to summer pasture in June), fall grazing to winter feeding (when cows return home in early October).

Soil Health Benchmarking *(continued from previous page)*

Recommendations to address rancher's objectives within current situation focused on how to manage spring and fall grazing more effectively between overgrazed and under-utilized stands with a 90-day break over the summer months when cows were away to summer pasture. Use of a detailed power fencing and portable water site plan was key in controlling pasture grazing and regrowth in a way to focus cow stocking rate and duration on spring pasture. Moving the herd with a more manageable system would require some permanent power fence infrastructure enhanced with a flexible portable fence system. A watering strategy to accommodate grazing cells removed from existing static water sites is also key. Target would be to enter spring with some stockpiled grass from previous fall, light graze first pass with 40 per cent utilization, then second pass more severe graze at 70 per cent+ utilization. The 90-day rest period could allow for ample recovery and defer some species from over maturity at fall grazing with cows returning, and with good fall grazing and stockpile set up. Referrals to industry leaders and specialists regarding performance indicators for financial profitably assessment was offered.

Rancher Researcher Extension project for 2020 will use these recommendations as a platform to work with the rancher to implement the recommendations of innovative management and technology for improved operation. Positive impacts on pasture and livestock management, soil health improvement, use of innovative infrastructure, and environmental enhancement will be demonstrated and discussed via field days and workshops to share the successes with other producers. This location has been enrolled in the Soil Health Benchmark Sampling program as one feature to help evaluate the land and promote producer participation.

Ongoing Activities

BIOCHAR PROPOSAL

Initially the project proposal was to investigate the impact the application of Biochar on the impact on soil structure and soil health influences, if any.

There was no Western Canadian protocol for the product (very fine flour-like powder) application to either perennial or annual crop situations. What parameters we would measure and how we would measure them was an unanswered question. Questions on the product concentration, and levels of application were less known in order to establish a required response. Research of lesser known practices was deferred to field demonstration of proven results and technology to use.

The area of Biochar has not been abandoned. In 2020 we are looking at the application as a livestock fed additive in the reduction of digestive emissions, and improved feed efficiencies would build on existing research conducted and continued out Ag Canada Lethbridge Research Centre and University of Saskatchewan. The GWFA is currently partnering with industry and researchers to investigate the possibility to acquire funding and refined data recording and automatic feeding equipment to make this possible, hopefully by fall of 2020.

2019 ADVISORY SERVICES

We continue to do customer consultations via phone, to help producers find some solutions to questions they may have regarding forage, livestock, or soil management. Four rancher consultations were conducted in 2019.

Pasture walks are positioned as a membership benefit. A half day review and pasture walk will evaluate the site and find solutions and recommendations, using the process outlined in the Pasture Rejuvenation project as a framework for a consultation report.

2019 ENVIRONMENTAL ACTIVITIES

ALUS (Alternative Land Use Services) program provides financial incentives towards management that protects and enhances wetlands and riparian areas on Canadian farms.

The GWFA currently sits on the Producer Advisory Committee for the Red Deer County ALUS group and supports the ALUS activities of other municipalities including Counties of Wetaskiwin, Lacombe, and Mountain View. Many of their project proposals with farmers and ranchers resonate with our philosophy and expertise in managing rangeland and environmental aspects of agriculture, and we have successfully partnered with them on workshops.

Environmental Farm Plans (EFP) serve as valuable planning tools for producers committed to environmental stewardship. GWFA assists in the delivery of EFP workshops with various counties within our service area. Greg is working towards certification as an EFP Technician to enable GWFA to take the lead on future workshops and assist individual producers with their EFPs.

Clearwater Landcare is an environmental program delivered by Clearwater County. The Grey Wooded Forage Association is currently developing a working relationship with Landcare to explore some mutual benefits and partnerships.

Medicine River Watershed Association engaged the GWFA with an invitation to their meeting to discuss collaborating with their group in workshops, seminars and field days that may have some synergies. We will be coordinating some of planning with them going forward, particularly regarding riparian area management and soil health topics.

Ellis Bird Farm has reached out to GWFA for guidance in establishing forages on their association property and long-term forage stand management advice. Covid19 circumstance suspended our association and their operation. Intentions to re-establish network post-Covid19 restrictions are in place.

