

State of the Prairie



Human activity in the last, best west

Human Activity in the West

- Transforming landscapes
- Environmental sustainability challenges
- Governance challenges
- Provincial overviews
- Choice and values



Global Challenges

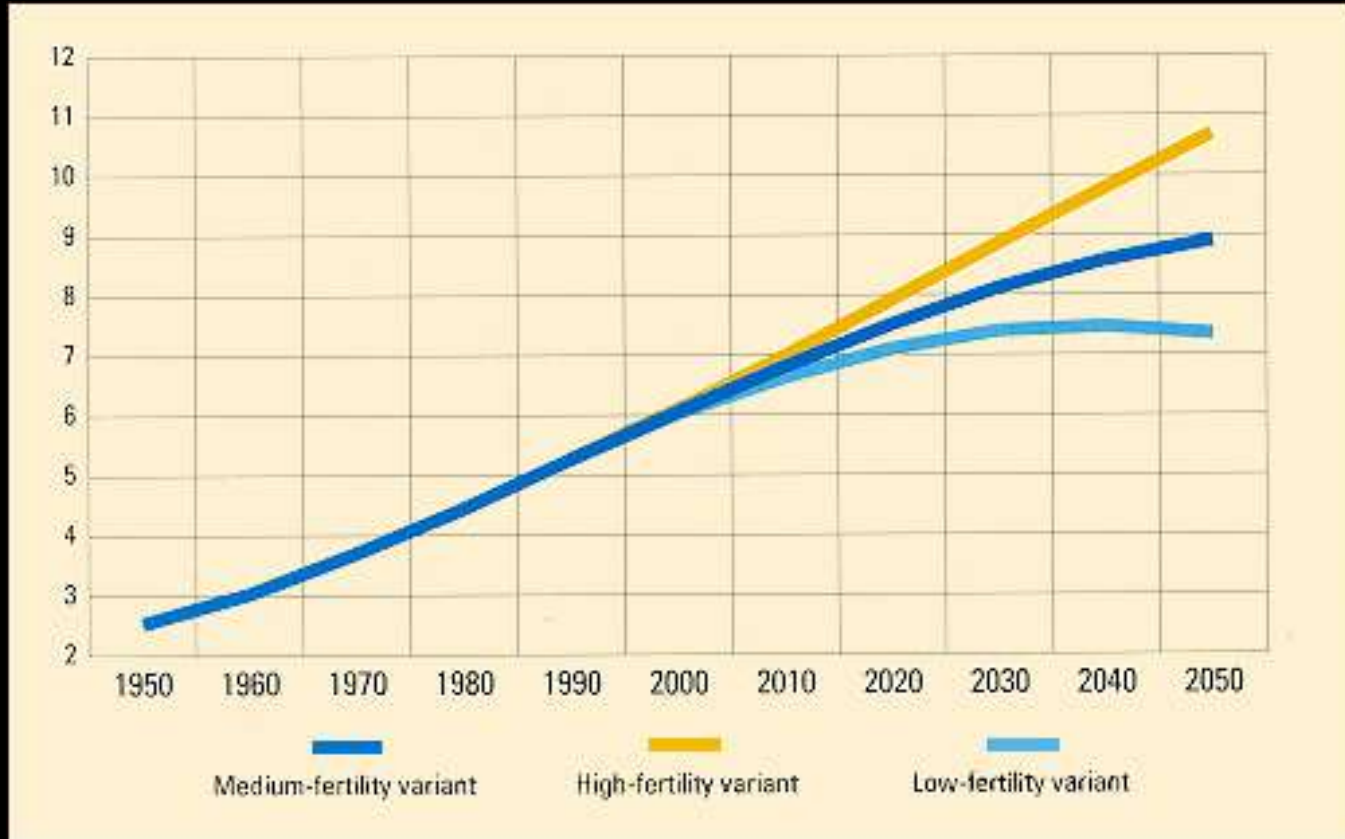
Solar
Energy



Heat
Loss

The Earth is a non-growing, finite body

World Population Growth



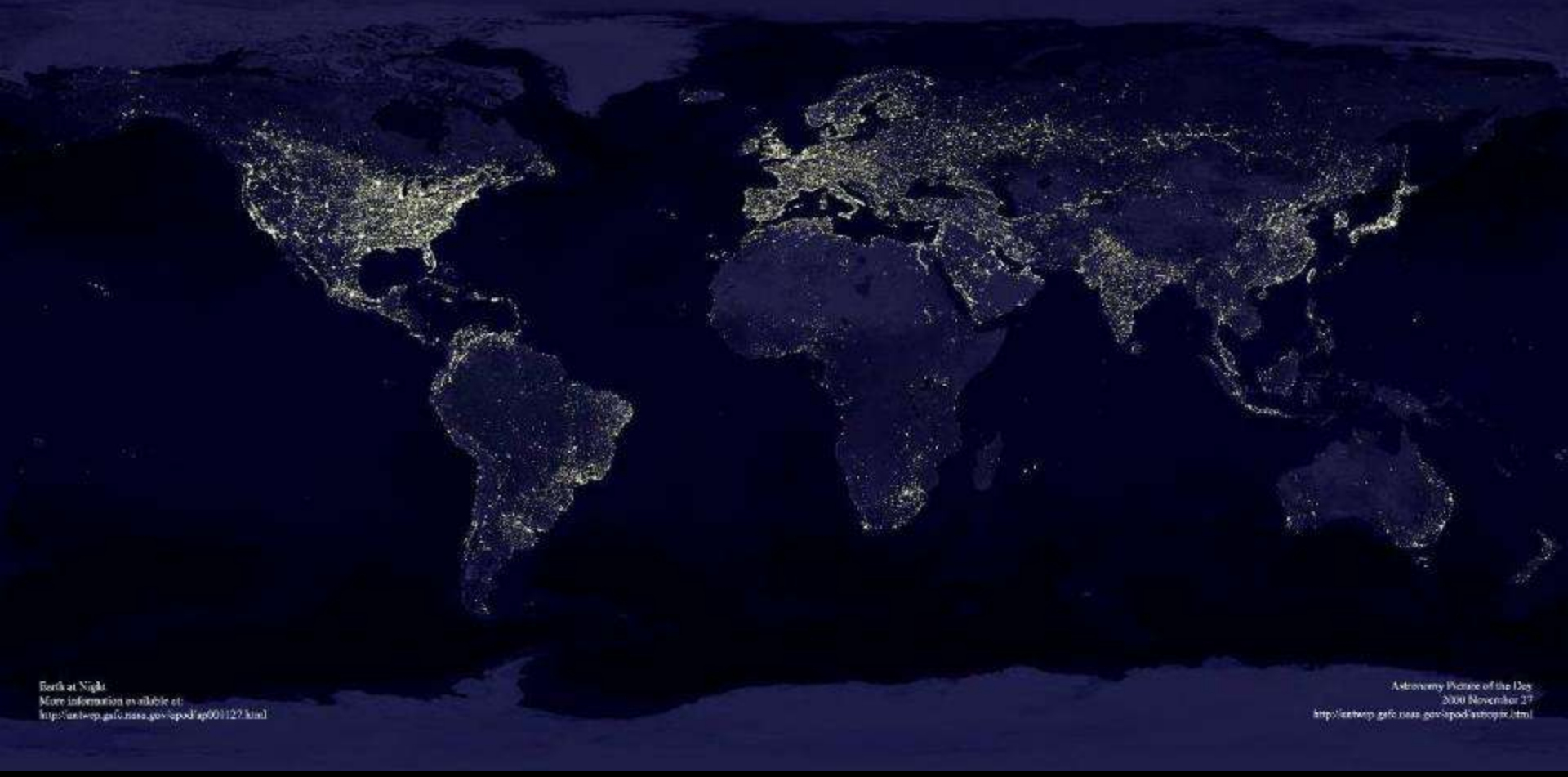
