



# Advancing Adaptation in Forest Management in Western Canada

HARRY NELSON, FACULTY OF FORESTRY, UNIVERSITY OF BRITISH COLUMBIA

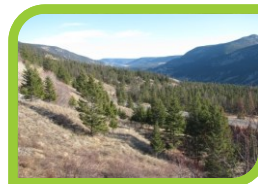
ADAPTATION FUTURES 2016,  
WORLD TRADE CENTRE, ROTTERDAM

## Canadian Forest Management Context

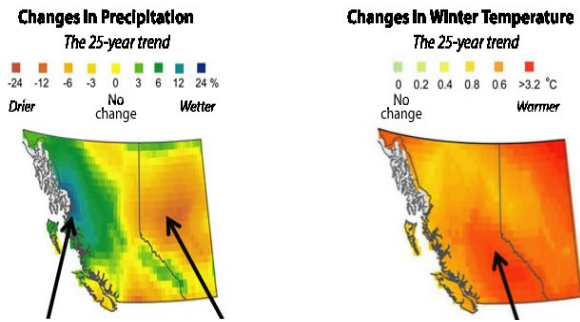
**Publicly-owned forests**, but management and operational activities delegated to third parties

Main management focus and activities centre around economic values of timber (i.e. timber revenues, employment, contributions to local and provincial economies)

Important environmental (wildlife, water) and social (recreation, cultural) objectives achieved through regulation

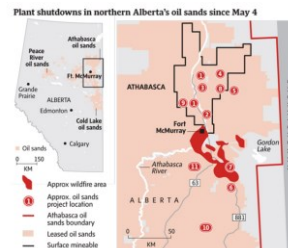
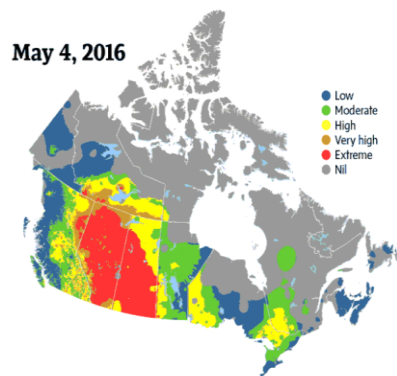


# Climate change risks to forests in Western Canada



PCICs

## Drier, hotter.....



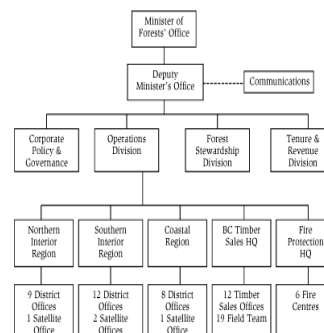
Please check any of the following items that you would identify as a threat to BC forests in a changing climate or that you have observed in your region of the province.

Response	Chart	Percentage
Increased levels of natural disturbance/mortality due to wildfires		59%
Increased levels of natural disturbance/mortality due to insects and disease		83%
Regeneration failures		43%
Changes in stand-level productivity		34%
Increase in invasive species		50%
Genetic maladaptation		23%
Biome conversion (e.g. forest to shrub, grassland, etc.)		32%
Business disruptions due to extreme weather		41%
Other, please specify...		13%

## Institutional Challenges

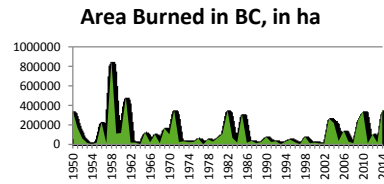
Policy & organizational: lack of priority (rather than resources) is main challenge in context of:

- Multiple and competing objectives
- Siloed management and organizational responsibilities
- Differences in perceived risks



# Institutional challenges (private)

Stakeholders, actors and risks differ



# Research to support action

Increasing capacity and awareness among decision-makers and actors

Identifying policy options and instruments, as well as barriers

Demonstrating costs/risks of inaction

Global Environmental Change 30 (2016) 103–114

Contents lists available at ScienceDirect

**Global Environmental Change**

journal homepage: www.elsevier.com/locate/gloenvcha

---

**The principal-agent problem and climate change adaptation on public lands**

Ngalo Hote\*, Collin Mahony, Harry Nelson

\*Corresponding author. Tel.: +1 250 853 3333; fax: +1 250 853 3333. E-mail addresses: ngalo.hote@ec.gc.ca (N. Hote), collin.mahony@ec.gc.ca (C. Mahony), harry.nelson@ec.gc.ca (H. Nelson).

**Economic instruments for adaptation to climate change in forestry**

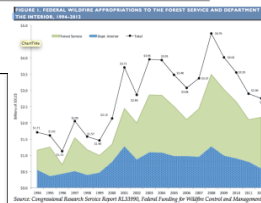
Final report

Naqo Hote\* & Harry Nelson

June 8, 2015

\*\*\* Funded by the Natural Resources Canada through the Adaptation Program Economic Working Group

**Forestry** **Canada**



**Adapting natural resource management to climate change in the Thompson-Okanagan Region: Considerations for practitioners and Government staff**

**1. About this Series**

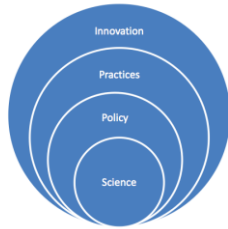
There is strong scientific evidence that climate change will significantly affect British Columbia's ecosystems. Therefore, adapting natural resource management to climate change is necessary to meet societal objectives that continue to provide the services, products and benefits society relies on.

This extension note is part of a series that uses current climate change research to summarize, for each region, projected climate change, impacts to ecosystems, and potential adaptation strategies. Where regional information is limited, information is given from provincial-scale research.

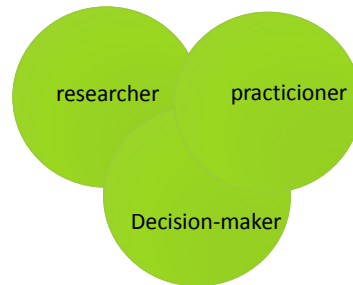
The intent of this extension note is to inform adaptation of natural resource planning and practices to climate change by providing the available information to resource professionals, business, and Government staff engaged in operational planning and practice under the Forest and Range Practices Act and other natural resource legislation, reviewing effectiveness of adaptation practice, assessing sustainable effects, and preparing climate change action plans. It includes provide references and further information.

# Research for implementation (action)

---



Not this...



but this instead



# Research for implementation (action)

---

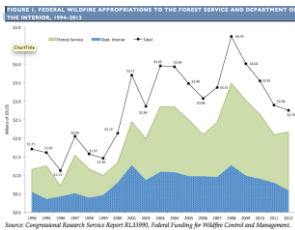


Or maybe even this.....



# Translating to policy: implementation challenges

- Maladaptation
- Fire risk



Area Burned in BC, in ha