KNOWLEDGE TRANSLATION AND TRANSFER

Pasture and Weed Management Workshop: April 17. Held at Spruce View hall in cooperation with Red Deer County ASB, including a review of top invasive pasture weeds, their control options, local services. There was also a presentation on basic grazing management strategies to establish and maintain a competitive forage stand to stave off weed invasion and spread. Eighteen producers attending

Environmental Farm Plan Workshop: April 18. Held at Lacombe County building in support of Lacombe County ASB; assisting with guiding producers in their development of an EFP for their farms; group delivery and working with individual producers at their workstations to answer questions and direct their progress.
Twelve producers attending

Education in Agriculture Tour (EAT) 2019; May 13. Participated in support of Clearwater County. Grade 4 students toured four Rocky Mountain House area farms and ranches. GWFA operated one of 12 stations that students continuously rotated through to learn about various aspects of agriculture. GWFA teamed up with Devin Knopp of Benalto Ag Services and local grazier John Reid to deliver interactive presentations on Forage, Crops, and Soils at Aasman's Arena. Two hundred and seventy eight students attending.

Annual Grey Wooded Forage Association Showcase: June 13. This first-time event was held at Westerner Park, Red Deer, in conjunction with the 2019 Annual General Meeting. Four select sessions in rotation included presentations:

- **Innovative power fencing technology**

Innovative Power Fencing had both sessions full of a lot of interaction and questions on power fence trouble shooting and solutions. In addition, Brendan Anderson shared his successful fencing experiences with the crowd. Steve Cannon of Lone Star Ranch Supplies is looking forward to partnering with GWFA on a potential in-field power fencing demonstrations ranging from introductory power fencing basics for beginners to new technologies for advanced users.

- **Genomics for the cow/calf operations**

Understanding Hybrid Vigor in Cattle had very keen interest by those who did take in this session. Extension Specialist Andrea Hanson of Alberta Agriculture presented the commercial availability and application of this technology.

- **Feed Nutrition and sampling analysis**

Feed Analysis: Myth vs Facts presentation covered proper sampling techniques to sample interpretation and how to make the most of your analysis information. Nutritional needs for various classes of livestock were also addressed. Biochar research was also touched on as an emerging technical tool for livestock and forage production.

- **Drone applications for farm and ranch**

Drones for Ranchers introduced producers to use of drones and information on how they could be incorporated into ranch and livestock management.

The Annual General Meeting of Grey Wooded Forage Association was held between the workshops and evening program.

Evening supper and presentations: Christine Campbell from ALUS Canada informing attendees on their program opportunities for farmers and ranchers; as well as Kim Nielsen of 4 Clover Ranch near Rocky Mountain House sharing his experiences of grazing cattle on opposite sides of the world: Canada and Australia.
This was a full day of value packed activities piloted as an signature event for GWFA.
Roughly 70 members and guests attended.

JACK AND JOHN, A FJORD/PERCHERON PAIR OWNED BY ROSS AND KAREN MCCUTCHEON FROM THE WEST COUNTRY HARNESS CLUB, TAKE A BREAK BETWEEN TRIPS AT THE WEST COUNTRY AGRICULTURE TOUR/*BRENDA KOSSOWAN PHOTO*

More KTT *(continued from previous page)*

OTIS THE GREAT HORNED OWL, ADOPTED AS A HATCHLING AT MEDICINE RIVER WILDLIFE CENTRE, WAS A HIT AT THE WEST CENTRAL AGRICULTURE TOUR ON AUG. 20 /*BRENDA KOSSOWAN PHOTO*

Get the Dirt on Soil Health and Carbon Workshops: June 18 partnered with Red Deer County at Cottonwood Hall, and June 19 partnered with Lacombe and Ponoka Counties at Lincoln Hall, in partnership with Food, Water, Wellness: Featured speaker Dr. Kris Nichols presented parameters defining and influencing healthy soil microbiology and the impacts on soil Carbon capture, aggregation and water infiltration/holding capacity. Hands on workshop with participants' soil samples and aggregate analysis.
A total of 42 producers attending both events.
November 22, partnered with Wetaskiwin County held at Winfield Hall.
November 24 partnered with Mountain View County held in Westerdale Hall.
A total of 34 producers attended the November workshops.

Sustainable Annual Forages, Plot Walk: July 25 An informal walk discussing the establishing annual forage cover crop combination plots with producers. Topics included how to identify new species in use, compare poly-crop competition with varied rates of barley, and learn of specific forage and soil health benefits of various species.
Seven producers attending morning session. The evening session cancelled so producers could take advantage of good haying conditions.

West Central Agriculture Tour, Clearwater County: August 20/19 Sustainable Annual Forage Plot feature: demonstrated comparative success of varied seeding rates of barley silage under seeded to various mixtures of polycrop species; discussed varied forage yield and quality in various combinations as well as highlighted the unique features of the alternative forage species and their benefits.
About 75 producers attended.

