MUNICIPAL DISTRICT OF GREENVIEW NO. 16

"A Great Place to Live, Work and Play"

REGULAR AGRICULTURAL SERVICE BOARD MEETING AGENDA

Wednesday, July 27, 2016 | 9:30 AM | Council Chambers, Administration Building

#1	CALL TO ORDER		-
#2	ADOPTION OF AGENDA		-
#3	MINUTES	3.1 Regular Agricultural Service Board Meeting Minutes held May 26, 2016 – to be adopted	4
		3.2 Business Arising from the Minutes	-
#4	DELEGATIONS	4.1 ACA (Alberta Conservation Association)	9
#5	OLD BUSINESS	5.1	-
#6	NEW BUSINESS	6.1 Agriculture for Life – Field Signage Project	11
		6.2 Wolf Harvest Program	14
		6.3 Elk Depredation	103
		6.4 Wild Boar Harvest Agreement	110
#7	STAFF REPORT & ASB MEMBERS BUSINESS & REPORTS	7.1 Agricultural Services Department Activity Report May 26, 2016 - July 27, 2016.	-
#8	CORRESPONDENCE	8.1 Alberta Crop Conditions as of May 10, 2016	122
		8.2 Alberta Crop Conditions as of May 17, 2016	124
		8.3 Alberta Crop Conditions as of May 24, 2016	126
		8.4 Alberta Crop Conditions as of May 31, 2016	128

Minutes of a
REGULAR AGRICULTURAL SERVICE BOARD MEETING
MUNICIPAL DISTRICT OF GREENVIEW NO. 16
M.D. Administration Building
Valleyview, Alberta on Thursday, May 26, 2016

#1 CALL TO ORDER

Chair Cailliau called the meeting to order at 9: 34 a.m.

PRESENT

Chair	Roland Cailliau
Vice Chair	Allen Perkins
A.S.B. Member – Councillor	Bill Smith
A.S.B. Member – Councillor	Dale Smith
A.S.B. Member	Larry Smith
A.S.B. Member	Jonas Ljunggren

ATTENDING

Manager, Agriculture Services	Quentin Bochar
Assistant Manager, Agriculture Services	Dave Berry
Recording Secretary/ Supervisor	Sean Allen
Trainee, Agriculture Services	

ABSENT

A.S.B. Member	Laurie Mitchell

#2 AGENDA

MOTION: 16.05.32 Moved by: Allen Perkins
That the Agenda be adopted with the following change:

- 6.3 changed to 3.1 Introduce Staff

CARRIED

#3.1 REGULAR ASB MEETING

MOTION: 16.05.33 Moved by: Bill Smith
That the minutes of the April 27, 2016 Regular Agricultural Service Board Meeting to be adopted as presented.

CARRIED

3.1 INTRODUCTION OF SEASONAL STAFF

The seasonal staff was introduced to the board.

Introduce Agricultural Seasonal
Hazel Edwards, Jennifer Hammel, Maureen Bly, Terrance Peever, Dennis Haglund, Jesslyn Alguire, Amy Cymbaluk, Hayden Grotkowski, Sue Lepage, Evan Brown, Sarah Johnson, Tia Laughington, and Logan Perron.

#3.2
BUSINESS ARISING FROM MINUTES

3.2 BUSINESS ARISING FROM MINUTES

The policies reviewed at the former meeting will be numbered when they are approved by the Policy Review Committee. Administration will ensure that policy numbers are assigned to the policies. The Policy Review Committee will ensure that the policies are reviewed and numbered correctly with no duplicates of policies.

The new rental equipment was added to the updated Schedule of Fees. The 14 ft disc was not listed for Valleyview.

The CRSB (Canadian Roundtable for Sustainable Beef) announced that they will be proceeding with the Sustainable Beef Pilot Project.

#4
DELEGATIONS

4.0 DELEGATIONS

#5
OLD BUSINESS

5.0 OLD BUSINESS

5.1 MUNICIPAL ROAD RIGHT-OF-WAYS

Quentin Bochar provided a verbal update on the status of the Municipal Road Right-of-Ways will be added to the Agricultural Service Department responsibilities.

MUNICIPAL ROAD RIGHT-OF WAYS POLICIES TO REVIEW

MOTION: 16.05.34 Moved by: Allen Perkins
That the Agriculture Service Board direct Administration to present the Municipal Road Right-of Ways policies to the ASB for review.

CARRIED

#6
NEW BUSINESS

6.0 NEW BUSINESS

6.1 PROPOSE WEED CONTROL GRANT TO TOWNS

A verbal presentation was provided to propose a weed control grant to the towns.

2017 BUDGET WEED VEGITATION CONTROL FOR MUNICIPALITIES

MOTION: 16.05.35 Moved by: Allen Perkins
That the Agricultural Service Board direct Administration to allocate $10,000.00 per municipality toward the 2017 Weed/Vegetation Control Budget for weed/vegetation control in Valleyview, Fox Creek and Grande Cache.

CARRIED

6.2 SURPLUS OLD BARBEQUE

A verbal report was given to the board proposing that the old rental barbecue be surplused to a community group within Greenview.

SURPLUS OLD BARBEQUE

MOTION: 16.05.36 Moved by: Jonas Ljunggren
That the ASB direct Administration to surplus the old barbecue by draw process to local community groups.

CARRIED

#7 STAFF REPORT & ASB MEMBERS BUSINESS & REPORTS

7.0 STAFF REPORT & ASB MEMBERS BUSINESS & REPORTS

MEMBER LARRY SMITH:

- No Report

MEMBER JONAS LJUNGGREN:

- No Report

VICE CHAIR ALLEN PERKINS:

- No Report

COUNCILLOR DALE SMITH:

- No Report

COUNCILLOR BILL SMITH:

- No Report

CHAIR ROLAND CAILLIAU:

- Attended the Alberta Beef Producer Meeting

STAFF REPORTS

MOTION: 16.05.37 Moved by: Dale Smith
That the Agriculture Service Board accept the reports as information.

CARRIED

#8 CORRESPONDENCE

8.1 FORAGE FACTS – MARCH

8.2 GROWING FORWARD 2

8.3 CALENDAR – MAY, JUNE, JULY

CORRESPONDENCE LISTING

MOTION: 16.05.38 Moved by: Dale Smith
That the Agricultural Service Board accept the correspondence listing as presented.

CARRIED

#9 IN CAMERA

9.0 IN CAMERA

Dale Smith vacated the meeting at 11:48 a.m.

#10 ADJOURNMENT

10.0 ADJOURNMENT

MOTION: 16.05.39 Moved by: Larry Smith
That the Agricultural Service Board Meeting adjourn at 11:49 a.m.

CARRIED

Agricultural Service Board Chair

Manager, Agricultural Services

REQUEST FOR DECISION

SUBJECT:	**ACA Delegation Presentation**		
SUBMISSION TO:	AGRICULTURAL SERVICE BOARD	REVIEWED AND APPROVED FOR SUBMISSION	
MEETING DATE:	July 27, 2016	CAO:	MANAGER: QFB
DEPARTMENT:	COMMUNITY SERVICES/AGRICULTURE	GM:	PRESENTER: QFB
FILE NO./LEGAL:			LEGAL/ POLICY REVIEW:
STRATEGIC PLAN:			FINANCIAL REVIEW:

RELEVANT LEGISLATION:

Provincial (cite) – *N/A.*

Council Bylaw / Policy (cite) – *N/A.*

RECOMMENDED ACTION:

MOTION: That the Agriculture Service Board accept the presentation from Alberta Conservation Association (ACA) as information.

BACKGROUND / PROPOSAL:

ACA is coming to discuss the current Elk Crop Depredation problem in Greenview and neighbouring municipalities, and a unique program to help address the elk depredation issue.

OPTIONS – BENEFITS / DISADVANTAGES:

Options – ASB may choose to not accept the recommended action, or ASB may choose to alter the recommended action.

Benefits – ASB will be aware of what ACA has proposed to address the elk depredation problems in Greenview.

Disadvantages – There are no perceived disadvantages to ASB accepting the recommended action.

COSTS / SOURCE OF FUNDING:

N/A

ATTACHMENT(S):

N/A

REQUEST FOR DECISION

SUBJECT:	**Agriculture for Life Field Signage Campaign**		
SUBMISSION TO:	AGRICULTURAL SERVICE BOARD	REVIEWED AND APPROVED FOR SUBMISSION	
MEETING DATE:	July 27, 2016	CAO:	MANAGER: QFB
DEPARTMENT:	COMMUNITY SERVICES/AGRICULTURE	GM:	PRESENTER: QFB
FILE NO./LEGAL:			LEGAL/ POLICY REVIEW:
STRATEGIC PLAN:			FINANCIAL REVIEW:

RELEVANT LEGISLATION:

Provincial (cite) – *N/A.*

Council Bylaw / Policy (cite) N/A.

RECOMMENDED ACTION:

MOTION: Greenview ASB to direct administration to provide logistical support for the Agriculture for Life Field Signage Campaign

BACKGROUND / PROPOSAL:

This summer, working in collaboration with government, municipalities, primary producers, commodity groups and agri-business, Agriculture for Life is looking to launch a province-wide public campaign targeting Alberta consumers to increase agriculture's social licence and work to bridge the urban/rural divide. This exciting initiative showcases all faucets of Alberta agriculture at the right time and right place – in the fields. Giving Albertans the opportunity to learn and understand where their food comes from. As families travel throughout Alberta during the peak summer months, educational signs will be erected showcasing "what is in the field," from canola to corn to llamas to the breed of cattle grazing the lands. Great games of "guess that crop/breed" will now have answers.

Social media, news releases, tradeshows, word of mouth, and print/digital ads will be targeted to farm and ranches across the province to register for field signs based on their crops and/or livestock breed(s). Registration will be done online at agricultureforlife.ca.

Signage will be sent to farms with a tip sheet outlining recommendations for signage placement. Primary and secondary highways are ideal locations. Signage and posts will be provided at no cost to producers to encourage participation and continuity of signs throughout the province. Clean, simple and easy to read.

Signage will include the tagline "What's in the field" and a url to Ag for Life's website where audiences can learn more about Alberta agriculture.

The campaign will run from July to October (end of Harvest) at which time we ask producers to store signage for next year. The campaign will run annually seeking new farm participants each year as the program expands and word of mouth spreads. Each year we will add an additional education component to encourage users to seek out more information. For example, a digital crop match game will be developed for the family to play and learn, links to podcasts/videos featuring interviews with producers - each element adding interest and excitement to the campaign and it connection to agriculture.

OPTIONS – BENEFITS / DISADVANTAGES:

Options – Greenview ASB may accept, or choose not to accept the recommendation as presented.

Benefits – Greenview ASB has a duty and responsibility under the Agriculture Service Board Act to promote the economic viability of local agricultural producers. By helping out with this program Greenview would fulfilling its mandate.

Disadvantages – There are no perceived disadvantages to this recomendation.

COSTS / SOURCE OF FUNDING:

N/A.

ATTACHMENT(S):

- Email for What's in the Field Campaign

We are in the process of launching a province-wide educational campaign that we hope to engage your support on. You will be receiving communication from The Alberta Association of Municipal Districts and Counties in the next couple weeks on this topic as well as we had contacted them for advice on the campaign.

Agriculture Education – Field Signage - What's In the Field?

This summer, working in collaboration with government, municipalities, primary producers, commodity groups and agri-business, Agriculture for Life is looking to launch a province-wide public campaign targeting Alberta consumers to increase agriculture's social licence and work to bridge the urban/rural divide. This exciting initiative showcases all faucets of Alberta agriculture at the right time and right place – in the fields. Giving Albertans the opportunity to learn and understand where their food comes from. As families travel throughout Alberta during the peak summer months, educational signs will be erected showcasing "what is in the field," from canola to corn to llamas to the breed of cattle grazing the lands. Great games of "guess that crop/breed" will now have answers.

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In order to execute this campaign, we are seeking the support of Alberta Municipal Districts and Counties as we comply with sign regulations. Alberta Transportation has provided us with guidelines and we are hoping these guidelines can blanket all areas. Once a producer has indicated they would like to particpate, our action will be to contact each office for signage approval. For each district that has signs, we would also like to showcase your logo on our website to highlight the collaborating partners.

If you have any questions and/or suggestions, please feel free to contact me at the info below. I look forward to working together to promote agriculture education throughout Alberta and learning "What's in the field!"

Thank you

--

LUREE WILLIAMSON

Chief Executive Officer

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28 Crowfoot Terrace
Crowfoot RPO 68070
Calgary, AB T3G 3N8

REQUEST FOR DECISION

SUBJECT: **Wolf Harvest Program**
SUBMISSION TO: AGRICULTURAL SERVICE BOARD
MEETING DATE: July 27, 2016
DEPARTMENT: COMMUNITY SERVICES/AGRICULTURE
FILE NO./LEGAL:
STRATEGIC PLAN:

REVIEWED AND APPROVED FOR SUBMISSION
CAO: MANAGER: QFB
GM: PRESENTER: QFB
LEGAL/ POLICY REVIEW:
FINANCIAL REVIEW:

RELEVANT LEGISLATION:

Provincial (cite) N/A.

Council Bylaw / Policy (cite) – *Wolf Harvest Incentive Program AG 10.*

RECOMMENDED ACTION:

MOTION 1: Greenview ASB recommend to Council to approve an additional funding requisition of up to $15,000.00 from Contingency Reserve to fund an unanticipated increase in use of the program.

MOTION 2: Greenview ASB accept the following documents: (Draft Version) Little Smoky and A La Peche Caribou Range Plan and Setting Alberta on the Path to Caribou Recovery as information.

BACKGROUND / PROPOSAL:

Greenview initiated a Wolf Harvest Incentive Program in 2012. This program includes a $300.00 per adult wolf incentive payment for wolves brought in to Agriculture Services. Statistics to date for the program are as follows:

Year	Number of Wolves	Amount
2012	70	$21,000.00
2013	53	$15,900.00
2014	48	$14,400.00
2015	98	$29,400.00
2016	120	$36,000.00
Total	**389**	**$116,700.00**

In 2016 for the first time ever the program was fully subscribed in Early May. This means that for the remainder of 2016 (approximately 7 months) there is no funding available for the program to continue. Agriculture Administration has already been hearing that this valued program needs to have more funding put in to it for the fall trapping season.

This spring the province of Alberta released two reports (Draft Version) Little Smoky and A La Peche Caribou Range Plan and Setting Alberta on the Path to Caribou Recovery indicating their plans for instituting a mechanism to facilitate caribou recovery, including continuation of the provincial wolf culling program in the range of the Little Smoky and A La Peche Caribou herds.

The provincial plan for Caribou recovery includes setting aside areas for providing range for the affected herds, and may have an effect on industrial and recreational activity within those Caribou areas.

OPTIONS – BENEFITS / DISADVANTAGES:

Options – Motion 1: Greenview ASB may choose to accept or to not accept the recommendation as presented. Greenview ASB may choose to alter the recommendation to a different dollar value ($15,000.00 = 50 wolves, $22,500.00 = 75 wolves, or $30,000.00 = 100 wolves).
Motion 2: Greenview ASB may choose to accept or not accept the recommendation as presented.

Benefits – Greenview livestock producers have benefitted from having wolves removed from the system. This additional funding will allow the program to continue for the fall trapping season in 2016.

Disadvantages – If Greenview ASB accepts the recommended action, it will require obtaining unbudgeted funds from the 2016 Contingency Reserve.

COSTS / SOURCE OF FUNDING:

The funding for the 2016 Wolf Harvest Incentive Program was $36,000.00 which comes from the Agriculture Services Department 2016 Operating Budget. The additional request of $15,000.00 would come from the 2016 Contingency Reserve Budget which if approved would bring the budget value for 2016 to $51,000.00.

ATTACHMENT(S):

- National Post Wolf Cull Article
- (Draft Version) Little Smoky and A La Peche Caribou Range Plan
- Setting Alberta on the Path to Caribou Recovery

Alberta Government

DRAFT

Little Smoky and A La Peche Caribou Range Plan

June 2, 2016

EXECUTIVE SUMMARY

Alberta's Range Plan for the Little Smoky and A La Peche Caribou Ranges presents a combination of habitat and population management actions, addressing the objectives of Alberta's woodland caribou recovery plan and policy, and the federal recovery strategies for Boreal and Southern Mountain woodland caribou populations.

Caribou recovery in the Little Smoky and A La Peche Caribou Ranges depends on addressing habitat-related factors that result in excessive predation rates on caribou populations. This requires both short and long term strategies and actions towards a future where caribou populations can be self-sustaining. Current habitat conditions in the Little Smoky and A La Peche Caribou Ranges will not support self-sustaining caribou populations. Full recovery of sufficient habitat to support self-sustaining caribou is anticipated to take decades.

These ranges include important forest and energy resources that continue to support local Alberta communities and the provincial economy. This Range Plan supports a working landscape where caribou and industrial activity co-exist, with strict regulation, investment in aggressive and innovative approaches, and careful monitoring of outcomes.

Caribou are an important part of the lives and traditions of Alberta's Indigenous peoples. This plan creates opportunities for Indigenous peoples to support and contribute to caribou recovery.

Alberta's approach is a focused strategy towards achieving self-sustaining populations. Many tools will be used including habitat restoration on seismic lines, wolf population management, creation of a caribou rearing facility for the Little Smoky population and stricter requirements for resource development.

The Range Plan identifies commitments to:

- Work with oil and gas companies to reschedule and provide voluntary extensions for developments, with increased flexibility in the tenure system to contribute to achievement of caribou goals and objectives.
- Reserve from disposition all remaining coal, metallic minerals, peat, sand and gravel rights.
- Restoration of legacy seismic lines to ensure establishment of appropriate vegetation within five years and ensuring that future seismic development is sensitive to caribou conservation and recovery requirements.
- Require integrated land management (ILM) for all industrial activities to reduce current and future footprint.
- Develop stringent requirements for new oil and gas approvals.
- Focus forest harvesting in areas where harvesting has already occurred.
- Continue population management of wolves, and the alternate prey of wolves (that is, moose, elk and deer), to avoid near-term extirpation of the caribou populations.
- Establish a caribou rearing facility to improve population growth for the Little Smoky caribou population.

- Engage Indigenous communities in opportunities to support achievement of the Range Plan.
- Support travel on approved corridors within the ranges to ensure both hunting access for alternate prey management and protection of forest growth on restored seismic lines.
- Ensure assessments, monitoring and research occurs, as needed, to track Range Plan accomplishments and assist in achieving Range Plan goals and objectives.
- Review and improve the Range Plan regularly, through adaptive management, to ensure achievement of plan goals and objectives.

1.0 CARIBOU RECOVERY PLANNING IN ALBERTA

In Alberta, woodland caribou (*Rangifer tarandus caribou*) are classified as two ecotypes: mountain[1] and boreal[2]. Woodland caribou are designated as *Threatened* under Alberta's *Wildlife Act*. The nationally defined Boreal and Central Mountain woodland caribou populations are similarly designated as *Threatened* under Canada's *Species at Risk Act* (SARA).

The *Alberta Woodland Caribou Recovery Plan* (2005) and *A Woodland Caribou Policy for Alberta* (2011) guide caribou conservation and recovery in the province.

In October 2012, the Government of Canada released the *Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal Population in Canada* (the Boreal Recovery Strategy). The strategy sets out requirements for range and action plans to support the goal of self-sustaining status for all remaining local populations of boreal woodland caribou in Canada. The strategy outlines requirements for critical habitat protection and management with the intent that woodland caribou recovery is to be achieved through a combination of habitat and population management.

In addition, in June 2014, the Government of Canada finalized and adopted the *Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Southern Mountain Population in Canada* (the Southern Mountain Recovery Strategy), which applies to all of the mountain ecotype woodland caribou in Alberta. The Southern Mountain Recovery Strategy is comparable to the Boreal Recovery Strategy in most details.

Approximately 23 per cent of Alberta is covered by caribou range, overlapping significant natural resources. There are twelve boreal and three southern mountain woodland caribou populations currently remaining on provincial lands in Alberta. One additional southern mountain caribou population remains in Jasper National Park and is under the jurisdiction of the federal government. The local population in Banff National Park was extirpated in 2009, from the Park and adjacent provincial lands.

Alberta is committed to achieving caribou conservation and recovery, where activities are well-managed and coordinated, supporting different land use activities and balanced outcomes in a working landscape. Recognizing that caribou represent one set of values, the integration of caribou range plans into Alberta's other Government of Alberta plans and frameworks (for example, regional plans and biodiversity management frameworks) will ensure Alberta addresses desired environmental, economic and social outcomes.

2.0 LITTLE SMOKY AND A LA PECHE CARIBOU RANGES OVERVIEW

The Little Smoky and A La Peche Caribou Ranges are located within the Foothills, Subalpine and Alpine Natural Regions, and Lower Foothills and Upper Foothills Sub-regions in west-central Alberta. Together, the ranges are 9,699 km² in size and while they share a common border, the Little Smoky and A La Peche caribou populations are different caribou ecotypes – the Little Smoky population are non-migratory boreal caribou while the A La Peche are migratory mountain caribou.

The distribution of woodland caribou in west-central Alberta has greatly declined over the last 50 to 80 years. The Little Smoky caribou population is the most southerly boreal population currently remaining in the province. The A La Peche caribou population is now the most southerly mountain caribou population remaining in Alberta on provincially controlled lands.

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[1] Equivalent to the nationally defined Southern Mountain woodland caribou (now subdivided into Southern and Central Mountain populations)

[2] Equivalent to the nationally defined Boreal woodland caribou

The Little Smoky and A La Peche Caribou Ranges are located in the Municipal District of Greenview No.16 and Yellowhead County and overlie significant forest and energy resources. Natural resource exploration and development in the area contribute to the economic and social stability of a wide network of west-central Alberta towns and communities.

There are three Aboriginal communities with consultation areas that overlap the Little Smoky and A La Peche Caribou Ranges: The Aseniwuche Winewak Nation of Canada, Sturgeon Lake Cree Nation, and Horse Lake First Nation. Sturgeon Lake Cree Nation and Horse Lake First Nation are both signatories to Treaty No.8. Caribou have been an important part of the traditional way of life of First Nations and Metis people in Alberta. In addition to reporting that caribou were an historical subsistence food source, aboriginal groups report that caribou have been an important source of raw materials.

3.0 Little Smoky and A La Peche Caribou Range Plan Purpose

This Little Smoky and A La Peche Caribou Range Plan (the Range Plan) describes Alberta's actions towards meeting the caribou conservation and recovery goals and objectives outlined in Alberta's caribou recovery plan and policy, and the goals and objectives listed in the Government of Canada's woodland caribou recovery strategies. It identifies an approach to habitat and population management that sustains a working landscape where caribou and careful development co-exist.

Alberta recognizes that woodland caribou conservation and recovery will require time and commitment to both habitat and population management actions. We are committed to ongoing assessments and research to supporting these actions.

The Boreal and Southern Mountain Recovery Strategies identify critical habitat as dependent upon both biophysical habitat attributes and undisturbed habitat. The strategies guide the effective protection of critical habitat and specify the need to achieve and maintain a minimum of 65% undisturbed area within each range (Boreal) or the low elevation winter range (Southern Mountain) and provide the biophysical habitat attributes necessary for caribou recovery. This range plan establishes a habitat trajectory towards the 65% threshold for both ranges.

The Range Plan identifies definitions, indicators and targets that support measuring and reporting on progress towards the requirements of the Recovery Strategies, while also providing the groundwork for a made-in-Alberta approach.

The federal *Species At Risk Act* establishes requirements for action plans, including specified protection of critical habitat. The Range Plan will form part of Alberta's action plan for boreal woodland caribou.

3.1 Alberta's approach

Alberta's approach is a focused strategy towards achieving self-sustaining populations while supporting communities and the economy.

Caribou recovery in the Little Smoky and A La Peche Caribou Ranges depends on reducing predation rates so caribou populations can grow and then remain stable at increased population levels, and restoring and conserving sufficient suitable habitat to support self-sustaining populations. Current habitat conditions in the Little Smoky and A La Peche Caribou Ranges will not support self-sustaining caribou populations. Achieving sufficient future habitat will take many decades.

Caribou habitat will be managed through the reduction of forest harvesting, modifications to how oil and gas resources are managed, restoration of industrial features, protection from natural disturbances and coordinating industrial development to reduce footprint. Restoration of legacy seismic lines will begin immediately and new footprint will be minimized and mitigated. Our goal is to achieve a level of habitat that will enable self-sustaining caribou populations without the need for direct actions to reduce

predation.

To meet provincial and federal goals and objectives, while remaining responsive to dynamic caribou population and landscape conditions, Alberta will employ an adaptive management approach. Objectives and actions identified in the Range Plan will be monitored and reported.

Alberta will support ongoing monitoring, research and evaluation to improve our understanding of caribou populations, habitat, and restoration efficacy. Actions in the Range Plan will be reviewed annually, and based on the outcomes of those reviews, Alberta will revise management strategies and actions as necessary to enhance caribou recovery. The Range Plan will be updated every five years.

The Range Plan takes a three phase approach to achievement of self-sustaining caribou populations:

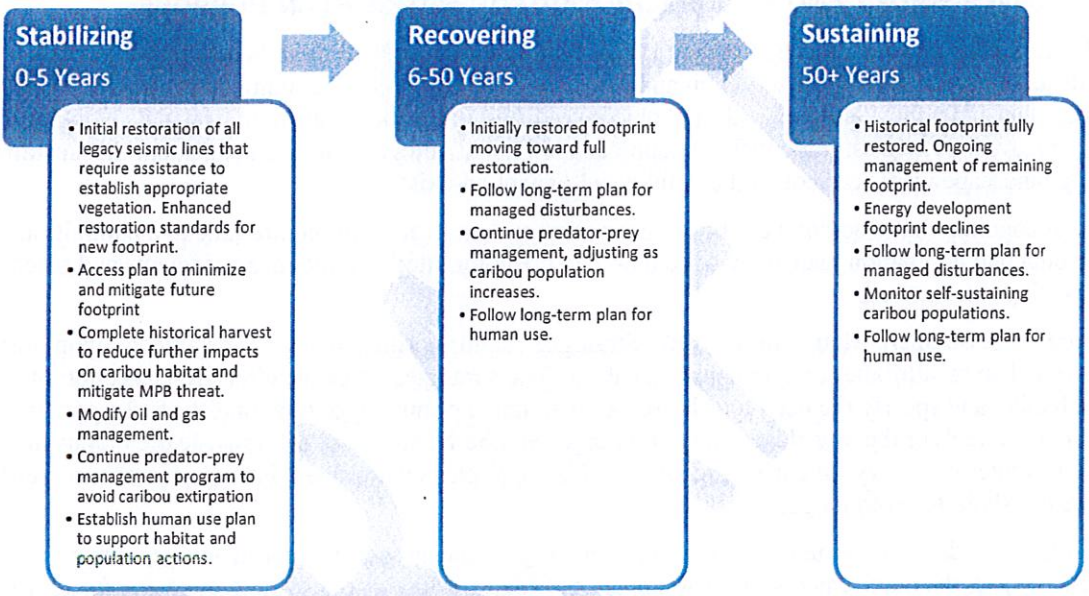


Figure 1: Alberta's phased approach to achieving self-sustaining populations.

3.2 Definitions

Alberta uses the following definitions in the Range Plan. They inform the management actions that follow, as well as monitoring and reporting activities.

3.2.1 Federal Recovery Strategies - definitions

The Range Plan adopts the following definitions from the federal Recovery Strategies.

Self-Sustaining Local Population

> A local population of boreal caribou that on average demonstrates stable or positive population growth over the short-term (≤20 years), and is large enough to withstand random events and persist over the long-term (≥50 years), without the need for ongoing active management intervention.

Disturbed Habitat

> Habitat showing: i) human-caused disturbance visible on Landsat at a scale of 1:50,000, including habitat within a 500 metre buffer of the human-caused disturbance; and/or ii) fire disturbance in the

last 40 years, as identified in data from each provincial jurisdiction (without buffer).

Undisturbed Habitat

Habitat not showing any: i) human-caused disturbance visible on Landsat at a scale of 1:50,000, including habitat within a 500 metre buffer of the human-caused disturbance; and/or ii) fire disturbance in the last 40 years, as identified in data from each provincial and territorial jurisdiction (without buffer).

3.2.2 Alberta's approach – definitions

These definitions support Alberta's approach to range planning.

Habitat

Effective Habitat

Habitat that has characteristics which provide caribou with all of their ecological needs (that is, food, shelter, ability to travel and disperse, ability to reproduce, and ability to avoid excessive levels of predation). Effective habitat is available and functioning at three scales – the local population range (sufficient for self-sustaining populations), the individual home range (providing for biophysical habitat needs) and individual foraging sites. Effective habitat has low risk of predation on caribou, caribou food availability, and low occurrence of food for wolves' main alternate prey: moose, elk and deer.

Initially Restored Habitat

Habitat that was disturbed in the past, but has since been put on a successional pathway towards providing effective caribou habitat, either naturally or through management actions. Forest cutblocks are required to be reforested by law; thus, they are considered immediately initially restored.

Restored habitat

Habitat that was disturbed in the past, but has since returned to a state that is beginning to contribute to effective habitat.

Development

Working landscape

An area of land managed for multiple environmental, social and economic objectives. These objectives include environmental conservation, as well as continued human use for social and economic values.

Footprint

Footprint, for this Range Plan, is defined as the area of human disturbance features, exclusive of an influence buffer, until they achieve a status of 'restored habitat'. Overlapping features are only counted once.

Historical footprint

Footprint as of April 1, 2016[3], deemed unnecessary to support continued human activity, is not initially restored and does not have a legally responsible party to deal with the restoration work (for

[3] Alberta will continue to improve its inventory of historical footprint over time, adding it to historical footprint based on the date of its creation, relative to April 1, 2016.

example, historical seismic lines that have not been returned, either naturally or through management actions, to a successional pathway towards providing effective caribou habitat).

Appended Development

Development that occurs immediately adjacent to roads, pipelines, facilities and well pads that have not been initially restored.

4.0 HABITAT MANAGEMENT AND RESTORATION

This section outlines the management actions that Alberta will take for caribou habitat in the Little Smoky and A La Peche Caribou Ranges, towards meeting Alberta's caribou conservation and recovery goals.

4.1 Targets and Management Intent

Alberta's habitat targets and management intents are framed as a phased approach to achieving the amount and quality of effective habitat which will support self-sustaining Little Smoky and A La Peche caribou populations. Alberta's immediate goal is to initiate the restoration of existing footprint and minimize/manage the creation of new footprint while sustaining social and economic values. This strategy puts the ranges on a habitat trajectory towards 65percent undisturbed habitat and enables wise management of biophysical habitat.

Phase	Habitat target	Energy Management Intent	Forestry Management Intent
Stabilizing 0 – 5 years	Restoration of all historical footprint. Minimize and mitigate new footprint to maintain habitat and develop future habitat, establishing a trajectory towards 65% undisturbed habitat and managing biophysical habitat attributes.	Minimize and mitigate new development.	Maintain and increase effective habitat. Complete historical harvesting to reduce further impacts to caribou and mitigate mountain pine beetle threat.
Recovering 6 – 50 years	Restoration sites on trajectory to effective habitat.	Manage new development to ensure the amount and type is appropriate to achieve caribou objectives.	Forest management to increase caribou habitat, and manage mountain pine beetle risk.
Sustaining 50+ years	Achieve sufficient effective habitat to support self-sustaining caribou populations.	Manage new development to ensure the amount and type is appropriate to achieve caribou objectives.	Habitat maintenance and sustainable development

4.2 Zonation

Zones provide the basis for allocating management strategies to achieve measurable outcomes. The zones support the overall management approach to achieve the goals and objectives of this plan. Two zones are identified to direct management activity, one within the caribou ranges, and one surrounding and

encompassing the ranges (Figure 1).

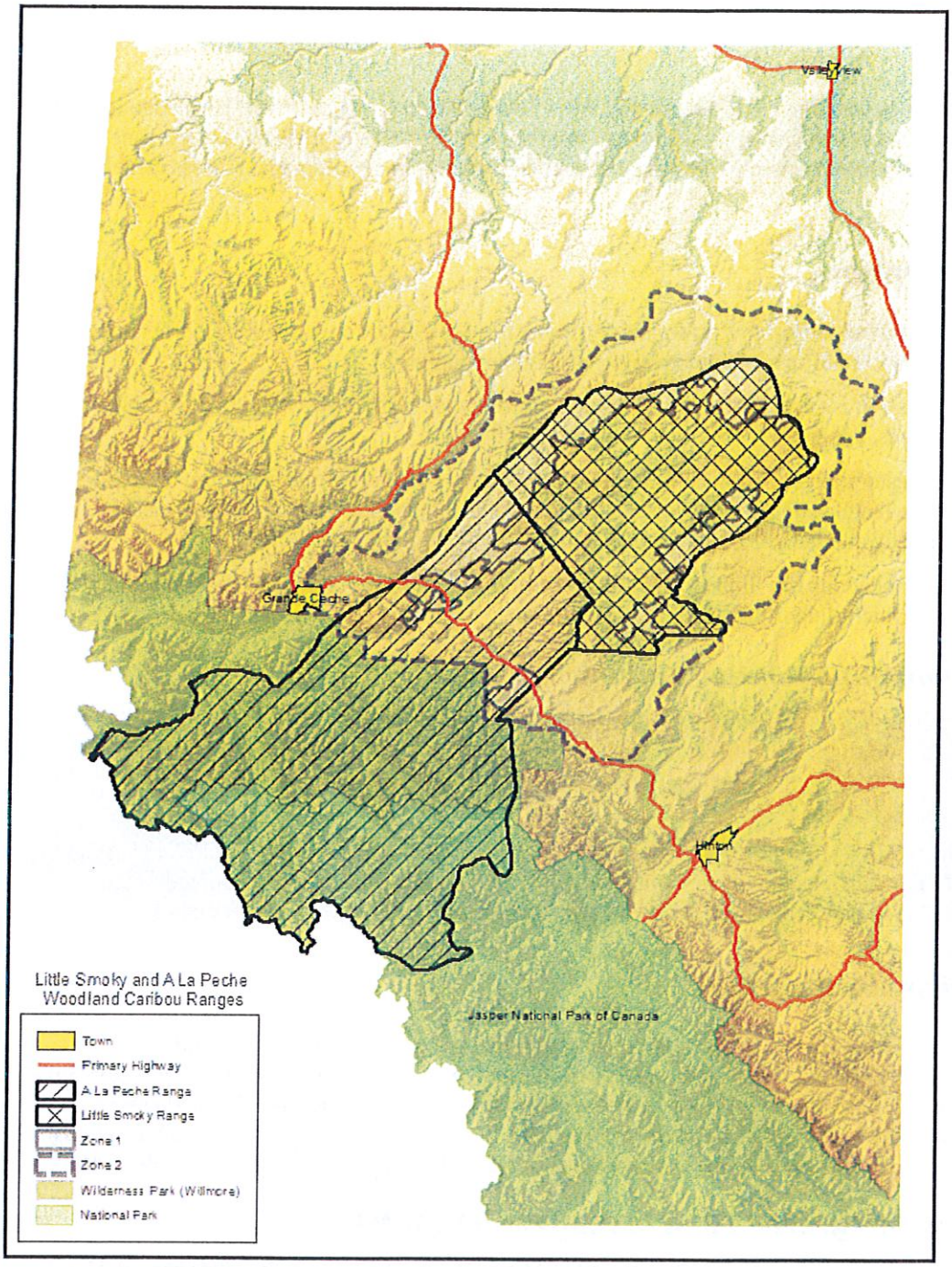


Figure 1. Management zones for the Little Smoky and A La Peche Caribou Ranges.

4.2.1 Zone Definitions

Zone 1

Zone 1 was delineated based on the occurrence of existing forest harvesting footprint along with caribou occurrence and movements.

Zone 2

This zone extends beyond the Little Smoky and A La Peche Caribou Ranges. It will be used to identify where coordinated access management practices are required, inclusive of the ranges. This zone coincides with the boundary used to develop the original Berland-Smoky Regional Access Development Plan.

4.3 Restoration

Restoration of disturbed habitat towards conditions which are effective for caribou is a cornerstone of Alberta's approach to stabilizing and recovering caribou populations.

The goal of restoration is to re-establish forest communities on disturbed sites, thereby restoring normal ecosystem processes. Alberta's restoration program objectives are:

- Habitat restoration – Restore sites to their natural successional trajectory, in turn 1) reducing caribou avoidance of disturbance; 2) reducing establishment and growth of plant species preferred by alternate prey; and 3) over time, creating effective habitat for caribou.
- Reduce predation risk –Impede and reduce wolf travel on linear corridors, and reduce habitat features which support high numbers of wolves.

Restoration Management Requirements

1. Alberta will lead the development and implementation of a restoration plan for historical and existing footprint in the ranges, to increase undisturbed and effective habitat and reduce predation rates on caribou. Implementation of this plan will initially restore historical seismic lines in the ranges by the end of 2022.
2. Industry operating in the area will be required to meet enhanced restoration requirements at the time of footprint abandonment, to be established by Alberta in communication with the Regulator, for any new footprint on or after April 1, 2017, within the caribou ranges.

4.4 Access Management

Minimizing the creation of new footprint in a working landscape requires carefully considered development plans, operating conditions, and coordination of access to minimize new linear disturbances and identify opportunities to restore existing linear disturbances. Alberta's Range Plan will ensure alignment with caribou habitat and population objectives by the application of strict operating conditions, and a mandatory ILM approach through the approval of a coordinated regional access development plan.

Mandatory Integrated Land Management (ILM)

ILM is a strategic, planned approach to manage and reduce human footprint on the landscape. ILM aims to balance values, benefits, risks and trade-offs when planning and managing resource extraction, land use activities, and environmental management. ILM in the Little Smoky and A La Peche Caribou Ranges is mandatory; industry operating within the Little Smoky and A La Peche Caribou Ranges will be expected to adhere to ILM requirements in applications for development and throughout their activity cycles.

Berland Smoky Regional Access Development Plan

The Berland Smoky Regional Access Development (RAD) Plan was developed by the Foothills Landscape Management Forum (FLMF). The FLMF is a self-funded forum made up of resource companies (energy and forestry) and the Aseniwuche Winewak Nation who work together on the management of industrial footprint to mitigate the impact on other resource values. The RAD Plan included input from government, Indigenous communities and industry stakeholders to provide a coordinated approach to planning access roads in the region within and surrounding the Little Smoky and A La Peche Caribou Ranges. Alberta approved the RAD Plan's primary corridors. In consideration of potential implications for caribou and some other fish, wildlife and land management values, completion and approval of all aspects of the RAD Plan's secondary corridors plan was deferred until the completion of caribou range plans. Following the release of the Range Plan, the Government of Alberta will work with the FLMF to prepare a new regional access plan which considers all access types.

Access Management Requirements

3. The Foothills Landscape Management Forum or a similar working group designated by Government will coordinate the preparation of a multi-company regional access plan for the forest and energy sectors in Zone 2, subject to oversight by the Government of Alberta, Indigenous peoples, environmental non-government organizations, municipalities and other key impacted stakeholders. Alberta Environment and Parks will lead the review and approval of this plan, including consultation with Indigenous peoples and downstream regulators.
4. Parties seeking to develop roads in the Little Smoky and A La Peche Caribou Ranges will be required to submit rolling 5-year operational access plans annually, demonstrating consistency with the approved regional access plan and provisions of the Range Plan. Road approvals and amendments for different sectors will be integrated, with oversight from Agriculture and Forestry and the Alberta Energy Regulator to ensure consistency with the approved regional access plan and rolling access plans.

4.5 Management of Forest Activity

Forest products harvesting will be managed using zonation as shown in Figure 1, and in some areas volume limits.

Harvesting will focus on areas of pre-existing harvest first (Zone 1), taking advantage of existing access and disturbance to reduce further forest fragmentation and produce large contiguous areas of future caribou habitat. Annual harvesting plans will strive to concentrate activities geographically. Further, companies will ensure any carryover volume from previous years is harvested outside the ranges before proceeding to harvest inside the ranges.

Each company with tenure overlapping caribou ranges will update their respective Forest Management Plan to reflect direction in this range plan, ensuring that volume scheduled inside the ranges is identified as an annual schedule. Range volume may be carried forward from year to year, but may not exceed the volume cumulative to that year.

Forestry Requirements

5. For any forest management unit, harvesting inside the ranges may only remove "second-pass"/ "reserve block" stands (that is, stands in Zone 1) until all of that area is removed.
6. Carryover volume must be harvested outside the ranges before proceeding to harvest inside the ranges. Harvesting plans will prioritize scheduling blocks that minimize increases to disturbed

habitat.

7. Harvesting in forest management unit W15 inside the ranges will not exceed the following levels annually:

   2016/17: 548,500 m^3

   2017/18: 498,500 m^3

   2018/19: 498,500 m^3

   2019/20: 473,500 m^3

   2020/21: 448,500 m^3

8. Harvesting in forest management unit E8 inside the ranges will not exceed 342,000 m^3 annually for the next 5 years.
9. Forest management plans will be updated to reflect the direction in this range plan by December 31, 2016, ensuring that volume scheduled inside the ranges is identified as an independent annual schedule.
10. Range harvest volumes may be carried forward from year to year, but may not exceed the volume cumulative to that year.
11. Alberta will introduce operational requirements for forestry activity to:
    a. Require the reforestation of historical footprint adjacent to or within forest harvest cut blocks.
    b. Require initial restoration of Class V forest roads within three years of construction.

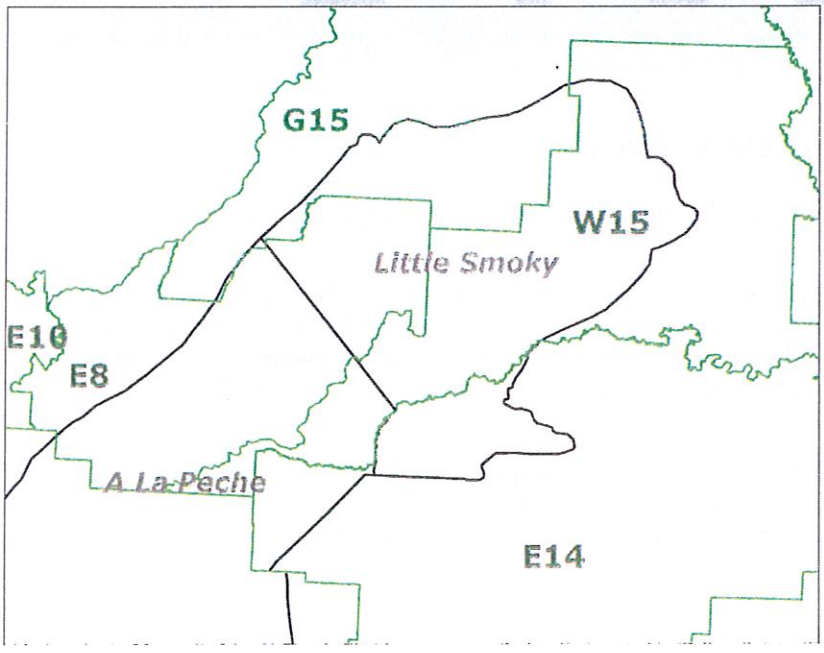


Figure 2. Little Smoky and A La Peche caribou ranges showing forest management unit names.

4.6 Management of Energy Activity

Alberta has various management provisions specific to caribou in place through its Enhanced Approval Process (EAP).

The current EAP provisions supporting caribou habitat and population protection will be reviewed and where necessary adjusted for consistency with the goals and objectives of the Range Plan.

Energy Requirements

Crown mineral rights

12. The Government of Alberta will work with companies to achieve voluntary activity rescheduling and will offer agreement extensions on a case-by-case basis for companies to support transitioning to compliance with all provisions of the Range Plan. These extensions will be conditional on a signed commitment to a significant multi-year rescheduling of new development on the agreement companies identify, or a substantive and significant prolonging of activity over an extensive period of time.
13. The Government of Alberta will reserve from disposition all remaining Crown coal and metallic and industrial mineral rights within the Little Smoky and A La Peche Caribou Ranges. Petroleum and natural gas rights are available.

Requirements for new and existing development

14. All new oil and gas development adheres to appended development as a required approach. New development may be approved, provided there is a demonstrated inability to access resources from existing roads, pipelines, facilities and well pads; or it is identified in the approved multi-company regional access plan. Consideration will be given to human safety and best environmental outcomes in assessing the inability to access resources.
15. New disturbances should avoid open and treed wetlands throughout the ranges.
16. The Government of Alberta will review the current requirements in the Enhanced Approval Process (EAP), and approval conditions applied to existing applications, for consistency with the Range Plan goals and objectives. In the case of conflict between the Range Plan and any applicable portion of the EAP or other approval condition, the Range Plan prevails.

Geophysical Exploration Requirements

17. Applications for new seismic exploration must demonstrate to the Alberta Energy Regulator that reprocessing existing seismic data cannot be used in its place.
18. Where existing disturbances occur (i.e. clearings and cleared lines with vegetation heights less than 1 meter in height and within 200m of proposed seismic program line), the creation of new lines is prohibited, and the existing lines must be reused.
19. Where existing disturbances (as outlined in Standard 2) are not available, new clearings must adhere to the following standards:

    a. Receiver lines must be meandering, under-canopy hand-cut and using tree avoidance techniques (that is, no trees with a diameter at breast height greater than 10 cm to be removed). Receiver lines must not be spaced closer than 200 meters apart.

    b. Source lines must be meandering and may not exceed 2.75 meters in width and employ tree avoidance techniques to limit line of sight to less than 50 meters. Source lines must be at least 300 m from each other.

c. Doglegs must be employed at all intersections with other linear features to limit line of sight.

20. Vehicles employed in seismic exploration will have a low ground pressure configuration.
21. Shrub and tree regeneration on existing lines must be protected through avoidance techniques.
22. Helipads must use natural open areas or existing clearings where available. If helipads are prepared, they must not exceed 35 meters in diameter.
23. Heli-portable programs must have shot hole drop zones no greater than 4 metres in diameter.
24. Initiate activity as early as possible in the winter to limit late winter activities. Seismic programs must be complete by February 15th of each year.

Pipeline Construction Requirements

25. Alberta will only approve pipeline construction that employs techniques to minimize the extent and duration of new footprint, through application of appropriate construction and restoration techniques. Alberta will develop requirements for approval of pipeline applications.

4.7 Other Sectors – Management Requirements

Peat Extraction

26. The Government of Alberta will reserve from disposition all peat within the Little Smoky and A La Peche Caribou Ranges.

Sand and Gravel Extraction

27. The Government of Alberta will reserve from disposition all sand and gravel within the Little Smoky and A La Peche Caribou Ranges.
28. Borrow excavations will be permitted for approved activities.

4.8 Managing natural disturbance risks to habitat

The majority of pine stands within the Ranges have been assessed as moderately susceptible to damage from attacking pine beetles; the risk of pine mortality is significant. Mountain pine beetle infestations and resulting impacts to pine forests damage hydrological function, ecosystem function, sensitive sites and wildlife habitat as well as sustainable forest harvest levels.

While only a small proportion of the ranges have burned over the last 60 years, wildfires are frequent natural and human-caused events in the Upper Athabasca and Upper Peace regions.

Alberta will focus its efforts in the Little Smoky and A La Peche Caribou Ranges to reduce the risk of habitat loss to these important natural disturbances.

Natural Disturbance Requirements

29. Alberta will continue with its high state of readiness for wildfire response and suppression in the Little Smoky and A La Peche Caribou Ranges.
30. Alberta will prioritize use of Level 1 (single-tree removal of high risk mountain pine beetle sites) control treatments in the Little Smoky and A La Peche Caribou Ranges, approving Level 2 (block or patch harvesting of infestations) treatments as necessary.
31. Alberta will review application of the Healthy Pine Strategy in the Little Smoky and A La Peche

Caribou Ranges to ensure alignment with caribou habitat needs.

5.0 Human Use Management

Successful restoration depends on supporting tree regrowth on sites, and ensuring it is protected from subsequent disturbance. At the same time, management of alternate prey species for wolves (that is, moose, elk and deer) rests on the ability of Indigenous and licenced hunters to obtain access to the range.

Alberta will designate a Public Land Use Zone (PLUZ) to support habitat conservation, approving routes to support targeted access. A PLUZ is an area of public land to which legislative controls apply under authority of the *Public Lands Act*, to assist in the management of industrial, commercial and recreational land uses and resources. A PLUZ is created for a specific land base and the unique conditions that exist within that land base. PLUZ conditions are designed primarily to protect areas containing sensitive resources and manage conflicting land-use activities, including recreation.

