

# Wildfire and the Beetle Infestations “The British Columbia Experience”



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# Bio – Dana Hicks

- Worked for Government for over 36 years (Nova Scotia and British Columbia)
- Involved to wildfire operations and research for over 30 years
- Register Forest Professional in B.C.
- Attended the Wildland Fire Behaviour Specialist Course (WFBS/ S-590) in 1997
- Served as the Chair of the National of the WFBS/S-590 for the past 10 years
- Opportunity to work in all Canadian Provinces, several States in the US as well as a stint in AU after the Black Saturday event (2009)
- Active member of IMTs for the past 20 years (FBAN)



# Outline

- British Columbia facts
- Mountain Pine Beetle infestation
- 2017/ 2018 – What Happened?
- Observed fire behaviour
- The new kid on the block??
- The future?
- Conclusions



# Welcome to British Columbia

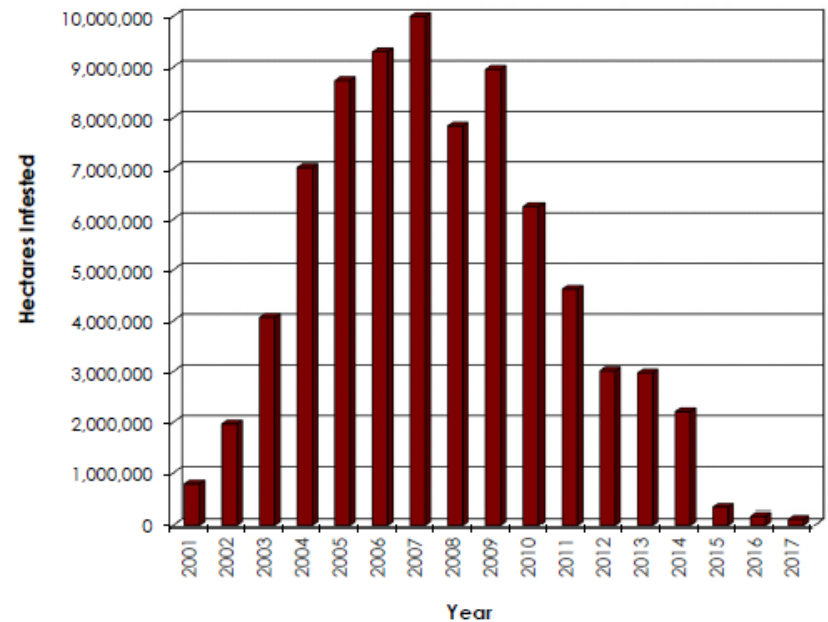
- Total area of 95 million ha or 234.65 million acres
- Forested Area of 60 million ha or 148.2 million acres and more than 90% publicly owned
- If Google is right... the New England states are 18.7 million ha