Homo Sapiens Economistus



Environment and Economy

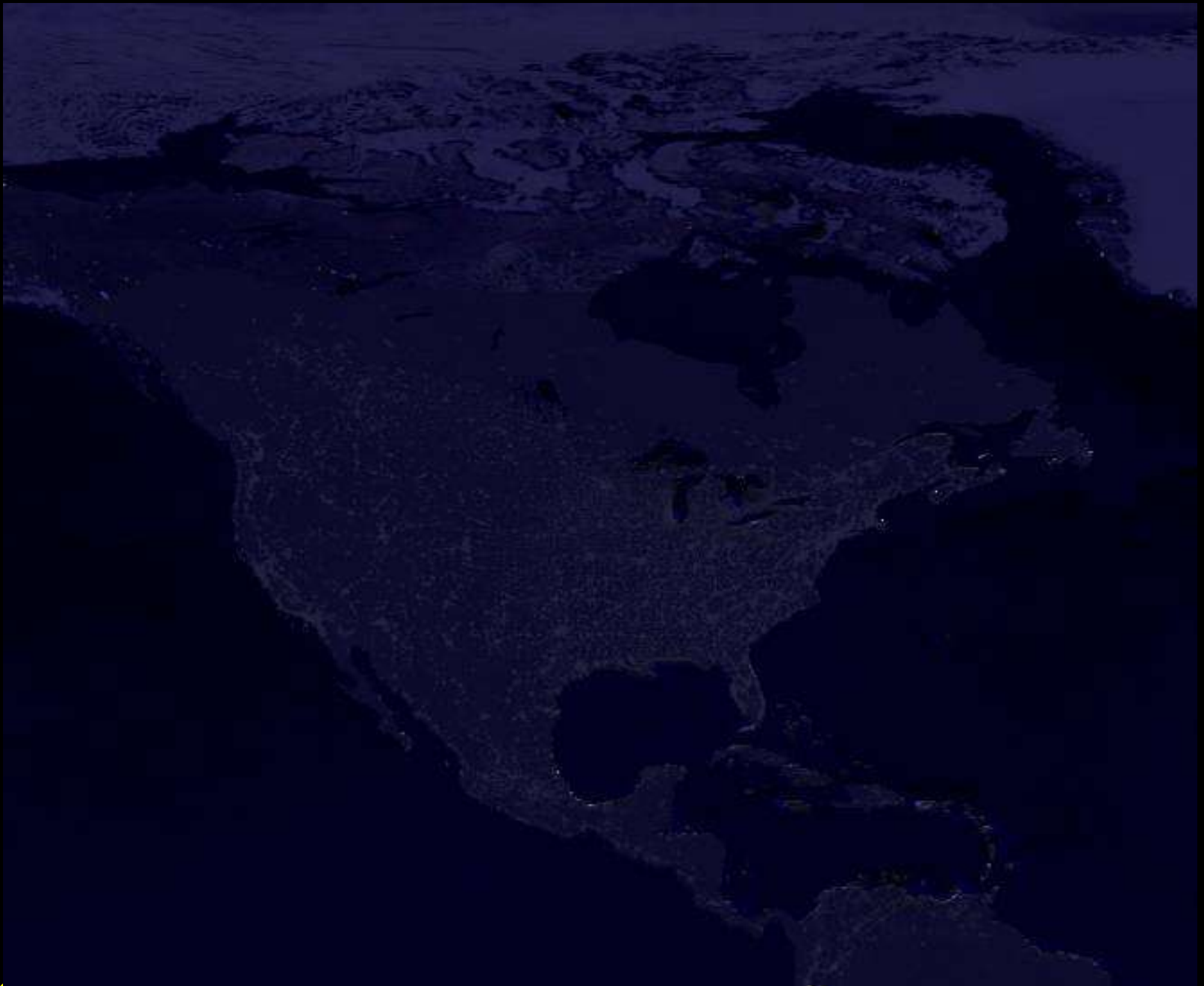


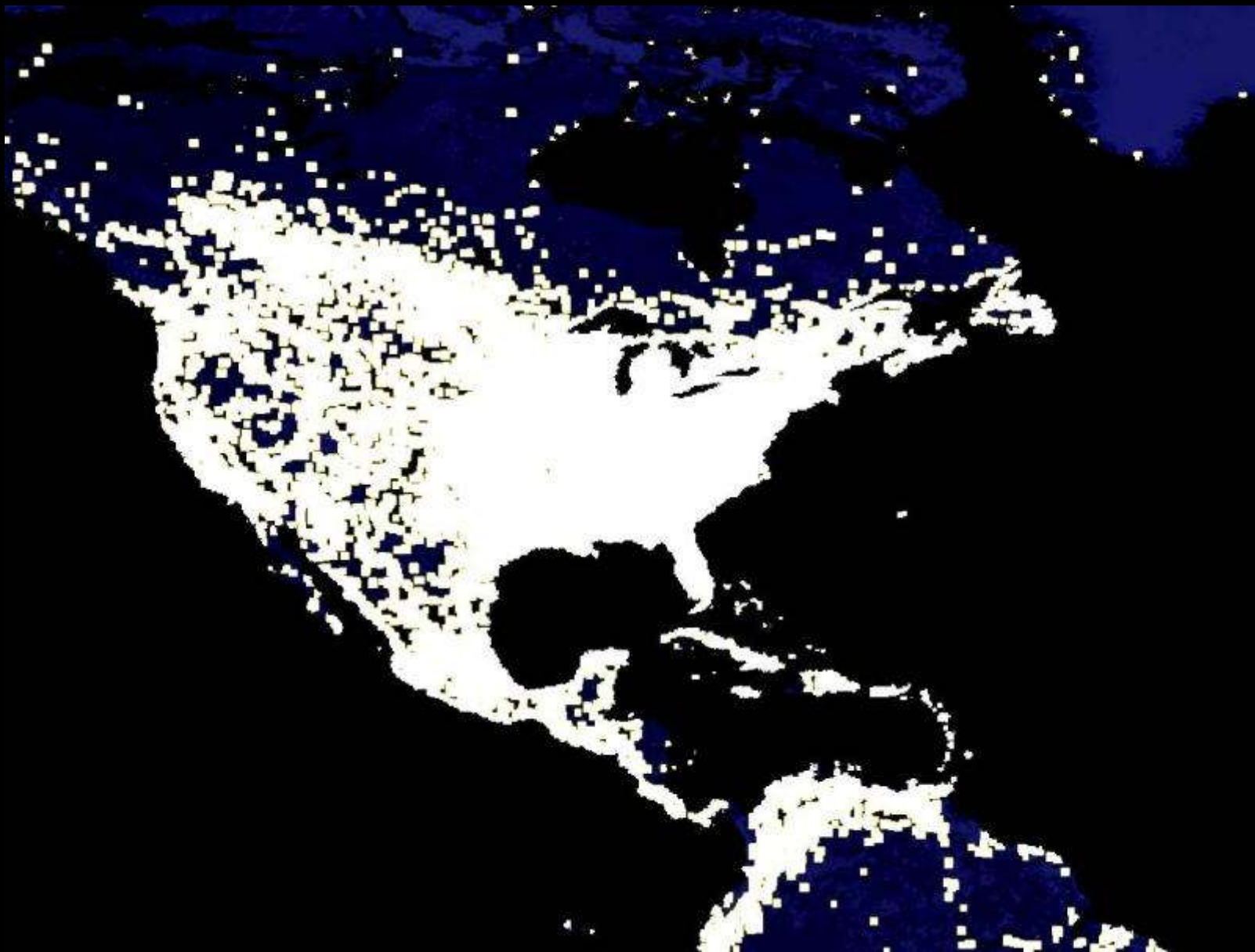
Earthlights



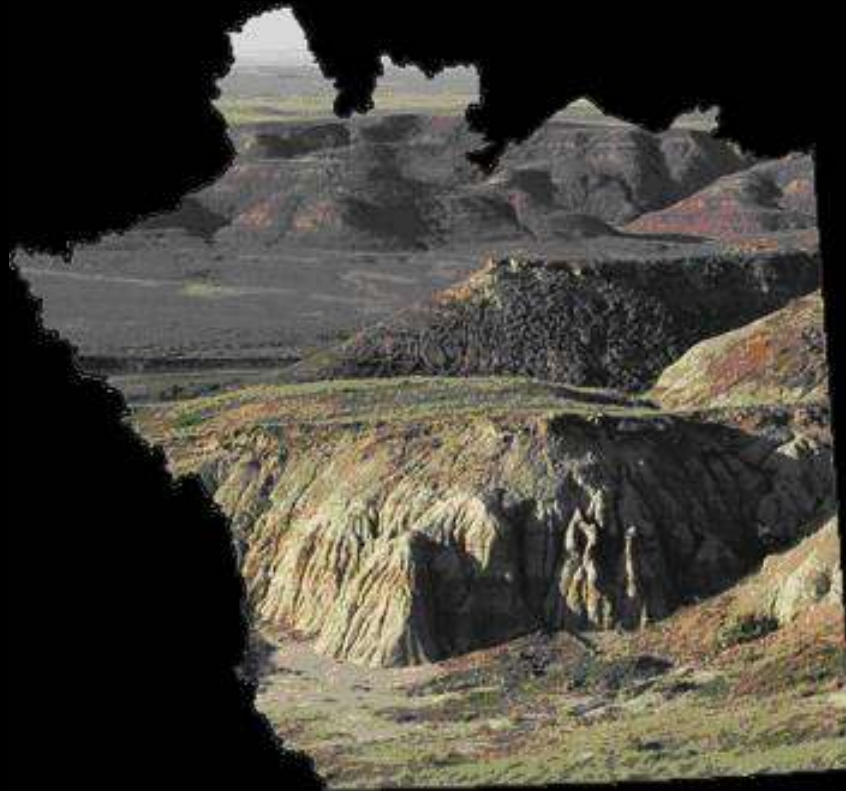
Earth at Night
More information is available at:
<http://earthexp.gfc.nasa.gov/spod/sp001127.html>

Astronomy Picture of the Day
2000 November 17
<http://earthexp.gfc.nasa.gov/spod/astrojr.html>