Management of Human Use - Requirements

32. Alberta will designate a Public Land Use Zone encompassing the Little Smoky and A La Peche Caribou Ranges, including application of necessary barriers and enforcement. Motorized use will be restricted to approved roads and designated corridors through the use of a Public Land Use Zone, subject to constitutionally practiced treaty rights.
33. Alberta will coordinate the development of a recreational access component of the multi-company regional access plan and the restoration plan, to define designated routes in cooperation with affected Indigenous communities, municipalities, recreation and other users.
34. Awareness and educational programming will be enhanced through the Alberta Caribou Patrol to educate local communities, recreational associations (for example, the Off Highway Vehicle Association) about the impacts of recreational use on caribou.

6.0 Population Management

Targets

Alberta's objectives for the Little Smoky and A La Peche caribou populations are framed as a phased approach towards achieving self-sustaining populations.

Phase	Population target
Stabilizing	Each range population has greater than 100 animals and demonstrates population stability or positive growth.
Recovering	Each range population has greater than 150 animals and demonstrates population stability, or positive growth (within the bounds of the ecological carrying capacity for caribou within each range).
Sustaining	Achievement and maintenance of a self-sustaining local caribou population in each of the Little Smoky and A La Peche ranges.

Recovery of habitat to levels that can sustain caribou will take many decades. During the Stabilizing and Recovering phases caribou populations require assistance to withstand excessive predation pressures. To improve survival rates, a large-scale caribou rearing facility will be used to augment the reproduction success of the Little Smoky population, with ongoing predator management for both caribou populations.

6.1 Caribou Rearing Facility

Alberta will construct a large (up to approximately 100 km^2) fenced caribou rearing facility, to contain a suitable breeding population of caribou within the Little Smoky range. Periodically, young adult caribou will be released to the caribou population outside of the facility to contribute to population growth. The approach provides several potential benefits:

- Year-round protection for adult and young caribou from predation;
- Infrequent removal of predators from within the fenced area;
- Relatively large area protection, so caribou should require minimal supplemental feeding;
- Animals released as young adults should have reduced predation mortality rates; and
- The size and location of the facility will assist in it not contributing to negative impacts for the main caribou population remaining outside of the fenced area.

This approach is not suitable for the migratory A La Peche population.

6.2 Alternate Prey Management

Alberta will continue to manage ungulate harvest levels to: 1) address increases in the productivity of moose, deer and elk which result from wolf population reductions, and 2) to reduce apparent competition between caribou and other prey species. These goals will be achieved through a combination of ungulate harvest by Indigenous peoples, and general and special hunting licence opportunities.

6.3 Predator Management

Wolf management in relation to Alberta's threatened woodland caribou is enabled by Alberta's Woodland Caribou Recovery Plan, Woodland Caribou Policy for Alberta, and the Management Plan for Wolves in Alberta. Wolf populations are abundant and widely distributed across provincial forested lands.

The Government of Alberta will continue its existing wolf population management program in and adjacent to the Little Smoky and A La Peche Caribou Ranges. Alberta will engage local Indigenous communities in dialogue on traditional knowledge supports, and opportunities for communities to support predator management efforts.

Alberta's goal for wolf management will be to annually reduce and maintain wolf populations to levels which enable caribou population persistence, by achieving population stability or growth.

Population management requirements

35. Alberta will establish and fence a caribou rearing facility up to approximately 100 km2 in size, to contain a suitable caribou breeding population, in the Little Smoky range.
36. Alberta will maintain conditions within the rearing facility necessary to the successful reproduction of the contained breeding population.
37. Alberta will continue setting harvest targets for moose, deer and elk in the Little Smoky and A La Peche Caribou Ranges that address the productivity increases of those species resulting from wolf population reductions, and to reduce apparent competition with caribou.
38. Conduct annual wolf population reductions within and adjacent to the Little Smoky and A La Peche caribou ranges to enable caribou population persistence, by achieving caribou population

stability or growth.

39. In consultation with local Indigenous communities, Alberta will identify opportunities for their peoples to contribute to caribou population management.

7.0 Monitoring and Reporting

As a key element of an adaptive management approach, the Government of Alberta will issue annual progress reports and five year stewardship reports for the Little Smoky and A La Peche Caribou Ranges. Alberta Environment and Parks will be accountable for Range Plan reporting, in collaboration with Alberta Agriculture and Forestry, Alberta Energy, the Alberta Energy Regulator, and other relevant departments and agencies. Annual reports will be prepared in association with a Caribou Range Management Advisory Committee, to be established by Alberta Environment and Parks.

Alberta will engage Indigenous peoples regarding opportunities for them to support and contribute to monitoring actions.

7.1 Population monitoring

Alberta will continue to monitor caribou in the Little Smoky and A La Peche Caribou Ranges.

Value	Indicator	Description
Caribou populations	Population size	Estimates every 5 years
	Population demographic rates and growth (lambda)	Annual estimates
Caribou predation	Moose (alternate prey) population size	Estimates every 5 years
	Annual wolf removals	Annual numbers removed

7.2 Habitat condition monitoring

Habitat will be monitored based on the Range Plan habitat definitions, and reported in annual and 5 year stewardship reports. The following indicators will be monitored by Alberta.

Table 1. Indicators associated with habitat condition and restoration activity that will be monitored and reported by Alberta.

Value	Indicator	Description
Landscape condition	Footprint	The area of anthropogenic disturbance features, classified by originating activity
	Footprint available for restoration	The area of anthropogenic disturbance features, classified by originating activity, eligible for restoration
	Natural disturbance	The area of disturbed and undisturbed habitat affected by natural disturbance (for example, wildfire, MPB, blowdown,

		etc.)
	Linear feature density	The length of linear features[4] per unit area, expressed for each range
Caribou habitat	Disturbed/undisturbed habitat	Per the Range Plan definitions, in absolute and proportional quantities
	Effective habitat	Per the Range Plan definitions, in absolutely and proportional quantities
Trajectory to 65% undisturbed habitat	Restoration activity	The area where footprint and historical footprint have been initially restored, by activity type
	Initially restored habitat	The area of restoration activity meets Government of Alberta requirements.
	Restored habitat	The area of restored habitat

Monitoring and Reporting Actions

Alberta Monitoring Requirements

40. Alberta will monitor habitat and population indicators as identified within section 7.0 of this range plan.
41. Alberta will engage Indigenous communities regarding opportunities for them to contribute to monitoring actions.

Industry Monitoring Requirements

42. Industrial land users operating in the Little Smoky and A La Peche Caribou Ranges shall report an accurate representation ("as-built") of additions or modifications to footprint annually, to Alberta Environment and Parks; the department will define acceptable standards for submitted data.
43. In association with Alberta Environment and Parks, a Caribou Range Management Advisory Committee will prepare annual public reports by March 31 of each year assessing:
    a. the establishment and success of the seismic restoration program and caribou rearing facility
    b. monitoring data collected annually by Alberta, as identified in requirement 36.
46. Alberta, led by Alberta Environment and Parks, will prepare five year stewardship reports for the Little Smoky and A La Peche Caribou Ranges.

8.0 Research – Ongoing and Future

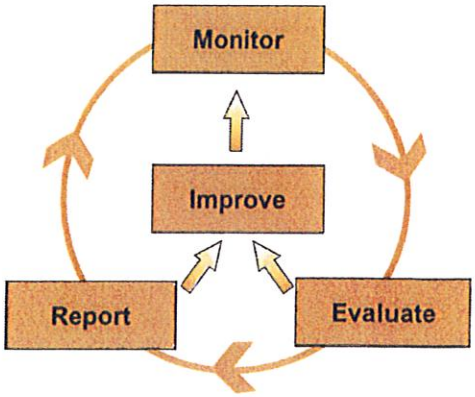
Alberta is committed to ongoing assessments, monitoring and research to support adaptive management of the Range Plan and to inform defining habitat indicators and targets. Alberta will identify priority areas of research that support caribou population and habitat objectives. Alberta will collaborate with suitable researchers and agencies to deliver research priorities.

[4] Features established to connect two points, that is, seismic lines, roads, trails, transmission corridors, railways, pipelines, easements, etc. Low impact seismic is not included in linear feature density calculations.

Alberta Environment and Parks, in association with a Caribou Range Management Advisory Committee to be established by Alberta Environment and Parks, will review and assess new research findings as they relate to delivery and potential adjustments to the Range Plan .

9.0 TIMELINES: RANGE PLAN UPDATES

9.1 Continuous Improvement



Alberta is committed to achieving positive environmental, economic and social outcomes for the benefit of current and future generations of Albertans. The principle of adaptive management incorporated in the Range Plan ensures that we will respond to changes in our understanding of those values over time, continuously improving our approach.

The occurrence of natural or unexpected disturbances (for example, wildfire) within the Little Smoky and A La Peche Caribou Ranges could threaten the achievement of expected outcomes. In the event that a natural disturbance affects more than 5% of the area of either range, more than one year before a regular plan update evaluation, the Government of Alberta will provide a management response in collaboration with key stakeholders, Indigenous people, amending the Range Plan as necessary.

Alberta's climate has been changing. Alberta has experienced the largest increase in mean annual temperature, approximately 1.4 degrees Celsius, of all Canadian provinces over the last 100 years. Caribou are among the most vulnerable boreal species to climate change. More moderate winter temperatures have allowed MPB to survive farther north and at higher elevations. Alberta will carefully evaluate continued changes in climate, identifying and addressing challenges to caribou populations, and investigating adaptation approaches as necessary.

If the management actions outlined in the Little Smoky and A La Peche Caribou Range Plan are not meeting intended targets or caribou populations continue to be challenged by excessive predation, Alberta will employ its adaptive management approach. Changes contemplated to the management actions outlined in the plan will be done in collaboration with key stakeholders and Indigenous people.

Adaptive Management Actions

47. Alberta will review and update the Little Smoky and A La Peche Caribou Range Plan, including all management actions and activity levels, at least every five years from its approval.
48. The Caribou Range Management Advisory Committee will review and assess annual monitoring data and new research, providing annual advice to government on the need for adjustments of the Little Smoky and A La Peche Caribou Range Plan.
49. If natural disturbance affects more than 5% of the area of either range, more than one year before a regular plan update, Alberta will provide a management response.

Setting Alberta on the Path to Caribou Recovery

Eric Denhoff

May 30, 2016

Table of Contents

Executive Summary

Alberta, like much of the rest of Canada, faces dramatic and urgent decisions to protect the remaining great caribou herds from the cumulative effects of climate change, human interaction, and other threats.

There is little doubt that human industrial, recreational and settlement activities have impacted these herds, and in many cases reduced them to near extinction.

Alberta can be proud of having committed perhaps more money and resources than any other jurisdiction in Canada towards research and innovation in relation to caribou protection. Nonetheless, it faces the challenge of herds in real danger of rapid decline or extirpation.

In the midst of both tremendous pressure on the herds, and the worst economic recession in the natural resource sector in many decades, Alberta has the tough job of balancing precautionary measures necessary for the protection of caribou, with a duty to be cautious in implementing radical change that might inadvertently exacerbate economic challenges.

Caribou come first. That's the law, and that's the right thing to do.

Alberta needs to work with Indigenous peoples, who have lived side by side with caribou successfully for tens of thousands of years; with energy and forestry industries; with communities and the Government of Canada to preserve these great herds, and protect Aboriginal and Treaty rights in doing so.

How Alberta resolves this decades-long issue could have profound impacts on jobs and communities.

No easy task. A solution has eluded provincial governments for decades.

This report will make substantial recommendations to rapidly accelerate habitat recovery in some areas; protect habitat in different ways in different places; embark on a unique undertaking with Indigenous peoples changing the way Alberta and Indigenous peoples face caribou protection issues together; and imposing some of the toughest operating conditions on natural resource industries anywhere.

Alberta has always been an innovator, and this report suggests Alberta move to the forefront in Canada in protecting caribou using common sense, difficult choices, large-scale innovation and sheer effort, with a resolute focus to complete all caribou range plans for all herds in Alberta by the end of 2017, but with special emphasis to conclude plans for three important areas by the end of this year.

Much of the work to date regarding caribou protection in Alberta has involved studying the situation. Strong scientific research effort has been expended to begin to explore and understand the caribou and both threats and opportunities for preservation.

Now is the time to act.

Consider that, in the Little Smoky and A La Peche ranges, Alberta has engaged in no less than ten separate study/stakeholder engagement or task force approaches to reviewing and recommending, over the last thirty or forty years.

Having studied the situation for decades, time is running out for action.

This report identifies specific strategies for six ranges, elements of which can be applied to some or all of the remaining range plans.

This is a story of tough choices—in some range areas, the ability to preserve 65% of habitat over time to ensure caribou survival is a reasonable and quite an achievable goal.

In other areas, the overwhelming level of human activity is so stunningly complete that the complex array of threats (climate change, predators, wildfires, intensive industrial activity, mountain pine beetle, invasions of large scale competing wildlife species and on and on) mean that even the most aggressive habitat protection measures may fail to assure the survival of the herds.

Only thirty or forty years ago, most of the A La Peche and Little Smoky range area was wilderness. Today, by some estimates, 95% of that area is disturbed, and through Government's design of an extremely effective and efficient forest industry in the area, thousands of jobs now depend on the harvesting of wood from the very wilderness and habitat which has supported these caribou for thousands of years.

Industry sincerely believes that they can responsibly operate in these areas and at the same time preserve sufficient habitat for caribou to survive.

They make the point that historic natural events which self-managed the environment and species no longer occur—wildfires are eradicated rather than allowed to burn; wolf and other populations have almost doubled in some areas and require control; moose and other game roll into new areas that were formerly difficult to access, bringing more wolves with them who in turn, also consume caribou.

So the wilderness is now so managed, it is no longer wilderness. Managed wildlife, managed forestry, managed energy extraction, managed predator control.

Forestry and energy experts argue that limited, controlled, well-planned and science-based approaches to harvesting and extracting can work in harmony with caribou.

Others argue that most large-scale industrial activity must be removed from caribou habitat to protect their survival.

And while it excites some of the greatest concern and opposition among the public, my most challenging finding personally is that the caribou of the Little Smoky and A La Peche caribou ranges simply will not survive unless wolf control continues. Virtually no stakeholder I spoke with disagreed with this, though all were familiar with public revulsion over it, some intimately so.

As habitat recovers over time, it will presumably, eventually—in many years—be possible to eliminate active wolf control on a regular and continuing basis.

In every area of Alberta, in every range, sorting out the levels and kinds of activity which may be undertaken requires the delicate balancing of caribou protection with the need for a sustainable economy, the need for jobs, and the necessity to respect Aboriginal and Treaty rights. Ultimately, caribou come first, and federal law requires each province and territory to develop range plans that protect, over time, at least 65% of that habitat or face federal intervention.

There is no easy solution – virtually all the forest fibre in the province has been allocated to companies, so there are few large areas without forestry allocations on which local mills and jobs by the thousands depend.

Where there are fewer forestry interests, there are mining or oil or gas or agricultural interests.

So every decision requires care, not just the duty of care and duty of caution to preserve caribou, but the duty of care and duty of caution to make sure that in finding solutions, unnecessary economic disruptions are not made beyond those necessary to preserve the caribou and their necessary habitat.

This report will clearly outline those choices and a host of suggested immediate actions to address them.

It will recommend immediate action in four distinct areas of Alberta, and the completion of remaining range plans by the end of 2017:

1. A dramatic increase in protected land to the north of the existing Chinchaga Wildland Provincial Park, extending wildland park status to an additional 347,600 hectares, effectively quintupling the existing park size and in a single stroke, forever preserving almost 25% of the Chinchaga caribou range. A complete range plan must be in place by the end of 2016, showing the plan to achieve 65% habitat protection over time.

2. Further large additions of 1,469,879 hectares of protected area covering the Bistcho, Yates and Caribou Mountains caribou ranges, bringing them to 61%, 72% and 72% permanent protection, respectively.

   Altogether, this will create over 1,800,000 hectares of new permanent protection for the Chinchaga, Bistcho, Yates and Caribou Mountains ranges, for a total of 3,158,000 hectares of permanent protection in these ranges. This is a dramatic increase in Alberta habitat protection, offering a large, solid foundation on which to complete range plans in Alberta's north.

   No new park or protected area is without cost. These actions will have impacts on future and forestry harvesting and have some potential impacts on some future energy developments inside parks, but will demonstrate Alberta is serious about taking action now, to protect habitat.

3. An immediate commitment by the Alberta government to a new co-operative range management process with appropriate Indigenous members of the Alberta Treaty 8 Tribal Association, forest companies, environmental non-government organizations (ENGOs) and others to establish a range plan for the area around forest zone F23 and Red Earth, west of Wood Buffalo National Park and south of Caribou Mountains Park.

4. Major changes and new innovations in the Little Smoky and A La Peche area to enhance herd survival, limit forestry activity and energy activity in the caribou ranges here and insist on the most dramatic seismic line habitat restoration in Alberta history.

These four initial range plan steps provide for the completion of range plans in these areas by the end of 2016, with Alberta's remaining range plans complete by the end of 2017.

Introduction

Woodland caribou are threatened in Alberta and Canada, and efforts to halt their decline and recover the species have been ongoing for decades. These efforts were renewed with the release of the federal recovery strategies for boreal and southern mountain caribou in 2012 and 2014, respectively. Since that time, Alberta has been engaged in a difficult conversation on maintaining caribou on a working landscape in the Little Smoky and A La Peche caribou ranges (LS/ALP) in western Alberta.

These ranges are the most challenging landscape in Canada for the achievement of federal recovery strategy objectives. The Little Smoky is considered the most disturbed range in Canada; both populations co-exist with forest industry that is highly dependent on forests within the range, and beneath them lie some of the most valuable energy resources per unit area in Alberta.

My recommendations will identify opportunities to advance a made-in-Alberta approach to protecting these populations from further decline, and ensuring their persistence in the landscape, while at the same time providing some security to local communities. Further, I have identified caribou ranges to the north where more protection is possible, towards ensuring Alberta's caribou populations are maintained for future generations.

Context

Alberta kicked off its more recent range planning work with the LS/ALP caribou ranges in the spring of 2013, initiating a multi-stakeholder advisory group (MSAG) that included Indigenous peoples, forest products industry, energy industry, municipal and environmental and other non-government organizations. While the broad inclusion of stakeholders was considered positive by participants, many have noted to me that the Government may have underestimated the degree of conflict between some parties, and appeared unwilling to table information or proposals that might precipitate strong conflict. As a result, their opinion was that the discussion was superficial, and failed to produce constructive solutions.

The Government was presented with a draft range plan by a cross-ministry team in the summer of 2014. Aware of the unresolved conflict from discussions with key stakeholders, the Government directed staff to work with the forest and energy sectors to identify a means to resolve key questions on the co-existence of industry and caribou. This culminated in the appointment of the Ministerial Task Force by Ministers Fawcett and Oberle in the spring of 2015. This Task Force provided its report to Government in July 2015, identifying four options that spanned the solution space for range planning in the

LS/ALP, including bookends that highlight the potential impact of management missteps to caribou, industry and local communities.

While this report constructively advanced the discussion, by failing to include Indigenous, municipal and environmental representatives, it lost important credibility. I was appointed in December 2015 to review the report with stakeholders, including representatives to the original MSAG, understand their perspectives and viewpoints on the work and caribou recovery, and make recommendations to Government on how to resolve the situation.

Scope

My terms of reference originally identified my scope as the LS/ALP. With the approval of Ministers, I extended my investigations to the northwest of the province, where I identified opportunities in the immediate future to advance caribou recovery through large scale protected areas and innovative range planning processes.

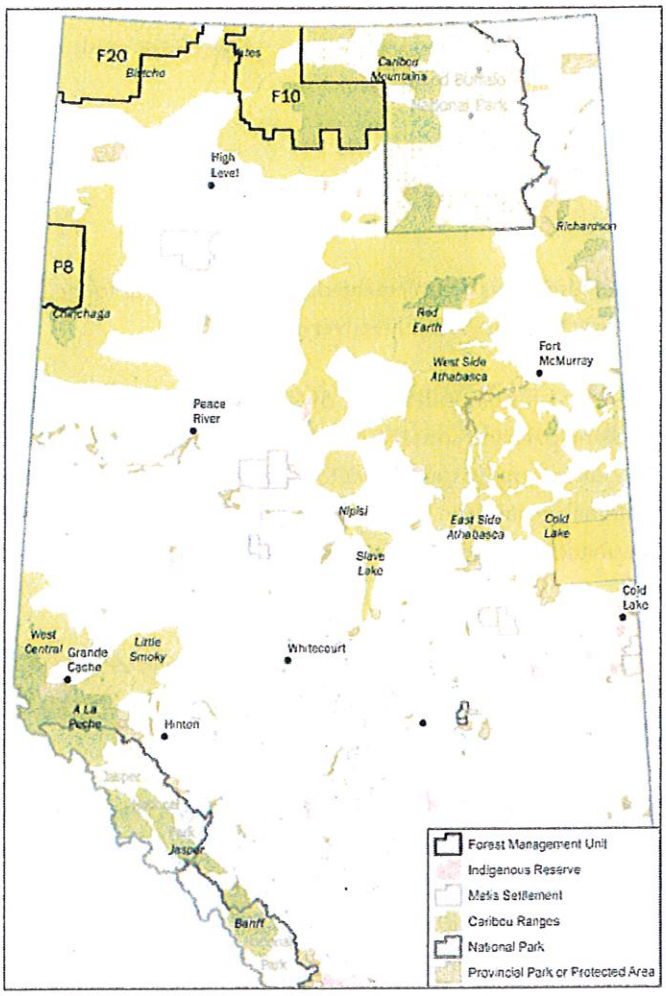


Figure 1. Map showing provincial caribou ranges. My report focuses on the Little Smoky, A La Peche, Chinchaga, Bistcho, Yates, Caribou Mountains and Red Earth ranges. The highlighted forest management units represent areas where strong protection opportunities exist.

Objectives

My objectives, established in the Terms of Reference, were to engage key stakeholders in discussions to develop an approach to caribou habitat and population management within the LS/ALP, seeking as much agreement as possible. This depended on my sharing all information available to me, to ensure transparency of the process with stakeholders, and remove possible future concerns that full information was not exchanged or some viewpoints were excluded. My recommendations were to advise Government on a path forward considerate of caribou recovery, stakeholder impacts and the federal caribou recovery strategies.

During my work, I enjoyed the strong support of department staff in developing an understanding of background and context, introductions to stakeholders, and testing possibilities.

Made-In-Alberta Approach

I have identified several key measures that, if implemented, will vault Alberta to the front of all provinces in taking strong action for caribou recovery:

- Protection of more than 1.8 million hectares of key caribou habitat through creation of a new wildland park and conservation areas in the Chinchaga, Bistcho, Yates and Caribou Mountains ranges, and work towards further protection of up to two million additional hectares in the Caribou Mountains and Red Earth ranges, increasing permanent protection of habitat and Alberta's protected areas network dramatically.

- Initiating the most aggressive seismic line habitat restoration project in Canadian history in the LS/ALP ranges, recovering as fully as possible the 10,000 kilometres of seismic lines over a five year period.

- Building a fenced Caribou Rearing Facility in the LS/ALP ranges, unparalleled in scale, where caribou can safely reproduce and raise their calves, towards rapidly rebuilding local populations, potentially doubling them within five years. Considering this approach, where appropriate, elsewhere.

- Providing strong resourcing for local Indigenous peoples to partner with the Government and other stakeholders in recovering caribou through shared administration and provision of monitoring, restoration, targeted predator control and oversight and maintenance of the Rearing Facility.

- Implementing an innovative Government-backed, energy industry-paid Green Bond program to reduce cash flow impacts to affected companies.

- Minimizing forest harvesting within the ranges LS/ALP ranges, and with a view to still providing for long term habitat recovery to 65%, with voluntary rescheduling of harvesting in most of the range areas.

- A renewed effort between government and industry over the next several months towards the "pooling" concept of forest companies pooling fibre outside the LS/ALP ranges to limit or prevent harvesting inside the ranges.

- Voluntary rescheduling of substantial amounts of energy development in LS/ALP until the restoration program and rearing facility are firmly established.

- Establishing some of the most stringent operating conditions in North America for continuing energy development inside the LS/ALP range, including coordination of development plans and stricter requirements for development.

- Providing coordination and targeted funding towards provincial caribou monitoring and research in support of Alberta's objectives, through the establishment of a dedicated research program.

- Erection of a Caribou Interpretive Centre associated with the Rearing Facility, where the public can learn about Alberta's recovery initiatives and ongoing research.

- Establishment of a Monitoring Board to assess progress and monitor implementation for the ranges. The Board should include representation from all affected stakeholders.

On the basis of this strong foundation, Government will be well-positioned to drive the completion of remaining range plans by the end of 2017.

My Discussions with Stakeholders

Who I talked to

To inform my work and recommendations, I met with a wide range of stakeholders. I initiated discussions in late December, continuing to meet with stakeholders through January and into February. During that time, I shared the Task Force report with them, explored their viewpoint, and tested different ideas and concepts with them. I was able to visit with most key stakeholders at least twice, and met additional times with some.

A full list of stakeholders is provided in Appendix 1.

Previous work

Multi-stakeholder advisory group

In my opinion, the original MSAG established to advise the government on a range plan for LS/ALP appropriately sought representation and input from a broad set of stakeholders. However, all participants I spoke to noted dissatisfaction with its ultimate outcomes. The criticisms included:

- Lack of a clear process leading to a range plan
- Unwillingness by the Government to broadly explore all possible solutions, or support habitat modeling that could inform a shared understanding of stakeholder perspectives. This approach was favored by ENGOs and some forest products representatives

There is substantial concern among all stakeholders that Government will make decisions without fully understanding the different options and their ramifications. This speaks directly to ensuring fully informed, transparent decision-making, inclusive of all key points of view in a strong discussion. Without doubt, that discussion will at times involve heated debate, but that debate is necessary for the different sides to move off their positions and towards creative solutions.

Ministerial Task Force

The Ministerial Task Force was doomed from the outset, as it confined its work to the input of a very small number of industry and government staff, without including Indigenous peoples, municipalities or ENGOs, and was conducted confidentially. As a result, the Task Force Report does not include many other important perspectives on the issue – its conclusions are one-sided and suspect.

Every question or opportunity that is treated as taboo or deemed unrealistic in advance simply leaves some stakeholders feeling the outcome has already been decided. I think that was the case here. Participants I spoke to made it clear they felt the previous government had established the Task Force on the basis of maintaining business-as-usual.

Not all the conclusions were suspect. I think the habitat modeling work had value, but it stopped short of exploring creative solutions. I was able to explore the underlying work more fully, and I have done my best to take it the next step in my report.

That being said, many observers will again view this approach as not resolving all of the long standing issues, some will critique it as, again, a form of business-as-usual.

It is important that stakeholders respect and understand these differing viewpoints, in light of the extraordinary difficulties involved in this land use situation.

General stakeholder perspectives

In general, all stakeholders shared a deep concern and commitment to ensuring caribou recovery, and recognition that business-as-usual was not sufficient to achieve this. There was also consensus that restoration of existing disturbance, especially seismic lines, was a necessary and beneficial measure.

There was a measure of shared support for continuing the Province's current wolf control program, with notable exceptions as described below.

Municipalities

The municipalities I met with expressed strong support for maintaining a viable forest products industry and general support for ensuring both the forest products and energy sectors maintained access to resources within the range. The impact of the recent economic downturn was evident to all the municipalities I spoke with, especially the community of Grande Cache, where the recent closure of the coal mine has added to an already challenging outlook. Mayors and councillors shared that community members are

increasingly aware of the caribou issue, and to some extent, perceive it as a threat to community well-being.

As noted in the Task Force report, local communities are highly dependent on the development of natural resources for maintaining employment in their communities. The Department of Economic Development and Trade provided me with a list of major projects – none appears likely to offset the potential economic impact associated with overly aggressive approaches to habitat protection.

Indigenous Peoples

Aseniwuche Winewak Nation

The Aseniwuche Winewak Nation (AWN) is located in Grande Cache, and has inhabited and used the local landscape for decades, following their eviction from the current area of Jasper National Park when the Park was created. They are not included in a treaty, holding lands granted to them by the Province in fee simple. The AWN voluntarily ceased hunting caribou over 40 years ago, but their elders maintain a deep connection to caribou and desire their recovery. They expressed deep concern that the many caribou initiatives over the past decades have failed to take real action for caribou. They are frustrated that current Government programs, especially wolf control, provide no opportunity for them to participate in a meaningful, hands-on manner or build capacity to implement other more acceptable means of predator control. Meanwhile, their perspective is that the Government's continued use of strychnine as a control measure causes unacceptable losses to non-target species, and the use of moose as strychnine bait stations, combined with increased hunting quotas to reduce prey for wolves, competes with their use of moose as food.

The AWN were deeply dismayed by the exclusion of Indigenous peoples from the Ministerial Task Force, and the lack of representation of their perspective in its report. They are concerned that continued forest harvesting threatens their traditional land use of areas near their communities, including an area they reference as the A La Peche (see map), and recently proposed harvesting near one of their community sites, McDonald Flats. At the same time, many AWN members depend on Foothills Forest Products (FFP) for employment, and they would like a clear role in establishing a balance between development and the environment, and implementing a thoughtful approach to integrated land management.

They are cautious about using fencing on a large scale to protect caribou from predation, noting that there are many unanswered questions about the effects of such a fence on the local ecosystem.

The recent signing of the Statement of Intent with the AWN by Minister Phillips establishes a promising basis to build community capacity for implementing caribou recovery measures in partnership with Government. They are proud of the value their Caribou Patrol Program has had in building community understanding and public support for caribou recovery actions. The AWN has an important role to play in implementing a range plan, including associated restoration and monitoring activities, so that they can continue being stewards of their traditional land use areas.

Horse Lake First Nation

I had a preliminary meeting with staff from the Horse Lake First Nation (HLFN). During our conversation, they expressed frustration at the lack of opportunities for involvement created by the Alberta government, and lack of consultation with them on actions affecting caribou habitat. Particularly, they noted that traditional knowledge of the community, and especially elders, was not being taken into account by government on an equal footing with Western science.

The HLFN remains concerned about both forestry activity and oil and gas activity in the ranges. They are unconvinced that forestry activity can co-exist with caribou in the range itself, citing their experience that second-growth forests provide different ecosystems missing certain herbs and plants, compared to original forests or forests re-growing after wildfires.

We agreed further consultation meetings were required and an initial discussion was scheduled for the community in February.

Sturgeon Lake Cree Nation

I gave Sturgeon Lake Cree Nation (SLCN) copies of both the Task Force report and a discussion of the general direction my recommendations would be taking in this report.

In meeting with staff, representatives of the SLCN expressed concerns with forest harvesting and industrial development. They noted their strong connection to the land, and the growing interest among younger generations to learn traditional knowledge from elders. The SLCN have undertaken very positive efforts and events to help that knowledge and those traditions grow and strengthen.

They view caribou as sacred – hunting caribou has not been a part of their traditional ways. The community strongly favors moose, and they are concerned about the impact of increased wolf populations on moose availability. There is strong support for woodland caribou recovery efforts with particular interest in maintaining predator control for its positive effect on moose populations. They are interested in exploring habitat restoration and a caribou rearing facility, as they see an opportunity for their members to contribute to this. They suggested that SLCN trappers have an important role to play in supporting predator control.

Grande Cache Métis

I had a very preliminary discussion with the Grande Cache Métis Local #1994, who have a strong interest in caribou preservation in the area and who will be examining the report and previous reports as provided to them, with a view to engaging in subsequent discussions and initiatives.

Little Red River Cree Nation

I had a very preliminary discussion with Little Red River Cree Nation (LRRCN) about the F23 forest management unit, the importance of that area to the LRRCN, and the nature and extent of their forestry quota in the area.

They explained the history of their discussions with the Alberta government and others regarding the future status of the area in relation to caribou. They noted their strong potential to contribute creative solutions which would provide for long term habitat access for caribou in the area.

I would expect these discussions to continue under one of the two scenarios outlined later in the report for this area.

Environmental Groups

I was struck by the historical, general lack of consultation and involvement of a wide range of ENGOs in the issues surrounding caribou and their preservation in Alberta. One or two of the organizations, who do have much to contribute to both the discussion and to solutions, were consulted in a limited number of the previous planning initiatives. However, most had little involvement. This appears to have been intentional.

I met with the Alberta Wilderness Association, Canadian Parks and Wilderness Association (CPAWS), Alberta Biodiversity Offset Association, Nature Conservancy of Canada, and indirectly with the Pembina Institute, in that one of their managers participated through his role as a secondee to the CPAWS organization.

The Alberta Wilderness Association noted that they were founded on a shared desire to see the substantial protection of Alberta's Foothills, an area that extends to the LS/ALP. They maintain that park protection of these ranges is the only acceptable approach to caribou recovery. They said they would support the continuation of oil and natural gas dispositions within such a park as supported by the *Parks Act* and used in the establishment of Hay Zama Lakes Wildland Park. They completely oppose any continued forest harvesting in these ranges.

The Canadian Parks and Wilderness Society, Northern Alberta Chapter noted their commitment to seeing the Province achieve its target of 17% protected areas. As a

signatory to the Canadian Boreal Forest Agreement (CBFA), they are not opposed to forest harvesting, provided it accords with the principles of the CBFA.

The Biodiversity Offset discussion centred around the need for substantial offset replacement lands for any lands taken up in these critical caribou habitats for development.

All of the ENGOs said that continued wolf control without substantial caribou habitat protection was unacceptable to them. Generally, ENGOs view wolf control as a necessary mechanism only until such time as sufficient habitat is restored to prevent increased access by moose and other game, which in turn increases wolf populations beyond their natural level. They do not see evidence that the Government is pursuing sufficient habitat protection to warrant the use of wolf control, beyond simply enabling industrial development to continue unabated.

All of the ENGOs were all deeply concerned that they had been excluded from the work of the Ministerial Task Force. They expressed distrust and disagreement with several key aspects of the report, including its representation of the economic contributions of forestry; the threat posed by mountain pine beetle to the forest resource; and the representation of scenarios inclusive of forestry as potentially supporting caribou recovery.

During my consultations, several ENGOs (the Alberta Wilderness Association; the Pembina Institute; the West Athabasca Bioregional Society; and the Yellowstone to Yukon (Y2Y) Initiative) sent a letter to Ministers requesting that:

- new energy dispositions be deferred in all caribou ranges
- compensatory habitat restoration start immediately
- logging be deferred in all caribou ranges
- Government ensure range plans achieve 65% through a combination of protected areas with other measures

The same letter noted that measures including fencing and predator control must be secondary to habitat protection and prevention of further habitat destruction.

During the course of my work, the ENGOs also presented a detailed discussion of the potential for the forest companies in the area to "pool" timber allocations outside the ranges in LS/ALP, to support lowering or eliminating harvesting inside the range.

This discussion is explored further in this report, but the concept, while challenging, has merit and has been explored in the past. There is renewed interest in the concept and the ENGOs made strong proposals for government and industry to work together to utilize this approach.

The ENGOs without exception were constructive and expressed a sincere desire to work collaboratively with all stakeholders towards solutions. They particularly mentioned their willingness to work with Indigenous groups in co-operating towards solutions, and a number of the ENGOs met with industry representatives during the time of my work to explore options for caribou protection and explain their positions to companies or industry groups.

I experienced the ENGOs as neither dogmatic nor highly positional, but rather holding strong views on the steps they consider necessary to preserve caribou herds, including a general aversion to continued forestry operations of any kind in the ranges.

It is fair to say that, despite the efforts of industry to promote a 'working landscape' for caribou ranges, ENGOs feel that this approach has not proven successful anywhere in Canada. They are sceptical that continued large scale forestry activities in the ranges can provide, even after many years, the 65% undisturbed habitat the federal *Species At Risk Act* requirements dictate.

In addition, the ENGOs re-iterated strongly that cumulative effects have not been taken seriously by government in general, and specifically in the area in and around the LS/ALP ranges. They noted the dramatic increase in water use to assist gas extraction and the effects of forestry, seismic line activity and overall energy footprints have not been adequately addressed from a cumulative impact perspective.

There is merit in this argument. In general, provincial governments have been reluctant to fully explore and address cumulative effects, primarily out of a fear of the impact of such assessments on future resource development, and therefore jobs, tax revenues and wealth creation. ENGOs make compelling arguments that the public interest requires a more fulsome exploration of cumulative effects, and nowhere more so than as it related to caribou ranges overall across the province.

As was noted, no party is individually responsible for the 95% disturbance rate in the LS/ALP ranges, but somehow it happened.

I was also struck during my work at the vast gulf between the perceived values of government towards the land base—primarily as land for economic development purposes — and the ENGOs view that the public wants and deserves large, protected spaces for parks, recreation and species protection, where economic outcomes are subordinate to these values.

It is the job of government to reconcile these differences.

Academia

I consulted Dr. Stan Boutin, a professor of population ecology and Alberta Biodiversity Conservation Chair at the University of Alberta. A fellow of the Royal Society of Canada, he was awarded the Miroslaw Romanowski Medal "for significant contributions to the resolution of scientific aspects of environmental problems or for important improvements to the quality of an ecosystem in all aspects - terrestrial, atmospheric and aqueous - brought about by scientific means". He previously held a National Sciences and Engineering Council Industrial Chair in Integrated Land Management.

Dr. Boutin expressed his belief, based on decades of caribou research, that the Little Smoky and A La Peche caribou populations are not viable without significant direct intervention, including predator control and the use of fenced predator exclosures to house and protect caribou and their calves from predation. He suggested that habitat-focused means of caribou recovery are more likely to be successful in northern Alberta, where considerable areas are already protected or remain undeveloped, and caribou are primarily dependent on wetlands, which are not subject to similar development pressure from forest harvesting. Conversely, caribou in the LS/ALP have been shown to also use areas of upland pine stands.

In addition, I read a wide variety of research on the issues, both from Government of Alberta work done previously and from general sources. Suffice to say, Alberta remains a leader in research in this area, and at the same time, there is a definite need for significant additional research.

Federal Government

Again, I was struck by the lack of consultation between the Government of Alberta and federal department responsible for SARA regarding potential range management options and direction Alberta was considering.

There have been, at times in every province, dynamic tensions between federal and provincial interests, and these tensions would appear to have precluded extensive communication with federal wildlife officials at a senior level in recent times regarding this issue.

It is important to involve Canada at the earliest opportunity and in the fullest manner possible, in the discussion of key issues in achieving the 65% habitat target, and in the proposed directions for doing so, and to discuss cooperatively the best approaches to finding solutions.

In discussion with the Regional Director of the Canadian Wildlife Service, who has regional responsibility for caribou range planning in Environment & Climate Change Canada, I shared the work of the Task Force under the previous administration and some

of the key issues I had identified. He noted several key considerations that affect my recommendations:

- Canada is open to innovative approaches to addressing the objectives of the recovery strategies that are founded on science.

- Canada desires to work together with Alberta to identify and develop these approaches.

- Canada looks to Alberta for leadership on development of these approaches, keeping in mind that the eventual solutions must meet the criteria laid out in the federal legislation.

I want to emphasize that nothing in my conversations with Canada should be interpreted as an endorsement by Canada of the recommendations in this report, or agreement with the narrative, context or conclusions in this report.

Energy Sector

I had a number of meetings with energy representatives, in groups organized by the Canadian Association of Petroleum Producers (CAPP), and individually, as many of the companies' interest diverge in relation to some of the issues. In addition, I met with the large Caribou Working Group of CAPP.

Generally, CAPP and their members were concerned with their ability to continue to access the core areas and the whole extent of the LS/ALP ranges and at the same time were constructive and creative.

From these discussions, consideration emerged for large scale voluntary rescheduling of most new energy activity within the LS/ALP; general support for the concept of a rapid re-growing of seismic lines through a restoration program financed by industry through a Green Bond issued by the Alberta government; strong support for Integrated Land Management concepts; and a willingness to explore a variety of approaches, such as play-based development and even, potentially and subject to liability and technical issues, multiple companies operating from one well pad to limit resulting footprint.

There are companies whose interests lie almost entirely within these ranges, and thus, feel they need to continue drilling and operating wells in the short to medium term. For these companies—operating under what I think would be the most stringent guidelines in North America for this kind of development—the opportunity for limited drilling should be maintained, primarily by existing road and pipe infrastructure platforms. The companies accounting for most development indicated willingness for a rescheduling of most activity

for four or five years, but in return would need their tenures extended for a reasonable time.

Forest Products Sector

The Forest Products sector is, arguably, the most complex and difficult industrial activity sector in the range areas, not just for LS/ALP but also indirectly for the P8 area north of Chinchaga, where industry might prefer to have those forests available for eventual use, and in the F23 area, where a combination of First Nation quota and dependent mills pose challenges.

However, the most urgent and difficult challenges are found in the LS/ALP area.

The forest industry in Alberta is highly developed, efficient and extremely inter-company inter-related. Nowhere in the province is this more evident than in the region of the LS/ALP.

The companies operating here are highly inter-dependent; exchanging wood fibre in various forms to enable efficient operation of sawmills and pulp mills, and other facilities including biomass power generation and composite wood products. In turn, they are all greatly dependent on wood allocations under various forms of tenure that originate in and around LS/ALP.

The caribou are, of course, dependent on these same areas as habitat, presenting the tremendous challenge of seeing whether industrial forest activity in a permanent working forest can exist alongside the need to maintain the caribou habitat in these ranges and grow it to 65%.

Even worse for the caribou, harvest levels were accelerated, in some cases doubled, to reduce Lodgepole pine in advance of mountain pine beetle, which was believed to pose a substantial and imminent threat to Alberta 10 years ago. That threat hasn't played out as expected, likely due to the government's aggressive control program, and these same mills are facing a large "falldown" in wood supply in 10 to 15 years, which also threatens their long-term viability.

The industry, as evidenced by a host of meetings held with companies and with the Alberta Forest Products Association, feels very strongly that through carefully planned harvesting using exceptionally high standards, replanting and operations, they can maintain and grow habitat.

Not just maintain, but actually grow the habitat back to 65% of habitat being recovered.

While some companies indicated a degree of creativity and thoughtfulness in proposing possible solutions, others reverted to highly positional statures revolving around insistence

on their harvesting rights under existing tenures or a requirement for, in their belief, the Alberta government to compensate them if it wished to take tenure or quota away to preclude harvesting.

After considerable discussion, a number of participants in the industry did provide potential solutions, some of which have been taken and modified or otherwise taken into account in my recommendations.

The industry will need to keep adjusting and innovating in the years to come to maintain access to the ranges and core areas of the ranges, and must win social licence through science to enable that access, based on an ability to reach 65% habitat over time.

Little Smoky & A La Peche Ranges

Now, to the Little Smoky and A La Peche ranges.

The specific approaches are outlined below, and involve a combination of:

- A new approach with Indigenous partners to involve them in project implementation, assessment, monitoring and future planning
- Continuing to plan forest harvesting significantly outside the range and core areas of the Little Smoky and A La Peche ranges for the next five years, and concentrating any harvesting inside the range in already disturbed areas
- A large-scale, voluntary rescheduling of much new energy activity in the ranges, through a program of activity rescheduling for extended periods such as four or five years, or extension and stretching out of activity by energy companies covering a vast majority of the range land base
- Immediate implementation of Integrated Land Management
- A large-scale Caribou Rearing Project to protect maternal caribou and their offspring
- The largest seismic line restoration program in Alberta history, to make habitat again out of the 10,000+ kilometres of seismic lines in the area, financed by a new Green Bond (or other appropriate mechanism) and paid by the energy industry
- New research endeavours to assess the concepts of working forest in the area, the success of the seismic recovery program and the Caribou Rearing Project

The following sections identify specific actions for government, industry, and other impacted stakeholders to advance innovative, challenging approaches for caribou protection in the Little Smoky and A La Peche ranges.

Energy development

Energy companies I met with understood the need for innovative, credible efforts towards caribou recovery in the LS/ALP ranges, supported by research and careful monitoring to see that these efforts actually work.

While the current economic downturn is causing great hardship for Albertans, it provides, perhaps, some breathing space to explore alternative approaches carefully and deliberately.

Then, when energy development recovers, the mechanisms to support it without undue harm to caribou or their habitat will be safely in place.

Voluntary rescheduling of energy development

Several large companies – comprising the majority of the area currently under tenure in the LS/ALP – have stepped forward to suggest voluntary rescheduling of development of most of their leases for up to five years.

My recommendation is that government work expeditiously with the energy industry, through CAPP and other energy representative organizations, to:

- Arrange extensions of tenures commensurate with the length and breadth of activity rescheduling commitments; and

- Examine extensions of tenures for companies who are willing to stretch out drilling activity over multiple years but face tenure expiration.

Under Alberta's Petroleum and Natural Gas Tenure Regulations, agreements must normally be proved productive within a set time. Thus, to support these new activity timelines, the Government will need to provide extensions of these agreements in return for a lessee's commitment to reschedule.

The amount of new footprint associated with energy development here is small. Some smaller companies have most or all of their resources within the LS/ALP. Thus, it is reasonable to allow them to continue their development plans. That said, they would be subject to some of the most stringent requirements in North America for this kind of unconventional development.

Recommendations:

Within the next 90 days, work with all oil and gas companies with agreements in the LS/ALP to determine how best to implement the commitment to voluntary activity rescheduling and extensions of development, to be enabled by appropriate agreement extensions for those companies. The extensions will be conditional on a signed commitment to a significant multi-year rescheduling of new development on the agreements companies identify, or a substantive and significant prolonging of activity over an extensive period of time.

An Area Based Approach

Managing plays for footprint reduction

The unconventional development of shale gas plays like the Montney and Duvernay, which are found across the LS/ALP, is quite different from traditional oil and gas development in Alberta. Companies require access to huge amounts of water as well as roads and well pads distributed throughout a large area, subject to many different levels of government oversight and approval. This poses incredible challenges to Government, who can easily lose control of the cumulative effects of this development on water and footprint in the region.

The Alberta Energy Regulator's (AER) area or play-based regulation pilot overlaps part of the Little Smoky range and was brought to my attention by some energy companies. Ultimately, the goal of the pilot is to coordinate the activities of all the energy companies operating in a play towards ensuring cumulative effects are managed consistently with resource availability and biodiversity needs. At the same time, companies submit plans subject to a single approval, instead of a large number of smaller approvals, reducing the burden for both industry and Government.

My sense of the work thus far is that, as a voluntary initiative, it has not yet had the opportunity to achieve this lofty but worthwhile goal. Six companies applied to the AER during the pilot for specific areas associated with their individual surface and sub-surface leases for the Duvernay play. While it did provide for certain efficiencies in bureaucracy and footprint, it did not achieve the regional scale, multi-company coordination envisioned for the project.

Inherently, "unconventional" development differs from oil and gas development as Alberta has known it to date. The methods have been in broad use for barely a decade, and industry has learned a great amount about their efficient application.

However, regulatory requirements haven't fully evolved to reflect tight gas development as they have in adjoining provinces. The burden of existing regulation places unnecessary requirements on shale gas play development, with a significant cost to caribou habitat. There are clear opportunities for tenure regulatory reform or flexible application of existing tenure regulations.

Opportunities exist to improve upon Energy's tenure system and several notable points were brought to my attention that I think deserve more in-depth, expert consideration than I am able to give them here.

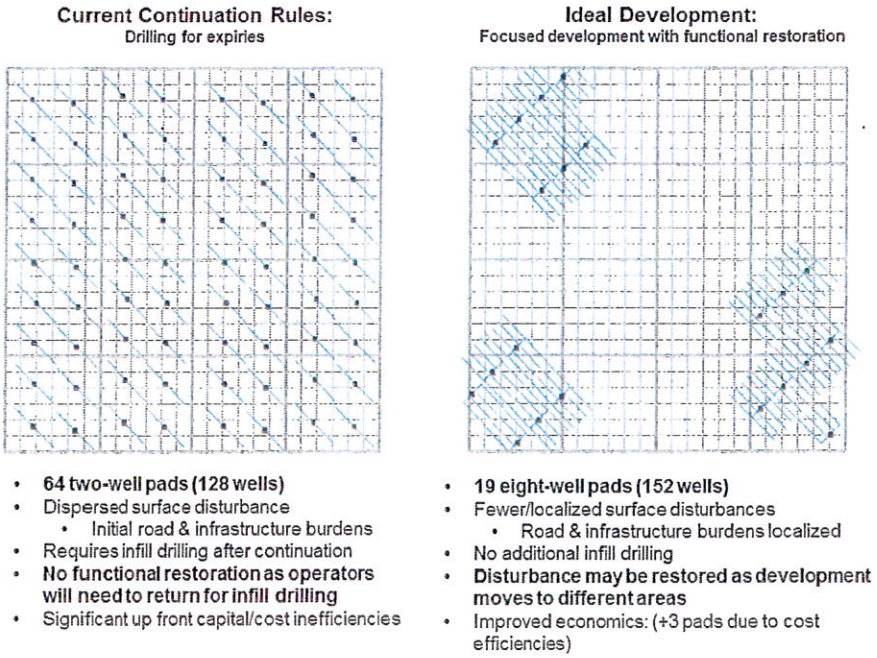
- Requirements to demonstrate that areas are producing, or capable of producing, to continue leases creates an incentive for companies to drill sooner and at a

greater density than they might if they were trying to manage and reduce surface footprint (and impact on habitat across time). This could mean increased roads and pipelines as well.

