



British Columbia

Ecosystem Restoration Program





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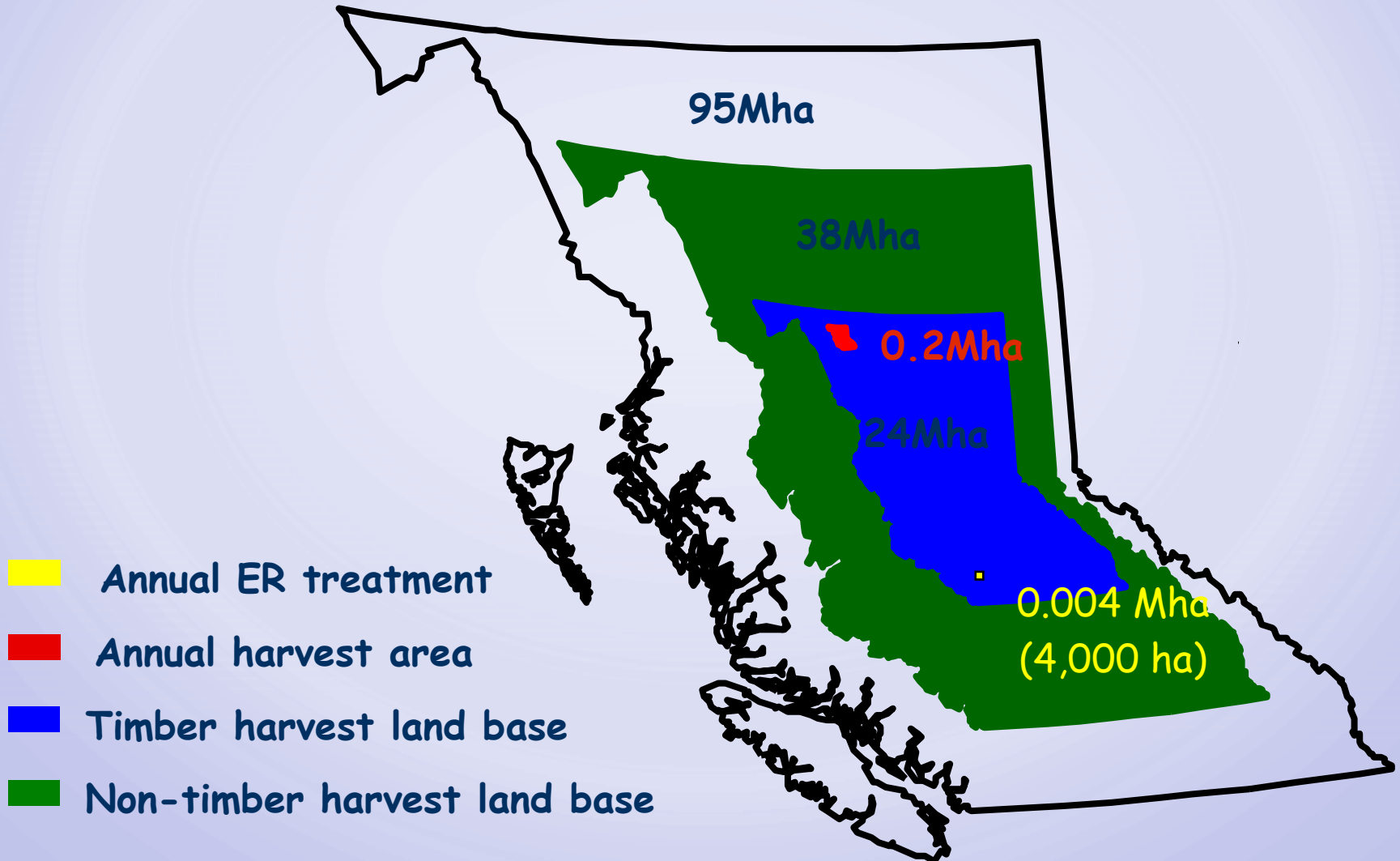


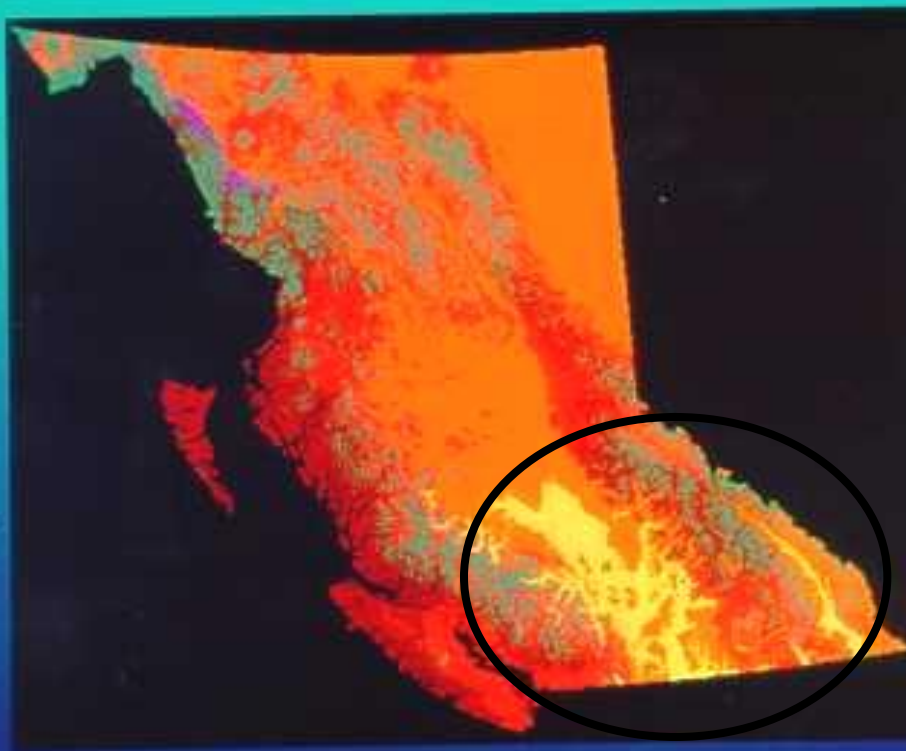


Presentation focus

- BC Ecosystem Restoration 101
- Controlled burning on the landscape
- ER and lessons learned

