16LA-NAPATAK FIRE

June 2, 2016

Case Study:

How Fuel Treatment Areas Affect Wildland Urban Interface Fires

Contents

Introduction

The 16LA-Napatak Fire was reported to the La Ronge Fire Base at 20:52 on June 2, 2016. The fire was located south of La Ronge within the resort community of Napatak. The fire originated within a thinning project that was completed in 2009 and spread north east toward a nearby home. The fire was mapped at 0.5 hectares, and burnt in M2 boreal mixed wood green fuel.

Figure 1 - Photos taken after the fire was called out.

Fire History

The 16LA-Napatak Fire was discovered by an Initial Attack crew that had lifted off in a helicopter from the La Ronge Fire Base. The crew was on route to another fire and spotted the smoke at 20:52 on June 2 2016. The Fire Base dispatched a wildland fire truck to the location, upon arrival the La Ronge Regional Fire Department was also on site. The fire spread from the thinned area into a yard 70 metres from the fire origin. The daughter of the home owner reported that the poplar fuzz was really thick and carried the fire for some distance without leaving any noticeable burn scars. Initial attack members along with type 2 personnel continued to work on the fire with a water pump and hose lengths from the lake nearby. On June 3rd an Initial Attack Crew Member scanned the fire and no hotspots were found. The fire was then later called out. A fire investigation was requested and was concluded that the fire caused by a lightning strike.

Figure 2 – Photos taken by crew where fire reached a homeowners yard

Weather Observations

Recorded weather observations for the La Ronge weather station at 12:00 June 2nd 2016 were as follows:

Temp	RH	Wind Direction	Wind Speed
23	38	SE	19

FFMC	DMC	DC	ISI	BUI	FWI
87	56	180	7	63	20

ROS M2 m/min	HFI (kW/m)	CFB (%)
7	5341	59.33

Fuel Treatment Background

Wildfire Management has had ongoing fuel management work completed since 2009. The area along the 16LA-Napatak Fire had been thinned in the winter of 2009 and a fuel break was cleared along this thinned area in the winter of 2015. This 1.5 hectare block was 70 metres wide, treated by the softwood being thinned out by hand crews to a crown spacing of two meters and ladder fuels were removed up to two meters. All salvageable wood was stacked for firewood and tops and limbs were piled and burnt on site. The fuel break that was established in 2015 was clear cut to 50 metres beyond the thinned area. The fire did not reach the fuel break as it started within the thinned area and burnt in the opposite direction.

Figure 3 - Treated area in the winter after thinning was complete and treated area after the fire.

Wildfire Behaviour Analysis

On August 11th Wildfire Prevention staff examined the fire area to collect information on fuel break effectiveness. Personnel on the ground during the fire noted that the poplar fuzz carried the fire quickly with very little evidence of a fire burning. The fire was mapped at 0.03 hectares, with less than half of the fire burning in the thinned area as seen in the map below.

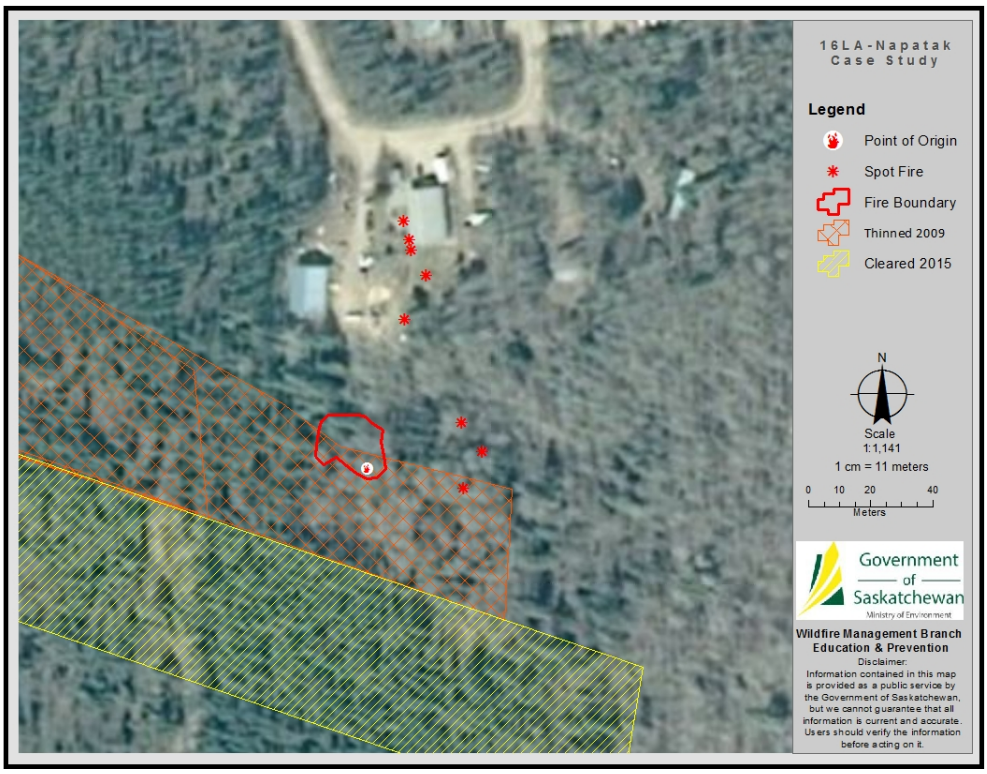

Figure 4 - Map of fire boundary and spot fires

Spot fires were observed 34 meters to the east of the point of origin and burn scars were present on trees and a play structure 65 meters to the north of the fire.