- From an engineering standpoint, industry innovations may have made it possible to continue a larger area with a given well or well pad, than current tenure rules may support.

- Companies and tenure rules are, generally, focused on the development of a site. Companies may be encouraged to think differently about how they arrange and pace their developments in caribou ranges if the concept underlying tenure and associated surface dispositions is shifted from the site, to the area.

At extremes that are very unfair to the interpretation of tenure rules, a worst case scenario might be a very even distribution of one or two-well pads across the landscape, with their associated roads and pipelines, all with a large disturbance buffer applied according to the federal recovery strategies. At the other end of the spectrum, we might have carefully clustered 8-well pads, with a higher number of wells overall, but occupying less of the range with wells, roads and pipelines.



Again, the figure represents extremes. However, one is clearly more ideal for caribou, and changes that may support this approach should be explored.

Current tenure rules may encourage development that more closely approaches the left-hand side of the figure. Caribou ranges should have different rules that support development patterns that can be strategically paced and placed through time.

An approach that supports or incentivizes greater clustering of activity between independent operators will reduce the impact to caribou habitat. Some operators currently place wells primarily to continue their tenure, maximizing the resource held by that location. In the caribou ranges, we want them to place wells based on minimum environmental impact.

Agreement extensions may provide similar benefits in the short term, as it relieves companies of pressure to develop the resource. However, Alberta certainly desires its resources to provide value, through employment, royalties to the province and other benefits.

And where one company seeks to defer development, another may be eagerly awaiting in the wings, hoping to purchase that undeveloped tenure for themselves.

Companies must be held accountable for real development, and not illusory promises of future activity. Any changes to tenure rules must require a direct link between some form of activity and any continuation.

To enable an approach that is area-based, rather than site or play specific, may require a small but important change to the Public Lands Act; this could enable government to issue an approval in support of this approach.

Recommendations:

Starting immediately, use the flexibility of the existing tenure system to support licence and lease continuations consistent with improving outcomes for caribou. Within a year, conduct an internal review to analyze and assess opportunities to make recommendations that will ensure licence and lease continuations are sustainable and support caribou habitat outcomes.

The government should determine what changes may be necessary to the Public Lands Act to support approval of area-based activities as soon as possible, to support an amendment at the soonest opportunity.

Green bond

The potential cost of restoration could be as high as $40 million or more. With the added cost of a caribou rearing facility, costs could approach $60 million. Over a five-year period, the resulting cost to contributing energy companies would pose a significant impact to their cash flow, especially during the current economic downturn.

Green bonds use debt capital to fund projects that have a positive environmental benefit. Their application here could provide the funds necessary to rapidly get the needed work done while spreading the cost to the energy sector over a long period. It would work like this:

- The government issues a government-backed green bond for the full cost of the targeted implementation activities related to the seismic recovery program and one third of the rearing facility (the remainder of the rearing facility funding from provincial and federal governments) with regular Alberta bond rates and a 30-year maturity. Industry will pay the reasonable administrative costs of the bond.

- The government then has the necessary funds up front to immediately fund required work and future offset and recoveries, paid in advance.

- The interest on the bond and the principal are repayable to Government by the contributing energy companies over the life of the bonds (30 years), reducing the impact on company cash flow.

Figure 2. A conceptual description of green bonds and their application to the Little Smoky and A La Peche ranges.

The initially proposed amount is smaller than most Green Bond issues; this is an important consideration, as there are fixed overhead costs associated with the bond issue and its administration. However, it is possible to expand the issue over time to address other projects Government may be considering. If this approach is pursued, it will be important to ensure funds are tracked separately to ensure companies are contributing to intended projects in their own backyard – in bond terms, this is called "ring-fencing".

Recommendations:

The Government should move forward to issue a Green Bond for the full cost of restoration (that is, full costs of current restoration requirements, a set-aside for future restorations and one third of the cost of the Caribou Rearing Facility) and create administrative mechanisms (a contract or payments) to enable contributing energy companies to pay back the principal and interest on the bond over a 30 year timeline. Alternatively, a similar financing mechanism should be designed.

Seismic restoration

Of all the approaches available to recover caribou, planting trees is certainly the most widely supported. Over 10,000 kilometres of seismic lines exist in the LS/ALP, and while every caribou recovery effort has recommended their restoration, these simple, obvious efforts have always failed to come to fruition as Government deferred stronger action on other necessary elements.

Simple, but not inexpensive. While the true cost of restoring seismic lines will not be known until seismic lines are assessed on the ground for regrowth, and different techniques are implemented, estimates range from $30 to $40 million.

The energy sector recognizes that they are the beneficiary of the existence of these seismic lines, and in order to have a landscape where energy development can continue simultaneously with caribou, in our discussions, they volunteered as a matter of social responsibility and co-operation to fund the restoration. A green bond program will help them manage the cost of this.

To say they accept responsibility for the seismic lines would be to go too far – in fact, as they point out, the government did not require the companies who created these lines to reclaim them. Industry was at pains to point out that their willingness to fund this seismic recovery plan is a one-off, one time commitment reflecting the unique challenges and requirement for unique solutions in these ranges alone.

Also, when the lines were created, the companies paid 'timber damage assessment' dues to the forest products companies holding tenure, and that money was, in part, earmarked to plant trees on these areas. Whether these funds were actually spent on effective replanting programs is, obviously, in question.

This highlights the cooperativeness of the energy sector in finding a solution.

It also flags the opportunity to require reclamation for new seismic lines that do not meet low-impact requirements, and hold forest companies accountable for ensuring timber damage assessment dues are used to fund replanting of the forest, as intended.

It is critical the government embarks on this aggressively in the future.

There is no further reason to delay in the LS/ALP ranges. The means are in place to start a full-scale restoration program of all legacy seismic lines in the LS/ALP virtually immediately, to be completed over the next 5 years.

There is significant opportunity here for regional employment in this recovery program—and the associated caribou rearing facility—and every effort should be made to design the contract for this work as a partnership between Indigenous-owned companies and forestry replanting firms.

Recommendations:

Prepare a seismic restoration priority plan, identifying opportunities for immediate work this spring and summer.

Complete the overall work of a seismic restoration program for the Little Smoky and A La Peche caribou ranges by 2021.

Take steps to require, in the future, proper seismic recovery on new seismic lines as they occur in the province.

Caribou Rearing Facility

It will take decades to regrow habitat to levels that can sustain caribou in the LS/ALP, while caribou remain subject to high predation levels from wolves, bears and other predators. Many stakeholders and the public are tired of, or even repulsed by, the traditional reliance on the wolf cull, without attempts to innovate new ways to reduce caribou predation.

Alberta is home to a current study evaluating a small (10 km^2) fenced enclosure. Alberta researchers are also engaged in similar investigations in British Columbia, and have reached a point of maturity in understanding successful ways to house and protect caribou from predation using these methods.

After speaking with academic and industrial researchers, I concluded that establishing a large (10 km by 10 km) fenced area as a caribou rearing facility is the most cost-effective and pragmatic approach, and the most likely to succeed. Approximately 40% of the current female caribou population would be housed in the rearing facility, with rotation of males and some females annually to ensure genetic integrity. This approach provides several real and potential benefits:

- Year-round protection from wolves and bears
- One time, or at least very infrequent, removal of predators from within the fenced area
- Large area (initially 100 km^2, growing to 400 km^2) protection, so caribou do not exceed food supply and intruding predators can be caught before caribou are killed
- Calves grow to yearling stage, when they have developed sufficiently to better avoid predators on their own, then exported to the surrounding herd
- Moose and deer are controlled by hunting
- Oil and gas development can continue inside the fence, under stringent conditions related to seasonality, caribou rearing timelines, and ILM conditions

This is a substantial facility, with associated costs – estimates I received were approximately $15 million over a 10 year period to build and maintain the fence. However, in various evaluations shared with me, the approach presents an opportunity to examine the potential benefits to building caribou populations with only modest risks and potentially significant benefits.

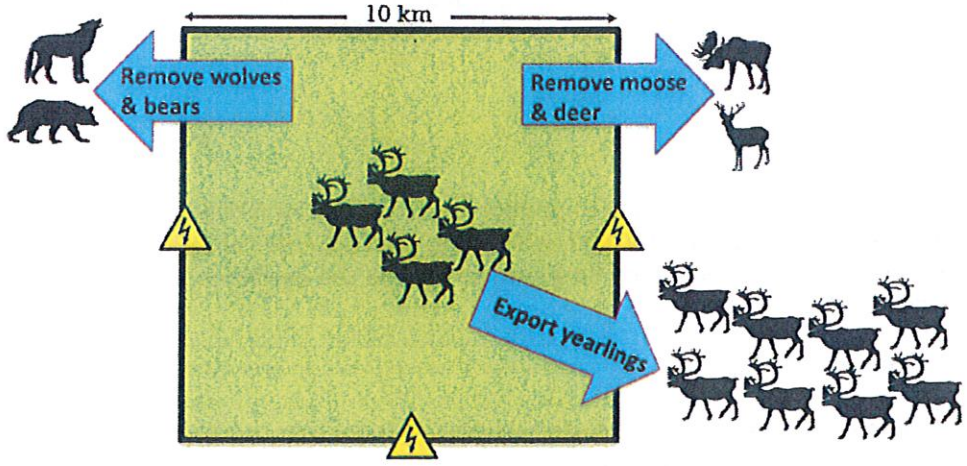


Figure 3. A conceptual diagram of how the caribou rearing facility would work. The triangular symbols denote that the fence would be electrified.

Another option I investigated was a maternity pen. These are much smaller – for the LS/ALP, you might use two 10 hectare pens, penning 40% of the females each year for 3 months while they calve. While the cost of such facilities was lower (perhaps $6-$7 million over a 10 year period), compared to a rearing facility, I found the disadvantages were:

- If predators succeed in entering a maternity pen, the results are likely catastrophic.
- Rounding up pregnant, female caribou every year at an annual low point in their fitness is likely to result in some undesired losses.
- Food must be supplemented, for example, by collecting lichens.

Substantial conceptual design and implementation tests for a rearing facility have already been completed in Alberta and British Columbia. The knowledge base and will is there to see this succeed.

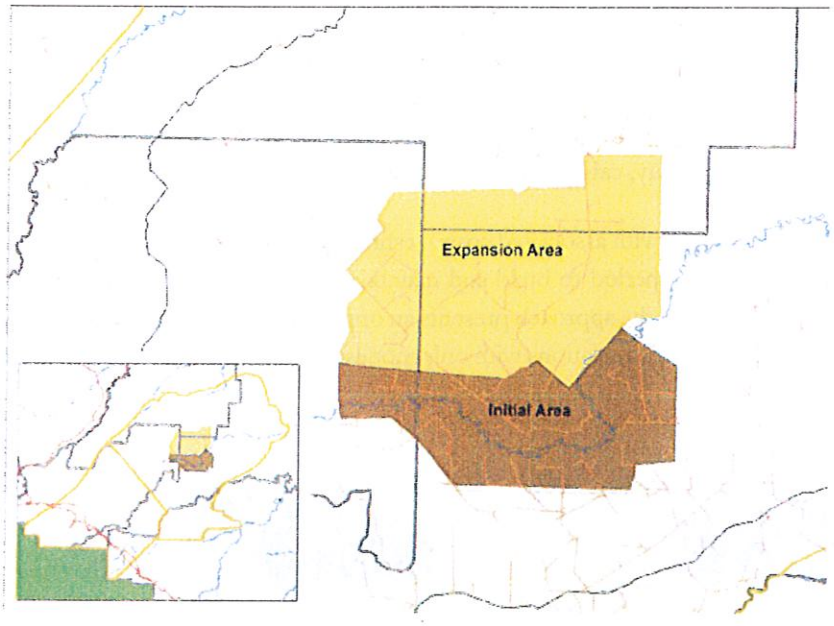


Figure 4. An example of a way to position a caribou rearing facility. The initial area represents approximately 100 km², sufficient to start operation and understand local implementation. It could then be grown to include the expansion area, ultimately including about 400 km².

Recommendations:

Immediately prepare a detailed, implementable plan for placing, constructing, operating and maintaining a 100 km² caribou rearing facility. Examine the potential for similar projects, where appropriate, in other ranges.

Proceed to break ground on its construction in the summer of 2016.

ILM

After restoration, the concept with the most support is integrated land management, or ILM. There is no reason for this not to proceed – it is good business, and smart management of Alberta's resources, above and below ground.

Integrated land management is the idea of managing all of the activity on a landscape in the service of a common outcome; it is the management of cumulative effects.

The energy sector involves over 100 companies in this area, most operating independently of each other. Certainly, they take advantage of shared efficiencies when the opportunity presents itself, but there is no overarching coordinated effort to make this happen.

Forest companies may actually be the leaders in this respect, as the forest management plans for an area are prepared with consideration of both the land tenure holder and their quota operators simultaneously.

Access planning

As with restoration, previous efforts to proceed with even simple coordination of road planning failed as a result of government's indecision on how to proceed on caribou habitat. Further, humans will always take advantage of an easy path, and seismic lines have provided access for off-highway vehicles and snowmobiles throughout the ranges.

I agree completely with the recommendations of the Task Force (and many previous initiatives) on this work. The preparation of a well-coordinated multi-company road access plan for energy, forestry and other users is necessary and desirable.

This is no small effort, requiring substantial and expert planning resources. Across Canada, in my experience, government has often functioned best in setting the bar for industry, but rarely in preparing industry's plans for them. I think the same will prove true here; government is a necessary and important contributor and leader for this effort, but industry must be responsible and accountable for preparing the plan.

All roads lead somewhere – reducing the number of destinations reduces the necessary roads. Although exceedingly complex, the energy sector could assess opportunities to combine their ownership interests in subsurface resources. Business arrangements to combine ownership interests in subsurface oil and gas minerals are supported by existing provincial mechanisms.

Similarly, if companies more closely share footprint such as multi-well pads to access their individual areas, this could substantially improve the efficiency of surface footprint development including associated access, without sterilizing the resource. However, industry has communicated substantial challenges to implementing this approach including:

- Specific extraction techniques, in some part, comprise part of their competitive advantage and they do not want to share that information, for example, by working in such close proximity to each other

- Coordinating the activity of multiple companies from the same well pad, given differences in complex operating procedures and techniques, poses real operational and safety concerns

That said, government should encourage industry to form a working group to assess this approach to determine the potential for more widespread use.

Government will certainly have an important role in working with industry and further with Indigenous peoples, trappers, and the public to reduce the number of seismic lines under active use by off-highway vehicles and snowmobiles, so that trees planted to restore them can grow. Simultaneously, these same users have an important and necessary role to play in hunting and trapping wolves and their alternate prey, moose and deer – carefully planned, continued access will be necessary. As industrial users also make use of these lines, I view it as ultimately part of the same overall access planning effort.

The regulatory tools, in the form of Public Land Use Zones, exist to provide legal support to results of this important work. In my work, I met with the Foothills Landscape Management Forum, established for the express purpose of providing a multi-company forum for coordinated access and restoration planning. They're simply in need of a stick to make it work.

Recommendations:

Within the next year, government should work with the Alberta Energy Regulator to develop an area-based approach for energy companies with mandatory participation inside the caribou ranges that enables companies to combine interests and integrate development plans. Alberta Energy will ensure that companies are able to continue their tenure to support this approach.

Require all industrial land tenure holders to align access development applications in the Little Smoky and A La Peche caribou ranges with a multi-company plan developed for the entire area.

Designate the Foothills Landscape Management Forum as the society with responsibility for the coordinated preparation of the multi-company access plan, with the required inclusion of government, Indigenous peoples, ENGOs, municipalities and other key impacted stakeholders. This plan must be subject to rigorous government review and approval.

Conduct a rigorous public engagement and planning exercise to ensure that necessary access to the ranges is maintained for Indigenous peoples, trappers and hunters, while allowing regrowth of other, unnecessary routes.

New leasing in ranges

Considerable energy resources underlie Alberta's caribou ranges. No mineral lease sales have been approved in Alberta since spring 2015. Generally, I believe the approval of sales of mineral leases can resume, provided that range plans or supporting policies enable the same general approach:

- Ensure legacy footprint created by energy development is rapidly restored, and enhanced reclamation standards are established for existing and new footprint.
- The energy sector ensures its operations are conducted with the utmost care and world-leading practices, including appending to existing footprint, coordinating access development, net positive restoration, and restoration of existing development.
- Careful monitoring of caribou populations is continued.

The completion of range plans will take approximately another two years. To provide interim direction consistent with the above approach, a directive can be issued enabling the Alberta Energy Regulator to require compensatory restoration for development; improved reclamation standards for new development that are consistent with future caribou habitat needs; and that new development follows practices that minimize footprint.

In addition, government must assess whether during this economic downturn, it is wise to issue new tenures likely to attract the lowest return to government in decades. Instead, proceeding to lease in these areas after oil and gas markets improve will likely obtain a better price from companies. Meanwhile, there will be time and space to improve requirements and practices for caribou.

Recommendation:

At the appropriate time, considerate of caribou recovery and Alberta's economic environment, resume the sale of mineral rights in caribou ranges.

Prepare a directive that requires stringent operating practices (including little or no new footprint) for energy companies who receive new development approvals, pending direction from range plans.

Forestry

Continued forest harvesting in the LS/ALP ranges continues to be the primary subject of debate in relation to caribou habitat in the range.

It is highly likely that one, possibly two facilities would close if habitat protection approached the levels described for Scenario #2 in the preceding Task Force report, and possibly a third under the No Further Action Scenario they examined.

The use of half measures over the last several decades has worsened the problem. While companies have been excluded from much of the ranges, they have continued to harvest outside the ranges at approved harvest levels that assume the availability of the range wood fibre. As a result, there is limited commercial harvesting opportunity remaining outside the ranges for the two most affected companies, Foothills Forest Products (FFP) and Alberta Newsprint Company (ANC), and ANC's primary quota holders, Millar Western and Blue Ridge Lumber. Local communities are deeply concerned about the possible ramifications of the closure of these facilities, or even more modest employment reductions.

A combination of factors has led to this situation, all leaving a choice between only two options: potentially lay off hundreds or thousands of workers; or, let companies harvest on a very limited basis inside the ranges.

An Innovation Model in the LS/ALP Ranges

While industry argues it can be accomplished, the weight of evidence is clear overall that significant disturbance harms caribou, and particularly so without various interventions like wolf control, maternal penning or other tools.

Many of the initiatives I have described should enable modest harvesting in the ranges under certain circumstances, but none have been tried on this scale before, and to move continually in this direction would require close attention to see if they can truly succeed. Further, every effort must be expended to find ways to reduce even necessary footprint inside the ranges.

To that end, my recommendations involve enabling harvesting over the next five years in areas which are already disturbed and not currently prime caribou habitat in the range, so-called "second pass" harvesting.

Let me be clear---wildlife biologists, and various other experts in this area will be deeply concerned and critical about any approach to a working landscape solution, and this approach enables very modest harvesting in primarily already-disturbed areas of the range while the continuing assessment of the potential for further activity takes place.

It's essential that the project not continue indefinitely without adequate monitoring that allows an exit ramp at appropriate junctures over the next decade. I have intentionally constructed the recommended approach with a view to limiting the potential for significant harm during this initial period, so that the Government may choose at a five or ten year interval to exit the strategy and opt for full scale protection.

The suggestion here is to give the combination of elements recommended a brief but intense opportunity to work, on a closely monitored basis, with a very limited incursion into the caribou ranges and inside the range concentrated in already disturbed areas. If the evidence mounts that it is not working, an exit is very possible and practical.

As the forest sector contributes the most footprint, they may present the most opportunity to limit footprint. ENGOs, and even some forest companies, expressed to me their desire to see pooling of wood allocations outside the ranges. This might, through various efficiencies, reduce harvesting inside the ranges. Even long-term avoidance of core areas would improve significantly the speed or certainty of achieving a 65% habitat recovery profile.

I have tried to maintain, for the foreseeable future, a modest intact area in the core, through harvesting reductions and rescheduling of activities by companies including a longer term rescheduling of activity by Foothills Forest Products in 41% of its footprint inside the core.

There has been a lot of harvesting towards the outside of these ranges already. It followed a traditional "two-pass" system, that's left a clover-leaf pattern of cutblocks and mature forest intermixed across some landscapes. This isn't the pattern that fires would leave, and it's not the size and extent of habitat caribou need.

Biologists have shared with me that potential negative effects can be reduced by confining harvest to "second-pass" areas of already logged lands on the periphery of the ranges. I think this provides sufficient time to evaluate progress on the other innovative measures I've recommended. To be clear: forest harvesting should be directed into these areas first, to ensure that the remaining small patches are harvested first, before any other fiber is touched in the range.

And, as the actual wood fibre needs of companies fluctuate from year to year based on market needs, every effort should be expended in harvesting annual allowable cut (AAC) from outside the ranges, before taking any from inside the ranges.

Finally for forestry, care and attention must be paid to how forest harvesting is arranged on the landscape, to minimize the increase in disturbed habitat from a federal perspective, and obtain best outcomes for caribou.

Measures that may reduce pressure to harvest inside the ranges, such as higher utilization of smaller trees and logs, and using unallocated forest in agricultural lands require further exploration as well.

Evidence presented to me during my work suggests that pine beetle is indeed still present, and even modestly increasing. Nonetheless, it does not present the extreme threat that warranted such extreme increases in harvesting, and communities are facing a massive disruption in a decade if the government is not proactive in moderating the future falldown with modest, deliberate reductions now.

Most of all, achieving a working landscape means remaining keenly attuned to opportunity with eternal vigilance for the care of caribou.

Recommendations:

Prepare annual reports assessing the establishment and success of the seismic restoration and caribou rearing facility work.

After five years, and thereafter at appropriate junctures, Government should review the success of this strategy, and make any necessary changes, potentially including further restrictions on forest harvesting.

Harvesting inside the ranges can only proceed once a company has completed any previous year's harvesting from outside the ranges, starting in 2016/17.

For any forest management unit, harvesting inside the ranges may only remove "second-pass" stands, as defined by the government in consultation with companies and consistent with their forest management plans, until all such "second-pass" stands are removed.

During the preparation of logging plans and forest management plans, companies and government should pay careful attention to minimizing any increases to disturbed habitat.

Appoint an independent forestry expert to report to the Minister of Agriculture and Forestry a current outlook for mountain pine beetle, the ramifications of maintaining the pine beetle surge, and identifying recommendations for moderating the falldown that improve the future outlook for affected communities. In the event that one or more tenure holders wishes, or faces a requirement to, dispose of existing quota or annual allowable cut over this five year period, the government should assess whether some or all of that fibre can be withdrawn from harvest to add to permanent protection in the core of the LS/ALP ranges.

Maintaining forest communities - FFP

The forest products industry continues to provide important jobs and wealth creation in this region, especially important at a time when the energy sector is struggling with a worldwide downturn in their fortunes. The communities of Fox Creek, Grande Cache, and Whitecourt surrounded by Woodlands County and Municipal District of Greenview, are especially affected by range planning in the LS/ALP given, in turn, the relative reliance of Alberta Newsprint Company and Foothills Forest Products (FFP) on fiber from the ranges.

Effort and innovation must be expended in the service of trying to maintain these jobs, if at all possible, while simultaneously recovering and protecting caribou and their habitat.

There is little additional fibre available; surge cuts have already over-allocated wood fibre from the land base. The only area that is unallocated is forest management unit E10, which is adjacent to E8, the Crown-managed forest management unit on which FFP is the sole quota holder.

Grande Cache is faced with extremely hard challenges in these tough financial times. The recent announcement of the closure of their coal mine has caused house prices to plummet over a hundred thousand dollars. Like many communities, upgrades to their drinking water facilities have been enormously costly, and they have been forced to close their municipal airport. The coal-fired power plant in their community faces imminent decisions about if and how to migrate to natural gas, and there is uncertainty regarding the future of the medium-security prison found there.

FFP is the largest single employer in Grande Cache, and has expressed the sincere desire to maintain a long-term presence in the community. However, as a quota holder, they are challenged by the relative insecurity of their wood fibre. They, too, are facing a falldown following the pine beetle surge, and are actively working with investors to raise capital to improve their facilities. A forest management agreement, as opposed to a quota, offers FFP needed opportunities and secures their interest in improving the forest land base to increase wood fiber yields.

Working closely with FFP, we have agreed on an approach that, if actioned by government, will:

- FFP would forego harvesting in, on average between the two ranges, 41% of their E8 footprint in the core zone for 35 years
- FFP would not harvest at all in the core zone for three years
- Secure FFP's $6 million investment in a new pellet dryer, with associated employment.

- Maintain the government's opportunity to reconsider how fiber is apportioned to caribou habitat and harvesting, should FFP reconsider its business approach.

Recommendations:

The government should allocate a forest management agreement to FFP, subject to the following conditions:

- FFP foregoes harvesting in the core area of the range for at least three years.
- The FMA includes forest management unit E10 and some smaller additions; the annual allowable cut and harvest sequence for the FMA would be partitioned to reflect the originating forest management unit.
- FFP pays all costs associated with preparing a forest management agreement (FMA), including identification of a public advisory group, preparation of a forest management plan and supporting timber supply analysis, and associated consultation.
- FFP continues to harvest in the range, on a limited basis, for the next five years a volume not to exceed 342,000 m^3.
- The company foregoes harvesting in identified LS/ALP areas representing, between the two ranges, an average of 41% of the E8 component of the core zone for 35 years.
- The company commits to investing $6 million in a new pellet dryer, creating some jobs in Grande Cache.
- The FMA is non-compensable for withdrawals made to increase caribou habitat protection or other environmental or protection reasons minus any sunk costs FFP invests in preparing a forest management plan, or infrastructure or silviculture investments FFP makes in withdrawn areas.
- During consultation on their FMA, FFP strives to avoid harvesting in areas identified by AWN as particularly sensitive to their community.

Maintaining forest communities - ANC

Alberta Newsprint Company, or ANC, is one of the lowest cost newsprint providers in North America. ANC shared evidence of the success of their workforce in achieving this

status – all the more amazing, given how highly competitive newsprint remains, with a market that declines in size every year.

ANC and their quota holders, West Fraser and Millar Western, are extremely dependent on fibre from the ranges. Through government policy, this reliance has been growing. The government directed ANC, as it did many companies, to increase its harvest substantially to eliminate pine that would support mountain pine beetle populations.

However, while their annual allowable cut (AAC) was approved at a very high level for 15 years, compared to what it would naturally support over the long term, they have not been allowed to harvest in the range portions of it since 2013, and some parts even longer. As the reason for the deferral has been waiting for government to complete a range plan, they are, of course, nervous and argue they are approaching desperation.

To keep their mill operating, and the mills of some of those they trade fibre with, and satisfy their quota holders and commercial arrangements, they have kept up the harvest level on the eastern portion of their FMA only, outside the ranges.

The problem is obvious. You can't sustainably cut the same number of trees from a small area as you can from a big one – but that is exactly the situation in which they've been placed.

And, the longer they are kept out of the ranges, the more they will need when they are allowed to enter, if they are to maintain the same harvest level.

ANC has, quite rightly, requested that their annual allowable cut be reduced on their whole FMA. Their largest quota holder, West Fraser, expressed their strong support for this strategy. Their considerations included:

- The mountain pine beetle threat, while present, has not come close to having the impact that the government expected a decade ago.

- ANC wants to see their prize asset continue – continue to provide profits for ANC, jobs and wealth for Whitecourt, and valuable partnerships for local sawmills.

- To continue to harvest at the current AAC, they would be forced to overharvest outside the range, force extensive downsizing on one or more of their wood fibre partners to survive, and face their own probable demise. Reducing the AAC now, rather than waiting until the end of their surge in 2028, allows them to continue harvesting enough volume for ANC sustainably, likely for decades to come.

A fortunate consequence is that more trees remain for caribou.

Recommendations

The government should immediately approve ANC and its quota holders to harvest inside the Little Smoky and A La Peche caribou ranges for the 2016/17 season, on a limited basis and in "second pass" areas, consistent with the schedule below.

The government should direct ANC to prepare a forest management plan amendment by 2017, consistent with the recommendations here.

The amended forest management plan will reflect the following harvesting levels, enabling harvest in the range on a limited basis in the first five years:

	FMA-level reduction	FMA AAC	Harvest level inside ranges	Harvest level outside ranges
Year 1	150,000	948,000	548,500	400,000
Year 2	225,000	873,500	498,500	375,000
Year 3	250, 000	848,500	498,500	350,000
Year 4	275,000	823,500	473,500	350,000
Year 5	300,000	798,500	448,500	350,000
Annual Average	**240,000**	**858,500**	**493,500**	**365,000**

This formula can be re-assessed, in combination with the suite of caribou recovery activities implemented by government, after the first five year period to determine its efficacy in meeting both the 65% recovery target mandated by SARA, and the company's continued viability.

Other Forest Management Considerations

For the Canadian Forest Products (Canfor) and West Fraser Hinton forest management agreement holders, who are much less dependent on range wood fibre, I recommend rescheduling much of their harvesting outside of the ranges for five years. They can seek modest volumes inside the second-pass areas of their FMA areas. I do not expect these volumes to have a material impact on the overall harvesting rescheduling in the ranges.

Overall, even at the end of five years of limited access, I would expect only a small part of the range to have been impacted, most or all of that in second-pass areas, and at the same time restoration work will be complete, and thousands of kilometres of seismic lines on the march to becoming habitat over time.

Recommendations:

Schedule all significant harvesting, outside the ranges in the Canadian Forest Products Ltd. and West Fraser Hinton Forest Management Agreement areas for 5 years, except for limited quantities of mountain pine beetle infested stands and "second-pass" stands.

Pooling of Forest Fibre

The concept of pooling fibre amongst companies to limit impacts in the range has been explored, more than once, in previous decades, and was discussed again internally amongst forest companies during my exercise.

Forest companies who have sufficient fibre at this time outside the range do not feel it appropriate to "force" them to share with the others, and view this approach as, essentially, confiscation of a property right. That seems to me somewhat simplistic and somewhat of an exaggeration, given the inter-connectedness corporately of some of the firms, and the tremendous integration of fibre sharing overall in the region.

There is an argument to be made that companies are legitimately conserving this wood in anticipation of an eventual falldown from pine beetle surge. Without knowing the intimate details of the companies' corporate strategies, it is difficult to assess this issue accurately, but I have no reason to believe the companies are not accurately portraying their concern.

At any rate, because of the lack of data, the disinterest of some companies, the insistence on compensation which could be, under some circumstances, massive and other challenges, it was not possible in the time frame necessary for this work to completely determine whether pooling can be accomplished, and how.

Therefore, as outlined above, I recommend the government convene a process immediately to engage an experienced forestry executive or firm with professional forestry experience to examine the data, the concept and potential for the solution, and to cost the approach to determine its utility.

If a solution emerged, it can easily be vended into this framework to provide additional protection to habitat in the area.

Recommendations

Government will convene a process within 90 days, chaired by an experienced forestry executive or firm to conduct a thorough analysis of the concept of a regional wood fibre basket, assessing the opportunities the concept may create for increased caribou habitat, as well as efficiencies in wood supply that may moderate the post-pine beetle surge falldown.

A path to 65%

This report is about taking action now. Caribou cannot live on good intentions and studies on shelves.

The federal recovery strategies for these herds clearly describe the critical habitat requirements necessary to recover caribou populations to the point where they can survive naturally, without a fence, without a wolf cull. I want to point out that this may not ever be possible, even with the entire area protected and in park-like status. However, that is the current law.

Ultimately, the real value of any action must be in putting these ranges on the path to having 65% undisturbed habitat, as required by the federal recovery strategies to achieve self-sustaining caribou populations.

Other measures that do not directly increase habitat are, in some sense, only efforts to buy time for caribou, and perhaps give them a positive boost.

The forest harvest volumes and schedules described in the report result in somewhat less harvesting than was proposed in the Task Force report.

Thus, achievement of 65% within 100 years, as was shown in that report, is possible.

The restoration work I have recommended isn't simply about planting trees – it would be considerably cheaper if it was. There has been substantial work in Alberta with innovative site preparation methods that slow or stop predator access and reduce the browse for moose and deer.

With the application of these methods and other approaches, it may make sense to explore improved disturbance definitions, possibly investigating alternative buffer widths in the definition of critical habitat.

I fully expect the governments of Alberta and Canada to explore the science and opportunities carefully in their collaboration, and offer their full and frank advice on a choice that reflects reality.

Northwestern Alberta

Substantial opportunities exist in northwestern Alberta to provide almost immediate protection to vast areas of four caribou ranges. Immediately following and subject to consultation with affected Indigenous communities to assure their Aboriginal and Treaty rights are protected and honoured, the Government should:

- Substantially expand the Chinchaga Wildland Provincial Park by 347,600 hectares, adding all of forest management unit P8.

- Permanently protect forest management unit F20, adding 870,240 hectares of protection to the Bistcho range.

- Permanently protect forest management unit F10, adding 294,440 hectares of protection to the Caribou Mountains range, and 305,190 hectares of protection to the Yates range.

These measures will achieve permanent protection of 24% of the Chinchaga caribou range, 61% of the Bistcho range, 72% of the Caribou Mountains range and 72% of the Yates range - immediately. It does not require displacement of any existing forestry tenure and existing oil and natural gas leases can be grandfathered in; these are not as extensive as some other areas. There are no operations currently underway in the area involving major drilling programs, mines or similar developments. It further protects vast areas of wetlands and there are substantial opportunities to use this protection to provide valuable sinks for carbon.

The landscape in this region consists of as much as 40-50% wetlands habitat preferred by caribou. When combined with other management opportunities, the 65% range target can be achieved in the Chinchaga and Bistcho ranges. The province should move quickly to complete range plans for the area in 2016.

The range planning process here, as in the F23 area, should involve a collaborative process including Indigenous communities, ENGOs, industry, municipalities and the Province.

Ultimately, the Province is responsible to complete a range plan which both meets the federal SARA requirements and meets with Provincial land use goals and objectives. However, the process of constructing the range plans requires much more collaboration than witnessed thus far.

This suggestion reflects both the growing court-ordered requirements for consultation related to Aboriginal and Treaty rights in land use decisions, and the reality that in contemporary Canadian society, consultation that is meaningful is best achieved with significant input from those citizens most affected by government decisions.

The expansion of protected areas to include all of P8, F10 and F20 provides a tremendous foundation on which to finalize range plans in the area.

It will also be necessary to engage in consultation, and ideally some joint planning, with the BC and NWT governments as caribou in these ranges move back and forth across the provincial border.

Recommendations:

Establish a wildland park over forest management unit P8. The park will enable existing oil and gas dispositions to continue, and support continued trapping, hunting, fishing and backcountry camping. Off-highway vehicle and snowmobile use would require careful management to minimize, and in many cases, exclude access to the area.

Permanently protect forest management units F10 and F20, with similar conditions to enable existing oil and gas dispositions to continue and support continued but restricted recreational use.

Immediately establish inter-provincial planning committees for these ranges with British Columbia and the Northwest Territories, and proceed to complete range plans by the end of 2016.

Opportunity for protection: FMA – F23

This report recommends, in consultation and co-operation with the Little Red River Cree Nation (LRRCN) and Treaty 8 members, to protect as much as between 40 and 50% of the F23 forest management unit adjacent to Wood Buffalo National Park and south of Caribou Mountains Provincial Park, through mechanisms to be negotiated with LRRCN as a part of the range planning process during 2016.

LRRCN own a large forestry quota in the area. They have expressed a willingness to contribute to greater caribou habitat protection in the area, but —quite rightly— want and deserve an increasing role in cooperatively managing this area with the Province. They deserve to be consulted and supported in their willingness to reduce forest harvesting— which produces jobs and income for them—in return for some long term habitat protection.

The exact mechanisms for this co-operative approach can be worked out by the parties, but the framework would be a range planning exercise to be completed this year in a joint undertaking between the Government of Alberta, Tolko and other forest companies in the area, LRRCN, ENGOs and energy interests, supported by necessary resources from the Alberta government.

The industry group has made initial contacts with ENGOs, Indigenous communities and the Alberta government to suggest a collaborative planning process which could involve some 5 million hectares—perhaps a fifth the size of Great Britain--and potential protection for up to two million hectares. Science and discussion will have to validate this potential.

This would be a tremendous undertaking, and an even greater achievement if brought to success.

The LRRCN have suggested their quota be converted to a Forest Management Agreement. While this approach has real challenges, it should be explored seriously by the Government of Alberta as a tool supporting one element of the habitat solution in the area. Alternatively, an approach that combines planning over a greater area, inclusive of more forest tenure and range areas, could secure an even larger benefit.

Of equal importance to the actual habitat protection in this and other areas is the need to completely and whole-heartedly change the approach of the government in dealing with Aboriginal and Treaty rights issues in relation to the land base these herds inhabit.

Indigenous peoples are stewards of the land. They are generational students and protectors of wildlife and natural resources, as well as wise, effective, and willing partners for the Alberta government in land management and resource protection.

They need to be included, valued, respected, honoured and made partners — they are not "stakeholders", just another group to be consulted.

Indigenous communities have both Constitutional rights and a very deep traditional knowledge base to bring to every conversation. They are not mere actors who happen to be geographically close to the caribou herds. They are unique citizens and governments who have both a historical and relational experience to bring to the conversation. Land management approaches, governance approaches and innovations centred on partnerships need to be a hallmark of any reconciliation of the Government of Alberta's interests with Indigenous interests.

Indigenous peoples also value resource jobs. Their community members need to work, earn income and support families.

Their perspectives are very much lost in the current construct. My recommendation is to create a new land management partnership to govern F23 and adjacent areas, either through an FMA or another constructive co-operative land management arrangement. This is an important pilot project in this area, to be put in place before the end of 2016, coincidental with the completion of a range plan for this area.

This can and should be done by the end of 2016.The area described as forestry area F23 provides a unique opportunity for collaboration in protecting caribou habitat.

As noted above, I recommend an immediate commitment by the Alberta government to a new co-operative range management process with the Little Red River Cree Nation, forest companies, ENGOs and others to establish a range plan for the area around forest area F23 and Red Earth in northern Alberta.

Whichever of the above approaches takes place, the ability to protect 65% of the caribou range for the herds involved in the areas around F23 and into the Wood Buffalo National Park and provincial Caribou Mountains Park should be readily achievable given the amount of land already protected, willingness of Indigenous peoples in the area to contribute to further protection strategies, and the significant element of habitat that is wetland and, therefore, not particularly under development pressure.

Recommendations:

Government should proceed to set a terms of reference for caribou range planning in northwestern caribou ranges, defining an approach that recognizes the unique status of the Little Red River Cree Nation and other Treaty First Nations, and leverages existing relationships with stakeholders.

Government should enable and support discussions to see Little Red River Cree Nation, and potentially other Indigenous communities, established as holders of a forest management agreement in this area.

The role of Government

The provincial government has a strong, over-arching responsibility to protect caribou and their habitat, even if federal SARA legislation did not exist.

Normal land use planning values require provincial governments, as stewards of the land for future generations, to plan not only for economic values for land use, but also for conservation, recreation and, importantly, for Indigenous peoples' ability to exercise their rights.

It is evident that economic interests tend to aggressively pursue government's attention, towards ensuring that the generation of wealth - a legitimate enterprise which creates jobs and tax revenue - are met.

Caribou, of course, have a less well-funded, less resourced and less obvious lobby for their interests.

While environmental and other NGOs are active in promoting caribou habitat protection, there is no doubt that the resources available to industry to lobby for their case vastly outweigh the resources available to those ENGOs representing and actively arguing for the public's interest in caribou recovery.

Government has a strong role in ensuring that industry is accountable in both the planning and execution of their resource extraction. More importantly, government is itself accountable and responsible for ensuring that sufficient caribou habitat is protected.

Failing to protect enough habitat would ultimately result in dramatic federal intervention through SARA. It is in the province's economic interest to ensure it exercises its responsibility to protect habitat, despite intensive lobbying by industry.

To date, it is clear government has not always done this. Undertaking a Task Force report with a group made up solely of a couple of industry representatives and couple of government representatives does not provide comfort that the broad public interest is being taken into account.

Going forward, government has an opportunity to redress the past by providing greater balance, greater transparency to its efforts, and greater inclusion.

In addition, there are significant opportunities for better and more innovative regulatory approaches in the regulatory arena, dealing with everything from seismic reclamation requirements for industry to ILM and other approaches, as I have noted.

Predator control

Wolf control will need to continue in the LS/ALP area for the foreseeable future, and will also be needed in some limited circumstances elsewhere where caribou are particularly at short term risk.

Most authorities believe the wolf population in the LS/ALP area is significantly higher than natural levels, possibly by as much as 50%.

In addition to caribou, wolves are taking an extraordinary number of elk (one First Nation representative reported an incident of 13 elk being killed by a small wolf pack, for example), moose and other game. Of course, they are the primary cause of caribou mortality thanks to caribou habitat destruction.

Currently, wolves are killed in the LS/ALP by government-delivered aerial shooting, poison and private trapping. There is opposition to the wolf cull by animal rights activists, and concern about the methods even from those who approve wolf control as a short-term or transitional method while caribou habitat recovers sufficiently to limit wolf access.

For example, the province kills an average of approximately 20 moose and elk per year to use as strychnine bait stations set to kill wolves. In addition, the strychnine-laced traps used to kill the wolves have unintended consequences, since other animals—from cougars to bears and birds—unwittingly eat the same bait.

In conducting wolf control, society has embarked upon species valuation trade-offs that not everyone is comfortable with.

Ideally, the restoration of habitat in the LS/ALP areas over time will reduce the need for the wolf cull. Other efforts, such as the caribou rearing penning project, may also reduce the need for a cull.

However, even if the entire LS/ALP area was protected today from all industrial activity, it would likely be decades before habitat was sufficiently restored to reduce wolf predation on caribou sufficiently, such that the province could eliminate the wolf cull.

Indigenous representatives argued that they would prefer to replace poisoning of wolves with approaches that avoid killing unintended species, and for direct Indigenous participation in wolf control efforts. Given their traditional knowledge and the direct impact to their rights and traditional use, this is well-advised and should be given consideration. At the same time, discussion needs to continue to reflect the reality that wolf control using trapping alone has not previously been successful.

In addition, the Alberta Trappers Association has raised concerns regarding the use of poison, and will be submitting a proposal to government aimed at decreasing its use.

It would be worthwhile for government to engage Indigenous communities and trappers to assess the best methods for wolf control going forward.

Recommendations:

The wolf cull should continue in the Little Smoky and A La Peche caribou range, and will need to be used on a limited basis elsewhere potentially, until such time as caribou populations remain stable without this intervention.

Government should proceed immediately to work with Indigenous peoples to identify opportunities for them to provide leadership and participation in control of wolves, starting in 2016.

Provincial-Federal Cooperation

I initiated contact with the Canadian Wildlife Service early in my work, and provided them with information prepared to date, including the Task Force report and other information. As my work progressed, I shared with them the general direction of my recommendations to government.

It would be extremely beneficial if there were greater co-operation between the government of Alberta and federal government on the whole range planning exercise. Ottawa should be fully informed of the significant progress being made by Alberta, so no misunderstandings emerge.

Ottawa has its own caribou protection issues, as neither caribou herd inside Banff or Jasper National parks have fared well. The Banff herd is now extirpated, the Jasper population is on the edge of extirpation, and the A La Peche herd, which migrates in and out of Jasper National Park, has all but ceased that migration.

Alberta's concrete efforts can assist Ottawa both in relation to herds moving in and out of national parks like Jasper and Wood Buffalo, as well as in general terms by providing evidence that Canada and provinces working together can achieve positive outcomes for caribou.

It is worth considering further jointly-funded caribou research projects, and federal funding for these projects to assist Alberta.

Alberta has long been a net contributor to Canada's revenues, and even more particularly when it comes to caribou, has spent considerably more than most other jurisdictions in funding innovative and ground-breaking research into caribou.

Alberta has spent millions, and industry has contributed further millions, to working on research and new operational approaches linked to caribou protection, often with little or no funding from Ottawa.

Now that Alberta faces tougher fiscal challenges, it is incumbent on the federal government to provide substantive, significant and ongoing support for research and protection activities to Alberta. These activities can be funded from new federal stimulus and green infrastructure spending.

With more than a dozen new range plans to complete within two years, Alberta faces a major planning challenge that it is left to resource from declining revenues in a rapidly deteriorating fiscal environment. This is an opportunity for Canada to show its commitment, care and compassion, both for caribou and Albertans, in a time of true need.

I recommend Alberta seek:

- One third of the costs of the Caribou Rearing Project funding from Canada, as this is clearly a major research project with implications for all of Canada if successful.

- 100% of funds for an additional $10 million of research over the next ten years, into various projects identified by fRI Research and other Alberta research agencies, and critical to caribou protection, caribou habitat restoration, and the concept of a working landscape in caribou ranges.

- $2 million in capital and $2.5 million in operating funds for the next five years towards a Caribou Interpretive and Education Centre, to be operated by Indigenous partners in a caribou range community such as Grande Cache, to provide greater education to the public regarding the caribou's value to society, their current predicament, and the approaches being taken to protect them.

- $5 million in funds from Canada to Alberta to support the new collaborative range planning exercises recommended in this report, which are much more expensive than traditional range planning exercises and are required by federal legislation, and therefore should be strongly supported, as partners in caribou recovery, by Canada.

- $5 million to support Indigenous participation in caribou protection consultations and range planning activities across Alberta. Indigenous populations in Canada,

whose funding and responsibility is primarily a federal one, are completely bereft of federal funds to participate in range planning activities. Many of these range plans involve consideration of federal interests, such as the overlap of range plans with national parks like Wood Buffalo and Jasper, and Indigenous groups have no funds to actively participate in these complex, time consuming and critical discussions.

- $100 million over ten years towards a Caribou Offset Habitat Fund, to enable purchases by government, ENGOs such as the Nature Conservancy, or others of key forestry or mineral tenure areas which are valuable to protect over the long term as caribou habitat, and for which no other funds currently exist. In many situations, habitat recovery could be accelerated if funds were available to remove existing tenures. While the 65% recovery goal can be achieved, often this will be over many, many decades, in some cases taking nearly a century. The availability of funds to acquire and retire certain tenures could accelerate this recovery dramatically.

Recommendations:

Government should formally establish a clear and specific channel of communication on caribou range planning with Environment Canada. Alberta's range planning team should meet regularly with the federal government, in a complete and transparent exchange of information and developments.

Alberta should request Canada provide representatives to Alberta's caribou range planning multi-stakeholder advisory groups.

Alberta should immediately request support funding from Canada, as detailed above in this section.

Transparency and Oversight

To assist in the transparency and oversight of range planning and implementation efforts, I recommend the establishment of a Range Management and Monitoring Board or Committee to include representatives from the Indigenous community, ENGOs, the research community, the forest products and energy sectors and the Province.

Ultimate decision-making regarding land use in the ranges belongs to the Province.

However, there are a number of activities which the Board can undertake to improve transparency, collaboration and an independent look at progress in the ranges, such as:

- Monitoring the establishment and implementation of the Seismic Recovery Program to ensure it starts immediately, proceeds rapidly and is successful. The Board can assess the annual rate of recovery work, the success of the previous year's work and the extent to which the work is contributing, over time, to habitat restoration in the ranges.

- Monitoring the establishment of and implementation of the Caribou Rearing Facility and similar projects to ensure it is begun in a timely manner and informed by Indigenous communities and caribou science, and to monitor the success of the project on an annual basis with particular attention to protection of maternal caribou and their offspring, calf re-integration into the main herd and survival rates.

- Oversee the direction of research projects in the ranges to assess the continuing potential for working landscape concepts, research regarding herd improvement, wolf control, habitat improvement and restoration and other such research as the board deems appropriate in consultation with the government, funding agencies, and stakeholders.

- For LS/ALP, make recommendations to government after five years as to whether the Board is of the view that the 65% habitat recovery target remains achievable with current plans, or whether additional measures, ranging from additional protection to different operating approaches, are required to achieve 65% habitat recovery..

- Assess the implementation of Integrated Land Management, and make any additional recommendations necessary to ensure its success.

- Undertake research and analysis with government and industry to determine the efficacy of implementation of play-based approaches and other tools to limit the impact of development in the ranges.

Recommendations:

Government should form a Range Management and Monitoring Board or Committee for the caribou ranges, with broad representation, to provide oversight for range plan implementation, monitoring and assessment, and to provide annual reports and make recommendations to government on adaptive management.

