Minutes
ACFIRE Spring 2007 Meeting

Edmonton, March 27, 2007

Attendees:

John Mann	FERIC	Wally Born	SRD
Marv Clark	FERIC	Bob Udell	FMF
Ray Ault	FERIC	Rich Just	Thermo Gel
Greg Baxter	FERIC	Colin Cameron	Astaris
Dave Schroeder	FERIC	Kim Chell	Astaris
Wally McCulloch	FERIC	Chuck George	Astaris
Kris Johnson	GNWT	Bill DeGroot	CFS
Jim Thomasson	FERIC	Mark Handel	Millar Western
Rex Hsieh	FERIC	Rick Solomon	Thermo-Gel
Rory Thompson	FERIC	Susan Corey	GNWT
Dave Patterson	FERIC	Dennis Brown	CIFFC
Yuri Agapow	FERIC	Darryl Jessop	Sask Env
Darcy Moshenko	FERIC	Mark Campbell	Sask Env
Gary Dakin	Consultant	Terry Dixon	Flying Tankers Inc
Lou Foley	Vanderwell	Peter de Bruijn	Astaris
Jeff Barry	BCFS	Bruce MacGregor	SRD
Revie Lieskovsky	SRD	Diana Boylen	CFS
Axel Winter	Alpac	Don Penny	CN
Rick Pederson	Conair	Tom Wells	BCTC
Brent Schleppe	SRD	Ted Szabo	Alb. Innovation& Science
Candace Galbraith	Phos-check	Doug Higgins	Wildfire Group
Rick Solomon	Thermo-gel		

0835 Meeting begins. Marv reviews ARC safety procedures.

Minutes from Fall 2006 meeting reviewed. No comments.

1. **John Mann - FPInnovations.**

Re-organization: The merger of FERIC, Forintek and Paprican.

Update: The idea of merger began 3 years earlier for FERIC, Forintek and Paprican. The official merger date of is April 1, 2007. The merger also includes the Canadian Wood Fibre Institute (CFS).

Why the merger?

A broader base of expertise will be available to address complex issues faced by members.

Sharing personnel and best practices among the existing institutes will benefit members through improved efficiency and effectiveness
.
The Single Institute will bring together the Canadian forest sector's interest in innovation thereby ensuring strong representation nationally, through discussions with members and government stakeholders, as well as internationally through exchanges with similar organisations.

One unified voice, Research & Development (R&D) synergies, closer relationships with Universities and a Full Value chain from seed to product. The Fibre Centre adds the biological aspect into the group, as this was missing.

Cross Institute R & D Initiatives – ideas.
Utilisation of Mountain Pine Beetle killed wood; Bio-economy; Precision Forestry; Technical support and solutions; Nanotechnology initiatives.

The three research institutes will now be Divisions. Members will have the same influence. Each Division Steering Committee will be composed of current Institute Board and Advisory Committee members.

Fibre Centre – 55 scientists available to work with all institutes.

Plan – to become World Leader in creating forest sector solutions that will enhance our global competitiveness.

Q) Axel Winter – how will we protect the research so that competitors are unable to get reports? A) Reports will still be Restricted.

Q) Susan Corey – will the structure of the organisations change? A) You will have access to all Divisions to enhance research and benefit all members

Q) Ted Szabo – Will there be three dues? A) At this point in time yes, but these may be less. The dues payment structure is still under investigation.

2. Projects for 2007

Reports in Progress: FireSmart AAC; Surge Buster; IA access; Sprinklers and gels; 3-D literature survey; Carrot Lake; Jasper NP debris; Log deck protection; Williams Lake

Meetings and Conferences:

- Fire Behaviour Documentation Workshop - Hinton
- Smoke Forecasting Workshop - Edmonton
- Fire Effects Workshop - Edmonton
- Backyard and beyond WUI Confernece – Denver, CO
- 40th North American Community Fire Management Working Group – Ft. Collins, Colorado

3. **Saskatchewan Forest Centre**

Kris Johnson has left FERIC and now represents the GNWT as their Fire Scientist at Fort Smith. Kris reported to this position in March 2007. FERIC's contract with the SFC ends on March 31st. FERIC is waiting to hear if position will be filled.

Sask. Forest Centre Projects: Surge Buster; Community Protection Docudrama – This film will be shown at end of meeting. Wind direction study. A guide to managing community wildfire risk. Estimating fire size for IA crews.

Saskatchewan Generation II Helitorch - work will continue on Generation II Helitorch. Gary Dakin will work with Sask. on this project. Sask. Forest Centre is funding the Generation II Helitorch.