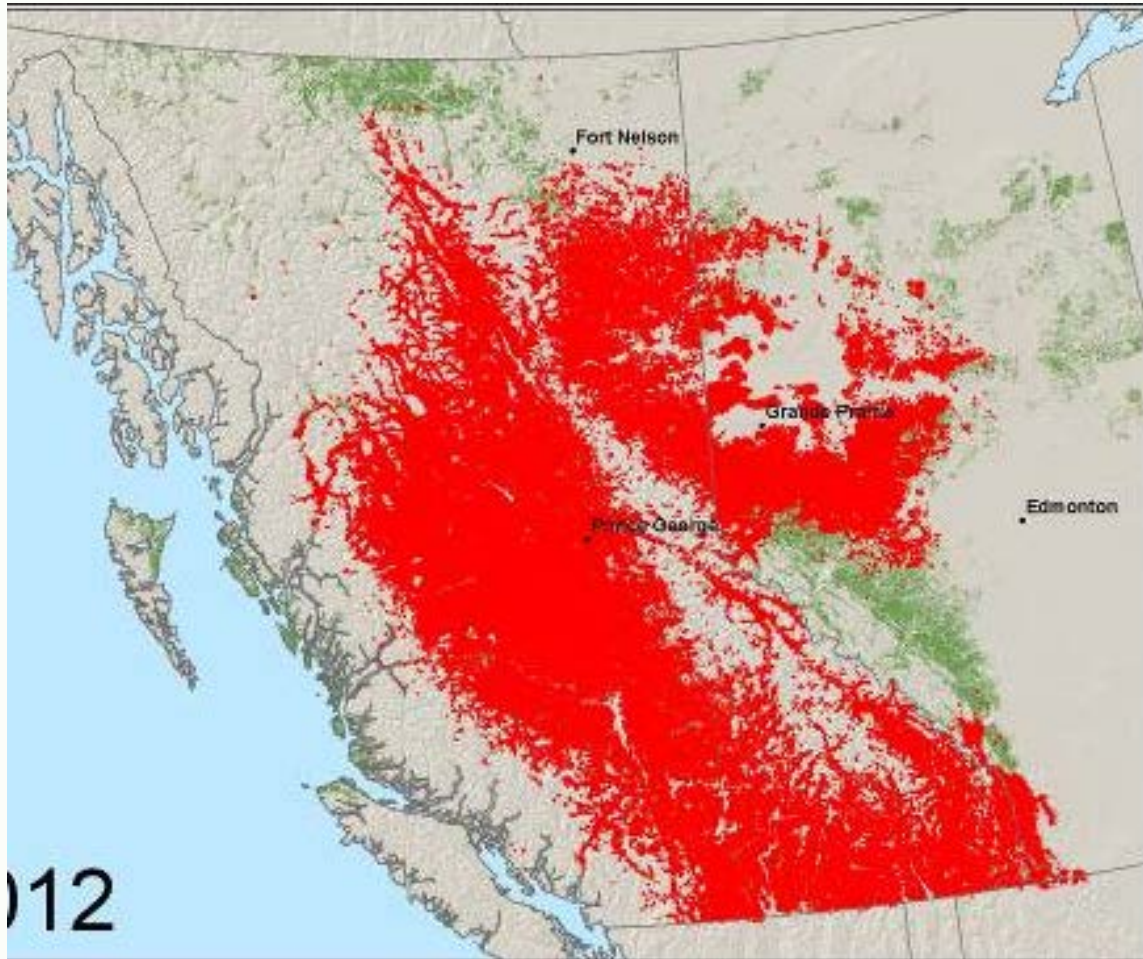


# MPB Infestation in British Columbia

- Emerged as a threat in the early 2000's
- Infestation peaked in 2007
- Has impacted over 18.3 MM hectares (45.2 MM acres) (almost equal to the land mass of New England)



