

Minutes

Spring ACFIRE Advisory Meeting October 7, 2008 Alberta Research Council, Edmonton, AB

In Attendance:

FPInnovations:

Marv Clark
Ray Ault
Greg Baxter
Dave Schroeder
Jim Thomasson
Rex Hsieh
Colleen Mooney
Rory Thompson
Wally McCulloch
Gary Dakin
Juri Agapow
Colin Bamsey
Kelsy Gibos (U of T)
Steve Craft – Forintek

Alberta Sustainable Resource Development (ASRD)

Brooke Bannerman
Chris Shapka
Laurie Weidenhamer
Cordy Tymstra
Neal McLoughlin
Chris McGuinty
Wally Born

BCFS Aviation Management

Steve Newton

BC Transmission Corporation

Tom Wells

Conair Group Inc.

Rick Pedersen

FTS Forest & Technology Systems

Chris Lindsay

Govt of Northwest Territories – Forest Management Division

Kris Johnson

Ontario Min. of Natural Resources - AFFM

Marney Brown

Natural Resources Canada – CFS

Richard Carr
Jim Gould (CSIRO)

Parks Canada

Tanya Letcher

Saskatchewan – Fire Management

Darryl Jessop

Thermo-Gel

Rich Just
Steve Newton

Vanderwell Contractors (1971) Ltd.

Lou Foley

Wildfire Group

Doug Higgins

0830 - Marv Clark calls the meeting to order.

Marv presents an update on FPInnovations – Feric Division:

- As of Sept 1, 2008 there are nine National Programs: Fire, Energy, Forest Feed Stocks, Value Maximization, Precision Forestry, Silviculture, Road Engineering, Extension and Transportation

Introductions of individuals then followed.

Aviation

New product field evaluation process for gels as determined by the Aviation Steering Committee during discussions after the spring 2008 advisory meeting. – Wally McCulloch

- The process – a request is forwarded to CIFFC aviation representative, if the product is on the QPL then CIFFC will canvas agencies for a field evaluation sponsor; FPInnovations or the agency would conduct the field evaluation and share the results, if successful the product would be listed on the Cdn QPL.
- Two requests in 2008: Coldfire and Barricade. Coldfire was removed from QPL so no evaluation will take place. Alberta sponsored a Barricade evaluation and worked with FPInnovations to develop a data collection methodology. Unfortunately, there were no opportunities in 2008 to collect data due to a slow fire season.

Martin Mars drop evaluations. – Wally McCulloch

- Worked with Coulsons and USFS Missoula Technology Development Center to conduct drop tests for the Mars US certification to allow Coulson to fly in the US. This was done at Port Alberni in May and a final report was delivered in September.
- Collected data on force of gel horizontally and vertically. Also looked at the coverage on structures. 14 drops took place. Mars flew at 120 knots at 200 feet. Tested gel, water and foam. No damage to structures took place. Walls and eaves only light coverage. This is ground breaking work conducted with the help of the FPInnovations Vancouver office.
- The Mars Has been in the US for last 3.5 months
- At the request of Coulson, FPInnovations put together a proposal for a field evaluation to compare the effectiveness of gel over water with the USFS in California. Fire situation eased and the evaluation did not proceed.

Q) How many coverage levels occurred?

A) 16 drops with an average level of 3-4.

AT 802 drop evaluation. – Wally McCulloch

- Done as follow up to request from ASRD
- Amphibious and wheeled AT 802' drops were documented in 2006 at the request of ASRD. Results were posted on the web.
- In Aug 2008 additional field drops were documented in Rocky Mt House. Conflicting data was obtained.
- Concluded dropping over a grid may be required to accurately answer drop patterns for the 802.

Betts valve failures at Alberta tanker bases. – Wally McCulloch

- Six Alberta tanker bases had problems with the valve on overhead recirculation side of system in 2008.
- The Betts valves have separated, cracked and do not close.
- Working with ASRD, ARC and U of A to find an explanation and develop a solution for the spring 2009.

