Integrated Fire Management: Towards developing landscape level wildfire resiliency in British Columbia, Canada

Evelyn H. Hamilton
Director, Bulkley Valley Research Centre
Principle, Hamilton Ecological Consulting
British Columbia, Canada

Bulkley Valley Research Centre

OUTLINE

1. Background – Imperative to change forest management practices
   - Global situation and predictions regarding wildfires
   - British Columbia's situation and predictions regarding wildfires

2. Integrated Fire Management – British Columbia's approach

3. Resiliency concepts

4. Management strategies to reduce wildfire impacts

5. Pilot projects to develop more wildfire resilient landscapes
   - Northern Wildfire Resiliency Initiative
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7. Acknowledgements and for further information

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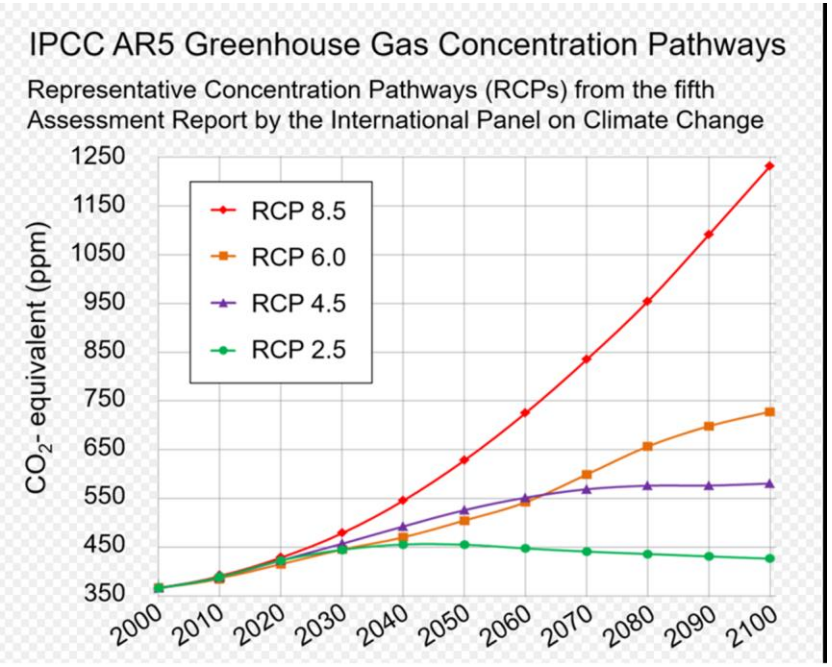
Background – Imperative to Change