# Infestation Extent



# 2017 and 2018



## 2017 Wildfire Season

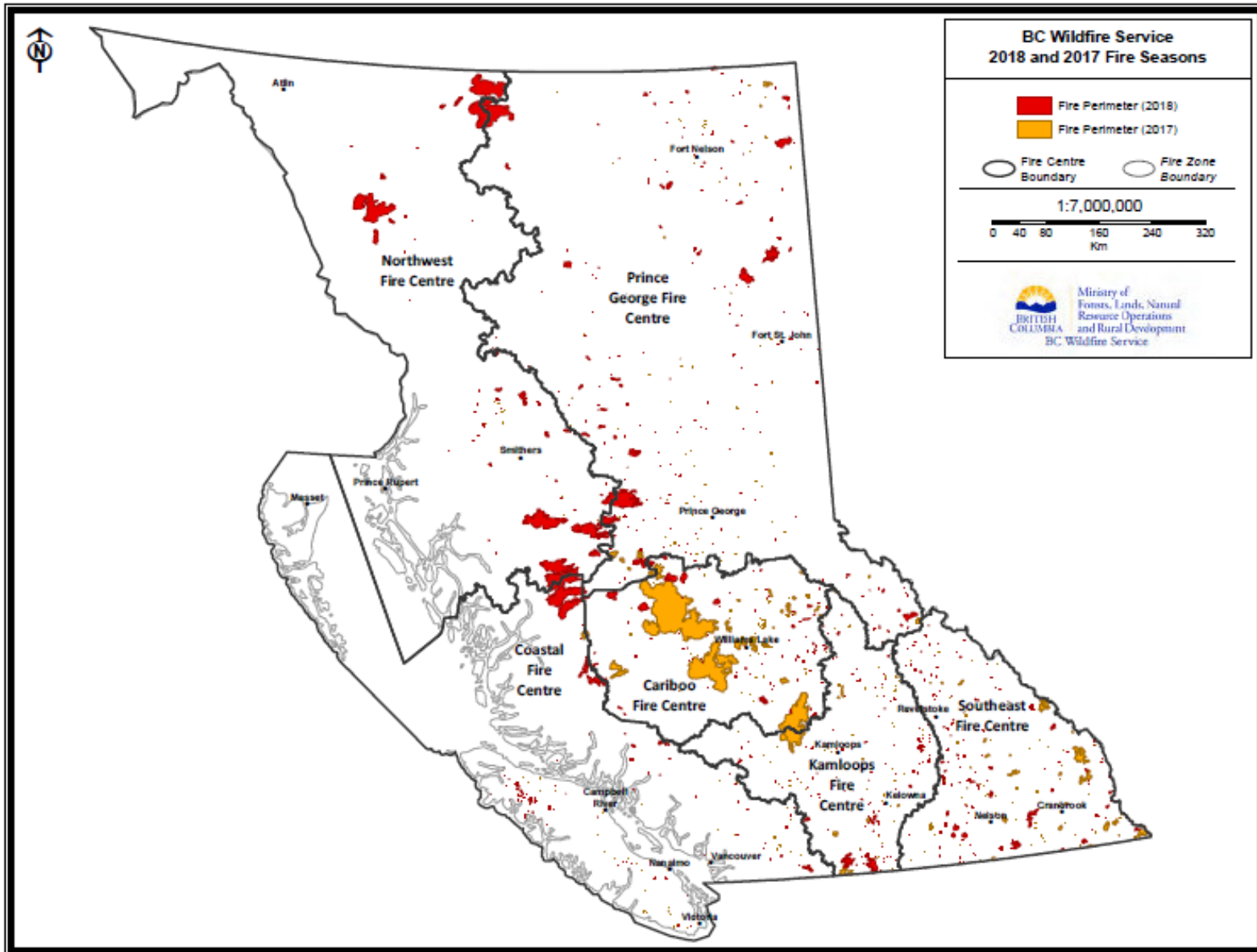
- Area Burnt – >1.2 MM ha (>3 MM acres)
- Number of Wildfires - 1265
- Provincial State of Emergency – 70 days
- Plateau Fire – Largest in BC History – 545 151 ha (1,346,523 acres)

## 2018 Wildfire Season

- Area Burnt – >1.35 MM ha (> 3.3MM acres)
- Number of Wildfires - 2092
- Provincial State of Emergency – 23 days

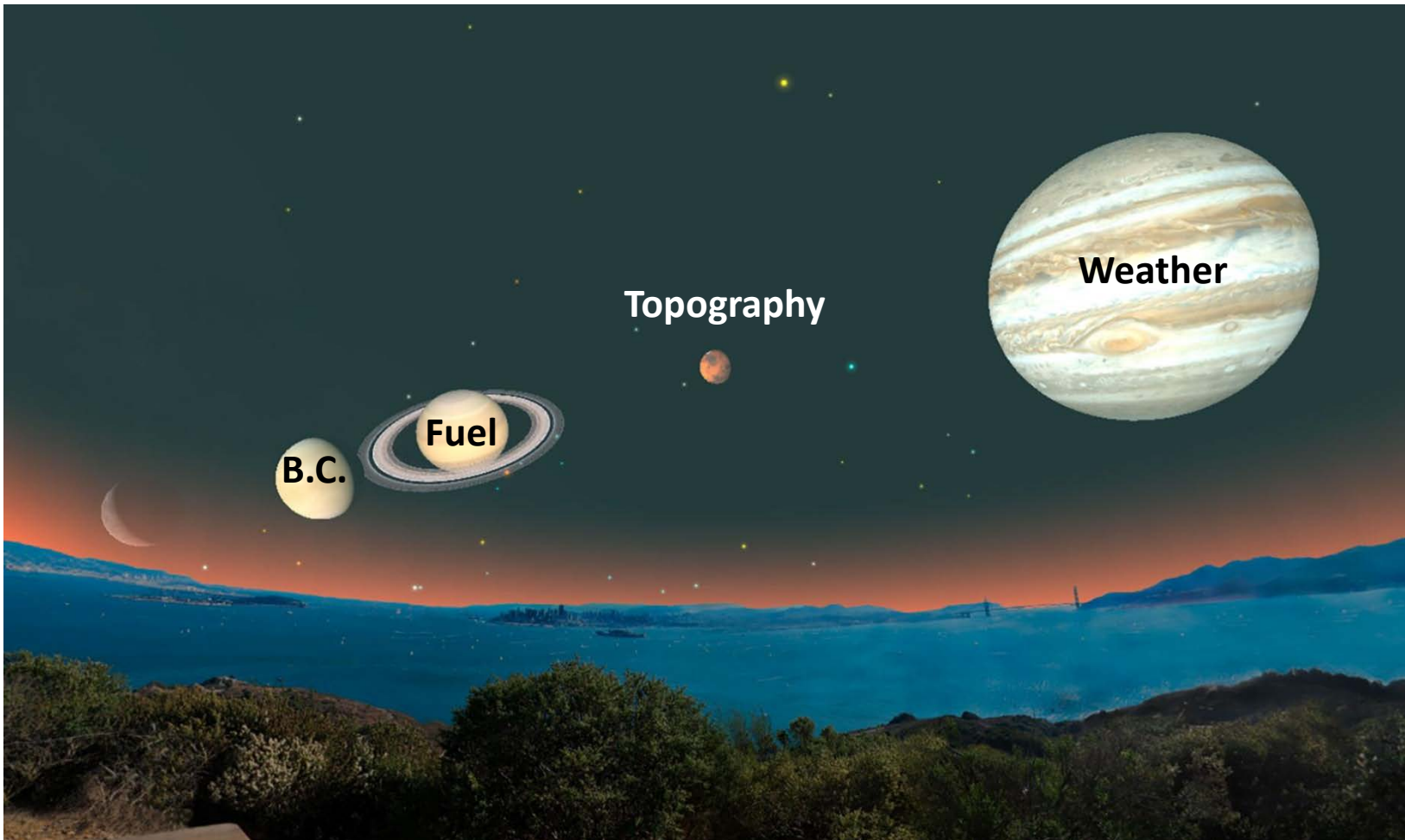
Large tracts of MPB affected stands were burnt, both years

# Wildfire Locations/ Perimeters





# What Happened in B.C. in 2017 -2018?



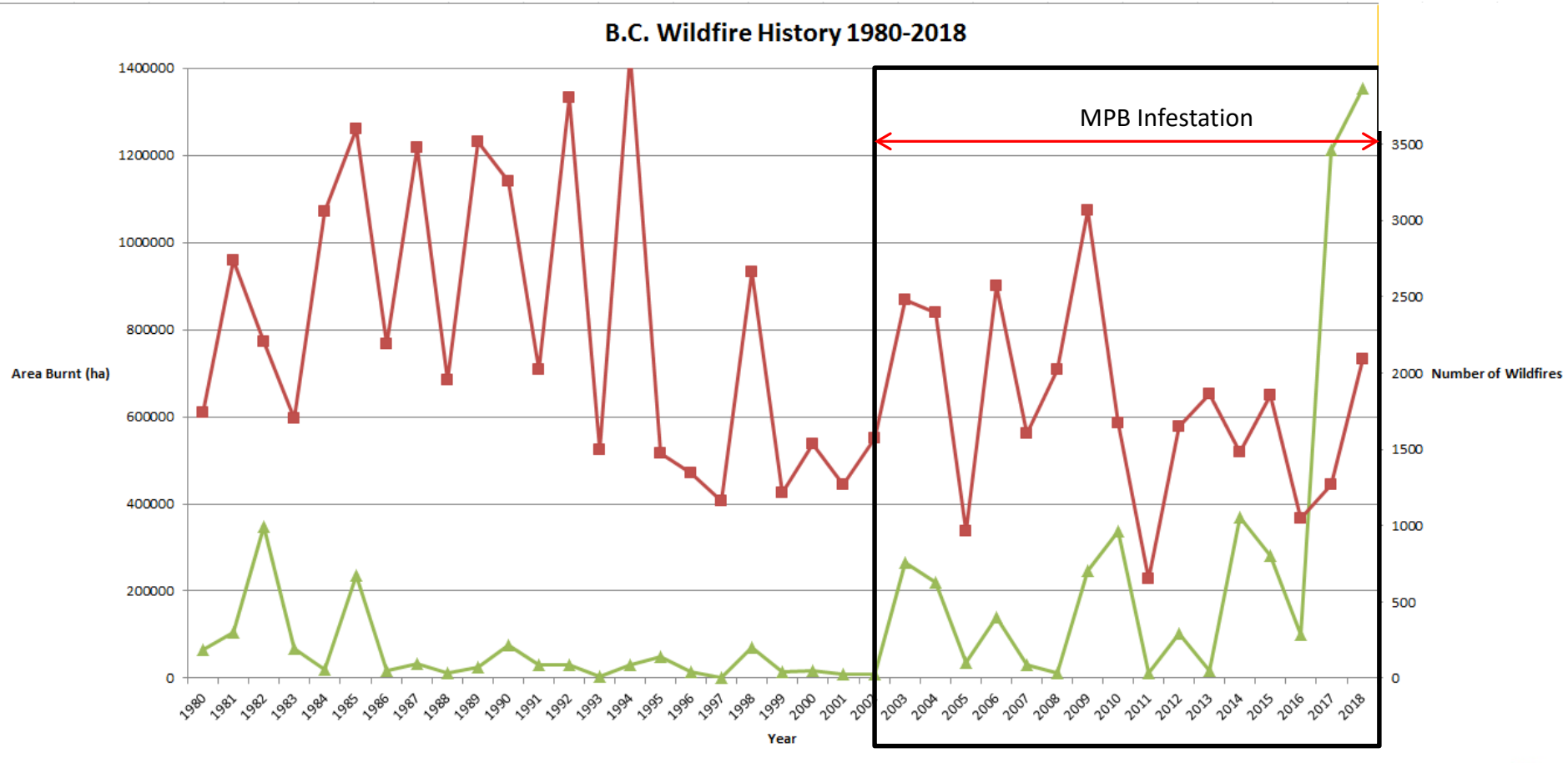
It was no one factor ... the Planets Aligned