4. **Corridor Management** – Greg Baxter

Program: A concern for fire managers is the influence linear disturbances have on fire behaviour and fire suppression. The concern with linear disturbances is the re-vegetation of primarily grass species. The objective of this study is to identify methods and treatments that can reduce fire spread potential within linear disturbances

Program Update: Reviewed 2006 years work and set out plans for 2007. Work includes:

- Species flammability
- Grass mowing trials
- BCTC fuel loads
- Linear Disturbance Workshop
- Fast Attack kit

Species flammability – performed ignition tests last year and developed a new combination for testing. Results will be posted on website. Plan to continue ignition tests in 2007 and burn large fire behaviour plot.

Grass mowing trials – have completed 8.5 sets of burns and plan 2.5 more in 2007 at Vanderwells Contractors (1971) Ltd. This years research burns will be the end of the mowing trials.

BCTC – Research gathering trip to BC on April 2nd 2007, the information gathered will be used for the burning of woody debris in NWT at various depths this summer.

Linear Disturbance Workshop – to be held at Slave Lake April 17/18, 2007. Objective is to present all the Linear Disturbance work to date and discuss future research directions for this project.

Fast Attack Kit – will be developed and put on website that includes the equipment required and a methodology required to collect basic fire behaviour information on grass or linear fires.

Q) – Is there a cost for the fast attack kit? A) Not at this time, but will calculate one when list put on website.

5. **Thinning and Fuel Management** – Dave Schroeder

Program: Modification of forest fuels is a recommended treatment to reduce wildfire intensity. Treatments may include thinning, surface fuel removal, and pruning. The premise for fuel modification was not to stop fires, but reduce potential fire intensity to a level that can be suppressed. Fuel modified forest patches that are located strategically around communities could reduce fire intensity to a level so that the fire can be stopped before losses are incurred.

Program Update:

Plans for 2007:

- Jasper NP – spring 2007, Surface fuel reduction.
- Mt. Nestor – spring 2007.
- Williams Lake – spring 2007. FireSmart treatments.
- NWT – June 2007 – assorted fuel management burns.
- Crowsnest Pass – spring/fall 2007. Monitor debris disposal productivity.
- Calling Lake – August 2007. 3-year post harvest.
- Meadowlands – late summer 2007.

Fuel Inventory – Data collection Manual. Worked with SRD to develop a methodology for fuels data collection.

Developing a database for fuels information. Rex Hsieh has already developed a similar database.

Q) – How is the Crowsnest Pass work funded? A) It is funded through the Foothills Model Forest.

6. **Helicopter Bucketing** – Ray Ault

Program: This research project was developed from Rory Thompson's aircraft research. The objective is to determine bucketing productivity and cost based on turn-around times of the various helicopters. FERIC will produce a spreadsheet model based on travel times and type of helicopter. This model will allow users to scenario build with other helicopters and their use depending on the situation.

Program Update: The report is under review, the spread sheet will be put on the WFORG website

Q) When will this be on-line? A) The report is under review at this time and then will be put on

FERIC's WFORG website by end of April.

Comment – this will allow a weight analysis to take place.
Q) What is availability of dip tanks? A) They are available in sufficient numbers.

7. **Passive Land Base** – Dave Patterson

Program: The Passive Land Base Project was established to look at opportunities to reduce the risk of fire spreading across the landscape in to productive forests due to a build up of fuels on the non-productive forest. The build of fuel may cause an increased fire intensity making it more difficult to suppress fires.

Program Update: FERIC has documented the state of knowledge with a bibliography (currently 340 pages). The Bibliography includes sections of silviculture, forest management, fuel management, fuel size and arrangement, etc. It is comprehensive in that it also includes biomass utilization opportunities that can be adopted to enable removal of treatment residues.

There is a lack of interest at this time by forest industry (probably driven by economics) – as Landscape FireSmarting is looked at as 'just a cost'. Rapid growth in bio-energy/ bio-products sector may reactivate this program area.

To increase the awareness of the evolving bio-industry opportunities FERIC is hosting the "Forest Industry Introduction to: Forest Biomass for Bio-energy and Bi0-products" Seminar which will be at the Mayfield Inn in Edmonton on March 28 – 30th.

Coffee break at 0951; back at 1025.

8. **Smoke Detection** – Ray Ault

Program: Alberta SRD, Saskatchewan Environment, and FERIC evaluated three video-based smoke detection systems in 2003, and determined that semi-automated systems could detect smoke from a 0.1 ha fire up to 40 km distance. Alberta SRD asked FERIC to continue evaluating Forest Watch. The objectives for the study will be to quantify factors that affect smoke visibility and system performance, and to evaluate multiple data transmission techniques.

Program Update: Two Smoke Detection Projects are both funded by directly by SRD. The Automated Detection component and Operational cameras. FERIC will evaluate and report on the systems.

FERIC will start using and assessing the system at the Detection Centre at the Hinton Training Centre from May – August. FERIC will complete all tasks by spring of 2008.

