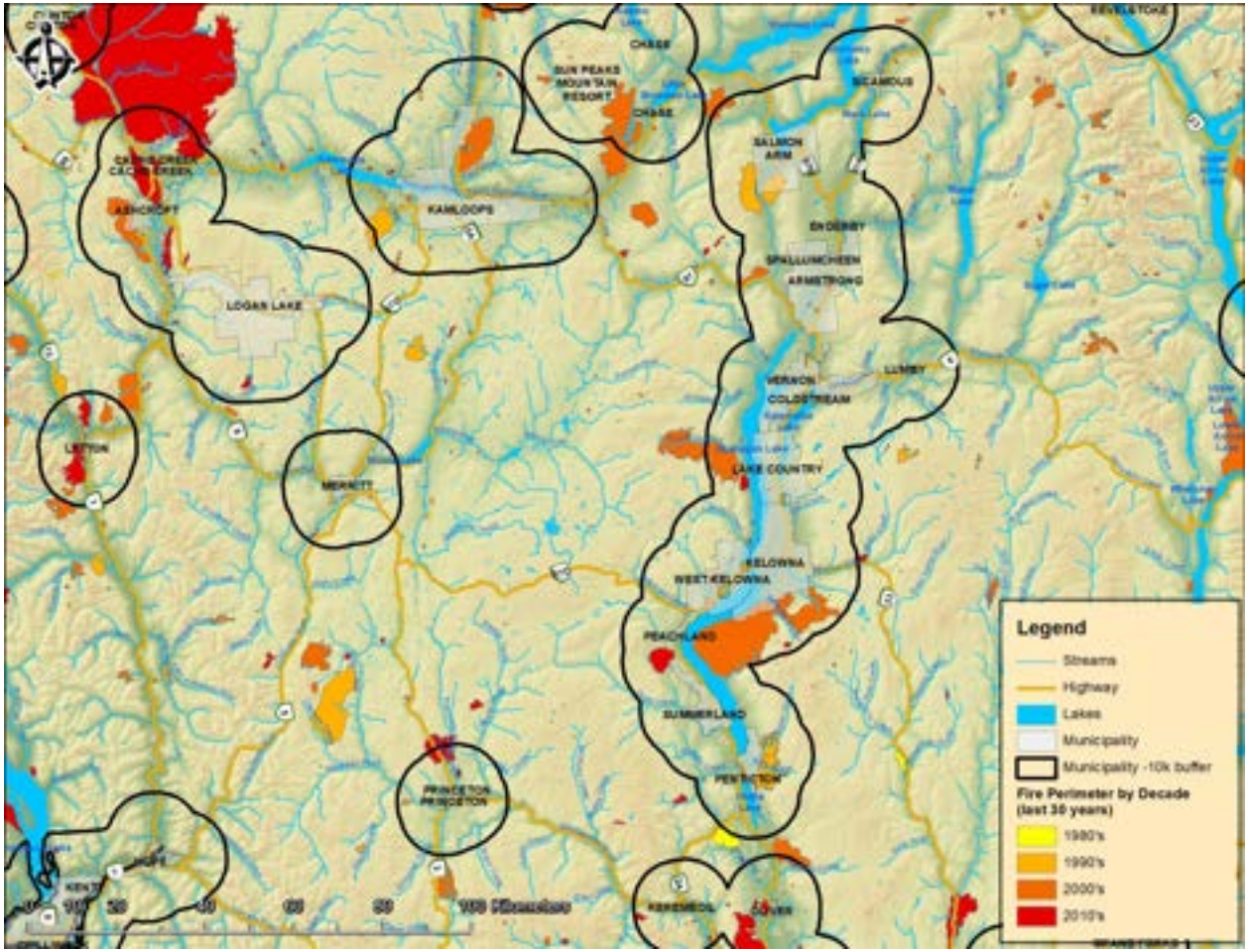
FUEL MANAGEMENT A NEW FOCUS PRESENTATION TO THE BC COMMUNITY FOREST ASSOCIATION MAY 2018

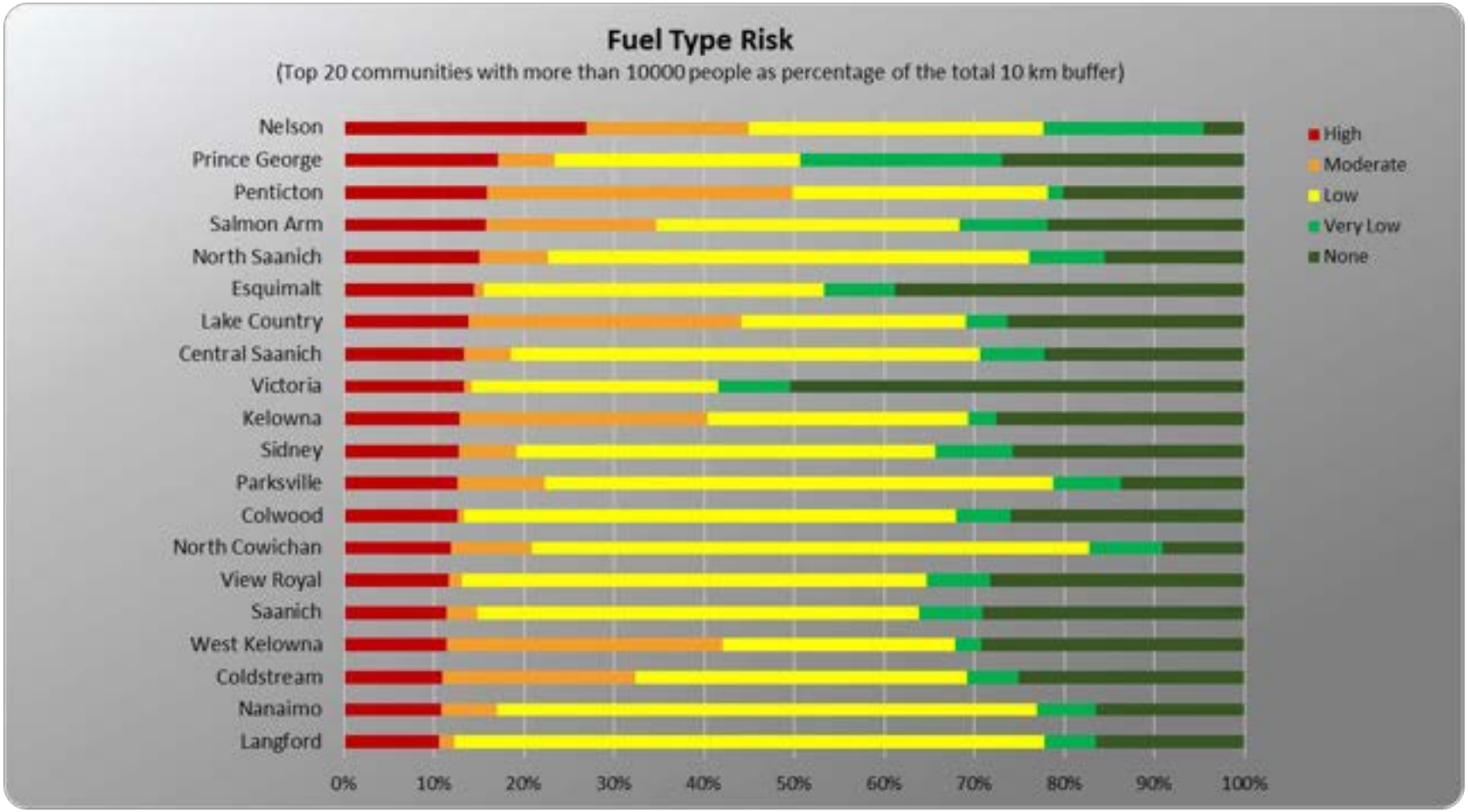
B.A. Blackwell and Associates Ltd.