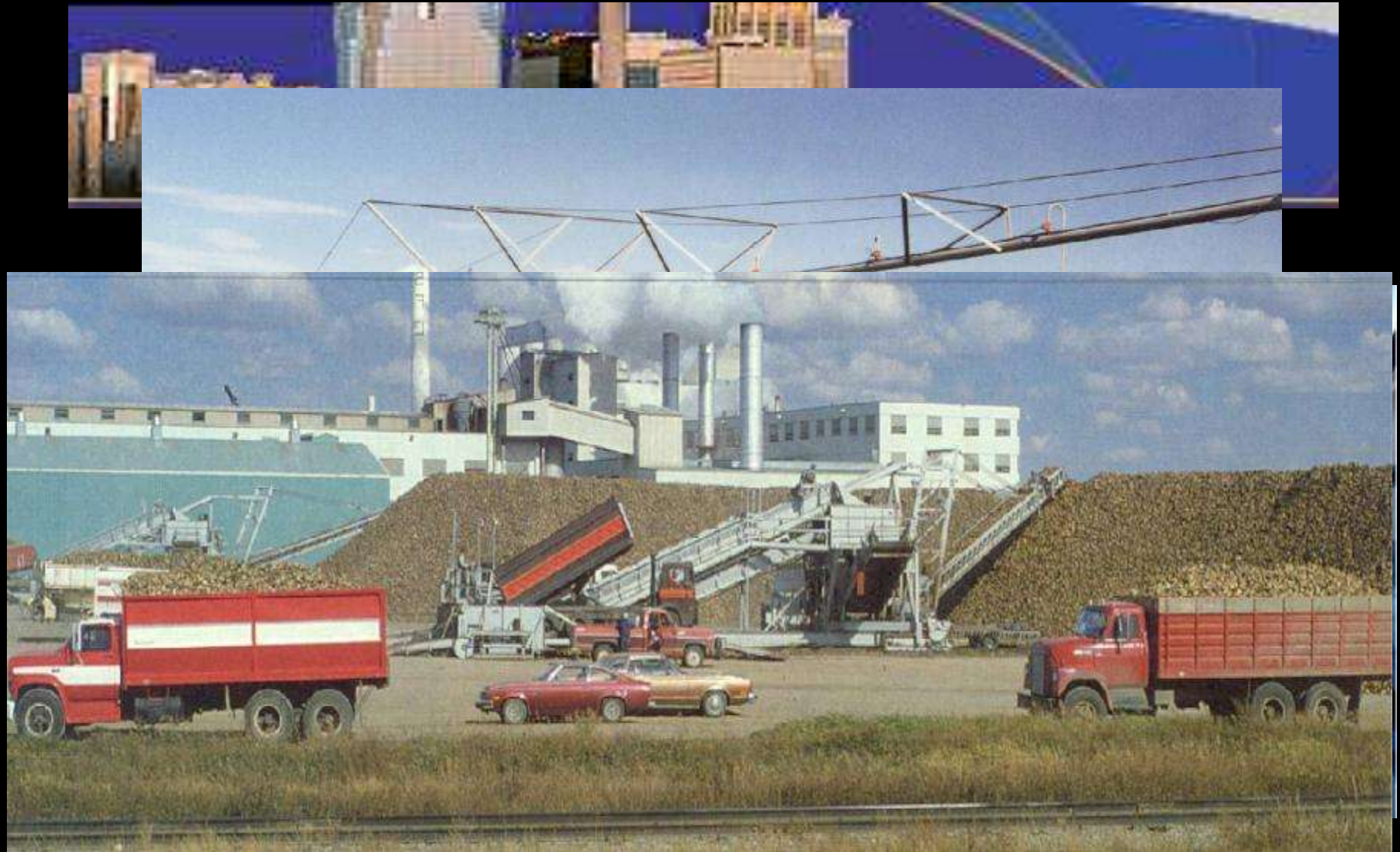




Contemporary Regional Challenges



Alberta Economy

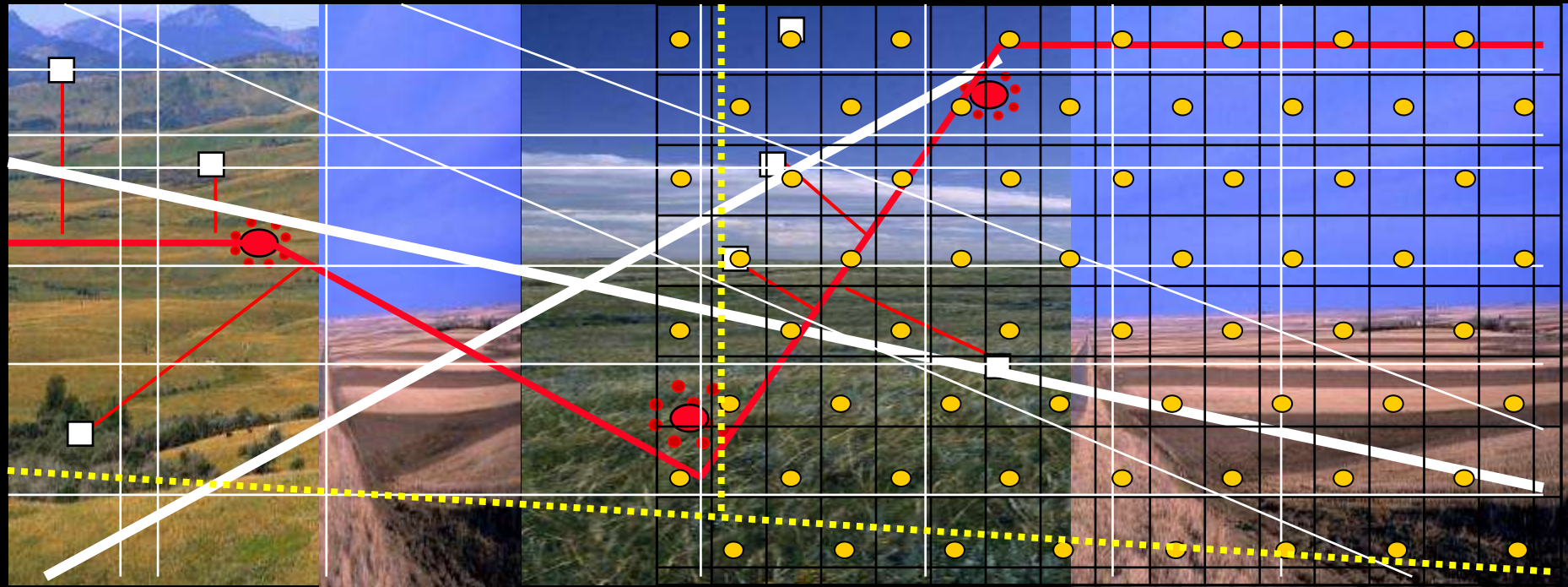


Agricultural Sector

Human Infrastructure

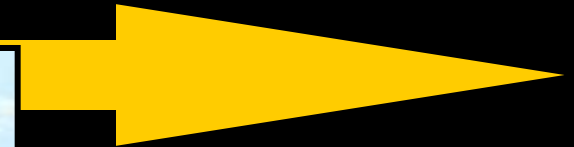
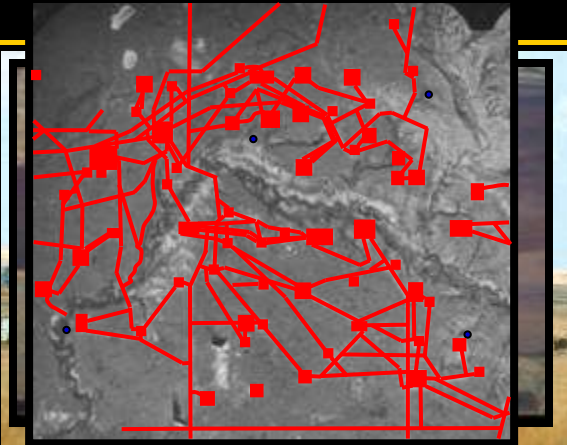
Energy Sector

