

2018 BCCFA Burns Lake



SIFCo

WILDFIRE AND CLIMATE CHANGE CONFERENCE



LEARN-SHARE-ACT

**JUNE 26TH-28TH
NELSON, BC**

**AT THE PRESTIGE
LAKESIDE RESORT**

Ecosystem Resiliency,
Community Protection &
Landscape Level Management,



SIFCo



Register today at

www.kootenaywildfire.ca

Flow

- **Our story – 5 minutes**
 - **FlamMap5 – 5 minutes**
 - **Landscape Level Planning - 5 minutes**
 - **5 treatment types– 10 minutes (one short movie)**
 - **Some questions – 5 minutes**
-
- **Total time: 30 minutes**

Thank You to:



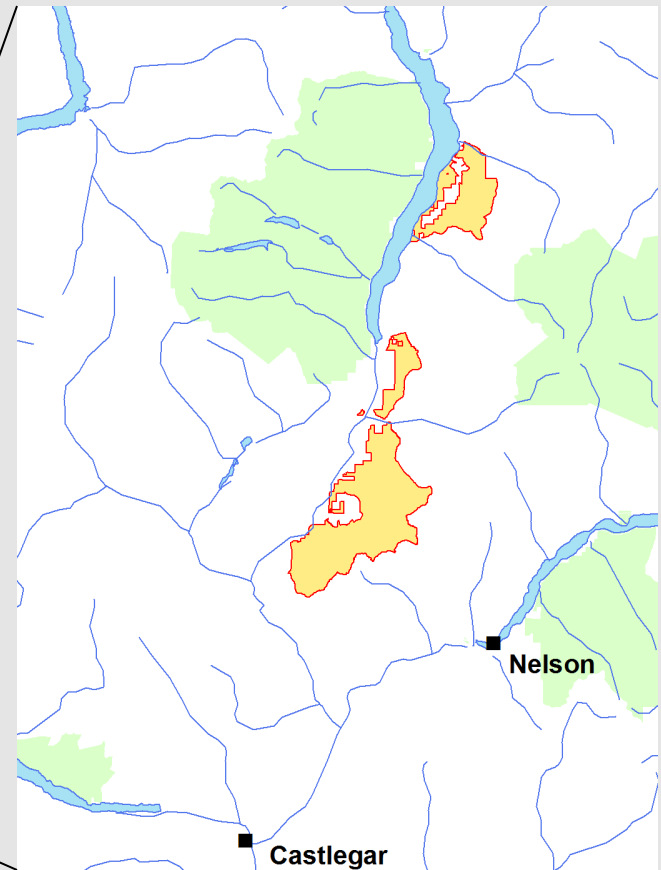
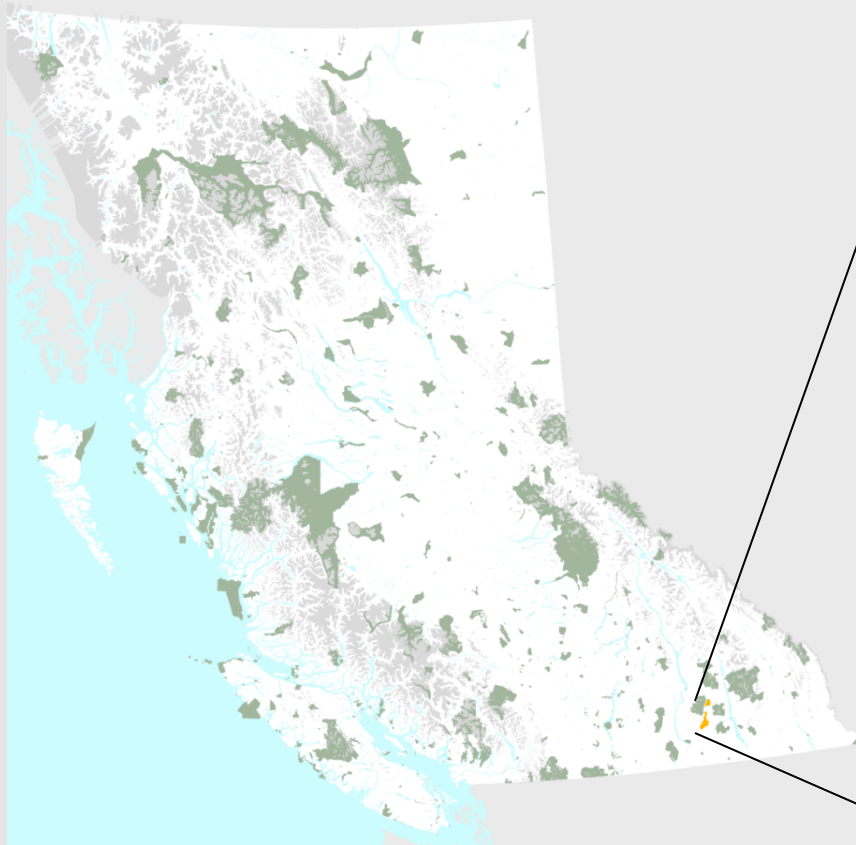
Our three municipalities:

Slocan
Silverton
New Denver



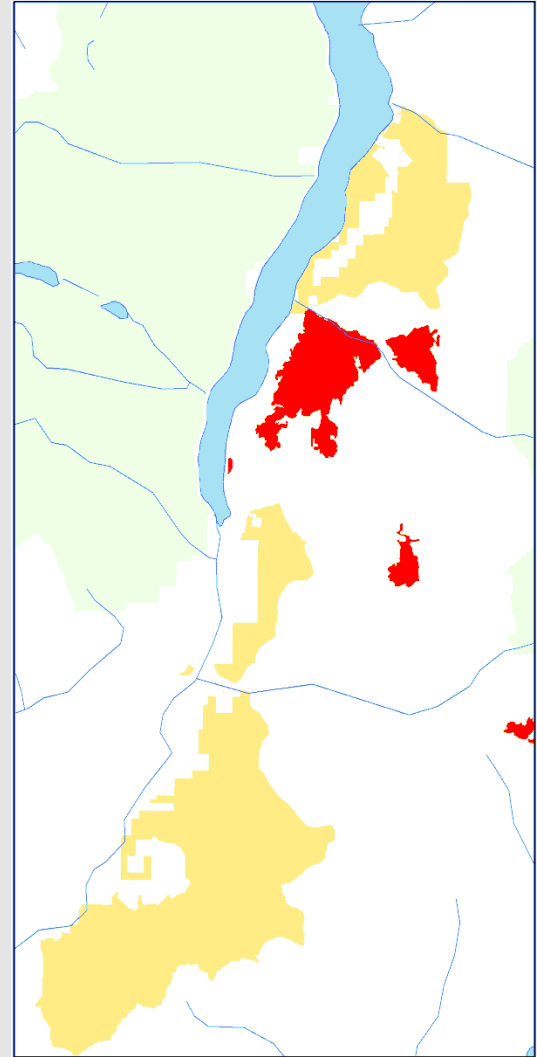
History

- **SIFCo formed in 2005**
- **Goal: a Community Forest Agreement over a group of domestic use watersheds in Slocan Valley.**
- **Perspective: Water and Ecosystem Protection.**
- **CFA awarded in 2007**