High Fire Severity Fire with Total Organic Matter Loss

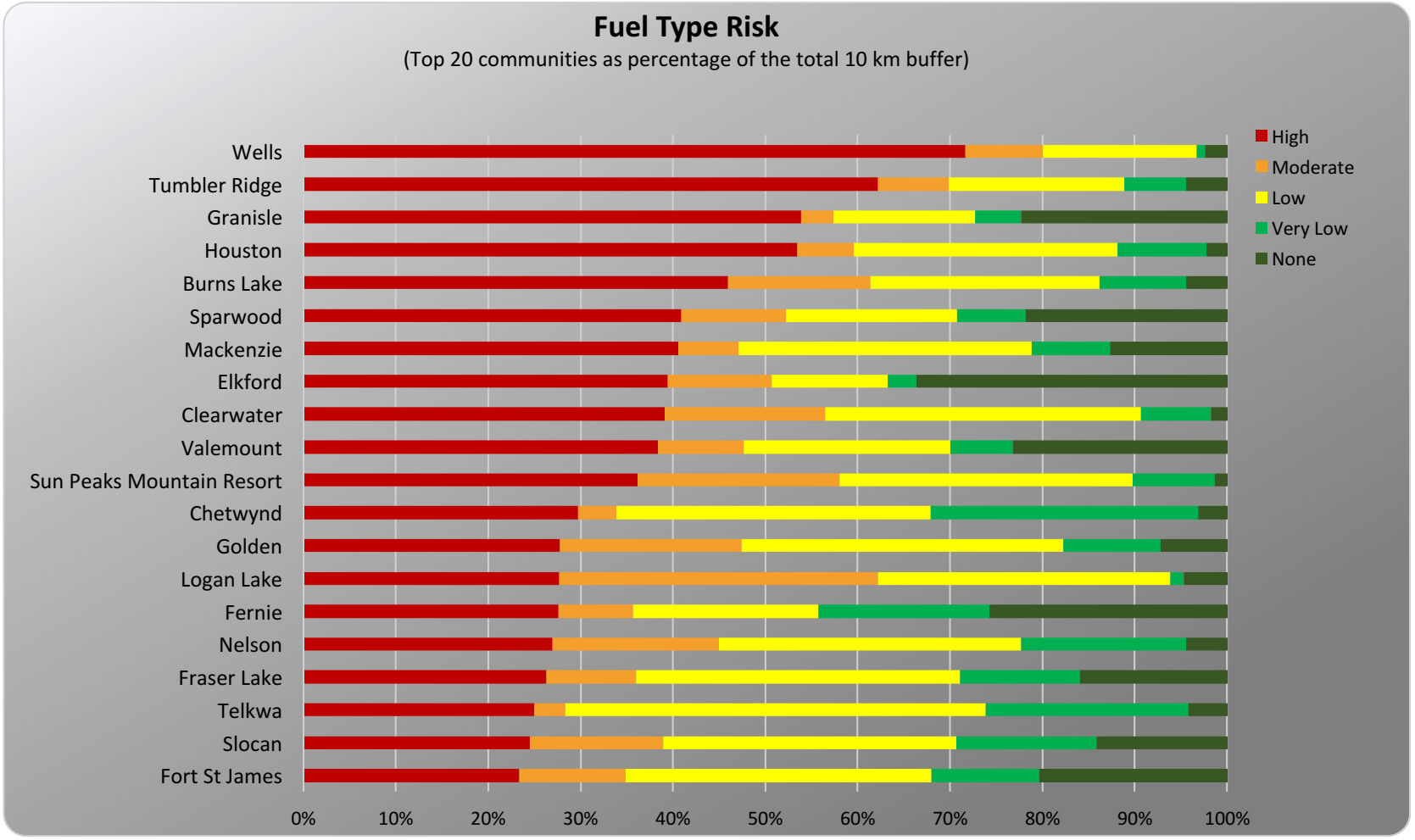
INTERFACE FIRES WITHIN 10KM OF COMMUNITIES



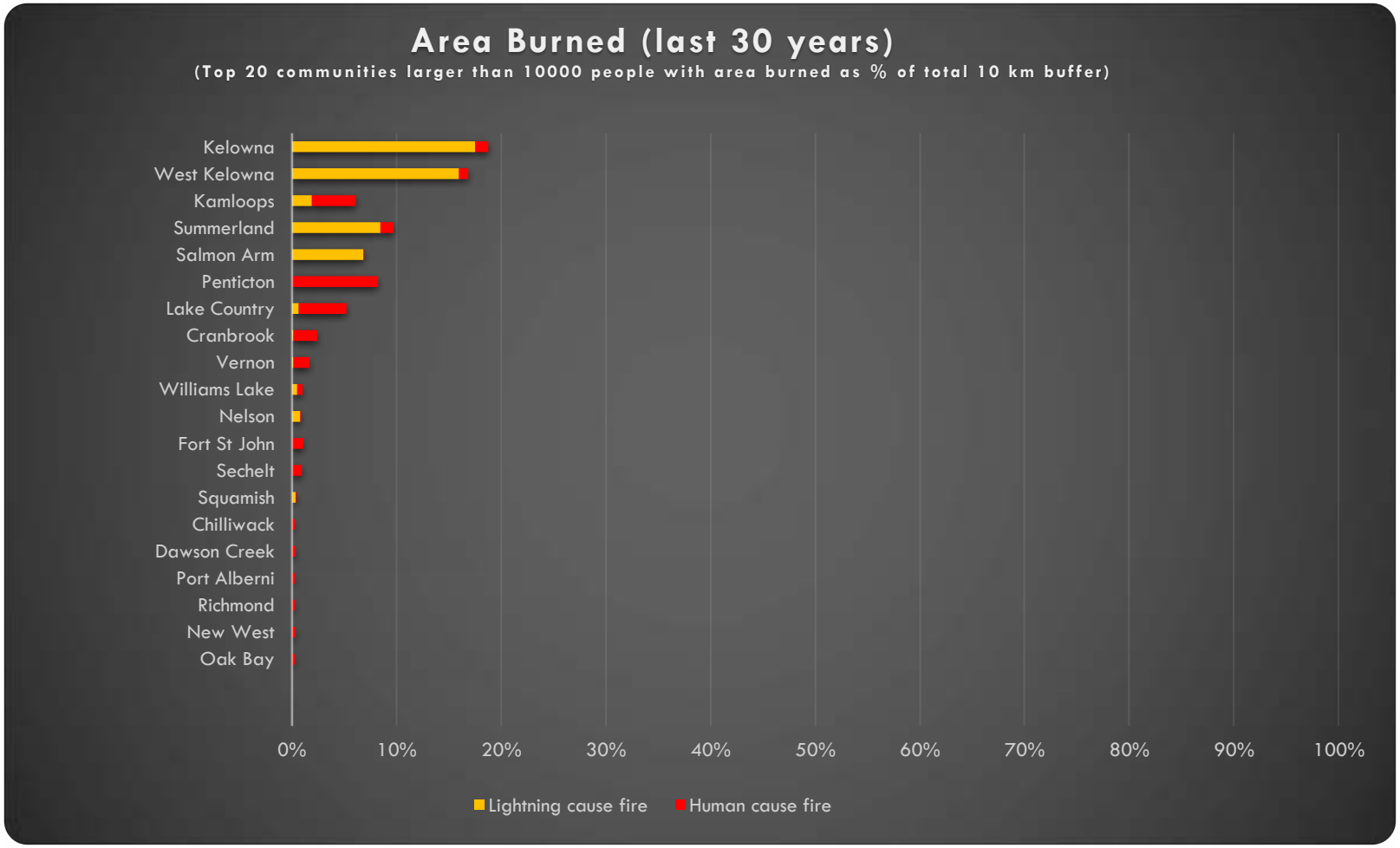
TOP 20 COMMUNITIES AT RISK – WITH > 10,000 PEOPLE



TOP 20 COMMUNITIES AT RISK – BASED ON THE % AREA OF HAZARDOUS FUELS



TOP 20 COMMUNITIES AREA BURNED WITH >10,000 PEOPLE



B.C. Wildfire Management Strategy

Fuel Management

- Reduce loss and damage from wildfires through community wildfire protection planning and fuel hazard reduction

Landscape Fire Management Planning

- Lead landscape fire management planning that results in fire-adapted communities and fire-resilient ecosystems

Wildland Management Practices

- Develop and promote innovative wildfire management sciences , practices, technology and decision support models

Why a Fire Management Strategy

- The Province has experienced a series of catastrophic wildfire seasons over the past 10 years including 2003, 2004, 2009, 2010, 2014, 2015 and 2017 with substantial suppression costs, economic and resource loss and large areas burned
  - Forecasted climate change suggests these trends are likely to continue and future wildfire losses are likely to increase
  - Increased wildfire loads will continue to tax available suppression resources such that there is no guarantee that all resources will receive equal priority
  - Prevention efforts are required to improve fire suppression success and reduce overall wildfire losses.