Rural Residential



High to

Well Sites



Human Population



Human Communities

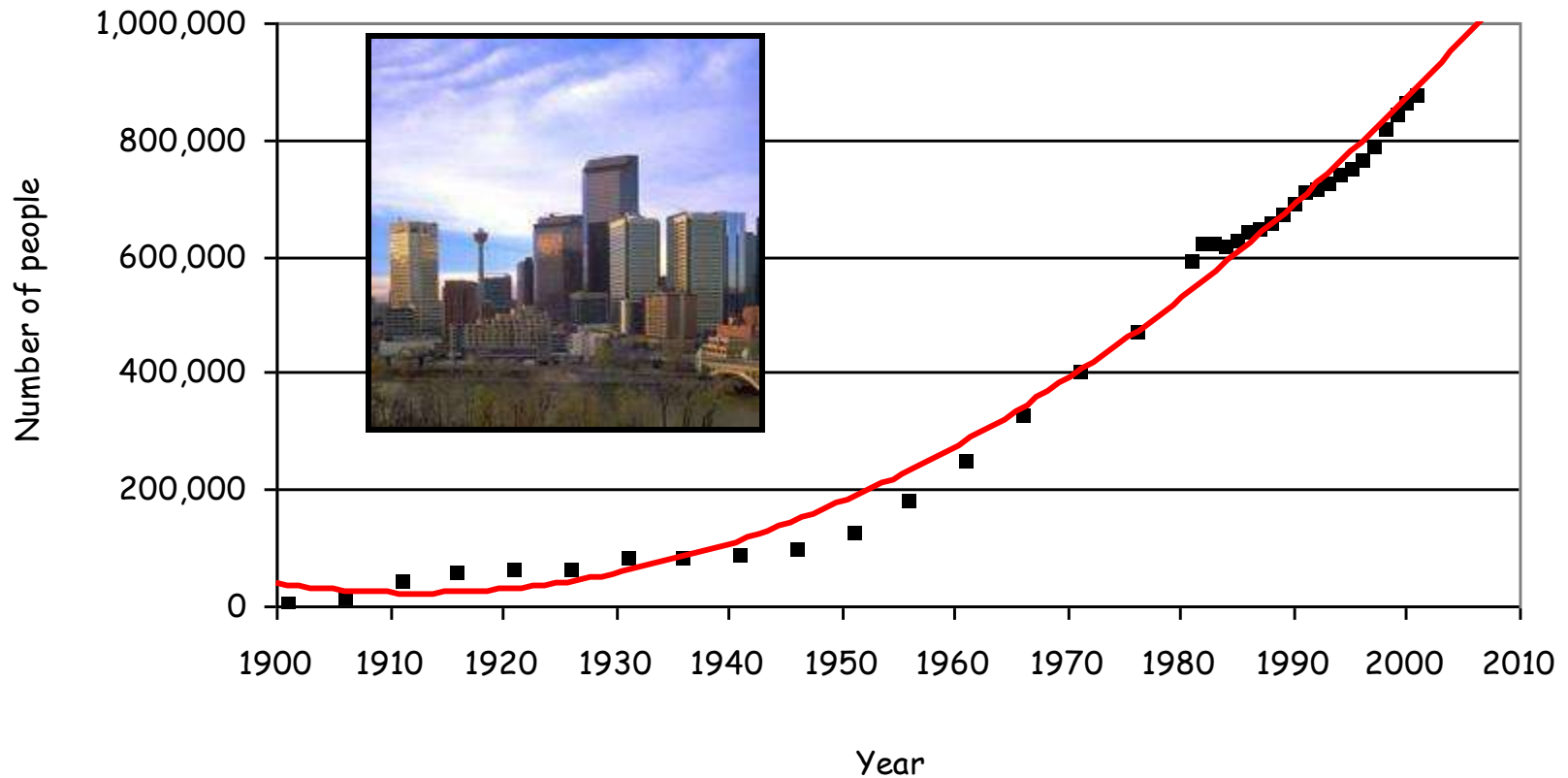


1,500,000 people

