



**esa**

Ecosystem Services  
Assessment

## Ecosystem Services & Land-use Management

---

*Alberta Lake Management Society  
21<sup>st</sup> Annual Workshop  
Slave Lake, AB  
September 26, 2014*

It's Our Nature *to Know*

*Alberta Biodiversity Monitoring Institute*

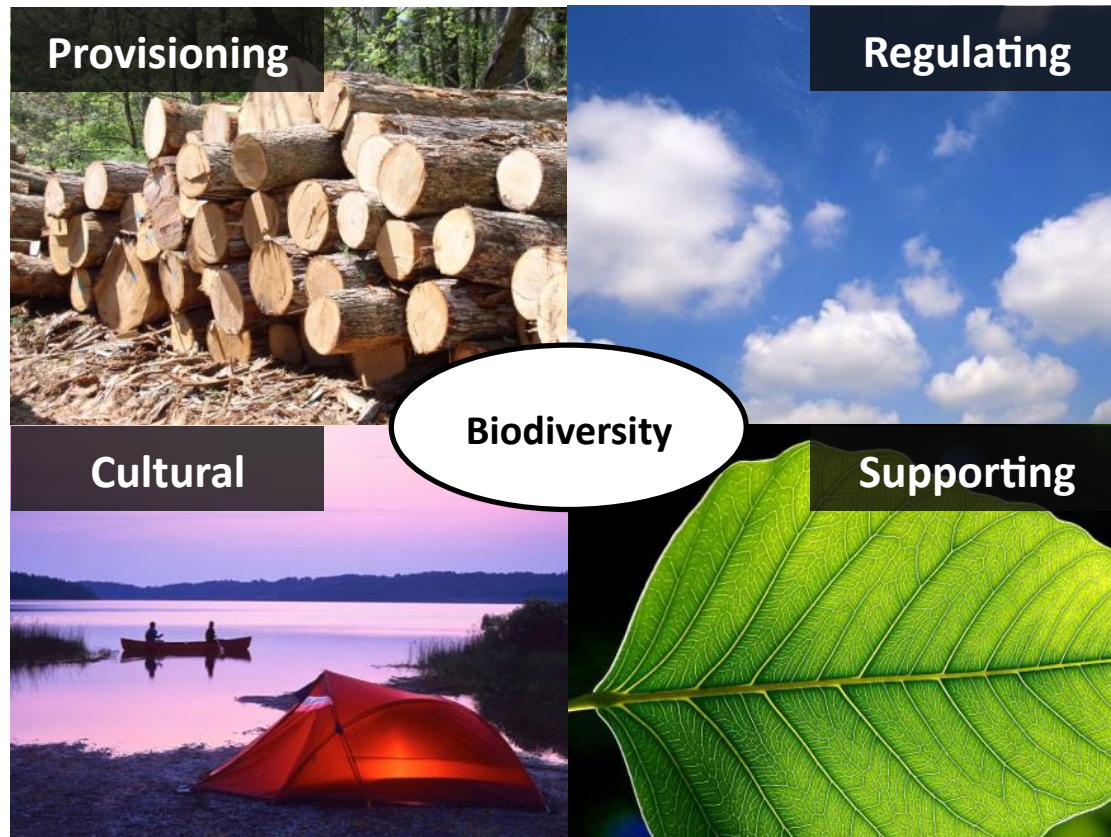


# Ecosystem Services