Figure 5 - Burn scars on a tree and play structure within residents' yard.

A Pegasus[1] Wildfire Projection was completed for this fire. The 12 hour projection shows the fire burning an area up to 157 hectares, which covers the whole subdivision including the only access road.

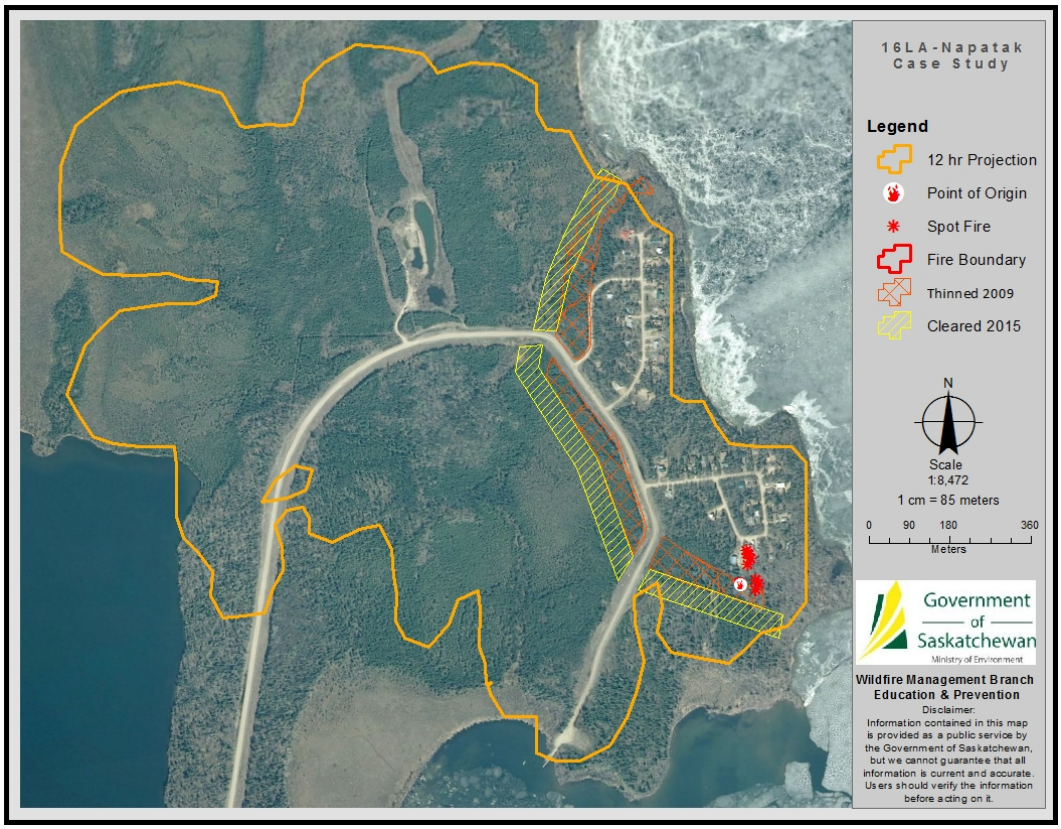

Figure 6 - Map of Pegasus 12hr projection

[1] Pegasus is an online version of Prometheus that was developed by the Canadian Forest Service in collaboration with Saskatchewan Ministry of Environment Wildfire Management Branch.

Figure 7 - Scorch heights up to 86 cm within treated area

Figure 8 – Fire line within treated area

Untreated plot

White Spruce	300 / ha
Birch	1500 / ha
Balsam	600/ ha
Labrador Tea	40%
Sasparilla	40%
Alder	20%
Height Class	15m
Crown Separation	1m
Crown Closure	80%
Crown Base Height	1m

Treated plot

Black Spruce	800 / ha
Birch	200 / ha
Labrador Tea	10%
Horsetail	20%
Cranberry	30%
Bunch Berry	50%
Height Class	15m
Crown Separation	2m
Crown Closure	25%
Crown Base Height	10m

Conclusion

The Napatak Fire did not display extreme fire behaviour yet was a great indicator of how far a fire can be carried by poplar fuzz. The treated area that the fire started in did not have the ladder fuels for it to become a crown fire yet it still spread a significant distance towards a nearby home. The crew that responded to this fire had been to fires in the past that have been in the areas of treated fuels. The crew stated that it is easier working in the thinned trees and helps with suppression as the fires are not as dangerous.