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BC's Fire-Maintained Ecosystem

British Columbia

Dark Red	NDT1	Rare stand-initiating events
Red	NDT2	Infrequent stand-initiating events
Orange	NDT3	Frequent stand-initiating events
Yellow	NDT4	Frequent stand-maintaining events
Green	NDT5	Alpine Tundra and Subalpine Parkland
Pink	Unclassified	

ADAPTED FROM BIODIVERSITY GUIDEBOOK, 1995

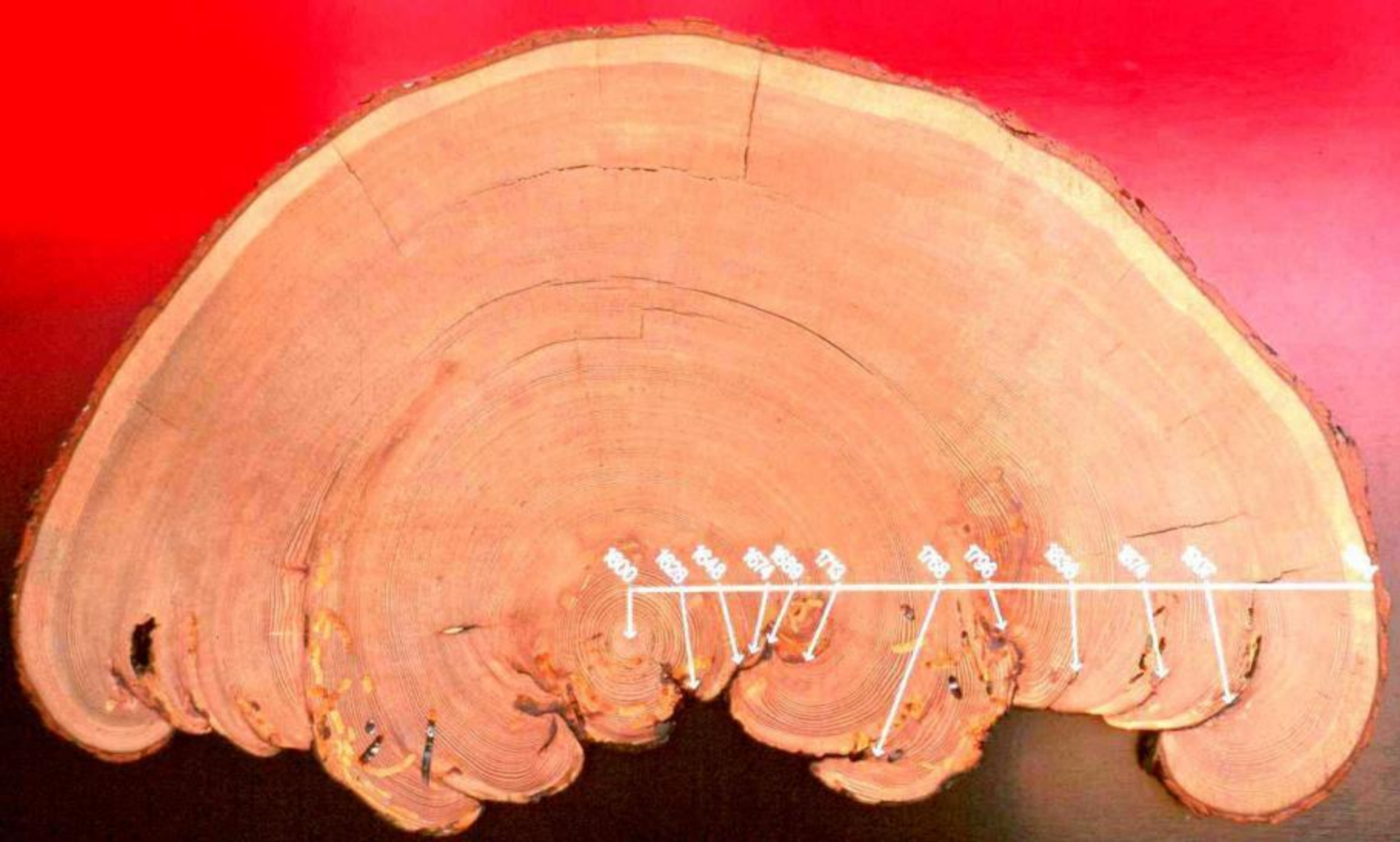
Fire Maintained History

- Pre - 1880 fires
- 1880 disruption of frequent low-intensity fires



- 1920's & 1930's high intensity wildfires
- 1940's to present fire suppression era





400 year old western larch from Rocky Mountain Trench showing 10 fire scars between 1628 and 1907 (~28 year interval)

The issues in the fire-maintained....

“ingrown” open forests (up to 100,000+ stems/ha) & native grassland “encroachment”



Disappearing native grasslands.....