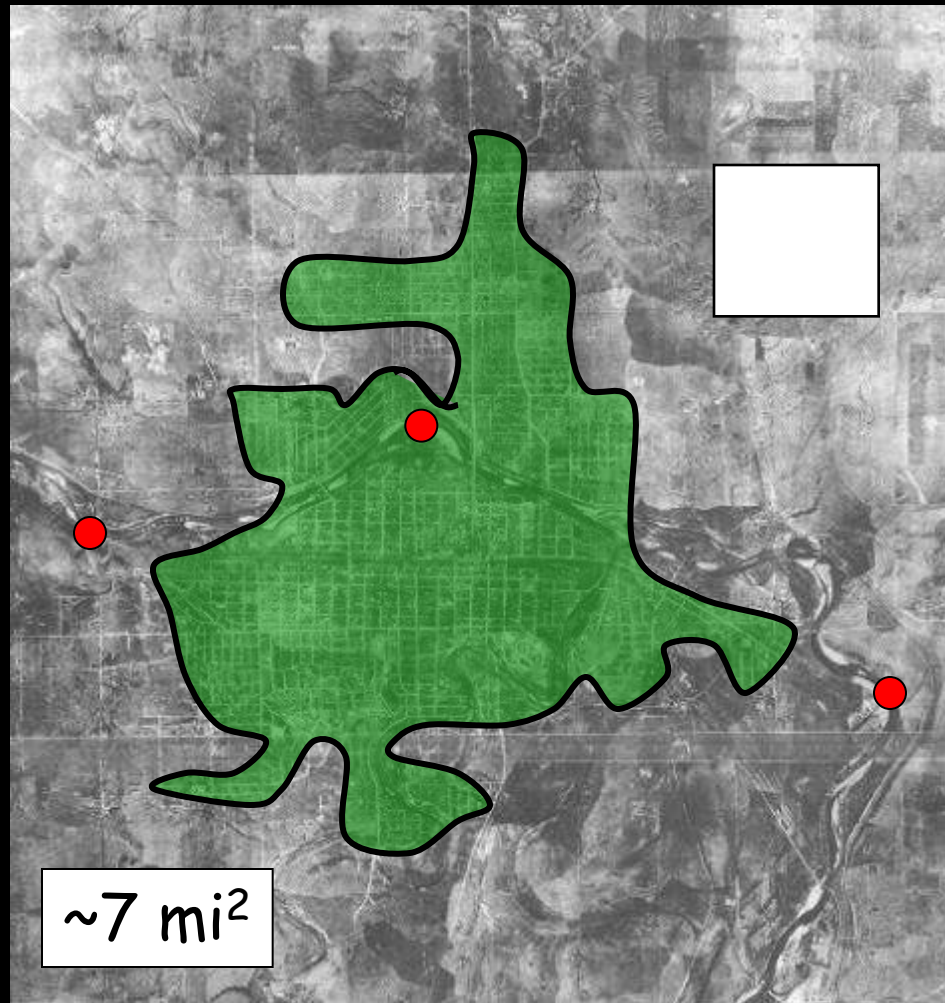


Calgary Population

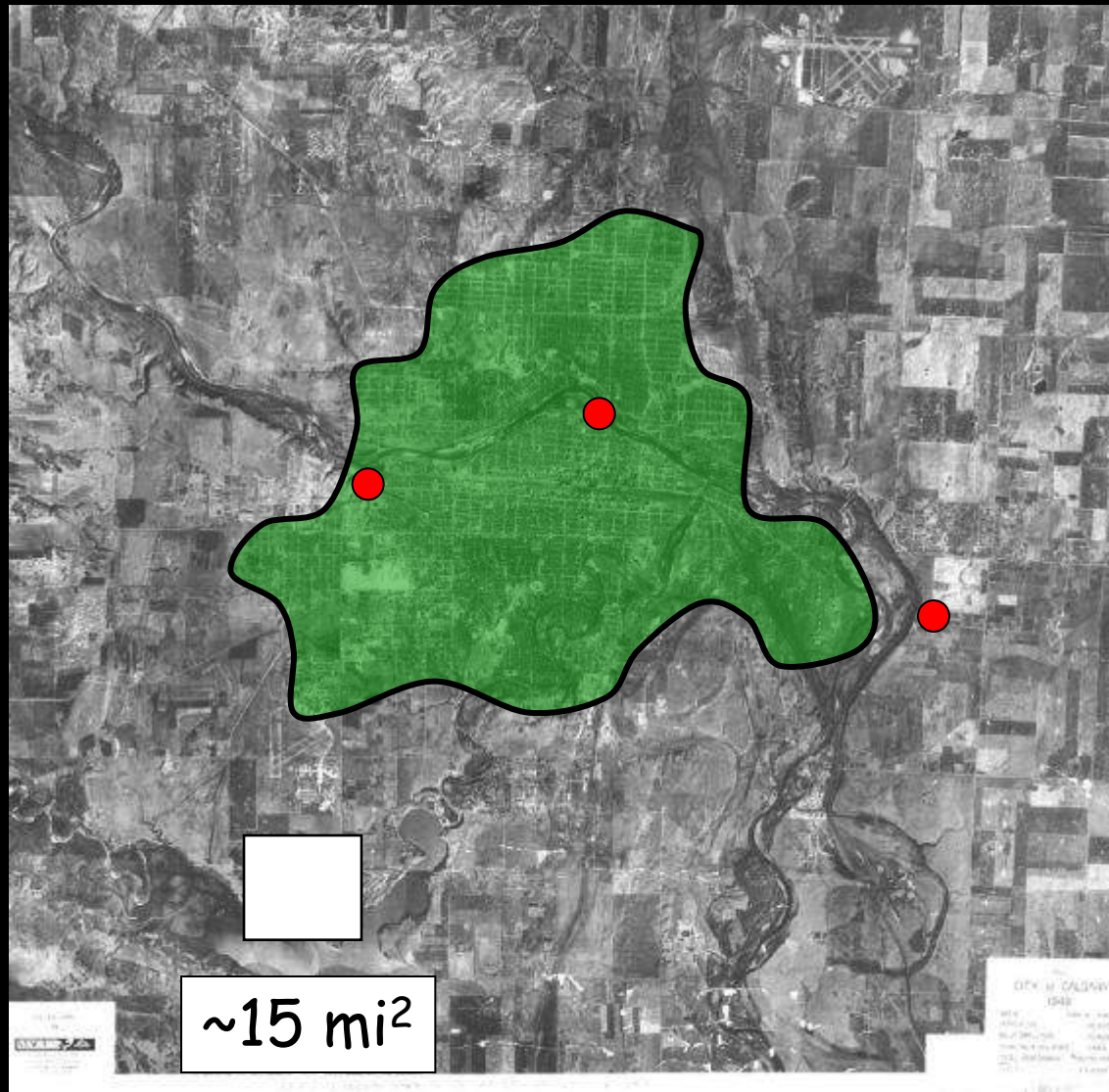
Population of Calgary



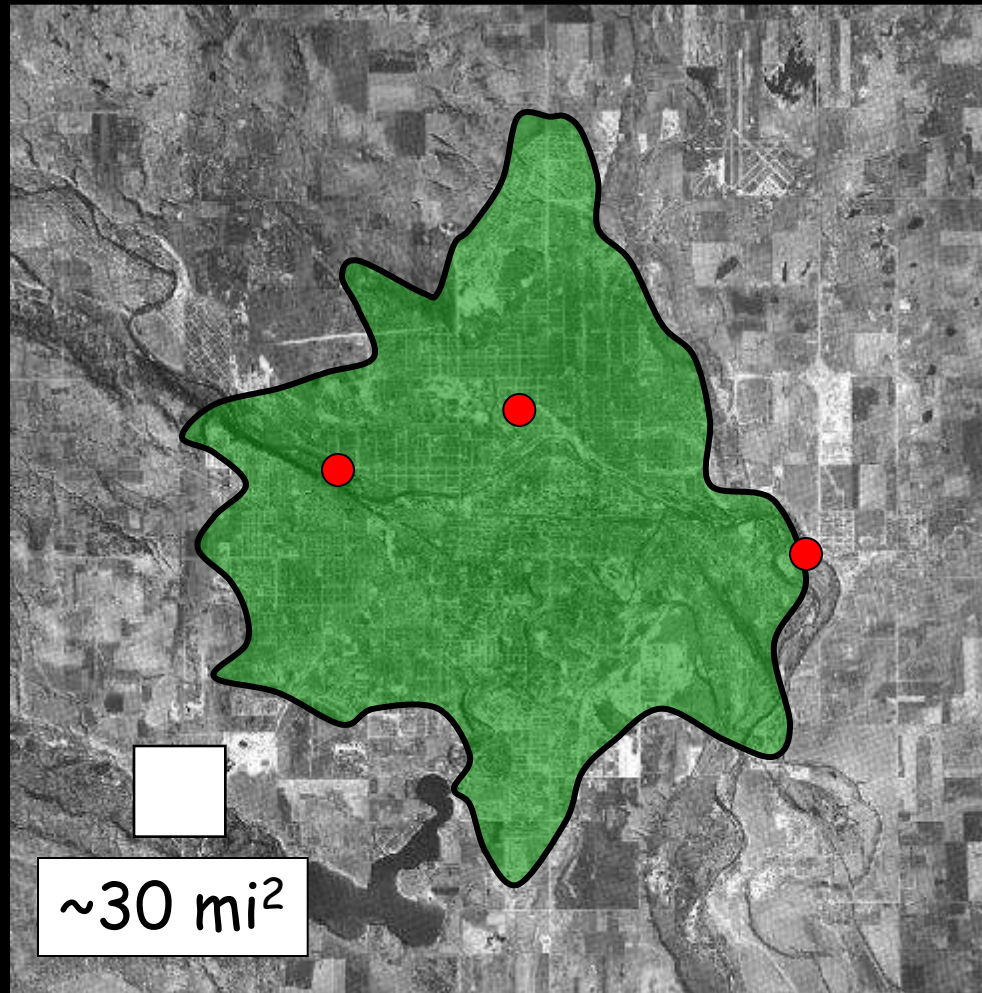
