



## **Ecosystems in Change and Ecological Restoration The BC Parks Experience**



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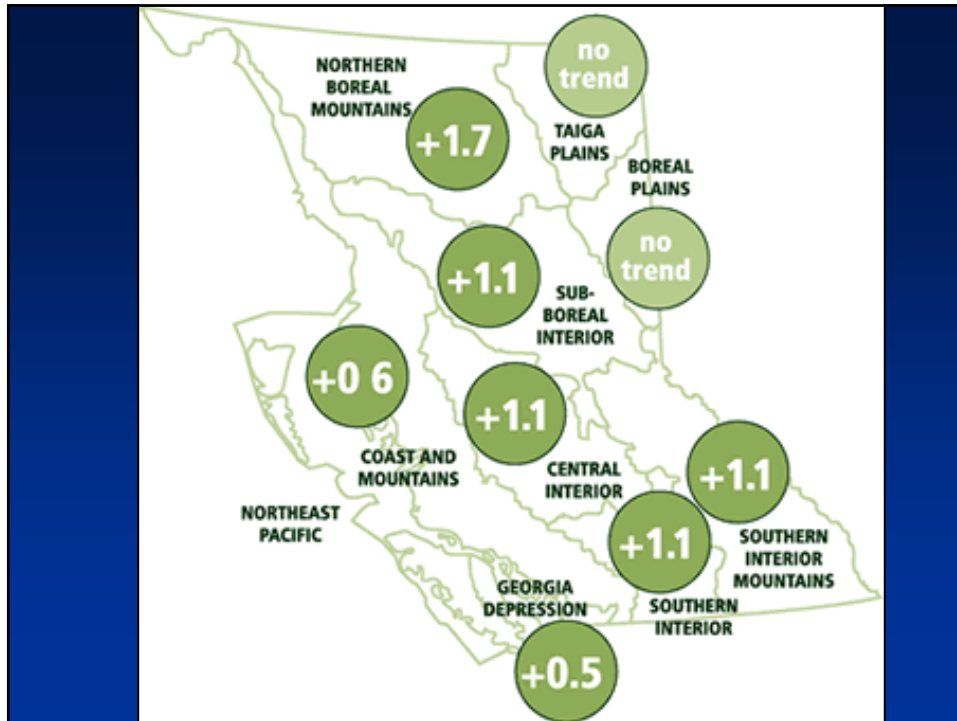
## **Presentation Overview**

- I. Climate Change and Changes to Natural Disturbances**
- II. Planning and Research for Management and Restoration**
- III. Management and Restoration Examples**
- IV. Emerging Management Issues**

## **I. CLIMATE CHANGE AND CHANGES TO NATURAL DISTURBANCES**

### **Climate Change**

- **Intergovernmental Panel on Climate Change Report – 4<sup>th</sup> Assessment Report**
- **Indicators of Climate Change for British Columbia 2002**



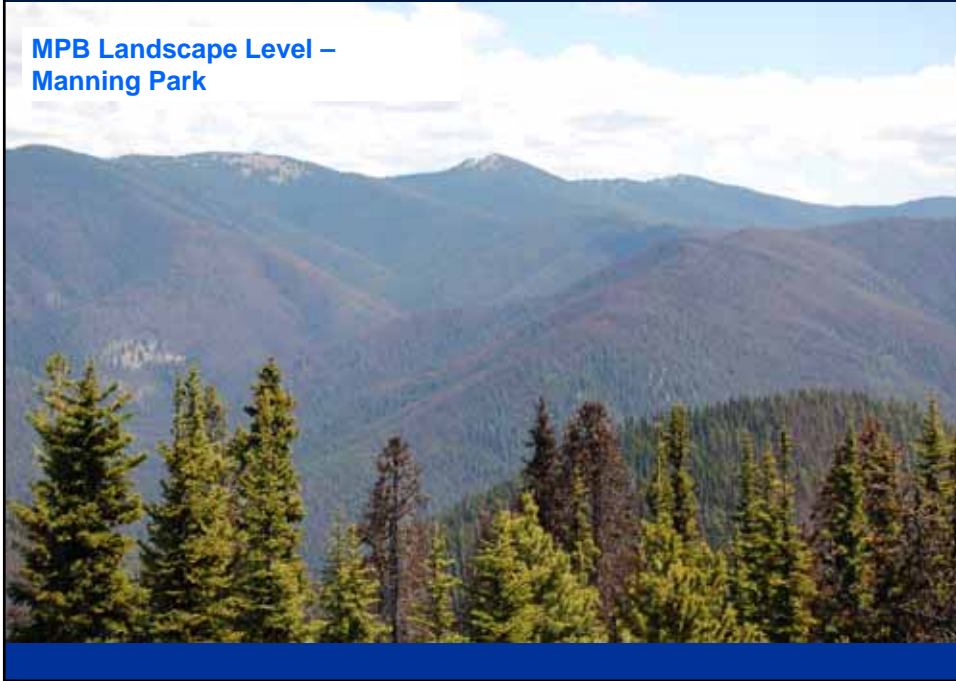
## Climate Change and Natural Disturbances

Natural disturbances predicted to increase in frequency, scale and intensity:

- Mountain Pine Beetle/Insect Outbreaks
- Wildfires
- Floods
- Droughts
- Storm events



**MPB Landscape Level –  
Manning Park**



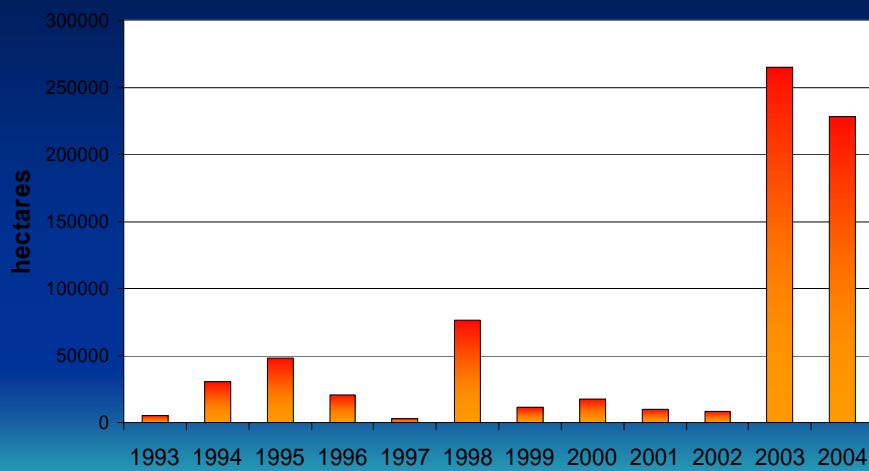
**MPB Stand level –  
Manning Park**

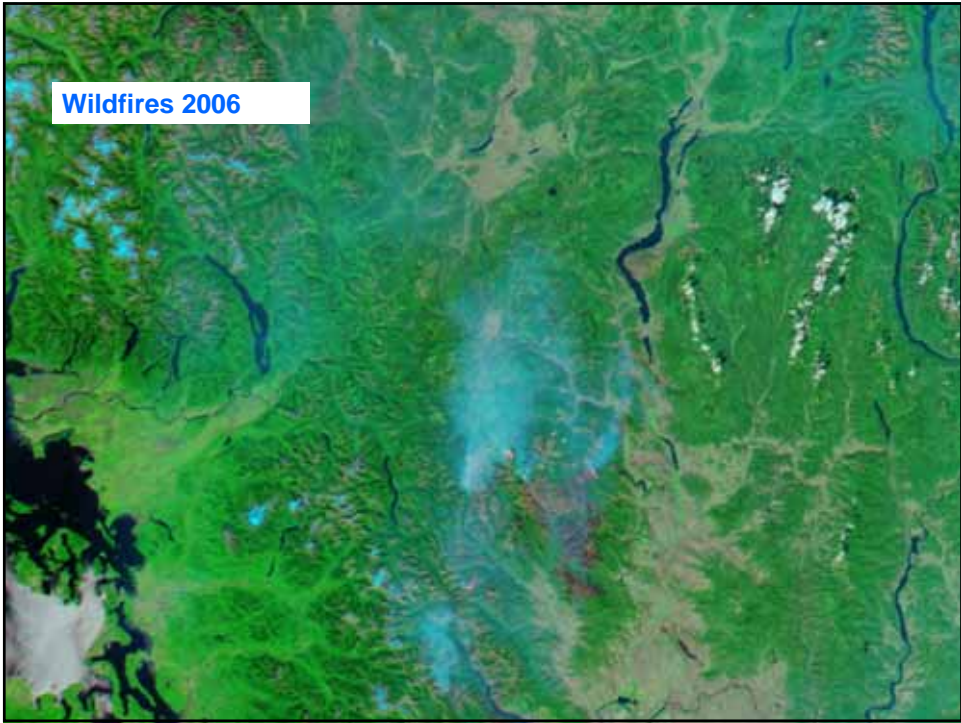


**Wildfire - Okanagan  
Mountain Provincial  
Park 2003**



**Area burned in BC**

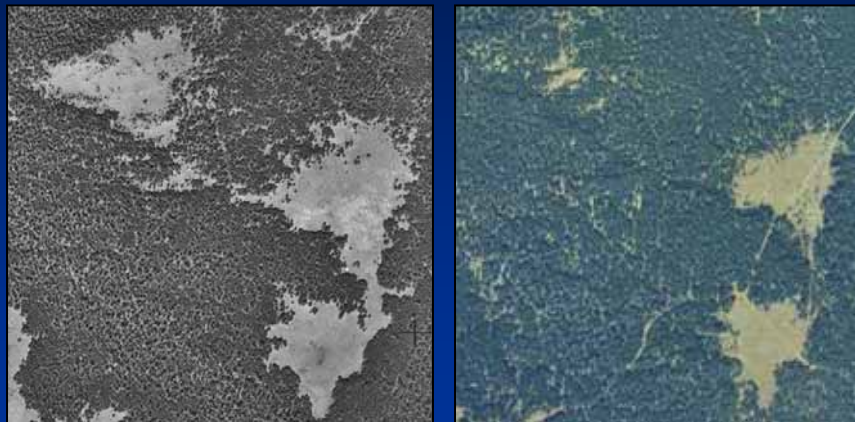




## Encroachment Kal Lake Park – 1935 to 2005



## Encroachment Churn Creek Park – 1965 to 1995



## **Climate Change – Other Impacts**

- **Variability in water flows – volume, timing, quality, temperature**
- **Increase in invasive species/naturals becoming invasive**
- **New plant community assemblages**
- **Current vegetation communities become “offsite” – e.g. red cedar**
- **Rapid habitat changes**
- **Wildlife/species “winners” and “losers”**

## **II. PLANNING AND RESEARCH FOR MANAGEMENT AND RESTORATION**



# Parks and Protected Areas Mountain Pine Beetle Assessment



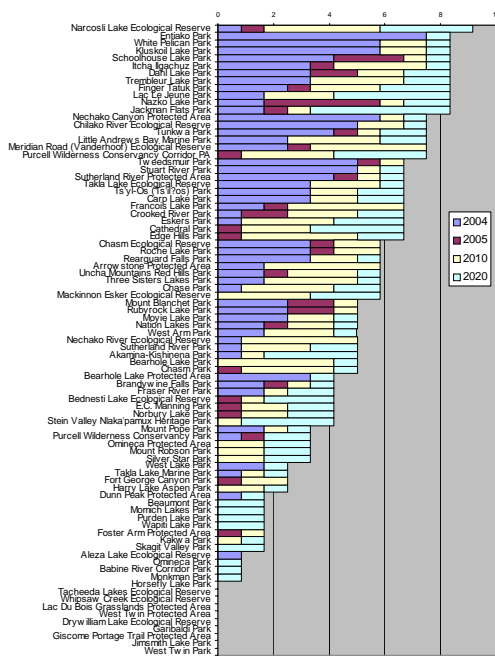
Submitted By

**B.A. Blackwell & Associates Ltd.**

March 2005



Impact



**Forest Health Strategy  
For Mount Robson  
Provincial Park**



Submitted By  
**B.A. Blackwell & Associates Ltd.**  
**Compass Resource Management**  
April 2004



**Provincial Park**

**Restoration of Fire Maintained Ecosystems  
in Provincial Parks and Protected Areas**



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*Parks and Protected Areas  
Fire Risk Assessment*



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March 2005



**Fire Management Plan  
Churn Creek Protected Area**



### III. MANAGEMENT AND RESTORATION EXAMPLES




## Challenge of Ecosystem Restoration in Parks and Protected Areas

### Balance

#### Ecosystem perspective

- Allow natural processes to prevail to maintain natural ecosystems
- Determine when ecosystems require active management to offset human induced changes (e.g.: fire suppression resulting in encroachment, loss of habitat or forest fuel accumulations)

#### Social and economic perspective

- Recognize and mitigate social and economic issues associated with the frequency and nature of natural disturbances (e.g.: visitor safety, urban interface wildfires, recreation management, forest health)
- 



**Mt. Robson Prescribed Burn  
August 2004**



**Mt. Robson Prescribed Burn – August 2004**



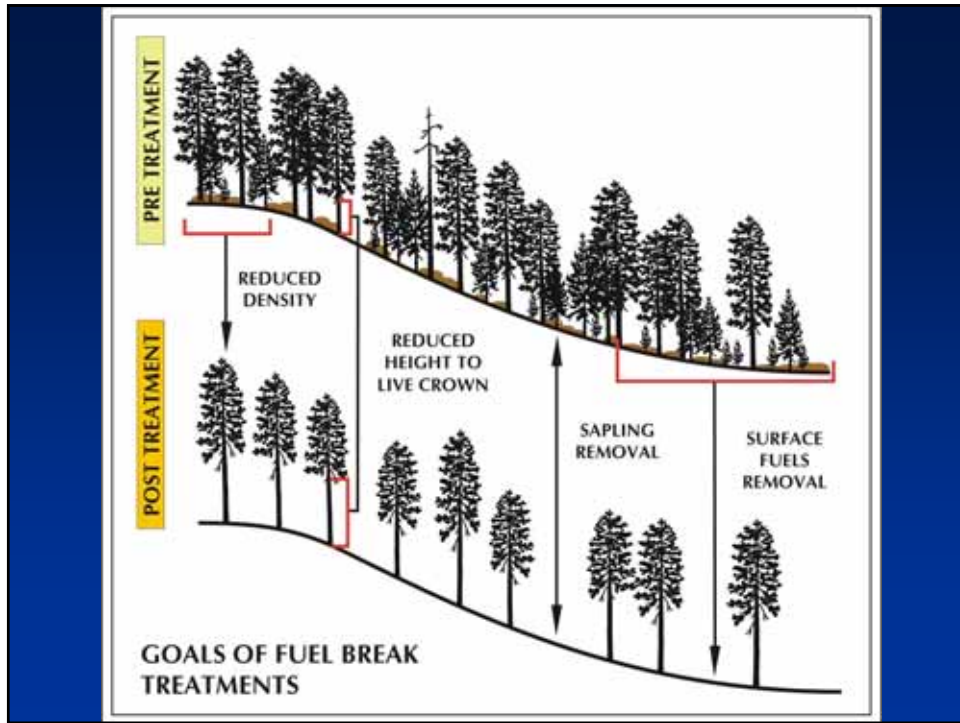


## Best Management Practices for Tree Removals in Parks and Protected Areas

### PLANNING



April, 2004









#### IV. EMERGING MANAGEMENT ISSUES

- A system assessment of parks and natural values most vulnerable to climate change impacts is required.
- A provincial assessment of landscape corridors for species migration is required— what is the role of parks and how should they be managed?
- Planning for park ecological adaptation/resiliency to climate change based on predicted climate change impacts should start now.
- Baseline monitoring to assess speed of climate change impacts is essential.

**Natural Processes Prevail; however, park managers may be faced by future management challenges.....**

- Wildfire control to prevent loss of a critical habitat for endangered/threatened species?
- Initiate reforestation after fires/MPB to sequester carbon and mitigate climate change?
- Manage parks as climate refugia/lifeboats for species/ecosystems threatened by climate change?
- Allow parks to serve as genetic reservoirs for critical restoration needs outside of parks?