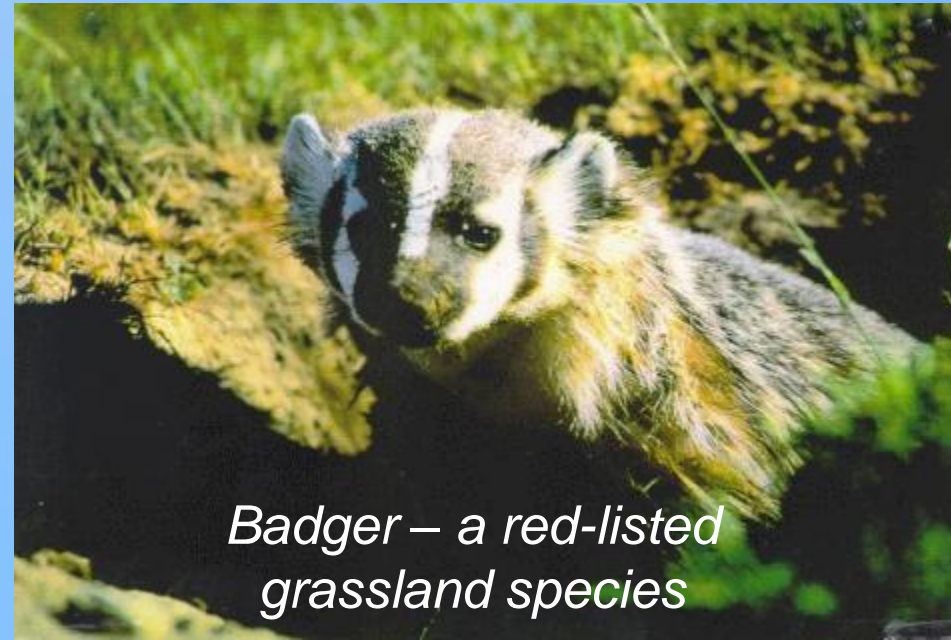
(<1% of BC's land base is remaining native grassland while ~30% of at-risk species in province are grassland dependent!)



Bluebunch wheatgrass – an imperilled grassland species



Racer Snake – blue-listed grassland species



Badger – a red-listed grassland species

Loss of First Nation cultural values



Bitterroot



Balsamroot



Saskatoon



[Matthew Jacob](#)

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**Trout Creek
Bridge 1910**



**Trout Creek
Bridge 2009**



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Cold Stream Ranch, Vernon 189-

BC Archives



Cold Stream Ranch 2009

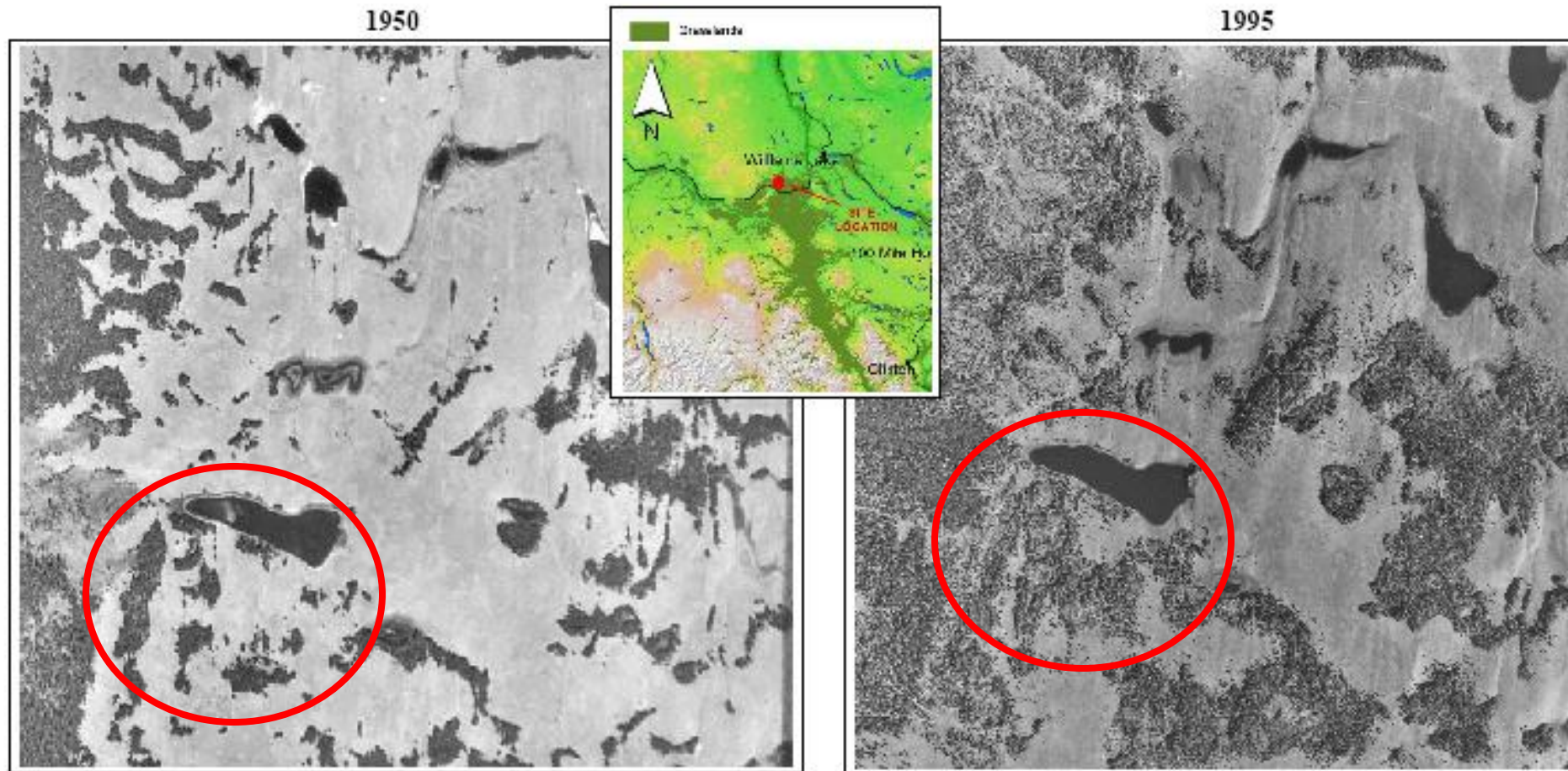


Fairmont Hot Springs circa 1900 and 2009



Cariboo-Chilcotin

FIGURE 16: Cariboo-Chilcotin: forest encroachment (Becher's Prairie)