Calgary, 1924



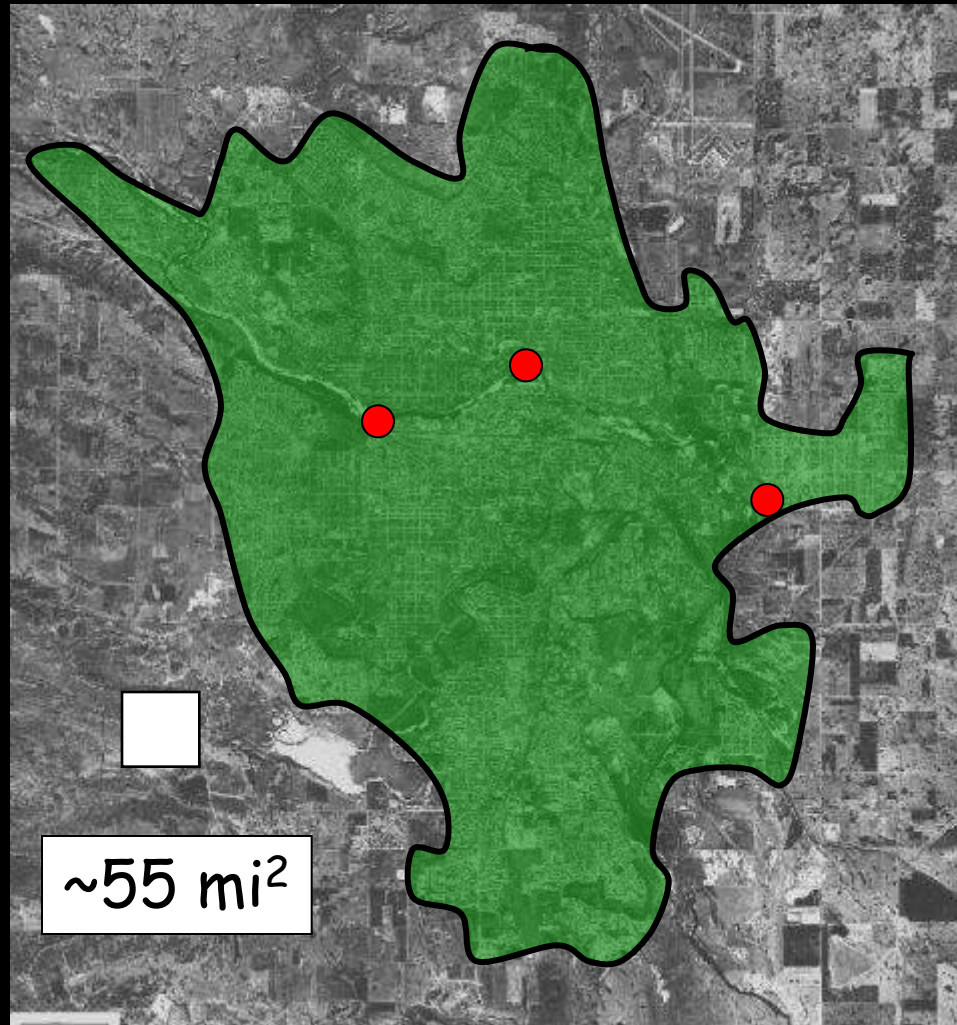
Calgary, 1949



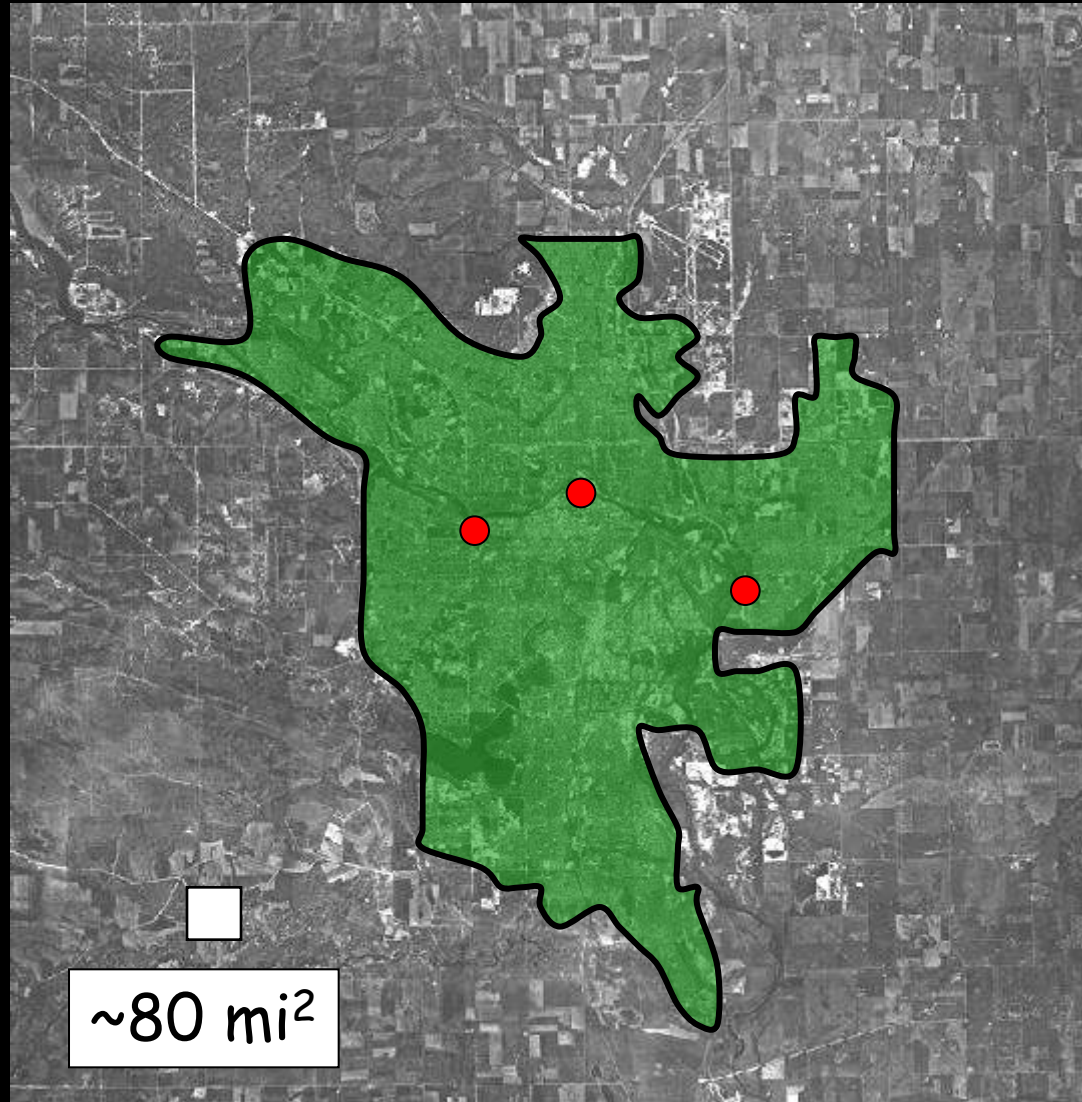
Calgary, 1957