Q) Can you use Paprican's Corrosion lab to answer the valve problem?

A)Possibly, will need a cold chamber to reproduce the -35C temperature.

Community Protection

Presentation of video product. – Dave Schroeder

- Working with ASRD to develop a community protection video for use by communities and fire managers.
- Still some editing to take place.
- Will be completed before the spring 2009 advisory meeting.

Survey of advisory members on fuel treatment research. – Dave Schroeder

- Objective – to send out surveys to collect ideas for future research in the area of fuel management for community protection. Sent 25 out to fire group members, and had people rate the importance of various approaches.
- Feed back – project ranking based on 14 responses
 - Thinning (highest rank by a wide margin)
 - Debris management (FireSmart)
 - Patch retention
 - Long term site maintenance
 - Cost and productivity of doing treatments
 - Strip mulching
 - Underburning
 - Thinning on slopes
 - Managing aspen stands (little support)
 - Improving fuel inventory data collection (little support)

Comment) BCTC – Micro-wave site protection – how to protect these sites? That is a BCTC priority.
 Answer) Oil and Gas Industry – now have a FireSmart manual specific to industry in Alberta. This would be a good starting point for discussion and planning for BCTC.

Potential opportunity for FPInnovations project to initiate look at maintenance / Debris / Thinning and Strip mulching with Encana at Cold Lake.

Fuel break effectiveness study. – Colleen Mooney

- Objective – State of Knowledge; Expand Knowledge Base; Document Best Practices.
- Work plan developed and funding in place. Work will begin in spring 2009.
- Project is directed research sponsored by Saskatchewan.

Q) Workshop time frame?

A) TBA – want to complete research first.

Comment) from sponsor – Does not need to be in Saskatchewan

Q): Are you going to identify data gaps in the knowledge?

A) Report will show what exists and from this can see the data gaps.

Comment) Jim Gould – State of Victoria in Australia has many examples of fire breaks and should be contacted.

Q) Where is the Literature review?

A) Lit review will be placed on the fire website.

Smoke detection

Foothills emergency simulation exercise. – Jim Thomasson

- At the request of ASRD FPInnovations ran smoke generator and provided video from automated smoke detection camera system.
- Smoke generator was an effective tool

Automated smoke detection update. – Ray Ault

- Oregon – 18 cameras using ForestWatch system.
- Chisholm – Jim T working with camera there.
- Chile – 20 cameras on top of manned towers watching plantations.
- Ontario – 2 licenses in urban / rural inter-face areas.
- Alpac – looked into system for log decks but found to be too expensive.
- We continue to monitor advancements and share information with those that are interested in automated smoke detection.
- Will plan a third detection workshop for spring 2010.

Chisholm camera. – Jim Thomasson

- Technical issues at the start of the project. System delivering images to Chisholm fire lookout operational without flaw beginning in August.
- Cupula – developed a new ergonomic monitor with Infosat of Edmonton.
- Smoke test conducted in August and involved CN – camera and lookout observer found all smokes.
- Conclusion of the Chisholm installation – increased visible area by 5% in the critical high value community zone. Increase detection hours. Faster detection. Nighttime use. Negative comments from operator: highly technical system.
- Working with ASRD to determine objectives for 09.

Equipment

Remote start pump systems. – Jim Thomasson

- Working with Ontario MNR to jointly examine the dependability of the remote start aspect of the system.
- An expansion of a demonstration at CIFFC meeting and Jim’s trip to USFS in San Dimas in spring 2008.
- ASRD and other agencies anticipate the remote start has application for the commercial hunting / outfitter operations and wanted to know more about the reliable start.
- Looked at two systems: Remstar BB4 by Wildfire Equipment and a propane powered pump by a US company.
- Range: Remstar 425 m, Propane 290 on ground. From air Remstar 2-2.5 km and Propane 3 km.
- Applications – Propane – small sprinkler setups. BB4 – Resort, larger values.
- Conclusions – both worked. BB4 is of superior quality and demonstrated high reliability.