Cameras have been installed on the following towers for 2007: Athabasca Tower, Chip Lake and Chisholm (CN).

Athabasca Tower has been installed with the ForestWatch system. The Forest Watch system on the Athabasca Tower has a security feature. FERIC will still need to train staff, install computer and get feed back.

CN – Plans for 2007: install a ForestWatch camera system at Chisholm Tower – train staff, review performance and then turn over to the SRD Radio Shop in July.

9. **Smoke Management, East Vancouver Island** – Greg Baxter

Program: Abundant fuel and limited good smoke venting days have created a smoke management problem along the east side of Vancouver Island. Two main objectives have been identified by the BCFS in their Pilot Plan for this research. The first is identifying best burning practices and the second is assessing if there are more 'good' burning days than the venting index issues during the burning season.

Program Update: Our approach will be to monitor fuel moisture and determine best time of year to burn. FERIC has established four study sites and have tarped piles to compare fuel moisture in these piles to uncovered piles.

Winter of 2006/07 saw major storms that ripped apart the tarps. Re-visiting sites to better tarp piles and develop a simple method to monitor fuel moisture contents of the wood.

FERIC will investigate methods for determining venting conditions on a local level.

10. **Air Program 2006** – Wally McCulloch

A) Rocky Mountain House drop tests – AT502's.

Program: Alberta's Sustainable Resource Development requested that FERIC attend an AT 502 agricultural aircraft training course in Rocky Mt House. FERIC conducted exploratory research to measure the retardant drop patterns and the percentage of retardant that made it to the ground under a forest canopy dropped out of the AT 502 aircraft.

Program Update: Report is completed and is being reviewed.

B) Carrot Lake mix ratio tests

Program: The Provinces of British Columbia and Alberta as well as other Provincial Protection Agencies have requested FERIC to test different retardant mix ratios used from helicopter buckets. The role of helicopters has grown to the point that in the 2003 and 2004 fire seasons; the amount of long term retardant delivered by helicopters on wildfires in British Columbia equalled that delivered by land based retardant aircraft.

Program Update: Report is completed and is being reviewed.

- Fire Gel evaluation contract: BCMOFR
- 802 testing at Lost Creek – influence of canopy.
- Lost Creek retardant drop evaluation
- TCAS – Traffic Alert and collision Avoidance
- Canadian QPL – cancelled project
- CL-215 Drop evaluation – waiting for response.

SAC Western Canada Strategic Air Command

Program: This research project is to determine the advantages that could be achieved by sharing aircraft (air tankers) resources within a 70 km zone of the Alberta/British Columbia border and the Alberta/Saskatchewan border.
Considerations:

- Values at risk
- Reloads
- Additional aircraft
- Time spent on fire
- Final fire size.

Program Update: Will be working with BC, Alberta and Sask. to get 2005-06 data for the program.

Comment – do you want to add Saskatchewan data? Yes – can add. With speed of aircraft these days it allows three provinces to cover for each other. FERIC will plot all fires near border.

Comment – multiple aircraft groups are common now – the second aircraft is critical to stop fires – will have to include this data. Also tough to quantify 'what didn't happen' to show worth of system

Traffic Alert/Collision Avoidance System (TCAS) - Currently two operational versions. The TCAS - I does not offer solutions. TCAS - II provides solutions for avoidance. Big difference is the cost of the systems. Skimming aircraft exempted for use.

Yukon T has TCAS as does Williams Lake Forest. Wally can go for a ride-along to see system work. System needs the right amount of information to the pilots – not too much as could distract pilots.

This research study is now completed and the report is in the works.

11. **Railroad Program** – Jim Thomasson

Program: Provide fire management tools and options for railway right of way fire prevention. FERIC is currently examining alternative vegetative species for right of ways, techniques for

protection of timbered bridges. FERIC is also working with SRD and CN Rails to establish an automated smoke detection camera at the SRD Chisholm fire lookout.

Program Update: Literature search – There is currently not a lot of current information on railroads and fire issues.
The Fulford 2000 Report was very in-depth and also detailed the carbon side.
San Dimas – studied carbon, inspections, and spark arrestors. FERIC will compile and publish information collected to date this summer.

Bridge Timber Protection - Timber Bridge Monitoring System (TBMS) proposal from Nova Engineers. This was an undeveloped and unproven work. They determined the problem was too complex and untried. May be able to do in future.
Passive Protection – Phase I: radiant heat protection – protect small bridge from low intensity fire. Test concept at Slave Lake in April. Full test: set-up in 2007 and burn in 2008. The results from the bridge timber protection research will be applicable to power poles.

FERIC will develop a quickly deployable test model.
Phase II – larger bridges. Active protection.
Phase III – Preventative actions. Fuel treatments, Right-Of-Way improvements.