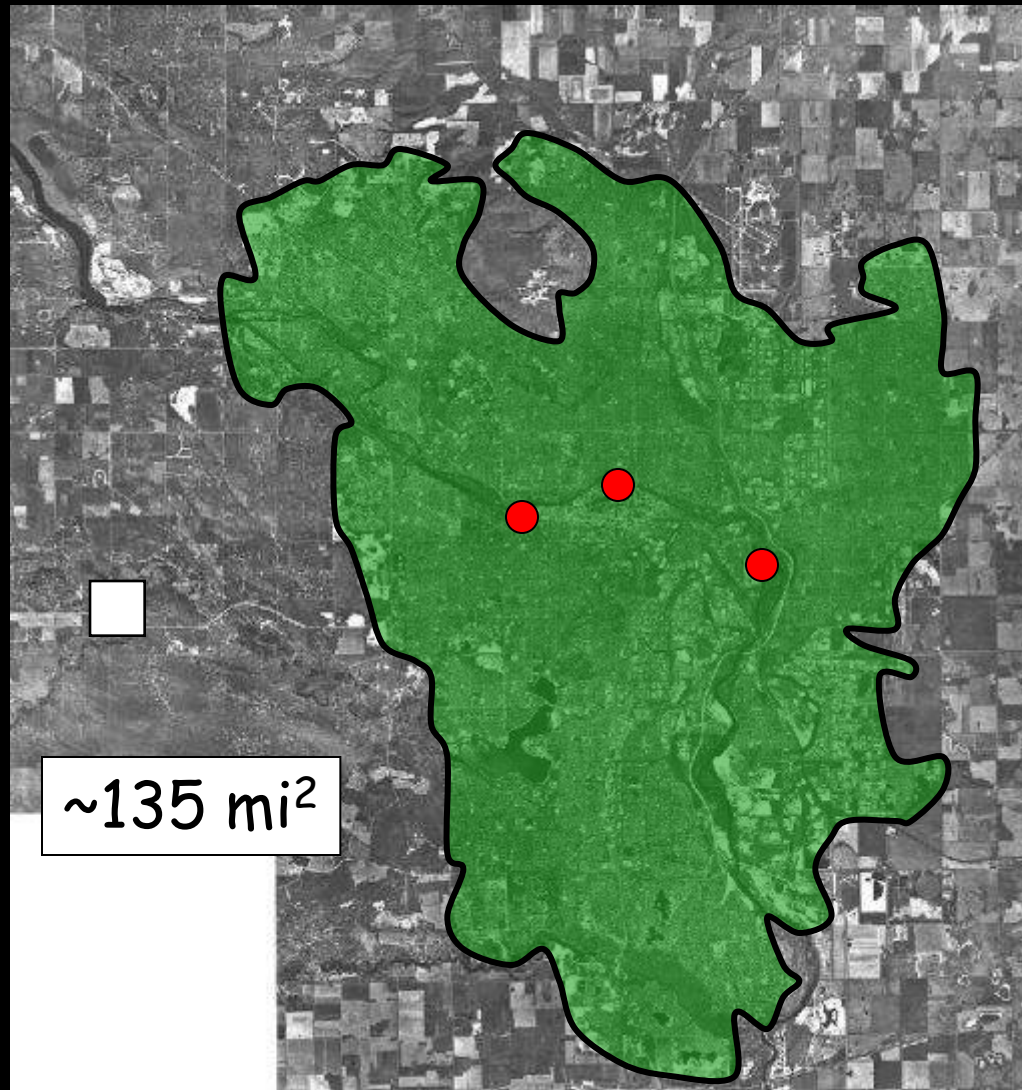
Calgary, 1969



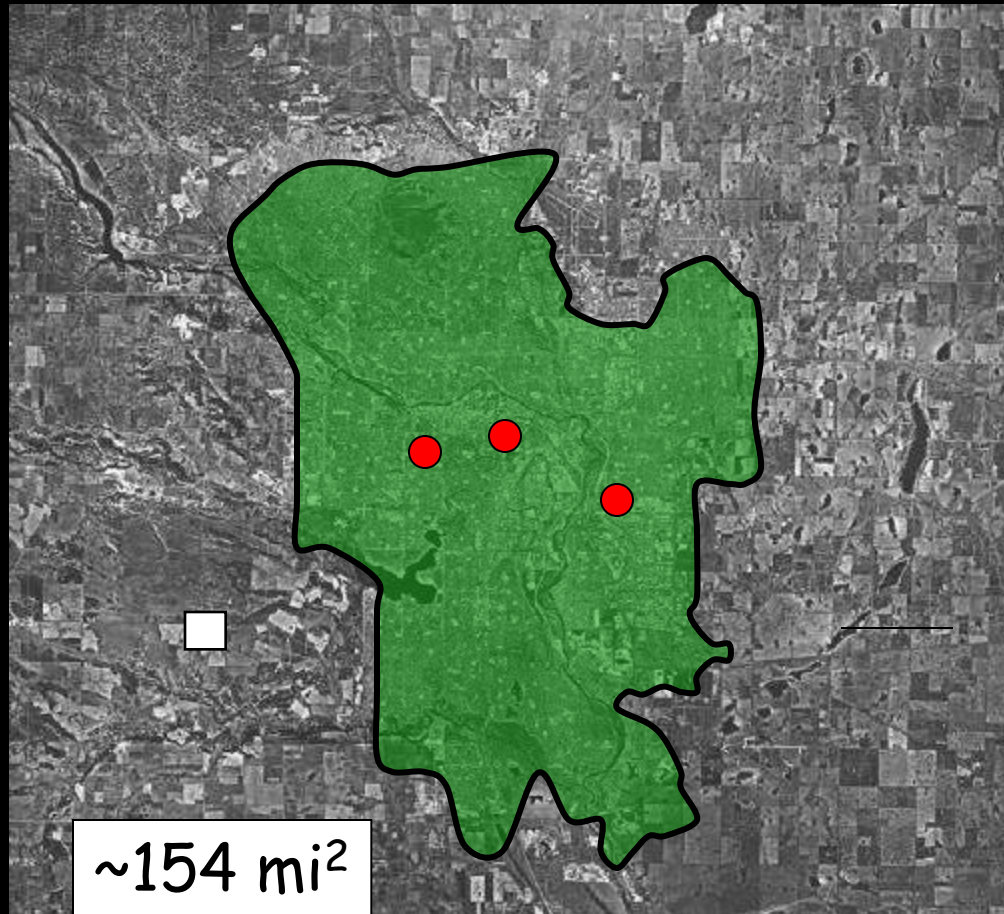
Calgary, 1976



Calgary, 1989



Calgary, 1998