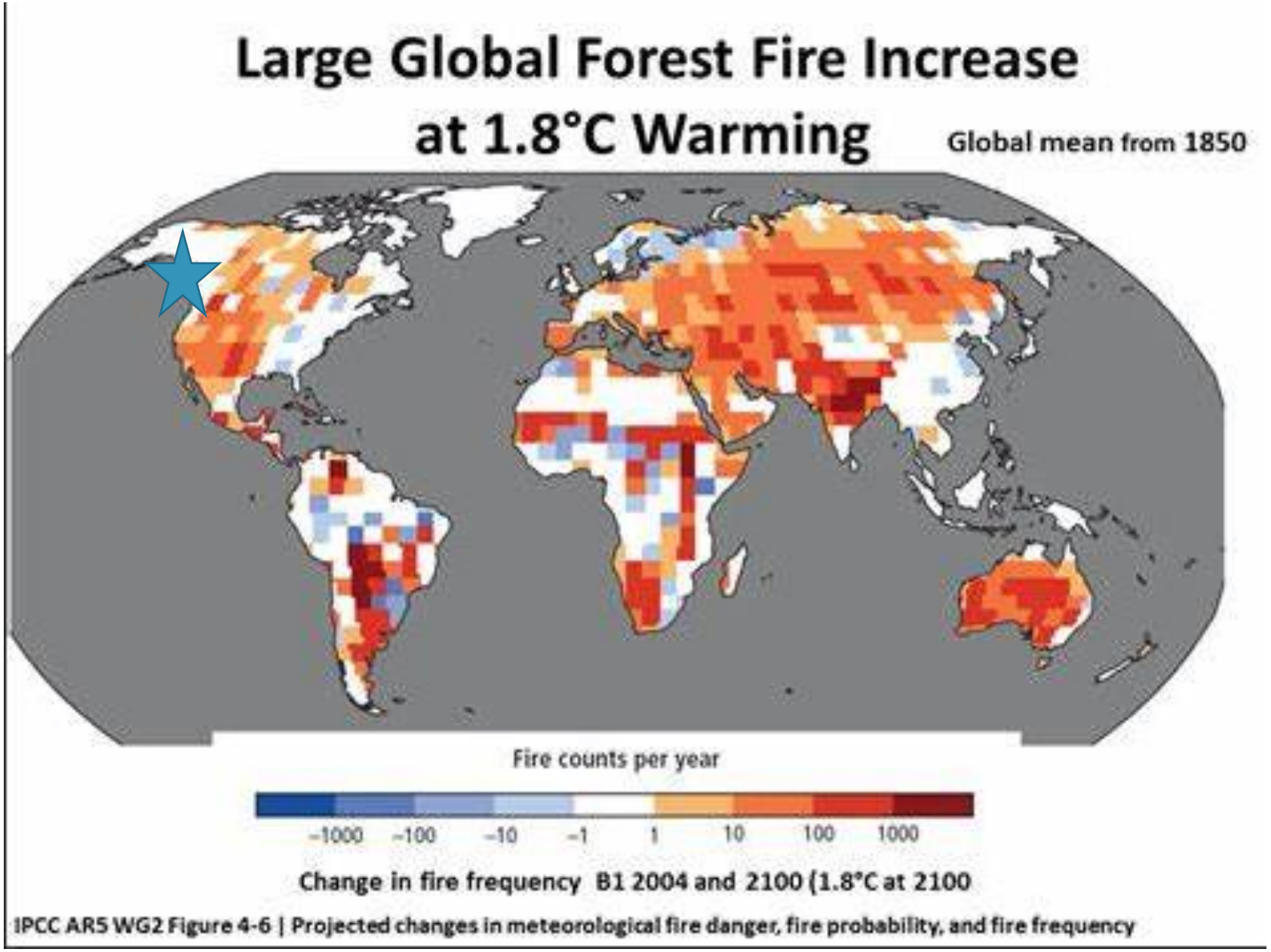
1. Global situation and predictions regarding wildfires
    - Greenhouse gases
    - Global temperatures
    - Wildfire risk

2. British Columbia's situation and predictions regarding wildfires



"Predicted increases in droughts and heatwaves increase the risk of **fire occurrence**"

"Projected impacts on forests as climate change occurs include **increases in the intensity** of storms, **wildfires** and pest outbreaks"



From IPCC 2014 report. available from https://www.climateemergencyinstitute.com/ecosystems_and_species.html

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GLOBAL FIRE CHALLENGES IN A WARMING WORLD
Summary Note of a Global Expert Workshop on Fire and Climate Change

Edited and coordinated by:
François-Nicolas Robinne, Janice Burns, Promode Kant,
Mike D. Flannigan, Michael Kleine, Bill de Groot, D. Mike Wotton.

"Available data shows a trend of **increasing frequency and intensity of uncontrolled fires** adversely affecting biodiversity, ecological services, human well-being and livelihoods and national economies"