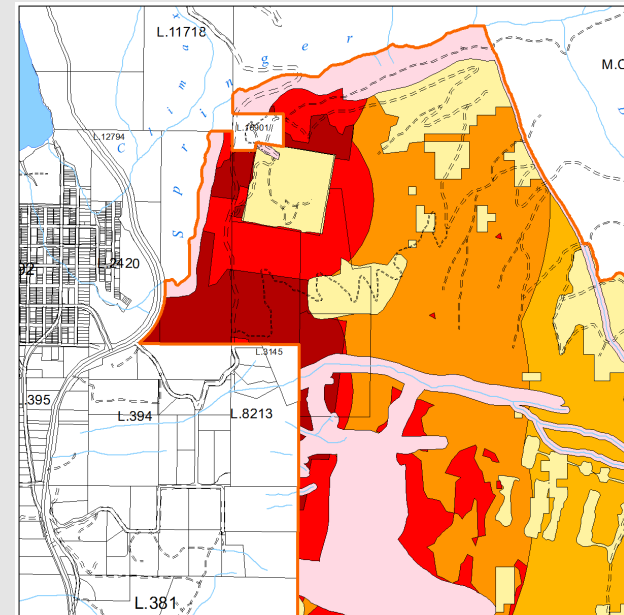
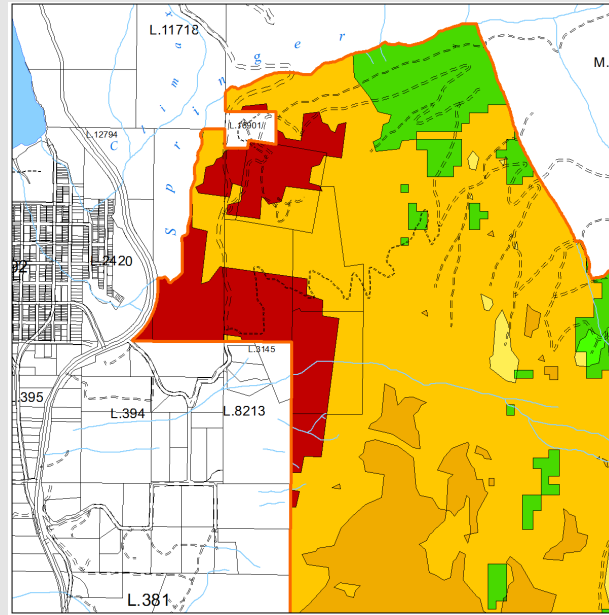
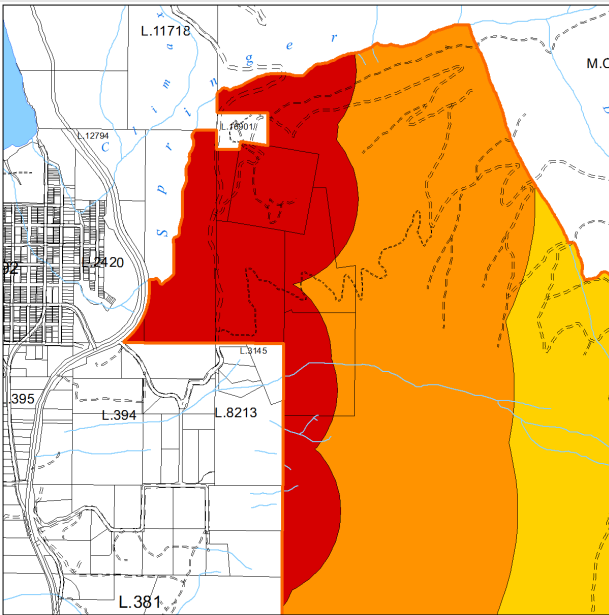
History

- **2007: Springer Fire – a landscape scale fire next door....**
- **Fuel management became a CFA priority**



History

Crude
2008: ~~Initial~~ Approach to identifying priority treatment areas



**Proximity to Infrastructure + Fire Risk and Consequence = Treatment Priority
(Inop netted out)**

2008: wrote new WUI stocking standards in our FSP

2008-13 : We started working



- **treated 250 + ha, approximate investment and grants = \$2,000,000**

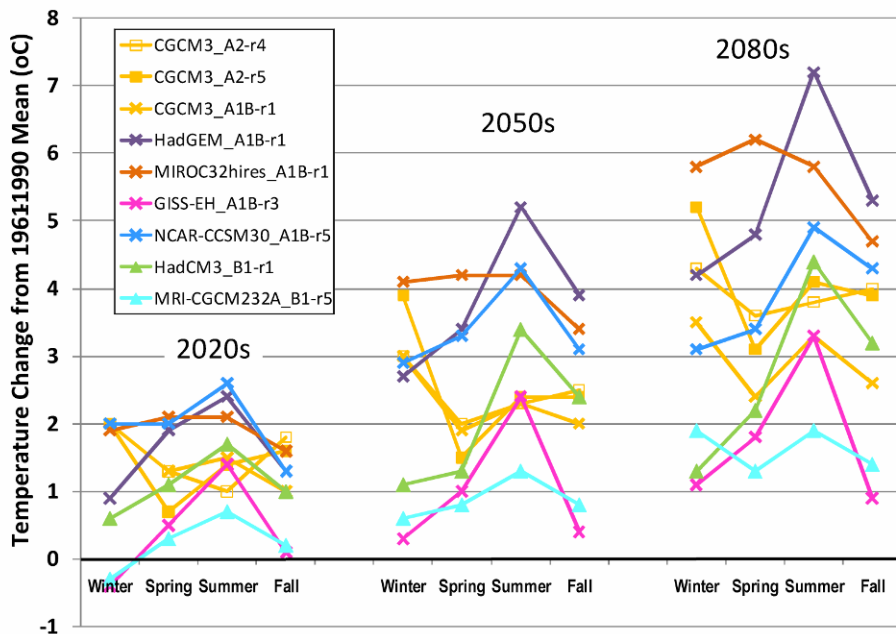
THE BIG PICTURE was getting clearer:

2011 Kootenay resilience projects

Impacts of Climate change on the Kootenays

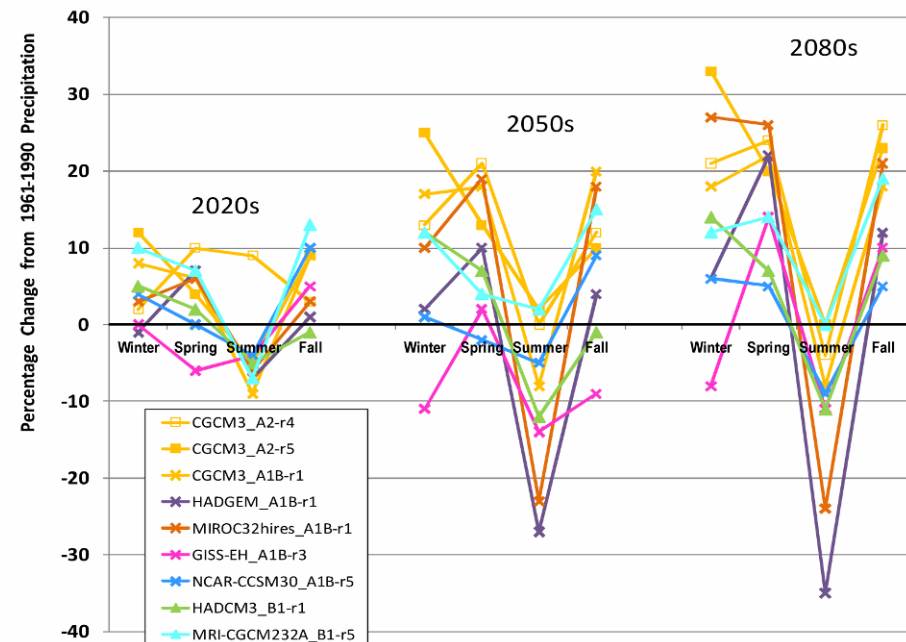
How to adapt? Huge implications!

West Kootenay Mean Seasonal Temperature Projections



Hotter Summers

West Kootenay Mean Seasonal Precipitation Projections



Dryer Summers

Add to this picture ingrowth ...

and you have a volatile situation!

Fire Suppression and Ingrowth - 1



1909

Fire Suppression and Ingrowth - 2



1948

Fire Suppression and Ingrowth - 3



1979

Fire Suppression and Ingrowth - 4



1989

Things are not likely to get “better” – We have to scale our efforts, and become more efficient... so where and how should we work?



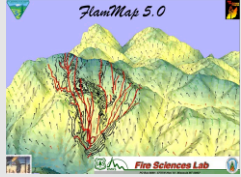
Some questions arose:

Were there some areas that burned more frequently?

Were there fire movement paths in the landscape?

So we turned to fire behaviour modelling.

2013-14: Fire Behavior Modeling



Using FlamMap5 – from US Joint Fire Sciences Program, Rocky Mountain Research Station.

- **Model considers:**
 - **Terrain:** slope, aspect, elevation
 - **Veg Cover:** species, density, height, crown base height, crown volume.
 - **Weather:** temperature, wind speed, wind direction, effect of terrain and daytime heating on wind.
 - **Fuel Conditions:** effect of previous weather patterns on flammability.