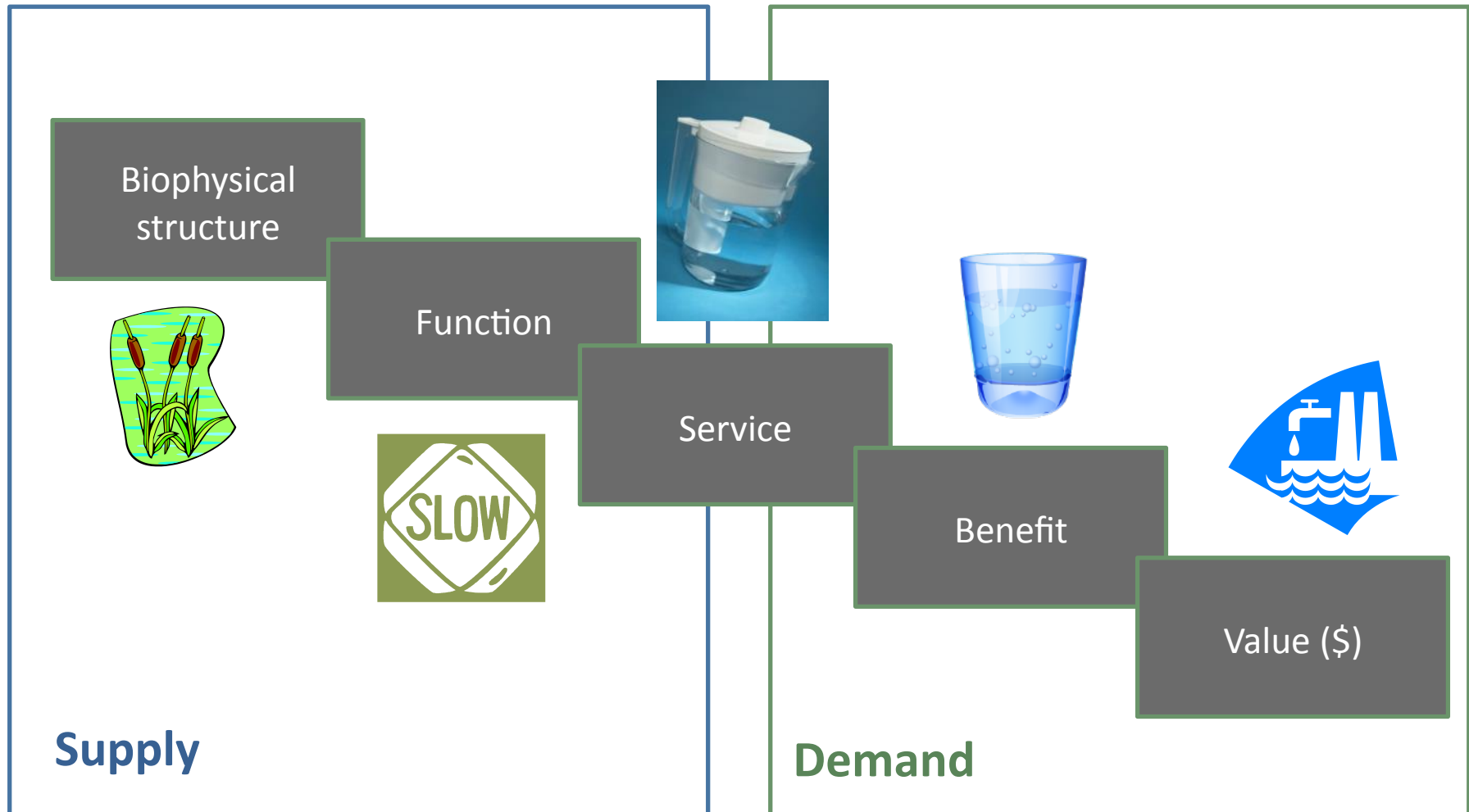




# Ecosystem Service Categories



# ES Supply & Demand



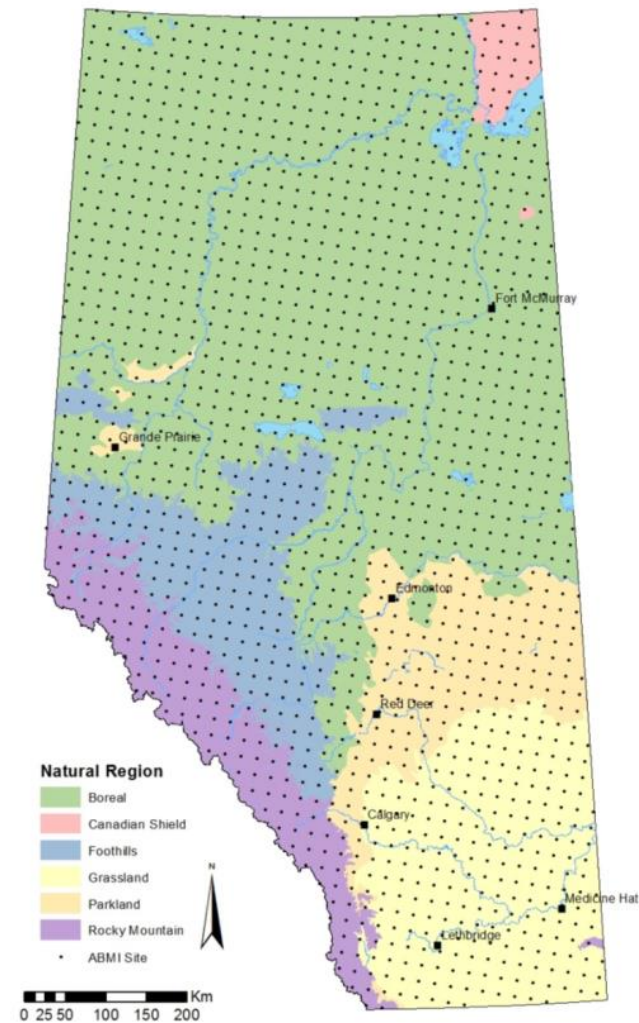


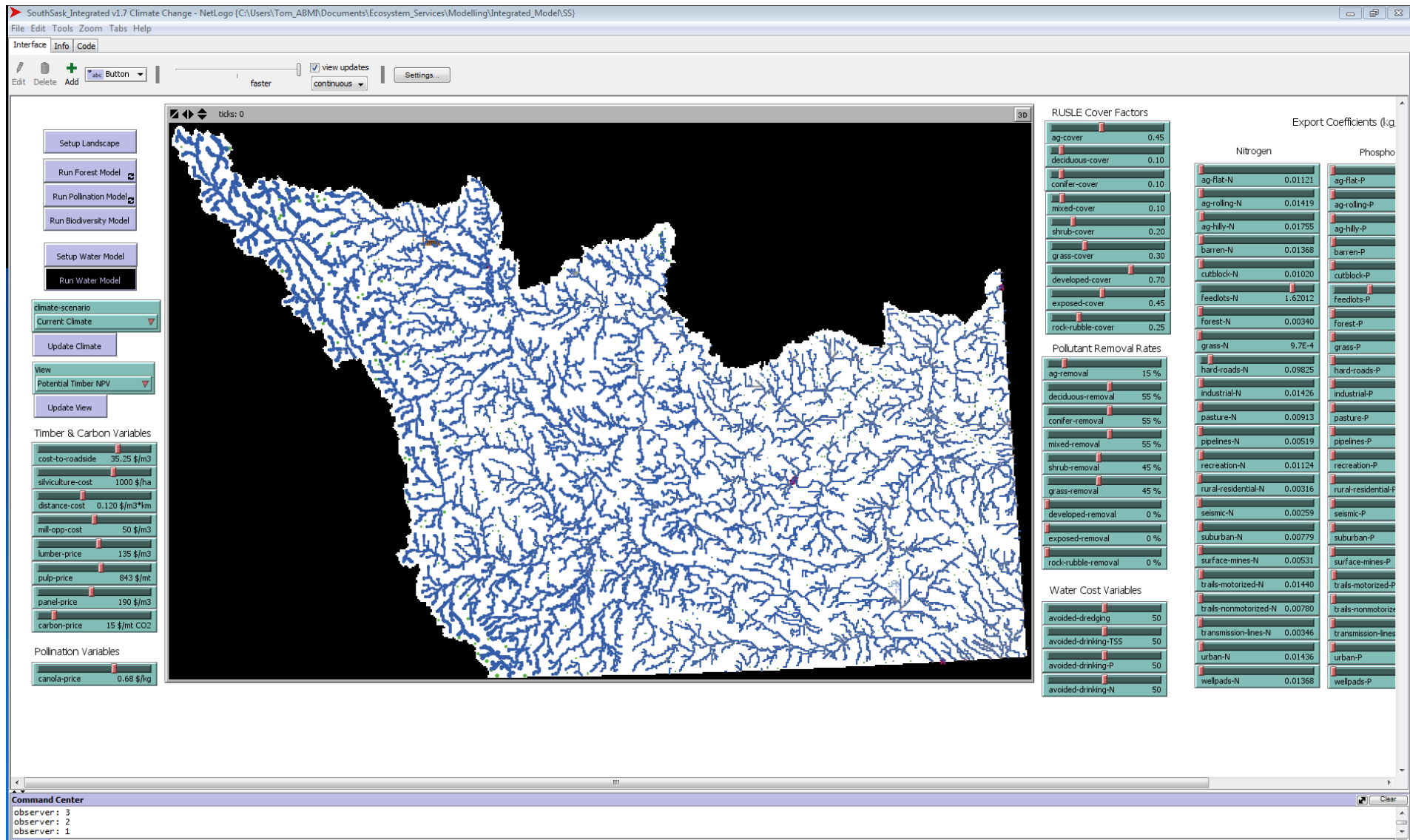