Q) Can we use them on all AB pumps?

A) No, remote start can’t be retrofitted on a Mark 3 pumps, but could be used on most battery start pump units.

Fly-in equipment. – Rory Thompson

- Project is a follow-up on Exploratory Research. Looking for a small mulcher that could be slung into a remote area to build line

- Power to weight dictates that without a mulchers of 100hp or more it is not really feasible.

Operations and Planning

Woody debris management. – Greg Baxter

- FPInnovations is managing a portion of the BC's Clean Air Program. This involves selecting Woody debris management projects with the goal of reducing smoke production from debris reduction. This is a 3-year, \$600,000 program.
- A call for proposals was placed on FPInnovations website and 23 letters of intent were received. A selection criteria was established and all proposals were reviewed by a group composed of government, forest industry and FPInnovations.
- The list was reduced to 10 projects for funding. Three involved the use of fire and 7 from the forest industry wanting to document the use of new processes for debris management.
- Phase two of the program will begin May 2009 with a new call for proposals.

Bridge timber and powerpole protection. – Jim Thomasson

- Investigating techniques to protect poles and bridge timbers from wildfire.
- Spring 2008 – tested radiant stand-off in grass fires. Tried to separate the wood from the fire.
- Summer 2008 – tested Intumescent paints on wood. This paint expands from the heat and provides insulation for the wood.
- Encouraged by the results of the work so far.
- There are other applications beyond powerpoles and timber bridges.

Q) What is the conductivity of the paint? Can they be used on cross poles? What are the insulation properties?

A): Should be able to work. – (manufacturer attended this meeting and answered specific questions about the product.)

Fine fuel moisture variability. – Kelsy Gibos

- Presentation given at the social last night – her ppt will be put on website for viewing.
- Project involved ASRD – Rocky Mt House office and was well supported.
- Data collection occurred in Nordegg.
- Project will continue in 2009 and Kelsy will produce a report for ASRD as part of FPInnovations support of this masters thesis.

Smoke management Vancouver Island. – Greg Baxter

- Part One of this project has been completed. An investigation of the influence fuel moisture has on debris burning and the accuracy of the Venting Index used for planning debris burning.
- Results: 25% moisture content appears to be the threshold between go-no-go burning. Covering piles leads to faster, more efficient burning. The venting index predicted inaccurately on 35% of days.
- Recommendations: covering debris piles in interface areas will reduce smoke production. A handheld meter can be used to predict the go-no-go burning threshold. Local input is required to produce a more accurate venting index.
- Part Two of this research is underway. Industry is interested in knowing how soon following harvest can debris be burned efficiently. Five study sites have been chosen and moisture contents from

debris in piles and on the surface have been collected from May until present. Data will be collected until the debris is burned this fall.

BC response centre. – Colleen Mooney

- An in-depth look at the dispatch function in BC Fire Centres.
- Developed methods and a proposal with two visits this year to understand the workings of the centres to be followed up on next year.
- This project is funded directly by BC and will take place in 2009.

Fire behaviour in simulated pine beetle attacked stands. – Dave Schroeder, Colleen Mooney

- Trees at study site near Archer Lake were girdled in 2007. In summer of 2008 trees were in the red/green stage. Two plots were burned in 2008 under very dry conditions.
- Results – Little difference in fire behaviour occurred due to the dryness of the area. Decided to wait until 2009 to burn other plots in lower hazard conditions.
- Will wait until the trees are ‘red’ and ignite during lower hazards. Smaller ignition lines will be used and greater separation distances between the control and treated stands.

Mountain pine beetle attack – video collection. – Dave Schroeder

- May 2008 FPInnovations supplied and ran in-fire video cameras at a prescribed fire for the National Parks at the request of Parks Canada.
- Objective was to collect video to document fire behaviour and severity.
- Delivered video to Parks Canada who are using it for public consultations.