Causal Mechanisms: will look at exhaust carbon, brake slag and into other causes.

12. **Infrared Research** – Ray Ault

Program: FERIC has been requested to assist BC and Alberta in evaluating infrared systems to match mission objectives with scanner capability to improve cost effectiveness of fighting fire and wildfire mop up.

Program Update: FERIC has completed high altitude infrared research tests using grid in Hinton. One more company to be tested this April. Current work involves helicopters and these will be tested April 23-27 on Hinton grid. FERIC will simulate mop-up conditions by providing targets of similar size and temperature. FERIC will develop best practices for helicopters. FERIC will compare new technology costs versus current practices (such as marking spot with toilet paper).

Outputs: Handheld vs. Gimballed: trial BC system; best practices; field test map format with IA crews.

Q) Is date of testing on website? A) No, not at this time, but will send out notice to all advisory members.

13. **Log Deck Protection** – Dave Schroeder

Program: FERIC was asked by industry to evaluate log deck protection strategies and products from wildfire.

Program Update: A Best Practices Report will be produced based on the Alberta Pacific Forest Industries (Al-Pac) tour 2002, gel case studies in NWT and Wabasca. The report will include suggestions for use of gels to prevent and suppress fire.

Al-Pac has developed a Mobile Sprinkler Deployment Trailer. FERIC will time the set up of the mobile sprinkler system, measure coverage and water consumption and measure water penetration.

In the United States the US Forest Service use a hydro-seeder to apply gel – this can be tested in Canada.

14. **Flash 21 Fuel Gelling Agent** – Wally McCulloch

Program: FERIC was requested by SRD to test Astaris Canada Ltd's new fuel gel product called Flash 21 for its gelling and burning capabilities with various petroleum products.

Program Update: Flash 21A and 21B of equal parts were mixed with gas, diesel and jet B. A mixing chart was developed. Initial testing of the product was carried out in Kamloops and then for pile burning at Ellison PP and piles around Kamloops.

Q) How safe is Flash 21? A) Very stable – slow spread. Even poured from bottles.

Mixing takes 5 minutes to get the product to gel in a large pail.

Observations – Product gels quickly. Flash 21 is most efficient when mixed with straight gas. In colder temps it takes more Flash 21 to achieve a satisfactory viscosity when mixed with a petroleum product. The gel ignited slowly and did not flash. The Flash 21B part thickens if stored in the cold.

Comment – U of S Engineers have done viscosity tests on Flash 21. FERIC will gather this data.

Lunch Break: back at 12:45.

15. **Sprinkler Update** – Ray Ault

Program: FERIC was requested by SRD to evaluate the use of sprinklers systems to prevent fire damage to structures from wildfires. FERIC was to look at various types of sprinklers, duration of time sprinklers had to be on prior to the wildfire hitting the site, and the arrangement of the sprinklers. FERIC was to test equipment that could be bought in the local

hardware stores so property owners did not have to purchase specialty equipment to protect their property.

Program Update: This is the fifth summer of the sprinkler project. The objective this year is to complete burns in NWT with 5 cabins; present data at fall meeting; Final report in November.

16. **Website Improvement** – Ray Ault

Program: It is important to FERIC to provide update information to our clients.

Program Update: WFORG has recently changed the website format. All reports for a project are now on right side of screen under the project page. Rex has hired an IT assistant for the summer to continue to update the website and databases.

17. **NWT 2007 Work Plan** – Dave Schroeder

Program: The International Crown Fire Modelling Experiment site in the NWT was turned over to FERIC to conduct research for FireSmart projects, new products and equipment evaluations. This site allows FERIC to test the effects of wildfire for various research programs by allowing the researcher to start crown fires.

Program Update: Projects for 2007 are as follows:

- Debris burning
- Fuel Management plots
- Gel testing
- 2.5" hose test (for NWT)
- Bridge timber protection
- Flash 21
- Fuel depth/fire behaviour studies

Comment – Can you look at foam/gel lines and how long they last after being applied? Yes – this can be tested.

Fire Weather Workshop – are there any other agencies that can host this? CIFFC does have a Working Group that meets annually – this can be brought up.

Jeff Berry – I want this for the fire briefing side. What products are available? Is there a unified weather-briefing package? What is the state of the art in weather forecasting? This is an operational project – not one for CIFFC. I want a product that IA crews can understand and use.

When should this take place? Next winter or spring. Want field application – strategic and tactical applications.

18. Saskatchewan Docudrama

Program: The Saskatchewan docudrama was produced using local people to introduce the FireSmart concept to Saskatchewan communities.

Program Update: Kris Johnson provided background on the film – why they went with a video rather
than reports – a much better media for northern communities. He also talked on how this may be used as training and teaching material for schools and other courses.

Meeting was adjourned.

Next ACFIRE meeting Oct 18 2007