LFMP Approach

Utilizes the Provincial Strategic Threat Analysis (PSTA)

- identifies the relative wildfire threat across the province
- based on fuel type, head fire intensity, and spotting.

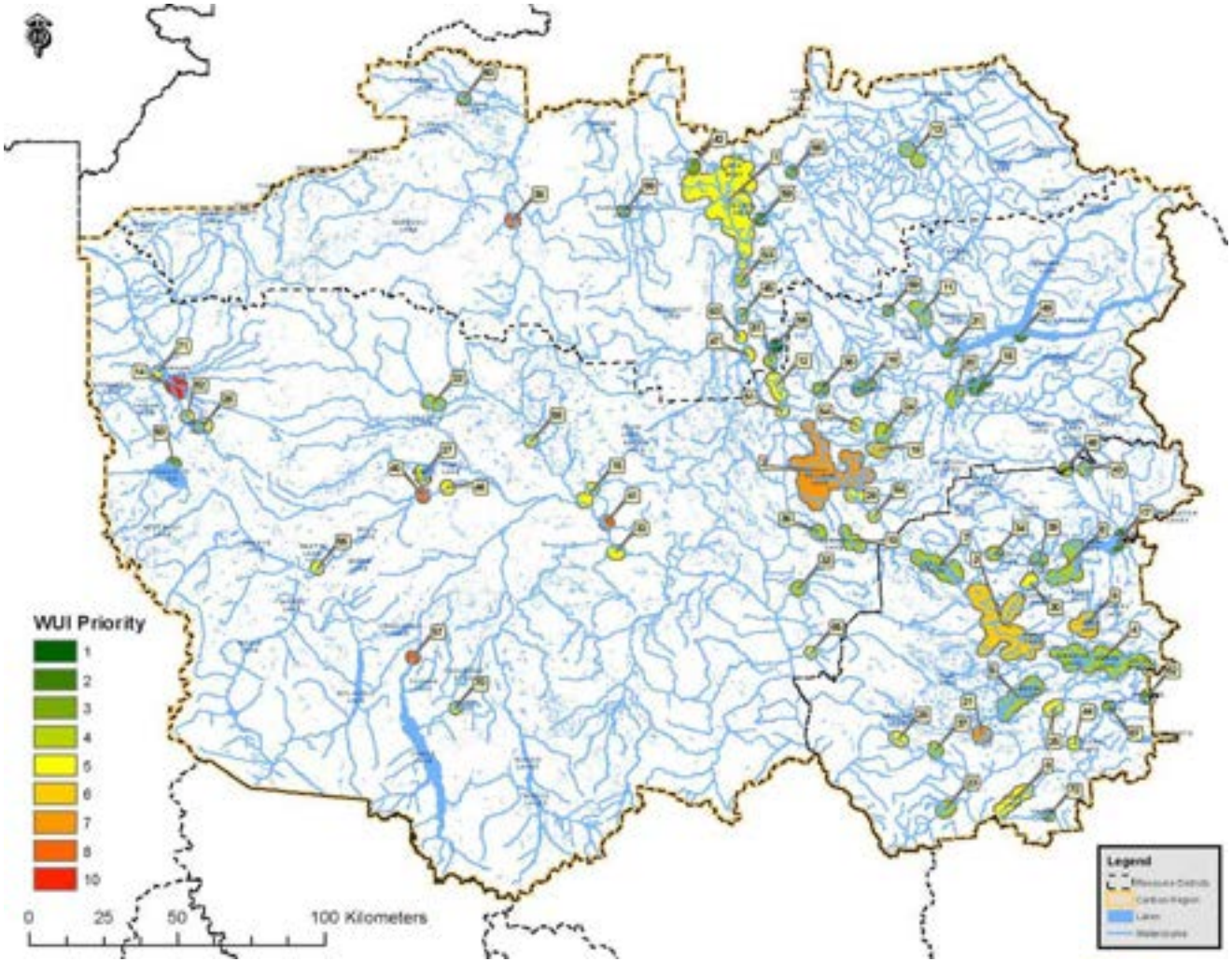
Values are prioritized in relation to their threat (PSTA) and priority

- fire management objectives are described, and mitigation treatment plans and strategies are developed to modify the amount and distribution of fuels on the landscape in order to reduce the risk.

Identifies a network of shaded fuel breaks

- strategically located to alter fire behavior and head fire intensity such that suppression resources have a safe opportunity to suppress the fire or the area can be used as a firing line to back burn into an oncoming fire.

Communities and 2km WUI based on PSTA (60%) & structure density (40%)



What are the Goals of Landscape Fire Management Planning?

- To identify strategic landscape fuel management opportunities – fuel breaks.
- To engage and work with licensee's in developing a network of landscape level fuel breaks to protect values at risk outside communities.
- To work with communities to implement fuel management to protect values at risk.

The main wildfire objective of fuel management strategies is to shift stands from a high crown fire potential to low surface fire potential

Themes 1 to 4 identify priorities for protection in response and landscape plans:

1. **Human Life and Safety:**
   within 2 km of a community with >6 structures/km^2

2. **Critical Infrastructure**
   communication towers, transmission lines, pipelines, airports, hospitals and more

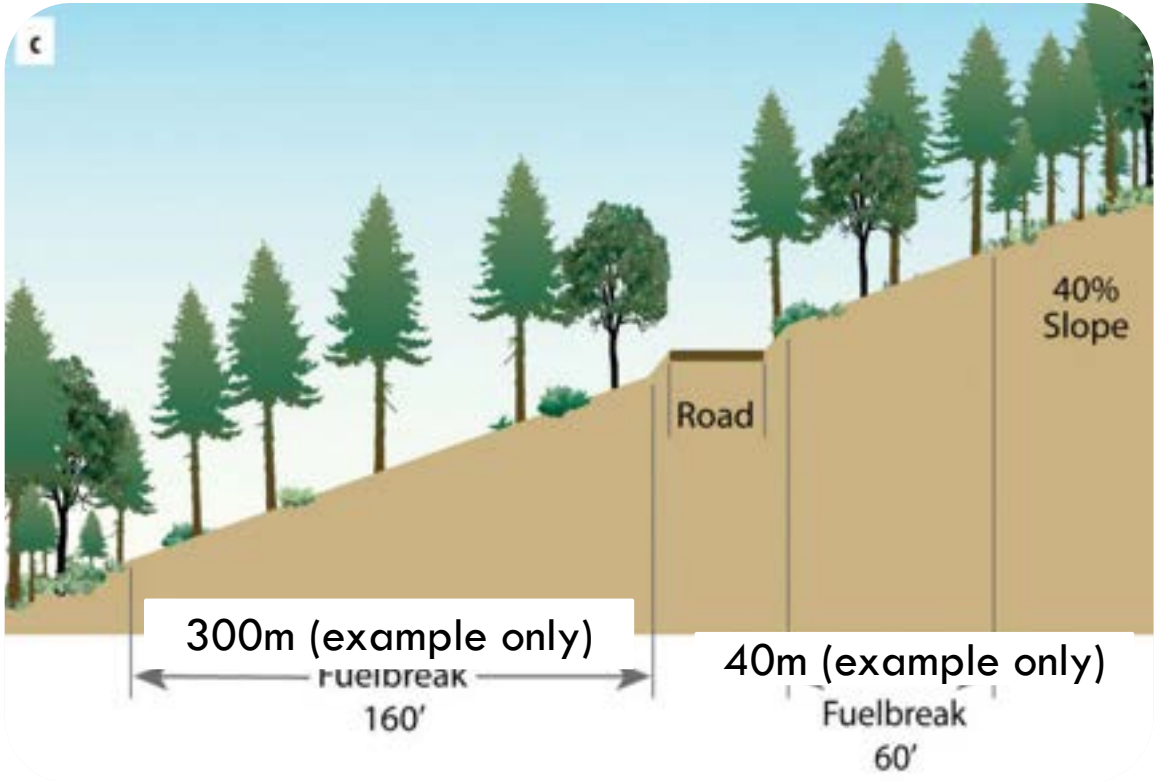
3. **High environmental and cultural values**
   FN values, OGMAs, WHAs, UWRs (legal orders)