My recommendation is that the first Chairperson for the board be eminent caribou expert, Dr. Stan Boutin of the University of Alberta, who will bring tremendous knowledge and experience to the task, as well as unparalleled independence and integrity.

Interpretive Centre

As outlined above, I think it's important that communities adjacent to the ranges, citizens of Alberta and all Canadians understand the importance of caribou to the landscape, and the importance of caribou protection as a core value of society.

Currently, little is done by way of public education to inform the public on the history of the caribou, their importance as indicators of overall landscape health and their tremendous historical and ongoing importance to Indigenous communities.

In our zeal to focus on the minutiae of various options for preserving habitat, what is lost in the discussion is the reality that for tens of thousands of years, caribou survived throughout Alberta in harmony with Indigenous communities. In other words, one human society figured out how to live with caribou in a way that wasn't detrimental to their survival.

Our society hasn't done well in this regard, perhaps in part due to our focus on industrial development, job creation, and wealth creation. Ultimately, these are not ends in themselves, but they create real value for our great society through world class health services, highways, universities and schools and a host of other life-enriching benefits. This includes the opportunity to enjoy, and the fundamental responsibility to conserve, one of the greatest, most diverse natural landscapes in the world. Society needs to work diligently to protect those very natural resources from which we extract our wealth. This is not easy. Energy companies and forestry companies alike have, over the past decade particularly, made enormous efforts to analyze their work in relation to caribou protection and to develop new ways of doing their work to try and protect the caribou and their habitat.

We just don't know if it's enough. We need to make sure that there is continued public support for the inevitable trade-offs necessary to protect caribou. Educating the public about caribou is a necessary and excellent way to ensure their survival.

Indigenous communities in the area of LS and ALP are best suited to undertake this work, and should be provided the opportunity to plan, develop and implement a modest Caribou Interpretive and Education Centre in the area, funded by Canada primarily, but with contributions from time to time from industry as the economy recovers. In my experience, industry generously funds such activities, nowhere more so than Alberta.

Recommendations:

Within the next year, prepare a plan to build a Caribou Interpretive and Education Centre is the region of LS/ALP.

Completing range plans

The Province will be extremely challenged to implement the recommendations of this report, and conclude all remaining range plans by 2017, as required by federal law, unless a dedicated team is put in place to further develop, coordinate and ensure implementation of these plans.

Caribou protection work is cross-government by its nature, involving elements of various ministries and central agencies.

The work required is contentious, typically requires new approaches and may require regulatory or legislative shifts. The work also involves federal-provincial relations and inter-provincial relations. It is almost impossible for existing staff from one line ministry to achieve.

The analysis, consultation, policy development, technical work and negotiation involved in establishing these range plans and associated implementation measures creates an extremely challenging task for line ministry staff in moving these range plans forward. More resources are needed.

I recommend government commit sufficient resources towards ensuring that it is able to develop and implement all remaining range plans by 2017. At the end of the day, the Minster of Environment and Parks is the responsible and accountable provincial Minister in this area. Departments must ensure the Minister is regularly briefed on progress on these recommendations and the development of range plans.

Recommendations:

In the next 90 days, government should identify key staff resources and its approach to implement these recommendations, with Environment and Parks leading.

The Government should renew its commitment and redouble its efforts towards completing range plans for all of Alberta's caribou herds by the end of 2017. The establishing of priorities for range planning, following these initial plans outlined here, should be undertaken by Environment and Parks.

Progress on these recommendations and the completion of range plans should be reported quarterly to the Minister of Environment and Parks.

Appendix 1- Stakeholders I Spoke With

Indigenous Peoples

Aseniwuche Winewak Nation
Horse Lake First Nation
Sturgeon Lake Cree Nation
Grande Cache Métis Local #1994
Little Red River Cree Nation

Municipalities

Mayor Chichak, Whitecourt
Mayor Rennie, Woodlands County
Mayor Curtis and Council, Grande Cache
Dale Gervais, Reeve, M.D. of Greenview
Mayor Mackin, Hinton

Forestry

Alberta Newsprint Company
Alberta Forest Products Association
Tolko
Foothills Forest Products
Millar Western
West Fraser
Canadian Forest Products

Academia

Dr. Stan Boutin, University of Alberta

Government

Federal Government - Environment Canada

Non-Governmental Organizations

Environmental

Alberta Wilderness Association
Nature Conservancy
CPAWS
Environmental Law Centre
Pembina Institute
Alberta Association for Conservation Offsets

Other

Alberta Trappers Association
fRI Research
Foothills Landscape Management Forum

Energy

Canadian Association of Petroleum Producers
CAPP Caribou Working Group
Jupiter
XTO
EnCana
Explorers and Producers Association of Canada
Cequence
Paramount
Tourmaline
Canadian Natural Resources Limited
ConocoPhillips
Ikkuma Resources

National Observer

Alberta's wolf cull to continue as it scrambles to save caribou

June 8th 2016 Alberta plans to continue the provincial wolf cull for the foreseeable future, but announced Wednesday that it intends to restore habitat to ease pressure on the endangered caribou
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Alberta's wolf cull to continue as it scrambles to save caribou

By Charles Mandel in News, Politics |June 8th 2016
#29 of 29 articles from the Special Report:**State Of The Animal**

Hunters with a wolves in Alberta. File photo by Geordie Day.
Previous story

Alberta plans to continue the provincial wolf cull for the foreseeable future, but announced Wednesday that it intends to restore habitat in an effort to ease pressure on the endangered woodland caribou.

The province retained Eric Denhoff, an experienced mediator, to try and break the existing “policy logjam” that exists over satisfying animal rights advocates, First Nations, hunting and trapping interests and industry.

Some of Denhoff’s key recommendations include the restoration of over 10,000 kilometres of seismic lines back to caribou habitat in the Little Smoky and A La Peche caribou ranges; and providing permanent protection to an addition 1.8 million hectares of caribou range in the north and western parts of the province.

At the same time Denhoff recommended that the wolf cull continue in the Little Smoky and A La Peche ranges until caribou populations stabilize.

Alberta was required, under the federal Species at Risk Act, to provide a plan to protect the caribou. If it had failed to do so, the federal government could have intervened to introduce its own plan.

“Our government inherited a policy logjam and a looming federal deadline to file our plan to recover the caribou and manage critical habitat for caribou throughout the province,” Shannon Phillips, Alberta’s Minister of Environment and Parks, said in a statement.

“Rather than admiring the problem, as had been done for two decades, our government took action. We rolled up our sleeves and looked for solutions.”

Phillips said Denhoff’s recommendations are based on collaborative science and protecting jobs.”

"Ultimately, caribou come first"

Over the last 30 to 40 years, the province has had no fewer than 10 separate studies or task forces examine the caribou problem, Denhoff notes in his report, Setting Alberta on the Path to Caribou Recovery.

“This is a story of tough choices,” Denhoff writes.

Caribou protection requires balancing the need for a sustainable economy, the need for jobs, and the necessity to respect Aboriginal and Treaty rights, he notes.

“Ultimately, caribou come first, and federal law requires each province and territory to develop range plans that protect, over time, at least 65 per cent of that habitat or face federal intervention.”

Denhoff believes it’s reasonable in some of the caribous’ range to be able to preserve as much as 65 per cent of the habitat.

In other parts, the “overwhelming level of human activity is so stunningly complete that the complex array of threats mean that even the most aggressive habitat protection measures may fail to assure the survival of the herds.”

The threats caribou face include climate change, predators, wildfires, intensive industrial activity, and others.

Although the cull will continue, Denhoff is recommending an ambitious caribou rescue plan to the province. Besides seismic line restoration and habitat protection, the report calls for a fenced caribou rearing facility, “unparalleled in scale,” where the animals can safely reproduce and raise their calves.

The facility would potentially double local populations within five years.

Pressure would also be eased on industrial use on the lands in a number of ways. A government-backed paid green bond program to energy companies would help offset any revenue loss from restoring the seismic lines.

Energy firms would also be asked to voluntarily scale back “substantial amounts” of energy development until the restoration program and caribou rearing facility are firmly established.

Forestry companies will be asked to “pool” wood fibre outside the caribou ranges in order to limit or prevent harvesting inside the impacted areas.

The plan also calls for the establishment of a monitoring board to keep track of progress with representation from all the affected stakeholders.

The program won’t come cheaply. Restoration of the seismic lines and establishment of the caribou raising facility is estimated at $60-million alone.

Poisoning of the wolves likely to be phased out

Denhoff notes that the wolf cull "excites some of the greatest concern and opposition among the public," and added that his most challenging finding is that the region's caribou will not survive unless wolf control continues.

"As habitat recovers over time, it will presumably, eventually—in many years—be possible to eliminate active wolf control on a regular and continuing basis."

The report says that in addition to caribou the wolves are taking an "extraordinary" number of elk and cites a wolf pack having killed 13 elk in one incident.

Alberta's wolf cull began in 2005 in the Little Smoky Region of the province in an attempt to save the endangered woodland caribou.

Over the last nine years, more than 1,000 wolves have been killed along with 700 other animals.

Currently, the province shoots wolves from the air and uses strychnine bait and private trapping to kill the animals. But the report notes that some 20 moose and elk annually are killed from the poison as well.

"In conducting wolf control, society has embarked upon species valuation trade-offs that not everyone is comfortable with," the report notes.

First Nations representatives told Denhoff that they would prefer to replace the poison with approaches that avoid killing other species unintentionally and have asked for direct participation in the cull.

"Given their traditional knowledge and the direct impact to their rights and traditional use, this is well-advised and should be given consideration," Denhoff writes

"At the same time, discussion needs to continue to reflect the reality that wolf control using trapping alone has not previously been successful."

The report says the Alberta Trappers Association has also raised concerns about the use of poison and will be submitting a proposal to government aimed at decreasing its use.

Denhoff notes that even if the entire Little Smoky-A La Peche caribou regions were protected today from all industrial activity, "it would likely be decades before habitat was sufficiently restored to reduce wolf predation on caribou sufficiently, such that the province could eliminate the wolf cull."

REQUEST FOR DECISION

SUBJECT:	**Alberta Conservation Association (ACA) Elk Depredation Proposal**		
SUBMISSION TO:	AGRICULTURAL SERVICE BOARD	REVIEWED AND APPROVED FOR SUBMISSION	
MEETING DATE:	July 27, 2016	CAO:	MANAGER: QFB
DEPARTMENT:	COMMUNITY SERVICES/AGRICULTURE	GM:	PRESENTER: QFB
FILE NO./LEGAL:			LEGAL/ POLICY REVIEW:
STRATEGIC PLAN:			FINANCIAL REVIEW:

RELEVANT LEGISLATION:

Provincial (cite) – *N/A*

Council Bylaw / Policy (cite) – *N/A*

RECOMMENDED ACTION:

MOTION: That Greenview ASB recommend to Council, to direct administration to provide logistical support for the ACA's Elk Depredation Assistance Program.

BACKGROUND / PROPOSAL:

Elk depredation of stacked feed, swaths, bagged grain, and standing feed have been a continual problem in Greenview.

In 2012/2013 Greenview sent two letters to the Minister Alberta Sustainable Resources (ASRD) in regards to the problems that local agriculture producers are having with elk, a resolution was also sent to the Provincial ASB Conference January 2014. In March 2014 an ASB (Agriculture Service Board) meeting was held with a presentation from ASRD regional biologists and the regional problem wildlife specialist. This meeting was also attended by Greenview agricultural producers.

The direction from this meeting was to draft another letter to the Minister of ASRD regarding the problems that producers have been having with elk. In October of 2014 a resolution was presented to the regional ASB conference and was passed. The resolution was forwarded to the Provincial ASB Conference in January of 2015, was passed and then presented to AAMDC in March of 2015, and was again passed.

The presentation from ACA (Alberta Conservation Association) in regards to elk depredation proposes to make a list of legal hunters available, for resident landowners who are having trouble with depredation to call and come legally harvest an elk. The Sr. Biologist from AEP (Alberta Environment and Parks) feels that the department's goals in elk harvest are being met on a WMU (wildlife management unit) basis, and that this program would probably help target those localized problem areas that are not being utilized at this time.

OPTIONS – BENEFITS / DISADVANTAGES:

Options – Greenview ASB has the option to approve, alter, or deny the proposed recomendation.

Benefits – Greenview ASB approving the recommendation, will allow another tool to become available in the struggle to deal with elk depredation.

Disadvantages – the only perceived disadvantage to approving the recommendation, would be that it may be seen as not providing the necessary amount of relief.

COSTS / SOURCE OF FUNDING:

There would be no additional costs, as having Agriculture Administration provide logistical support to this program would be part of daily pest control program activities.

ATTACHMENT(S):

- Ungulate Crop Damage Compensation Information

UNGULATE CROP DEPREDATION

Ungulate Damage Prevention & Compensation

The Fish and Wildlife Division of Alberta Environment and Sustainable Resource Development, through the Ungulate Damage Prevention Program, offers producers advice and assistance to prevent ungulates from spoiling stored feed and un-harvested crops.

The Agriculture Financial Services Corporation (AFSC), through the Wildlife Damage Compensation for Excreta Contaminated Crops, Stacked Hay, and Stored Silage programs, provides financial compensation to producers who have consulted Fish and Wildlife, and followed the advice given by the officer.

Qualifying for Compensation

Deer, elk, antelope and moose are often attracted to agricultural fields and livestock feed yards. This is especially common in winters with extended periods of cold weather, heavy snowfall or crusty snow cover, when natural sources of vegetation are more difficult to find. Ungulates are messy eaters, however, and soil or destroy three to four times the forage that they consume.

Agricultural producers who have taken steps to minimize ungulate damage but still suffer losses on stacked hay, stored silage or un-harvested crops, can qualify for assistance and compensation.

To qualify for these programs, producers do not need to have Production Insurance. There are no premiums or administrative costs, aside from a $25.00 assessment fee for each section of land (or portion thereof) on which the damage has occurred.

For Stacked or Stored Hay or Greenfeed That Has Been Damaged by Ungulates

An agricultural producer is eligible for compensation

- when hay has been stacked and stored at sites that can be regularly monitored by the producer
- when a producer has allowed access to hunting
- when a producer has complied with recommendations made by the Fish and Wildlife officer

Who do you call to file a claim?

You must first contact a Fish and Wildlife officer, then the AFSC, who will arrange for an adjuster to visit.
Be sure to contact Fish and Wildlife as soon as you've noticed the damage

What will the Fish and wildlife officer do?

A Fish and Wildlife officer will visit the site. The officer will assess how wildlife may be accessing the property and make recommendations to prevent ungulate damage from reoccurring.

It is important to follow the recommendations of the Fish and Wildlife officers, as future compensation (total lifetime claims) will be dependent on having done so. Producers who have

not followed the recommendations will receive only 50% of the claim amount on the second claim, and, on the third and consecutive claims, will receive no compensation at all.

The Fish and Wildlife officer may also assist the producer by providing materials for intercept feeding or by lending

- fencing (permanent wire and/or temporary fencing called stackwrap)
- scaring devices
- repellents

What does the AFSC officer do?

The AFSC adjuster must also visit the site to determine the extent and financial value of the damage. In order to submit the claim for payment, the AFSC adjuster must include reports from both Fish and Wildlife and the AFSC.

How can you prevent Ungulate damage to stacked or stored hay?

- Before winter, move bales from the field to a feed yard or protected storage area.
- Use fencing or place posts before freeze-up to prepare permanent stack-yard sites.
- Use straw bales stacked two tiers high as a protective barrier for feed stores.
- Stackwrap can be more effective and easier to put up if bales are stacked two tiers high. Straight sides also keep deer and elk from climbing the stacks.
- Clean up spilled grain, loose hay and other food sources which may attract ungulates.
- Chase away ungulates as soon as they first appear (be cautious however, as they could become aggressive).
- Scarecrows in clothes with a human scent, as well as loud radios, may be effective in keeping away ungulates that are not already conditioned to humans or dependent on the food source.
- Store grain only in protective storage bins.
- Allow access for hunting.

Un-harvested crops that have been destroyed or soiled by ungulates, bears, waterfowl or upland game birds

What crops are covered by the compensation program?

All commercially grown cereal, oilseed, special crops and hay are eligible for compensation.

What crops are not covered by the program?

Crops not covered by the compensation program include:

- Bales or stacks (these are covered in the Wildlife Damage Compensation on Stacked Hay program)
- Crops in granaries or bins
- Crops left exposed to wildlife damage due to management practices
- Crops seeded on land considered unsuitable for production
- Crops seeded too late in the season to produce a normal yield
- Crops that were cut or swathed for grazing
- Grazing land or native pasture
- Volunteer crops

Who do you call to file a claim?

Call the nearest AFSC office no less than 24 hours before harvesting. The adjuster will visit the site to determine the extent and the value of the damage.

How can you prevent this from happening again?

Call a Fish and Wildlife officer for more information on wildlife activity in your area, and how to prevent wildlife damage on your property.

			/w EPDw UKMTg5

Unique Financial Services
AFSC
INSURANCE • LENDING • INCOME STABILIZATION

Wildlife Damage Compensation Program (WDCP)

Overview
The Wildlife Damage Compensation program (WDCP) compensates agricultural producers for damage to eligible un-harvested hay crops that is caused by ungulates, waterfowl, upland game birds and bears.

AFSC also offers WDCP for Stacked Hay and Haylage in Pits and Tubes. This program provides compensation for damage caused by ungulates (white tailed deer, mule deer, elk, moose or antelope) to harvested hay.

Producers wishing to participate in WDCP are not required to have insurance to qualify for a claim.

Premium and Cost Sharing
The Federal and Provincial governments pay all the costs for this program. Producers pay no premium or administration costs.

Insurable Crops
All un-harvested hay crops that can be insured under AFSC Insurance are eligible for compensation under this program.

Stacked Hay and Haylage in Pits and Tubes are not insurable under any of AFSC's Insurance Programs but are eligible for coverage under this Program.

The following crops are not eligible:
- Grazing land or native pasture
- Crops seeded on land considered unsuitable for production
- Crops that were cut or swathed for grazing
- Crops that were left exposed to wildlife damage due to management practices

Price
Compensation is based upon the commercial value of the crop.

Commercial value for a wildlife claim is determined by estimating the yield of the undamaged hay crop at the time of inspection multiplied by the higher of:
- the highest price option offered under the current year's Hay Insurance contract; or
- the price offered under the "Variable Price Benefit" for hay, which is determined in the fall.

Indemnity
There is a non-refundable appraisal fee of $25 required for each section of land on which damage has occurred.

Un-harvested Hay
In order to be compensated under WDCP, there must be at least 10 per cent wildlife damage and a minimum of $100 calculated loss per crop. Damaged hay crops can not be cut until adjusted, as wildlife claims cannot be adjusted from representative strips.

For AFSC Hay Insurance clients, the wildlife claim will be deducted from any Hay Insurance payments. Compensation is based on the percentage of damage multiplied by the commercial value of the crop.

Stacked Hay and Haylage in Pits and Tubes
A Provincial Fish and Wildlife (FW) Officer will provide the producer with appropriate recommendations to prevent further damage prior to a claim being paid. If a producer has a second claim, the minimum recommendations for the FW Officer during the first claim visit must have been implemented in order to be eligible for a full claim. If the recommendations have not been followed, the producer is only eligible to receive 50 per cent of the claim amount. On third and subsequent claims, if minimum recommendations are not followed, no claim will be paid.

Claims filed over the winter will not be finalized until all damage has ceased and the total damage can be determined.

For Wildlife Damage Compensation for Stacked Hay, the maximum compensation is $5,000 per inspection.

Client Responsibilities

Un-harvested Hay

Producers must contact AFSC at least 24 and preferably 72 hours prior to harvest so AFSC can arrange to have an adjuster perform an on-farm inspection.

Stacked Hay and Haylage in Pits and Tubes

Producers are responsible to notify Fish and Wildlife and AFSC as soon as possible after first noticing damage to request an inspection and receive more detailed information.

REQUEST FOR DECISION

SUBJECT:	**Agreement for Implementation Of Wild Boar Containment Standards under the Agricultural Pests Act**		
SUBMISSION TO:	AGRICULTURAL SERVICE BOARD	REVIEWED AND APPROVED FOR SUBMISSION	
MEETING DATE:	July 27, 2016	CAO:	MANAGER: QFB
DEPARTMENT:	COMMUNITY SERVICES/AGRICULTURE	GM:	PRESENTER: QFB
FILE NO./LEGAL:			LEGAL/ POLICY REVIEW:
STRATEGIC PLAN:			FINANCIAL REVIEW:

RELEVANT LEGISLATION:

Provincial (cite) – *The Agricultural Pests Act Chapter A-8.*

Council Bylaw / Policy (cite) – *N/A.*

RECOMMENDED ACTION:

MOTION: That Greenview ASB direct Administration to enter into an Agreement for the Implementation of Wild Boar Containment Standards under the Agricultural Pests Act with Alberta Agriculture and Forestry (AAF).

BACKGROUND / PROPOSAL:

A phone call received from Phil Merril with Alberta Agriculture and Forestry has indicated that Greenview has not signed an agreement with AAF in regards to implementing and enforcing minimum containment standards for wild boar operations within Greenview boundaries.

Under the Agricultural Pests Act, the Minister may establish programs to enter into an agreement with local authorities for the purpose of preventing the establishment of, controlling, or destroying a pest or nuisance and preventing or reducing damage caused by a pest or nuisance. With the implementation of minimum containment standards that were effective July 1, 2014, it was AAF's objective to take the initial lead in the implementation and compliance of these containment standards in order to gain full compliance for all wild boar farms by December 31, 2018.

OPTIONS – BENEFITS / DISADVANTAGES:

Options – Greenview ASB has the option to approve, alter, or deny, the recommendation as presented.

Benefits – Having Greenview ASB approve the recommendation made by Administration will allow Agriculture Services to fulfill the mandate approved in the 2016-2018 ASB Strategic Business Plan.

Disadvantages – There are no perceived disadvantages with approving the recommended action.

COSTS / SOURCE OF FUNDING:

N/A.

ATTACHMENT(S):

- Sample of Agreement with Red Deer County
- Letter sent to Red Deer County
- Letter sent to all municipalities

THIS AGREEMENT MADE EFFECTIVE THE 1ST DAY OF MAY, 2016

BETWEEN:

HER MAJESTY THE QUEEN IN RIGHT OF ALBERTA

as represented by the Minister of Agriculture and Forestry
(the "**Minister"**)

and

Red Deer County
(the **Municipality**)

AGREEMENT FOR THE IMPLEMENTATION OF WILD BOAR CONTAINMENT STANDARDS UNDER THE *AGRICULTURAL PESTS ACT*

BACKGROUND

The Parties recognize preventing the establishment of wild boar at-large is beneficial to all the citizens and industries in the Municipality and the Province of Alberta.

Cabinet approved province-wide containment standards for farmed wild boar; the effective date for the standards is July 1, 2014. The containment standards are a step toward Alberta's goal to control and prevent the establishment of wild boar at-large in the Province.

The Municipality is required to appoint sufficient inspectors to carry out the *Agricultural Pests Act* and the regulations within the municipality.

The Municipality requests the Minister and the Minister agrees to provide initial administration support to the Municipality for three years to assist with the implementation of the containment standards within the municipality.

The Minister and the Municipality agree benefits will accrue to each Party the result of a cooperative and mutual responsibility for the implementation of the Containment Standards within the municipality.

The Minister and the Municipality agree to provide resources, support and other incidentals to the other party at no cost to the other party.

The purpose of the Agreement is to specify the responsibilities of the Minister and Municipality for the implementation and administration of the Containment Standards.

Now therefore the Parties agree as follows:

1. DEFINITIONS

1.1. In this Agreement and the Background:

(1) **"Agreement"** means this Agreement between Province and Municipality and includes all of the Schedules referred to in it;

(2) **"Act" means the Agricultural Pests Act;**

(3) **"Compliance Principles"** means the compliance principles developed and followed by the Government of Alberta, Agriculture and Forestry Department, Inspection and Investigation Section, as set out in "Compliance Principles of Agriculture and Forestry, as amended from time to time;

(4) **"Confidential Information"** means any information communicated or disclosed by one party to the other party is identified as confidential.

(5) **"Containment Standards"** means the containment standards set out in "Minimum Containment Standards for Alberta Wild Boar Farms, as amended from time to time;

2. PURPOSE

2.1. Implement Containment Standards--The Parties agree the purpose of this Agreement is to identify the activities and responsibilities of the Parties to implement and administer the containment standards for the prevention of wild boar at-large within the municipality.
Municipality still obligated--The Municipality acknowledges that this agreement does not relieve the Municipality from any obligation or responsibility of the Municipality arising from the Agricultural Pests Act.

3.

TERM and TERMINATION

3.1. Term –The term of this Agreement is from the Effective Date until December 31, 2018 unless otherwise terminated in accordance with this Agreement.

3.2. Terminate on notice–Either party on 30 days written notice to the other party may terminate this Agreement.

3.3. Mutual Termination–The Parties may mutually consent to terminate this Agreement.

3.4. Default—In the event of a default, the non-defaulting party may immediately terminate this Agreement.

4. IMPLEMENTATION, DELIVERY AND ADMINISTRATION

4.1. Responsibilities of the Minister-- The Minister agrees to cooperate with the Municipality in accordance with the terms of this Agreement for the implementation, delivery and administration of the Containment Standards in the municipality, including:

(1) Minister has or agrees to appoint inspectors under the Agricultural Pests Act available to inspect farms containing wild boar in the municipality;

(2) Conduct initial inspections of wild boar farms in the Municipality to determine the wild boar farm compliance with Containment Standards.

(3) Conducting follow-up inspections of wild boar farms in the Municipality, as required to determine the wild boar farm compliance with the Containment Standards;

(4) Undertake activities and extension services consistent with the Compliance Principles, including enforcement under the Act as necessary;

(5) Issue notices under section 12 of the Act;

(6) Minister agrees Minister appointed inspectors will consult and coordinate with the Municipality prior to undertaking any enforcement steps under the Agricultural Pests Act;

(7) Minister agrees Minister appointed inspectors be made available, at the request of the Municipality, acting reasonably, to participate in section 14 of the Act, appeal proceedings resulting from notices issued by Minister appointed inspectors.
(8) Ensure bilateral communication between the Minister and Municipality is maintained;

4.2. Responsibilities of Municipality- Municipality shall be responsible for the implementation, delivery and administration in the Municipality of the Program in accordance with the terms of this Agreement, including:

(1) **Existing Activities** – The Municipality acknowledges that it shall remain responsible for the obligations of carrying out the Act in accordance with the terms and conditions of the Act and the continued activities of which the Minister is relying on, including:
   (a) Administration of complaints of wild boar at large located within the boundaries of the Municipality.
   (b) Continue to administer the wild boar ear bounty program.

(2) **Cooperation-**The Municipality agrees to cooperate with the Minister to ensure the successful implementation, delivery, administration and enforcement of the Containment Standards during the term of this Agreement. Such cooperation shall include:
   (a) provide the Minister with a list of inspectors appointed under the Act
   (b) handle appeals as they now do for other pests as per s.14 of APA
   (c) actively participate in the inspection and enforcement of the wild boar containment standards
   (d) liaise between the wild boar producers and AF
   (e) facilitate communication between the Municipality and Minister at all times

5. INSPECTORS

5.1. The Act permits the Minister to enter into agreements with local authorities for the purpose of preventing the establishment of, controlling or destroying a pest and preventing or reducing damage caused by a pest.

5.2. The Minister and Municipality acknowledge either party may appoint inspectors pursuant to the Act.

5.3. The Parties agree that salaries paid and expenses incurred by that party for activities of that party's inspector carrying out this Agreement are at no cost to the other party.

6. RECORDS AND REPORTING

6.1. The Minister shall:

(1) Submit a written status report to the Municipality annually, for the preceding twelve month period ending June 30, during the Term of this Agreement and for the period from the last status report to the date of Termination, indicating:
   (a) activities undertaken by the Minister pursuant to the responsibilities of the Minister under this Agreement
   (b) any other information requested by the Municipality, acting reasonably, in relation to the responsibilities of the Minister.

(2) The Minister shall submit to the Municipality reports within 30 days of June 30th or the date of Termination, as the case may be.

6.2. The Municipality shall:

(1) Submit a written status report to the Minister annually, for the preceding twelve month period ending June 30, during the Term of this Agreement and for the period form the last status report to the date of Termination, indicating:

(a) activities undertaken by the Municipality pursuant to the implementation of the Containment Standards
(b) any other information requested by the Minister, acting reasonably, in relation to the implementation of the Containment Standards.

(2) The Municipality shall submit to the Minister reports within 30 days of June 30th or the date of Termination, as the case may be.

7. CONFIDENTIALITY

7.1. Each Party will make reasonable efforts, and take such action as may be appropriate to prevent unauthorized use or disclosure of the information received from the other Participant, taking into account the nature of the information to be protected, including without limitation;

(1) to keep information according to the laws, policies and practices of the Party for information of the same type; and
(2) to safeguard against theft, damage or access by unauthorized persons.

7.2. The Parties will take all reasonable steps to ensure that their employees, agents and contractors abide by the provisions of this Agreement;

7.3. Section 7.1 shall not apply to any part of the Confidential Information which:

(1) is or becomes publicly available or enters the public domain, other than through a breach of this Agreement;
(2) is lawfully obtained by the recipient from a third party without breach of this Agreement by the recipient;
(3) is used or disclosed with the prior express written approval of the supplier;
(4) was known to the recipient prior to the supplier's disclosure of it and so documented;
(5) is used or disclosed pursuant to the exercise of rights or obligations under other provisions of this Agreement; or
(6) is used or disclosed in response to a valid order of a court or agency of government or in accordance with applicable law, including the Freedom of Information and Protection of Privacy Act.

8. INFORMATION: RECORDS, USE, FOIP-

8.1. **Shared records—**The Parties represent and agree the information, regardless of form, including Personal Information, that is obtained, generated, provided or collected by a party in the performance of this Agreement is information collected for purposes and in a manner compliant with each Party's privacy legislation.

8.2. **Responsibility for records** – Each party will retain information under this Agreement for the period of time prescribed in that Party's access to information, privacy and archive legislation and record retention schedule and will respect the requirements of that legislation with respect to the disposal of information.

9. DISCLOSURE OF THE AGREEMENT BY MINISTER

9.1. **Disclosure by Minister** - The Municipality hereby expressly consents to the disclosure of this Agreement and its contents by any means chosen by the Minister including, without limitation, tabling it before the Legislature.

10. HOLD HARMLESS

10.1. Each party shall indemnify and hold harmless the other, its employees and agents against and from any and all third party claims, demands, actions, or costs (including legal costs on a solicitor-client basis) to the extent arising from

(1) that party's breach of this Agreement, or
(2) the negligence, other tortious act or willful misconduct of that party, or those for whom it is legally responsible, in relation to the performance of its obligations under this Agreement

11. INSURANCE

11.1. Each party agrees to maintain a self-insurance program providing general liability coverage to protect the other in the event of third party claims for bodily injury, personal injury and property damage arising out of the operations of the party.

12. DISPUTE RESOLUTION

12.1. If a dispute arises between the Parties with respect to this Agreement, they will first attempt to resolve the dispute through good faith discussions and negotiations at the level of the Assistant Deputy Minister of Agriculture and Forestry and the Reeve/Mayor of the Municipality for final resolution.

13. EVENTS OF DEFAULT

13.1. The following constitute events of default:

(1) a party failing to meet any of its obligations under this Agreement;
(2) the Municipality failing to comply with the provisions of the Act or the Regulation;

13.2. **Notice to cure** - the party not in default may, in its sole, unfettered discretion, upon any default of the other party under the Agreement, provide the defaulting party with notice that it will have not more than 15 days to correct the default. The defaulting party may make an agreement with the non-defaulting party concerning the correction of the default over such longer period as the non-defaulting party may agree to.

14. ACTIONS ON TERMINATION

14.1. **Actions on Termination** – In the event of termination, at the expiration or earlier termination of this Agreement, or at the end of the Term, the defaulting party agrees to report to the non-defaulting party as required in section 6.

15. SURVIVAL AND EXPIRY OF OBLIGATIONS

15.1. Subject to this Agreement, the following survive Termination and remain in effect for an indefinite period:

(1) Section 1, Definitions;

(2) Section 7, Confidentiality;

(3) Section 8, Information: Records, Use and FOIP;

(4) Section 10, Hold Harmless;

(5) Section 14, Actions on Termination;

(6) Section 16, Interpretation;

(7) Section 17, General Provisions.

16. INTERPRETATION OF THE AGREEMENT

16.1. Interpretation - In this Agreement

(1) words in the singular include the plural and vice versa,

(2) words imparting one gender include all genders,

(3) a reference to a person includes a body corporate and a body politic,

(4) headings are included for reference only and do not form part of the Agreement,

(5) a reference to dollars or amounts of money means lawful money of Canada,

(6) a reference to an obligation includes representations and warranties,

(7) a reference to a statute, regulation, document or provision thereof means the statute, regulation, document or provision as amended or superseded from time to time,

(8) the rules established in the Interpretation Act (Alberta) respecting the calculation of time apply to the interpretation of this Agreement so that, for greater certainty, with respect to a reference to between two events, in calculating the number of days, the day on which the first event happens shall be excluded and the day on which the second event happens shall be included, and;

(9) a reference to an individual by his name of office means the person holding that office or the successor of that office.

17. GENERAL PROVISIONS

17.1. Amendment - This agreement may be changed by an amendment in writing, signed by authorized representatives of the Parties, but not otherwise.

17.2. Assignment –This Agreement is not assignable by the Municipality but is assignable by the Minister.

17.3. Entire agreement - This Agreement contains the entire agreement between the parties relating to the subject matter of this Agreement and there are no oral agreements, statements, representations, collateral agreements, undertakings, conditions or agreements whatsoever.

17.4. Further assurances - Each of the parties agrees to do such further acts or things and to execute and deliver such further documents, agreements and assurances as are reasonably required to give effect to the terms of this Agreement, at the time this is required.

17.5. Notices - All communications and notices under this Agreement must be (i) left with an individual in an office noted below or (ii) sent by recorded mail as follows:

(1) the Municipality as follows:

Agricultural Fieldman
Red Deer County
38106 Range Rd 275
Red Deer County, AB
T4S 2L9

(2) the Minister as follows:

Director, Inspection & Investigation Section
Alberta Agriculture and Forestry
Provincial Building,
#301 4920 - 51 Street
Red Deer, AB T4N 6K8

17.6. **Delivery of notices** - For the purposes of this agreement, notice is effective on the date acknowledgement of receipt is signed.

17.7. **Change of address for notices** - A party may change that party's information for the purposes of section 17.5 by giving notice to the other party.

17.8. **No waiver** - No provision of this Agreement will be deemed to be waived unless such waiver is in writing. A waiver of a default committed by either party will not extend or be deemed to extend to any other default.

17.9. **Responsibility for costs and disbursements**- Each party will be responsible for the payment of all costs, expenses or legal fees or disbursements it incurred in negotiating and preparing this Agreement.

17.10. **Severability** - The invalidity of any provision in this Agreement will not affect the validity of the Agreement or any other provision in it. This Agreement will be construed as if any invalid provision was severed from it.

17.11. **Time -** Time is and will remain of the essence of this Agreement.

17.12. **Counterpart execution** - This Agreement may be executed in counterpart. A party may send a copy of its executed counterpart to the other parties by facsimile or e-mail transmission instead of delivering a signed original of that counterpart. Each executed counterpart (including a copy sent by facsimile or e-mail) shall be deemed to be an original. The signature page of each counterpart may be attached to one copy of the Agreement.

HER MAJESTY THE QUEEN IN RIGHT OF ALBERTA as represented by the MINISTER OF AGRICULTURE AND FORESTRY

Date:_____ By: _____
Deputy Minister

[Municipality]

Date:_____ By: _____
(Position)

Date:_____ By: _____

(Position)

Alberta Agriculture and Forestry

Animal Health and Assurance Branch
Inspection and Investigation Section
301, 4920 – 51 Street
Provincial Building
Red Deer, AB T4N 6K8
Telephone: 403-340-5320
www.alberta.ca

April 30, 2016

Dear Red Deer County:

Our Inspection and Investigation staff have been working closely with Agricultural Fieldmen in the municipalities that may have wild boar producers, including your municipality.

Under the *Agricultural Pests Act* (APA), the Minister may establish programs or enter into an agreement with local authorities for the purpose of preventing the establishment of, controlling, or destroying a pest or nuisance and preventing or reducing damage caused by a pest or nuisance. In order to continue through this containment management plan, an agreement has been developed that outlines what has been taking place during this process and what the Agriculture and Forestry (AF) responsibilities have been and will continue to be until December 31, 2018, the target date for all wild boar producers to be compliant with the containment standards. The agreement also outlines what the responsibilities of your municipality are and will be throughout the implementation of the wild boar containment standards.

As was stated previously, it is AF's goal to continue to take the lead in the implementation and enforcement of these containment standards until 2018 and work closely with municipalities and producers to achieve compliance. AF staff will continue to work with Agricultural Fieldmen with the goal of voluntary compliance through regular visits and working with producers. The issuance of a notice under the *Agricultural Pest Act* (APA) would be a final measure when all other efforts have failed. We presently have three producers that refuse to comply with meeting the equivalency standards which were required by October 1, 2014.

I am enclosing an agreement for your municipality to review, sign, and then return to our Red Deer office prior to February 10, 2015 in order for our Deputy Minister to then sign the agreements.

If you have any questions regarding the agreement, please do not to hesitate to contact me at 403-340-5320. I look forward to your anticipated cooperation in the continued implementation of the wild boar containment standards.

Yours truly,

Lyle Marianchuk,
Section Director

Attachment

Alberta Agriculture and Forestry

Animal Health & Assurance Branch
Inspection and Investigation Section
301, 4920 - 51 Street
Red Deer, Alberta T4N 6K8
Telephone: 403-340-5320
Fax: 403-340-5870
www.alberta.ca

May 19, 2016

Dear Municipality:

This letter is a follow up to correspondence that was sent to municipalities in March 2014, regarding the implementation of the minimum containment standards for wild boar farmed in Alberta.

In order to ensure that Alberta is able to manage Wild Boar properly, it was essential that a pro-active strategy for the province be developed and implemented with all of our producers in the form of a comprehensive Wild Boar Management Program.

In 2014 with input from wild boar producers, ASBs, and Agricultural Fieldmen, Agriculture and Forestry (AF) developed minimum containment standards for wild boar as the first step in resolving the problem of wild boar at large. By having all wild boar producers in the province compliant with the minimum standards for containment, it is hoped that no further wild boar will escape into the wild. This is the first step in resolving the wild boar problem. These containment standards seek to enable producers to continue their livelihood while at the same time ensuring that wild boar farming does not negatively impact the environment outside the farm.

The wild boar minimum containment standards were last revised in September 2015 and can be found on the AF website, the link is:

http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/rsb12565/$FILE/containment-standards-september2015.pdf

Under the *Agricultural Pests Act*, the Minister may establish programs or enter into an agreement with local authorities for the purpose of preventing the establishment of, controlling or destroying a pest or nuisance and preventing or reducing damage caused by a pest or nuisance. With the implementation of the minimum containment standards that were effective July 1, 2014, it was AF's objective to take the initial lead in the implementation and compliance of these containment standards in order to gain full compliance for all wild boar farms by December 31, 2018. Presently, there are 16 known wild boar farms in the province and AF staff have been working closely with the ASBs and Agricultural Fieldmen in those municipalities that have wild boar producers by implementing a containment management plan which has included inspection visits to wild boar farms to ensure proper containment of their animals.

If your municipality has determined that there have been wild boar producers who are operating in your municipality and you have not yet signed an agreement with AF, we ask that you immediately contact our Red Deer office at 403-755-1474. These agreements simply include the responsibilities of AF and the responsibilities of the municipality in the implementation of the minimum containment standards. We will follow up with both the producer and you to start the compliance process.

.../2

If your municipality has wild boar producers, you have already signed an agreement with AF and your Agricultural Fieldmen have been working with our AF staff to gain compliance, we thank you for your cooperation and efforts to date.

If you have any questions or concerns in the meantime please feel free to contact Lyle Marianchuk at 403-340-5320 in our Red Deer office.

Yours truly,

Lyle Marianchuk
Director
Inspection and Investigation Section

Alberta Crop Report

Crop Conditions as of May 10, 2016 (Abbreviated Report)

Continuing dry weather throughout much of the province has provided producers with the opportunity to make substantial progress in their seeding operations over the past week. Seeding is estimated to be 45% complete as of May 10, up from 21% last week and well ahead of the 5 year average of 23%. Warm weather during the past week aided emergence with approximately 8% of crops out of the ground. Emergence is most advanced in the South with 24% of crops up, followed by 7% in the Central, 2% in the North East, less than 1% in the North West and 2% in the Peace Regions.

Surface soil moisture ratings declined to 63% of the province rated as poor or fair from 56% last week though moisture levels should be adequate in most areas to support good germination. Very light showers were experienced in the extreme south and western portions of the South Region and amounts of up to 12 mm (one-half inch) fell in the Peace Region. Brisk winds were reported across many areas which enhanced moisture loss from the top layer. Cooler weather is forecast for the upcoming week which will slow moisture loss while anticipated below zero low temperatures provide the potential for some crop damage depending upon severity.

Hay and pastures are in dire need of rain and have been slow to start growth. Precipitation is needed in the near future to maintain the opportunity for an average 1st cut hay crop.

Table 1: Alberta Seeding Progress as of May 10, 2016

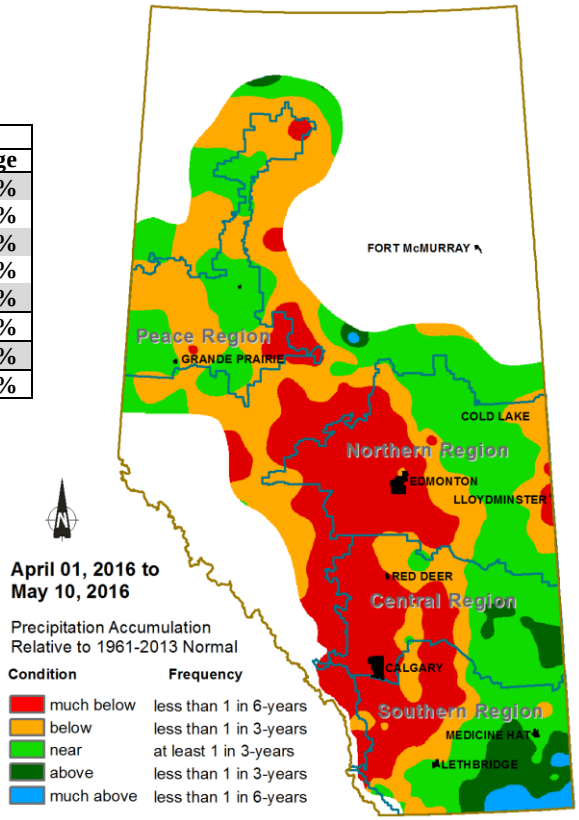
	% Seeded					
	South	Central	N East	N West	Peace	Average
Spr. Wheat	74.6%	62.7%	45.0%	39.6%	42.3%	**56.0%**
Barley	77.3%	40.7%	10.4%	9.9%	16.2%	**41.4%**
Oats	65.3%	19.3%	5.9%	5.8%	11.1%	**13.3%**
Canola	49.2%	43.3%	22.7%	19.6%	21.2%	**30.9%**
Dry Peas	90.8%	83.3%	84.6%	95.0%	51.5%	**82.4%**
Average	**70.0%**	**51.0%**	**31.8%**	**26.0%**	**29.8%**	**44.8%**
Last Week	50.2%	19.0%	2.4%	2.8%	10.9%	**20.8%**
Last Year	86.3%	50.8%	29.5%	27.6%	18.9%	**48.8%**

Source: AF/AFSC Crop Reporting Survey

Table 2: Surface Soil Moisture Ratings as of May 10, 2016

	Poor	Fair	Good	Excellent	Excessive
South	16.4%	50.0%	33.2%	0.4%	0%
Central	17.2%	40.4%	36.8%	5.2%	0.4%
N East	8.5%	50.0%	27.3%	14.2%	0%
N West	27.1%	70.4%	2.5%	0%	0%
Peace	5.4%	44.6%	44.2%	5.8%	0%
Average	**14.2%**	**49.2%**	**30.9%**	**5.6%**	**0.1%**
Last Week	11.0%	45.4%	32.4%	11.1%	0.1%
Last Year	11.2%	30.9%	47.6%	9.8%	0.5%

Source: AF/AFSC Crop Reporting Survey



Our thanks to Alberta Agricultural Fieldmen, staff of AFSC and the Alberta Ag-Info Centre for their partnership and contribution to the Alberta Crop Reporting Program.

The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Division, Technology and Innovation Branch.

REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Seeding has progressed to 70% complete, up from 50% last week and the 5 year average of 43%. Last year, seeding was 86% done.
- Biggest difference between 2016 & 2015 is canola seeding, last year 81% completed, this year 49%.
- Surface soil moisture ratings declined from 40% good or excellent to 34% over the week. In 2015, 41% of the region was rated good or excellent

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Seeding has progressed to 51% complete compared to 19% last week and the 5 year average of 23%. 51% had been seeded by this date in 2015.
- Seeding progress very similar across the crops between the past two years.
- Surface soil moisture rated at 42% good or excellent, a significant decline from 60% rated good or excellent last week. 48% of region was rated good or excellent in 2015.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Seeding has progressed to 32% complete compared to 2% last week and the 5 year average of 12%. Last year, seeding was 30% completed by this date.
- Seeding progress very similar across crops between the last two years.
- 41% of region rated good or excellent for surface soil moisture, down from 48% last week. In 2015, surface soil moisture in the region was rated at 82% good or excellent.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Region is 26% seeded compared to 3% last week and the 5 year average of 12%. Seeding was 28% complete in 2015.
- Spring wheat seeding is 10% behind last year while field pea seeding is 13% ahead of last year.
- The region is extremely dry with only 3% rated good or excellent for surface soil moisture. This is down from 5% last week. Last year at this time, 58% of the region was rated good or excellent.
- Subsoil moisture will be an issue in the future if the dry conditions continue as 92% of region is rated poor or fair.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- The entire region received some precipitation this past week though amounts were less than needed.
- Seeding is progressing faster this year than last at 30% completed compared to 19% last year and the 5 year average of 8%. In 2015, seeding was slow to get underway due principally to slow soil warming caused by the cool spring temperatures.
- Surface soil moisture ratings improved to 50% rated good or excellent this week with the precipitation, an increase from 44% last week. Last year, 62% of the region was rated good or excellent.
- The Peace currently rates as one of the best regions in the province for surface soil moisture.
- Subsoil moisture could be an issue in the future as it currently rates below the provincial average.

Agriculture Financial Services Corporation
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May 13, 2016

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Alberta Crop Report

Crop Conditions as of May 17, 2016

Unusually warm spring weather was interrupted by a brief frost which descended across most of the province, with the coldest temperatures occurring on May 13, 2016. Generally, the irrigated crops are looking good, dry land crops are in need of moisture and pasture and tame hay are under stress due to the dry conditions. Although warm weather contributed to seeding progress across the province, winds depleted surface soil moisture. About 75 per cent of crops across the province are seeded (See Table 1), compared to the 2011-2015 five-year average of 66 per cent at this time. Regionally, seeding progress (five-year average in brackets) was, for the Southern Region 87 (74) per cent, Central Region 78 (67) per cent, North East Region 63 (64) per cent, North West Region 66 (66) per cent and Peace Region 74 (51) per cent.

Last week showers in some areas maintained soil moisture, but conditions are generally dry. Provincially, surface soil moisture declined from last week and last year (See Table 2). Surface soil moisture is rated (five-year average in brackets) at 34 (seven) per cent poor, 36 (23) per cent fair, 29 (48) per cent good and one (22) per cent excellent.

Pasture and hay land are challenged with the lack of moisture. Provincially, pasture conditions are reported (five-year averages in brackets) as 38 (10) per cent poor, 34 (28) per cent fair, 26 (51) per cent good, and two (11) per cent excellent. Tame hay conditions are rated (five-year averages in brackets) as 34 (eight) per cent poor, 37 (28) per cent fair, 27 (52) per cent good and two (12) per cent excellent.