# Mapping Alberta's Ecosystem Services

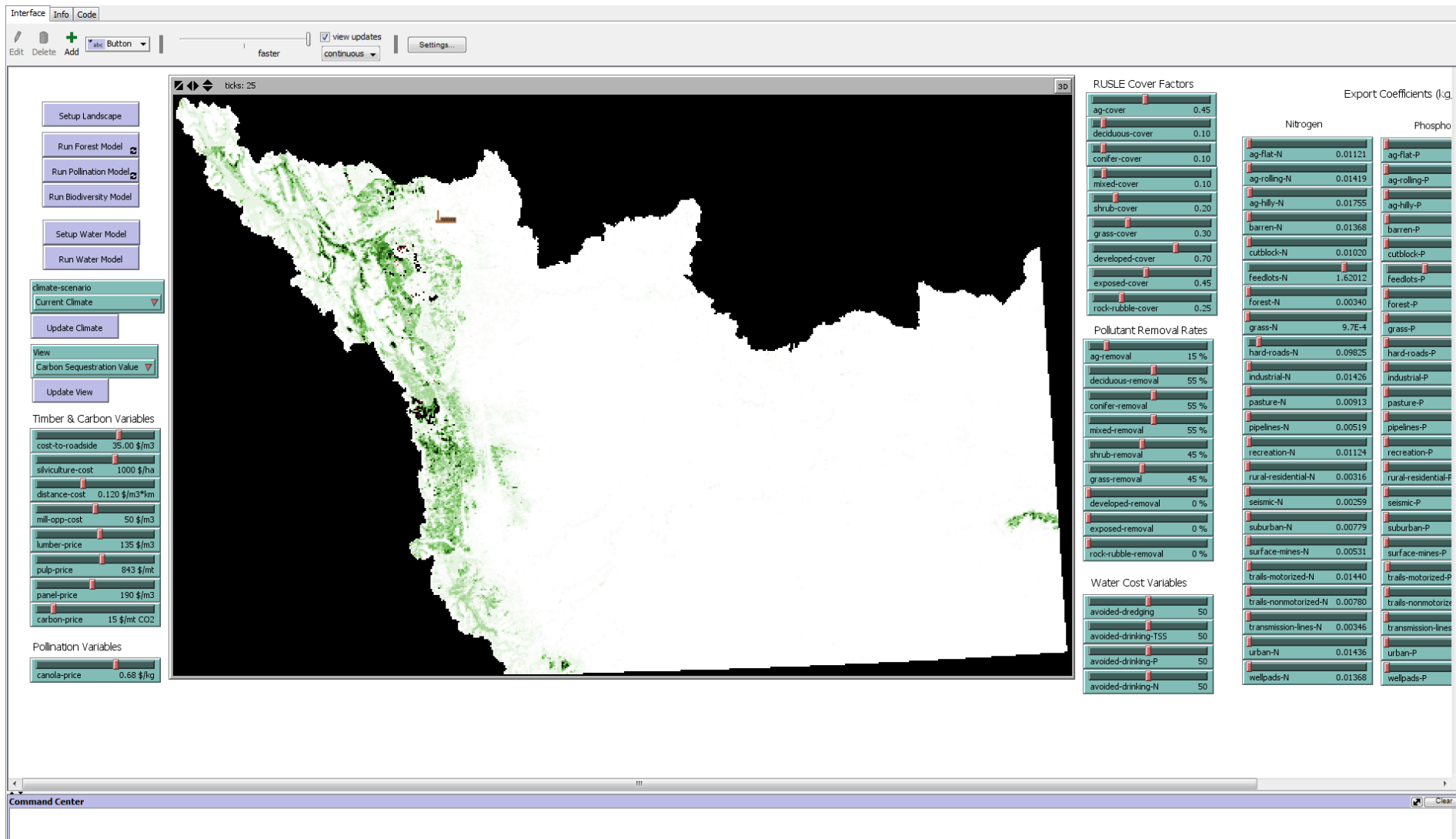


## *Data Sources*

- Landcover
- Elevation
- River network
- Human Footprint
- Crop maps
- Biodiversity

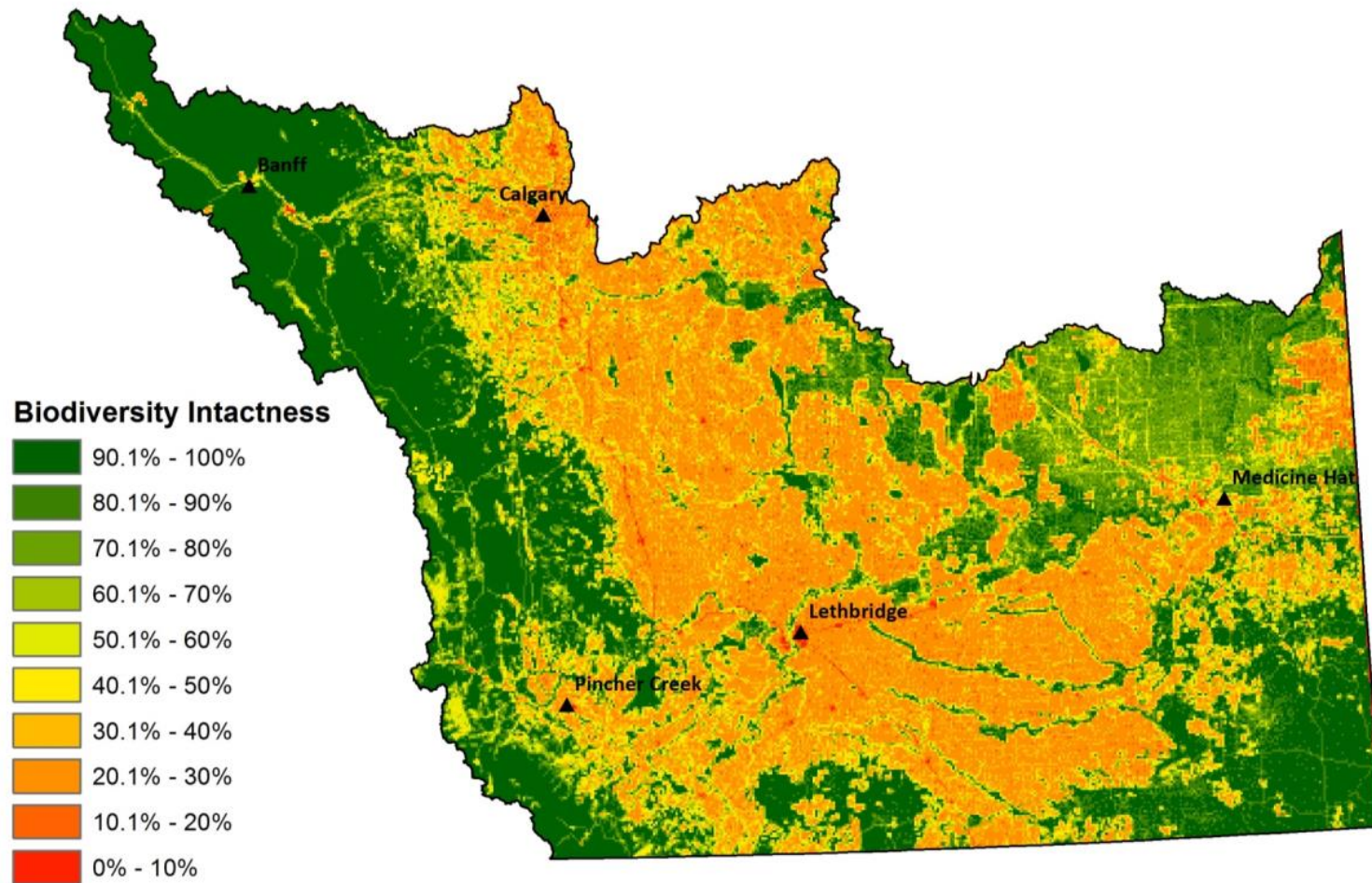




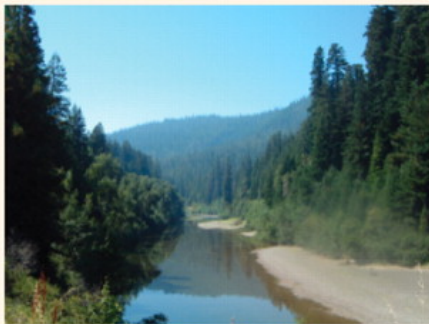
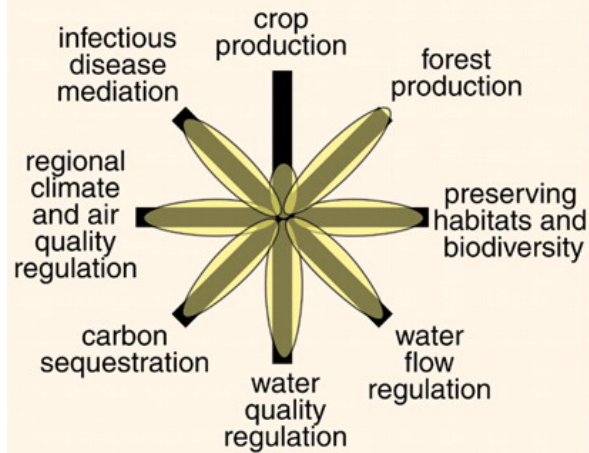




