

## 2012 Canadian Boreal Communities FireSmart (CBCFS) project



Fire Behaviour in a Mulched Fuel Bed. Photo S Hvenegaard

Researchers and support staff from NWT ENR, Alberta ESRD, FPInnovations, Swansea University, University of Alberta, National Geographic and the Canadian Forest Service attended this year's CBCFS project from June 20<sup>th</sup> through 28<sup>th</sup>. The weather was favourable for two plot burns and test burns in mulch. In addition; instrument testing, plot preparation, carbon analysis and final testing of a redesigned Terra torch was also carried out.

For information on any of these projects contact the CBCFS Project Manager (below):



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## Planned research for 2012 (Bold indicates work carried out):

### FPI

Mooney - Project 1	Title: Fire Behaviour in Simulated Mountain Pine Beetle Attacked Jack Pine
<b>Mooney - Project 2</b>	<b>Title: Effectiveness of Stand Thinning/Stand Cleaning as a Fuel Treatment in Jack Pine</b>
Baxter - Project 1	Title: Fire Behaviour in 'Stand Cleaned' Pine stands.
<b>Baxter - Project 2</b>	<b>Title: Survival Zones</b>
Baxter - Project 3	Title: Fire Behaviour in 'Under-burned' Pine stands.
Ault - Project 1	Title: Documentation of changes in fire behaviour from helicopter gel drops (tentative due to rotary wing costs)
<b>Campbell - Project 2</b>	<b>Title: Testing of prototype ATV terra torch system using inline flash 21 mixing</b>
<b>Campbell - Project 1</b>	<b>Title: Ignition Device Evaluation</b>
Campbell - Project 2	Title: Wildland Fire Sprinkler Design (tentative and dependent on prototype delivery)
Campbell - Project 4	Title: Structure Protection (to be revised)
<b>Hvenegaard - Project 1</b>	<b>Title: Ignition Probability in Mulched Fuel Beds</b>
<b>Hvenegaard - Project 2</b>	<b>Title: Effectiveness of Mulching as a Fuel Treatment in Jack Pine</b>
<b>Hvenegaard - Project 3</b>	<b>Title: Fire Behaviour in a Mulched Fuel Bed</b>

FPIInnovations website links: Info on FPIInnovations and reports from above projects

<http://wildfire.fpinnovations.ca/Research/NWTPProject.asp>

<http://wildfire.fpinnovations.ca/index.asp>

<http://wildfire.fpinnovations.ca/Research/Research.asp>

### Swansea University

Doer, Project 1 Title: Pyrogenic carbon deposition in forest fire ash

### National Geographic

Testing fire proof cameras and documentation of wildfire



## 2012 CBCFS Attendees

NAME	Organization	NAME	Organization
Caroline M. Preston	Canadian Forest Service	Mark Thiessen	National Geographic
South Slave crew 8, 9 & 10	ENR,GNWT	Christopher Grainger	ESRD, Alberta
Larry Nixon	ENR, GNWT	Amanda Ashton	ESRD, Alberta
Jordyn Siurko	ENR, GNWT	Michael Shantz	ESRD, Alberta
Brent Starling	ENR, GNWT	Terry Jessiman	ESRD, Alberta
Ray Ault	FPIInnovations	Dave Schroeder	ESRD, Alberta
Rex Hsien	FPIInnovations	Mike Williamson	ESRD, Alberta
Roy Campbell	FPIInnovations	Stefan H. Doerr	Swansea University
Steve Hvenegaard	FPIInnovations	Cristina Santín Nuño	Swansea University
Tom Schiks	FPIInnovations	Stephanie Koroscil	University of Alberta
Colleen Mooney	FPIInnovations	André McDonald	University of Alberta
Gary Dakin	FPIInnovations	Brian Yang	University of Alberta
Mark Ackerman	FPIInnovations		
Greg Baxter	FPIInnovations		



Back Row: Steve Hvenegaard, Mark Thiessen, André McDonald, Dave Schroeder, Caroline M. Preston, Stefan H. Doerr, Stephanie Koroscil, Cristina Santín Nuño, Christopher Grainger, Amanda Ashton, Terry Jessiman, Mike Williamson  
 Mid row: Greg Baxter, Mark Ackerman, Roy Campbell, Ray Ault, Tom Schiks, Larry Nixon, Colleen Mooney  
 Front: Rex Hsien, Brian Yang, Michael Shantz  
 Missing: Jordyn Siurko & Brent Starling. South Slave 8, 9 & 10.