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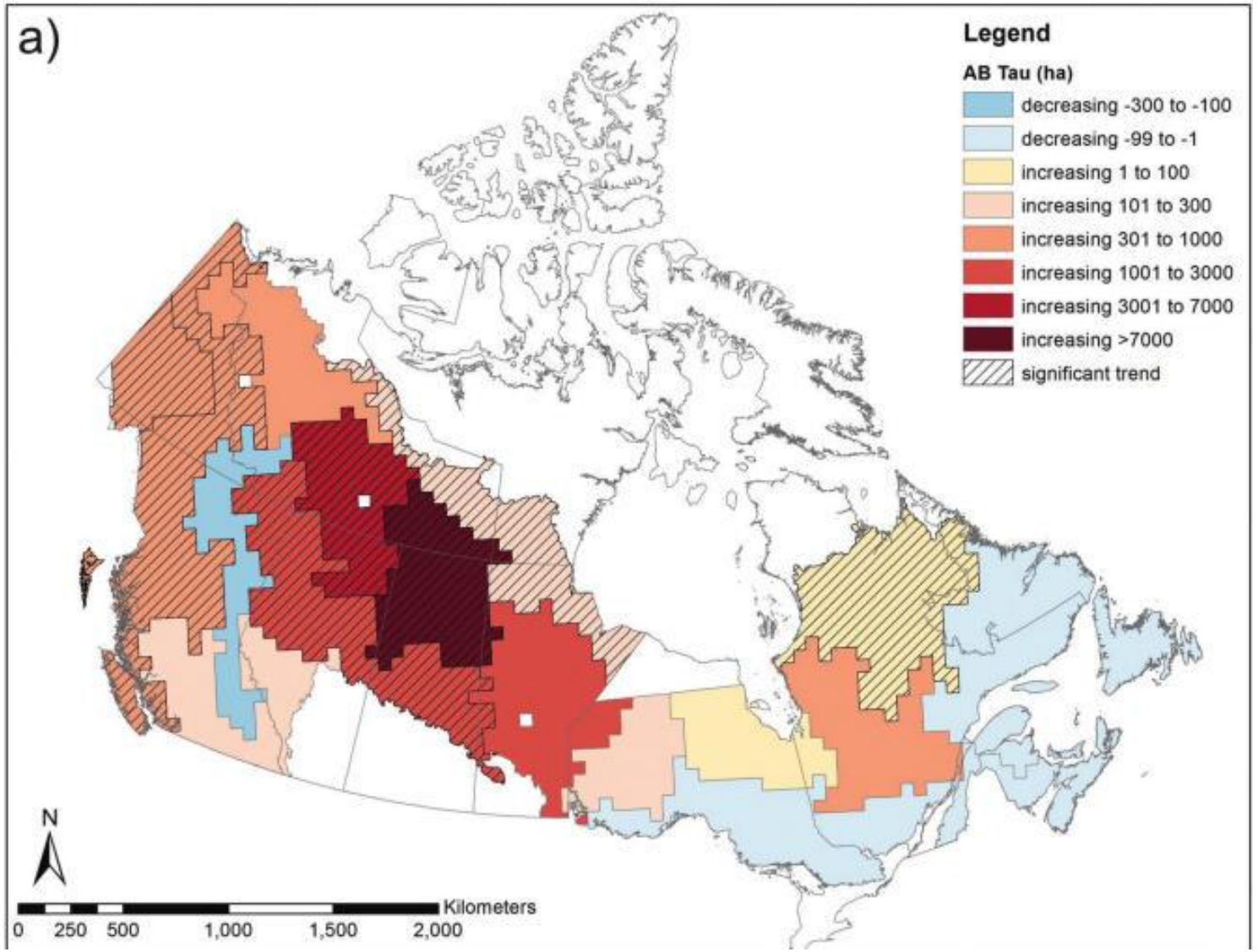
Increase in area burned (ha) in Canada (1959 to 2015).



" Climate change is predicted to **worsen all three ingredients required for wildfire** (fuel, ignition, weather) across most of Canada, making global warming a triple threat to our forests'