Site Information

Ecoregion: Fraser River Basin

Biogeoclimatic Zone: IDFxm

Elevation: 980 to 1000 meters

Slope and Aspect: relatively flat prairie with some gently rolling hills

General Description

Forest encroachment is widespread across this prairie, with open grassland succeding to closed forest on many sites. Ross (1997) has estimated an average decrease in open grassland of more than 90 ha/yr on Becher's Prairie Range Unit. At the northern edge of the bunchgrass grassland ecotype, rates of forest encroachment are very high.

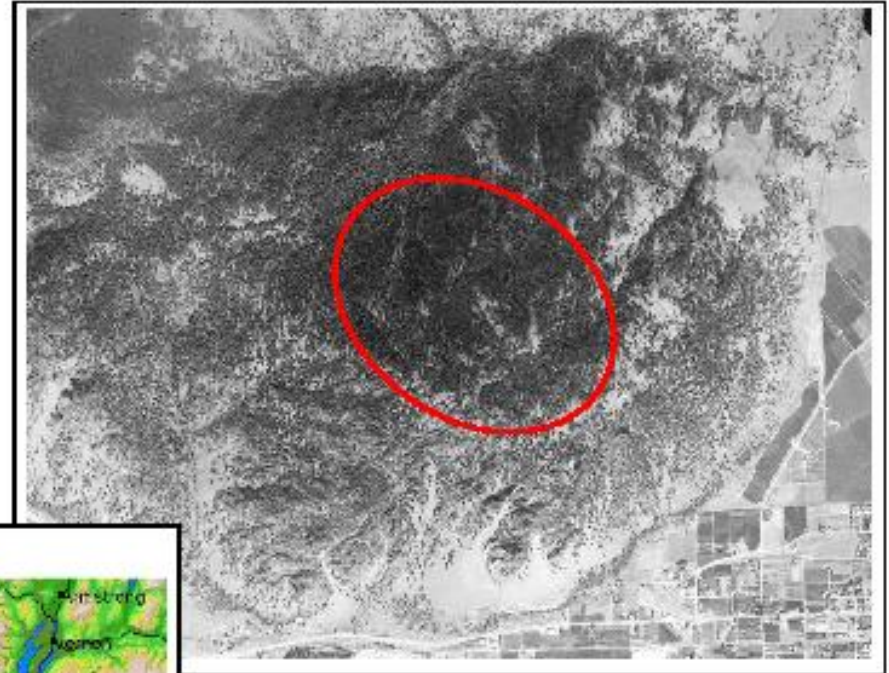
Okanagan

FIGURE 7: Okanagan: forest ingrowth (Shuttle Creek Hills/Keremeos)

1951



2001



Site Information (within circled area)

Ecoregion: Okanagan Range

Biogeoclimatic Zone: IDFdk1

Elevation: 1200 to 1600 meters, increasing from northwest to southeast

Slope and Aspect: moderate to steep north facing slope

General Description

Gyug and Martens (2002) noted considerable infilling of forest in this area during their study of canopy cover changes in the Lower Similkameen. Treed grasslands and open forests have been converted to closed forests in many areas. Conditions on this north facing site in the IDFdk subzone are generally cooler and moister than the surrounding areas in the IDFxh subzone. The degree of infilling is greater on this site when compared to the warmer and drier surrounding sites.



Taking Nature's Pulse

The status of Biodiversity in BC, 2008

1. At the broad scale, four biogeoclimatic zones:
 - Coastal Douglas-fir
 - Interior Douglas-fir
 - Ponderosa Pine
 - Bunchgrass

Representing approximately 5% of British Columbia's land base, are of provincial conservation concern (critically imperilled, imperilled or vulnerable).