### Summary of activities for Thursday June 21 2011

- No burns conducted.
- One crew onsite. Repaired outhouse, moved equipment to site, checked water sources and planned pump set ups.
- Swansea University researchers onsite to examine plots suitable for their research.(Stephan & Cristina)
- FPInnovations onsite later in day & dropped off equipment.
- Request into TDO for AM & PM spot forecasts starting Saturday AM
- Walk plots to examine site cdx.
- Evening planning session

#### Wx information

Observations and data from onsite Wx Stn @ 1300

Temp	RH	WS	WD	Precip
27.3	26	6.9	282	0

Thunder showers in area



Photo L Nixon



Corner of Beetle plot and Plot 7

Photo L Nixon



## Summary of activities for Friday June 22 2012

- 0800 briefing
- Test burns in mulch and forest floor around SZ1
- One crew onsite. Hose lay in place, pumpkins set up.
- Instruments and test gear set up in and around Plot SZ1
- Assessment of prefire conditions on Plot SZ1 (Cristina, Stephan, Stephanie & Caroline)
- 90% of attendees onsite.
- Visit to Fort Providence Resource Management Board and brief on activities
- Check out & assessment of Terra Torch (Roy, Gary)
- Evening planning session, and assignments for tomorrow

### Wx information

Observations and data from onsite Wx Stn @ 1300

Temp	RH	WS	WS max	WD	Precip
24.9	27	14.8	28	357	0

Clear and sunny, overnight recovery was excellent



Mulched line and untreated comparison test burn

Photo L Nixon





Pre fire assessment and installation of plots in SZ1 (Cristina Nuño)

Photo L Nixon



## Summary of activities for Saturday June 23 2012

- 0800 briefing
- Test burns in mulch and forest floor around SZ1
- SS8 & 10 onsite.
- Researchers check of plots around I-4 for tomorrow
- Burn on Plot SZ1 (Mark A, Greg, Roy, Gary)
- Assessment of Terra Torch (Roy, Gary)
- Heli KMZ onsite for burn
- 23 researchers onsite
- Evening planning session, and assignments for tomorrow

### Wx information

Observations and data from onsite Wx Stn @ 1300

Temp	RH	WS	WD	Precip
21.3	32	8G19	113	0

Clear and sunny



New Terra torch set up for using Flash 21.

(Standing: Mark Williamson & Greg Baxter. In UTV: Gary Dakin & Mark Ackerman) Photo L Nixon





Briefing Fire Crew and Ignition team on new Terra torch.

(Eric Nadli, Gary Dakin, Eddie Gargan, Gregory Elleze, Lucas Elleze, James Matto, Peter Farcy, Darcy Bonnetrouge, Mark Thiesson, Terry Jessiman.) Photo L Nixon



Ignition team lighting up Plot SZ1

Photo L Nixon





PLOT SZ1 (Gary Dakin) Photo M Williamson



## Summary of activities for Sunday June 24 2012

- 0800 briefing
- Test burns in mulch and forest floor (Steve H.)
- SS8 & 10 onsite.
- All staff briefed on plot GD1
- Burn on GD1. (Colleen)
- Small escape to NE contained by bucketing and crews.
- Assessment of Terra Torch (Roy, Gary)
- Researchers check of mulch grid plot and I-5 for tomorrow - will not be burned this year as nighthawk nest was found on walkthrough.
- Collect data loggers and samples from Plot SZ1 (Cristina, Stephan, Stephanie & Caroline)
- Heli KMZ onsite for burn
- 23 researchers onsite
- Evening planning session, and assignments for tomorrow