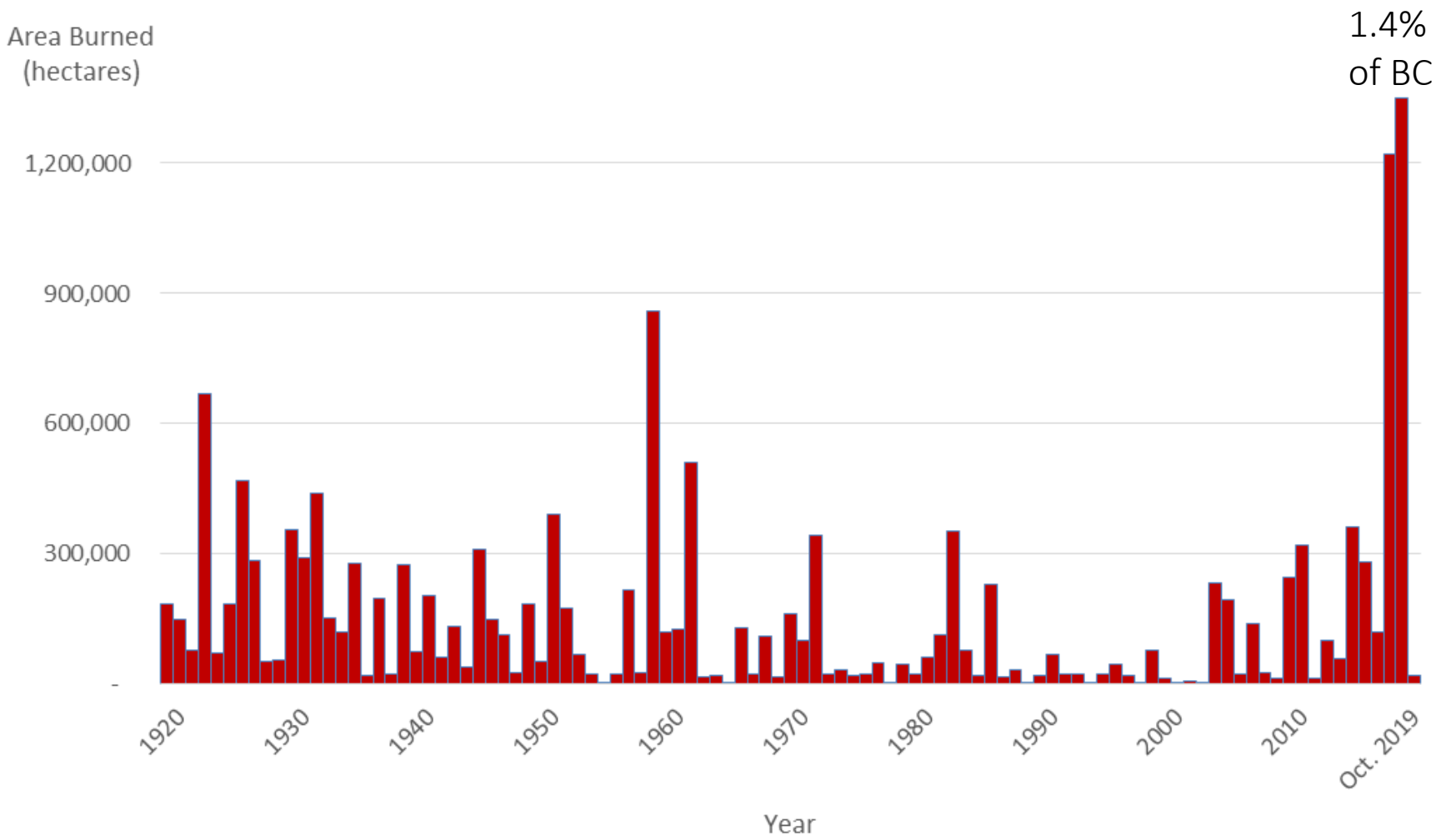
From https://climateatlas.ca/forest-fires-and-climate-change

From: Fire-regime changes in Canada over the last half century. C. Hanes et al. · 2019 CJFR 49(3): 256-269, https://doi.org/10.1139/cjfr-2018-0293

Location of Wildfires in BC - 2018 fire season

Size of British Columbia	944,735 km2	
Area Burned in 2018/19	13,000 km2	1.3%

Area (ha) burned in British Columbia by year (1920-2019)