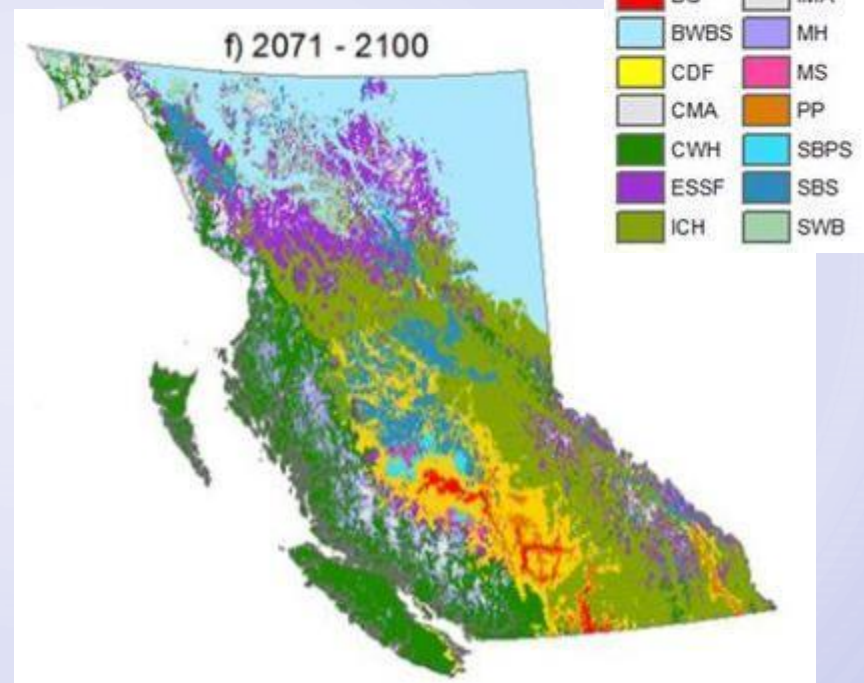
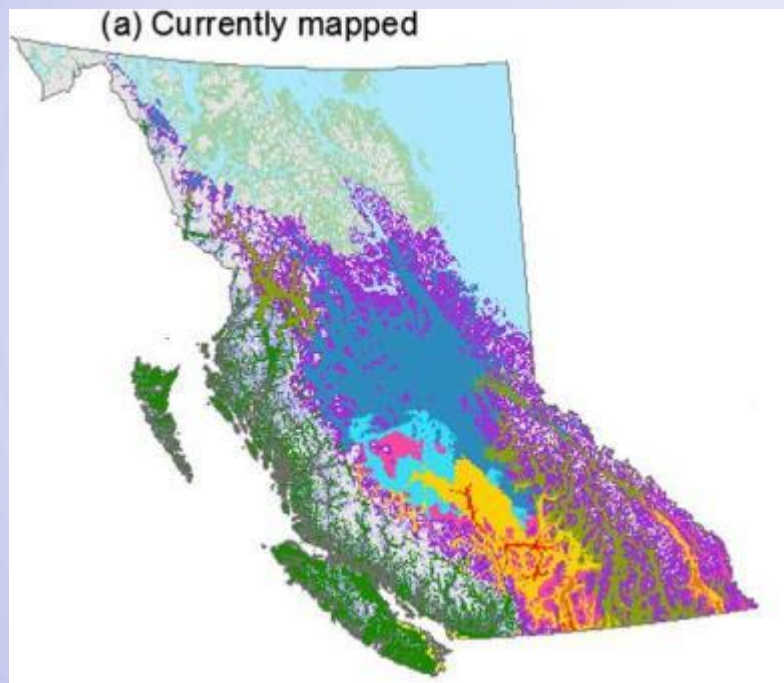


Increasing
losses of
wildlife habitat
& forage
supplies





Climate change



Wang et. al. 2012



Canadian Forest Service

Unprecedented forest insect epidemics.....



Lorraine Maclauchlan, MoFR



Wildland fire management strategy

September 2010

“Climate change research indicates that the incidence and severity of wildfires will greatly increase over the next several decades.”



More frequent catastrophic wildfires.....



Forest Communities



Habitat for Sensitive Species



Soil Productivity



Drinking Water Sources





Ecosystem Restoration (ER):

“The process of assisting the recovery of resilience and adaptive capacity of ecosystems that have been degraded, damaged, or destroyed.”



- *Ecosystem Restoration focuses on establishing the composition, structure, pattern, and ecological processes necessary to make terrestrial and aquatic ecosystems sustainable, resilient, and healthy under current and future conditions.*

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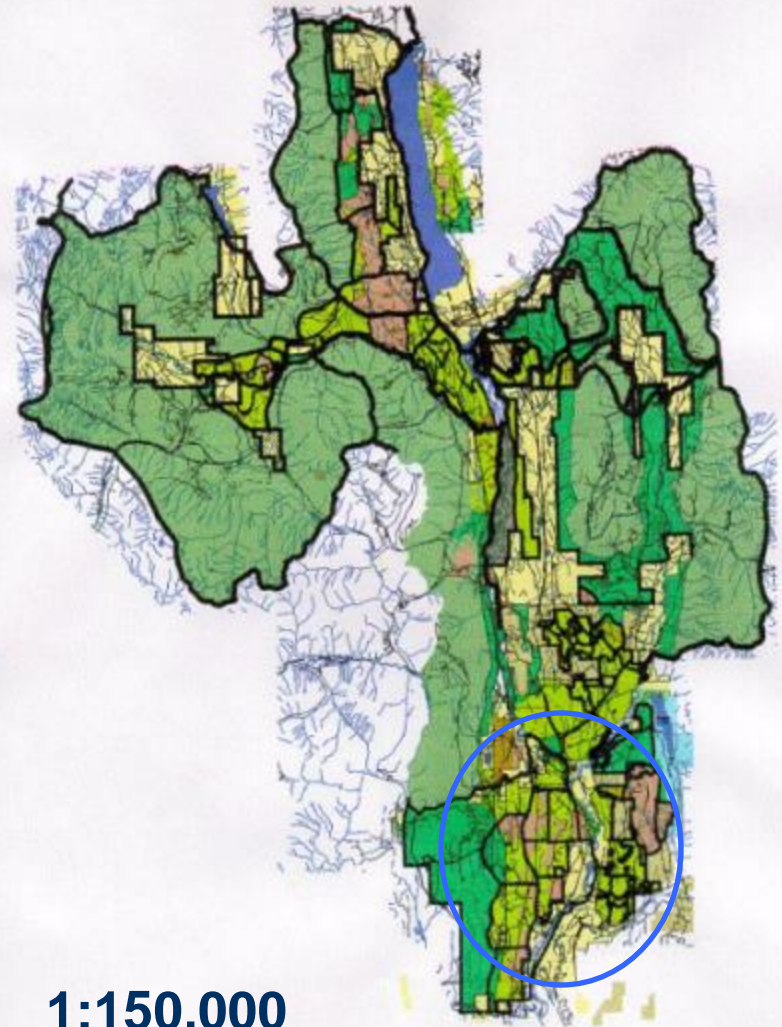
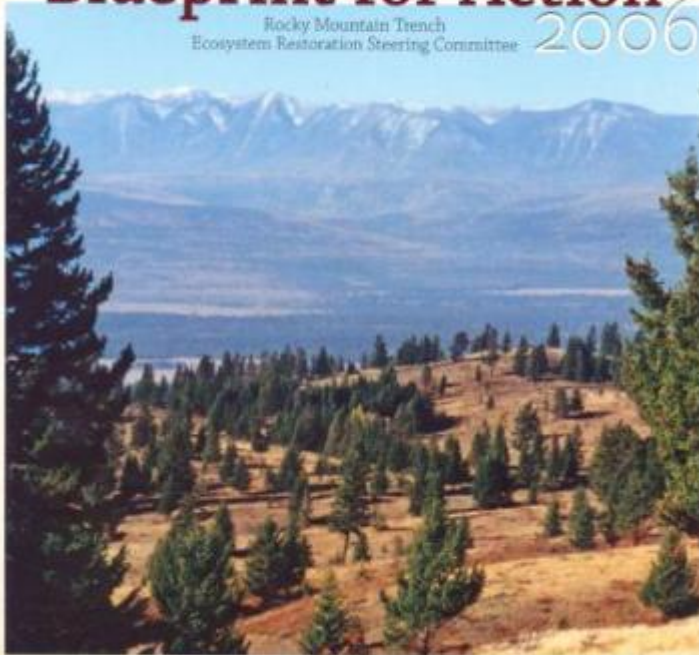
Fire-maintained Ecosystem Restoration in
BC's Rocky Mountain Trench

PRINCIPLES, STRATEGY, PROGRESS

Blueprint for Action

Rocky Mountain Trench
Ecosystem Restoration Steering Committee

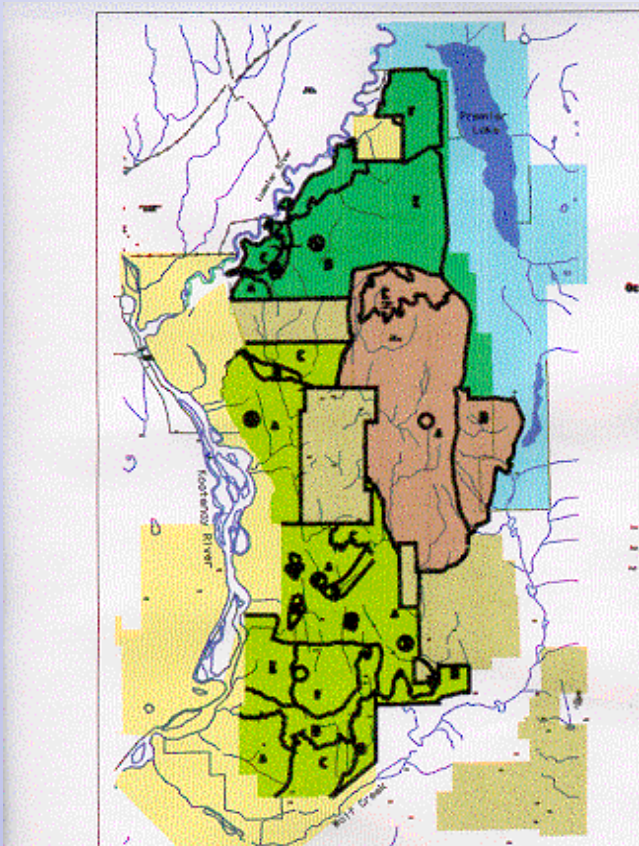
2006



1:150,000



**Develop a vision or desired future condition for
your objective, what are you working
towards?**



**Almost always, this is a balance of
ecological, economic and social
factors.**

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Conventional Harvesting



Slashing/Spacing



Prescribed Fire

Restoration

Before
July, 2003



July, 2006

3 Months
After Rx Fire



Maintenance



Gail Berg



Understand your site



Downy Brome – Invasive



***Silene spaldingii* – Rare**

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Consider your site through time