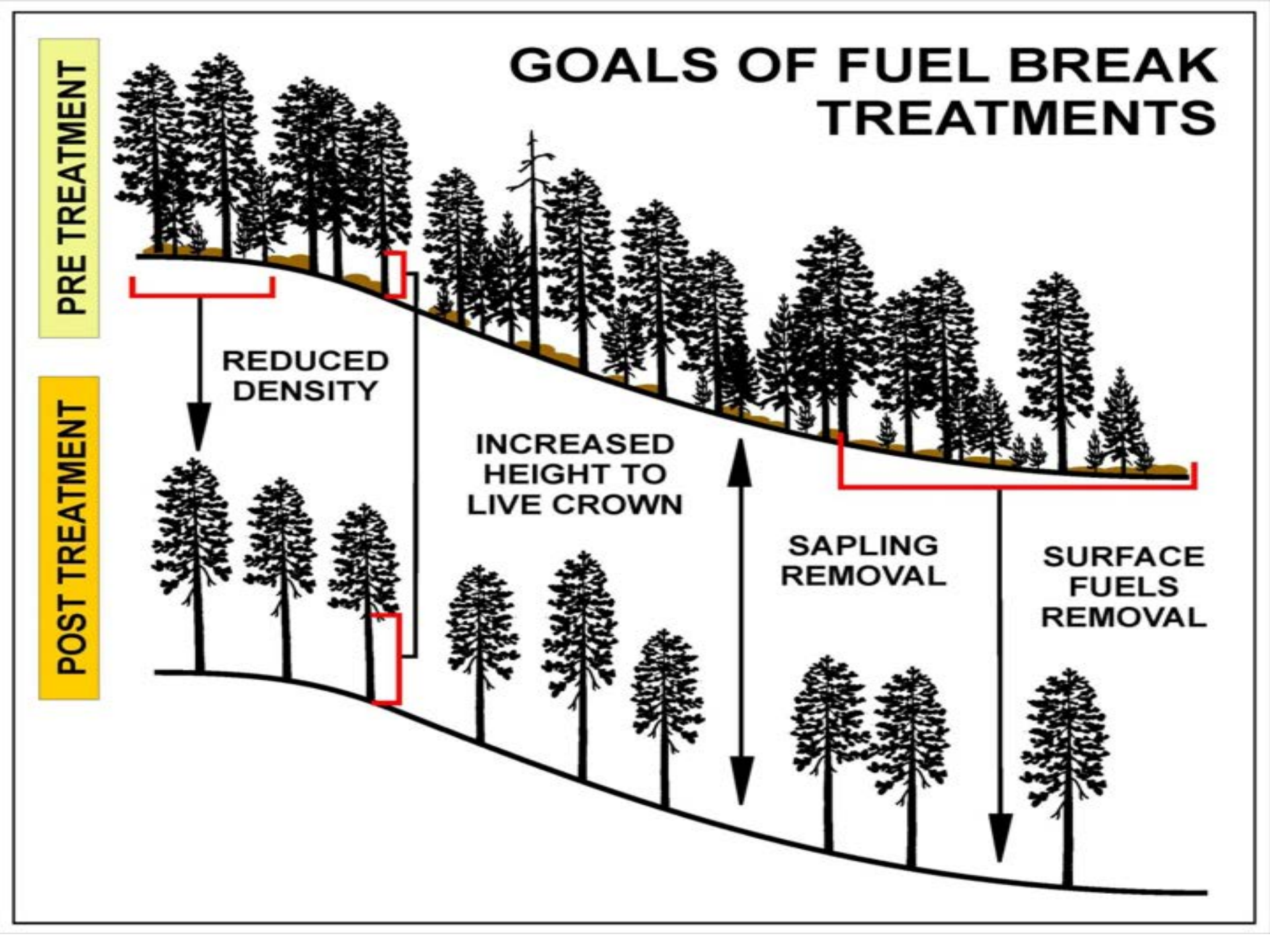
4. **Resource Values**
   Timber, fish, range, lower priority wildlife habitat, planned harvesting, regeneration areas, local THLB

What is a Fuel Break?

- **A natural or manmade change in fuel characteristics** affecting fire behaviour so that fires **can be more readily controlled.**

- A distinct area outside a community (or other value at risk) of strategic size and shape where human modifications of forest fuels aid in the protection of that community or resource from future wildfires.




GOALS OF FUEL BREAK TREATMENTS
PRE TREATMENT
POST TREATMENT
REDUCED DENSITY
INCREASED HEIGHT TO LIVE CROWN
SAPLING REMOVAL
SURFACE FUELS REMOVAL

Fuel Break Options

Three treatment options;

- Fuel Conversion – will encourage deciduous other than birch where feasible
- Fuel removal – transmission and gas lines are examples
- Fuel modification – by prescribed fire or thinning

In general the goals of thinning are to:

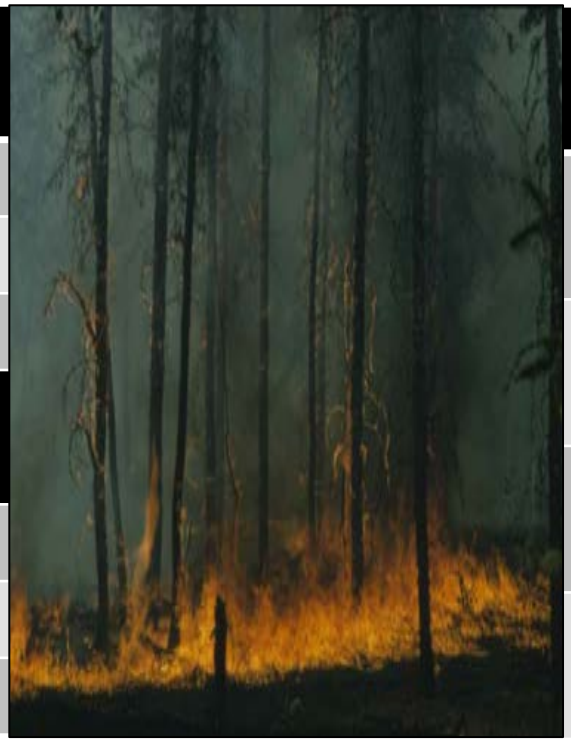
- Reduce stem density below a critical threshold to minimize the potential for crown fire spread. Target crown closure is less than 35%;
- Prune to increase the crown base height to a minimum of 2.5 meters or 30% of the live crown (the lesser of the two) to reduce the potential of surface fire spreading into tree crowns; and
- Remove slash created by spacing and pruning to maintain surface fuel loadings below 5 kg/m^2.

CFFDRS – Fire Behaviour

FWI 17 – Moderately Vigorous Surface Fire

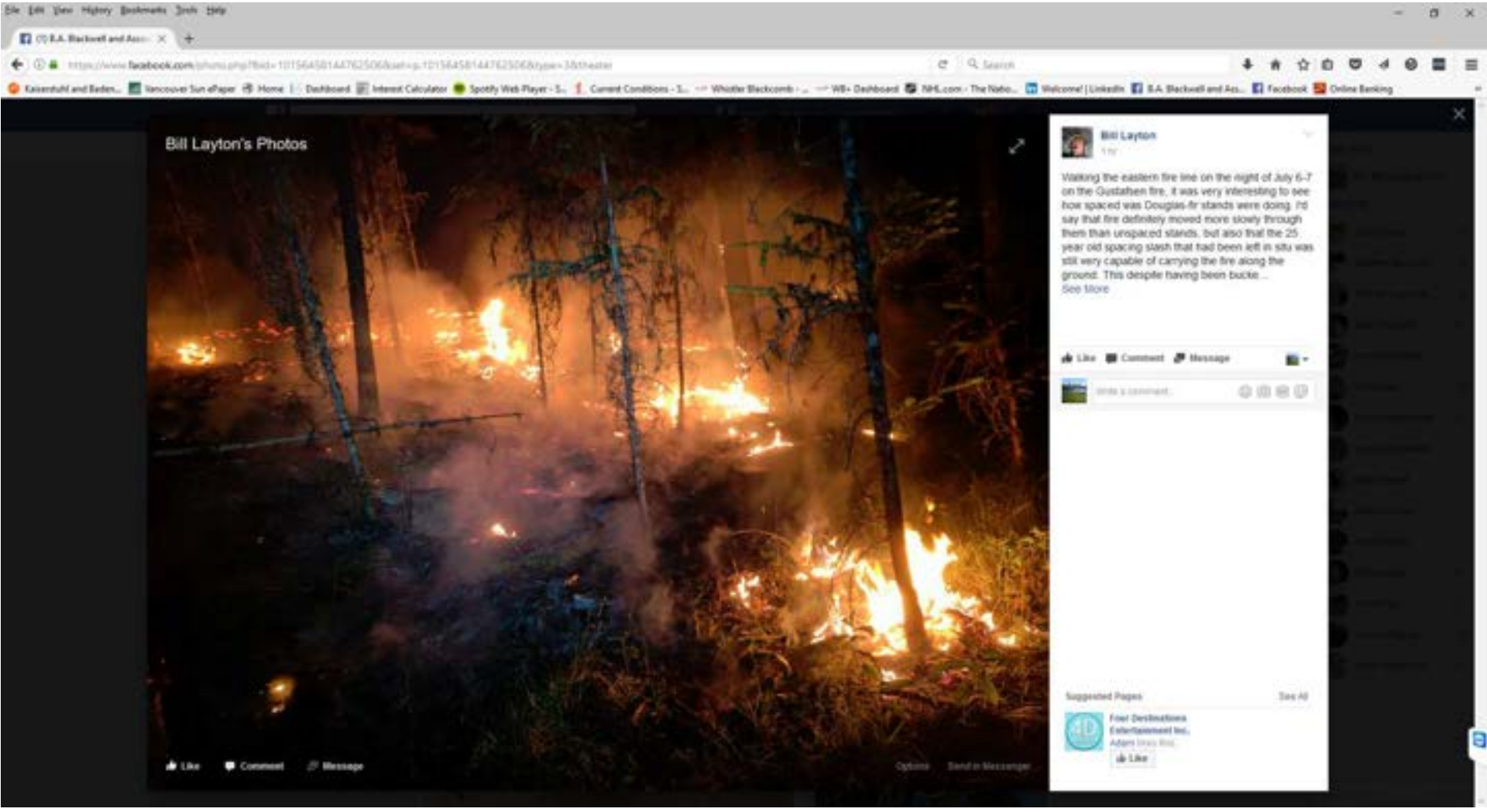
- Fire burning into crowns using ladder fuels. Steady spread.
- Fire frontal intensity is 950 kW/m and fuel is consumed at 1.54 kg/m^2 and spreads at 2.0 m/min.

Fuel Moisture Codes	
FFMC	91
DMC	31
DC	222
Fire Behaviour Indices	
ISI	7
BUI	46
FWI	17



Weather Observations	
Dry-bulb Temp.	29°C
Relative Humidity	40%
10-m open wind	8 km/h
Days since rain	7