# Forest Fuel in MPB areas





# Wildfire Stats – MPB?, Climate Change?



# Fire Behaviour Observations

## Fire Intensity



Fire intensity and residence time are much higher in  
MPB effected stands

# Fire Behaviour Observations

## Spotting/ Receptive fuel beds



With higher intensity comes increase convective energy, this lead to increased spotting as well as increased ember material size (plates of bark are becoming spotting material)



# Fire Behaviour Observations

## Post Harvest Slash is an Issue



Fuel connectivity across the landscape is a concern

# Fire Behaviour Observations

High intensity/ rate of spread wildfire runs

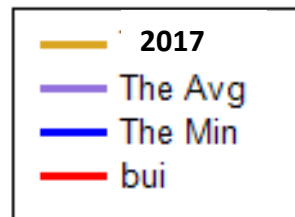
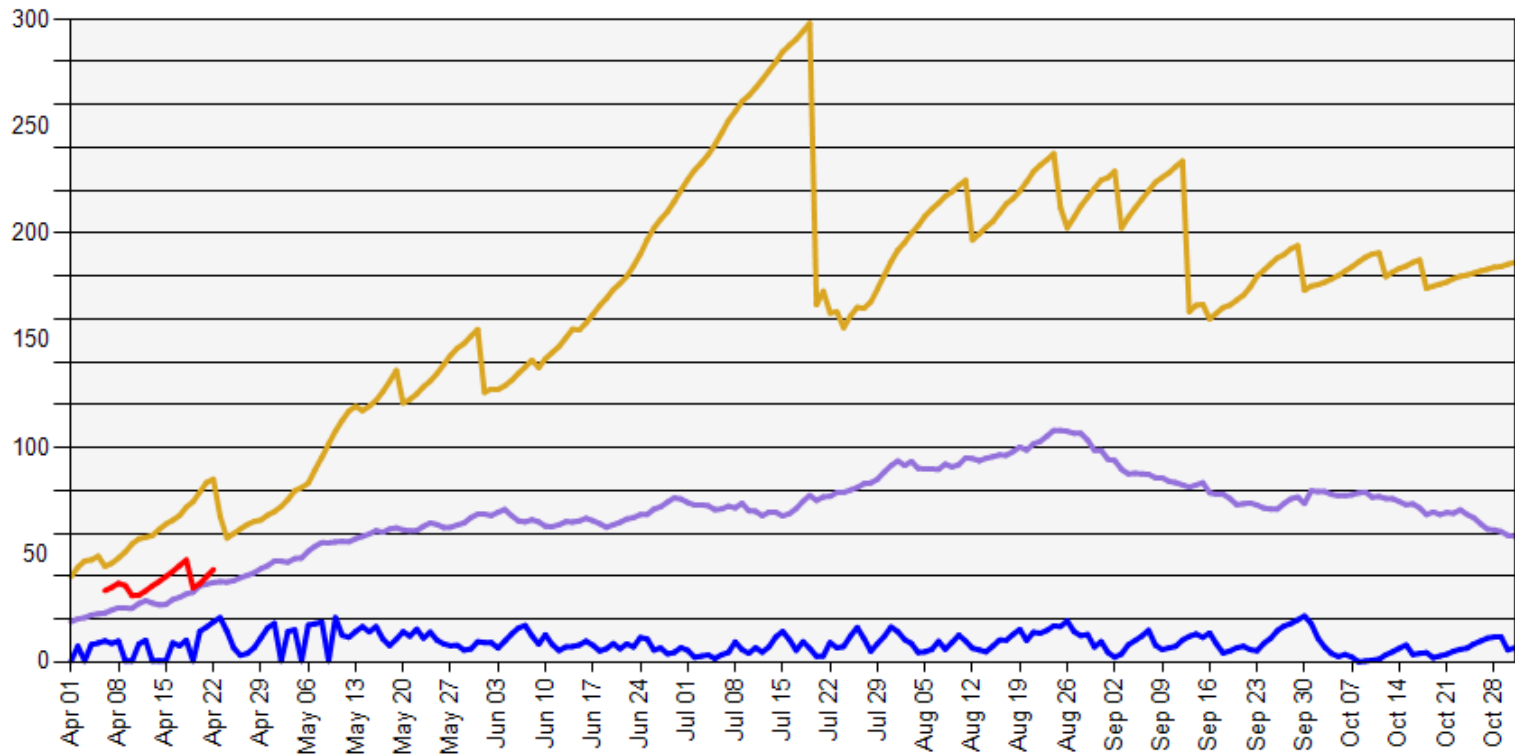