Hazard abatement



Lewis' woodpecker







**Adequate planning is
essential!!**

**There is no room for
error! Training &
experience are critical!**



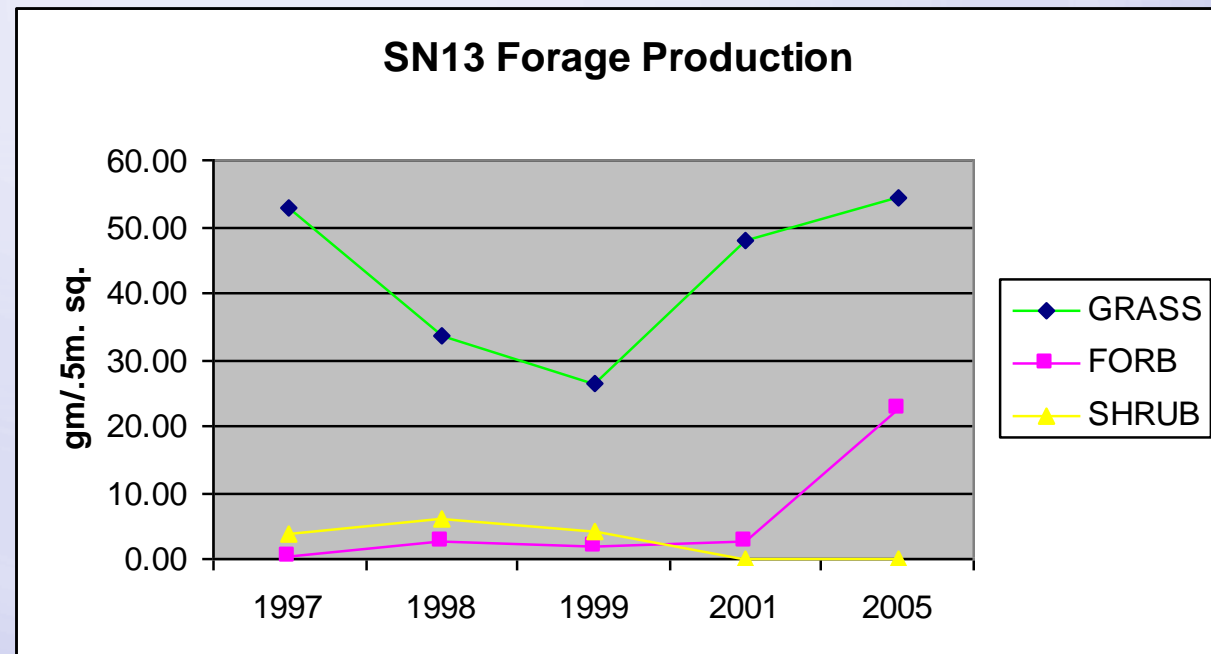
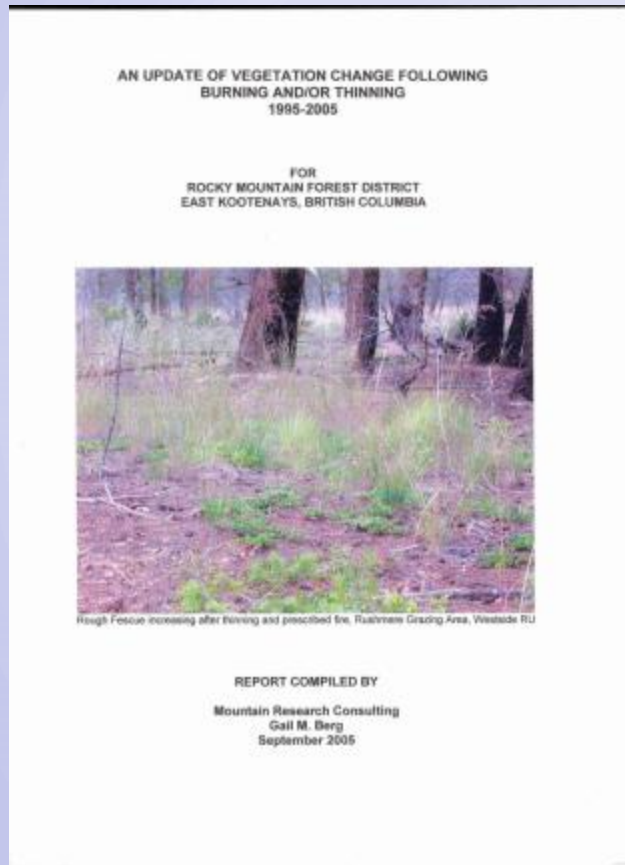
**Aftermath of a burn –
mortality of a few additional
overstory stems, removal of
ladder fuels, greater light to
forest floor & reduced fire
risk**