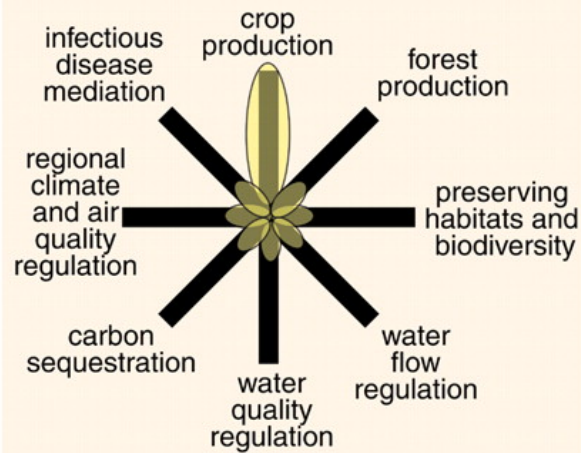
# Ecosystem Service Maps



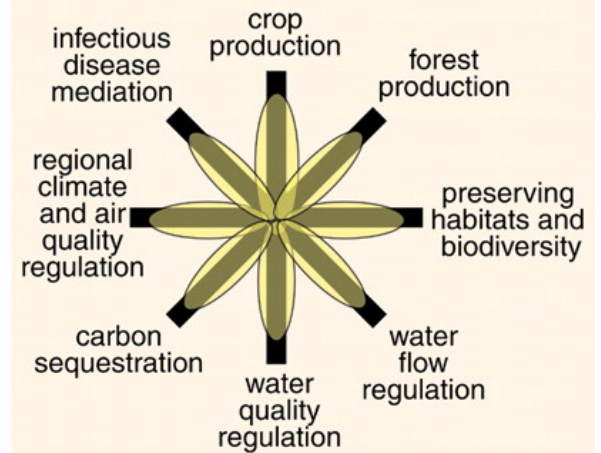
# Ecosystem Service Trade-offs



natural ecosystem



intensive cropland

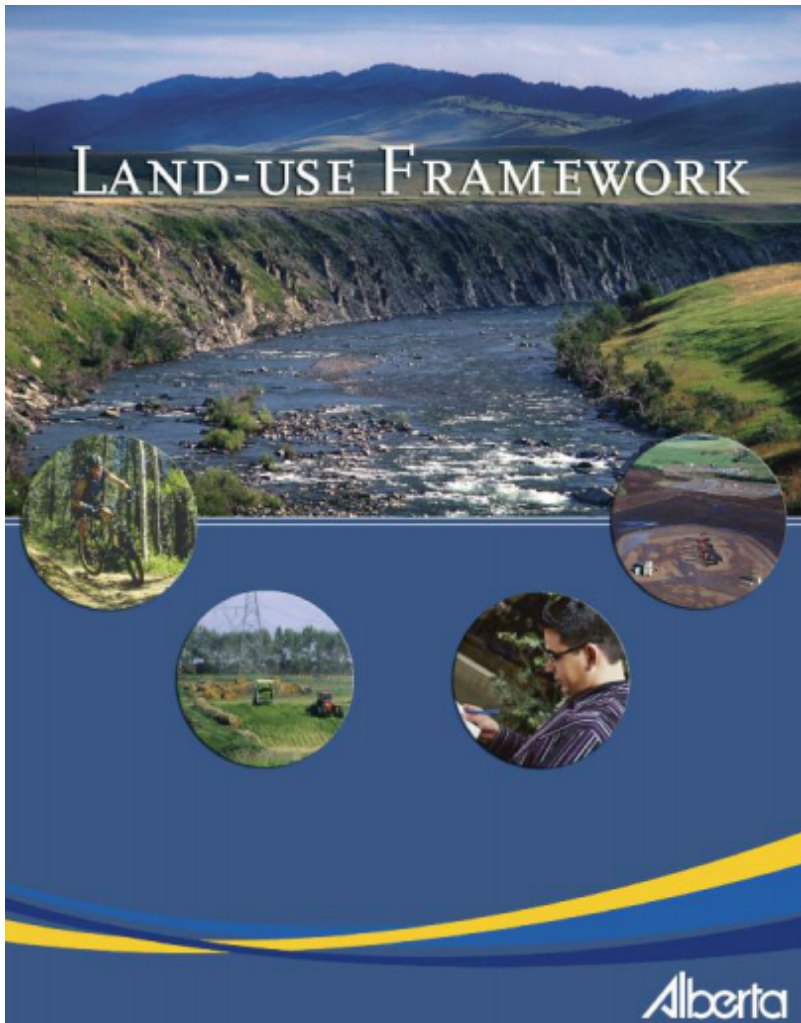


cropland with restored ecosystem services

- Public vs. private benefits of ES?
- Public vs. private costs of supplying ES?



# Regional Planning Objectives



*"Alberta's Land-use Framework (LUF) sets out a new approach to managing our province's land and natural resources to achieve Alberta's long-term economic, environmental and social goals."*



# Regional Planning Objectives



*From the South Saskatchewan Regional Plan:*

## **Outcome 1: The region's eco**

## **Outcome 2: Biodiversity and shared stewardship.**

### **Objectives:**

- Terrestrial and aquatic bio
- Species at risk are recove
- Areas are added to the reg
- Biodiversity and healthy fu
- range of benefits to comm
- Long-term forest ecosyste

## **Stewardship and Conservation on Private Lands**

### **Objectives:**

- The contributions of landowners for their stewardship and conservation efforts on private lands are recognized.
- The contribution and value of private land in supplying ecosystem services is recognized, and opportunities to support ecosystem services on private land are identified.
- The value of ecosystem services supplied by economic sectors reliant on pri

## **Outcome 4: Watersheds are managed to support healthy ecosystems and human needs through shared stewardship.**

### **Surface Water Quality**

#### **Objective:**

- Surface water quality in the Bow, Oldman, South Saskatchewan and Milk rivers is managed so current and future water uses are protected.