Ranchers' Drone School: November 4 and 5, held at Lincoln Hall (Gull Lake) in partnership with Landview Drones. This was a technical training in the operation, regulations and typical and atypical uses of drones in agricultural and specifically livestock management and monitoring. Participants received hands on instruction and experience with drones. Examination at end of course gave passing students Federal Certification for drone operation. This was a very popular session with participants wanting to explore this technology further.
22 producers attending

Environmental Farm Plan Workshop: November 19/19 Held at Mountain View County building in support of Mountain View County ASB; assisting with guiding producers in their development of an EFP for their farms; group delivery but working with individual producers at their workstations to answer questions and direct their progress.
Also included was a presentation on CAP funding for producers.
Fourteen producers attended.

Western Canadian Conference on Soil Health and Grazing; December 10, 11, & 12/19 Held in Edmonton, AB GWFA participated as a supporting partner in the production

More KTT *(continued from previous page)*

of this high profile conference. This premium conference, which sold out weeks ahead of time, gathered producers from across Western Canada and speakers from across North America and beyond for two days of intensive presentations leading industry and research individuals encompassing soil health, cover crops, regenerative livestock and cropping systems, and advanced grazing management. GWFA joined ARECA in hosting a booth on the Trade Floor.
There were well over 500 people in attendance.

Ladies Livestock Lessons: January 18 at a conference centre near Cremona, a project by members of the Red Bow Agricultural Partnership. Greg delivered two presentations on Grazing Basics for Success, outlining the basic principles of Solar, Water, Nutrient and Carbon cycles involved in managing a productive and healthy forage stand in a grazing system.
Sixty seven people attended.

Environmental Farm Plan Workshop: January 27 in Alix with support from Rahr Malting (at the plant); assisting with guiding producers in their development of an EFP for their farms; group delivery but working with individual producers at their work stations to answer questions and direct their progress. Also included presentation on identity preserved malt barley production contracts, which included public trust in producers enrolled in an EFP.
Thirteen producers attended.

Pasture and Weed Management Workshop: January 28 at the Calnash Event Centre, Ponoka: in partnership with AFSC, Ponoka County ASB, Corteva, and the Co-operators. Presentations included a review of top invasive pasture weeds, their control options, and local services. GWFA gave a presentation on basic grazing management strategies to establish and maintain a competitive forage stand to stave off weed invasion and spread. Additional topics included AFSC forage and pasture insurance programs and Cooperators agricultural risk management insurance products.
There were 24 producers in attendance.

Ranching Opportunities 2020: February 13 at Olds College in partnership with Red Bow Agricultural Partnership. GWFA staff attended as support in delivery of the full-day event featuring Jim Gerrish presenting Getting the Most Out of Your Pastures; Landview Drones presenting Managing Cattle with Drones; Dylan Biggs demonstrating Cattle Handling with Dogs, Rebecca Husted on Large Animal Emergency Response; Kim Cornish on Alberta Soil Carbon Qualification, and a Producer Panel on Using Water as a Tool for Pasture Management. GWFA also set up an information table in the trade-show area.
There were 100 producers and 30 students in attendance.

Greener Pastures Grazing Concepts Workshop with Steve Kenyon
February 24, partnered with FBC, and Wetaskiwin County ASB at Lakedell Hall: Topics included grazing concepts and principles, pasture plan and cell design, power fence and water systems, and grazing riparian areas. Also presenting FBC on helpful Farm Tax tips, and Wetaskiwin County on local ALUS programs.
Twenty-four producers attending
February 25, partnered with FBC, and Red Deer & Mountain View Counties ASB at Patterson Hall in Bowden. Topics included winter grazing concepts and principles; winter bale grazing, swath grazing, stockpile and residue grazing systems; power fence and water systems, and grazing riparian areas. Also presenting FBC on helpful Farm Tax tips; and Red Deer and Mountain View Counties on local ALUS programs.
Eighteen producers attending

Environmental Farm Plan Workshops
February 26 in support of Lacombe County ASB held at Lacombe County building; assisting with guiding producers in their development of an EFP for their farms; group delivery but working with individual producers at their workstations to answer questions and direct their progress.
Sixteen producers attending
Environmental Farm Plan Workshop: March 12/20 in support of Clearwater County ASB, Rocky Mountain House Learning Centre; GWFA as Lead Technician in guiding producers in their development of an EFP for their farms; group presentations but working with individual producers at their workstations to answer questions and direct their progress.
Fifteen producers attended.