Over 1.3 M ha burned in 2018

Over 1.2 M ha burned in 2017

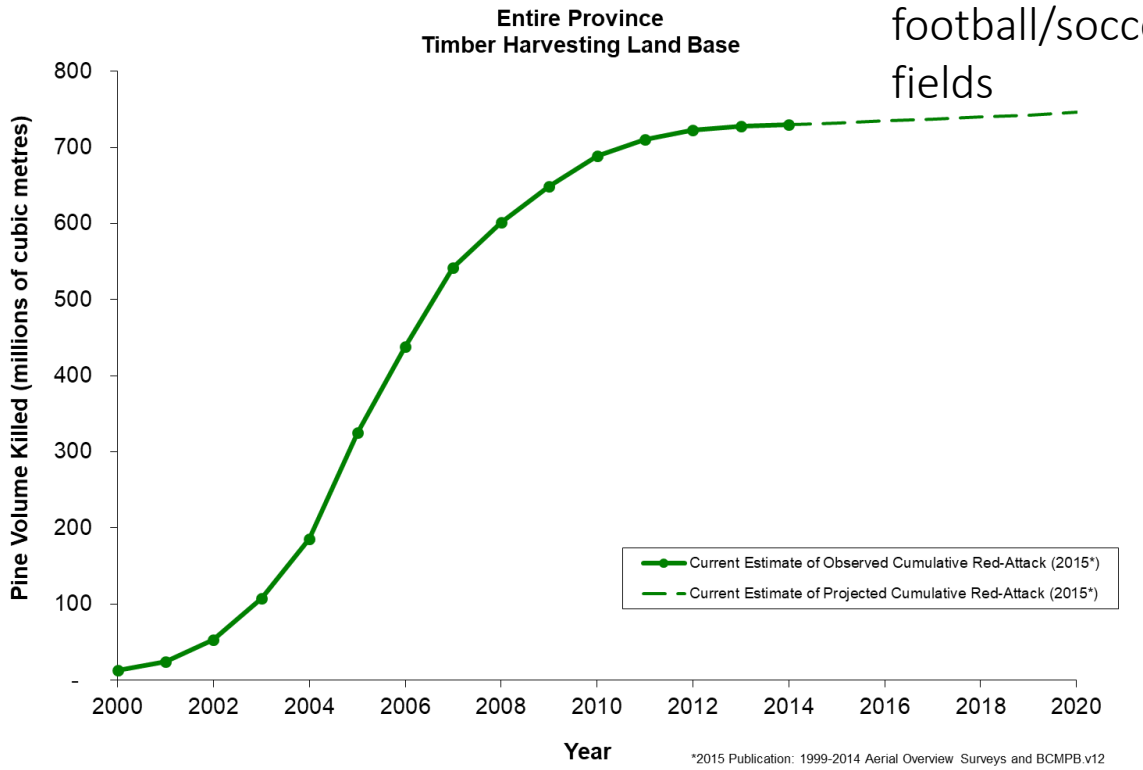
Source: National Fire Database (1950-2015), BC Wildfire Service (2016-2019) https://cataloque.data.gov.bc.ca/dataset/fire-perimeters-historical

Mountain Pine Beetle (MPB) impact in British Columbia

Over 700 M cubic meters of pine volume killed

2.3 M cubic football/soccer fields

https://forestinvasives.ca/Meet-the-Species/Insects/Mountain-Pine-Beetle



https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health/forest-pests/bark-beetles/mountain-pine-beetle/mpb-projections

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Integrated Fire Management – British Columbia's approach

Integrated Fire Management Components	British Columbia's Approach
Assessment and analysis of situation and issues	**Ongoing**
Fire management goals and desired ecosystem condition	**Evolving from suppression to management**
Laws, policy and institutional framework	**Comprehensive, evolving**
Prevention and education	**Comprehensive, expanding**
Fire use	**Limited, increasing prescribed burning**
Preparedness and response	**Significant and increasing**
Restoration, recovery and maintenance	**Limited, increasing**
Adaptive management, research and information transfer	**Adaptative management - early stages**
	Research – Considerable, evolving
	Information Transfer – Significant

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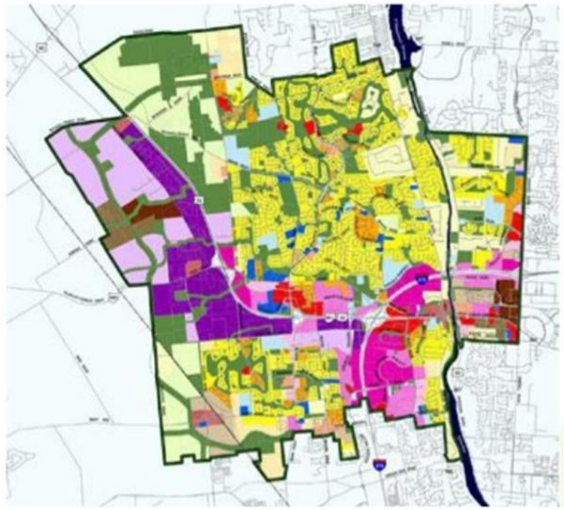
Management Strategies for Reducing Wildfire Risks

- Individual homeowners “FIRESMART” their homes on private lands

- Wildland urban interface (WUI) fuel reduction on public and private lands



- Landscape Fire Planning and Management – landscape level fire planning and management.