Table 1: Alberta Seeding Progress as of May 17, 2016

	% Seeded					
	South	**Central**	**N East**	**N West**	**Peace**	**Average**
Spr. Wheat	92.3%	83.1%	77.7%	89.9%	79.2%	84.2%
Dur. Wheat	94.5%	90.4%	-	-	-	93.9%
Barley	91.3%	67.0%	43.8%	49.6%	66.9%	68.0%
Oats	84.1%	47.3%	40.0%	52.5%	63.1%	51.8%
Canola	75.4%	79.9%	54.6%	55.0%	70.4%	66.5%
Dry Peas	98.0%	94.5%	98.8%	100.0%	85.5%	95.6%
Mustard	68.1%	71.3%	-	-	-	69.1%
Flax	65.0%	57.7%	25.0%	-	-	58.5%
Potatoes	89.2%	90.0%	75.0%	52.5%	-	86.1%
Dry Beans	13.0%	-	-	-	-	13.0%
Chickpeas	87.3%	96.5%	-	-	-	87.7%
Lentils	80.0%	93.8%	-	-	-	81.9%
Mixed Grain	60.0%	44.6%	1.7%	10.0%	-	35.2%
Average	87.3%	78.1%	63.4%	66.2%	74.0%	75.2%
Last Week	70.0%	51.0%	31.8%	26.0%	29.8%	44.8%
Last Year	92.8%	78.0%	72.5%	70.3%	54.6%	76.8%

Source: AF/AFSC Crop Reporting Survey

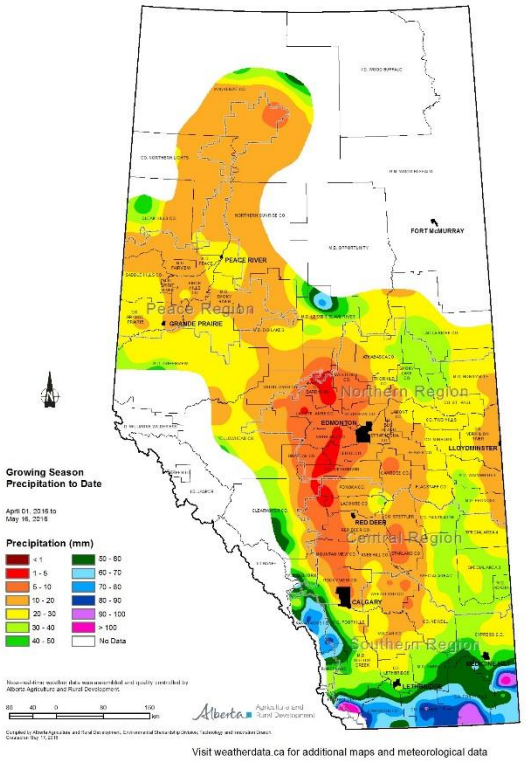

Table 2: Surface Soil Moisture Ratings as of May 17, 2016

	Poor	**Fair**	**Good**	**Excellent**	**Excessive**
South	13.4%	40.7%	45.5%	0.4%	-
Central	40.6%	35.9%	22.1%	1.1%	0.2%
N East	46.5%	26.9%	23.1%	3.5%	-
N West	68.2%	30.4%	1.4%	-	-
Peace	13.5%	48.8%	36.9%	0.8%	-
Average	33.6%	36.2%	28.8%	1.3%	-
Last Year	11.2%	34.0%	48.8%	5.8%	0.2%

Source: AF/AFSC Crop Reporting Survey

Our thanks to Alberta Agricultural Fieldmen, staff of AFSC and the Alberta Ag-Info Centre for their partnership and contribution to the Alberta Crop Reporting Program.

The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Branch, Technology and Innovation Section.

Growing Forward 2
A federal-provincial-territorial initiative

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REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Seeding is progressing rapidly with good germination. Overall, seeding is estimated at 87 per cent, up 17 per cent from a week ago, with 53 per cent of crops emerged.
- Due to showers and cooler weather this past week, surface soil moisture improved to 46 per cent being good to excellent from 34 per cent a week ago.
- Most parts of Southern Region have had several cold nights with a few below zero. Frost damage has reported for a few counties in the region.
- Pasture conditions are reported as 19 per cent poor, 50 per cent fair, 29 per cent good, and two per cent excellent, with similar ratings reported for tame hay.

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Weather conditions over the last week were dry and cool, with a few nights of frost in most parts of the Central Region. There were reports of frost damage in nearly all areas of the region. While frost damage was reported in alfalfa, canola and legumes fields in some parts of the region, the severity of the frost is still unknown in some other areas.
- Seeding has progressed to 78 per cent complete, up 27 per cent from last week, with 21 per cent emerged.
- Surface moisture conditions are rated as 23 per cent good to excellent (42 per cent a week earlier).
- Pasture conditions are reported as 32 per cent poor, 37 per cent fair, 28 per cent good, and three per cent excellent, with similar ratings reported for tame hay.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- As of May 17, seeding stands at 63 per cent complete, compared to 32 per cent a week ago, with 22 per cent of crops emerged.
- Dry days combined with winds have depleted soil moisture. Overall, surface moisture conditions are rated as 27 per cent good to excellent, compared to 42 per cent a week ago. Warmer weather and more precipitation are needed to help with crop development.
- Forage crops are at a standstill due to dry conditions over the last few weeks. Pasture conditions are reported as 50 per cent poor, 18 per cent fair, 29 per cent good, and three per cent excellent, with similar ratings reported for tame hay.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Seeding is progressing rapidly but germination appears to be slow due to dry conditions. Also, some already germinated fields are showing unevenness.
- Regionally, 66 per cent of the crop is now seeded, compared to 26 per cent a week ago, with 20 per cent of crops emerged. Some frost damage to alfalfa and seeded canola were reported.
- Surface soil moisture is rated as one per cent good to excellent, down from three per cent from a week ago.
- Pasture conditions are reported as 93 per cent poor, six per cent fair, and one per cent good, while tame hay growth reported as 79 per cent poor, 20 per cent fair and one per cent good.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- Warm and windy conditions over the past week advanced seeding operations, while diminished surface moisture. About 74 per cent of the region has now been seeded, compared to 30 per cent from a week ago, with 23 per cent of crops emerged.
- Surface soil moisture was 38 per cent good to excellent, compared to 50 per cent a week ago.
- Pasture conditions are at 20 per cent poor, 49 per cent fair, 30 per cent good, and one per cent excellent, with similar ratings reported for tame hay.

Alberta Agriculture and Forestry
Economics and Competitiveness Branch
Statistics and Data Development Section
May 20, 2016

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The 2016 Alberta crop reporting series is available on the Internet at: *http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sdd4191*

Alberta Crop Report

Crop Conditions as of May 24, 2016 (Abbreviated Report)

While wet conditions due to rainfall this past long weekend delayed seeding progress and cold damp weather slowed crop development, the much needed rain was welcome across the province. The moisture has been good for all crop, hay and pasture fields. Crops that haven't germinated as yet, now have the moisture to get a good start. Hay and pasture fields will definitely benefit from the moisture.

Provincially, seeding advanced by 15 per cent from the past week to 90 per cent now completed (See Table 1). This is a little behind last year's 95 per cent at this time. Seeding progress is reported over 90 per cent complete in most regions, with the North East and North West Regions slightly behind 85 per cent. Regionally, 74 per cent of crops seeded have emerged in the Southern Region, with 55 per cent in Central Region, 47 per cent in North East Region, 40 per cent in North West Region and 58 per cent in Peace Region.

Precipitation over the weekend improved surface soil moisture significantly across the province (see Table 2). Provincially, surface soil moisture is rated at two per cent poor, 22 per cent fair, 38 per cent good, 35 per cent excellent, and three per cent excessive.

Pasture and hay are still poor but will benefit from the recent moisture and relatively warmer weather. Provincially, pasture conditions are reported as 27 per cent poor (down 11 per cent from last week), 29 per cent fair (down five per cent), 38 per cent good (up 12 per cent), and six per cent excellent (up four per cent). Tame hay conditions are rated as 24 per cent poor (down 10 per cent from last week), 31 per cent fair (down six per cent), 36 per cent good (up nine per cent) and nine per cent excellent (up seven per cent).

Table 1: Alberta Seeding Progress as of May 24, 2016

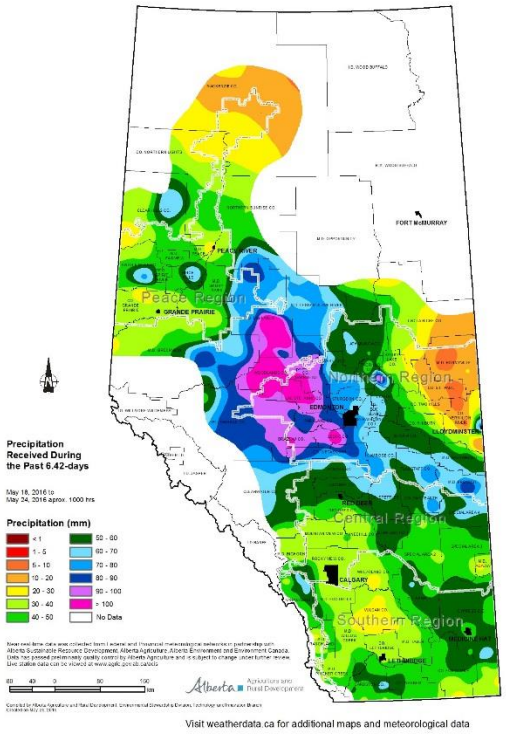
	% Seeded					
	South	**Central**	**N East**	**N West**	**Peace**	**Average**
Spr. Wheat	97.1%	94.8%	95.8%	98.7%	93.9%	96.0%
Barley	96.5%	84.6%	66.2%	77.2%	88.9%	84.0%
Oats	93.8%	73.9%	57.3%	77.9%	86.9%	73.9%
Canola	88.9%	93.9%	80.4%	77.5%	92.2%	86.5%
Dry Peas	99.6%	98.1%	100.0%	100.0%	96.8%	99.0%
Alberta	**95.0%**	**91.8%**	**84.8%**	**84.8%**	**92.8%**	**90.1%**
May 17, 2016	87.3%	78.1%	63.4%	66.2%	74.0%	75.2%
May 26, 2015	97.8%	92.4%	93.7%	93.6%	94.1%	94.5%

Source: AF/AFSC Crop Reporting Survey

Table 2: Surface Soil Moisture Ratings as of May 24, 2016

	Poor	**Fair**	**Good**	**Excellent**	**Excessive**
South	5.0%	19.6%	66.8%	8.6%	-
Central	1.9%	8.8%	44.9%	42.4%	2.1%
N East	-	31.9%	3.8%	55.4%	8.8%
N West	-	21.4%	7.0%	66.9%	4.7%
Peace	2.7%	31.2%	53.5%	11.9%	0.8%
Alberta	**2.2%**	**22.0%**	**38.0%**	**34.5%**	**3.3%**
May 17, 2016	33.6%	36.2%	28.8%	1.3%	0.0%

Source: AF/AFSC Crop Reporting Survey



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The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Branch, Technology and Innovation Section.

REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- While wet conditions delayed seeding in the past few days, about 97 per cent of spring wheat and barley, 94 per cent of oats, 89 per cent of canola and 99 per cent of dry peas have already been planted. Crops are developing well due to the rainfall last week, and 74 per cent of crops have emerged.
- Surface soil moisture conditions improved 30 per cent from a week ago to 75 per cent good to excellent.
- Pasture conditions have also improved and are reported as 11 per cent poor, 39 per cent fair, 41 per cent good, and nine per cent excellent. Similarly, tame hay growth have improved and is rated as 10 per cent poor, 36 per cent fair, 39 per cent good and 15 per cent excellent.

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- About 95 per cent of spring wheat, 85 per cent of barley, 74 per cent of oats, 94 per cent of canola and 98 per cent of dry peas have been seeded. However, due to the rainfall this past week, seeding progress has temporarily has halted. Also, some reseeding has been reported due to the frost on May 10-12. Almost 55 per cent of seeded crops have emerged, up 34 per cent from a week ago.
- Soil moisture has greatly improved and is rated as 89 per cent good to excellent, compared to 23 per cent from a week earlier.
- Precipitation improved tame hay and pasture growth and will benefit alfalfa fields which suffered some frost damage from the week before. Pasture conditions are reported as 12 per cent poor, 25 per cent fair, 50 per cent good, and 13 per cent excellent, with similar ratings reported for tame hay.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Seeding progress has been delayed by rain. Nearly 96 per cent of spring wheat, 66 per cent of barley, 57 per cent of oats, 80 per cent of canola and all dry peas are seeded, and 47 per cent of crops have emerged.
- Surface moisture conditions improved to 68 per cent from 27 per cent good to excellent a week ago.
- Hay and pasture are still poor, but should improve quickly with some heat and more moisture. Pasture conditions are reported as 41 per cent poor, 17 per cent fair, 41 per cent good, and one per cent excellent. Similarly, tame hay growth is rated as 37 per cent poor, 23 per cent fair, 33 per cent good and seven per cent excellent.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Almost 99 per cent of spring wheat, 77 per cent of barley, 78 per cent of oats and canola and all dry peas have now been seeded, and 40 per cent of the crops have emerged. However, recent rains have halted seeding progress and cold damp condition have slowed crop development.
- Surface soil moisture improved dramatically over the past week and is rated as 79 per cent good to excellent, up from one per cent a week ago.
- Pasture and hay fields are still poor and will improve with the increased moisture. Pasture conditions are reported as 80 per cent poor, 14 per cent fair, and six per cent good, while tame hay growth is reported as 66 per cent poor, 27 per cent fair and seven per cent good.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- All areas in this Region received precipitation in the form of a rain and snow mix. Some frost was reported but no reports of any damage as yet. Cooler temperatures have slowed crop development.
- Nearly 94 per cent of spring wheat, 89 per cent of barley, 87 per cent of oats, 92 per cent of canola and 97 per cent of dry peas have now been seeded, with 58 per cent of crops emerged.
- Surface soil moisture was 66 per cent good to excellent, compared to 38 per cent a week ago.
- Pasture conditions are 17 per cent poor, 47 per cent fair, 34 per cent good and two per cent excellent, with similar ratings reported for tame hay.

Alberta Agriculture and Forestry
Economics and Competitiveness Branch
Statistics and Data Development Section
May 27, 2016

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Alberta Crop Report

Crop Conditions as of May 31, 2016

Cool conditions prevailed over the week. Precipitation was reported in all regions in the amount of 10 – 20 mm with the North East Region receiving between 30 – 50 mm. Seeding progress is nearing completion at 97% seeded compared to last year at 99%, the 5 year average of 96% and the long term provincial average of 94%. The North East is the only region below 96% seeded and will incur completion delays due to the moisture received this past week.

Emergence has been slowed by the cool conditions. 78% of crops are now above ground with 86% of the spring wheat, 95% of the durum, 71% of the barley and 70% of the canola emerged. Emergence has generally been strong based upon the good growing conditions now being experienced in most areas of the province.

Soil moisture conditions improved for both surface and sub soil ratings. Surface moisture improved 4 percentage points to 77% rated good or excellent. The precipitation in the North East this week has 17% of the region rated excessive for surface moisture. Sub soil moisture ratings improved 3 percentage points to 64% good or excellent.

Hay and pastures have improved significantly with the precipitation of the past 2 weeks but need warmer weather.

Table 1: Alberta Seeding Progress as of May 31, 2016

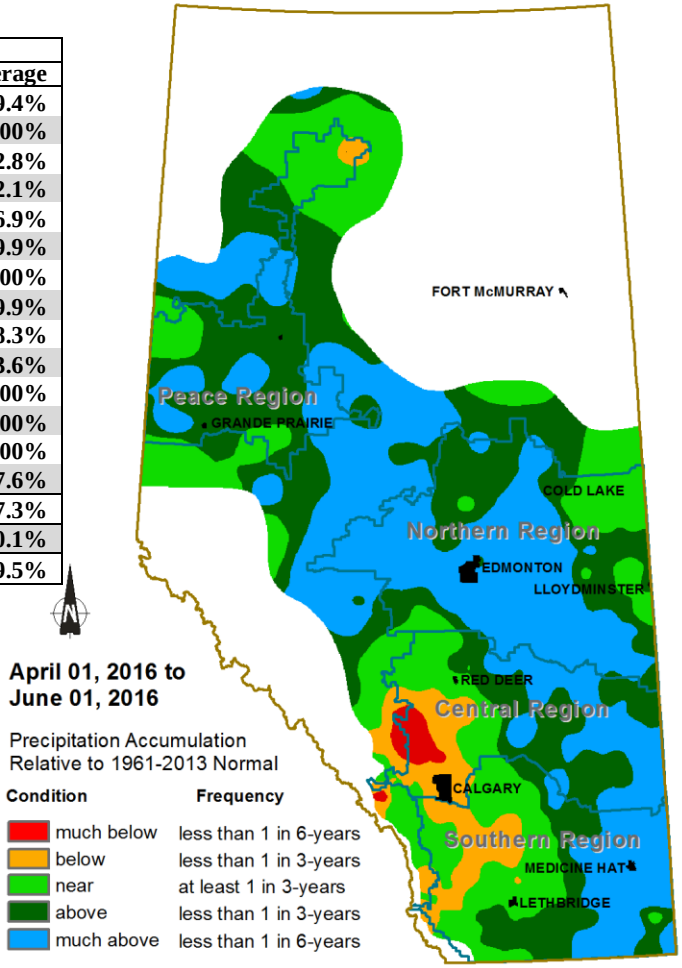
	% Seeded					
	South	Central	N East	N West	Peace	Average
Spr. Wheat	100%	99.7%	98.9%	100%	98.4%	**99.4%**
Dur. Wheat	100%	100%	---	---	---	**100%**
Barley	99.2%	93.1%	82.0%	91.0%	96.8%	**92.8%**
Oats	99.9%	92.3%	82.7%	96.8%	97.4%	**92.1%**
Canola	100%	99.4%	92.6%	96.9%	98.1%	**96.9%**
Dry Peas	100%	100%	100%	100%	99.2%	**99.9%**
Mustard	100%	100%	---	---	---	**100%**
Flax	100%	99.4%	100%	---	---	**99.9%**
Potatoes	100%	100%	100%	80.0%	---	**98.3%**
Dry Beans	93.6%	---	---	---	---	**93.6%**
Chickpeas	100%	100%	---	---	---	**100%**
Lentils	100%	100%	---	---	---	**100%**
Corn	100%	100%	---	---	---	**100%**
Mixed Grain	100%	92.7%	35.0%	40.0%	---	**77.6%**
Alberta	**99.8%**	**97.9%**	**93.7%**	**96.8%**	**98.2%**	**97.3%**
Last Week	95.0%	91.8%	84.8%	84.8%	92.8%	**90.1%**
Last Year	99.8%	99.4%	99.4%	99.3%	99.4%	**99.5%**

Source: AF/AFSC Crop Reporting Survey

Table 2: Surface Soil Moisture Ratings as of May 31, 2016

	Poor	Fair	Good	Excellent	Excessive
South	4.3%	22.1%	58.9%	14.6%	0%
Central	2.8%	10.9%	35.7%	43.3%	7.3%
N East	0%	10.8%	23.8%	48.1%	17.3%
N West	0%	6.4%	22.1%	68.6%	2.9%
Peace	0%	21.2%	45.4%	30.4%	3.1%
Alberta	**1.9%**	**15.0%**	**39.2%**	**37.3%**	**6.7%**
Last Week	2.2%	22.0%	38.0%	34.5%	3.3%
Last Year	29.8%	42.7%	25.4%	2.1%	0%

Source: AF/AFSC Crop Reporting Survey



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REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Precipitation was slightly above average for the month. An area along the west portion of the region remains in a moderate soil moisture deficit.
- Seeding 99.8% completed, 99.8% last year, the 5 yr. average of 96.5% and the long term average of 96.6%.
- 91% of crops have emerged with spring wheat at 95%, durum 96%, barley 93%, canola 85%.
- Surface moisture declined to 74% rated good or excellent. Sub soil moisture at 65% good or excellent.
- Forage grasses starting to head. 1st cut dryland hay crop expected to be negatively affected by the early dryness.

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Dry start to the month of May allowed producers to make good seeding progress. Precipitation arrived in the second half of the month. April/May accumulations are 140 – 200% of normal. Moderate to severe soil moisture deficit remains in the west, north of Calgary as April/May precipitation has been only 85% of normal.
- Seeding 97.9% completed, 99.4% last year, the 5 yr. average of 95.6% and long term average of 95.9%
- 79% of crops have emerged with spring wheat at 85%, durum 89%, barley 69%, canola 78%.
- Surface moisture ratings declined to 79% good or excellent due to significant increase in excessive moisture. Sub soil moisture benefited from the precipitation and rose to 76% rated good or excellent.
- Hay and pastures benefited from the improved moisture and rose 10 points to 76% good or excellent.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Some areas in the region are very wet with precipitation amounts of 30 – 50 mm this week following the good moisture received the week previously. April precipitation was 80% of normal. Precipitation over past 2 weeks has precipitation amounts at 150 – 200% of the April/May accumulated normal.
- Seeding 93.7% completed, 99.4% last year, the 5 yr. average of 95.4% and the long term average of 93.6%.
- 66% of crops have emerged with spring wheat at 76%, barley 49%, canola 59%, field peas 97%.
- Surface moisture ratings showed major improvement despite 17% of region rated excessive. Surface moisture is rated good or excellent by 72% of the region, sub soil at 63% rated good or excellent.
- Hay/pasture outlook improved with the precipitation of past 2 weeks to 55% rated good or excellent.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Additional precipitation this week in amounts of 15 – 25 mm, following on the good rains of the previous week. After virtually no precipitation in April, the April/May accumulations are 150% of normal.
- Seeding 96.8% completed, 99.4% last year, the 5 yr average of 96.3% and the long term average of 95.0%.
- 64% of crops have emerged with spring wheat at 88%, barley 56%, canola 49%, field peas 100%.
- Surface moisture has improved significantly with the precipitation of the past 2 weeks to 91% rated good or excellent. Sub soil moisture improved to 58% good or excellent.
- 24% of hay and pastures are rated good or excellent. Should show further improvement with some heat.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- 15 – 30 mm of precipitation reported across the region. Following minimal precipitation in April, precipitation arrived in 2nd half of May. April/May accumulations now stand at 180% of normal.
- Seeding 98.2% completed, 99.4% last year, the 5 yr average of 97.2% and the long term average of 96.6%.
- 81% of crops have emerged with spring wheat at 86%, barley 75%, canola 77%, field peas 90%.
- Surface moisture improved to 76% rated good or excellent. Sub soil moisture at 49% good or excellent.
- 45% of hay and pastures rated good or excellent, improving from 37% last week.

Agriculture Financial Services Corporation
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June 3, 2016

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The 2016 Alberta crop reporting series is available on the Internet at: *http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sdd4191*

Alberta Crop Report

Crop Conditions as of June 7, 2016 (Abbreviated Report)

Crops and forages throughout the province benefitted from the warmer weather of the past week as temperatures rose into the mid to high 20's and even the low 30's in southern Alberta. The warm temperatures enhanced crop emergence to 91% germinated (see Table #1) and allowed emerged crops and forages to take advantage of the good moisture conditions of the past several weeks to advance crop development. Seeding is 99.4% complete compared to the 5 year average of 98.4% with only a small amount of acres remaining to finish due to excessive moisture or reseeds.

Surface moisture ratings improved in all regions with the exception of the South. Provincially, surface moisture was rated at 81% good or excellent compared to 77% last week with the ratings improvement due principally to the reduction in excessive soil moisture (see Table #2). A year ago, only 20% of the province was rated good or excellent. Sub soil moisture ratings improved in all regions to 67% rated good or excellent compared to 64% last week. The area of moderate to severe precipitation deficit along the west portion of the South and Central regions (see map) expanded this week and is starting to extend into the central portions of both regions.

Pasture and hay crops showed significant improvement with the warmer temperatures. Ratings improved in all regions to 67% good or excellent from 54% last week. Last year, only 20% of pastures and hay in the province were rated as good or excellent. Haying has started in a few areas of southern Alberta and should become more general over the next week or so. Forage crops across the province are showing damage from the delayed start to growth and there is some anticipation that producers may opt to harvest their 1st cut early in hope of getting a better 2nd cut.

Table 1: Alberta Emergence Progress as of June 7, 2016

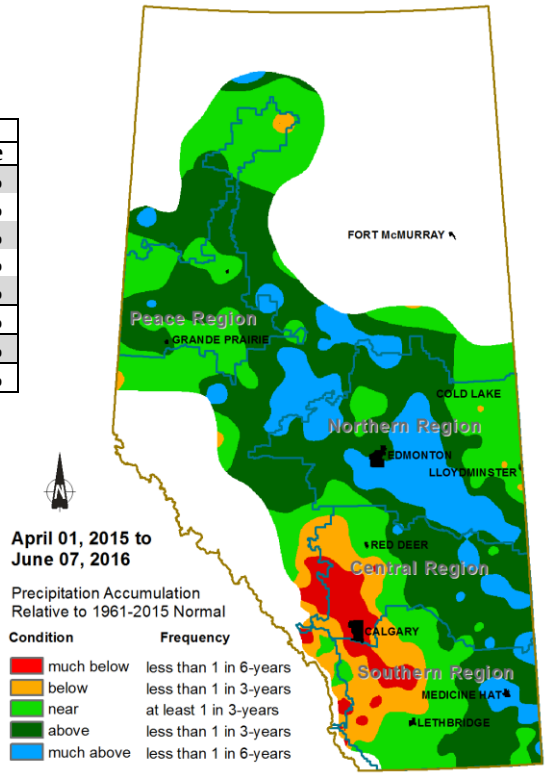
	% Emergence					
	South	Central	N East	N West	Peace	Average
Spr. Wheat	99.5%	96.7%	95.7%	100%	93.9%	**97.1%**
Barley	98.3%	88.1%	71.8%	71.9%	89.2%	**86.4%**
Oats	96.9%	81.0%	72.7%	70.6%	86.4%	**78.0%**
Canola	98.3%	94.4%	79.8%	66.5%	89.2%	**86.1%**
Dry Peas	99.7%	98.5%	100%	100%	96.9%	**99.1%**
Average	**98.9%**	**93.6%**	**85.5%**	**79.1%**	**91.2%**	**90.8%**
Last Week	91.2%	78.6%	65.5%	63.6%	80.8%	**77.5%**
Last Year	93.6%	92.7%	95.6%	97.9%	96.2%	**94.7%**

Source: AF/AFSC Crop Reporting Survey

Table 2: Surface Soil Moisture Ratings as of June 7, 2016

	Poor	Fair	Good	Excellent	Excessive
South	4.6%	26.8%	60.6%	8.0%	0%
Central	2.5%	15.9%	46.8%	32.8%	2.1%
N East	0%	3.1%	36.9%	53.1%	6.9%
N West	0%	0%	27.1%	68.4%	4.4%
Peace	0%	16.5%	46.9%	33.5%	3.1%
Average	**1.9%**	**14.2%**	**46.2%**	**34.6%**	**3.1%**
Last Week	1.9%	15.0%	39.2%	37.3%	6.7%
Last Year	43.4%	36.5%	18.5%	1.5%	0.1%

Source: AF/AFSC Crop Reporting Survey



Our thanks to Alberta Agricultural Fieldmen, staff of AFSC and the Alberta Ag-Info Centre for their partnership and contribution to the Alberta Crop Reporting Program.

The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Branch, Engineering and Climate Services Section..

REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Warm weather throughout the region has crops growing rapidly. Seeding is completed and virtually all crops have emerged. The most common growth stage for cereals is completed tillering.
- Surface soil moisture ratings declined to 69% good or excellent (73% last week); sub soil ratings showed a small improvement to 67% good or excellent (65% last week)
- Pasture and hay ratings improved marginally to 56% good or excellent from 54% last week.

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Warm temperatures with some light, spotty showers reported. Crops and forages showing significant improvement with the warmer weather. Seeding is virtually completed at 99.7%.
- 94% of crops have emerged with most common stage for cereals being early tillering.
- Surface soil moisture ratings improved slightly to 80% good or excellent (79% last week). Sub soil ratings were unchanged at 76% good or excellent.
- Pasture and hay ratings rose to 78% good or excellent from 76% last week.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Warm temperatures with some spotty light precipitation reported. Seeding nearing completion at 99% in the ground and 86% of the crops emerged. Most common stage of crop development has cereals entering the tillering stage.
- Surface soil moisture ratings improved substantially to 90% good or excellent (72% last week) largely due to the significant reduction in excessive moisture from last week's ratings. Sub soil moisture improved to 66% good or excellent (63% last week).
- Pasture and hay ratings improved greatly to 85% good or excellent (55% last week) with to the heat.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Seeding is 99.2% completed with 79% of crops emerged. The most common crop stage is 6-8 leaf stage.
- Soil moisture ratings showed small improvements with surface moisture at 95% good or excellent (91% last week) and sub soil moisture at 61% good or excellent (58% last week).
- Pasture and hay ratings showed substantial improvement to 56% good or excellent (24% last week).

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- Warm temperatures and spotty light precipitation throughout the region.
- Seeding is wrapping up with 99.4% completed. 91% of crops have emerged. The most common stage for cereals is early tillering.
- Surface soil moisture ratings showed a small improvement to 80% rated good or excellent (77% last week). Sub soil ratings rose 6 points to 55% good or excellent (49% last week).
- Pasture and hay ratings improved with the warm weather to 49% good or excellent (45% last week).

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Alberta Crop Report

Crop Conditions as June 14, 2016

During the past week, rain has continued to fall -- mostly in the form of wide spread thunderstorm activities. Almost all agricultural lands received up to 20 mm of rain, with large areas in North East, North West and Peace Regions receiving upwards of 50 mm (See Map). The generally warm wet weather across the province has contributed to crop advancement. While fall seeded crops across the province are in the head emergence or flowering stages, other cereals are largely in the stem elongation stage. Most canola and pulses are in the 4-6 leaf/node stage of development.

Provincially, crop growing conditions are 80 per cent good to excellent, up eight per cent from the 5-year average (2011-2015). About 83 per cent of spring wheat, 81 per cent of barley, 88 per cent of oats, 75 per cent of canola, 82 per cent of dry peas, 91 per cent of potatoes and 95 per cent of sugar beets are in good to excellent condition (See Table 1).

Recent rainfall maintained the surface soil moisture, with no change from the previous week, and also improved sub surface soil moisture conditions. Provincially, surface moisture was rated at 81 per cent good or excellent compared to 28 per cent a year ago (See Table 2). Sub-surface soil moisture conditions across the province have improved and are rated as 69 per cent good or excellent compared to 31 per cent last year and the 5-year average of 71 per cent.

Pasture and hay fields generally look good and haying has started in the province. The condition of both pasture and tame hay improved three per cent across the province to about 30 per cent poor to fair and 70 per cent good to excellent.

Table 1: Regional Crop Condition Ratings as of June 14, 2016

	Per cent rated in Good to Excellent Condition					
	South	Central	N East	N West	Peace	Alberta
Spr. Wheat	70.6%	81.7%	95.4%	92.9%	78.8%	**83.3%**
Dur. Wheat	80.1%	79.0%	-	-	-	**79.9%**
Barley	70.1%	83.1%	91.9%	91.1%	69.2%	**80.9%**
Oats	85.1%	85.3%	92.3%	91.1%	79.2%	**87.6%**
Win. Wheat	70.4%	85.0%	90.0%	-	-	**72.5%**
Fall Rye	89.3%	85.9%	90.0%	-	-	**88.4%**
Spr.Triticale	84.0%	79.3%	-	-	-	**81.6%**
Mixed Grain	84.0%	83.5%	90.0%	-	-	**84.7%**
Canola	76.4%	75.2%	87.3%	57.1%	63.5%	**74.5%**
Dry Peas	75.0%	88.1%	96.2%	99.6%	73.8%	**82.0%**
Lentils	85.0%	94.8%	-	-	-	**86.4%**
Chickpeas	90.0%	89.0%	-	-	-	**90.0%**
Mustard	76.5%	91.8%	-	-	-	**81.2%**
Flax	84.6%	89.7%	90.0%	-	-	**86.0%**
Potatoes	91.2%	78.3%	100.0%	100.0%	-	**91.3%**
Sugar Beets	95.0%	-	-	-	-	**95.0%**
Dry Beans	92.0%	-	-	-	-	**92.0%**
All Crops	**74.3%**	**80.4%**	**91.4%**	**76.4%**	**70.0%**	**79.6%**
Last year	**60.6%**	**25.3%**	**41.8%**	**16.1%**	**43.0%**	**41.0%**
5-year average	**79.4%**	**70.2%**	**67.7%**	**64.3%**	**72.3%**	**71.7%**

Source: AF/AFSC Crop Reporting Survey

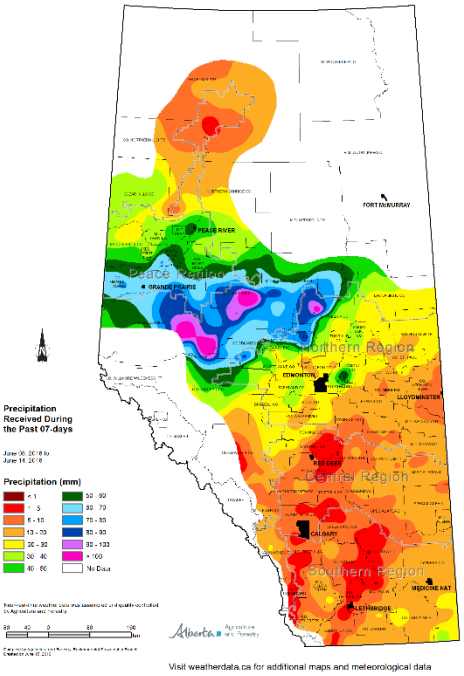

Table 2: Surface Soil Moisture Ratings as of June 14, 2016

	Poor	Fair	Good	Excellent	Excessive
South	5.7%	31.4%	55.0%	7.9%	0.0%
Central	2.5%	17.8%	50.2%	28.8%	0.7%
N East	0.0%	0.0%	19.6%	77.0%	3.4%
N West	0.0%	0.0%	11.5%	85.6%	2.9%
Peace	0.0%	10.0%	40.4%	43.5%	6.2%
Average	**2.2%**	**14.3%**	**38.6%**	**42.8%**	**2.1%**
Last Year	**30.0%**	**41.8%**	**25.7%**	**2.5%**	**0.0%**
5-year average	**8.4%**	**17.1%**	**39.8%**	**29.6%**	**5.1%**

Source: AF/AFSC Crop Reporting Survey

Our thanks to Alberta Agricultural Fieldmen, staff of AFSC and the Alberta Ag-Info Centre for their partnership and contribution to the Alberta Crop Reporting Program.
The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Branch, Engineering and Climate Services Section.

REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Most cereals are in the elongation stage with fall seeded crops in head emergence stage. About 68 per cent of canola crops have 4-6 leaf/node now. Gophers are becoming a problem in some fields. Spraying is completed at 74 per cent of farms.
- Regionally, about 74 per cent of crops are in good to excellent condition.
- Both surface and sub-surface soil moisture declined and are rated at about 62 per cent good or excellent.
- Pasture conditions are reported as 46 per cent poor to fair, 54 per cent good to excellent with similar ratings reported for tame hay. Haying operations are underway, with 27 per cent of irrigated and 20 per cent of dryland completed.

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Spring seeded crops are either in tillering or elongation stages of development; fall seeded crops are mostly in head emergence or flowering stages and most canola and pulses are in 4-6 leaf/node stage. About 60 per cent of spraying is completed. Gophers in this Region are becoming a problem.
- Regionally, almost 80 per cent of crops are in good to excellent condition.
- Surface and sub-surface soil moisture condition are rated at 79 and 76 per cent good to excellent, respectively.
- Pasture conditions are now reported as 26 per cent poor to fair and 74 per cent good to excellent with similar ratings reported for tame hay. Haying operations have started in a few fields.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Most spring seeded cereals are tillering, with canola in the 1-3 leaf/node and dry peas in the 4-6 leaf/node stage. Spraying operations have been slowed due to rain and storms with windy days and only 58 per cent is complete. Some canola reseeds are reported mainly due to cut worms or gophers.
- Regionally, about 91 per cent of all crops are in good to excellent condition.
- Surface and sub-surface soil moisture are reported as 97 and 68 per cent good to excellent, respectively.
- Pasture conditions improved and are reported as seven per cent fair and 93 per cent good to excellent, with similar ratings reported for tame hay.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Cooler wet conditions of the past week has slowed crop development (cereals are mostly in tillering stage) and spraying is 54 per cent completed. Some reseeding was reported due to cut worms.
- More than 90 per cent of crops are in good to excellent condition, while only 57 per cent of canola is in good to excellent condition.
- Surface and sub-surface soil moisture are rated as 97 and 69 per cent good to excellent, respectively.
- Pasture conditions are reported as 38 per cent fair, 62 per cent good to excellent with similar ratings reported for tame hay.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- Low lying fields are suffering from excess surface moisture. Most cereals are tillering. Spraying has been delayed by wet conditions with about 76 per cent complete.
- Regionally, 70 per cent of crops are in good to excellent conditions. Canola is suffering from seedling diseases and insect damage in a number of municipalities with only 64 per cent rated as good to excellent.
- Surface soil moisture are reported as 84 per cent good to excellent with six per cent excessive. Sub-surface soil moisture jumped 17 per cent from a week ago to 72 per cent good to excellent.
- Pasture conditions improved dramatically by 19 per cent and are rated as 32 per cent poor to fair and 68 per cent good to excellent, with similar rates for tame hay.

Alberta Agriculture and Forestry
Economics and Competitiveness Branch
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June 17, 2016

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The 2016 Alberta crop reporting series is available on the Internet at: *http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sdd4191*

Alberta Crop Report

Crop Conditions as June 21, 2016 (Abbreviated Report)

Over the past week, widespread thunderstorm activity has provided adequate moisture to most of the province, although some western parts of South and Central Regions have received less than 60 mm of moisture since the start of growing season (See map). While these areas have received enough moisture to sustain growth in recent days, they are still in need of more moisture.

Provincially, crop growing conditions across the province improved by two per cent and are now 82 per cent good to excellent, compared with the 5-year average (2011-2015) of 73 per cent (See Table 1). About 83 per cent of spring wheat, 79 per cent of barley, 90 per cent of oats, 82 per cent of canola and 81 per cent of dry peas are in good to excellent condition. In terms of crop development, most cereals across the province are in the stem elongation stage.

Soil moisture reserves are variable across the province. While both surface and sub-surface soil moisture declined in the South and Central Regions, last week rainfall improved surface and sub-surface soil moisture in the North East, North West and Peace Regions. Provincially, surface moisture was rated at 77 per cent good to excellent compared to 29 per cent a year ago and the 5-year average of 70 per cent (See Table 2). Sub-surface soil moisture conditions across the province have declined by two per cent and are rated as 67 per cent good to excellent compared to 28 per cent last year and the 5-year average of 70 per cent.

Haying has started in the province. Some producers in the Central Region are considering using hay fields for pasture. Provincially, pasture conditions are rated as five per cent poor, 23 per cent fair, 54 per cent good and 18 per cent excellent. Tame hay conditions have similar ratings and are reported as seven per cent poor, 23 per cent fair, 52 per cent good and 18 per cent excellent.

Table 1: Regional Crop Condition Ratings as of June 21, 2016

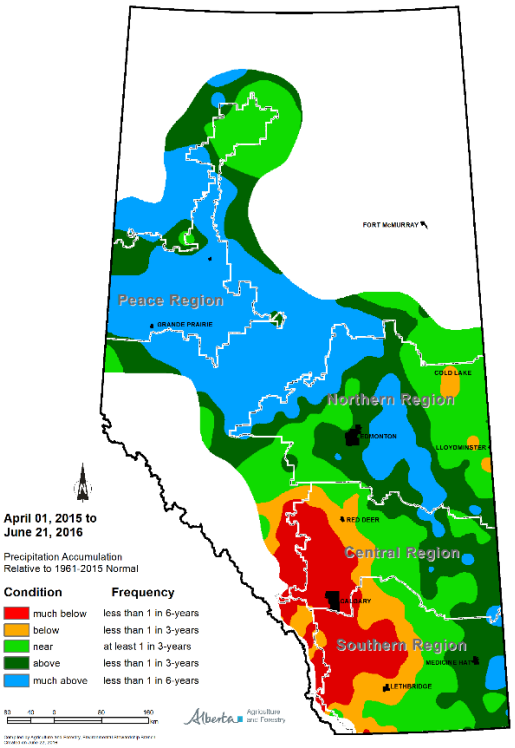
	Per cent rated in Good to Excellent Condition					
	South	**Central**	**N East**	**N West**	**Peace**	**Alberta**
Spr. Wheat	69.2%	75.0%	95.4%	97.9%	86.2%	82.8%
Barley	69.8%	73.4%	92.3%	97.3%	77.3%	78.7%
Oats	82.5%	80.5%	92.7%	97.4%	87.3%	89.6%
Canola	74.6%	75.1%	88.1%	92.1%	76.9%	81.5%
Dry Peas	75.2%	75.8%	96.9%	99.6%	82.1%	81.2%
All Crops	**71.5%**	**74.7%**	**91.9%**	**95.2%**	**80.6%**	**81.6%**
Last year	**50.4%**	**29.1%**	**43.6%**	**13.7%**	**39.3%**	**38.2%**
5-year average[a]	**80.0%**	**68.8%**	**73.4%**	**67.1%**	**69.1%**	**72.6%**

a) 5-year average refers to 2011-2015
Source: AF/AFSC Crop Reporting Survey

Table 2: Surface Soil Moisture Ratings as of June 21, 2016

	Poor	Fair	Good	Excellent	Excessive
South	11.2%	33.9%	48.9%	5.9%	0.0%
Central	7.2%	29.1%	45.5%	17.8%	0.4%
N East	0.0%	0.0%	50.4%	47.6%	2.0%
N West	0.0%	0.0%	30.0%	69.0%	1.0%
Peace	0.0%	4.2%	30.8%	57.3%	7.7%
Average	**4.8%**	**16.8%**	**44.1%**	**32.5%**	**1.7%**
Last Year	**29.5%**	**41.1%**	**26.5%**	**2.7%**	**0.2%**
5-year average[a]	**8.0%**	**16.5%**	**38.9%**	**31.2%**	**5.3%**

a) 5-year average refers to 2011-2015
Source: AF/AFSC Crop Reporting Survey



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The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Branch, Engineering and Climate Services Section.

REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Most cereals are in the booting stage of development. Spraying is almost complete and gophers are still a problem in a few fields.
- Crop growing conditions are good. Regionally, about 70 per cent of spring wheat and barley, 83 per cent of oats, 75 per cent of canola and dry peas are in good to excellent condition.
- Surface and sub-surface soil moisture have declined by eight and seven per cent, respectively from a week ago and are now rated at 55 and 54 per cent good to excellent.
- Pasture conditions have declined by three per cent from last week, with 51 per cent reported as good to excellent. Similar ratings are reported for tame hay, with some producers looking at grazing same.

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Most of cereals are in the elongation stage. Spraying is still going on, having been delayed by windy conditions this past week. Dry conditions are again prevalent and more moisture is needed in some areas.
- Regionally, about 75 per cent of spring wheat, canola and dry peas, 73 per cent of barley and 81 per cent of oats are in good to excellent condition, which is higher than the 5-year average of 69 per cent.
- Surface and sub-surface soil moisture declined by 16 and seven per cent, respectively from last week and are now rated at 63 and 69 per cent good to excellent.
- Producers have started haying with about average yields expected. Pasture conditions are now reported as 37 per cent poor to fair and 63 per cent good to excellent with similar ratings are reported for tame hay.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Most spring wheat are in the elongation stage, while barley and oats are tillering. Windy conditions have slowed spraying operations. More reseeding is reported due to cut worms, gophers and hard crusting.
- Regionally, about 95 per cent of wheat, 92 per cent of barley and oats, and 97 per cent of dry peas are in good to excellent condition, while canola is at 88 per cent.
- Surface and sub-surface soil moisture conditions have improved by one per cent from a week ago and are now rated as 98 and 69 per cent good to excellent, respectively.
- Haying operations are about to start. Pasture conditions improved by two per cent and are reported as five per cent fair and 95 per cent good to excellent, with similar ratings reported for tame hay.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- While most spring wheat has just started elongation stage, barley and oats are mostly passing the tillering stage. Good progress has been made with spraying last week. Some reseeding was done due to cut worms.
- More than 92 per cent of canola are in good to excellent condition, compared to 57 per cent from a week ago. Also, about 97 per cent of spring wheat, barley, oats and dry peas are in good to excellent condition.
- Surface and sub-surface soil moisture are rated as 99 and 70 per cent good to excellent, respectively.
- Pasture conditions improved dramatically and are now rated as 18 per cent fair and 82 per cent good to excellent. Tame hay conditions are reported as 27 per cent poor to fair and 73 per cent good to excellent, while the haying operation has just began.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- More rainfall in the past week has caused some standing water in the fields, with some yellowing due to excess moisture. Spring wheat is mostly in elongation stage, while barley and oats are tillering.
- Regionally, about 87 per cent of wheat and oats, 77 per cent of barley and canola and 82 per cent of dry peas are in good to excellent condition.
- Surface soil moisture is reported as 88 per cent good to excellent, with eight per cent excessive.
- Pasture conditions have improved again and are rated as 21 per cent poor to fair and 79 per cent good to excellent, with similar ratings for tame hay.

Alberta Agriculture and Forestry
Economics and Competitiveness Branch
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June 24, 2016

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Alberta Crop Report

Crop Conditions as of June 28, 2016

The month of June saw highly variable amounts of precipitation fall in the province from near excessive amounts of 150-250% of normal in the Peace region, to above average quantities of 100-200% in the North West, to below average of 50-100% in the North East, and dry conditions to the Central and South regions at 35-50% of normal. Regional crop condition ratings reflect these moisture differences. Crop ratings declined this week in the South and Central regions due to the continuing dry conditions, were unchanged in the North East, and are reflecting the effects of the wet soil conditions on growth in the North West and Peace regions **(See Table 1)**. Currently, crops provincially are rated 79% in good or excellent condition, down 2 points on the week, compared to last year at 30%, the 5 year average of 73% and the long term average of 70%. The past week brought spotty showers and some hail to most areas. Surface soil moisture ratings declined 1 percentage point to 75% good or excellent, and subsoil moisture ratings declined 2 points to 64% good or excellent.

Haying is underway in virtually all areas of the province with 20% of the 1st cut dryland crop and 35% of the 1st cut irrigated alfalfa crop baled. Hay yields are below average due to the slow start to growth this spring caused by the cool, dry weather. Early quality has been very good with over 80% rated good or excellent. 67% of hay land and 70% of pastures are currently rated in good or excellent condition.

Table 1: Regional Crop Conditions Ratings as of June 28, 2016

	% Rated in Good or Excellent Condition					
	South	Central	N East	N West	Peace	Average
Spr. Wheat	62.6%	72.8%	94.2%	96.1%	85.4%	**80.0%**
Dur. Wheat	72.9%	74.4%	---	---	---	**73.1%**
Barley	63.8%	74.2%	91.5%	94.8%	77.3%	**76.7%**
Oats	75.9%	82.1%	93.1%	95.6%	87.3%	**89.2%**
W. Wheat	62.3%	70.6%	90.0%	---	---	**63.9%**
Canola	69.3%	71.2%	90.4%	85.0%	77.3%	**79.6%**
Dry Peas	69.6%	79.0%	96.2%	99.6%	81.5%	**79.2%**
Mustard	69.3%	63.8%	---	---	---	**67.6%**
Flax	80.3%	80.7%	95.0%	---	---	**82.4%**
Potatoes	90.6%	73.3%	100%	100%	---	**90.5%**
Dry Beans	92.6%	---	---	---	---	**92.6%**
Lentils	79.0%	90.4%	95.0%	---	---	**80.6%**
Alberta	**67.4%**	**73.1%**	**92.3%**	**90.9%**	**80.5%**	**79.1%**
Last Week	71.5%	74.7%	91.9%	95.2%	80.6%	**81.6%**
Last Year	43.5%	20.3%	29.7%	12.4%	34.6%	**30.4%**

Source: AF/AFSC Crop Reporting Survey

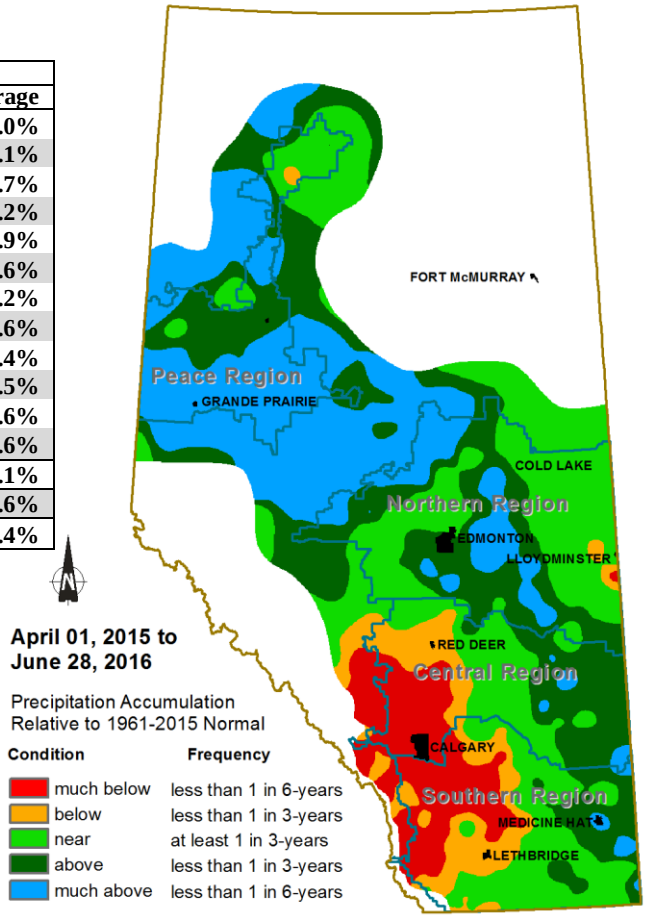

Table 2: Surface Soil Moisture Ratings as of June 28, 2016

	Poor	Fair	Good	Excellent	Excessive
South	14.3%	35.3%	44.1%	6.3%	0%
Central	8.1%	30.0%	40.1%	21.1%	0.7%
N East	0%	0%	54.2%	43.5%	2.3%
N West	0%	0%	45.9%	53.2%	0.9%
Peace	0%	2.7%	31.5%	59.6%	6.2%
Alberta	**5.9%**	**17.2%**	**44.3%**	**31.0%**	**1.6%**
Last Week	4.8%	16.8%	44.1%	32.5%	1.7%
Last Year	42.7%	35.9%	19.7%	1.7%	0.0%

Source: AF/AFSC Crop Reporting Survey

Our thanks to Alberta Agricultural Fieldmen, staff of AFSC and the Alberta Ag-Info Centre for their partnership and contribution to the Alberta Crop Reporting Program.