Safety

Survival zones: Methodology and approach. – Greg Baxter

- Objective: To study the potential for firefighter survival in an entrapment situation.
- Pulled together a research team to work on the project. Includes Mark Ackerman (U of A) who will work on methodology, equipment, simulations and PPE. Marty Alexander (CFS) will work on lit review of close calls concentrating on zone size and fuel height. Gary Dakin will oversee logistics on experimental fires and Greg Baxter will investigate opening size and distribution of these openings.
- Tested methodology in grass fuels in May 2008 at Vanderwells at Slave Lake. Ran a grass fire at 2 cleared zones that were instrumented.
- Cleared 4 sites at Ft. Providence for testing next year.
- Mark Ackerman modeling fire passage around clearings.
- ASRD located a well site in the House River fire we are able to use for this study.
- Methodology will be reviewed externally.

Transportation and Utility Corridors

Species ignition trials. – Greg Baxter

- 3 years of species flammability trials in Vegreville at ARC is concluding. Nine sets of ignition tests are complete and one large fire took place.
- 3 species have been promising and these are selected for testing at a site ‘in the field’.
- The species are: plateau fescue, yarrow and white clover.

Species conversion study with ARC at Chisholm. – Greg Baxter

- IN conjunction with ASRD, ARC, CN, the hamlet of Chisholm and the MD of Lesser Slave, three sites have been chosen to plant the species from the Vegreville project.
- The sites were sprayed twice and then burned to remove the original vegetation and the sites will be ready for seeding this fall or early next spring.
- Yarrow, plateau fescue and white clover will be mixed and seeded on these sites. They will be monitored to see how they compete against the local vegetation. Small scale ignition testing will take place.

BC Transmission Corporation research. – Greg Baxter

- Work continued in the NWT looking at temperatures above burning piles in an attempt to find the maximum size of pile that can be burned safely under transmission lines. Research from last year found 1.5 m tall piles were the largest piles to be burned but these required further study.
- Next year more piles and windrows will be burned along with a look at fire break distances in spread debris.

Fire behaviour effects on transmission lines. – Jim Thomasson, Dave Schroeder

- In July a wildfire burned through a transmission corridor in the NWT. A research team was dispatched to document post-fire effects on the transmission line. The result of a request from Parks Canada and Govt NWT.
- Power was shut off before fire burned through. Fuels were documented and a stretch of line was viewed. No structural damage was observed by GNWT Power. The fire was a crown fire and it is projected that direct flame contact took place.
- Report was completed in September and will become a web report on the FPInnovations web site this winter.

Project Proposals

- Advisory Committee members commented on the lack of time to go through new proposals. It was decided that they would be explained at this meeting and then sent out to the committee for them to go through and prioritize. Ray will send them out and the advisory committee members will go through and rank the projects.
- A standard format for proposals was also discussed and this will be sent out prior to the fall meetings for use.
- The resulting rankings gathered after the meeting and appear in Table 1.

1530: Meeting adjourned

Next meeting: April 7, 2009.

Table 1. Results of Advisory Committee Project Support and Prioritization Survey

PROJECT	Total	h	m	l
Fire behavior knowledge base specialist case studies (who owns rights?)	14	8	3	0
Remote weather station / infrastructure monitoring	20	3	7	1
Remote weather station network and video observation	22	3	5	3
Helicopter flight / load data recording system	23	4	2	5
Focused burning - large volume water delivery for pb	23	2	6	3
Effect of elevation and aspect on FWI	24	3	3	5
Effect of ethanol blended fuel on firefighting power equipment	25	2	4	5
Impact of springtime DMC variation on prescribed burning in grass	28	0	5	6
Focused burning - brown & burn	29	1	2	8
Calculating hose pressure for gravity feed water systems	29	1	2	8
Spring dip estimation	29	0	4	7

1 = high, 2 = medium, 3 = low