# Regional Planning Objectives

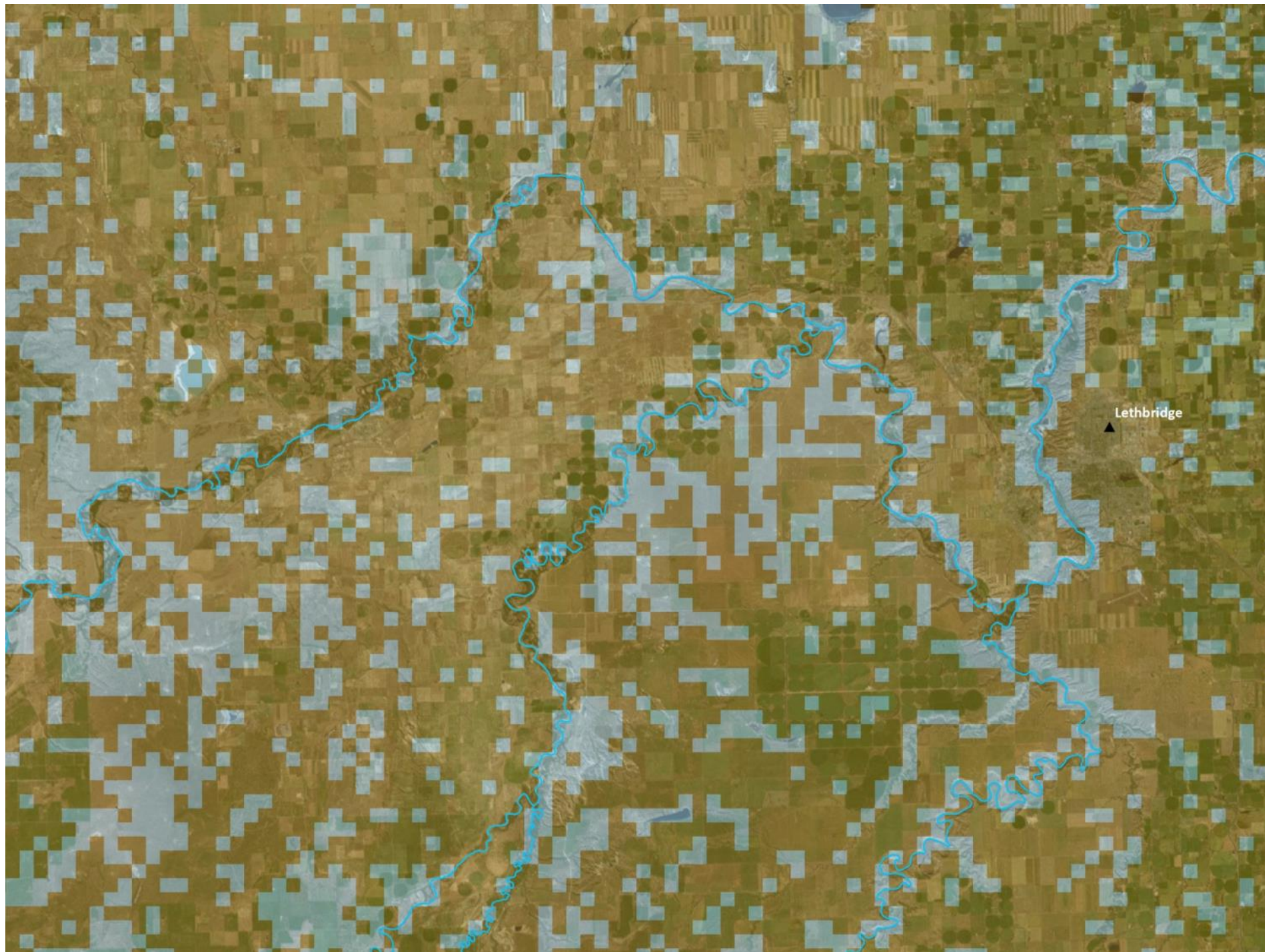
---



## *Applying ES Maps & Information*

1. Understand current ES supply
  - Define measurable objectives
2. Identify priority conservation areas
  - How far do they take us toward regional objectives?
3. Identify priority management areas
  - What actions are needed?
  - How can we incent these actions?







# Meeting Regional ES Goals

---



*Where, but also what?*

- Regional ES maps show priority areas for management
- Fine-scale, detailed models to inform & assess specific actions



# Thank You



[www.ecosystems-services.abmi.ca](http://www.ecosystems-services.abmi.ca)

Dan Farr  
Shannon White  
Dave Huggard  
Eric Butterworth  
Delinda Ryerson  
Carrie Selin  
Jeff Wilson  
Mike Kennedy  
Scott Heckbert

Craig Aumann  
Marius Cutlac  
William Donahue  
Yongbo Liu  
Daiyuan Pan  
Wanhong Yang  
Andrew  
Vandenbroeck  
Guy Greenaway  
Kim Good  
Rachelle Haddock