The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Branch, Engineering and Climate Services Section.

REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Crop development – Spr. cereals in early head emergence; Winter cereals have completed pollination; Canola at 45% rosette/48% flowering; Field peas are 56% flowering/5% podding.
- Regional crop condition rating down 4 points to 67% good or excellent; 5 year avg – 79%; long term avg – 77%. Individual crop ratings declined 5-7 points on all major crops.
- Surface moisture declined 5 points to 50% rated good/exc. Subsoil moisture at 51% good/exc. (down 4 points).
- 1st cut dryland hay is 50% completed; 1st cut irrigated hay is 63% complete..

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Crop Development – Spr. cereals entering boot stage; Winter cereals are pollinating; Canola at 55% rosette/ 22% flowering; Field peas 44% flowering.
- Regional crop condition rating declined 2 points to 73% good or excellent; 5 year avg – 73%; long term avg – 71%. Ratings declined for spring wheat (-2), canola (-4). Ratings improved for barley (+1), oats (+2), peas (+3).
- Surface moisture declined 2 points to 61% rated good/exc. Subsoil moisture at 63% good/exc. (down 5 points).
- 1st cut dryland haying is 17% completed.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Crop Development – Spr. cereals in late stem elongation to early boot stage; Winter cereals are in early to mid milk stage; Canola at 57% rosette/10% flowering; Field peas are 25% flowering.
- Regional crop condition rating is unchanged at 92% good or excellent; 5 year avg – 68%; long term avg – 67%. Crop ratings declined for spring wheat, barley & field peas (-1). Ratings for canola improved (+2).
- Surface moisture unchanged at 98% good or exc. Subsoil moisture at 67% good/exc. (down 2 points).
- 1st cut dryland haying is 3% completed.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Crop Development – Spr. cereals entering boot stage; Canola at 77% rosette/2% flowering; Field peas are 13% flowering.
- Regional crop condition rating declined 4 points to 91% good or excellent; 5 year avg – 67%; long term avg – 66%. Crop ratings declined for spring wheat, barley & oats (-2), canola (-7).
- Surface moisture unchanged at 99% good or exc. Subsoil moisture at 69% good/exc. (down 1 point).
- 1st cut dryland haying is 2% completed.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- Crop Development – Spr. cereals in early boot stage; Canola at 52% rosette/32% flowering; Field peas are 25% flowering.
- Regional crop condition rating is virtually unchanged at 81% good or excellent; 5 year avg – 71%; long term avg – 64%. Ratings declined for spring wheat, and field peas (-1), but improved for canola (+1). Barley and oat ratings were unchanged,
- Surface moisture improved 3 points to 91% good or exc. An additional 6% of the region is rated as excessive. Subsoil moisture rated at 88% good/exc.(improvement of 4 points)
- 1st cut dryland haying is 6% completed.

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June 30, 2016

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The 2016 Alberta crop reporting series is available on the Internet at: *http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sdd4191*

Alberta Crop Report

Crop Conditions as of July 5, 2016 (Abbreviated Report)

Crop condition ratings improved in all regions of the province with the greatest improvement occurring in the South and Central regions. Precipitation in the form of frequent showers prevailed throughout the province and was much welcomed in the dry western areas though the precipitation was an unwanted impediment to those spraying fungicides or baling hay. Crop condition ratings rose 2 percentage points on the week to 81% of the province rated good or excellent compared to the 5 year average of 71%. Last year, only 27% of the province was rated good or excellent at this time. Spring wheat, barley and canola ratings improved 2 points on the week with oats and field pea ratings up 1 percentage point.

Crop development finds much of the canola and field peas in flower with a small amount of podding occurring in the earlier areas. Cereals are entering their reproductive growth stage with much of the crop in the flag leaf to early head emergence stages. Pollination should be in full swing in the next 7 – 10 days, very much on average.

Surface soil moisture ratings improved 6 percentage points to 81% rated good or excellent, though excessive moisture ratings also rose by 1 point to 2.4% of the province due to the continuing wet weather. Subsoil moisture ratings improved to 71% good or excellent, up 6 points on the week. Rating improvements were noted in all regions.

Pasture ratings improved in all regions to 74% good or excellent, up 4 percentage points. Hay crops are less able to appreciate the improve moisture conditions based on their current growth stage, but rose 3 percentage points to 71% good or excellent condition in anticipation of a promising second cut in late August.

Table 1: Regional Crop Condition Ratings as of July 5, 2016

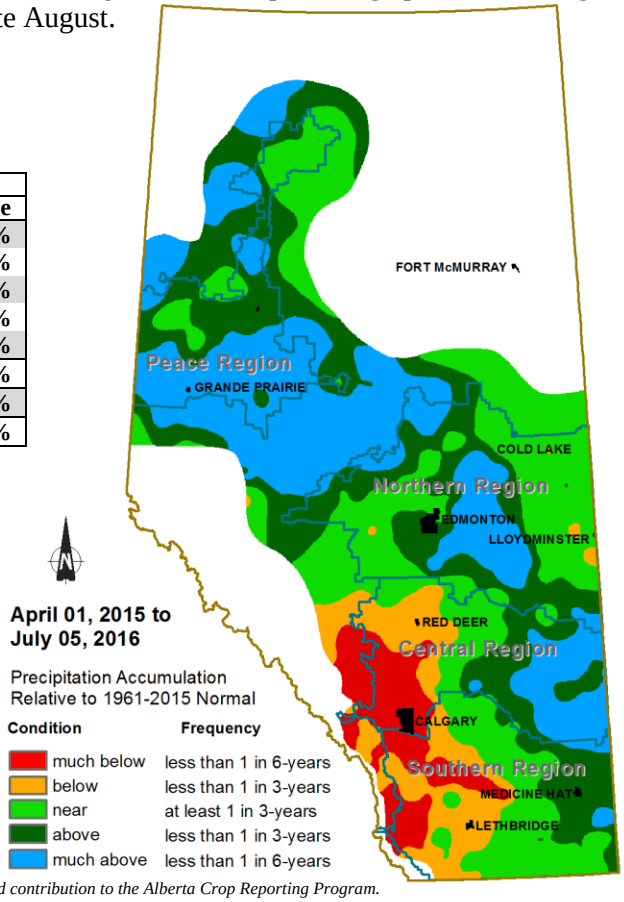
	% Rated in Good or Excellent Condition					
	South	Central	N East	N West	Peace	Average
Spr. Wheat	65.5%	77.8%	93.8%	97.6%	86.9%	**82.1%**
Barley	65.3%	76.3%	92.3%	95.8%	77.7%	**78.2%**
Oats	80.5%	83.9%	93.1%	97.2%	87.7%	**90.4%**
Canola	72.2%	76.5%	91.4%	86.8%	78.1%	**81.8%**
Dry Peas	69.8%	83.9%	94.5%	99.2%	81.2%	**79.8%**
Average	**69.5%**	**77.4%**	**92.6%**	**92.4%**	**81.4%**	**81.09%**
Last Week	67.4%	73.1%	92.3%	90.9%	80.5%	**79.14%**
Last Year	40.4%	13.8%	28.5%	13.5%	30.7%	**27.33%**

Source: AF/AFSC Crop Reporting Survey

Table 2: Surface Soil Moisture Ratings as of July 5, 2016

	Poor	Fair	Good	Excellent	Excessive
South	9.9%	28.5%	54.6%	7.0%	0%
Central	1.6%	20.3%	45.1%	30.8%	2.3%
N East	0%	0%	46.9%	49.2%	3.8%
N West	0%	0%	33.2%	64.6%	2.1%
Peace	0%	2.7%	31.2%	61.2%	5.0%
Average	**3.1%**	**13.1%**	**45.2%**	**36.2%**	**2.4%**
Last Week	5.9%	17.2%	44.3%	31.0%	1.6%
Last Year	41.6%	37.2%	20.1%	1.1%	0%

Source: AF/AFSC Crop Reporting Survey



Our thanks to Alberta Agricultural Fieldmen, staff of AFSC and the Alberta Ag-Info Centre for their partnership and contribution to the Alberta Crop Reporting Program.

The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Branch, Engineering and Climate Services Section..

REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Spotty showers brought welcomed moisture especially to the dry western portion of the region.
- Crop condition ratings improved 2 percentage points to 69% rated good or excellent. Spring wheat and canola ratings rose 3 points, barley was up 2 points with field peas showing little change.
- Surface soil moisture improved 11 points to 62% rated good or excellent while sub soil moisture ratings improved to 58% good or excellent, up 7 percentage points.
- Pasture ratings rose 3 points to 48% good or excellent, hay ratings rose 2 points to 45% good/excellent.

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Persistent late in the day showers covered the entire region this week.
- Crop condition ratings improved by 4 percentage points to 77% of the region rated good or excellent. Ratings improved most notably for spring wheat, canola and field peas, up 5 points. Barley and oat ratings were up 2 points.
- Surface soil moisture ratings jumped 15 percentage points to 76% good or excellent. Sub soil rating also showed a major improvement to 74% good or excellent, up 11 points on the week.
- Pastures are rated 73% good/excellent, up 4 points. Hay ratings are up 6 points to 68% good/excellent.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Frequent showers covered the region increasing the amount of excessive moisture in the region.
- Crop condition ratings which were already very high entering the reporting period showed a minimal improvement to 93% good or excellent. With all crops rated over 90% good/excellent, small declines were reported for spring wheat and field peas with small improvements for barley and canola.
- Surface soil moisture ratings declined slightly due to a 1.5 point increase in the excessive moisture rating. Sub soil ratings rose 1 point to 78% good/excellent. Excessive moisture also rose though marginally.
- Pasture condition ratings improved to 97% good or excellent, up 3 percentage points. Hay ratings rose 2 points to 98% in good or excellent condition.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Daily showers experienced across the region
- Crop conditions are exceptional with most crops rated above 95% good or excellent. The exception is canola at 87%. Canola rating being affected by the high soil moisture conditions. Spring wheat, barley, oats and canola ratings up 1 – 2 points. Field peas unchanged at 99% good/excellent.
- Surface soil moisture declined by 1 percentage point to 98% good or excellent due to a similar increase in the excessive moisture rating. Sub soil ratings rose 4 points to 73% good or excellent.
- Pastures showed significant ratings improvement of 16 percentage points to 79% good or excellent. Tame hay condition ratings were up 9 percentage points to 73% rated good/excellent.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- Sporadic showers and thunderstorms brought amounts of up to 60 mm to some parts of the region.
- Marginal improvement in crop condition ratings. Ratings being affected by pooling of water in low areas. Crop conditions rose 1 percentage point to 81% good or excellent. Spring wheat and canola ratings rose 1 point on the week while ratings on barley, oats and field peas were little changed.
- Surface soil moisture ratings improved 1 point to 92% good or excellent. Excessive moisture declined marginally to 5% of the region. Sub soil moisture ratings rose 2 percentage points to 90% good/excellent.
- Pasture ratings were near unchanged at 81% good or excellent, while tame hay is rated 78% good or excellent, up 1 percentage point on the week.

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July 8, 2016

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The 2016 Alberta crop reporting series is available on the Internet at: *http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sdd4191*

Alberta Crop Report

Crop Conditions as of July 12, 2016

The unsettled weather pattern which has been affecting the province over the past several weeks continued this past week. All regions reported frequent shower activity with amounts totaling 50 – 75 mm in the more northerly regions. Hail incidence has been very high, approaching all-time records. Crop condition ratings were unchanged for the week at 81% rated good or excellent compared to the 5 year average of 73% and the long term average of 69%. Regional crop ratings declined in the South, rose in the North East and North West and were unchanged in the Central and Peace regions.

Excessive soil moisture ratings rose to 4% of the province. Some crop ratings are being negatively affected by the wet conditions. Surface soil moisture is rated 82% good or excellent, up 1 percentage point for the week as ratings rose in the South and Central regions. Ratings declined in the North East, North West and Peace due to the rise in excessive moisture.

Pasture ratings declined 1 percentage point to 73% rated good or excellent. Hay ratings were unchanged at 71% good or excellent. 1st cut haying is being significantly affected by the wet weather. Dryland hay is 39% complete compared to 70% last year. Yields are below average though approximately double those obtained in 2015. 1st cut irrigated hay is 80% completed compared to 95% last year. Yields are slightly below those achieved in 2015.

Table 1: Regional Crop Conditions Ratings as of July 12, 2016

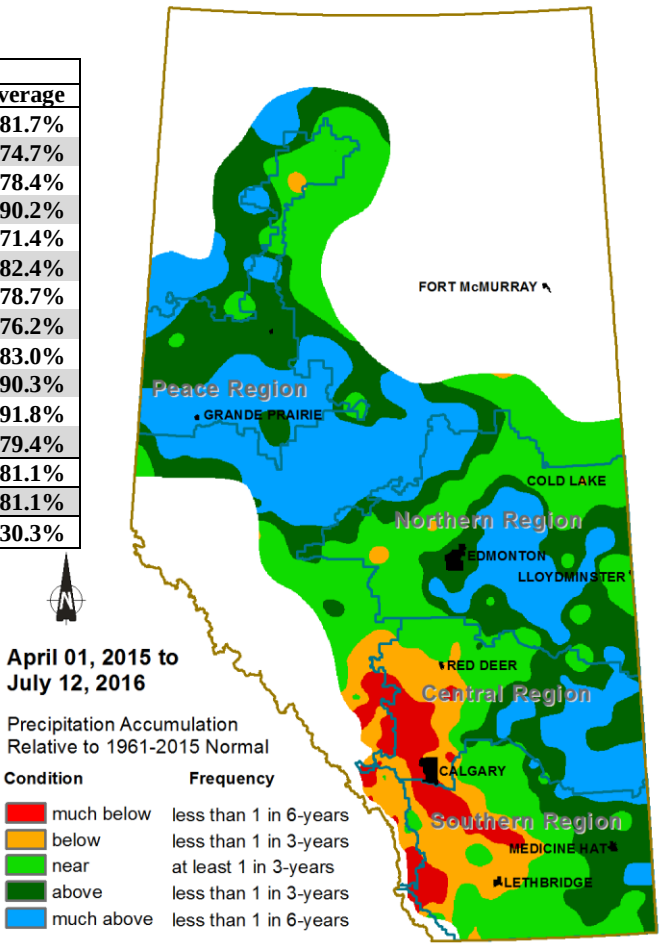
	% Rated in Good or Excellent Condition					
	South	Central	N East	N West	Peace	Average
Spr. Wheat	64.2%	78.0%	94.2%	97.2%	85.8%	**81.7%**
Dur. Wheat	73.3%	83.4%	---	---	---	**74.7%**
Barley	64.0%	77.7%	93.1%	95.4%	78.5%	**78.4%**
Oats	79.9%	83.3%	93.5%	96.9%	87.3%	**90.2%**
W. Wheat	68.9%	85.8%	92.5%	---	---	**71.4%**
Canola	68.9%	74.1%	93.4%	93.9%	78.5%	**82.4%**
Dry Peas	67.8%	80.9%	94.3%	98.8%	83.8%	**78.7%**
Mustard	72.4%	84.8%	---	---	---	**76.2%**
Flax	81.0%	89.1%	87.5%	---	---	**83.0%**
Potatoes	90.2%	76.7%	100%	100%	---	**90.3%**
Dry Beans	91.8%	---	---	---	---	**91.8%**
Lentils	78.0%	88.4%	---	---	---	**79.4%**
Alberta	**67.8%**	**77.1%**	**93.7%**	**95.5%**	**81.5%**	**81.1%**
Last Week	69.5%	77.4%	92.6%	92.4%	81.4%	**81.1%**
Last Year	43.8%	16.8%	36.0%	13.5%	26.0%	**30.3%**

Source: AF/AFSC Crop Reporting Survey

Table 2: Pasture Condition Ratings as of July 12, 2016

	Poor	Fair	Good	Excellent
South	18.3%	34.9%	37.9%	8.9%
Central	7.5%	18.8%	55.4%	18.4%
N East	0%	1.5%	59.2%	39.2%
N West	7.1%	21.1%	43.6%	28.2%
Peace	1.5%	18.1%	55.8%	24.6%
Alberta	**7.8%**	**19.1%**	**50.2%**	**22.8%**
Last Week	6.2%	20.0%	53.0%	20.8%
Last Year	52.1%	34.0%	13.5%	0.4%

Source: AF/AFSC Crop Reporting Survey



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The precipitation map is compiled by Alberta Agriculture and Forestry, Environmental Stewardship Branch, Engineering and Climate Services Section.

REGIONAL ASSESSMENTS:

The 2016 Alberta Crop Report Series continues to provide summaries for the following five regions:

Region One: Southern (Strathmore, Lethbridge, Medicine Hat, Foremost)

- Crop Development: Spring cereals in late pollination; Winter cereals in early dough stage; Canola is 28% podding with 72% flowering; Field peas are 50% podding and 50% still in flower.
- Crop condition ratings declined 2 percentage points from last week to 68% good or excellent, below the 5 year average of 79% and the long term average of 75%. Spring wheat, durum, barley and field pea ratings dropped 1-2 percentage points, canola declined 3 points. Winter wheat ratings rose 5 percentage points.
- Surface soil moisture improved to 64% rated good or excellent. 1% of region rated excessive.
- Dryland hay 82% baled (90% last year). Yields are similar to 2015. 75% rated good/exc for quality.

Region Two: Central (Rimbey, Airdrie, Coronation, Oyen)

- Crop Development: Spring cereals in early pollination; Canola is 11% podding with 80% flowering; Field peas are 32% podding and 65% in flower.
- Crop condition ratings were near unchanged from last week at 77% rated good or excellent, above both the 5 year average of 72% and the long term average of 69%. Barley ratings rose 1 percentage point, durum rose 4 points. Canola and field pea ratings dropped 3 percentage points.
- Surface soil moisture improved to 81% rated good or excellent. 3% of region rated excessive.
- Dryland hay 39% complete (63% in 2015). Yields are double those of 2015. 63% rated good/exc for quality.

Region Three: North East (Smoky Lake, Vermilion, Camrose, Provost)

- Frequent showers across the entire region. Totals for week of 50-75 mm.
- Crop Development: Spring cereals in mid to late head emergence; Canola is 5% podding with 84% flowering; Field peas are 44% podding and 56% in flower.
- Crop condition ratings rose 1 percentage point from last week to 94% rated good or excellent, above both the 5 year average of 73% and the long term average of 70%. Spring wheat and barley ratings rose less than 1 percentage point, canola rose 2 points. Field pea ratings dropped by less than a point.
- Surface soil moisture dropped to 92% rated good or excellent. 8% of region rated excessive.
- Dryland hay 6% complete (58% in 2015). Yields are 3-4 times those of 2015. 67% rated good/exc for quality.

Region Four: North West (Barrhead, Edmonton, Leduc, Drayton Valley, Athabasca)

- Frequent showers across the entire region. Total for week of 50 mm.
- Crop Development: Spring cereals in late heading; Canola is 1% podding with 91% flowering; Field peas are 66% podding and 34% in flower.
- Crop condition ratings improved 3 percentage points from last week to 95% rated good or excellent, above both the 5 year and the long term averages of 67%. Spring wheat, barley and field pea ratings were near unchanged. Canola ratings rose 7 percentage points.
- Surface soil moisture declined to 95% rated good or excellent. 5% of region is rated excessive.
- Dryland hay 29% complete (67% in 2015). Yields are 3 times those of 2015. 32% rated good/exc for quality.

Region Five: Peace River (Fairview, Falher, Grande Prairie, Valleyview)

- Frequent showers totaling 25-50 mm for the week.
- Crop Development: Spring cereals in early pollination; Canola is 7% podding with 86% flowering; Field peas are 19% podding and 77% in flower.
- Crop condition ratings were near unchanged from last week at 81% rated good or excellent, well above both the 5 year average of 64% and the long term average of 53%. Barley and canola ratings rose 1 percentage point, field peas rose 3 points. Spring wheat ratings dropped 1 percentage point.
- Surface soil moisture declined to 90% rated good or excellent. 5% of region rated excessive.
- Dryland hay 16% complete (72% in 2015). Yields are double those of 2015. 66% rated good/exc for quality.

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Forage Facts

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May Long Weekend in the Peace Country!

May 20th, 2016

May 23rd, 2016

Ranching For Gold

By: Nicole Masters, Integrity Soils

"Thar's Gold *in Them Thar Hills*". Black gold that is. Soil carbon and humus is the stuff that underpins the wealth and health of our agricultural enterprises. Over the past few years carbon has become quite the political hot potato. With soil carbon finally on the radar at the 2015 U.N. Climate Change Conference, we will see a global shift in focusing on methods which can address the legacy load of carbon in the atmosphere; this shift starts with ranchers and other land managers.

Join us June 22nd in Rycroft as we welcome Nicole Masters to the Peace Country! Photo: Nicole Masters

Global losses of carbon from past land use is estimated to be between 66 to 200 billion tons; a considerable loss for a resource with such a central role in the longevity of agriculture. Losses can be attributed to soil management practices, erosion, overgrazing biocides, low biology, residue management, compaction and the inefficient use of water and nutrients. The news is not all bad however, if soil carbon can be lost on such a scale, we also have the means to rebuild it.

There are two major soil carbon cycles at work here; the one most studied, and more commonly known, is the *shorter term decomposition cycle*, whereby organic matter becomes microbe food and much of the carbon is lost as carbon dioxide as the microbes respire. The aim of regenerative farming practices is to build more stable carbon forms. Humification is the process of changing the recognizable pieces of organic matter; roots, leaves, manure and dead critters into the fully decomposed dark uniform material known as humus.

The other important way that stable carbon is delivered from the atmosphere into the soil is through the nightly exudates from plant roots. In higher grasses, over half of the sugars gathered by plants during photosynthesis are sent out the roots as liquid carbon; these are chemically similar to nectar and feed the organisms in the root zone. Much of this root nectar is held at deeper undisturbed levels in the soil, 18-23 inches down deposited there through the action of mycorrhizal fungi.

This sequestered carbon directly passes its rewards to ranchers, with benefits including increased nutrient and water storage, improved soil structure and resilience to climactic extremes. Soil carbon is like a giant sponge; with a 1% increase in organic carbon (12" depth) able to increase the ability of soil to store water by 58,000 liters/acre. That's a significant increase, and a significant loss when you consider what historic carbon levels were on many ranches.

Root exudates are the cheapest, most efficient and most beneficial form of

organic carbon for soil life. Excessive applications of soluble salt fertilizers, glyphosate and overgrazing have been shown to shut-down this important soil process. Proper grazing management has been estimated to increase soil C storage on US rangelands from 0.1 to 0.6 Mg C ha(-1)year. Regenerative management practices, which foster the growth of beneficial microbes, reduce hardpans, encourage deeper rooting depths and increase plant photosynthesis, are required to build stable soil carbon. This process really is the money in your bank!

So, how can you tell if your soil is losing or gaining carbon? One way is to take a soil test which gives you a small part of the picture, or take a deep core which will show carbon levels at depth, but this may not be helpful if you don't have data for comparison. There are also labs which can test for glomalin; the carbon by-product produced during this biological process, which gives you a really clear picture if your management practices are building your soil resource or degrading it over time. Another cheaper and quicker method is to dig a few holes and compare the color of your topsoil to a hole dug in an undisturbed area nearby which hasn't received fertilizer, been cut for hay, cultivated or been intensively grazed. If you see a visual difference and your soil is paler, this can indicate management changes are required.

The benefits of soil carbon and humus on soil properties:

Physical: improves soil structure, increases water storage and buffers soil temperatures

Chemical: increase cation exchange, complexes cations, binds toxins, reduces run-off, filters contaminants, sink for GHG gases, improves nutrient uptake, humus stores anions (N, P, S and Zn), reduces the need for nitrogen and phosphorus fertilization, and buffers pH

Biological: energy and food for microbes, reservoir for nutrients and increased resilience of the entire soil ecosystem.

Soil Health: The Bottom Lines

Nicole Masters

June 22, 2016

Rycroft Ag Society Hall and Outdoor Field Site
9:30am Registration
$25/member, $40/non-member

PCBFA PEACE COUNTRY BEEF & FORAGE ASSOCIATION
NPARA NORTH PEACE APPLIED RESEARCH ASSOCIATION

Call Kaitlin for more info or to register! 780-835-6799!

Nicole's 3 pieces of advice for cow-calf producers:

1) Always consider your underground livestock. Soil microbes are vital for resilience, water holding, pasture performance and ultimately cattle performance. Use livestock to transport and/or stimulate soil biology.

2) Do no harm. Buffer, stop, or reduce any practices which negatively impact on microbial life and diversity. Instead use simple tools and practices which actively repair or regenerate soils.

3) Without monitoring there is no management. Pests, weeds and diseases are related to soil health conditions. Learning more about what they are indicating, gives you more power in honing your pasture management decisions.

Thank-You to the PCBFA Board of Directors

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Wildlife—More than a Nuisance

By: Kaitlin McLachlan

Here in the Peace Country, we are no strangers to wildlife. From coyotes and the occasional wolf wandering across the landscape like an old west drifter to scads of elk and deer that make themselves at home in our feed yards. If one was to survey every rancher in the Peace, I'm sure that most everyone has lost an animal to a predator and feed to an ungulate. However, there is another worry that we need to keep on our radar – disease.

In recent months, cases have cropped up in the south Peace of Leptospirosis. Leptospirosis is a bacterial disease that affects not only cattle, but also pigs and dogs, as well as wildlife, rodents and humans. There are two strains of the bacteria that affect cattle: Leptospira Hardjo and Leptospira Pomona. These two bacteria infect the kidney and genital tract of cattle and can cause fever, meningitis, hemolytic anemia (breakdown of blood cells), abortions, and death.

Leptospira bacteria is transmitted by direct contact with infected urine, placenta, or milk. The most common transmission of the bacteria is through infected urine. Cases in the south Peace of this disease have been linked back to elk urine on feed or in water holes.

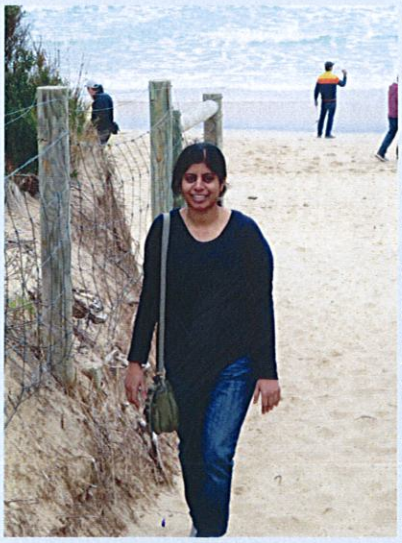
This is also a zoonotic disease – meaning it can be transmitted to humans. Leptosoira bacteria can be passed to humans when handling infected animals via cuts, scratches, mouth or eyes. It is very important – as with handling all sick animals – to wear appropriate protective clothing, cover all cuts, and wash your hands thoroughly after handling a sick animal. Early symptoms of Leptospirosis in humans include; fever and flu-like symptoms, exhaustion, aches and pains, headache, and a long lasting illness. More severe cases can cause renal failure and abortions.

Photo via: kootnaynaturephotos.com

The good news is, Leptospirosis in livestock can be vaccinated for. Consult your local veterinarian to assess the risk of the disease in your area and if it is worth vaccinating your herd. Other preventative actions include fencing feed yards and water sources off so wildlife can't access them. This is of course cost-prohibitive in some cases, but if you are already suffering feed loss due to wildlife, it may be a consideration.

It is always important to monitor our herds, especially when we have wildlife wandering about. If you are dealing with something out of the ordinary, be sure to consult your veterinarian as soon as possible. A loss in our industry is hard. A healthy herd is money in your pocket.

Warm Welcome to our Summer Research Technician, Lekshmi Sreekumar!



Lekshmi was born and raised in Kerala, India. She holds her Ph.D in Soil Sciences and Agricultural Chemistry from Anand Agricultural University, Gujarat, India. Lekshmi has worked on many different types of soils throughout her career with her Ph.D thesis on Pesticide Residue Contamination in different textured soils. She was an assistant Residue Analyst for the Indian Council of Agricultural Research during her time at Anand Agricultural University and is very passionate about applied research and innovation in agriculture. She moved to Canada in 2014 to be with her husband and has worked for the Canadian Food Inspection Agency and SGS Canada, before joining PCBFA. Lekshmi hopes to experience and practice new research methods in forage production in Peace region during her time with PCBFA. In her spare time she loves playing violin.

Lekshmi started with us April 25th, and has been a welcome addition to PCBFA. We are thrilled to have her as a part of our team!

Upcoming Events

Soil Health: The Bottom Line with Nicole Masters	Wed, June 22nd 9:30am Registration $25/Member	Rycroft Ag Society Hall
Watering Systems Tour	End of June Details TBA	High Prairie
Field Day at the Research Farm	Wed, July 20th Details TBA	MD of Fairview Research Farm 2 miles west, 1 mile north of Fairview
Pasture Walk Series	Tuesday, July 26th Wed. July 27th Thurs, July 28th	Fourth Creek North Peace Valleyview
Whole Farm Water Planning with Jessie Lemieux	Week of August 2nd Details TBA	Various Locations across the Peace
Soil Health Workshop with Jay Fuhrer	Thursday, August 18th Details TBA	Location TBA
PCBFA Study Tour to Denver!	Jan 10-17, 2017 Visit our website for booking forms & itinerary!	Twin: $2989/Person Single: $3526/Person $500 Deposit Due July 4

For more information or to register for any of these great events, please call Kaitlin or Jen at 780-835-6799.

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Forage Facts

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Stay up-to-date with all PCBFA's activities!

The PCBFA Crew wishes you a safe and trouble-free haying season!

If you have any questions about feed quality or would like to send some hay out for feed sampling, please feel free to give us a shout in the Fairview or High Prairie Offices!

What's the Brix on that Pasture??

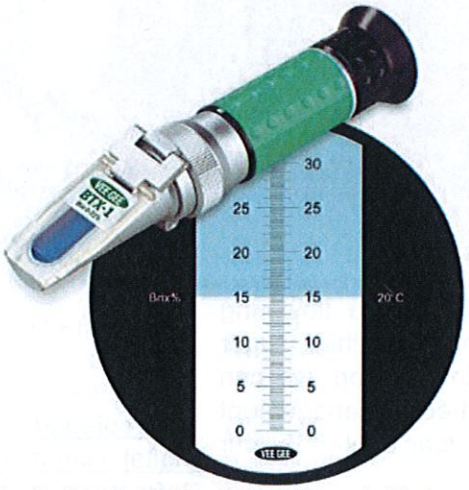
By: Kaitlin McLachlan

Do you have a refractometer in your toolbox in your truck? Maybe you need one! It is a neat tool that we can use to measure the sugar levels in plants and forages.

Refractometers have been used for years in the food and processing industry for quality control purposes, and now there are nice, small hand-held models that we can take to the field with us! All we need is the refractometer and a garlic press like what you'd use in your kitchen!

The sampling process is quite simple! You simply pick or trim some plants that you would like to test, roll them into a ball in your hands for a few seconds and pop it in the garlic press. These handheld models work by placing some juice from the test plant onto the glass prism at the end of the unit. Once the plastic cover is flipped over the juice and compresses the juices, you can look through the looking glass and measure the sugar content of the forage. In the picture in the middle of the page, we see a sample of a handheld refractometer as well as a sample of the reading that we can obtain from the tool. Each scale on the refractometer relates to one gram of sugar per 100 grams of liquid.

So what is a "good" Brix measurement? How can we incorporate it into our grass and feed management?



A refractometer and the Brix reading scale. Photo via: highbrixgardens.com

Using Brix measurements in management decisions actually started with beef producers in the States a few years ago. Brix is the measure of the total dissolved solids in a liquid. Most of these dissolved solids extracted from growing plants is carbohydrates in the form of sucrose sugar. The rest is simple sugars such as glucose and fructose, as well as minerals.

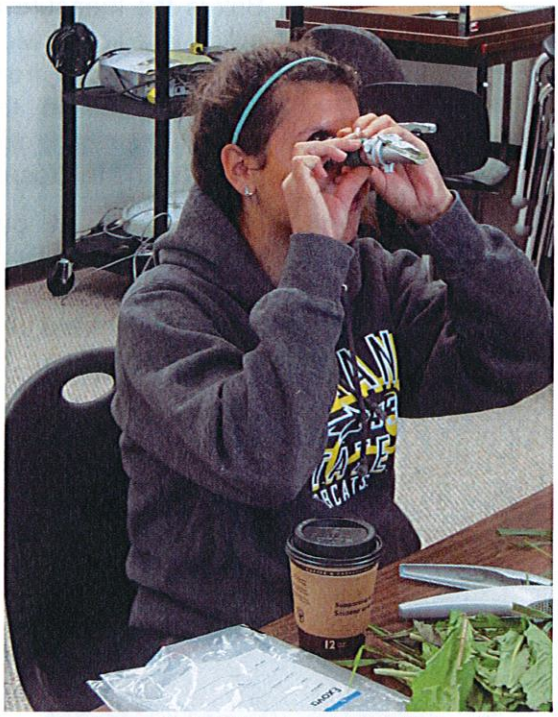
If you were at our Grass Fed Beef Workshop with Dr. Anibal Prodomingo and Clayton Robins back in February, you would have heard about the importance of sugar content in forages and how it relates to gain. The basic principle is that plant sugars provide energy. Therefore, the higher the Brix reading, the higher the sugar content, and should indicate a higher nutritional value in the plant.

From findings in the US, Brix levels of alfalfa are typically at an average of 8, with a reading of 22 being considered excellent. In cereals, 18 is considered excellent while 10 is a good average. Regardless of the plant species, the highest energy levels will always be in the lower stems and leaves of the plant. In alfalfa, the absolute highest brix levels come from the juice of the blossoms.

Another observation, that we learned from Nicole Masters at our workshop in June, is that plants with a Brix level of 12 or greater have improved resistance to disease and insect pressure! Nicole also related that healthy plants with high Brix measurements are a result of healthy soil.

If you are interested in learning more on how soil health relates to plant health and higher Brix readings, keep your eyes open for another workshop with Nicole Masters later on this year!

Dr Anibal Pordomingo has done some work relating Brix and forage quality in his studies in Argentina. He has found that the best ration for finishing cattle on grass is when soluble carbohydrates — sugars – and crude protein are balanced with protein between 14-18% and sugars being at least 15%. He has also found that young, vegetative plants tend to be too high in protein and too low in energy to provide good gains in a grass finishing program. As plants approach the flowering stage, they are in the peak of their sugar production. So with this information, we can start to make informed management decisions based on the sugar content in our forages.



Past Summer Student Taylor Iwasiuk taking Brix Readings

Research by the USDA Agriculture Research Service out of Idaho has found that sugar levels in growing plants are at their peak around 6pm in the evening before sunset, and at their lowest first thing in the morning. This is because the plant has been photosynthesizing all day, and has made itself a lot of sugars. Overnight, these sugars will flow down to the roots into the plant's reserves.

At Utah State University, researchers experimented with feeding two groups of dairy cows rations of 40% alfalfa hay—one cut early in the morning, and one cut in the early evening. The cows that were on the ration cut later in the day consumed 6 pounds more per day of the ration and produced 7.5 pounds more milk than the group on the morning cut hay. This increase in animal performance can be related back to the increased sugar content in the plants at the time of day the hay was cut. These are exciting results as we can also use Brix readings for not only making pasture rotation decisions, but also harvest decisions!

I'm sold! Where do I get my refractometer?

At PCBFA, we have a hand-held refractometer in our Fairview Office if you would like to have a look at it or have one of our staff show you how it works. If you are really sold on it, you can find them online. They typically start out at $120 and can be found at www.reedinstruments.ca/portable-refractometers.

Digital refractometers are also on the market. They are more pricy, starting at around $550 and can be found online at www.coleparmer.ca/Category/Digital_Handheld_Refractometers. Refractometers can also be found on Amazon.

When purchasing a refractometer, since there are many kinds of models that measure a variety of different dissolved solids, ensure that you are purchasing a Brix refractometer. For testing forages, also ensure that you are getting a refractometer that has a scale that can measure up to 30%. This is a good scale to measure a variety of forages accurately.

If you have any questions regarding refractometers or would like to try one out, please give us a call in the Fairview Office!

Happy Brix-ing!

Thank-You to the PCBFA Board of Directors

Jordan Barnfield
Thomas Claydon
Conrad Dolen
Nancy VanHerk
Preston Basnett
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John Prinse
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Have Project or Workshop Ideas?

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Big Lakes County
County of Grande Prairie

Erosion and the Importance of a Healthy Riparian Area

By: Jen Allen

Although a couple months ago it seemed the Peace Country was in for another dry season, Mother Nature has graced us with a lot of precipitation! With that being said, it is important to remember that during all weather conditions, whether it be dry or wet, there are precautions and proper management practices to take in order to optimize the benefits of our current abundant water supply.

When it comes to wet conditions, significant effects to keep under your radar are runoff and erosion, where both are fuelled by rainfall and snowfall. When soil erosion from water occurs, sediments and nutrients from fields, such as manure, are carried by the runoff causing pollution to water sources (streams, rivers, lakes, and dugouts), or leaching into groundwater sources. Such added nutrients from the runoff lead to the growth of undesirable aquatic plants and algae blooms in the water (such as blue-green algae), and also causes oxygen depletion. Water pollution can be harmful to livestock, fish, wildlife, as well as humans. The vegetation along the banks of streams, rivers, lakes or dugouts, known as riparian areas, are essential for filtering these unwanted nutrients and sediments before they reach a water source. Therefore, it is important to properly manage your current riparian areas, or implement one into your system.

There are many benefits to maintaining a healthy riparian area, including: they act as a buffer system for both floods and droughts (conserve water), filter nutrients and trap sediments before they reach downstream, reduce erosion and stabilize shorelines through plant root systems, and creating an abundance of vigorous forage, shelter, and water for livestock and both aquatic and terrestrial wildlife. Deep-rooted vegetation including trees (willows and poplars), shrubs and grasses make up a good riparian area. Leaving plant cover or crop residue in your field also helps securing soils from erosive power prior to reaching the riparian area.

Another significant practice to reduce erosion and runoff as a cattle producer is proper range management, such as rotational grazing, and planning for periods of rest on the landscape to assist in restoring and maintaining a healthy riparian area. According to Cows and Fish, these are the top four things to consider in proper range management: "balance animal needs with available forage supply, distribute livestock evenly, avoid or minimize grazing the area during fragile or vulnerable periods, and provide effective rest during the growing season." Runoff can also be managed by constructing pathways using the landscape's topography, such as a berm, ditch or constructed wetland, in order to control the direction and/or speed of runoff and reduce nutrient and sediment levels (see Figure 1).

If you have slumped shorelines, an absence in abundance of vegetation and wildlife, or murky looking water with sediment buildup, then the health of your riparian area is probably lacking. In order to improve or manage your riparian area, it is first ideal to observe and evaluate the current condition of it, then make improvements where needed and continue to long-term monitor. Protecting your soils with vegetation cover, such as a riparian area, assists in ensuring the sustainability of your farm, water sources, and the overall environment. (Alberta Agriculture & Forestry, Cows and Fish)

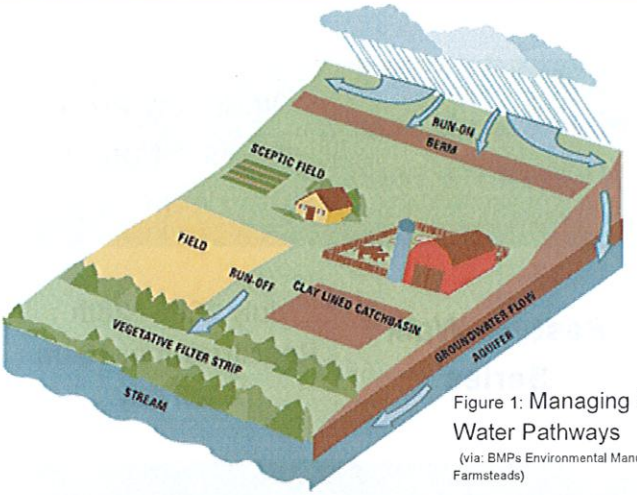

Figure 1: Managing Surface Water Pathways
(via: BMPs Environmental Manual for Alberta Farmsteads)

Be sure to check out PCBFA's Whole Farm Water Planning events in August! If you have any other questions regarding riparian areas, feel free to give us a call at the Fairview office!

Director's Corner *with Jordan Barnfield*

Hello my name is Jordan Barnfield. I run a mixed livestock farm in the Badheart north east of Teepee Creek. I am proud to say that I am a Director on the Board of the PCBFA. This is my 3rd year of being a part of this great Board and it has been a very rewarding experience for me. We are very blessed to have a great group of both Staff and Directors that are all very passionate producers from all around the Peace Country.

It has been great to see the PCBFA grow the last few years. People seem to really be getting involved and getting active in the beef and forage industry. There has been great attendance by producers at our events and field days the last while. PCBFA has brought in and hosted some great speakers the last few years that sure bring a lot of knowledge to us as producers. These events, speakers and just meeting and learning so much from all of the local producers that attend PCBFA events has really helped me grow my farm in the direction that I want to see it go. Taking the Don Campbell Holistic Management course, going to the soil conference in Edmonton last fall, and seeing speakers like Christine Jones, Nicole Masters, Gabe Brown and so many more has turned me into, as Monika our Manager would say, "a Soil Nerd".

There is so much to learn in the beef and forage industry and it has been fun doing this as a Board Member these last few years. I am looking forward to all the events that our great Staff has in store for us this next year. I have enjoyed being a part of some of the planning and I have learned a lot from our management sessions with David Irvine. Our great Staff and the great group of producers on the Board makes it very fun and easy to be a Director for the PCBFA. I hope to see and meet a lot more new and old producers at our events and field days to come this next year. I hope everyone has a great summer. Happy haying and enjoy all of this great rain and grass. It is a great year for building soil health.

Upcoming Events

Field Day of the Research Farm	Wed, July 20th Registration at 10am	MD of Fairview Research Farm 2 miles west, 1 mile north of Fairview
Pasture Walk Series	July 26th—28th Registration at 10am each day	July 26th—Fourth Creek Hall July 27th—Grimshaw Legion July 28th—Valleyview
Whole Farm Water Planning with Jessie Lemieux	August 3rd & 4th	Aug 3rd— Saddle Hills County Aug 4th—Hines Creek
Soil Health Workshop with Jay Fuhrer	Thursday, August 18th Details TBA	Manning
Peace Beef Cattle Day	December 7th	DMI in Fairview
PCBFA Study Tour to Denver!	Jan 10-17, 2017 Visit our website for booking forms & itinerary!	Twin: $2989/Person Single: $3526/Person

For more information or to register for any of these great events, please call Kaitlin or Jen at 780-835-6799.

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SARDA

Back Forty

Mission: To facilitate the transfer of unbiased ideas and information between research institutions, industry, and agricultural producers.

SUMMER ISSUE JUNE 2016

IN THIS ISSUE

Registrations now being accepted for SARDA's Annual Field School—June 22, 2016

On June 22th, SARDA will host its Annual Summer Field School. The event kicks off from the Donnelly Sportex at 8:30 am. A $75 fees includes transportation to and from the trial site, a barbeque lunch, and proceedings booklet and five speakers and sessions.

The field school is designed to allow participants to interact closely with experts and fellow producers, participate in presentations and view specially prepared demonstrations that showcase the topics. Every participant will have the opportunity to participate in each session during the day.

This years speakers and topics include:

1. Robyne Bowness (Alberta Pulse Growers) View and diagnose common pulse diseases and learn how to determine economic thresholds for applying appropriate fungicides.

Continued on page 2

This publication made possible in part by:

Continued from page 1

2. Jay White (Aquality Environmental Consulting Ltd.) Jay will discuss what a wetland is and how it could impact your farm under the Wetland Policy.
3. Doug Penney (Agritrend Consultant) This session will look at the limitations of soil productivity in the Peace Region.
4. And More

Plan to attend this wonderful opportunity to converse with agricultural experts and fellow producers.

Registrations can be completed on-line at www.sarda.ca , or by phoning SARDA at 780-837-2900.

Registrations will be accepted until June 17th or until the spaces are filled. Fees are: $75/person early bird until June 10th or $100/person after. Space is limited.

More Information

SARDA
780-837-2900
www.sarda.ca

North Dakota State University NDSU

Air Temperature Inversions

Causes, Characteristics and Potential Effects on Pesticide Spray Drift

By John W. Enz, Vernon Hofman and Andrew Thostenson

Pesticide spray drift always has been a costly and frustrating problem for applicators. It's particularly frustrating because some of the seemingly best weather conditions for pesticide application are often the worst. That is because those conditions are caused by air temperature inversions. Air temperature inversions provide near-perfect conditions for tiny, aerosol-size droplets to drift away from their targets. An understanding of air temperature inversions – why they occur, their characteristics and their dissipation – requires a basic understanding of energy transfer at the Earth's surface and in the lower layers of the atmosphere.

Microclimate

Microclimate is best characterized as a region with rapid changes in air temperature, wind speed, humidity and/or dewpoint temperature occurring over short distances and/or in short time periods. It is also a region of air and surface temperature extremes. Surface characteristics usually determine weather conditions in the microclimate, especially when wind speed is low.

Air temperatures vary greatly near the Earth's surface, depending on weather conditions and surface characteristics. For example,

around sunrise on a clear, nearly calm morning, air temperature measured 5 feet above the surface may be 4 to 10 F greater than the air temperature measured near the surface. Conversely, in early afternoon on a nearly calm, clear day, the air temperature at 5 feet could be 4 to 15 F less than the air temperature near the soil surface. Actual air temperatures depend on surface conditions.

Surface and Air Temperature Variation

Daytime: Clear Skies With Little or No Wind

Absorbed solar radiation begins to heat the Earth's surface shortly after sunrise. As the surface temperature increases, energy from the warmer surface slowly is conducted into the cooler soil. Simultaneously, energy is conducted from the Earth's surface to the adjacent cooler air molecules. As the sun continues rising, more and more solar energy is absorbed, and the surface temperature continues to increase. At the same time, more energy is conducted into the soil and the overlying air. As the air temperature near the surface increases, the heated air expands, making it less dense than air above it. This lighter air begins rising while the cooler, denser air above it begins sinking. When the cooler air reaches the surface, it is warmed by the surface and rises, allowing cooler air to descend. Thus, tiny circulation cells are formed that slowly warm a thin layer of air near the surface.

As the sun continues rising, solar rays become more perpendicular to the surface, and surface heating intensifies. This causes the tiny circulation cells to grow larger vertically and horizontally. The air temperature profile shows that air temperature a few hours after sunrise is greatest near the surface, and air temperature decreases with increasing height. Notice that the largest temperature gradients (greatest temperature changes with height) occur closest to the surface.

As surface heating continues, rising columns of warm air continually transfer more and more heat energy from the surface to greater and greater heights, and the descending air around each column transfers cooler air to the surface to be warmed again.