Fire Behavior Modeling

Some key model assumptions:

Hot Dry Weather:

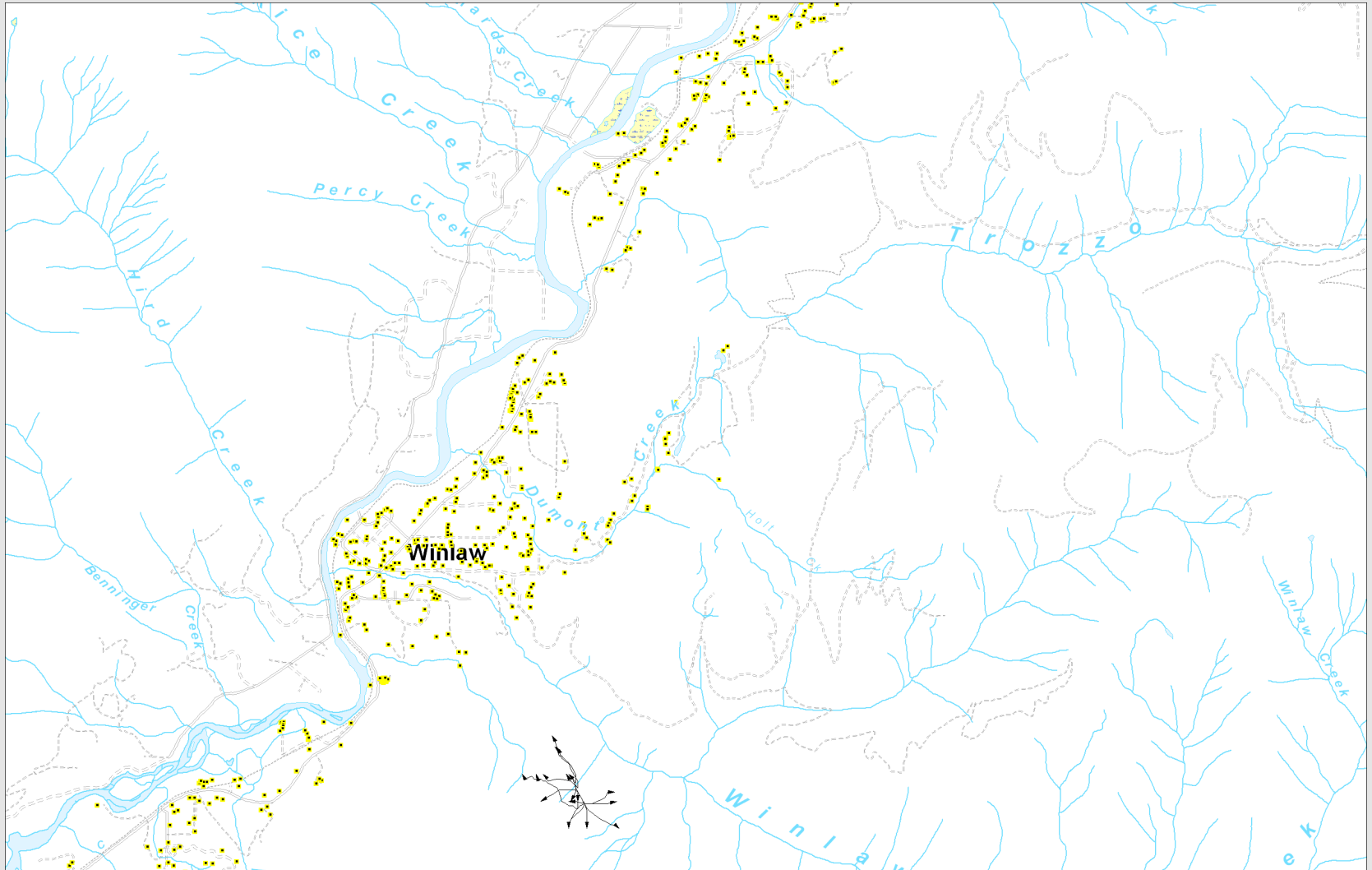
- **30° to 35° daytime temperatures, August.**
- **Has been a long hot summer – dry fuels.**
- **16 km/hr winds.**

Fire Suppression:

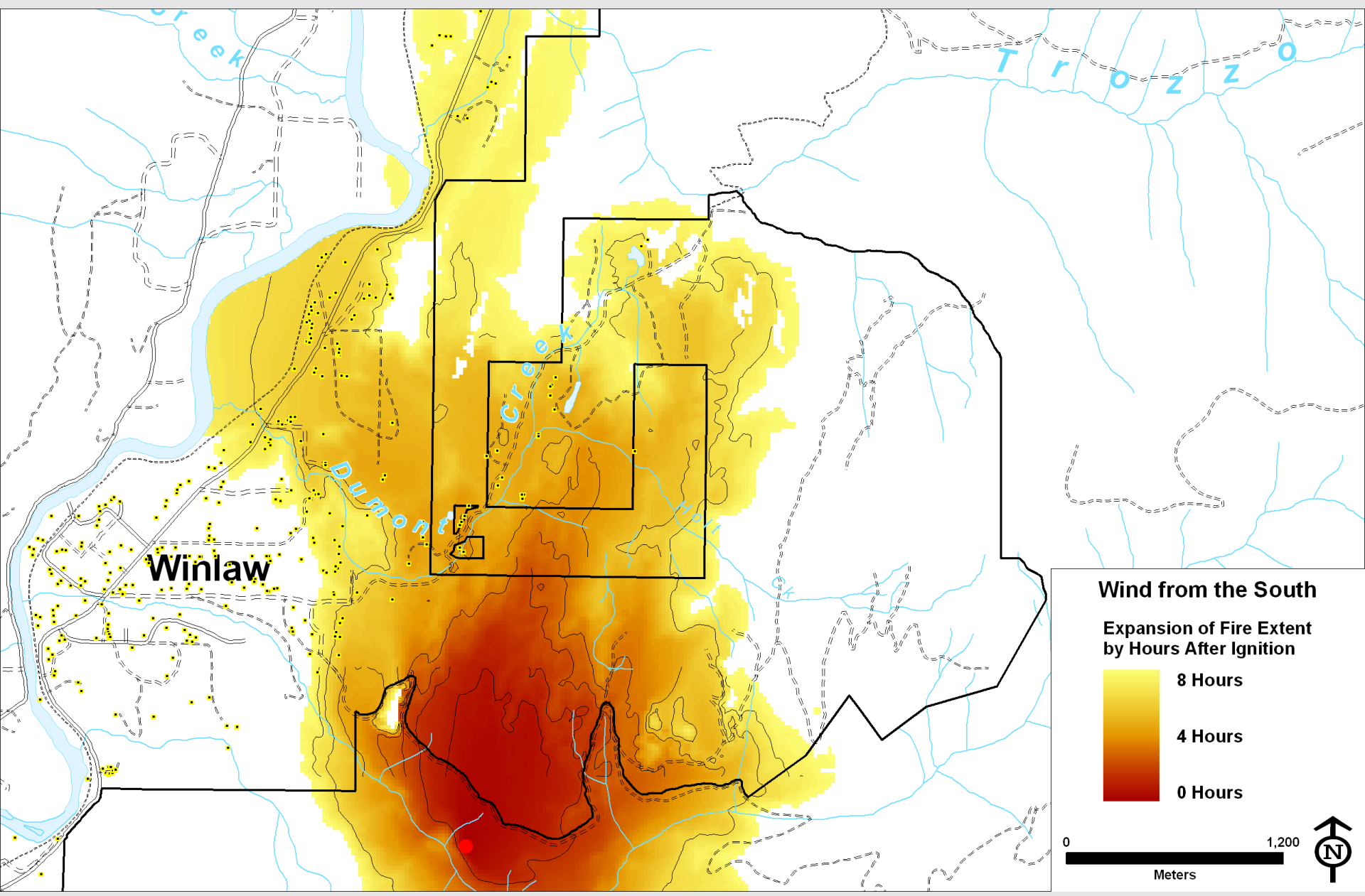
- **Not successful.**

We decided to model the bad days. “You want to know what could happen when things go badly.”