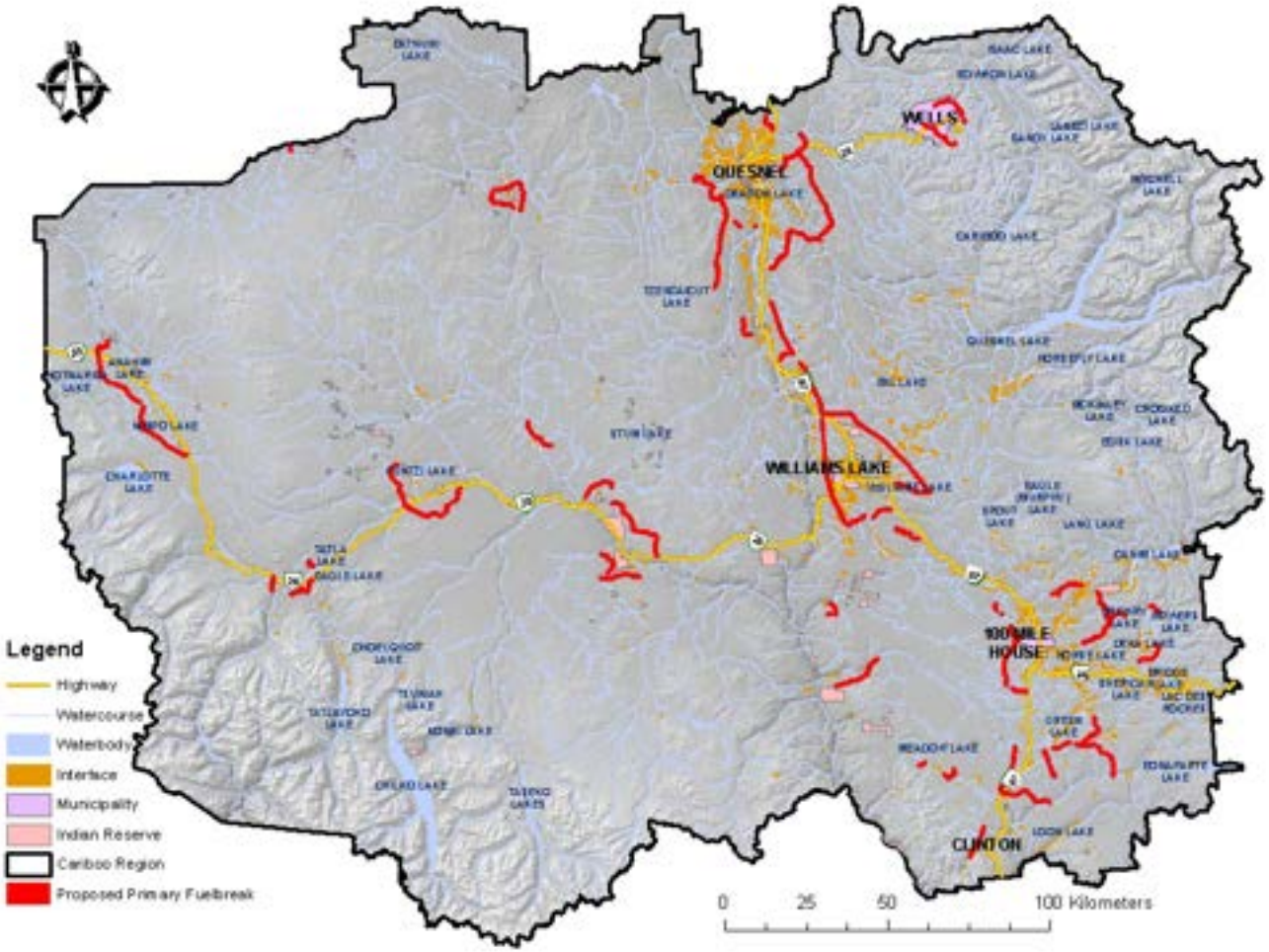
Gustafsen Fire 2017 – Spaced Stand



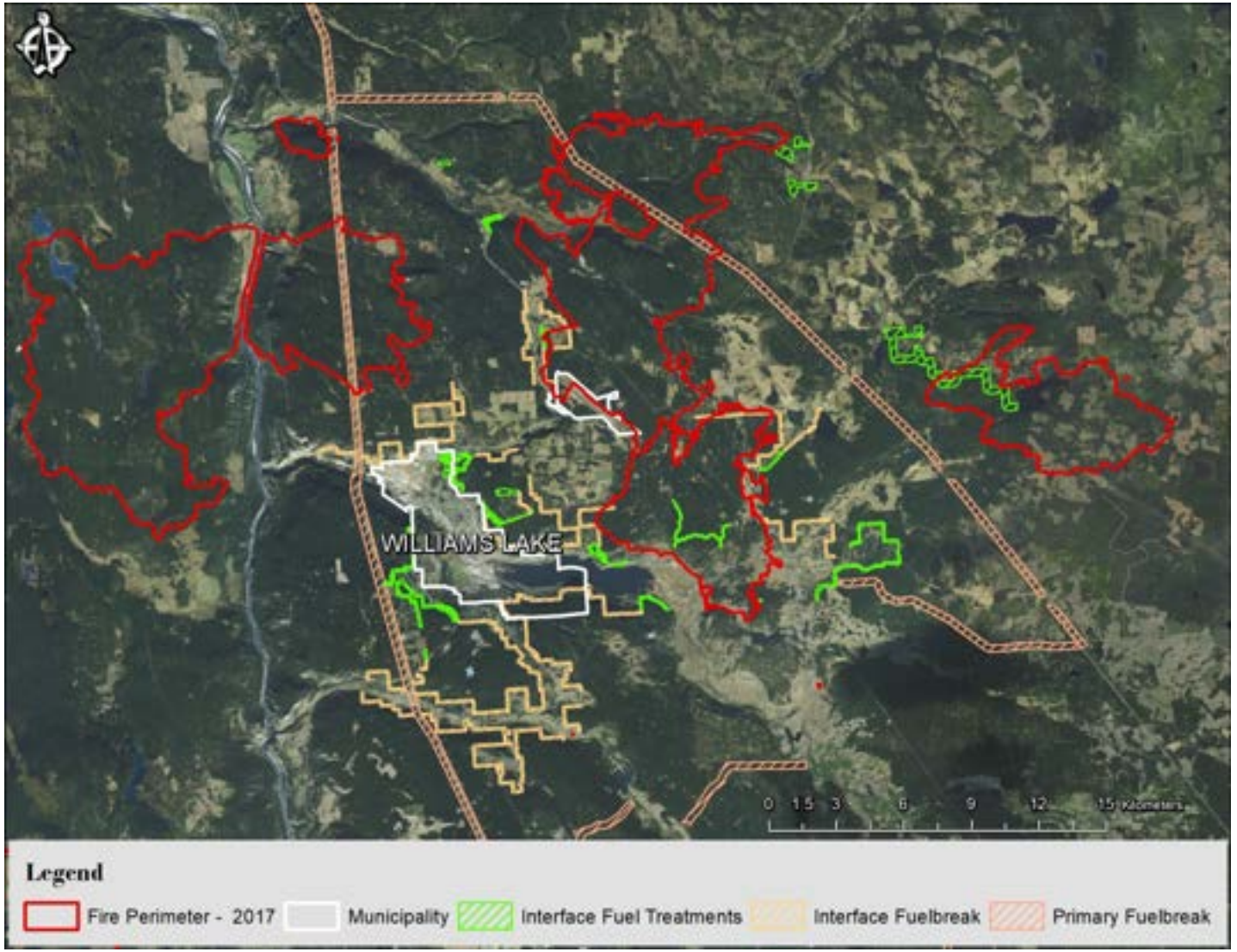
Primary and Secondary Landscape Fuel Breaks Defined

- Looking at the fuel breaks to protect communities – these are considered **Primary Landscape Fuel Breaks**
- Focus Human Life and Safety, Property, and Critical Infrastructure
- Looking outside of communities to identify fuel break opportunities to protect values at risk outside of communities including the THLB – these are considered **Secondary Landscape Fuel Breaks**
  - Focus on protecting values on the broader landscape