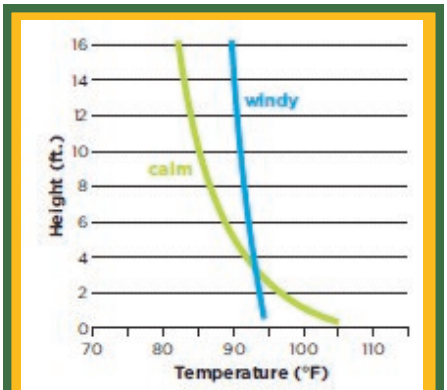

Figure 2. Comparison of typical midday air temperature profiles for a clear, nearly calm morning and a clear, windy morning

Energy transfer by the spontaneous movement of air or liquid is called convection. Convection cells continually grow larger as surface heating continues and eventually can reach heights of 100, 1,000, 5,000 feet or more by early afternoon on a clear day.

The appearance of late-morning or afternoon cumulus clouds that often form at the top of the rising warm air columns are proof that convection is occurring.

Wind Effects

On clear mornings with little or no wind, convection cells consisting of rising and sinking columns of air warm the lower atmosphere. These convection cells gradually grow larger and larger throughout the morning. When the sun is going down, convection cells slowly weaken, cumulus clouds slowly evaporate and wind speeds decrease, sometimes to near zero.

Wind speed is zero at the

Continued on page 4

Continued from page 3

Earth's surface, increasing exponentially with increasing height. During windy conditions, any surface unevenness or obstruction causes air to flow over or around it, resulting in horizontal and/or vertical eddies of various sizes and shapes. The result is a random, chaotic, swirling motion called turbulent flow in which wind speed and direction change rapidly.

These turbulent eddies cause air from greater heights, where wind speeds are greater and air temperatures are lower, to mix with the slower-moving, warmer air near the surface. This turbulent mixing heats the lower atmosphere more rapidly while maintaining a cooler surface temperature.

During an inversion, eddies cause air from greater heights, where wind speeds and temperatures are greater, to mix with and/or replace slower-moving, colder air near the surface. Inversions are generally stable enough to resist this mixing action when wind speeds are less than 4 to 5 mph. As wind speed increases, inversions steadily are weakened and only weak ones will form. However, even in the windiest cases, surface temperature still will be less than air temperature because the surface is cooling continually on a clear night

Cloud Effects

The greater the cloud cover, the more solar radiation is reflected back to space or absorbed by the clouds. Clouds reduce the amount of solar radiation absorbed by the Earth's surface, so it warms more slowly than on clear days. On overcast days, only the solar radiation that's transmitted through the clouds reaches the Earth's surface. Clouds also emit and absorb longwave (infrared) radiation that causes major effects on nighttime surface cooling.

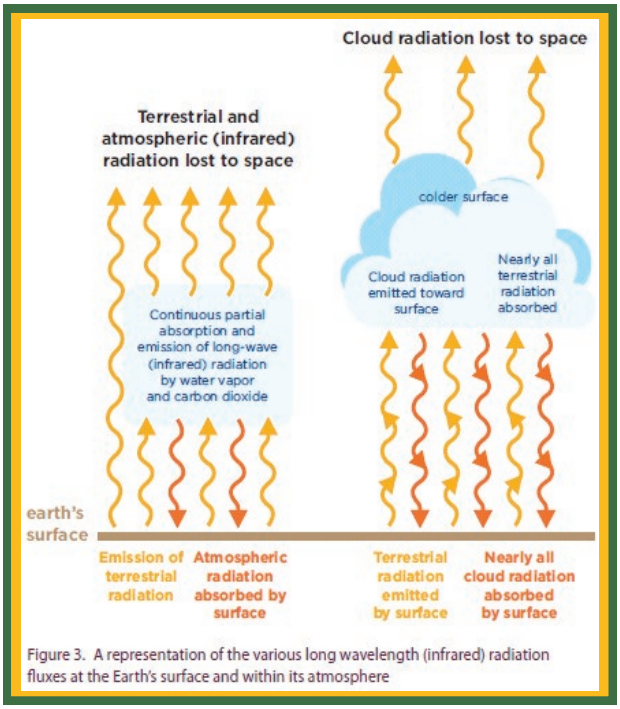

Figure 3. A representation of the various long wavelength (infrared) radiation fluxes at the Earth's surface and within its atmosphere

Midafternoon Through Nighttime: Clear Afternoon and Night

Throughout a clear day, the Earth's surface absorbs enough solar radiation to heat 5 to 10 inches of soil and several thousand feet of air. The maximum surface temperature usually occurs two to four hours after solar noon (when the sun is directly in the south), and the maximum air temperature is reached shortly after that.

Given clear skies, the Earth's surface temperature begins decreasing in mid to late afternoon, when the surface is emitting more terrestrial radiation energy than it is receiving from solar and atmospheric radiation.

As the surface temperature continues to decrease, more and more heat from the adjacent warmer air will be conducted to the cooler surface. Soon the air next to the Earth's surface will be colder and denser than the air above it. This is the beginning of an air temperature inversion. As time passes, more and more heat energy is conducted from the nearby air and soil to the Earth's surface,

where it continues to be lost by terrestrial radiation. Air farther and farther away from the surface also will cool as energy slowly is conducted through the air toward the colder surface. As long as skies remain clear, the surface temperature continues to cool the overlying air.

Air temperature measured at various heights near the surface during a clear night shows that the air temperature nearest the surface is always the coldest. And at each greater height, air temperature is greater than the temperature at the next lowest height up to top of inversion (Figure 6).

By definition, this increase in air temperature with increasing height above the surface is called an air temperature inversion because it's the opposite of the usual daytime air temperature profile.

The Earth's surface continues cooling as long as skies remain clear. Simultaneously, the air will continue cooling because more and more heat is conducted to the colder surface, and the total height of the cooled air layer will increase.

Maximum inversion intensity and height will occur shortly after sunrise because a short lag occurs before the sun begins heating the surface.

Late Afternoon, Evening and Night

In general, greater cloud cover causes slower surface cooling and slower inversion formation. This effect is less important during the daytime because solar radiation completely overwhelms the longwave radiation effects. When skies are completely overcast, the surface will cool very slowly or not at all, and inversion formation is highly unlikely. Clear nights always will be colder than overcast ones. This explains why inversions happens when skies are clear.

Generally, an extended period with clear or mostly clear skies during late afternoon or during the night is necessary for inversion formation. Clear skies allow the maximum loss of terrestrial radiation to space. The longer the clear period, the more intense the resulting inversion will be. Partly cloudy overnight conditions mean that knowing if an inversion has developed is nearly impossible without air temperature measurements.

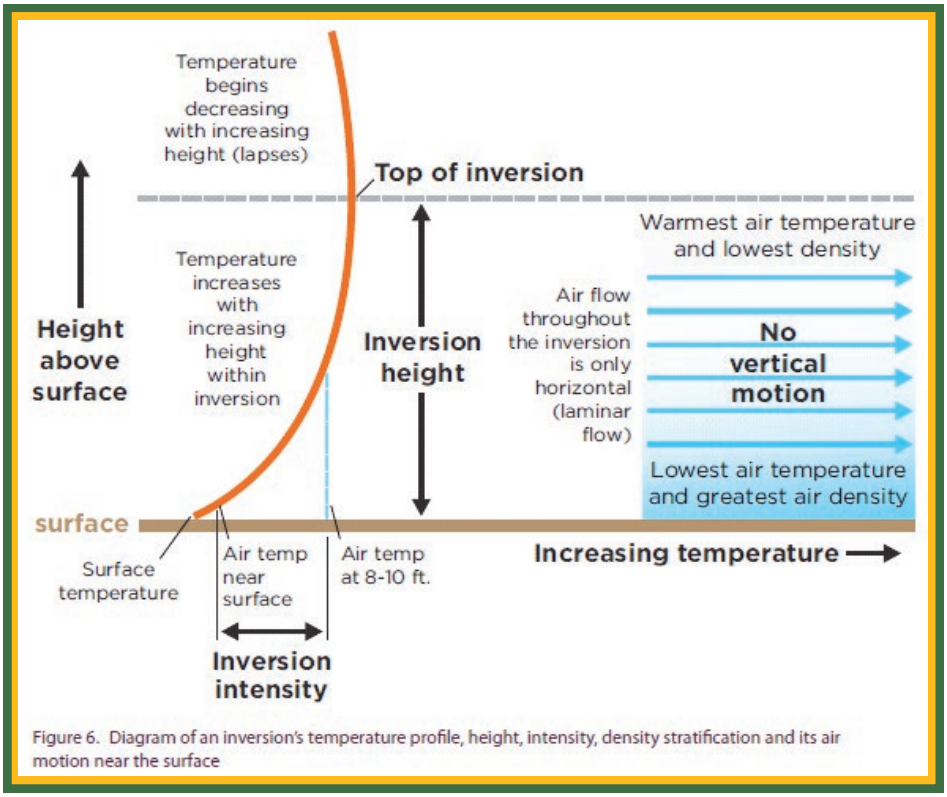

Figure 6. Diagram of an inversion's temperature profile, height, intensity, density stratification and its air motion near the surface

To determine if an inversion exists, measure the air temperature 6 to 12 inches above the ground or the top of a mostly closed-crop canopy, and at a height of 8 to 10 feet above the

Continued on page 6

Continued on page 5

surface to be sprayed. If the temperature at the higher level is greater than the temperature at the lower level, an inversion exists.

Pesticide applicators must make a serious effort to determine if an inversion exists based on various indicators or actual temperature measurements at two heights or more.

- Dew or frost deposition always should serve as a warning that an inversion may exist. The presence of fog nearly always indicates that an inversion condition existed prior to fog formation and that it has intensified. Introduced pesticide droplets will not evaporate, and even a light wind will move them like fog or with the existing fog and possibly affect susceptible crops downwind.
- Inversions form more rapidly over mulched or porous surfaces and also will be more intense.
- Inversions will form more quickly and be more intense over the cultivated soil.
- Inversions over closed-crop canopies will form sooner in the evening and probably will be more intense than those forming over a bare-soil surface.
- Reduced wind speed and turbulence in the shade of shelterbelts can lead to higher humidity and dew point temperature, earlier inversion formation and later dissipation.

Spraying during an inversion never is recommended, even with drift-reducing nozzles or drift retardants. During an inversion, the air temperature increases with increasing height above the soil surface. As a result, the coldest, densest air is at the surface and its density steadily decreases with increasing height. The result is a very stable stratification of air that prevents vertical air motion. When an applicator introduces spray droplets into very stable air, the larger drops with greater fall velocities strike the surface within one to three seconds. However, smaller droplets (200 microns in diameter and less) fall as little as a few inches per second and may float along with the air for long distances.

Spray applicators need to use extreme caution in mountainous areas, protected valleys, basins, and the lower areas and shaded hillsides of some steeply rolling topography because cold air drainage can cause very intense inversions in these areas. Measuring air temperatures at two heights is strongly recommended before spraying in these high-risk areas.

An inversion, plus low wind speed, is the best possible situation for long distance damaging drift of spray droplets. Evening is very different from mornings for inversion formation. During a clear morning, an inversion that formed the previous evening or night is dissipating. But on a clear evening with low wind speeds, the applicator must be extremely observant because an inversion already may be forming and is intensifying steadily and growing in height.

More Information

Air Temperature Inversions
North Dakota State University
By John W. Enz, Vernon Hofman and Andrew Thostenson

https://www.ag.ndsu.edu/pubs/plantsci/pests/ae1705.pdf

SARDA AG RESEARCH

SARDA's Summer Crew 2016

SARDA has a busy summer planned. With approximately 65 different trials in Smoky River and Greenview, pest monitoring , and several extension events planned, the students we hire for the summer period are a welcome addition. Nasima appears to have the students "all tied up" and working hard. The students have provided the following information .

From left to right—Back Row: Nasima Junejo, Seanna Benoit, Janelle Laverdiere, Dave Cloutier,
Front Row: Robyn Simoneau Missing: Sam White

Hello again! My name is Robyn Simoneau and this is my third year as a summer student for SARDA. My parents are Charles and Michelle Simoneau and they farm just south of Guy. I have recently completed my third year of university for my combined bachelor of arts and bachelor of education program majoring in drama with a minor in French. I am looking forward to another great summer at SARDA and wishing everyone a good season.

Hello there! My name is Seanna Benoit and I am 19 years old. I was raised on a grain farm near Guy by my parents Gabe and Lorrie Benoit. I am proud to say I have successfully completed one year at the University of Alberta studying Nutrition and Food Science. This is my first year working for SARDA, and I am eager to learn as much as possible over the course of this summer! Agriculture has always played a huge role in my life, and as a result, a job at SARDA seems to be a perfect fit for me!

I am Priya Karanth and am fairly new to Falher. I moved here with my husband Akshay Rajanna who works for CN. I graduated with a master's in petroleum engineering from University of Alberta in June 2015 and moved north looking for better opportunities. I am very thankful to SARDA for giving me a chance to learn new skills and experiences needed to showcase my personality and to advance my career. I enjoyed working with the SARDA team.

Priya's last day with SARDA was May 31. Priya moved to

Continued on page 8

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India to further pursue her career. Best wishes to her.

Hello, my name is Dave Cloutier, the oldest son of Jean Cloutier and Suzelle Brault. I just finished my bachelor of science at U of A this year and looking into continuing my studies in medicine to become a sports medicine physician. In my free time, I like to go camping, fishing, hiking and do a lot more of outdoor activities. I am excited working for SARDA as a summer student since, for once, I am actually working in a summer job that is somewhat related to my studies. Gathering data and working in the field is just a perfect combination for a great summer job.

Hi my name is Janelle Laverdiere and I am the middle daughter of Normand and Sharon Laverdiere and this is my first year at SARDA. I have just completed my business administration diploma at GPRC. I have been doing some field work and will hopefully be doing some work in the office as well.

Hello my name is Sam White, I am 21 years old and finished my third year of university at the UofA in April of 2016. This summer I will be working in Smoky River area as well as near La Crete and High Level for Alberta Agriculture through SARDA on a pest monitoring project. The major pests I am monitoring are bertha army worm and wheat midge. Monitoring for bertha army worms begins in the beginning of June and extends until I resume schooling at the end of August. It consists primarily of setting up pheromone traps near canola fields and monitoring them on a weekly basis. However, if the number of moths found in the traps reaches a certain threshold, something like 600 moths over the period the traps are set up, then I will be actively searching the field for eggs and larva.

Wheat midge monitoring is more difficult, in May I begin taking soil samples to check for pupae that have overwintered in the soil. In June, traps are set up to monitor adult numbers. There are 3 types of traps, emergence traps, pheromone traps, and sticky traps. Each trap monitors adults in a different way. Emergence monitors emerging adults in a set area of soil, pheromone monitors adult males in a rough area, and sticky traps monitors the number of adults, both male and female, in small air space. These traps are all checked twice weekly and recorded online. Later in the summer wheat heads are clipped and checked for new eggs and larvae laid by the adults. This helps give an estimate as to what next year's populations could be. For more information and details contact the heads of the project Scott Meers and Swaroop Kher. Thank you for reading and I am looking forward to doing a good job this summer as well as learning all I can about monitoring and managing pests.

Further Information

SARDA
780-837-2900
www.sarda.ca

Alberta Wheat COMMISSION

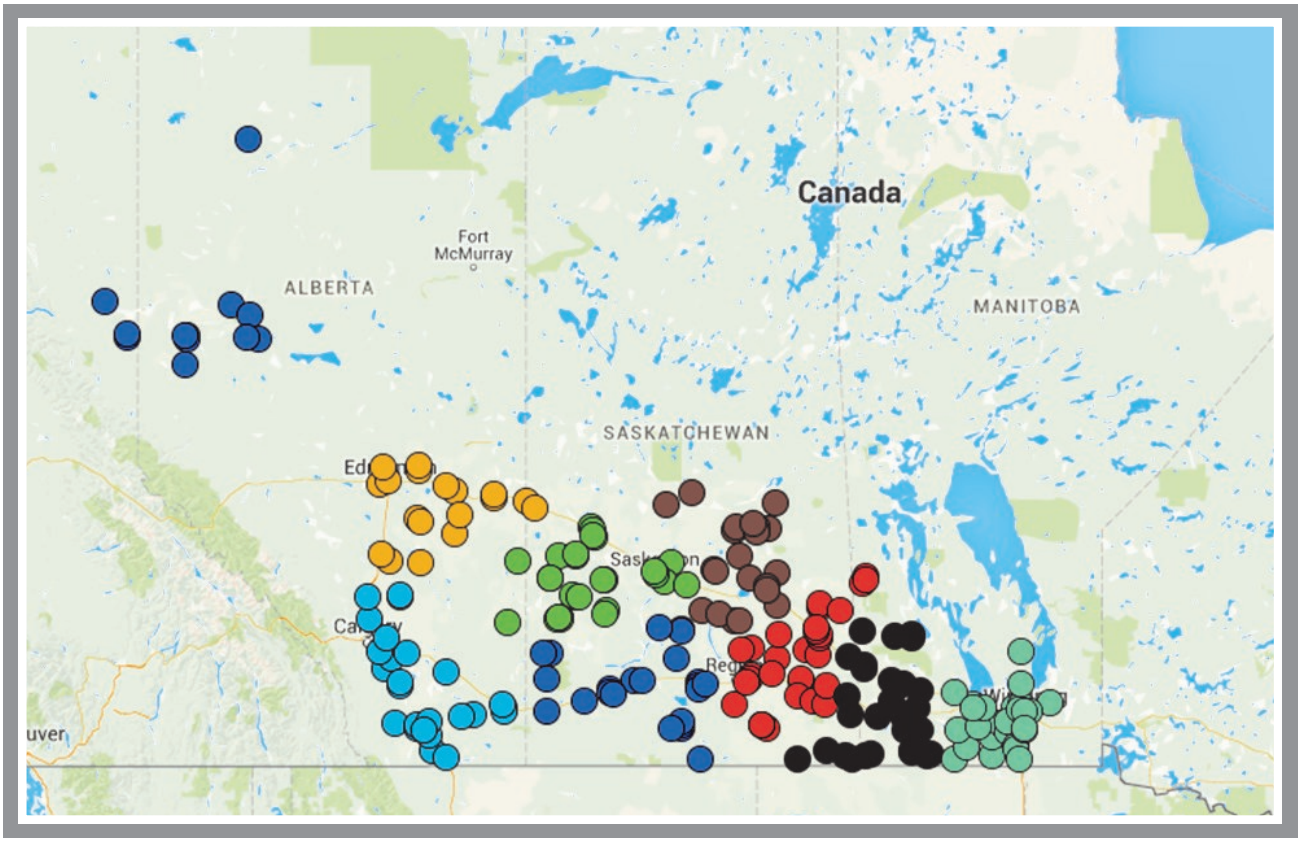
pdqinfo.ca – Daily Grain Prices, Basis Levels and more

Caalen Covey, Alberta Wheat Commission

PDQ or Price and Data Quotes is a website (pdqinfo.ca) that provides free information to users and includes daily cash bids, basis levels, foreign exchange conversions and a toggle that easily changes price information back and forth from tonnes to bushels.

In its current form, pdq collects prices information for three classes of wheat including, Canada Western Red Spring (CWRS), Canada Western Amber Durum (CWAD), and Canada Prairie Spring Red (CPSR). The site also includes prices for canola and yellow peas. Pricing information is uploaded daily on pdqinfo.ca once the markets close. The pricing information comes from seven grain handling companies, which account for about 95 per cent of all bulk shipments across Western Canada. The data is collected and an average regional price for each of the five commodities is updated with the result being regional prices in both the spot and deferred markets out as far as 12 months. PDQ is split up into nine regions across Western Canada, and based on rail freight rates and catchment areas.

The pricing information on PDQ allows users to get a general sense of the market and view historical information to help make marketing decisions. For example, one producer I recently spoke with noticed the price of yellow

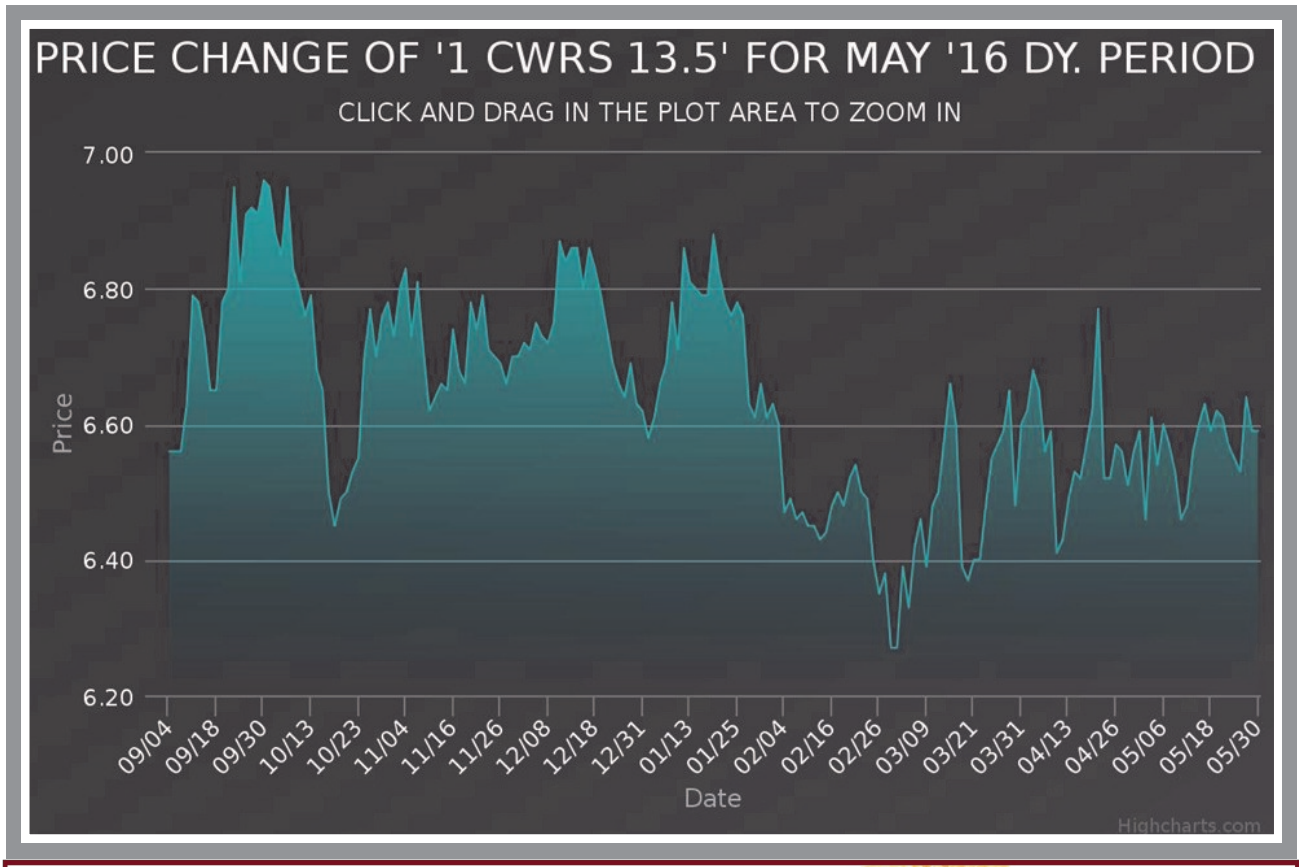


peas had fallen drastically on PDQ in his region and that the average price was much lower than the price he had received that day from one of his buyers. He quickly learned that other buyers in his region had filled their obligations on the export end and were shutting off their bids in the country. He made the decision to sell his remaining peas before his buyer had filled their contract obligations. Without the regional average on PDQ, he may not have caught this trend and ended up salvaging about $0.50/bushel on his peas.

PDQ also allows users to get a sense of where the market is going and where it has been. The deferred prices show users the contract opportunities and historical prices for each month. This can help growers decide if they want to hold on for a better price or sell in the current market place. The easy charting capabilities on PDQ can help growers avoid market lows and take advantage of markets when they are on the upside. To view this historical price information just click on a price and a chart will be brought up on either a computer screen or this information can be accessed

Continued on page 14

Below is an example of a historical CWRS 13.5 price chart in the Peace region for May 2016 delivery.



on a cell phone.

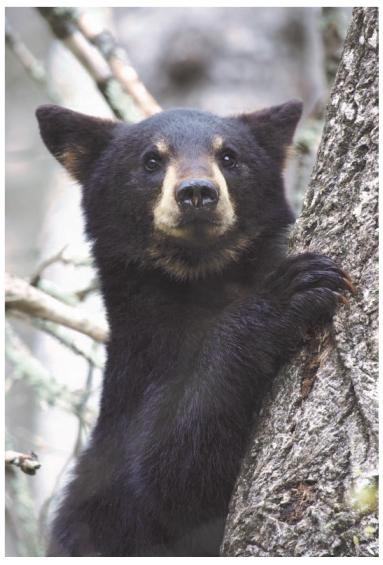
Since the launch of PDQ last September, there has been a steady increase in users with about 75 per cent being farmers. The pricing information has also been useful for analysts and industry members, as well as risk management consultants who track price trends. One key user of PDQ is Alberta Financial Services Corporation (AFSC), who will be using PDQ prices for their fall price endorsements for the current commodities that PDQ collects information on.

Next steps for the website are to provide more information such as feed prices and specialty crop prices, but it will take time to build a system that will be able to collect this information. The current setup is predominantly automatic since the companies providing the information have the technical capabilities to provide it on a daily basis to users. I invite you to check out pdqinfo.ca, sign up for a free account and use the contact information if you have any questions or comments about the site.

More Information

Visit www.pdqinfo.ca

Be BearSmart



Spring has sprung and this means Alberta's bears are out and hungry! During hibernation, bears lose 10-30% or more of their body weight. When they emerge from their dens, bears will eat carrion, insects, deer fawns and moose calves, or search out plant material such as grasses and sedges. You can typically find bears foraging on sunny, south-facing slopes, at the edges of streams or in open wetland meadows this time of year. Sometimes bears will come around your property, worksite or camping area especially if food such as garbage, compost, grains, calves, pet food or deadstock, is available. Therefore, it's VERY IMPORTANT to take extra precaution in bear country during the spring.

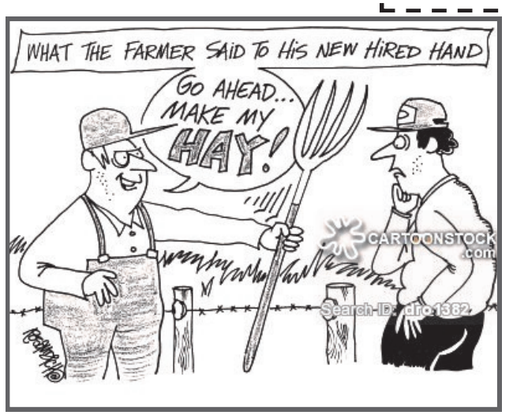
Some helpful tips include:

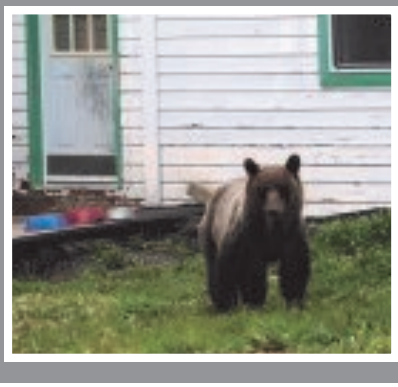
- Bears are more active at dusk and dawn. Make noise and carry bear spray when out at these times.
- Look for signs that a bear has been in the area, including tracks, scat, scratched logs and trees or upturned earth. If you see these signs, be calm and cautious and leave the area IMMEDIATELY.
- Keep your children close at all times.
- Keep your dog on leash. Dogs can trigger unwanted

Continued on page 14

SARDA requires pre-registration for ALL SARDA events.

Event Name	Location	Time	Date	Cost	Comments
Rate Payers' BBQ	Administration Building, Valleyview	5:00 pm	June 14	FREE	For more information contact 780-524-7600 or 1-866-524-7601
	Eagle's Nest Hall Grande Cache	5:00 pm	June 21	FREE	
	Community Hall Grovedale	5:00 pm	July 19	FREE	
	Community Services Building DeBolt	5:00 pm	July 26	FREE	
2016 Summer Field School	Donnelly	8:30 am	June 22	$75	Registrations accepted online www.sarda.ca or phone 780-837-2900 ext 3
Soil Health: The Bottom Lines with Nicole Masters	Ag Society Hall Rycroft	9:30 am	June 22	$40	Kaitlan 780-835-6799 or Nora 780-836-3354 www.peacecountrybeef.ca
Canada Celebration	NSC Public Works Building	4:00 pm—7:00 pm	June 27	FREE	For more information contact 780-624-0013
Canola PALOOZA	Lacombe Research & Development Centre, Lacombe	9:30—4:00 pm	June 28	FREE	Pre-registration is required 780-454-0844 or megan@albertacanola.com
Canola Growers Meeting	Dunvegan Inn, Fairview	9:00 am-3:30 pm	Nov. 29	FREE	Complete details available in September Visit www.albertacanola.com
	Guy Community Hall, Guy		Nov. 30		
	Five Mile Hall, Grande Prairie		Dec. 1		
2017 Study Tour National Western Stock Show	Denver, Colorado	TBA	Jan 10-17	Twin—$2989 Single—$3526	$500 deposit due July 4th For more information call Kaitlan 780-835-6799 or visit www.peacecountrybeef.ca





and negative encounters with bears.

- Use electric fencing to help protect bee colonies, calving grounds or other farm site areas.
- Clean up spilled grains or other crops where possible, and keep your BBQs clean – bears will smell food residues.
- Pack out all garbage from camp or worksites in airtight containers, and properly dispose of it.
- Be mindful of curves and blind spots on trails that block visibility.
- Keep your work or campsite clean. Store food and cook meals at least 100 meters away from your main living area.
- In some parts of Alberta, black bear baiting is allowed as part of the spring black bear hunt. If camping outside of designated campsites, watch for signs indicating that bear bait is in the area. Call your local Fish and Wildlife office at 310-0000 for more information.

Remember, most bear encounters can be prevented. It's up to us to decide how we will keep ourselves safe, and keep wild bears from becoming habituated, problem bears.

More Information

For more information on bears and Alberta BearSmart, visit: http://aep.alberta.ca/recreation-public-use/alberta-bear-smart/default.aspx

Rural Farm mailboxes in the MD's of Smoky River and Greenview, the County of Grande Prairie, Big Lakes County and Northern Sunrise County, all receive complementary issues of the Back Forty Newsletter. Request your mailbox be classified as **Farm** by talking to your local Post Mistress to ensure you receive your copy.

Do you Receive the Back Forty?

Build a Legacy!

Give a gift that benefits the Agricultural Community by providing a piece of land or funds to assist with the purchase of land. SARDA is a producer directed, not for profit organization whose Vision is to own an advanced agriculture resource center of excellence. Build your legacy. Call Vance at 780-837-2900. Tax deductible benefits available.

Alberta Farmland Values Keep Climbing

From the April 18, 2016 issue of Agri-News

Alberta producers should prepare for a possible easing of farmland values, although the latest Farm Credit Canada (FCC) Farmland Values Report indicates average values continued to increase in Canada in 2015. In Alberta, the average value of farmland increased 11.6 per cent in 2015, following gains of 8.8 per cent in 2014 and 12.9 per cent in 2013. Values in the province have continued to climb since 1993.

The report shows that nationally, and in many key agriculture regions, the average value of farmland increased at a slower pace last year. Overall, there appears to be greater volatility with a higher number of locales where values decreased.

J.P. Gervais, FCC's chief agricultural economist, said a strong agriculture sector – supported by healthy crop receipts and low interest rates – continued to sustain increases in farmland values in 2015. But some of the key factors that influence farmland values are beginning to change. "We're now seeing lower commodity prices offset by low interest rates and a weak dollar. The weak loonie not only makes our exports more competitive, but helps producers receive a better price for their commodities that are mainly priced in US dollars," Gervais said. "It becomes a real tug-of-war between competing factors that influence farmland values."

Average farmland values in Canada showed a 10.1 per cent increase in 2015, compared to a 14.3 per cent increase in 2014, and a 22.1 per cent increase in 2013. All provinces saw their average farmland values increase, and the rate of increase slowed in six provinces. Gervais said strong commodity prices from 2010 to 2013 generated high profits for crop producers, and contributed to record increases in the value of farmland. Profit margins and demand for agriculture commodities remain strong, mostly due to the low value of the Canadian dollar.

"The best-case scenario would be for the average value of farmland to reach a point of long-term stability, where any future increases or decreases are modest and incremental," said Gervais.

By sharing agriculture economic knowledge and forecasts, FCC provides solid insights and expertise to help those in the business of agriculture achieve their goals. To follow and participate to the discussion on farmland, visit the FCC Ag Economist blog .post.

More Information

Kenneth Gurney
senior appraiser
Farm Credit Canada
403-382-2907

County of Grande Prairie Corner

By Sonja Raven, Agricultural Fieldman

Sonja Raven, Agricultural Fieldman

Welcome to an early spring in the County of Grande Prairie. At time of writing, crops are in, the rain has come, and we are looking forward to the growing season.

As I always seem to, I'll be writing about weeds this time of year, because they too are happy for the early spring and the rain. I encourage you to keep an eye out for our invaders, and take steps to control them early.

One of the areas that isn't as widely covered when it comes to weeds is the use of wildflower mixes. Lately, in the effort to promote bee populations, and provide food for bees, companies have been giving away free "wildflower mix" seeds. The cereal company that markets Cheerios is the latest in the series of companies promoting feel-good things that you can do to help the environment. Their strategy is to send people free packages of "wildflower mix:" seeds, with the goal of sending one package to each household in Canada. On the surface, this sounds wonderful – who wouldn't want to scatter a few seeds and help out the humble bee – on whom we depend so much? The problem is, that these seeds are not "wild" at all. They are foreign seeds from Asia and Europe. Many of the plants that we already have from these areas haven't worked out so well for us; most of our noxious and prohibited noxious weeds are from Eurasia and we are having a hard enough time with them. Pollinator bees need NATIVE plants to feed on. One analysis of a "wildflower mix" only included 1 plant native to Canada out of over 15 on the label! When you go to your local hardware store, I encourage you to look at a wildflower mix and see if the species are labeled. If they aren't, you have absolutely no idea what you're getting! You would also be surprised to know how many have baby's breath, scentless chamomile and ox eye daisy in them; all of which are noxious weeds under the Weed Control Regulation. Many also contain purple loosestrife and other prohibited noxious weeds. The problem is, how many of us are familiar with the Latin names for these plants? And that is what the label often lists. So, look for plants like: Tripleurospermum inodorum (mayweed), Leucanthemum vulgare,(ox eye daisy) Gypsophila paniculata, (Baby's breath) and Lythrum salicaria. (Purple loosestrife) and if you want to get more information, talk to us. We are always happy to help people become more aware of the regulated weeds around them.

On June 2nd, the Agriculture Department will be hosting our first Youth Ag Discovery Tour. The Agriculture Service Board identified a need to increase educational opportunities for children, with regards to agriculture, and has tasked the Agriculture Department to deliver this. Local grade 3 children will be visiting our 2016 Farm Family, the Richards' at their Scenic Heights Farm just outside of La Glace. After a morning exploring the lambs, poultry, and grain operation, with a station on machinery safety,

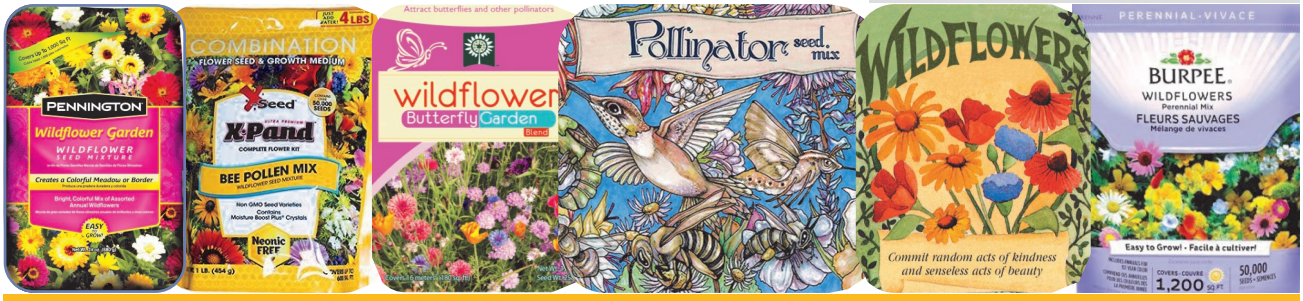
they will enjoy a BBQ lunch, and head to the Balisky Farm down the road. There they will learn about pigs, cattle handling, 4H, gardening and getting ready to ride. This promises to be an exciting day for the kids, filled with learning about where their food comes from, and what goes into producing it.

Our Annual Agriculture Tour is scheduled for August 25th. As in years past, we will kick it off with a hearty breakfast, and then tour some of the County's diverse agricultural operations. Registration for the tour will open up in the first week of August, and more information will be coming soon.

We wish you a successful growing season, and as always, encourage you to call our office at 780-532-9727 if you have any concerns or questions, or to report noxious weeds.

More Information

Sonja Raven, AF
780-567-5585
sraven@countygp.ab.ca



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Contact SARDA
780-837-2900 ext. 1 or manager@sarda.ca
Pay online www.sarda.ca

Alberta Government

Protecting Alberta's Water Resources

From the May 23, 2016 issue of Agri-News

Zebra and quagga mussels are small freshwater, clam-like species that pose a significant threat to Alberta's waterways and irrigation systems.

"The concern with zebra and quagga mussels is that they multiply very quickly and can attach and accumulate on any submerged surface in the water, and could clog up water related infrastructure such as irrigation pipelines within a matter of months," says Nicole Seitz Vermeer, Alberta Agriculture and Forestry (AF), Lethbridge. "They are also filter feeders, which means they can destroy fish habitat by outcompeting native species for food. There is no proven way to completely eradicate the mussels, and they are very difficult to control."

She says that invasive mussels are not yet present in Alberta, but are primarily spread by trailered watercraft travelling from an infested lake. "The concern is that folks coming to Alberta with their boats could be bringing zebra and quagga mussels they picked up on their boats while in infested lakes in Eastern Canada like the great lakes and Lake Winnipeg, or for our snowbirds returning with boats from infested lakes in the southwestern United States such as Lake Mead, Lake Powell, and Lake Havasu, all of which have zebra or quagga mussel infestations."

Alberta's irrigation infrastructure includes more than 50 storage reservoirs that provide recreational activities such as boating and angling. These reservoirs also provide water to 8000 km of canals and buried irrigation pipeline.

"If invasive mussels were to be introduced to an irrigation reservoir from an infested boat, the entire downstream irrigation system could be at risk of reduced water conveyance and increased maintenance and replacement costs due to the build- up of live mussels. The shells are also a nuisance – washing up on beaches."

Alberta Environment and Parks is leading a province-wide aquatic invasive species program to protect Alberta against invasive mussels. "AF, along with the Alberta Irrigation Projects Association and the Irrigation Districts are active program partners and recognize the huge negative implications that a mussel infestation could have for our province."

Last year, watercraft inspections became mandatory in Alberta. Watercraft inspection stations have been set up at several of Alberta's border locations, and anyone towing a boat or any

type of watercraft, including canoes and kayaks, are required by law to stop and be inspected. There are also three sniffer-dogs who complement the human inspectors, and the sniffer-dog program has been supported by our irrigation districts. Lastly, Alberta Agriculture and Forestry in partnership with the Eastern Irrigation District is conducting research this summer to develop a method to treat irrigation pipelines to prevent mussel growth if mussels are ever detected in an irrigation reservoir.

Seitz Vermeer adds Albertans can make a difference in protecting the province's valuable freshwater resources by making sure they clean, drain, and dry their boat after taking it out of the water.

"If you find anything suspicious, or suspect that another boat may have mussels attached to it, call the aquatic invasive species hotline at 1-855-336-BOAT (2628). When you are returning from out of province with a boat, be sure you have cleaned, drained and dried your boat, and ensure that the drain plug has been removed. If you come upon a watercraft inspection station, be sure to stop and be inspected. It doesn't take long, and you may even have the privilege of being inspected by a canine staff member."

Alberta Government

Blue Green Algae

From the May 23, 2016 issue of Agri-News

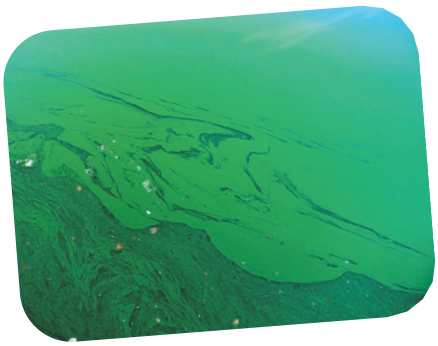
An Alberta Agriculture and Forestry (AF) water specialist has a warning about the dangers of blue-green algae.

"Blue-green algae is actually cyanobacteria, and can produce toxins that can be very dangerous," says Shawn Elgert, agricultural water engineer, AF, Barrhead. "It can cause organ damage or even death if ingested by livestock or pets."

Elgert says blue-green algae can be hard to identify. "It can look like blue-green scum, pea soup or grass clippings suspended in the water."

If blue-green algae is suspected in a dugout, it is best to be cautious. "Don't swim or bathe in the water and remove your livestock from it. Don't consume the water even if treated, and don't use the water on your vegetable garden."

The dugout can be treated using a copper product registered for use on



cyanobacteria. “Once you treat it, you need to avoid using the water for up to a month,” says Elgert. “The use of copper will break the cells open and release the toxins into the water all at once, so it’s important that you stop using the water while this is happening. You can follow up with alum and hydrated lime treatments afterwards to remove the nutrients from the water to prevent regrowth.”

Elgert says there are also preventative measures that can be taken to try to avoid the problem.

“Temperature is a very important factor in the growth of cyanobacteria, so a deeper dugout with slopes that are not too flat would help make the dugout water cooler. This will help prevent cyanobacteria from growing.”

Nutrients are also required for growth of cyanobacteria. “We have information on how to reduce nutrients from entering the dugout in our Quality Farm Dugouts manual. Buffer strips and grassed waterways are examples of how you can reduce nutrients. Aeration of the dugout can also help, as can using a dye in the dugout to help prevent photosynthesis from occurring, thereby reducing the growth of cyanobacteria. However, one action alone will not be enough to prevent growth.”

Elgert also notes that the wind can push the cyanobacteria into highly concentrated pockets where the risk of harm is higher. “Also, cyanobacteria can rise or fall in the water column so inspection of the dugout should include peering into the deeper part of the water. Always be safe around the dugout by going along with another person and have a rope with a flotation device attached.”

For more information or assistance, contact an AF water specialist at 310-FARM (3276). AF also has a factsheet on this subject entitled Blue-Green Algae (Cyanobacteria) in Surface Water Sources for Agricultural Usage. (http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/wqe15283

More Information

Alberta Agriculture
www.1.agric.gov.ab.ca
Ag Info Call Centre
310-Farm (3276)

Alberta Health Services

Blue Green Algae Health Advisories

http://www.albertahealthservices.ca/news/bga.aspx

CLICK HERE www.sarda.ca

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Important Deadlines:

June 20 - Last day to file Land Reports without penalty.

June 20 - Bee Overwintering Insurance deadline to apply, make changes, or cancel your c overage.

June 25 – Early Payment Discount to Annual & Perennial Crop Insurance premiums received by AFSC the latter of June 25th or within 15 days of each version's billing date.

For individuals and companies involved in primary agriculture in Alberta, AFSC's Revolving Loan Program is designed for you. The Revolving Loan Program allows you to control access to cash flow when you need it, and you only pay interest on what you use. Secure up to $5 million, whether you are an individual or a group of connected individuals or companies.

Straight Hail Insurance is now available for purchase:

For almost 8 decades, AFSC has provided Alberta Producers with hail insurance. Protect your investment and give yourself peace of mind this growing season. Purchase Straight Hail Insurance online at www.AFSC.ca or at your local AFSC branch office.

More Information

AFSC Falher
780-837-2521
www.afsc.ca

Foot Prints Tours

Wondering what to do on that Sunday afternoon drive or you need a break when travelling the Peace Region, take a slight detour and visit the SARDA research sites. SARDA encourages people to visits its research sites during the summer months. If you are wondering how specific varieties are performing throughout the season or how different agronomic practices affect the crops, you may want to visit the sites.

Included in this article are maps showing site locations and lists of the trials at each site. Each trial is posted with a brief description. More detailed information and a description of the treatments is available in the green mailbox located at the entrance of the site.

Biosecurity measures are in place at all of SARDA's sites and we require that people respect this. The green mailboxes are stocked with disposable booties for everyone's use.

If you would like a tour of a site with one of SARDA's staff, please call SARDA (780-837-2900) and we can arrange a time that is suitable to everyone. We ask that people get at least 5 friends, co-workers, or producers together for these special tours.

Greenview Site

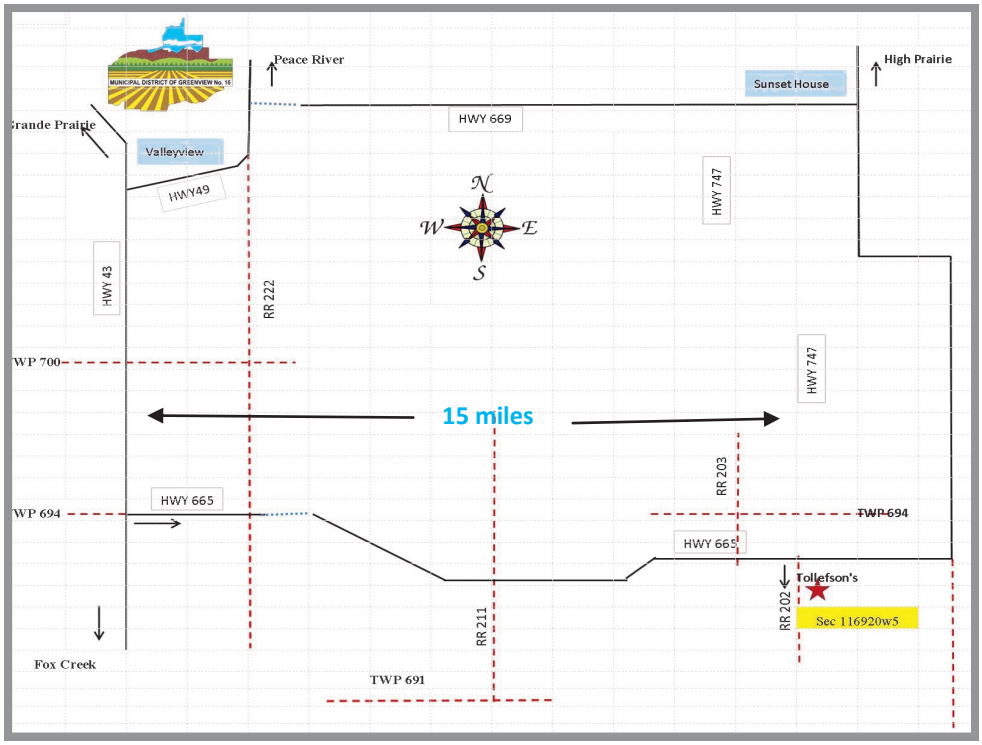
(Sec 11-69-20 W5th)

Regional Variety Trials (RVT)

- Barley (14 varieties)
- Wheat—CWGP, CWSWS, CPSR, CWRS & CWHWS (39 varieties)
- Oats (9 varieties)
- Flax (11 varieties)
- Yellow Peas (6 varieties)
- Green Peas (4 varieties)

Regional Silage Trials

- Barley (15 varieties)
- Wheat & Triticale (6 varieties)
- Cereal peas mixture (6 treatments)
- Industry Canola Trial



Smoky River Sites

Garant's Site

(SE 1-19-77-20 W5th)

Canola

- Canola Prairie Trials (26 varieties)
- Mosaic Canola- 2 trials
- Renew Canola —2 trials
- Emerard Canola Trial
- Koch Canola Trial (N rate, placement and type)

Peas

- RVT—Yellow Peas

(6 varieties); Green Peas (4 varieties)
- Hail (damage level and recovery trial)
- Puse intercrop (faba pea, chick peas and lentils
- Mosaic Pea Trials—5 trials

Hemp
- Seeding dates (3 dates X 4 varieties)
- Variety trial (12 varieties)
- Fertility X variety (6 N rates X 3 varieties)

Flax
- RVT (11 varieties)

Faba
- Fungicides (rates and types)
- Macro nutrients (N, P, K, S)
- Micro nutrients (B, Mo, & Mn combinations

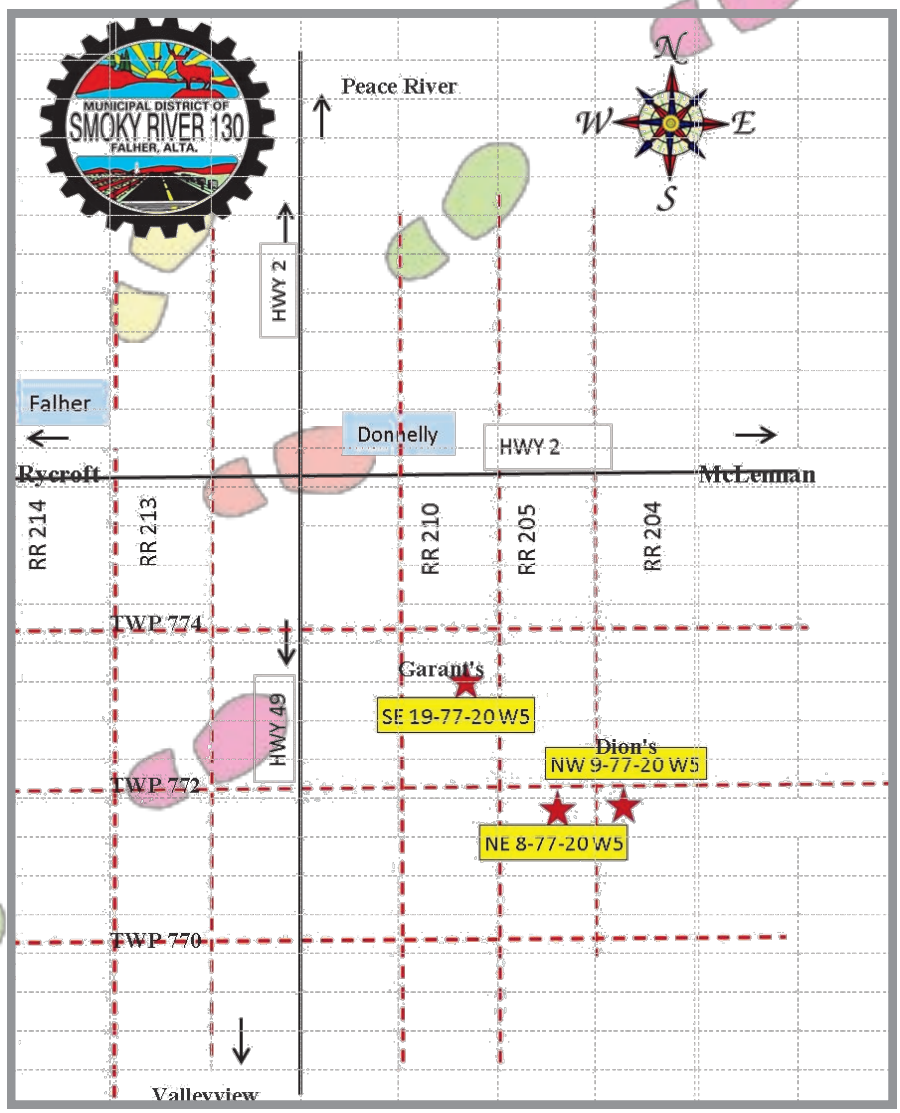
Dion West
- Canola Hail Trial (damage level, time and recovery)
- Cereals on Pulses Rotation

Dion East
Regional Variety Trials
- Barley (14 varieties)
- Wheat—CWGP, CWSWS, CPSR, CWRS & CWHWS (39 varieties)
- Oats (9 varieties)

Advanced Agronomy Trials
- Wheat stacking (N rate X Fungicide X PGR) 48 treatments)
- Barley stacking (N rate X seed rate (64 treatments)
- Wheat genetics X management (24 treatments)
- Barley genetics X management (20 treatments)
- Foliar fungicide on feed barley (14 treatments)
- Foliar Fungicide on malt barley (14 treatments)

Others
- Wheat Hail Trial (damage level and recovery)
- Oats Commission Trial (15 varieties)
- Monsanto Wheat trial (6 treatments)
- Engage Agro (6 wheat, 1 barley & 1 oat) (14 treatments.