CRIMSON CLOVER, PART OF THE COVER CROP AT CLEARWATER COUNTY'S 2019 TEST PLOT/BRENDA KOSSOWAN PHOTO

COMING UP

PROJECTS TARGETTED FOR 2020

1. Soil Health Benchmark Sampling 2020: Continuation of the project in place.
2. Annual Forage Demonstration project: Next phase with of annual forages with new combinations
3. Rancher Researcher Project: This is a province-wide project, in which each participating association partners with two ranchers as a next step to promoting production innovations with top researchers, consultants and operators.
4. ARECA Rangeland Carbon project: Province-wide collaboration with other associations, co-ordinated with the Canadian Grazing and Forage Association to develop awareness of Carbon offset potential and documentation for rangeland acres.
5. BioChar Cow calf Grazing project: Pending research funding, including a future application with the new (developing) Results Driven Agricultural Research (RDAR) funding structure incorporated by Alberta Agriculture, this will explore impact of fed Biochar to improve rumen efficiency and emissions.

EVENTS PLANNED IN 2020

1. Environmental Farm Planning: We anticipate the continuation of these as it becomes more important for funding and public trust program qualifications.
2. Grazing and Pasture workshops and field days: these continue to be cornerstone topics of request.
3. Soil Health Workshops: depending on available presenters, we have requests for 2020 workshops.
4. Power Fencing Essentials (introduction level) and Innovations (advanced level): Series of hands on in-field demonstrations and schools learning the “how to” of high tensile wire management and power fencing technology.
5. Alternate Watering Systems: planning in-field demonstrations of systems in place and “how to” get set up with various systems of alternate and portable watering systems for rotational grazing plans.
6. Forage Corn: In-field discussion of basic corn production essentials for success and workshops on using corn as silage or winter grazing.
7. Direct Producer to Consumer: Workshops on how to effectively develop and succeed in direct marketing your products to the consumer and improving the producer/consumer relationship.
8. Livestock Animal Welfare: Review industry Code of Practice and how farmers and ranchers are incorporating them in their operations. Topics from transportation, low impact processes, and others.
9. New Forages: Explore the fit for forage alternatives from annual cover crop species, new triticale varieties, lesser known legumes.

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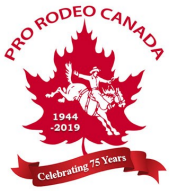
THANK YOU!

WE COULDN'T DO IT WITHOUT YOU!



The Blade

Monthly Newsletter of the

Grey Wooded Forage Association

During their time as managers of Grey Wooded Forage Association, Jim Bauer, Kyle Greenwood and Alberta Kuipers set a high bar for the monthly newsletter that would describe the work they and their collaborators were doing and spread the news about innovations and new technology in forage and livestock production. The Blade is GWFA's flagship project—the vehicle we use to stay in touch with our community and share the results of work and of others. We published nine issues in 2019-20, combining two months into one when we didn't have sufficient resources to fill the bill.

GREY WOODED FORAGE ASSOCIATION

greywoodedforageassociation.com | 403-844-2645

2020/21 Membership Application Form

Membership in the GWFA is open to anyone interested in forage production, grazing management and environment sustainability

The fee is $40 per year, running from April 1 to March 31

For information, call 403-844-2645 or email office@greywoodedforageassociation.com

Benefits of joining GWFA:

- Discounts on courses, seminars, workshops and tours.
- An automatic subscription to *The Blade,* published monthly online. Hard copy is available on request.
- Assistance with your Environmental Farm Plan.
- Equipment rental (deposit required).
- Access to our reference library.
- Access to our members-only Facebook group.
- Networking with like-minded producers and advisors.
- Farm consultation services (farm calls are 55 cents per kilometre, each way).
- A copy of the GWFA Annual Report.

Please mail your completed form and cheque to:
Grey Wooded Forage Association
PO Box 1448, Rocky Mountain House, AB T4T 1B1,
Or scan and email the completed form and send an e-transfer to *office@greywoodedforageassociation.com*

Renewal ☐ New member ☐	How should we send your copy of *The Blade*: Email ☐ Canada Post ☐
Name:	Email:
Mailing address:	
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***How do you describe your operation (tick all that apply)**	***How many head of livestock do you manage:**	***How many acres of land do you manage:**
☐Beef producer ☐Sheep/goat\ producer ☐Dairy producer ☐Annual crops producer ☐Forage producer ☐Other_____	Beef cows/heifers_____ Dairy cows_____ Feeders_____ Ewes_____ Does_____ Other_____	Pasture_____ Hay_____ Crop_____ Other_____ **These questions are voluntary. We do not share your information*

How can we improve our service to you?
Please suggest topics you would like to learn more about: