

# Project Plan

February 2012

  
FPInnovations  
Wildfire Operations Research  
1176 Switzer Drive  
Hinton, AB T7V 1V3

## Effectiveness of Under Burning as a Fuel Treatment

*Greg Baxter*

### Introduction

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This project will build on previous FPInnovations research burns completed in the Northwest Territories. The Northwest Territories '05 and '07 test burns showed that thinning and surface fuel removal changed fire behaviour in favour of successful suppression. Additional fuel treatment tests will help practitioners better understand tradeoffs between the effort needed to do fuel management, and fuel treatment effectiveness related to changing fire behaviour. The specific forest fuel treatment being replicated in this work plan is the under-burning of otherwise untreated forest fuels to remove the dead and downed component to the fuel complex. Note: It may not be necessary or possible to use a crown fire test to assess under-burning as was done in the case of thinning and stand cleaning. The reasoning being that if surface fuels are sufficiently removed to prevent a sustained surface fire, then a crown fire is unlikely to be possible. Therefore, ignition tests following an under-burning treatment may be sufficient to determine likelihood of sustained surface fire.

### Methods

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1. Determine suitable plot location(s). Either in NWT or in Alberta.
2. Layout under-burn plot. Plot does not have to be large (20 metre x 20 metre).
3. Record vegetation monitoring information within treated and untreated areas. Forest Vegetation Plot information will be gathered using ASRD protocol.
4. The standard ASRD fire behaviour data form is to be used for documentation.
5. Data recording equipment is to be set up using standard FPInnovations protocol during under-burning treatment. Required equipment is to be determined from referencing the fire behaviour data form. In-fire Cameras are to be placed at strategic locations around and throughout the plot to capture fire transition. One camera should also be dedicated to capturing the burn trial from a vantage point outside the burn perimeter (if required attach a radio to ensure radio transmissions are captured). Time lapse photos are to be taken from a strategic location outside of the burn perimeter to capture still photos (ensure the photos are time stamped).
6. Conduct under-burning activities within the plot at low intensities to remove dead and downed materials. Desired indices for burning window to be determined. Document fire behaviour within the plot using ASRD fire behaviour data form.
7. Repeat method 5 prior to performing ignition tests.

8. Conduct ignition tests in the following year(s) using procedures established by the Canadian Forest Service (i.e. used to determine ignition probability). Desired indices for burning window to be determined. If sustained ignition is marginal complete three to five metre strip ignition testing using drip torch. Note: It is recommended that this concept be reviewed with ASRD Fire Behaviour Specialist Bob Mazurik and Mike Flannigan.
9. Determine forest fuel treatment effectiveness.
10. Input findings into central data base.
11. Prepare a written report.

## Safety

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FPInnovations staff will utilize the HomeSafe check-in system during travel and project assignments into isolated areas.

Project safety plans will be followed at all times e.g. standing project work plans and Incident Action Plans.

If cell phone coverage is unavailable at project site, a satellite phone will be used to ensure sustained communication.

The FPInnovations equipment trailer is equipped with a first aid kit and eye wash station. All FPInnovations personnel will maintain First Aid certification as per policy direction.

Personnel will wear personal protective equipment at all times when engaged in work activities and as per FPInnovations policy.

Proper equipment training and where applicable certification is to be completed prior to equipment operation.

## Timeline

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|-----------------|---|
| May 1, 2011     | Determine potential sites   |
| August, 2011    | Field tour to confirm site  |
| June, 2012      | Equipment set up and Burn Trial execution (earlier opportunities will be considered pending field tour) |
| October 1, 2013 | Report completed on thinning phase of project   |

## Deliverables

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- Video (project prep, setup, and burn trials)
- Forest vegetation monitoring plot information

- Fire behaviour documentation sheets
- Report

## **Participating Members/Collaborators**

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Project collaborators include: Alberta Sustainable Resource Development, Northwest Territories Government, FPInnovations, and the University of Alberta.