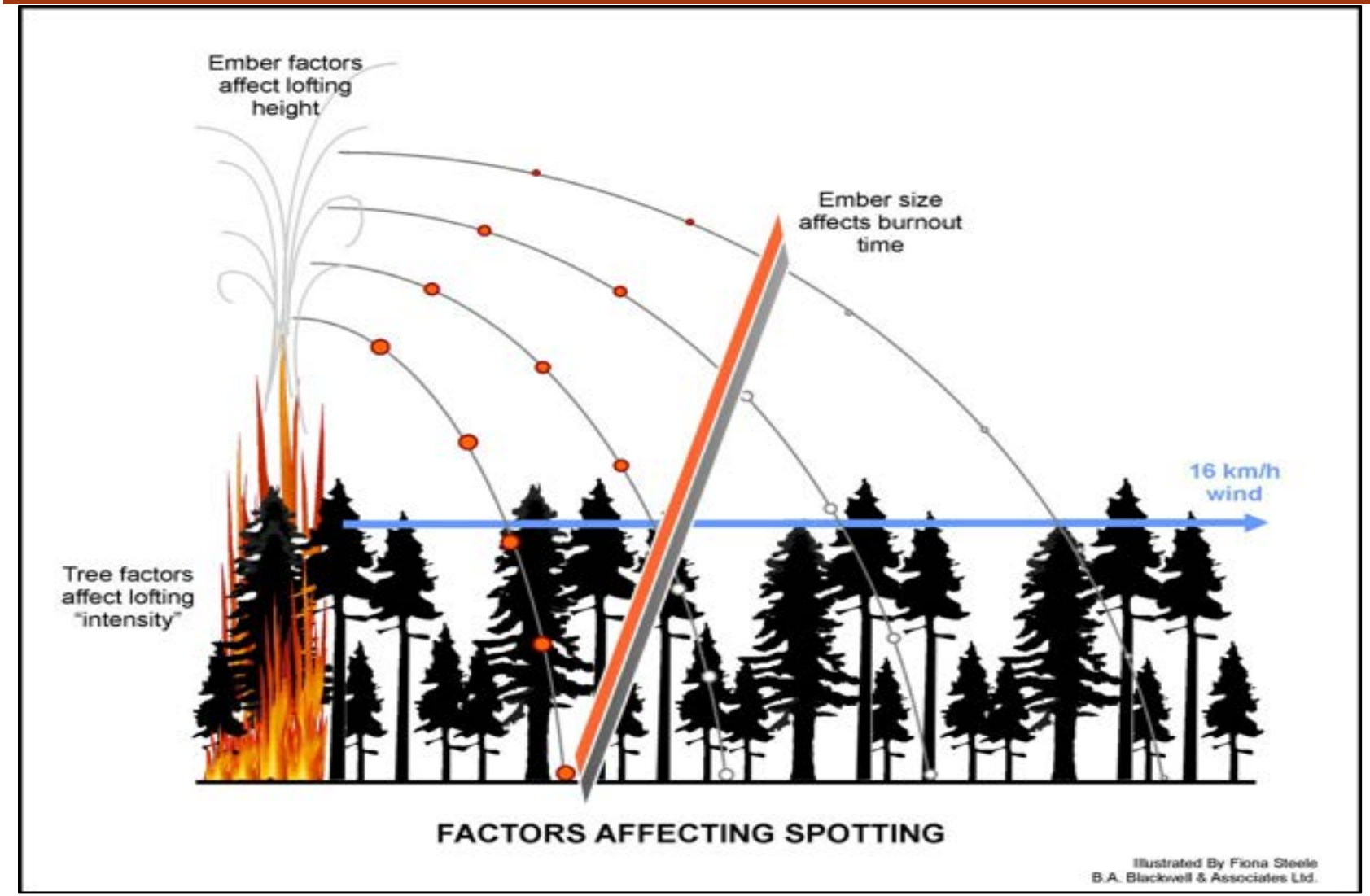
Proposed Cariboo Fuel Break Network



Williams Lake Fuelbreaks - Almost



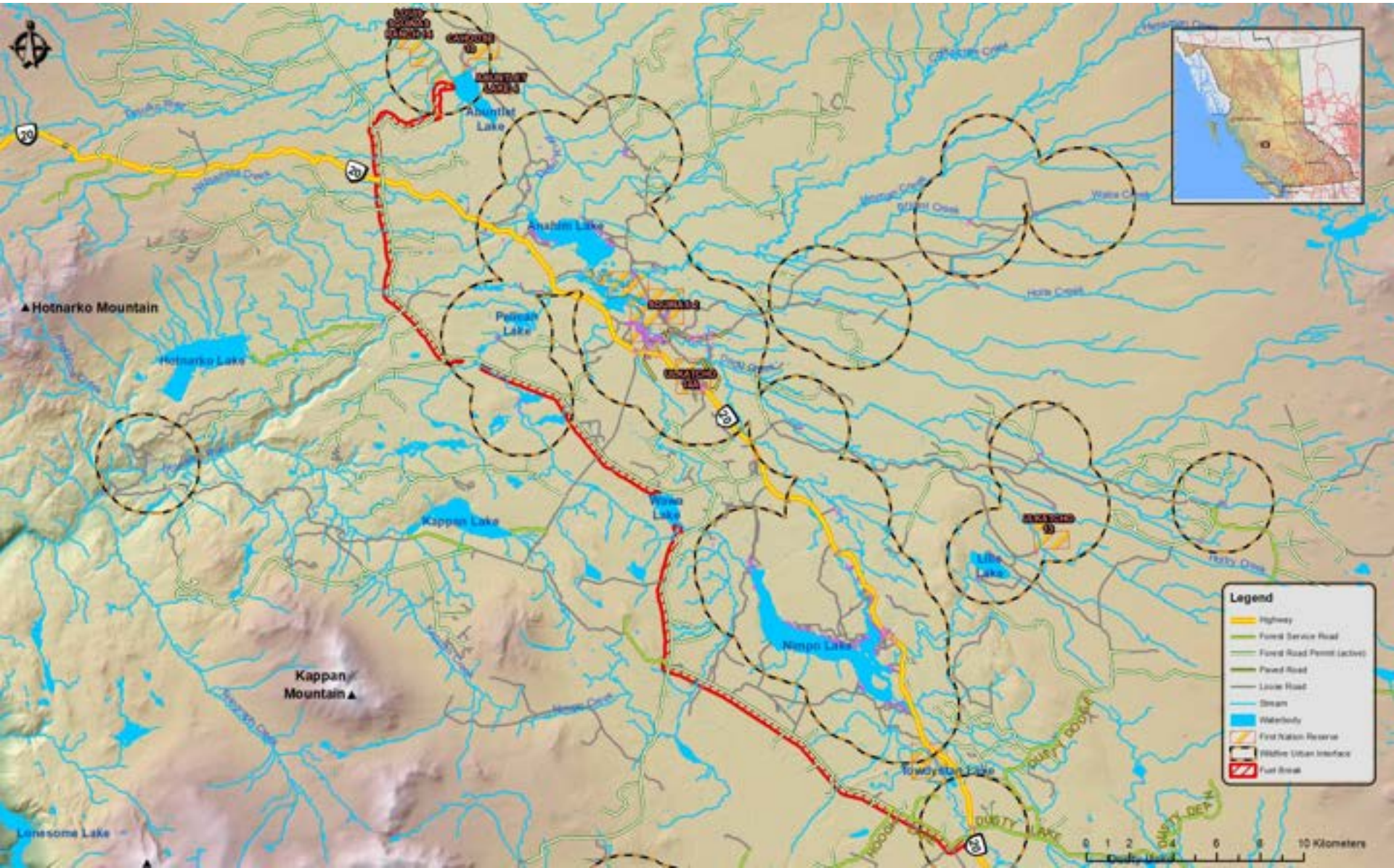
Fuel breaks Do Not Address Long Distance Spotting



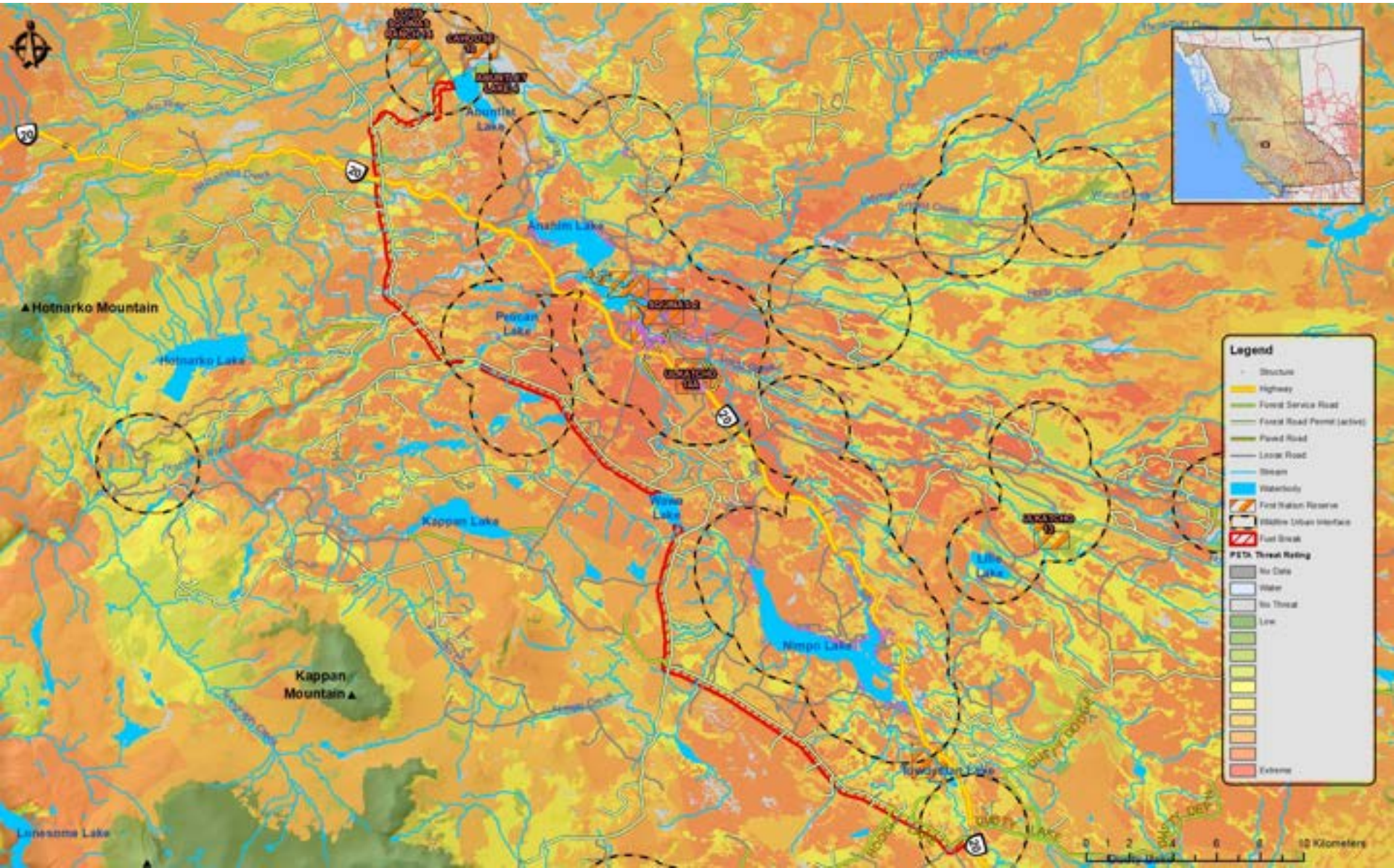
Development of the Fuelbreak

- The Anahim/Nimpo Fuelbreak was originally identified by BC Wildfire Service
- Facilitated by the Provincial Strategic Threat Analysis with input from the Chilcotin/Cariboo Resource District