Landscape Level Fire Planning and Management Options

- Harvesting & commercial thinning of forests
- Large scale fuel breaks
- Alternative silviculture regimes *e.g. less flammable hardwoods
- Increased prescribed fire
- Managed wildfire

https://www.ubcm.ca/assets/Resolutions~and~Policy/Policy/Governance/Regional~Districts/CEO~CAO~Forum~2013/Wildfire%20Management%20handout%20bw.pdf

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Case Study 1. Northern Wildfire Resiliency Initiative

Overview

- A collaborative effort to increase wildfire resiliency in northern BC.
- Workshop March 2019 with wide range of participants
- Developed consensus on the need for a resiliency based approach to wildfire management and recommendations
- Provincial government committed to a landscape level pilot project - scoping out now

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Case Study 1. Northern Wildfire Resiliency Initiative

Recommendations

1. Promote **public engagement** to get needed **policy/practices**
2. Determine **opportunities and obstacles**
3. Initiate **planning** to develop resilient landscapes
4. **Coordinate** efforts from home to community to the landscape
5. Address **operational constraints** to wildfire risk mitigation
6. **Use broadcast burns** as a management tool
7. Identify what **expertise** is available/ **needed and how to get it**
8. Determine **research /information needs**

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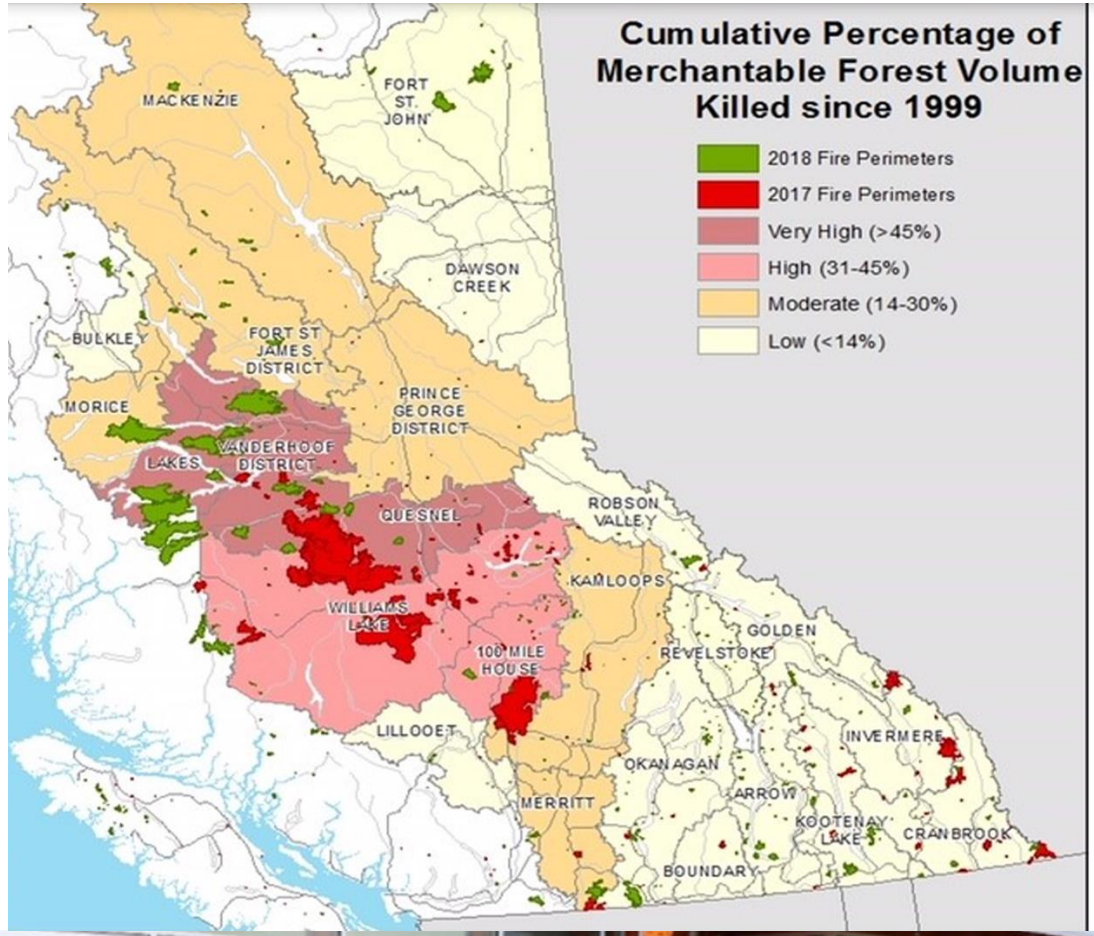
Case Study 2. The Quesnel Forestry Initiatives Program

- Workshops brought together local forest industry, researchers & governments to explore opportunities for alternate forest management in 2018.
- Community Wildfire Protection Plan (CWPP), FireSmart, managing the landscape for resiliency and encouraging new industries.
- Landscape level analysis and restoration work to support wildfire resiliency.
- Workshop for local people to discuss resiliency concepts and goals
- See www.quesnel.ca



Case Study 3. Kootenays – SIFCo Wildfire Resiliency Program

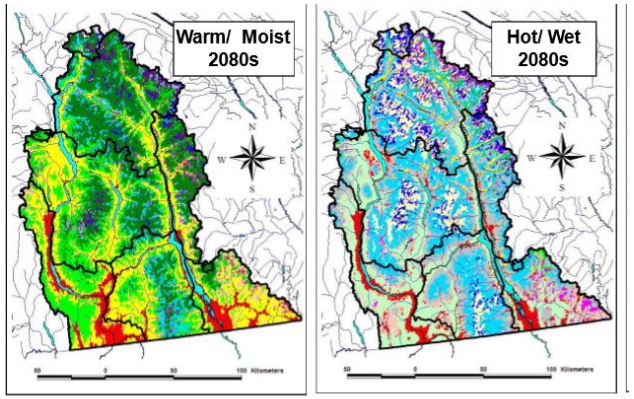
- Team assessed climate change predictions and how forest ecosystems will likely be affected – including wildfires.

- Workshops with forest and land managers and public to share learning about climate change impacts.
-
- Determined potential management strategies for adapting to changes at various scales (e.g. tree species planted, provincial policies).

- Led to the Slocan Integral Forestry Cooperative (SIFCo) Wildfire Resiliency Program.

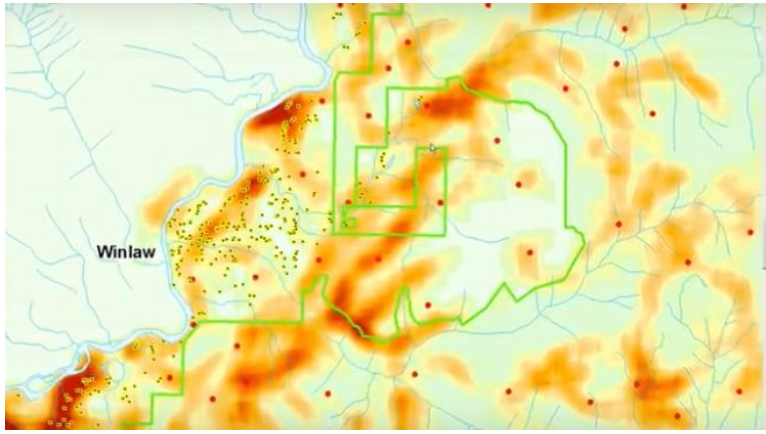
- See http://www.kootenayresilience.org/

Predicted climates 2080



Case Study 3 Kootenays - Slocan Integral Forestry Cooperative (SIFCo) Wildfire Resiliency Program

- Demonstration of climate change adaptation & wildfire preparedness at landscape scale.
- Landscape level planning, consultation/education/training, cooperation, WUI Mitigation, Fire Smart & emergency
- Use FLAMMAP model to predict likely future fire behaviours and plan treatments.
- Fuel Managed Zones across main fire movement corridors to create large fuel breaks.
- Treatments used include timber harvesting, thinning, dead wood removal & prescribed burns.
- See https://www.sifco.ca/.



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Summary

- Increasing GHG emissions predicted to lead to increased frequency and intensity of wildfires.
- BC has experienced severe fires and expects more and is working to reduce future negative impacts.
- BC has a robust Integrated Fire Management approach. Working to enhance Adaptive Management by clarifying goals, identifying main obstacles & undertaking research and landscape pilot projects.
- Value of partnerships and working at local to landscape scale.

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THANK YOU for your interest

For further information – visit
www.bvcentre.ca
www.db2020.net – for this and other talks and reports

Or contact Evelyn Hamilton at
ehhamilton16@gmail.com

Acknowledgements

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