

# Adaptation Actions in Northern Communities

Introduction to Webinar for Prairie  
Regional Adaptation Collaborative

Dr. Debra J. Davidson

Department of Resource Economics and  
Environmental Sociology

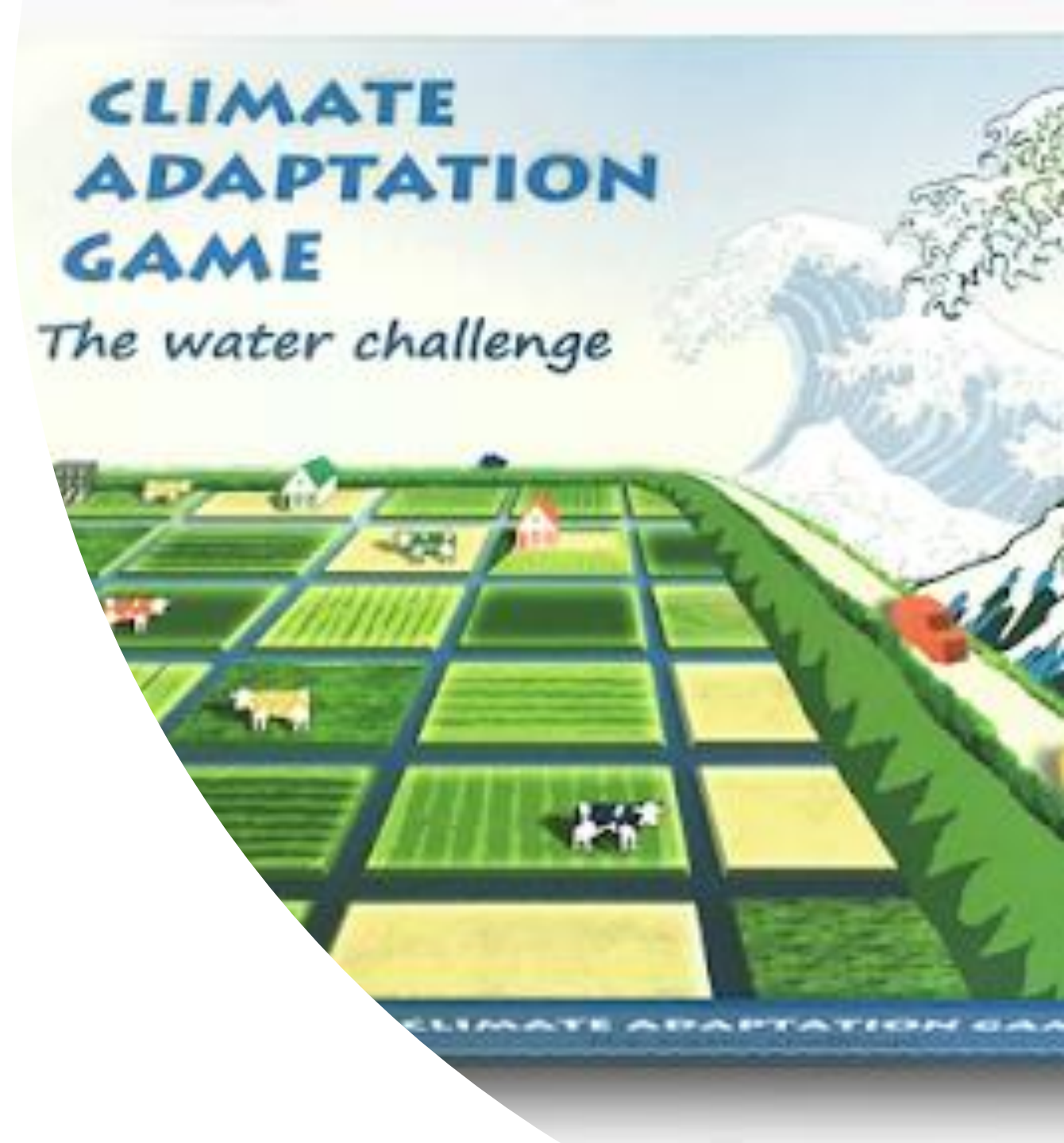
University of Alberta



# Adaptation is...

---

- “The process of adjustment to actual or expected climate and its effects.” (IPCC)
- Can be proactive or reactive
- Planned or autonomous
- Incremental or transformative
- Definitely NOT a game!





# A (Very)Brief Overview of the State of Academic Knowledge

Conceptual approaches over time; empirical studies focused on local-level adaptation efforts indicating types of activities undertaken, and common challenges or barriers

# Progression of Assessment Approaches

## ***Vulnerability/Risk Assessment:***

Vulnerability = Exposure x Sensitivity x  
Adaptive Capacity

Risk = Probability of Event x Consequences

Tend to be quantitative

Limited to knowables and measurables



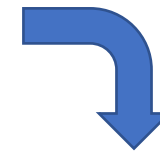
## ***Resilience:***

Acknowledgement of uncertainty

Focus on buffering, flexibility, recovery

Inward-gazing

Top-down; techno-managerial



## ***Intersectionality Approaches:***

Acknowledgement of socio-politics

Attention to equity and justice

Respect for multiple knowledges

Most  
Common  
Activities  
Undertaken

<p><b>Natural Buffers</b></p> <ul style="list-style-type: none"><li>• Resource management strategies</li><li>• Nature-based solutions</li><li>• New agriculture techniques</li></ul>	<p><b>Institution Building</b></p> <ul style="list-style-type: none"><li>• New policies</li><li>• New organizational units</li><li>• Staff training</li></ul>
<p><b>Community Capacity Building</b></p> <ul style="list-style-type: none"><li>• Improving public knowledge and awareness</li><li>• Financial support for residents and businesses</li><li>• Safety nets for marginalized groups</li></ul>	<p><b>Investing in Emergency Response</b></p> <ul style="list-style-type: none"><li>• Early warning systems</li><li>• Evacuation plans</li><li>• Improving infrastructure</li></ul>



Most  
Common  
Barriers

### **Socio-political**

- Governance
- Communication
- Inequity
- **Cognitive**

### **Resource limits**

- Financial
- Information technology
- Human Resources
- Time

# Bringing it Home to the Northern Prairies

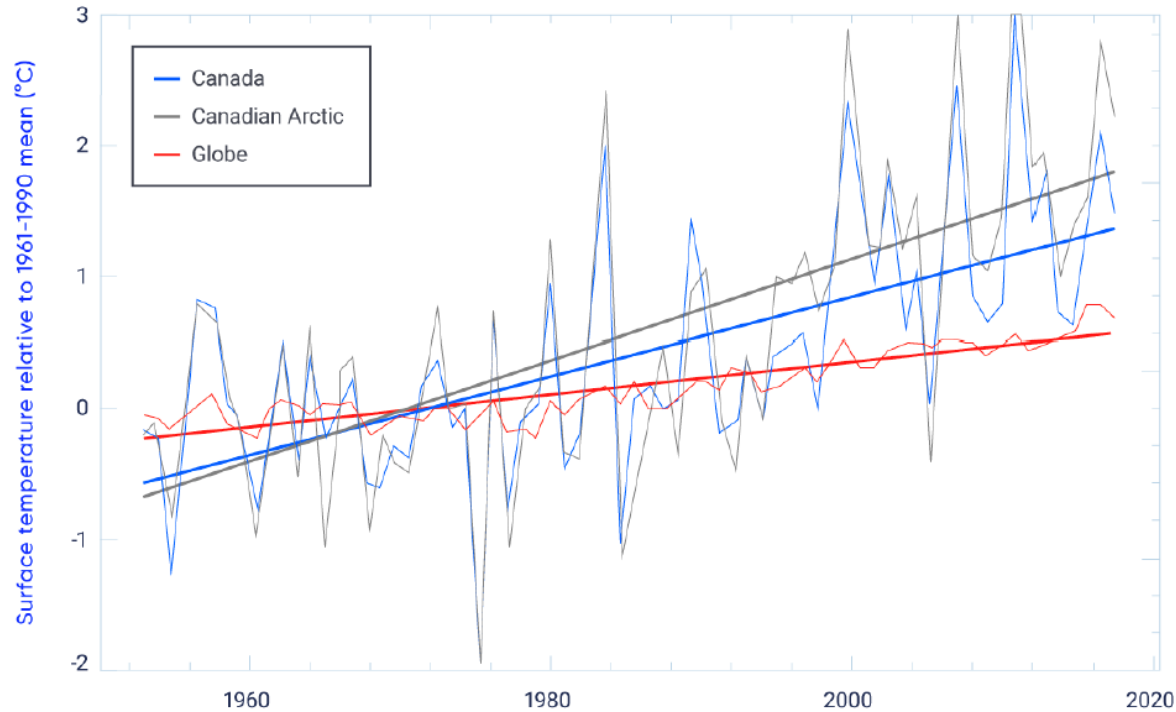
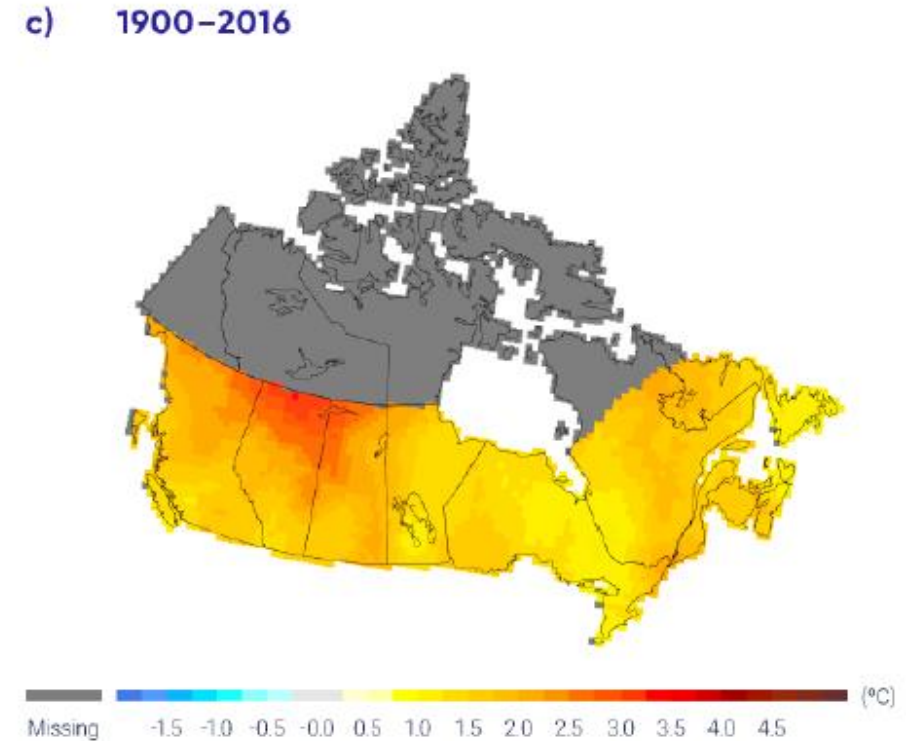
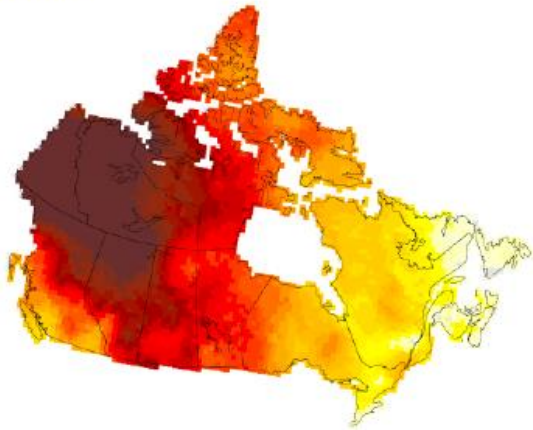


Figure 3.3: Rates of warming for Canada, the Canadian Arctic and the world

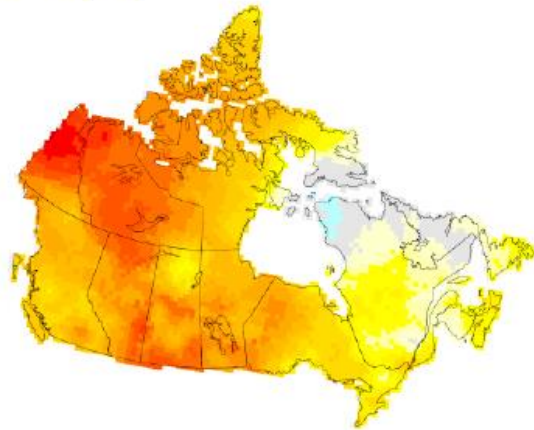


Images from Canada's Changing Climate Report

a) Winter



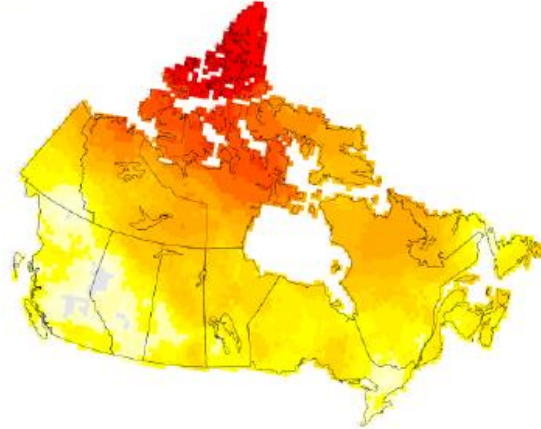
b) Spring



c) Summer



d) Autumn



## Key Impacts:

- Warmer winters
- Longer growing season
- Shifting ecosystems
- Changing hydrology
- More variability
- More extremes

Figure 4.4: Trends in seasonal temperatures across Canada



# My Personal Thoughts

- Forget about trying to eliminate uncertainty
- Conduct your own priorities assessment
- Get your community on board
- Focus on building community:
  - Decision-making support
  - Emotion coping support
- Don't ignore the elephant: Industrial development
- Even bigger elephant: Misinformation and Fractious politics

# One Final Note: Adaptation in Human History

Humans are among the most adaptive species on earth. Our key to adaptation is **cooperation**.

Cooperation allows for grappling with big problems, and rapid learning through knowledge sharing.

How do we foster cooperation?

We need to be able to:

- communicate** with one another,

- trust** one another,

- have **equitable** relations with each other,

- have **empathy** for one another.