Dion East Winter Wheat
- 2016 Wheat herbicide for 2017 Faba herbicide trials
- Winter wheat-2 trials (dry fertilizer vs. liquid fertilizer; seeding dates X seed treatmenst dry fertilizer
- Pea standability (wheat stubble X PGR)
- Winter wheat UAN stabilization



More Information

Summer Field School

Register Online
www.sarda.ca

$ 75

June 22

Donnelly Sportex

8:30 am –3:30 pm

(lunch included)

Pulse diseases,
Soils,
Wetlands,
and More!

SARDA

Box 90
Falher, AB
T0H 1M0

Phone: 780-837-2900
Fax: 780-837-8223
Email: admin@sarda.ca

Www.sarda.ca

Cutworms have been identified in the MD of Smoky River View this email in your browser

Cutworms (Noctuidae)

Keep an eye on fields that are "slow" to emerge, are missing rows, include wilting or yellowing plants, have bare patches, or appear highly attractive to birds – these are areas warranting a closer look. Plan to follow-up by walking these areas later in the day when some cutworm species move above-ground to feed. Start to dig below the soil surface (1-5 cm deep) near the base of a symptomatic plant or the adjacent healthy plant. If the plant is well-established, check within the crown in addition to the adjacent soil. The culprits could be wireworms or cutworms.

Several species of cutworms can be present in fields. They range in colour from shiny opaque, to tan, to brownish-red with chevron patterning. Cutworm biology, species information, plus monitoring recommendations are available in the Prairie Pest Monitoring Network's Cutworm Monitoring Protocol. Also refer to Manitoba Agriculture and Rural Initiatives cutworm fact sheet which includes action and economic thresholds for cutworms in several crops.

More information about cutworms can be found by accessing the pages from the new "Field Crop and Forage Pests and their Natural Enemies in Western Canada: Identification and Field Guide". An excerpt of ONLY Cutworm

pages from the new "Field Crop and Forage Pests and their Natural Enemies in Western Canada: Identification and management field guide" as an English-enhanced or French-enhanced version.

For ALBERTANS..... If cutworms are spotted in Albertan fields, please consider using the Alberta Pest Surveillance Network's "2016 Cutworm Reporting Tool". Once data entry occurs, your growers can view the live 2016 cutworm map.

Our mailing address is:
SARDA (Smoky Applied Research and Demonstration Association)
Box 90
#701 Mainstreet
Falher, AB T0H 1M0
Canada

To Spray or Not to Spray Fungicide

From the June 27, 2016 Issue of Agri-News

As the cereal crop's flag leaf stage approaches, many producers are wondering if a foliar fungicide application is worth their time and money.

"Most farmers want to know if they will get a yield and economic benefit from a foliar fungicide application," says Dr. Sheri Strydhorst, agronomy research scientist, Alberta Agriculture and Forestry, Barrhead. "Fungicide applications can be costly but, under the right conditions, can increase yields more than 30 per cent."

Strydhorst is leading a province wide-research project to help producers make fungicide management decisions. She says that, based on field research data from 2014 and 2015, they have come up with some helpful findings. "Our 10 site years of data show that a foliar fungicide application on AC Foremost wheat significantly increases yields when there has been at least five inches of rain from the time of seeding to end of June."

However, she cautions, it might not be that simple.

"For foliar diseases to infect crops and cause yield reductions, we need three

things. First, we need a susceptible host. Second, we need the pathogen. Third, we need environmental conditions suitable for disease development.
"Our detailed foliar fungicide work was done with AC Foremost. It is an old cultivar that does not have the best genetic resistance to foliar diseases. Without the genetic resistance, this cultivar needs extra help to battle disease pressure."

However, not everyone is growing AC Foremost. In another study, Strydhorst found that Stettler wheat showed a yield increase with dual foliar fungicide applications in only one of nine site years; AC Foremost in seven of nine site years and AAC Penhold in four of nine site years. "Some cultivars are responding to fungicide applications while others are not."

This certainly complicates the decision making process, she says. "Producers should check disease resistance ratings on the cultivar they are growing. For example, AC Foremost is rated as susceptible to stripe rust and moderately susceptible to leaf spot while AAC Penhold is rated as moderately resistant to stripe rust and intermediate to leaf spot."

Dr. Kelly Turkington, research scientist at Agriculture and Agri-Food Canada, Lacombe, says that, "in a continuous wheat rotation, residue-borne diseases such as tan spot and septoria are likely present, so it is reasonable to expect a fungicide response with a susceptible cultivar the majority of the time, especially when the weather is favourable."

Strydhorst's research found yield increases with AC Foremost in response to fungicide applications when there was 1.9" of rain from seeding until the end of June. In this instance, winter wheat fields in the area were showing high levels of stripe rust. She says that with high levels of disease in the environment, fungicides can contribute to yield increases.

Turkington says each disease has specific conditions that favour development. "Stripe rust does not necessarily need a lot of moisture. Heavy dew can be enough to promote stripe rust. More rainfall facilitates inoculum production, dispersal (in the case of rain splashed pathogens) and host infection."

With the timely and frequent rainfall seen in much of the province, Strydhhorst suggests environmental conditions are right for tan spot and septoria pathogen growth.

"Our research shows that the more rain we have had, the bigger the yield benefit from the fungicide. For example, with 10" of rain from seeding until the end of June we observed a 26 bu/ac yield increase. But with 7" of rain the yield increase was reduced to 20 bu/ac. We still have one more year of research to conduct, but our initial findings suggest that more frequent and timely rains lead to bigger benefits from fungicide applications."

Turkington says stripe rust is a different pathogen and warm days with heavy dew resulting in several hours of leaf wetness per day can provide suitable environmental conditions for disease development in June. "However, rainfall and/or heavy dew in July can contribute to stripe rust development including on the head and peduncle also contributing to yield reductions."

While Strydhorst's research aims to simplify decision making, she says, as we all know, nothing is ever simple.

"At the end of the day, producers should assess: the disease rating of their cultivar, the presence of disease in their field and the environmental conditions. If you have poor genetic resistance, disease presence coupled with frequent, timely rains, it will likely be worthwhile to spray a foliar fungicide in 2016."

Contact:

Sheri Strydhorst

780-674-8248

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Canada

Alberta's Crop Commissions hire Ipsos Reid to survey farms' sustainability practices

Alberta's four major crop commissions are addressing a growing need for the grain sector to meet high sustainability standards needed to maintain and expand international market competitiveness. The crop commissions contracted Ipsos Reid to conduct a phone survey of Alberta growers in late June to gain a better understanding of farmers' readiness to benefit from internationally recognized sustainability standards and beneficial management practices.

Jolene Noble, Extension Coordinator for the newly formed Farm Sustainability Extension Working Group (FSEWG) says, "Canadian agriculture has a very positive image in the global market place and Alberta growers are progressive, innovative, and dedicated to the stewardship of their land." This reputation positions the Alberta farmers to be leaders in the sustainable agriculture movement and capitalize on emerging market opportunities.

"We are living in a world where fewer and fewer people have a connection to agriculture. At the same time there is a growing interest by consumers as to where their food comes from," says Jason Lenz, Vice Chairman with Alberta Barley. "Sustainability is increasingly important to consumers, restaurants, and food retailers, so we need to be able to demonstrate that we are producing a sustainable product and dedicated to continued improvement on this front."

In mid to late June, growers will be receiving phone calls from Ipsos Reid to answer questions regarding their production practices. Results from this survey will enable the industry to quantify the great work that Alberta growers are already doing on farm sustainability. Building on the work from the Alberta Crops Sustainability Certification Pilot Project from spring of 2015, the working group will assess the results and provide resources and extension support to continue advancing on farm sustainability production practices in Alberta.

Contact:
Jolene Noble
Extension Coordinator
Farm Sustainability Extension Working Group
780.887.9446

The FSEWG is comprised of Alberta Barley Commission, Alberta Canola Producers Commission, Alberta Pulse Growers Commission, and the Alberta Wheat Commission. Working on behalf of our producer membership, we are committed to assessing and meeting areas of need for on-farm sustainability extension and education.

Farm Sustainability Extension Working Group hires extension coordinator to boost on-farm sustainability awareness

(Calgary, Alberta), May 2, 2016 –The Farm Sustainability Extension Working Group (FSEWG) is pleased to announce that Jolene Noble of Manning, Alberta, has been hired as an Extension Coordinator to develop, coordinate, and implement an extension program to increase Alberta producers' awareness of on-farm sustainability.

Organized by the FSEWG with funding support from Alberta Agriculture and Forestry's Growing Forward 2 Program, this collaborative role is in place to address a growing need for the crop sector to meet high sustainability standards to maintain and expand international market competitiveness.

"Sustainable agriculture is becoming increasingly important in building market access opportunities and ensuring the long-term viability of our industry," says Noble. "I look forward to contributing to these end-goals by working with producers to bring awareness to social license issues and highlighting on-farm best management practices."

Noble brings extensive professional program coordination experience from the beef industry where she successfully managed programs for youth and advocacy. Additionally, she has actively participated in programs such as the McDonald's Sustainability Pilot Project, Verified Beef Production, and the Environmental Farm Plan from a producer perspective on her family's mixed farm.

In this position, Noble will support the crop commissions in better understanding farmer readiness with respect to internationally recognized sustainability standards and best management practices. This information will be derived via phone survey to be conducted by Ipsos Reid this summer, building on the information compiled through the Alberta Crops Sustainability Certification Pilot Project that was collaboratively delivered during the spring of 2015. Noble will subsequently develop and deliver coordinated extension programming to support the crop commissions' membership in positioning their operations to meet current and emerging sustainability market standards.

The FSEWG is comprised of Alberta Barley, Alberta Canola Producers Commission, Alberta Pulse Growers Commission, and the Alberta Wheat Commission. Working on behalf of our producer membership, we are committed to assessing and meeting areas of need for on-farm sustainability extension and education.

For more information, please contact:

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Victoria Russell
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Ellen Cottee
Communications Coordinator
Alberta Barley
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Rachel Peterson
Communications Coordinator
Alberta Pulse Growers Commission
(780) 986-9398
rpeterson@pulse.ab.ca

Good morning,

Alberta Beef Producers is looking for nominations for their 2017 Environmental Stewardship Award. ABP has been awarding Alberta producers who exemplify the beef industry for almost 25 years. I have attached the nomination forms but they can also be found on our website.

Rosanne Allen
EXECUTIVE ASSISTANT

Alberta Beef Producers

165, 6815 - 8 Street NE
Calgary, AB Canada T2E 7H7

email rosannea@albertabeef.org
tel 403.451.1174
fax 403.274.0007

www.albertabeef.org

Check out what events are going on in the industry and around Alberta at http://www.albertabeef.org/page/events.

Is this email not displaying correctly? View it in your browser.

SINCE 1969 Alberta Beef Producers

June 16, 2016

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Verified Beef Production Plus Program officially launched

After months of hearing about the benefits of the Verified Beef Production Plus (VBP+) program, producers can now see for themselves how validating their sustainable production practices provides opportunity to proactively share their

stories with consumers and beef retailers.

Officially launched today, the new, national VBP+ program includes training and auditing for animal care, biosecurity and environmental stewardship along with on-farm food safety practices within the cow-calf and feedlot sectors. Through validating sustainable practises at the primary production level, VBP+ enables producers to publicly demonstrate their commitment to responsible stewardship of both cattle and resources.

The level of transparency VBP+ offers on a range of key production practices provides retailers and consumers with the knowledge that the beef they purchase is from a healthy animal raised with appropriate oversight and care on the farm, ranch or feedlot. These essential attributes are applicable throughout the beef production supply chain and are captured in a new impactful VBP+ logo.

VBP+ shows that Canadian beef producers are listening, said Alberta rancher and Chair of the producer-led VBP+ Transition Management Committee Cecilie Fleming. "Being a VBP+ registered producer enables beef operations to showcase the good production practises they commit to on their farms, ranches and feedlots as well as fosters continual improvements. VBP+ is a straightforward, practical and low cost program to implement yet contains the robust validation required to satisfy the retailer, other end users, and consumer needs. A voluntary program, VBP+ allows registered operations to be part of a bigger picture of raising beef cattle that can flow into the growing Canadian sustainable beef supply stream," she said.

VBP+ is an expansion of the former Verified Beef Production on-farm food safety program. Work began in late 2013 to expand the program to include production practices validation in all areas of the beef production supply chain. National delivery and oversight of VBP+ maintains a conformance system and streamlines delivery of information, training, online tools and resources. Like the initial program, VBP+ remains voluntary and industry-led.

The VBP+ program has demonstrable and credible threshold levels producers must achieve to become, and maintain, registered status on the program. This progressive, audited program promotes continual improvements at the beef farm, ranch and feedlot level.

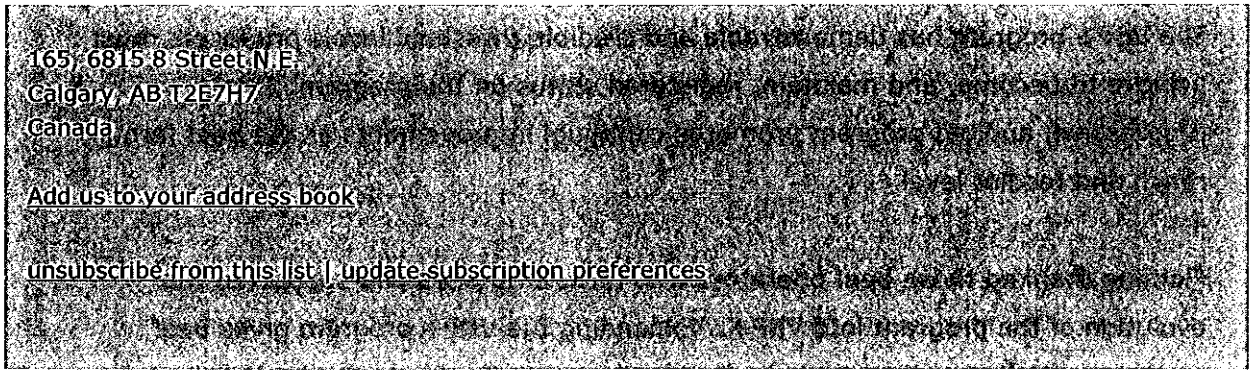
Fleming thanked those beef operators who have embraced and supported the evolution of the program into VBP+. "Expanding the VBP+ program gives beef producers another tool to credibly demonstrate that the beef industry is listening and responding to changing needs of its end users," she added.

The VBP program grew from its roots in the Quality Starts Here program, an educational initiative started by the Canadian Cattlemen's Association to help the beef industry move toward the highest beef quality in the world.

VBP+ is operated by the Beef Cattle Research Council. Funds to develop and deliver VBP+ are provided through the Canadian Beef Cattle Check-off and Agriculture Canada's AgriMarketing Program - Assurance Systems Stream of Growing Forward 2.

For further information, contact:

Gina Teel
Communications Manager
Canadian Cattlemen's Association
403-275-8558 x 306 | 403-875-3616
teelg@cattle.ca | www.cattle.ca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Canada
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FORWARDED ON BEHALF OF TOSO BOZIC

Dear Ag-Fieldman

As insects and disease season is on as well as drought I would like to just update you on what so far most of your questions are:

- Large Aspen Tortix are by far the most common insect problem that I am getting
- Forest Tent Caterpillar is next to it that happening through various part of province
- On spruce most of problems that I am getting is related to drought or salt but also some issues with Cytospora
- Please have a look these web sites and fact sheet how to deal with it
- If you notice anything else please let me know
- Lastly here are some pictures that I get – Tortix and Caterpillar

https://tidcf.nrcan.gc.ca/en/insects/factsheet/12016 - Large Aspen Tortix

https://tidcf.nrcan.gc.ca/en/insects/factsheet/9374 - forest Tent Caterpillar

https://tidcf.nrcan.gc.ca/en/diseases/factsheet/263 - Cytospora

Toso Bozic
Bioenergy/Agroforestry Specialist
Alberta Agriculture and Forestry

Phone: (780) 415-2681
Cell: (780) 940-6107
Fax: (780) 422-6096
e-mail:toso.bozic@gov.ab.ca

"Too often WE... enjoy the comfort of opinion without the discomfort of thought"

John F. Kennedy

Shelterbelt Centre Pest Leaflets

FOREST TENT CATERPILLAR

Host: Trembling aspen, poplar and other trees and shrubs.

Appearance and Life History: Larvae emerge from egg bands in the spring, just as the foliage begins to appear on the trees. Larvae are dark brown with broad blue bands along each side and marked with a row of white key-hole shaped markings down the centre of the back. Contrary to their name, forest tent caterpillars do not construct a tent, but feed openly on the foliage. By mid to late June, the full grown larvae are 45 to 55 mm in length. The moths are present from mid-July to early August. After mating, the females deposit egg bands containing 100 to 200 eggs on twigs of host trees. The egg bands are 10 to 20 mm long and are covered with a foamy, dark-coloured, protective substance. The forest tent caterpillar completes one generation a year.

Damage: Forest tent caterpillar damage can range from a thinning of the crown to complete defoliation. After a severe attack most trees will refoliate the same year. Trees may suffer top dieback or die if defoliated three or more consecutive years.

Control: Natural factors such as disease, parasites, predators, starvation and adverse weather usually keep populations low. Where practical, some control can be achieved by removing the egg bands from the host trees late in the fall or early spring. For large shelterbelts, the larval stage may be sprayed with an insecticide such as malathion, acephate, carbaryl, deltamethrin, or *Bacillus thuringiensis*. Malathion, deltamethrin, and *Bacillus thuringiensis* are also registered for aerial application. Application of insecticides should be conducted in late May to early June while larvae are small and damage is light. Spraying will probably be required if the number of egg bands on the tree is greater than the trunk diameter in centimeters, measured at approximately 1.5 m above ground level.

For further information please contact:
PFRA Shelterbelt Centre
P.O. Box 940
Indian Head, Saskatchewan, S0G 2K0
Phone: (306) 695-2284
Fax: (306) 695-2568
Email: pfratree
Internet: www.agr.gc.ca/pfra/shelterbelt.htm

Prairie Shelterbelt Program
Disease Leaflet

CYTOSPORA CANKER

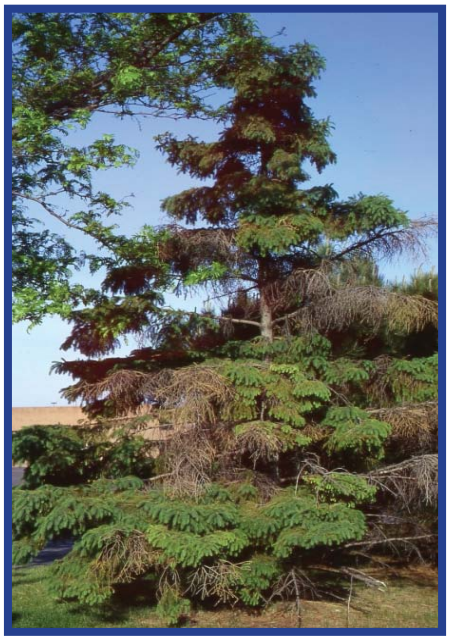
Cytospora kunzei

Hosts:

Colorado and White spruce

Distribution and Disease Cycle:

Cytospora canker is caused by a fungal pathogen which attacks many species of conifer, including Colorado, white, Norway, and Engelmann spruce and Douglas-fir, with Colorado spruce more susceptible than any other species. Spores are released from cankered branches throughout the growing season and spread by rain, wind, insects, birds or man to other branches on the same or other trees. Infection typically occurs through wounds, first infecting and killing the bark and eventually spreading to kill the entire branch. Cytospora can also be opportunistic, growing in bark killed by other pathogens. Damage is usually seen on older, larger trees.



Cytospora canker in Colorado spruce
Photo credit: Joseph O'Brien, USDA Forest Service, Bugwood.org

Symptoms and signs:

Cankers are a necrotic lesion on a localized area of stem/trunk tissue where tissue has died. Symptoms of Cytospora canker typically start on lower branches, with all needles on a branch being equally affected. Needles on infected branches turn brown and eventually drop, leaving entire branches bare, with dead (cankered) areas of the bark exuding a white or bluish resin. Infection is usually most severe on crowded or stressed trees.

Cytospora canker close-up with bark peeled.
Photo credit: Agroforestry Development Centre

Control:

Because Cytospora typically infects trees weakened by environmental stresses, maintain tree vigour by watering during periods of drought, do not cultivate deeper than a few inches nearby trees and avoid inflicting wounds to bark which act as infection entry points. Remove and dispose of infected branches, these branches will not recover and only will serve as a source of infection. Prune during late winter or during dry periods whenever cankered branches are discovered. Prune to a lateral branch at least 10-15cm below any visible cankers or to the main trunk as required, sterilizing pruning tools with 5% bleach solution or alcohol between cuts. When trees become large and crowded, thinning out some trees may help increase aeration and provide some control. There are no chemicals registered for canker control in spruce.

For further information please contact:
AESB Agroforestry Development Centre
P.O. Box 940
Indian Head, Saskatchewan, S0G 2K0
Phone: 1-866-766-2284
Email: agroforestry@agr.gc.ca
Website: www.agr.gc.ca/shelterbelt

Canada

FORWARDED ON BEHALF OF SHELLEY BARKLEY

Timely information for pest management

Alberta Insect Pest Monitoring Network 

On our first **Call of the Land** insect update of the growing season, Scott Meers talks about the early start to insect issues—pea leaf weevil, grasshoppers, flea beetles, and cutworms
http://www1.agric.gov.ab.ca/$department/newslett.nsf/all/cotl25166

Bertha armyworm traps will **go up the week of May 30**. We are shipping supplies today. If you are a cooperator, please check your package when it arrives to make sure everything you need is there!

The **Prairie Pest Monitoring Network Blog** for the week of May 18...
http://prairiepestmonitoring.blogspot.ca/?m=0

Crane fly, cutworms and mystery insects. Read about them in the **North Dakota State University Crop and Pest Report** (May 12, 2016) https://www.ag.ndsu.edu/cpr

And...it's the May long weekend...hopefully the rain predicitions come true! #justrain

Contact bugs.r.us@gov.ab.ca if you are not interested in receiving these updates

FORWARDED ON BEHALF OF SHELLEY BARKLEY

The best crop input...your shadow

Alberta Insect Pest Monitoring Network

Today Scott says although cutworms are winding down, you still need to scout. He talks about the alfalfa survey and the first reports of cabbage seedpod weevil
http://www1.agric.gov.ab.ca/$department/newslett.nsf/all/cotl25250

We have added the cabbage seedpod weevil reporting app to our website. Here is the link
http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/prm13779
Here is the link to the reporting app.
http://www1.agric.gov.ab.ca/$Department/pestmon.nsf/WeevilWebSubmission
The map generates a google balloon in the midle of 4 townships, so privacy is secure. If you are visiting a lot of fields in a day, even just 1 report will build the power of the map.

A secret for using the app...
If you pre populate the map with your name, company and telephone number, then save on your smart phone or tablet device, then you can quickly fill in the form from field edge.

We will begin the alfalfa insect survey next week. So if you see us at a field, stop and say hi.

Contact bugs.r.us@gov.ab.ca if you are not interested in receiving these updates

FORWARDED ON BEHALF OF SHELLEY BARKLEY

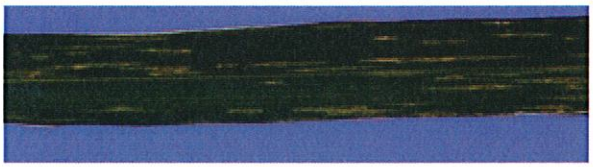
Timely information for pest management

Pathology

STRIPE RUST AND WHEAT STREAK MOSAIC VIRUS (WSMV)

Wheat streak mosaic virus has been reported in North Dakota, Montana, and Alberta. Early symptoms include yellow streaks. The initial leaf symptoms of wheat streak virus infection are yellow streaks or yellow-green mosaic patterns that run parallel to the veins.
(https://www.usask.ca/agriculture/plantsci/winter_cereals/winter-wheat-production-manual/chapter-22/viruses.php)

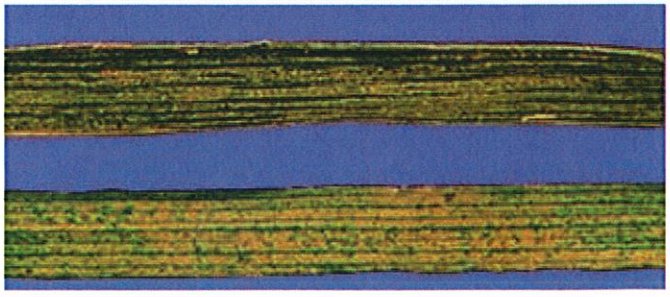
Early symptoms of stripe rust can appear similar to WSMV



(http://bulletin.ipm.illinois.edu/wp-content/uploads/2013/05/stripe-rust-early-symptoms.jpg)

How can I tell the difference?

Within a few days, stripe rust infections will produce pustules with orange-colored spores while WSMV infections will not produce orange pustules



https://osuwheat.files.wordpress.com/2013/05/stripe-rust-on-wheat-at-lahoma-ok-5-10-2013.jpg https://www.usask.ca/agriculture/plantsci/winter_cereals/winter-wheat-production-manual/chapter-22/viruses.php)

NOTE: STRIPE RUST IS CAUSED BY A FUNGUS, SO DISEASE PRESSURE IN A CROP CAN BE ALTERED WITH FUNGICIDE.
WSMV IS CAUSED BY A VIRUS AND WILL NOT RESPOND TO FUNGICIDES

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MEMBER BULLETIN

June 30, 2016

Draft AAMDC Municipal Agriculture Disaster Declaration Guide Now Available

In recent years, a number of rural municipalities experienced drought or excessive moisture conditions which impacted crop yields and resulted in municipalities declaring agricultural disasters across Alberta. These events presented an opportunity to explore the development of a tool that AAMDC members could use to help guide decision making in future instances of agricultural disasters. The AAMDC has worked with Alberta Agriculture and Forestry and the Agriculture Financial Services Corporation (AFSC) to develop a *Draft Municipal Agriculture Disaster Declaration Guide* (attached).

The draft guide is intended to promote a consistent mechanism for data collection and monitoring to support municipal decision making and to guide the communications process when considering agricultural disaster declarations. Through the use of information provided in the draft guide, municipalities can bring awareness to a situation as it is developing and ensure all levels of government and local residents are aware of the situation, without immediately declaring it as a "disaster."

The draft guide includes the following components:

- A condition statement tool
- Technical information that can be used to support data
- What a Government of Alberta declaration means
- An overview of municipal communication process in the event a disaster is declared
- Municipal agriculture disaster declaration template

The AAMDC is distributing this guide in its draft form recognizing that improvements to this document and tools included could be made. AAMDC members are encouraged to utilize this guide throughout the growing season and harvest and provide any input regarding its use or content to AAMDC Policy Analyst Tasha Blumenthal at **tasha@aamdc.com**. Any input is appreciated and feedback will be consolidated for improvements to the guide.

Enquiries may be directed to:

Tasha Blumenthal
Policy Analyst
780.955.4094

Kim Heyman
Director of Advocacy & Communications
780.955.4079

A Guide for Declaring Municipal Agricultural Disasters in Alberta

aamdc
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Partners in Advocacy & Business

Prepared by the Alberta Association of Municipal Districts and Counties

2016

Contents

About This Guide

Steps used towards declaring a municipal agricultural disaster can bring awareness to a developing situation, inform residents, industry and provincial and federal governments and enable collaboration with impacted producer groups.

This guide is intended to be used as a tool to enable municipalities to use informed decision making process prior to making a formal declaration of agricultural disaster as conditions evolve. **Municipal declarations do not automatically trigger access to increased funding programs, provincially or federally.**

A number of elements drove the creation of this guide, including:

- Past drought and excessive moisture experiences impacting agricultural production and crop yields,
- 2015 drought which resulted in a provincial declaration and multiple municipal declarations,
- Discussion stemming from the provincial Drought and Excessive Moisture Advisory Group (DEMAG) whose mandate is to provide advice and recommendations to complement government actions on drought and excessive moisture related issues affecting Alberta's agricultural producers in Alberta and to advise and provide recommendations to government on long-term strategies for mitigating the effects of drought and excessive moisture. More information regarding DEMAG is included in Appendix C.

Purpose of the Guide:

The purpose of the Guide is to promote a consistent mechanism for data collection and monitoring to support municipal decision making to guide agricultural disaster declarations.

Through the use of information provided in the Guide, municipalities can bring awareness to a situation as it is developing and ensure all levels of government and local residents are aware of the situation, without immediately declaring it as a "disaster."

The use of this guide is intended as a source of information that will allow data comparisons within a municipality year after year.

The Guide provides:

- Directions for consistent and clear messaging
- Identification of tools available to arrive at condition statement
- Access to technical data to support condition statement
- Timeline documentation of conditions
- The ability to modify condition statements due to a change in conditions
- An explanation of the differences between a condition statement versus a provincial declaration of agricultural disaster
- A recommendation as to when a municipal declaration should be made
- A communications guide noting key parties to notify

Condition Statement Tool Overview

The Condition Statement Tool is intended to provide a tracking mechanism that will enable data-driven municipal decision making where agriculture production is impacted by natural causes.

Utilizing data available through Agriculture Financial Services Corporation (ASFC) (ex. crop reports customized to the municipal level) and/or municipal resources such as agricultural fieldmen, the condition statement tool can be used to highlight and track the percentage of crops in poor condition. The use of a colour-coded chart demonstrates a snapshot of conditions at a given time, and includes identification of the size of area impacted (in hectares).

Municipalities are encouraged to attach a map highlighting the impacted area(s) where possible.

It is advisable to assess conditions through this tool every two to three weeks to monitor and document any changes prior to making a formal declaration. It is important to note that improved conditions can result in a declaration being lifted.

The Condition Statement Tool is available in Appendix A for use and a sample is provided below:

Date:	*July 7, 2015*					
Municipality:	*County of AAMDC*					
Total Area Impacted:	*324 seeded hectares*					
Map Included:	*No*					
Next Report Due:	*July 21, 2015*					
	Ranking	**Drought**	**Excessive Moisture**	**Floods**	**Pests**	**Hail**
Annuals Impacted (% rated poor):						
Cereals		13% poor				
Oil Seed					26% poor	
Others						
Perennials Impacted (% rated poor):						
Tame Hay				55% poor		
Tame Pasture						
Native Pasture						
Other: (please indicate)						

Legend: % of crop (in hectares) rated 'poor':

	0 – 10%	Crops near normal and above
	10% - 25%	Expected diminished crop yields
	25% - 50%	Pending disaster
	50% or higher	Definite disaster
	No impacts being experienced	

Technical Information to Support Data

There are a number of tools available that supply data municipalities can use in assessing their local conditions and utilizing the condition assessment tool. Click on the hyperlinks provided for access to information.

Agriculture and Forestry

Alberta Agriculture and Forestry houses significant data sources that municipalities can utilize, including:

- Instructions for Accessing Precipitation Data from Alberta Agriculture and Forestry
- Agroclimatic Atlas Introduction
- Agroclimatic Atlas Maps
- Agriculture and Forestry Climate Services Staff Resources

Agriculture Financial Services Corporation (AFSC)

AFSC can assist municipal districts and counties when they are experiencing drought or excessively wet conditions. AFSC provides information through the following mechanisms:

- *Crop Reports*: AFSC senior adjusters report on crop conditions every two weeks from emergence until harvest is complete. These reports provide information at the county or municipal district level and are available on the AFSC website. This information can be presented in more detail during severe dry or wet conditions, for example maps that show the percent of crops rated poor relative to previous years.
- *Insurance Program Response*: Detailed information on how AFSC's existing insurance products respond to a specific conditions are made available on the AFSC website. This would include options for putting crops to an alternate use when crops are deteriorating and there is a shortage of feed in an area.
- *AgriStability Response*: How AgriStability responds can be posted on the AFSC website along with procedures for obtaining an advance under this program.
- *AgriRecovery Process*: AFSC along with Agriculture & Forestry staff can provide municipalities with detailed information on what is required to trigger an AgriRecovery response.
- *Information on accessing Environment Canada data*:
    - Instructions for Accessing Precipitation Data
    - Instructions for Accessing Historical Radar Data

Municipal Information:

- AAMDC
- Association of Alberta Agricultural Fieldmen (AAAF)

Government of Alberta Declaration

The Role of AFSC

Agriculture Financial Services Corporation (AFSC) is a provincial Crown corporation that provides farmers, agribusinesses and other small businesses with loans, crop insurance and farm income disaster assistance. AFSC expenditures are consolidated into the provincial budget and the provincial budgeting process includes requirements for ministries and Crown corporations to live within budgeted expenditures, meaning that departments or Crown corporations cannot spend more than what has been budgeted for.

AFSC forecasts annual revenues that will be gained through premiums and estimates expenditures to pay out indemnities. AFSC provides those budget estimates to the Government of Alberta for inclusion into the provincial budget. If indemnities exceed budget amounts, AFSC needs to access reserve funds and the remainder of premiums as expenditures. This requires a formal process through the Treasury Board.

Provincial Declaration

In order to access additional funds the Government of Alberta must declare a disaster to access those funds for claim payments. This decision is made by Cabinet and is informed by data and analytical information provided by AFSC and Alberta Agriculture and Forestry. This declaration triggers a financial transaction through the Treasury Board to enable AFSC access to reserve funds.

Municipal Role

A common misperception is that a municipal declaration of an agricultural disaster will influence a provincial declaration or access to funding supports. This is simply not the case. Municipal declarations bring awareness to an issue in a specific area of the province, but they do not trigger a provincial declaration or access to any funding to support the issue.

Municipalities can work with their local agriculture industries or industry/producer organizations to communicate concerns and assess challenges being experienced.

Municipal Communications Process

The AAMDC assists AFSC and the Government of Alberta in distributing information to municipalities and Ag Service Board members. Providing a central communication hub for information sharing improves understanding of the challenges being experienced and connecting impacted municipalities with appropriate resources and support.

Before a municipality formally declares a state of agriculture disaster, a number of questions should be considered to enable consistent and thorough communications. These include:

- Does the state of agricultural disaster cover the entire area or just a region within the municipality?
- Does the agriculture disaster cover all agriculture in the municipality or only certain commodity products?
- Has the municipality used AFSC data for the local area to assess the level of impact being experienced?
- Has the municipality contacted producer groups and associations to discuss impacts being experienced?
- Does the municipality have data to support this decision (ex. completed condition assessment tool(s) and municipal mapping)?

Once a declaration of agriculture disaster has been made, the municipality should provide information regarding the details of the agriculture disaster to the following organizations for access to consistent information:

- Government of Alberta (Agriculture and Forestry)
- AFSC
- AAMDC

Appendix A: Condition Statement Tool

Utilizing data available through Agriculture Financial Services Corporation (ASFC) (ex. crop reports customized to the municipal level) and/or municipal resources such as agricultural fieldmen, the condition statement tool can be used to highlight and track the percentage of crops in poor condition.

The use of a colour-coded chart demonstrates a snapshot of conditions at a given time, and includes identification of the size of area impacted (in seeded hectares where applicable).

Municipalities are encouraged to attach a map highlighting the impacted area(s) where possible. It is advisable to assess conditions throughout the growing season to monitor and document any changes.

Date:						
Municipality:						
Total Area Impacted:						
Map Included:						
Next Report Due:						
	Ranking	**Drought**	**Excessive Moisture**	**Floods**	**Pests**	**Hail**
Annuals Impacted (% rated poor):						
Cereals						
Oil Seed						
Others						
Perennials Impacted (% rated poor):						
Tame Hay						
Tame Pasture						
Native Pasture						
Other: (please indicate)						

Legend: % of crop (in hectares) rated 'poor':

	0 – 10%	Crops near normal and above
	10% - 25%	Expected diminished crop yields
	25% - 50%	Pending disaster
	50% or higher	Definite disaster
	No impacts being experienced	

Appendix B: Municipal Agricultural Disaster Declaration Template

Municipal Agricultural Disaster Declaration

(attach all relevant data and completed condition statements to support declaration)

Municipality:	
Type of Agriculture Disaster:	[Type of disaster experienced and impact, such as drought conditions impacting 60% of cereal yields]
Stages of Disaster Declaration:	[Document the stages on the spectrum of the agriculture disaster and, as best as possible, the dates at which each stage was met]
Data to support:	[Insert or reference the data used to justify the state of agriculture disaster]
Level of impact:	[Describe the areas and commodity types impacted by the agriculture disaster]
Communication process:	[Outline the stakeholders to be contacted by the municipality following the declaration of agriculture disaster including Government of Alberta ministries, AFSC, AAMDC, and producer associations]
Other information:	

Appendix C: Drought and Excessive Moisture Advisory Group

The Drought and Excessive Moisture Advisory Group (DEMAG) is comprised of appointed representatives of key stakeholder agencies:

- Agri-Environmental Services Branch of Agriculture and Agri-Food Canada
- Agriculture Financial Services Corporation (AFSC)
- Alberta Agriculture and Forestry
- Alberta Association of Agricultural Fieldmen (AAAF)
- Alberta Association of Municipal Districts and Counties (AAMDC)
- Alberta Environment and Parks
- Crop sector
- Irrigated Crop sector
- Livestock sector
- Wildrose Agricultural Producers Association

Mandate:

- To provide consistent and consolidated advice and recommendations to complement government actions on drought and excessive moisture related issues affecting the agricultural producers in Alberta.
- To advise and provide recommendations to government on long-term strategies for mitigating the effects of drought and excessive moisture.

Key Duties and Responsibilities of DEMAG:

- Facilitate two-way communication that is effective, timely, respectful and clear.
- Recommend extension activities and provide input to drought and excessive moisture related and related risk management information for key stakeholder groups.
- Serve as a formal communication connection between industry and government, and from government back to industry.
- Provide recommendations and policy advice to the Minister of Agriculture and Forestry for effective, fiscally responsible drought and excessive moisture preparedness, monitoring and reporting, and response actions.
- Actively participate in long-term strategic planning for future drought conditions in Alberta; for example, long-term water management and production/crop choices.
- Work with industry organizations to identify how to best assist producers in preparing for and coping with drought and excessive moisture, and develop these discoveries into recommendations.
- Oversee the implementation of the Agriculture Drought Risk Management Plan (ADRMP), and provide advice on and input during the ADRMP's review and evaluation.

Acknowledgments

The AAMDC would like to thank the following organizations for their contributions in developing this guide:

- Agriculture Financial Services Corporation
- Alberta Association Agriculture Fieldmen
- Alberta Agriculture and Forestry

Reminder! Pasture Walk Series with Kelly Sidoryk Quickly Approaching!

Pasture Walks

Dates: Tuesday, July 26th at Fourth Creek Hall, Wednesday, July 27th at Grimshaw Legion Hall, and Thursday, July 28th in Valleyview at Scott & Kerry Mulligan's

Time: 10 am Registration, Tours start at 10:30am

Locations: Please Call for directions to halls and farms

Agenda: We are pleased to host Holistic Management educator, Kelly Sidoryk and Alberta Agriculture & Forestry Forage Specialist Karin Lindquist as we tour a variety of pastures, forage crops, and cocktail cover crops across the Peace! A special feature on the July 26th date includes a tour and overview of our Sainfoin for High Legume Grazing project!

Cost: Free!

For more information or to register, call Kaitlin or Jen at 780-835-6799 or email kmclachlan@gprc.ab.ca or jallen@gprc.ab.ca

Pasture Walk Series

With Kelly Sidoryk & Karin Lindquist

Join us for a day of Pasture, Hay, Holistic Grazing & Cocktail Cover Crops! As well as a special presentation on Sainfoin with a stop scheduled for our July 26 date.

July 26	**Dolen Land & Cattle**	**Fourth Creek Hall**
July 27	**Faron Steffen's**	**Grimshaw Legion**
July 28	**Scott & Kerry Mulligan's**	**Valleyview**

Join us at a location near you!
Registration at 10 a.m.
Lunch Provided
Free to Attend!

For more information, directions, or to register for any of these great days, please call Kaitlin at 780-835-6799 or email kmclachlan@gprc.ab.ca.

This series in collaboration with:

Growing Forward 2 | PCBFA | PrairieCoast equipment | Alberta Government | Canada

Our mailing address is:
Peace Country Beef & Forage Association
Box 3000
Fairview, AB T0H 1L0
Canada

Peace Country Beef & Forage Association

Invitation to Tender

Used Equipment

Peace Country Beef & Forage Association invites sealed tenders on the following used equipment:

A. 1981 John Deere 3140 tractor
97 HP
4,477 hours
John Deere 5.9L 6-cyl diesel engine
3-Point Hitch
PTO
2 banks rear hydraulics
Serial #402242

Item A: 1981 John Deere 3140

B. 2007 Chevrolet Silverado 1500 HD
303481 km
6.0L V8 gas engine, 4-speed Automatic
Crew Cab, Regular Box
4X4
Tonneu Cover
Dark Blue Metallic in colour

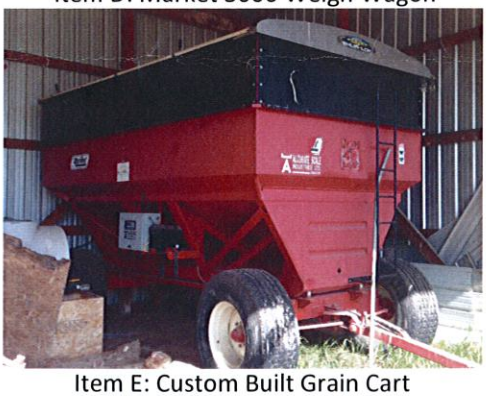
Item B: 2007 Chevy Silverado 1500

C. 2001 Dodge Ram 1500
144530 km
5.9L V8 gas engine, 4-speed Automatic
Extended Cab, Regular Box
4x4
White in colour

Item C: 2001 Dodge Ram 1500

D. Market 5000, 500bu Weigh Wagon
Gravity side unload
Roll Tarp
Serial #2175
Mass Load load bars Serial #18765
Western Scale M2000A-NSS scale head Serial #S7384002

Item D: Market 5000 Weigh Wagon



E. Custom Built 50bu Grain Cart
Gas Auger
50bu hopper on trailer

Item E: Custom Built Grain Cart

F. AGRIC BMS-70 Rotovator
3-Point Hitch & PTO driven
70" wide
42 tines, 6 tines/rotor

G. 15' Flat Deck Trailer
New deck
New brakes
New lights
Beaver tail ramps

H. Haybuster 1000 No-Till Drill
Seed & Fertilizer boxes
Disc Openers with steel press wheels
7" row spacing
Seeding width: 10.5'

Instruction to Bidders

All items are located at the MD of Fairview Research Farm. Please call Kaitlin at 780-835-6799 ext. 2 to set an appointment to view equipment.

All items are offered on an AS IS/WHERE IS basis. There is no warranty expressed or implied.

Prospective bidders are urged to examine all items to assure themselves as to the condition and suitability for the intended purpose. Tenders shall remain valid for 30 days from the closing date. Items must be removed by the successful bidder from the MD of Fairview Research Farm no later than 30 days after receiving notification of being the successful accepted tender.

Tender submissions will be accepted in writing until June 30th, 2016.

Tenders are to be sealed and clearly marked "Used Equipment Tender"

GST is not included in the Tender

The equipment will not be released until full payment is received from the bidder.

All tender openings are open to the public

The highest or any bid shall not necessarily be accepted.

Tender submissions to the attention of:

Monika Benoit
Manager
Peace Country Beef & Forage Association
Box 2803
High Prairie, AB, T0G 1E0
780-523-4033

Item F: AGRIC BMS-70 Rotovator

Item G: 15' Flat Deck Trailer

Item H: Haybuster 1000 No-Till Drill

July 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	*2*
3	*4*	*5*	*6*	*7*	*8*	*9*
10	*11*	*12* *Council Meeting*	*13*	*14* *Teepee Creek Stompede—Teepee Creek*	*15* *Teepee Creek Stompede—Teepee Creek*	*16* *Teepee Creek Stompede—Teepee Creek*
17 *Teepee Creek Stompede—Teepee Creek*	*18*	*19* *Rate Payers' BBQ - Grovedale*	*20*	*21*	*22*	*23*
24	*25*	*26* *Council Meeting* *Rate Payers' BBQ - DeBolt*	*27* *ASB Meeting*	*28*	*29*	*30*
31						

August 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	*2*	*3* *Whole Farm Water Planning*	*4* *Whole Farm Water Planning*	*5* *Peace Regional Harvest Fair—Peace River*	*6* *Peace Regional Harvest Fair—Peace River*
7 *Peace Regional Harvest Fair—Peace River*	*8*	*9* *Council Meeting*	*10*	*11*	*12*	*13*
14	*15*	*16*	*17*	*18* *Soil Health Workshop*	*19*	*20*
21 *Agricultural Fair—Hythe*	*22*	*23* *Council Meeting*	*24* *ASB Meeting*	*25*	*26*	*27*
28	*29*	*30*	*31*			

September 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13 Council Meeting	14	15	16	17
18	19	20	21	22	23	24
25	26	27 Council Meeting	28 ASB Meeting	29	30	