Then you begin to light fires... and some are not very exciting



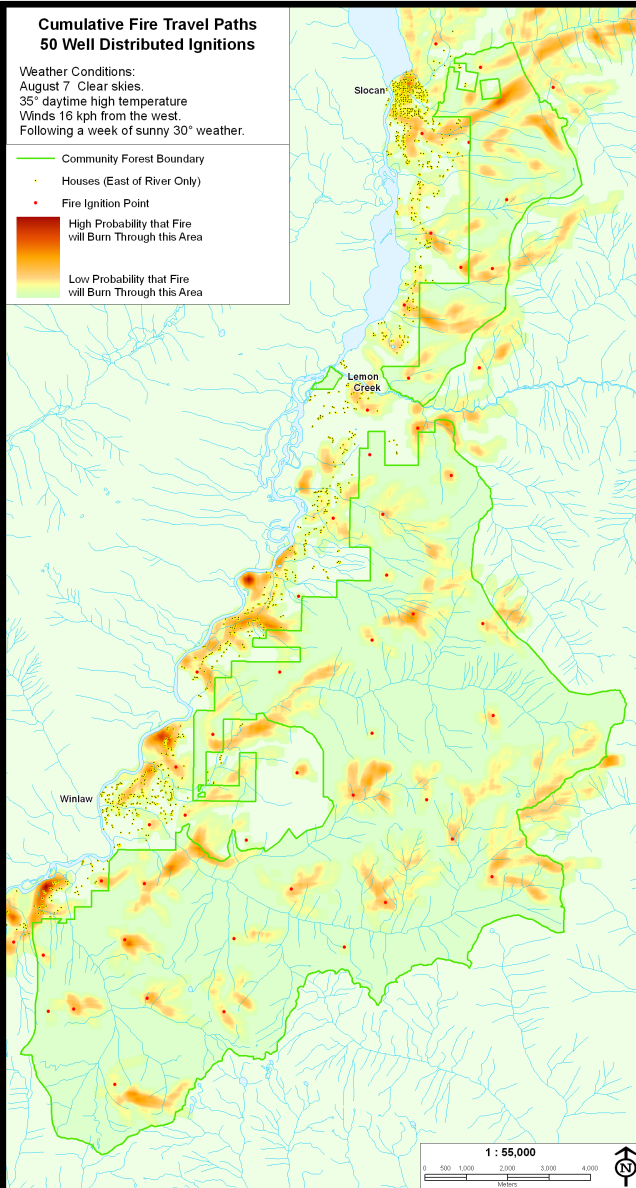
And some...



Cumulative Fire Travel Paths 50 Well Distributed Ignitions

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

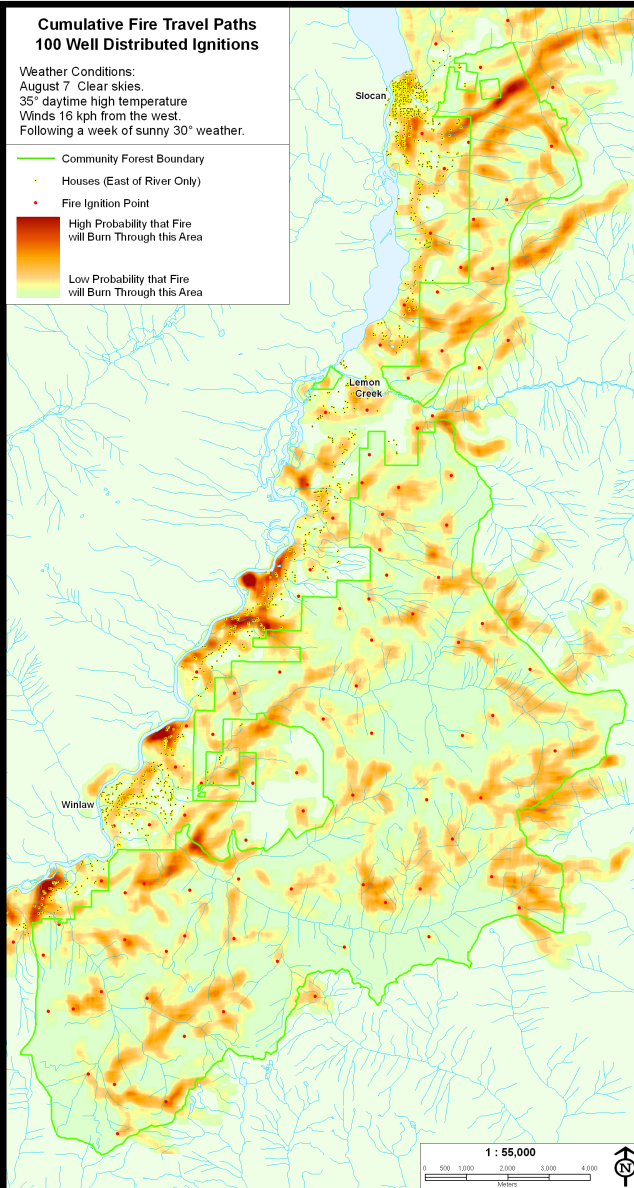
- Community Forest Boundary
 - Houses (East of River Only)
 - Fire Ignition Point
- High Probability that Fire
will Burn Through this Area
- Low Probability that Fire
will Burn Through this Area



Cumulative Fire Travel Paths 100 Well Distributed Ignitions

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

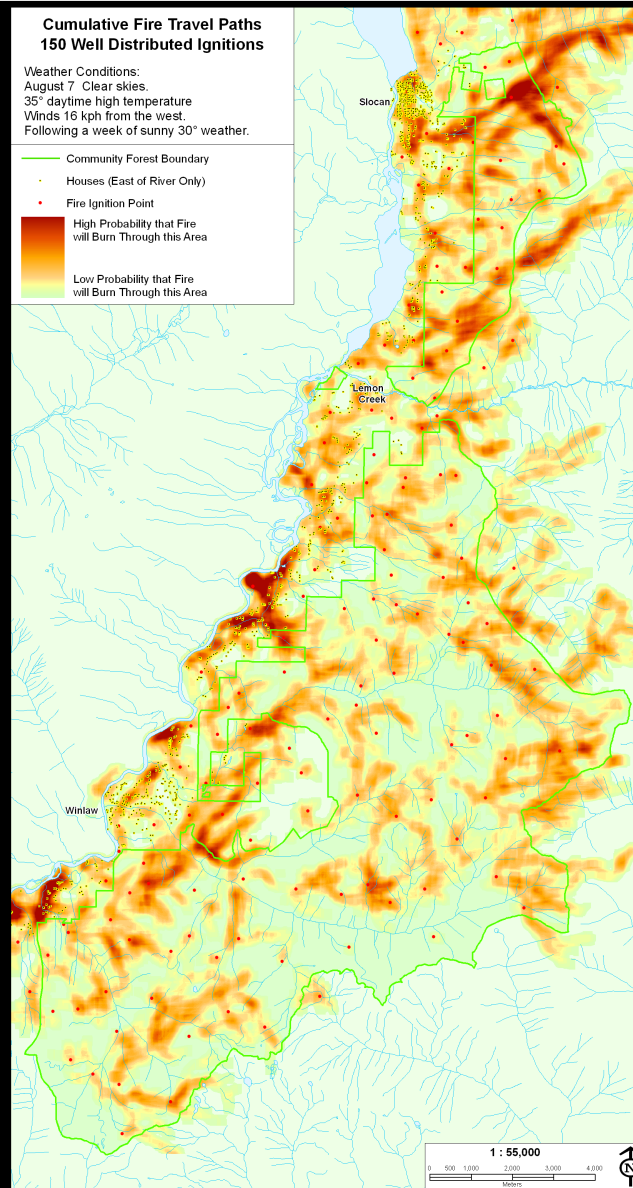
- Community Forest Boundary
 - Houses (East of River Only)
 - Fire Ignition Point
- High Probability that Fire
will Burn Through this Area
- Low Probability that Fire
will Burn Through this Area



Cumulative Fire Travel Paths 150 Well Distributed Ignitions

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

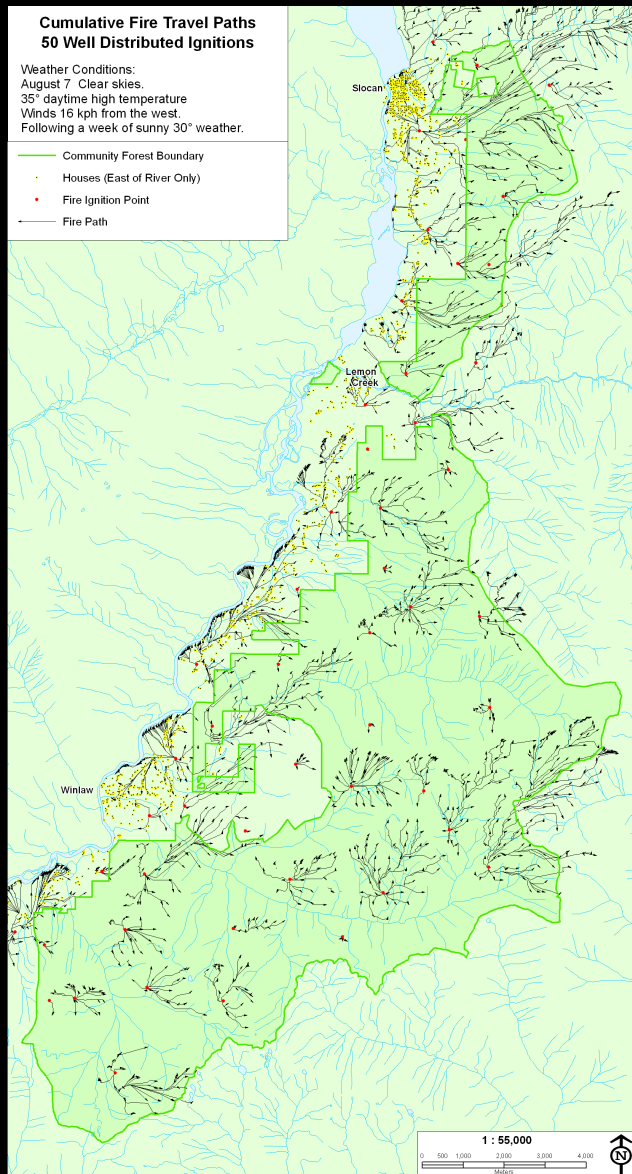
- Community Forest Boundary
 - Houses (East of River Only)
 - Fire Ignition Point
- High Probability that Fire
will Burn Through this Area
- Low Probability that Fire
will Burn Through this Area



Cumulative Fire Travel Paths 50 Well Distributed Ignitions

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

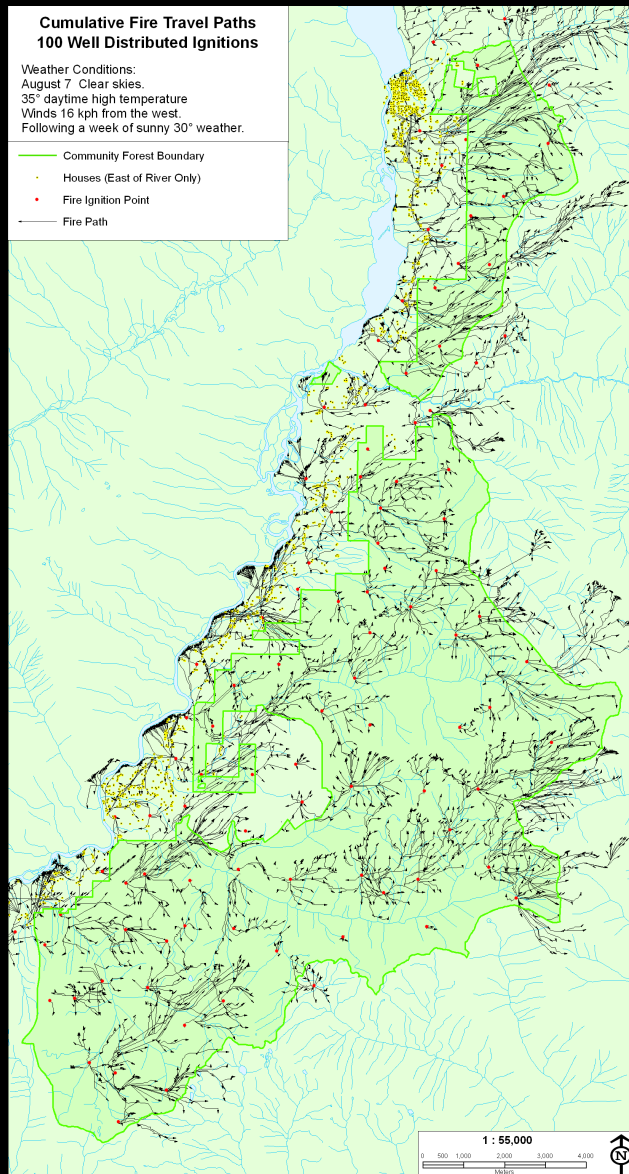
- Community Forest Boundary
- Houses (East of River Only)
- Fire Ignition Point
- Fire Path



Cumulative Fire Travel Paths 100 Well Distributed Ignitions

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

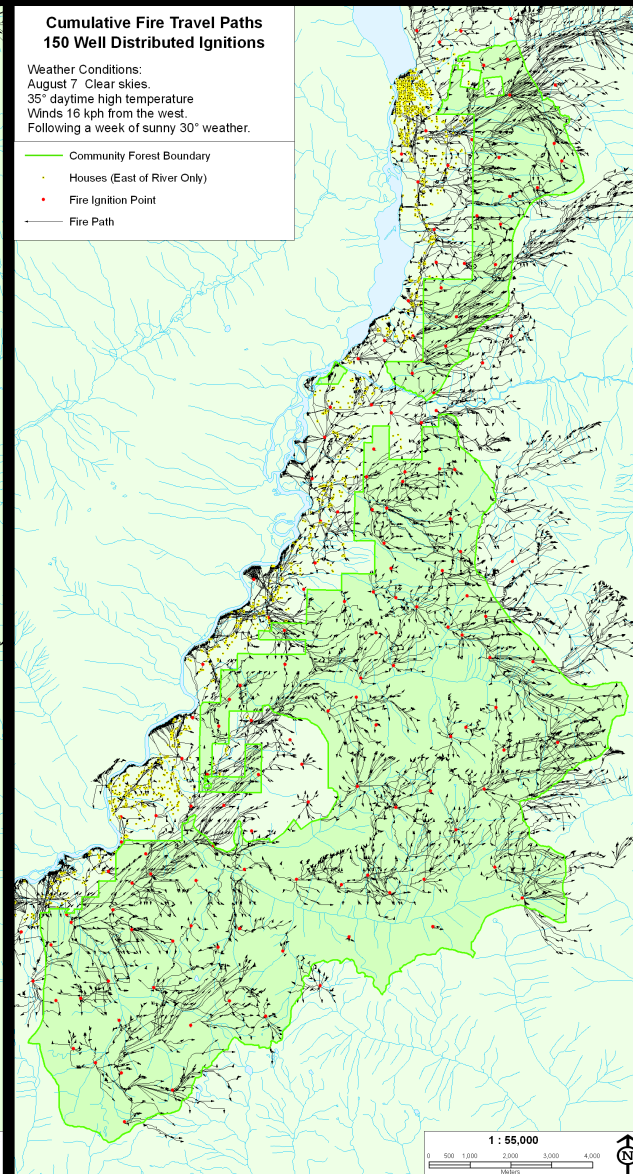
- Community Forest Boundary
- Houses (East of River Only)
- Fire Ignition Point
- Fire Path



Cumulative Fire Travel Paths 150 Well Distributed Ignitions

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

- Community Forest Boundary
- Houses (East of River Only)
- Fire Ignition Point
- Fire Path



**Cumulative Fire Travel Paths
Sorted by Path Length
Paths > 2000 m long**

150 Well Distributed Ignitions

Weather Conditions:

August 7 Clear skies.

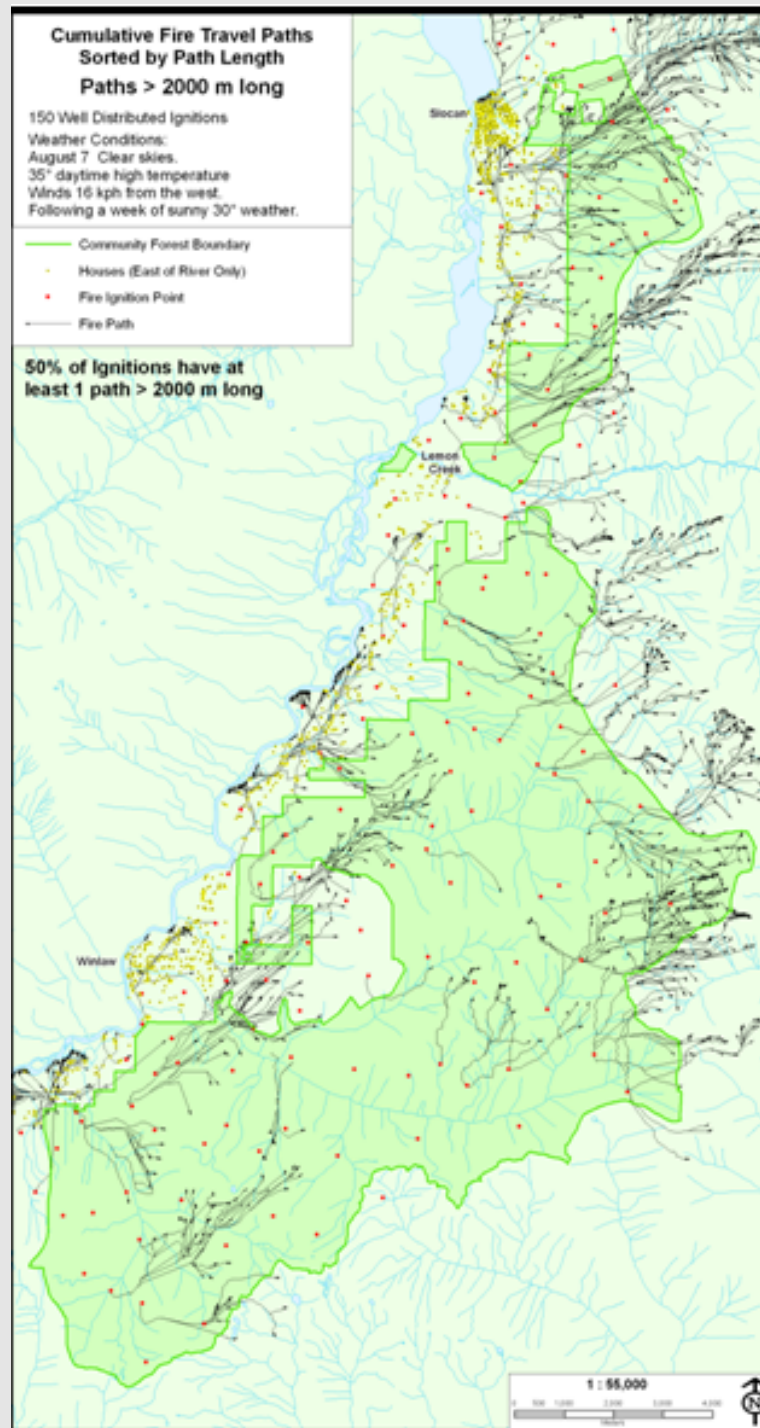
35° daytime high temperature

Winds 16 kph from the west.

Following a week of sunny 30° weather.

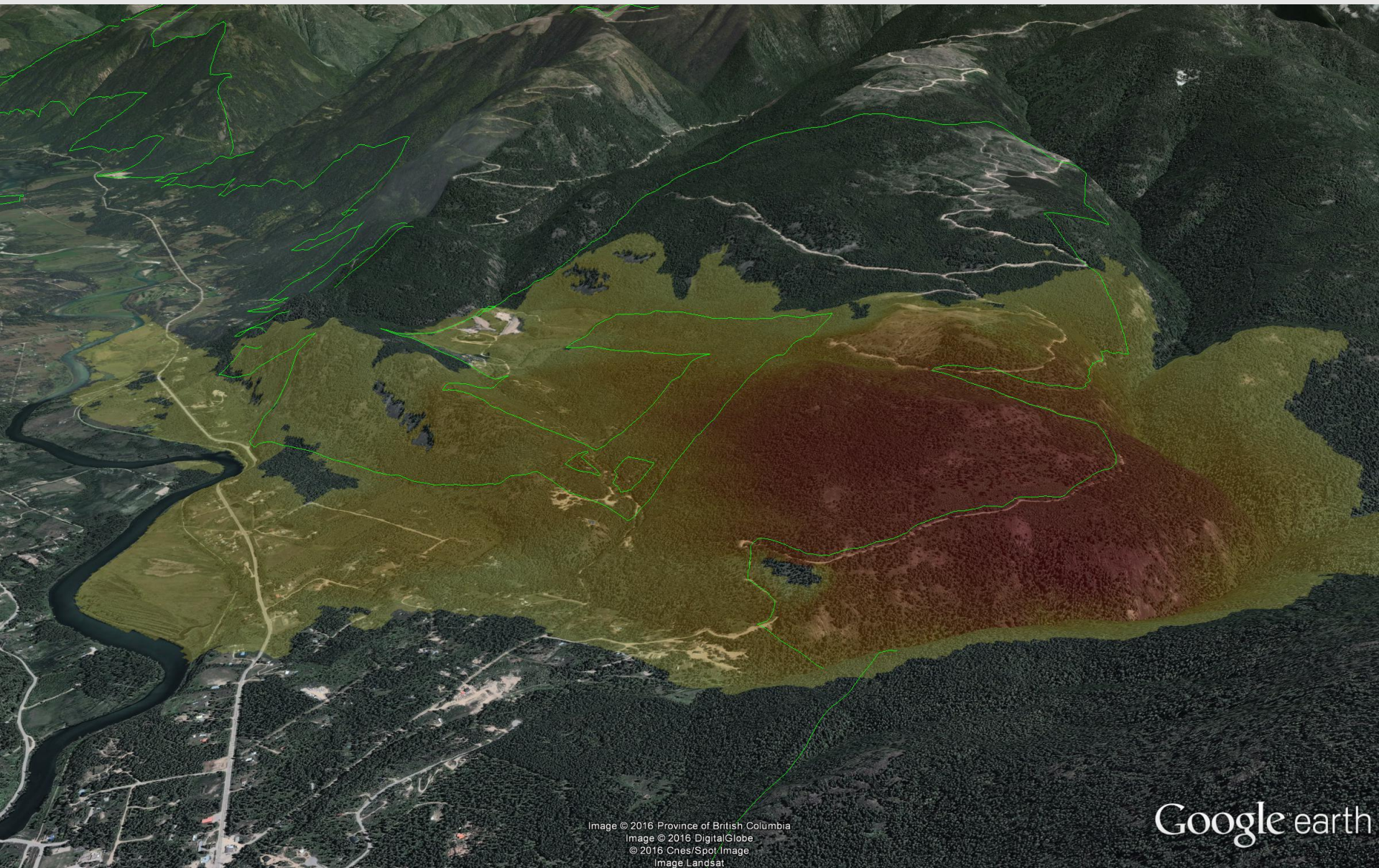
- Community Forest Boundary
- Houses (East of River Only)
- Fire Ignition Point
- Fire Path

**50% of Ignitions have at
least 1 path > 2000 m long**



Fire Behavior Modeling

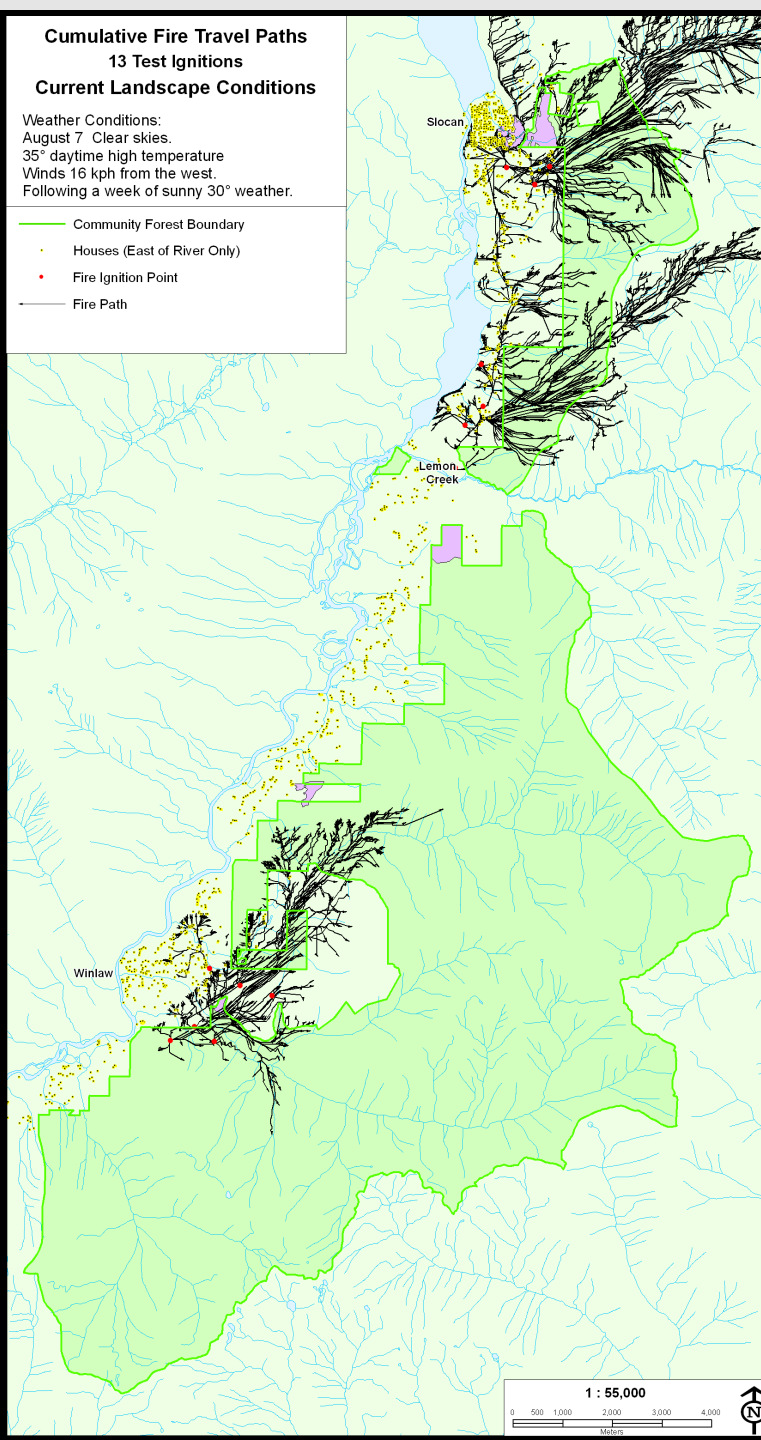
Interesting communications tool...



Cumulative Fire Travel Paths
13 Test Ignitions
Current Landscape Conditions

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

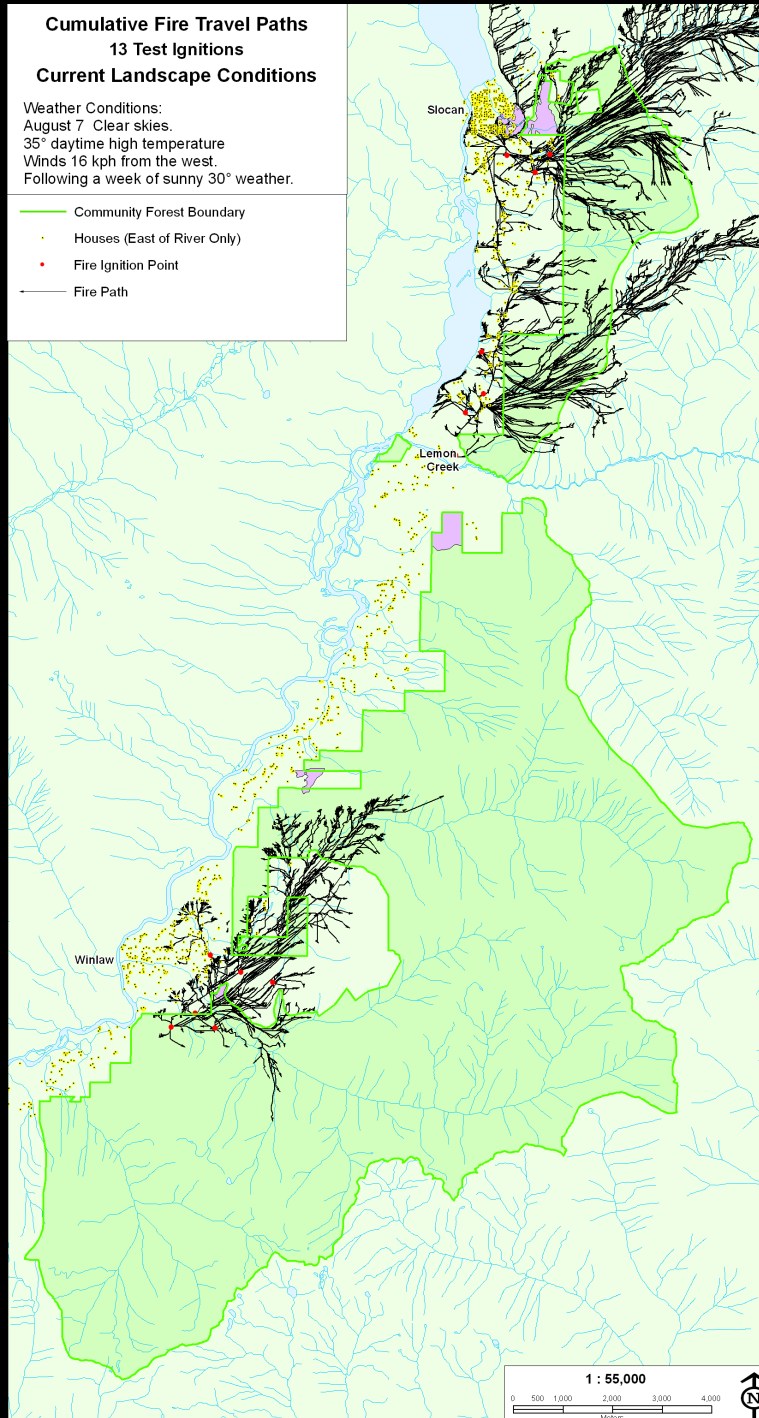
- Community Forest Boundary
- Houses (East of River Only)
- Fire Ignition Point
- Fire Path



Cumulative Fire Travel Paths 13 Test Ignitions Current Landscape Conditions

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

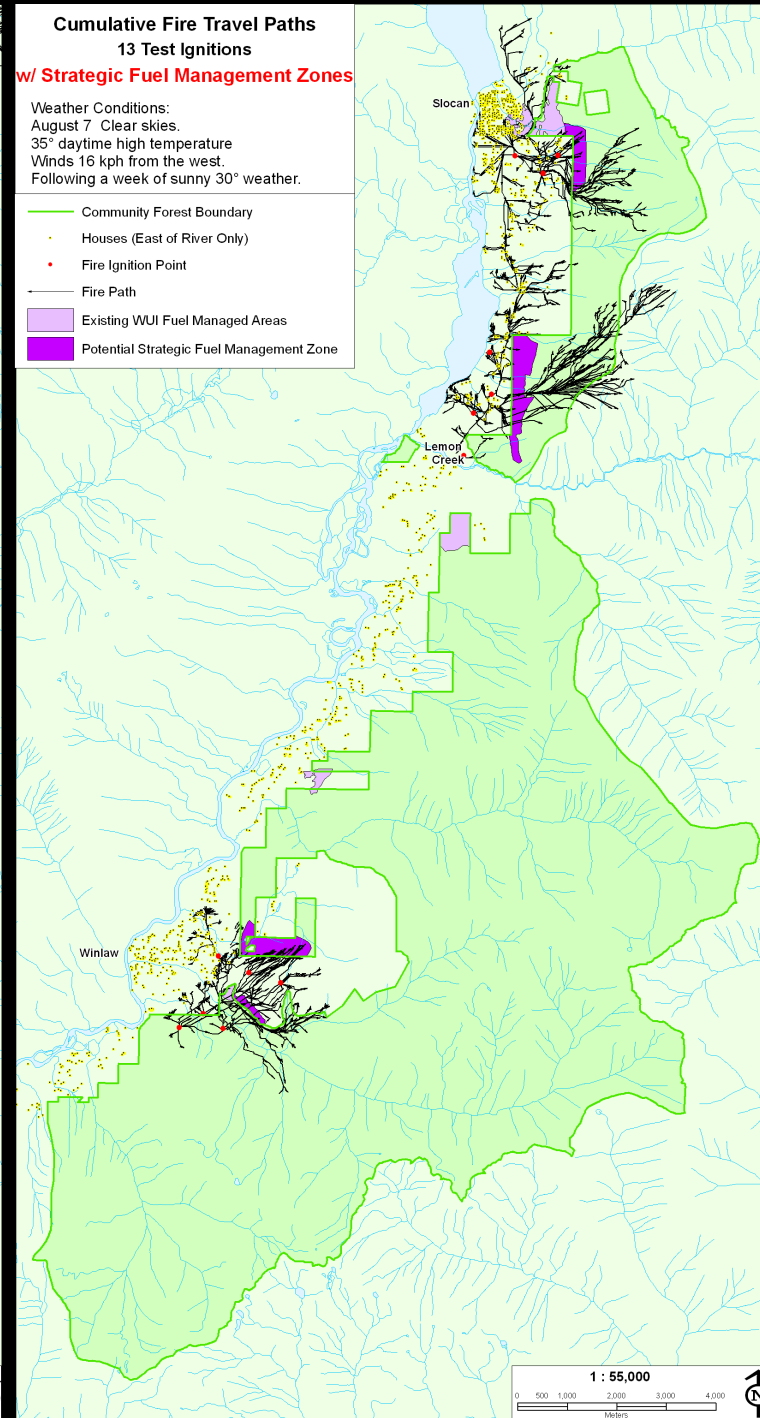
- Community Forest Boundary
- Houses (East of River Only)
- Fire Ignition Point
- Fire Path