Fire behaviour is driven by understory composition (green trees)

# Drought Condition 2017



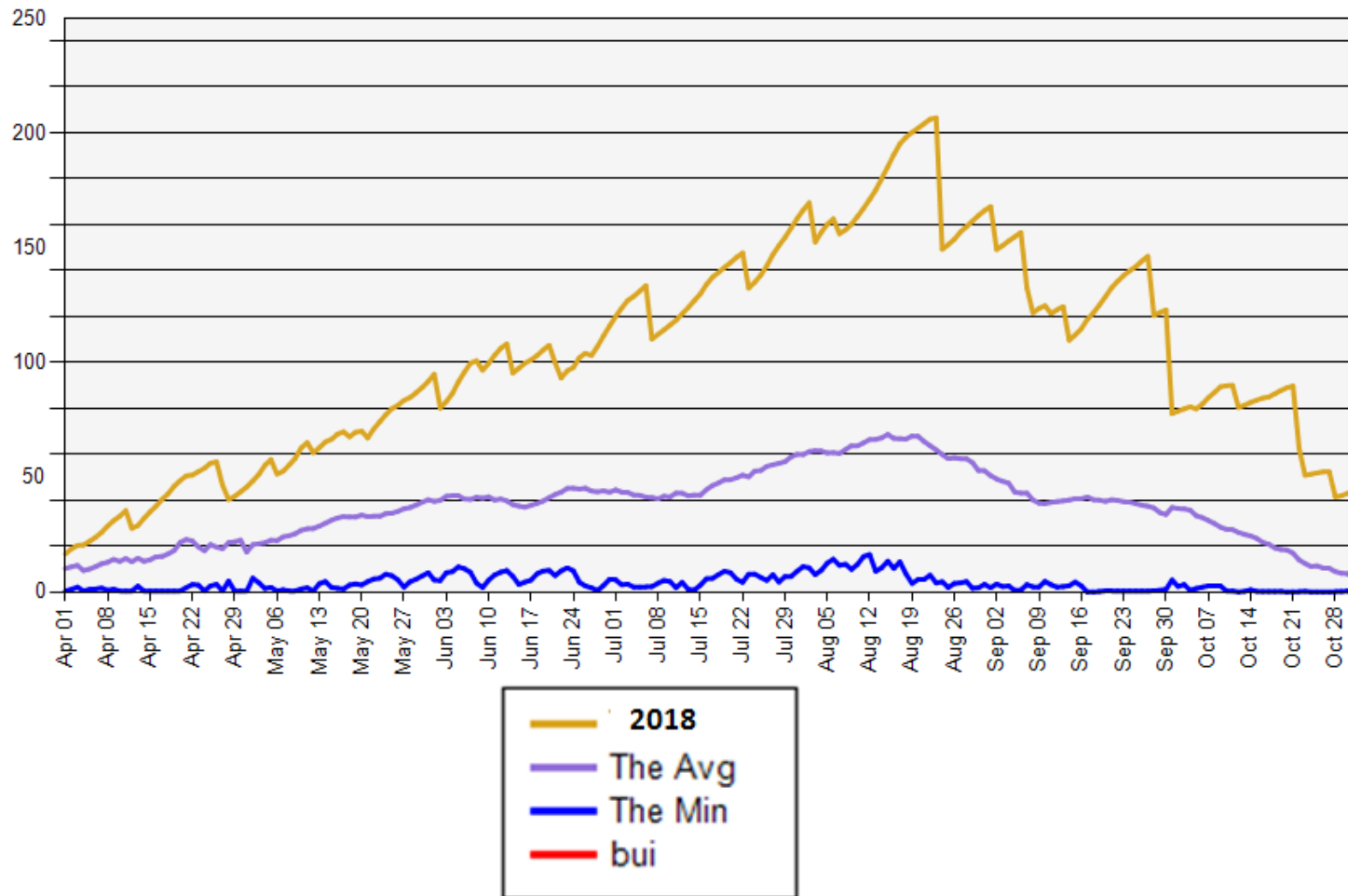
Wildfire Management  
BC Forest Service  
**BUI Daily Average vs. Current Day**  
RISKE CREEK