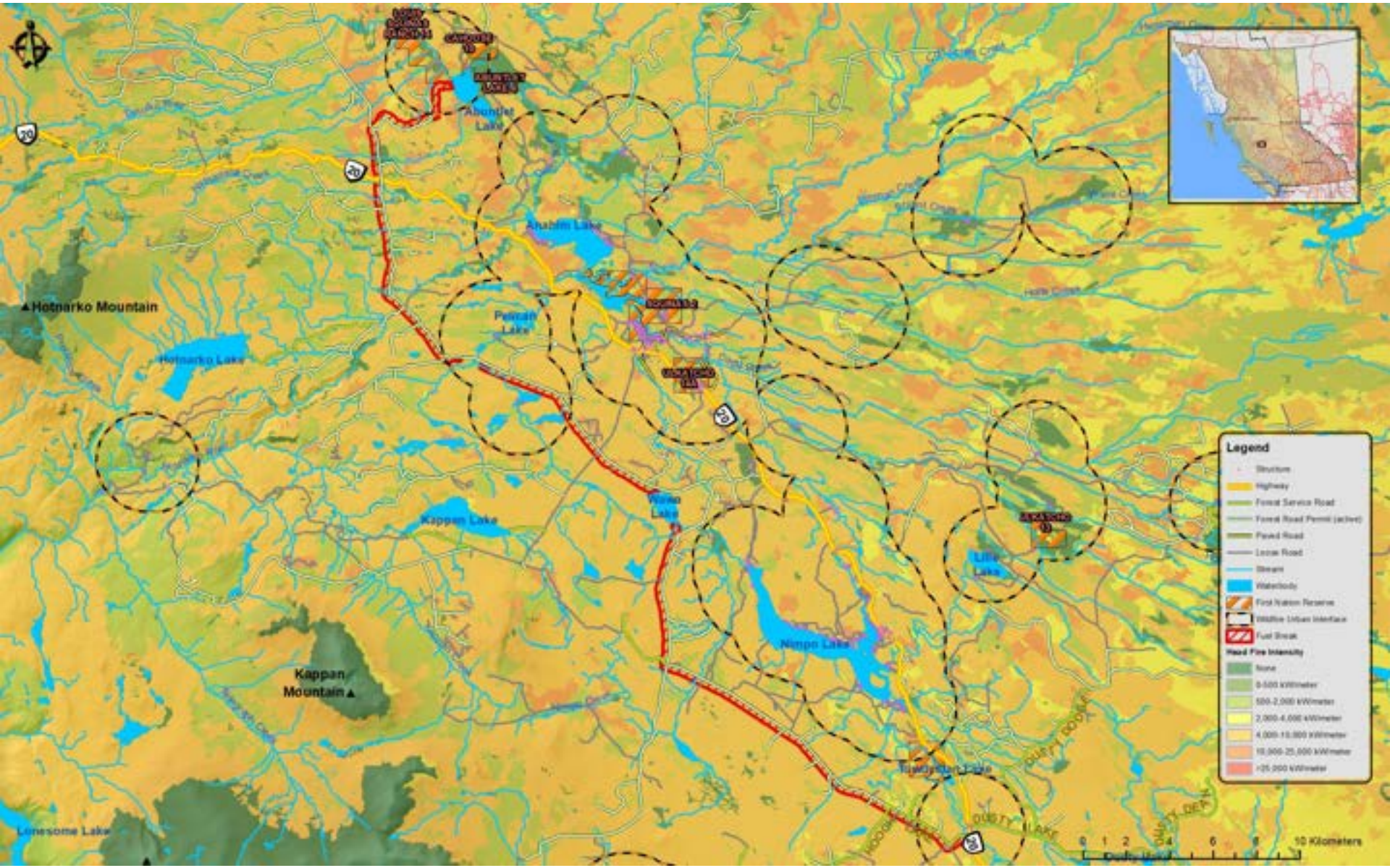
Overview


Hotnarko Mountain
Hotnarko Lake
Kappan Mountain
Kappan Lake
Lonesome Lake
Ahbau Lake
Ahahlin Lake
Pelican Lake
Nimpo Lake
Lily Lake
Legend
10 Kilometers

Provincial Strategic Threat Analysis



Head Fire Intensity



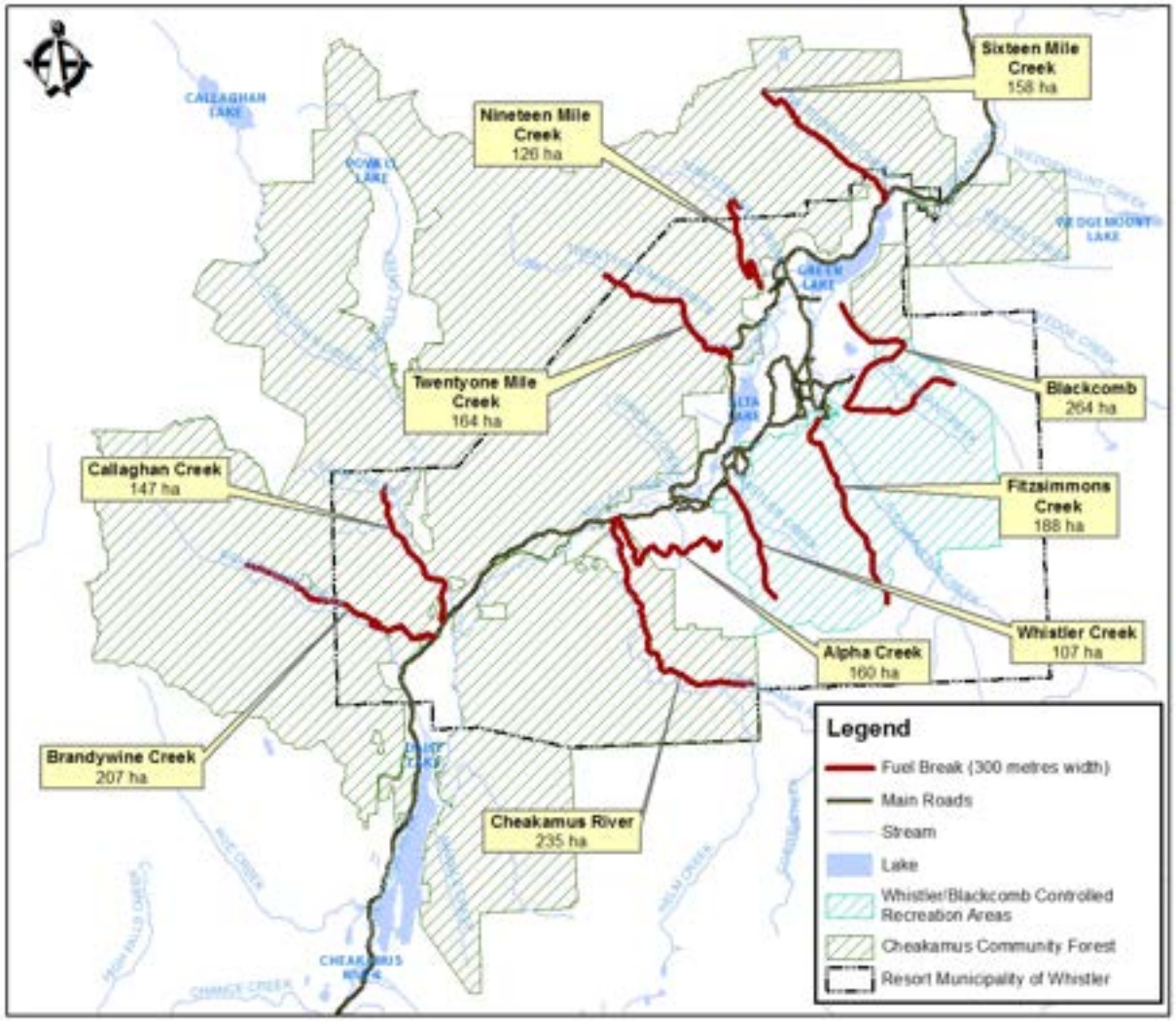
Identified Constraints

- Range tenures
- Grizzly, caribou, moose habitat
- Traplines
- Growth and yield research
- Timber licensees
- Old growth areas
- Wetlands throughout

Project Challenges

- Significant number of communities that are not considered in the strategy given location and size – these communities will not be satisfied with the plan.
- The plan creates expectation that something is being done in the absence of any committed funding and or resources.
- The success of the plan depends on communities actively participating in the CWPP process and FireSmart – many are not.
- There are large areas of hazardous fuel types that are within OGMA's and or Mule Deer Winter Range – without treatment many of these areas pose a risk to communities and are not resilient to fire.
- A significant area of fire risk is associated with private land that can not be treated.

Sea to Sky Fuelbreaks



BRING BACK PRESCRIBED FIRE

THE FOREST MANAGEMENT PARADIGM

HOW DO WE SUCCEED?

Recommendations and Reports are Great!

BUT

IT'S THE IMPLEMENTATION WE ARE WEAK ON!