Cumulative Fire Travel Paths 13 Test Ignitions w/ Strategic Fuel Management Zones

Weather Conditions:
August 7 Clear skies.
35° daytime high temperature
Winds 16 kph from the west.
Following a week of sunny 30° weather.

- Community Forest Boundary
- Houses (East of River Only)
- Fire Ignition Point
- Fire Path
- Existing WUI Fuel Managed Areas
- Potential Strategic Fuel Management Zone



Next: Landscape Level Plan – 2015-16

Combined:

- i. Our knowledge/ data of CFA landbase with**
 - ii. fire movement paths from fire behaviour modelling.**
-
- Where is it a priority to reduce fuels?**
 - Where is it feasible to operate?**
 - Where are there reasonably sized treatment units?**

Next: Landscape Level Plan – 2015-16

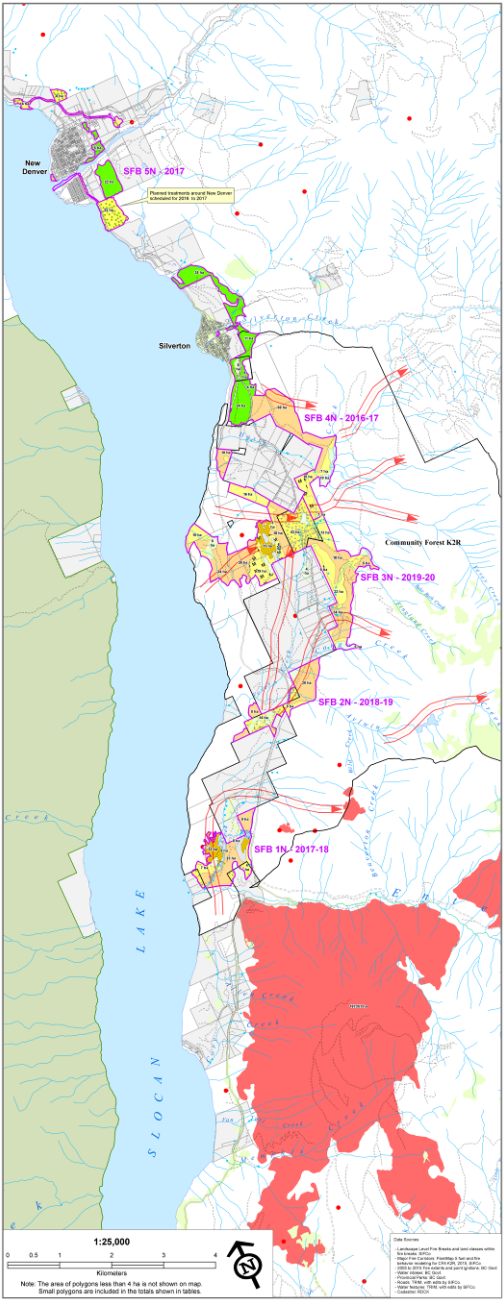
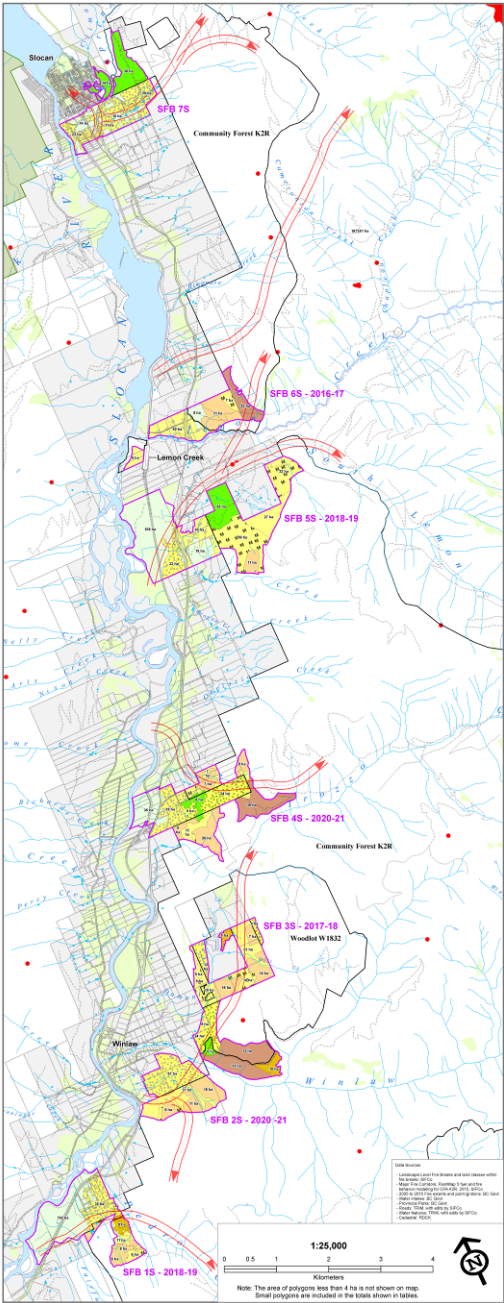
Combined:

- i. knowledge of CFA landbase with**
 - ii. fire movement paths from fire behaviour modelling.**
-
- Where is it a priority to reduce fuels?**
 - Where is it feasible to operate?**
 - Where are there reasonably sized treatment units?**

**June 2016 we released our Slocan Valley
Strategic Landscape Level
Wildfire Protection Plan**

Slocan Valley Strategic Landscape Level Wildfire Protection Plan

The
Plan
= 12
SFB



The map displays two Special Forest Buffer (SFB) areas: SFB 3S (top) and SFB 2S (bottom). A red dot is located in the center of the map. Various data points are labeled with values and years, indicating different measurements or dates. The map also shows the location of Woodlot W1832 and the town of Winlaw. The map includes a legend for SFB 3S and SFB 2S, and a scale bar.

Location / Feature	Value	Year
SFB 3S (Top Right)	6.6	2019
SFB 3S (Top Right)	23.2	2019
SFB 3S (Top Right)	3.3	2019
SFB 3S (Top Right)	13.7	2019
SFB 3S (Top Right)	13.8	2020
SFB 3S (Top Right)	15.5	2019
SFB 3S (Top Right)	9.5	2020
SFB 3S (Top Right)	4.5	2020
SFB 3S (Top Right)	8.5	2020
SFB 3S (Top Right)	4.9	2023
SFB 3S (Top Right)	14.1	2023
SFB 3S (Top Right)	33.7	2022
SFB 3S (Top Right)	18.2	2023
SFB 3S (Top Right)	10.6	2023
SFB 3S (Top Right)	26.7	2023
SFB 3S (Top Right)	7.6	2023
SFB 3S (Top Right)	1.9	2023
SFB 3S (Top Right)	2.1	2023
SFB 2S (Bottom)	4.5	2020
SFB 2S (Bottom)	8.5	2020
SFB 2S (Bottom)	9.5	2020
SFB 2S (Bottom)	4.9	2023
SFB 2S (Bottom)	14.1	2023
SFB 2S (Bottom)	33.7	2022
SFB 2S (Bottom)	18.2	2023
SFB 2S (Bottom)	10.6	2023
SFB 2S (Bottom)	26.7	2023
SFB 2S (Bottom)	7.6	2023
SFB 2S (Bottom)	1.9	2023
SFB 2S (Bottom)	2.1	2023