# Drought Condition 2018



Wildfire Management  
BC Forest Service  
**BUI Daily Average vs. Current Day**  
GRASSY PLAINS HUB





# The New Kid on the Block –Spruce Beetle

- Spruce Beetle (*Dendroctonus rufipennis*) is a forest pest that is native to spruce forests of western North America. In British Columbia, the spruce beetle typically has a two-year life cycle.
- Current infestation is at 1.25 million acres or 500,000 hectares.
- Current assessment ongoing to determine the impact on wildfire occurrence and burn severity.



Above: adult spruce beetle

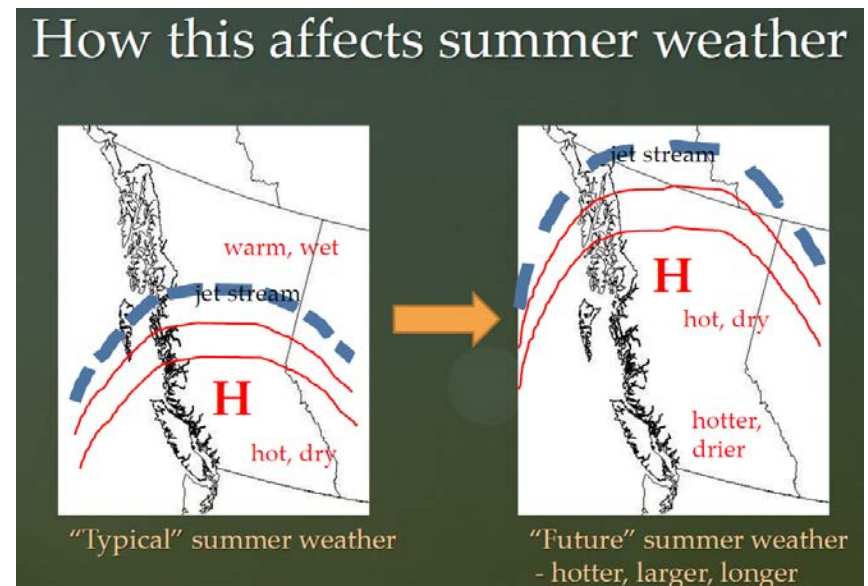




# The Future?



- Increased drought will lead to increased area burned
- The Jet Stream is slowing down leading to hotter drier summers
- The MPB affected stands will continue to fall down, increasing fuel loading



Slide credit – Vanessa Foord, MFLNRORD

# Conclusions

- Wildfire season will increase in intensity, area burned and duration
- Fuel hazard will remain high to extreme, in MPB attacked stands (Spruce Beetle Stands??)
- Landscape and WUI fuel management/ FireSmart are increasing in importance
- Values at risk will continue to be threaten





# Thank You! Questions?



**Ministry of  
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