Monitor your efforts

**Ongoing pre & post-treatment monitoring
is essential to ensure continuous
improvement**

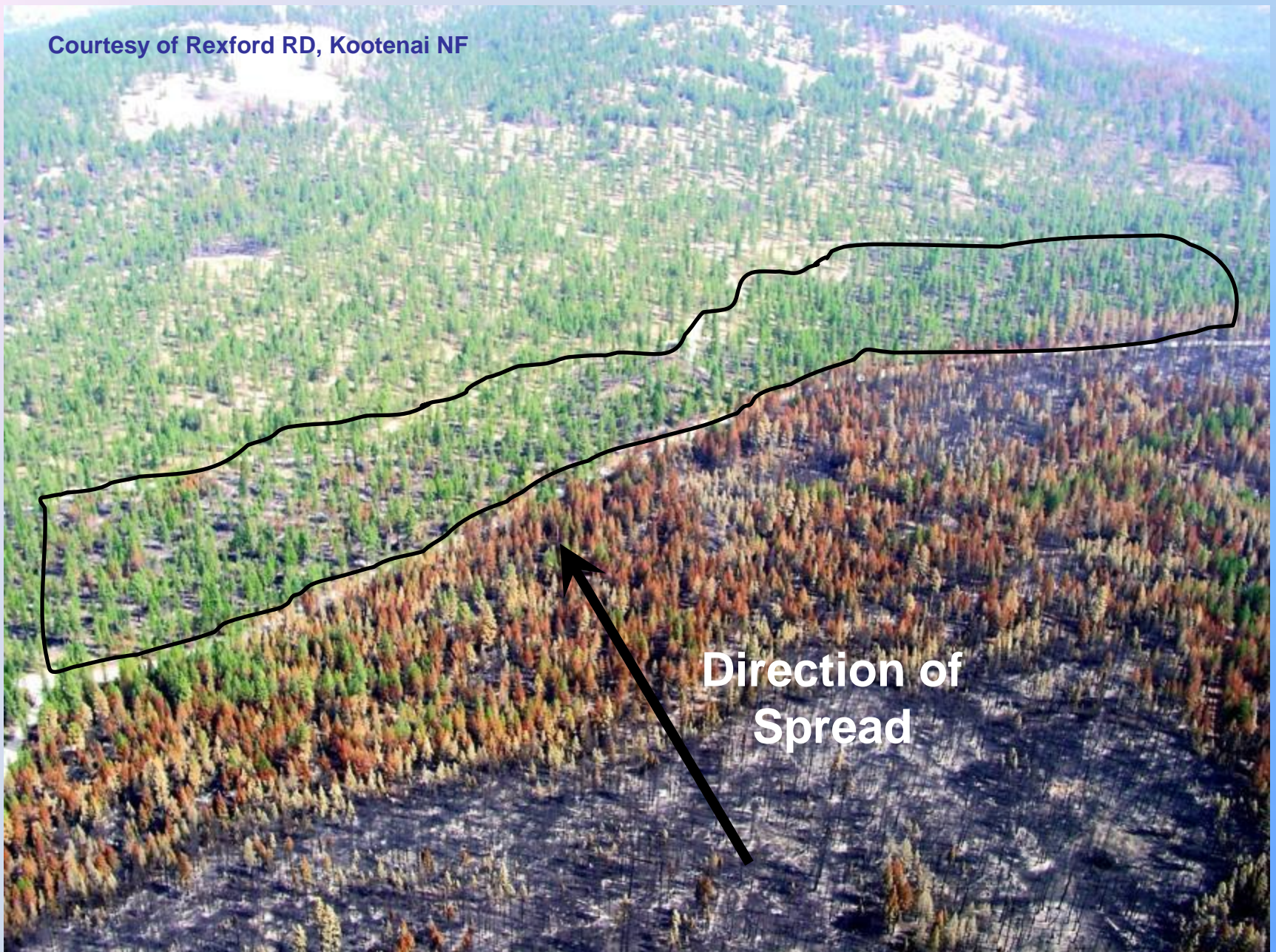




BCPFC

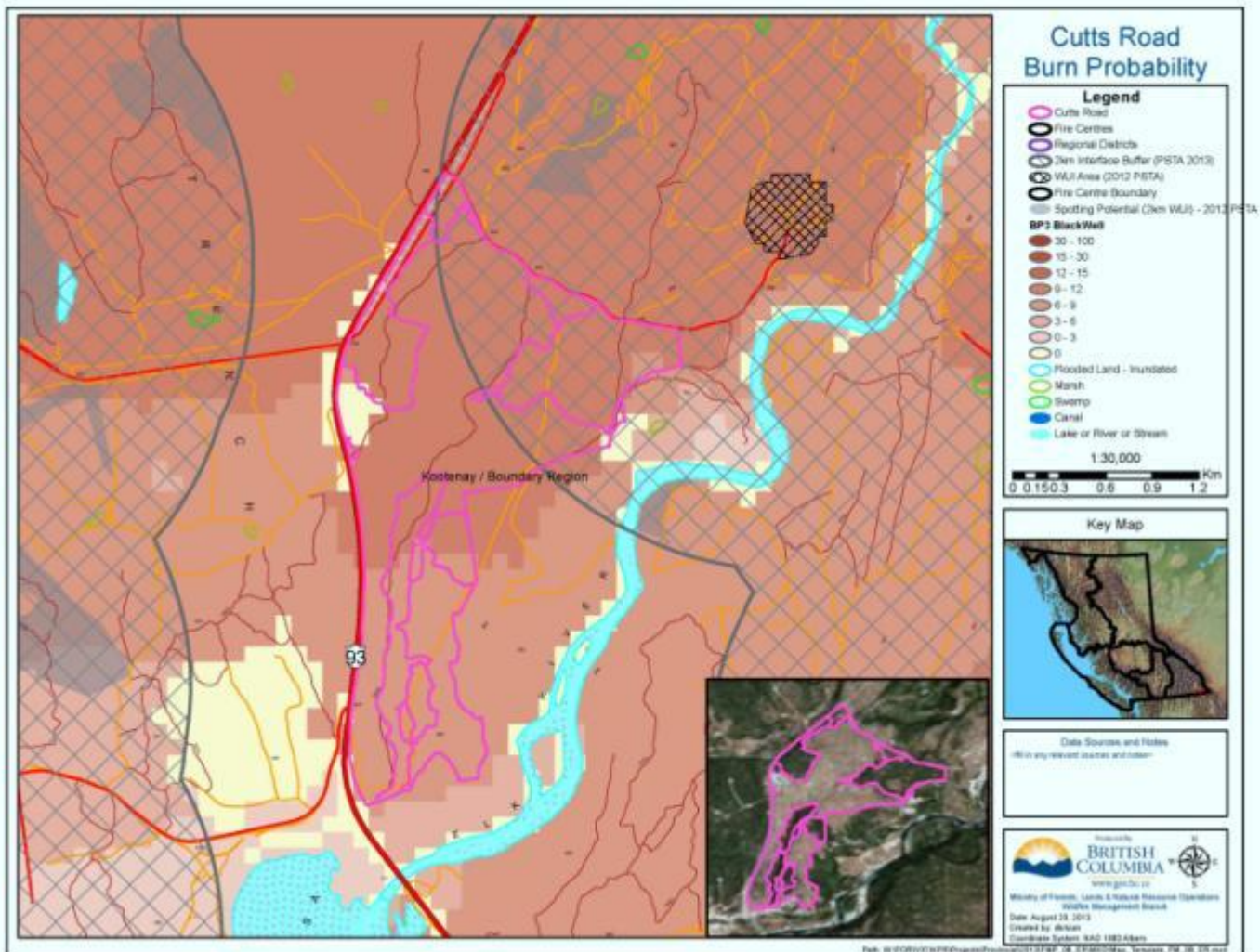
- BC Government: WMB planning, Fuels, ER, MOE, Air, Climate change, FFT
- FNESS and BC First Nations Forestry Council
- Federal; Parks Canada, NR Canada, Canadian Wildlife Service
 - Web site and communications
 - MOU's and policy, (Air quality, Highways)
 - Training courses
 - S-434 Ignitions
 - S-435 Fire Planning and Operations
 - S-580 Fire and Ecosystems
 - After Action Reviews

Courtesy of Rexford RD, Kootenai NF



2005 Camp 32 Fire in NW Montana – field tested 150 stems/ha!!

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Thanks for your time!