### Wx information

Observations and data from onsite Wx Stn @ 1300

Temp	RH	WS	WD	Precip
26.8	30	10G20	211	0

Clear and sunny, some scattered clouds



New Terra Torch ready for ignition of Plot GD1

Photo L Nixon





Attaching GoPro camera to Terra Torch nozzle.  
(Gary Dakin & Mark Thiessen) Photo L Nixon



Plot GD1  
Photo M. Williamson





Plot GD1  
Photo L Nixon



Documenting and collecting Fire proof cameras in Plot GD1  
(Mark Thiessen & Ray Ault) Photo L Nixon





Recovering instruments, collecting samples and checking depth of burn in Plot SZ1  
(Stephan Doer & Cristina Nuño) Photo L Nixon



## Summary of activities for Monday June 25 2012

- 0800 briefing
- Test burns in mulch and forest floor
- SS8 & 10 onsite.
- Walkthrough and assessment of plot GD1
- Collect data loggers and samples from Plot SZ1 (Cristina, Stephan, Stephanie & Caroline)
- Burn Slash piles in SZ2.
- Repaint block numbers
- 23 researchers onsite
- Evening planning session, and assignments for tomorrow

### Wx information

Observations @ 1300

Temp	RH	WS	WD	Precip	
16	92	10G15	211	1.5	

Solid overcast



0800 Fire Behaviour briefing (Christopher Grainger, Andre McDonald, Rex Hsieh & Dave Schroeder) Photo L Nixon





Mulch test burn in wet conditions (Steve Hvenegaard)  
Photo L Nixon



## Summary of activities for Tuesday June 26 2012

- 0800 briefing
- Test burns in mulch and forest floor (Steve, Tom)
- Walkthrough and assessment of plots I-5, SZ3, C3, I-3
- Plan & preparation of GD2 (Dave, Colleen)
- Burn Slash piles in SZ3. (Gary, Greg, Mark A.)
- Continued collection of samples on SZ1 (Cristina, Stephan, Stephanie & Caroline)
- Analysis of SZ1 samples in wildlife shack (Cristina, Stephan, Stephanie & Caroline)
- 23 researchers onsite
- Evening planning session, and assignments for tomorrow

### Wx information

Observations @ 1300

Temp	RH	WS	WD	Precip
16	47	10G15	211	18

Solid overcast. Occasional breaks mid-day to afternoon.



Discussing ash and carbon sampling in SZ1 (Cristina Nuño, Ray Ault, Stephan Doer, Caroline Preston, Stephanie Koroscil) Photo L Nixon



Plot SZ1 post burn (small blurs are blackflies) Photo L Nixon



## Activities for Wednesday June 27 2012

### **Activities:**

- Researchers briefing @ 0800
- Meet crew at base in AM and review plan for day
- Finish off any remaining slash piles.
- Prep plot GD2 for future burns
- Examine GD3 & 4 for planning
- Pile and burn small pile to test data loggers
- Crews assist in plot prep and kit collection.
- Mark out new control lines
- Continue collection of samples from SZ1
- Mark Thiessen leaving.
- Researchers assessing samples in Wildlife shed.
- Expecting 1, maybe 2 more ENR out to site.
- Onsite 1200 briefing.



Brian Yang and André McDonald





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Testing Data loggers  
Photo Andre McDonald



### **Activities for Thursday June 28 2012**

No further large burns are planned except small slash piles and small test fires.

Researchers will assess and collect data and samples from existing burns

Researchers will prep other plots for future burning.

Majority of researchers planning to start leaving tomorrow – Saturday



**August 22 2012**

A few photos of regen on SZ1 plot from a visit two months post burn.



Regeneration in Plot SZ1 on August 22 2012 (burnt June 23 2012)

Photo L Nixon





Regeneration in Plot SZ1 on August 22 2012 (burnt June 23 2012)  
Photo L Nixon





Mulch test burn from June 25th