A Time Series of Calgary, Alberta

1924

1949

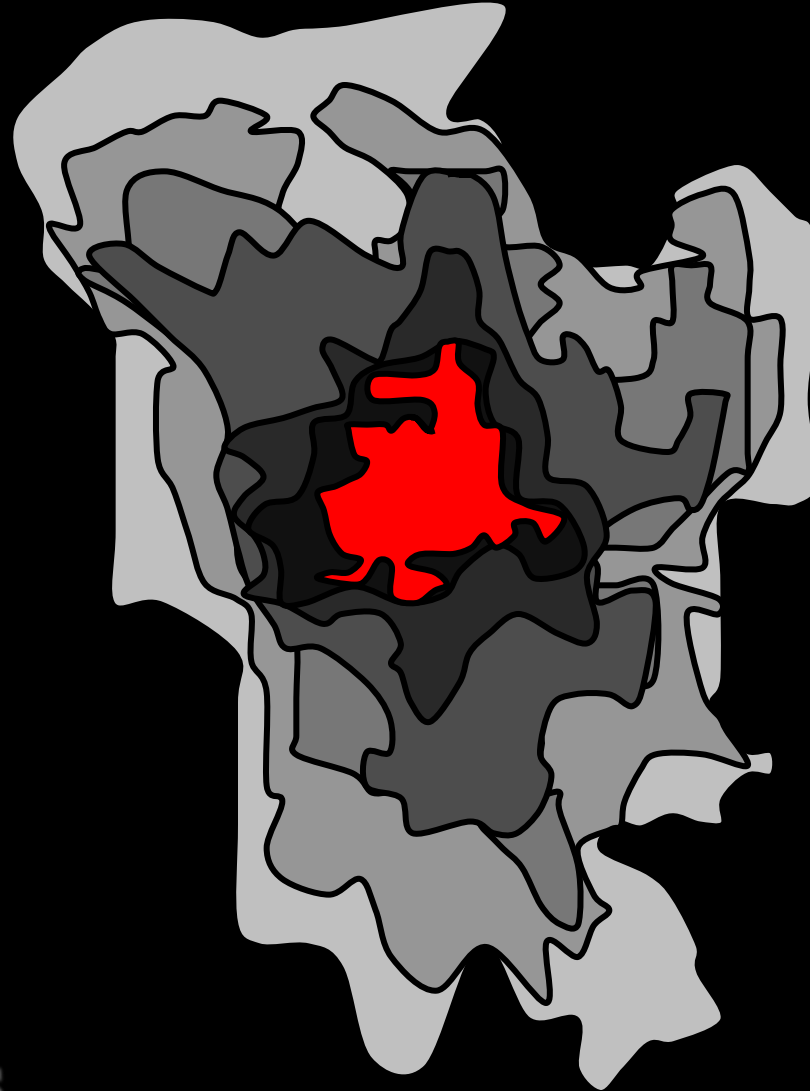
1957

1969

1976

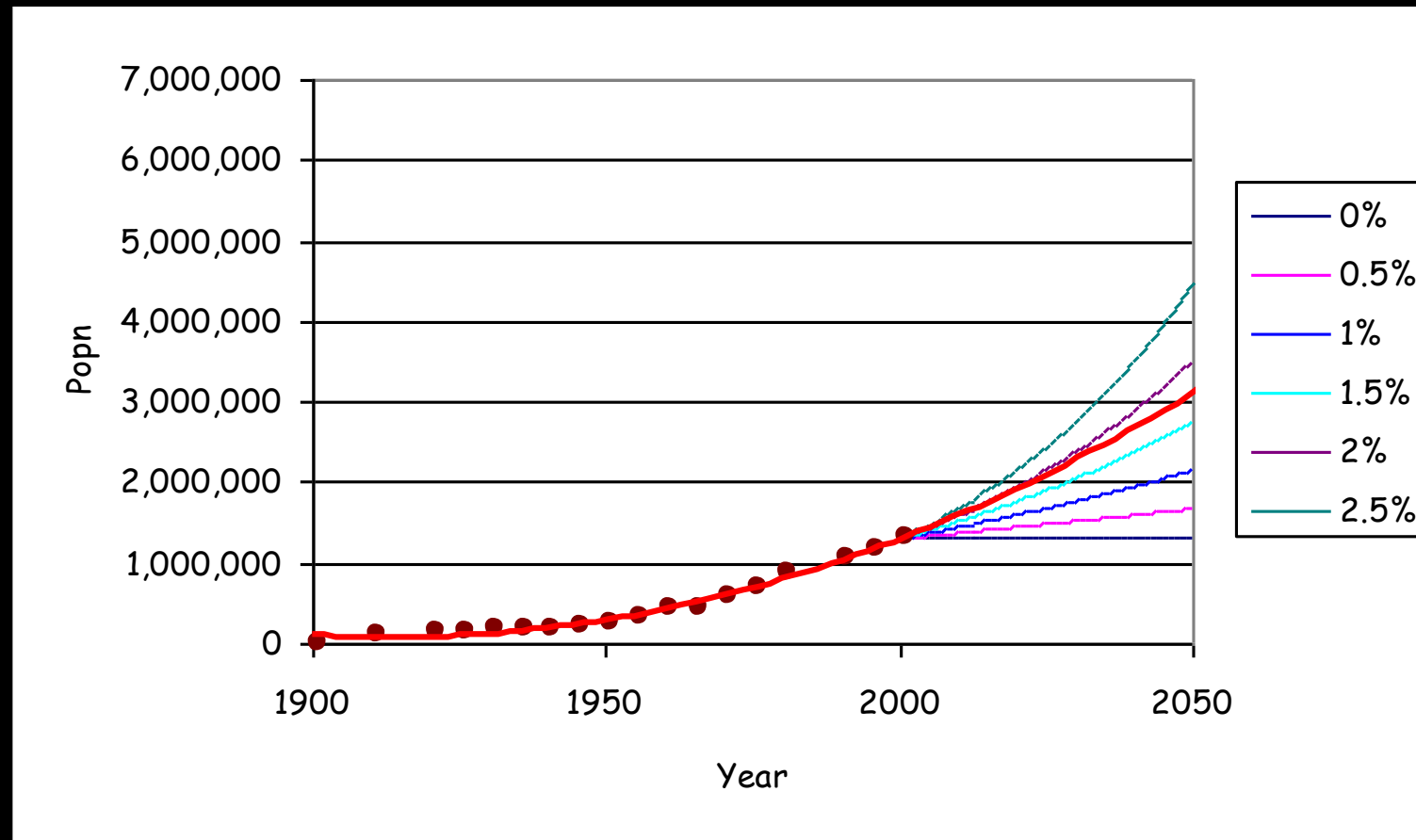
1989

1998

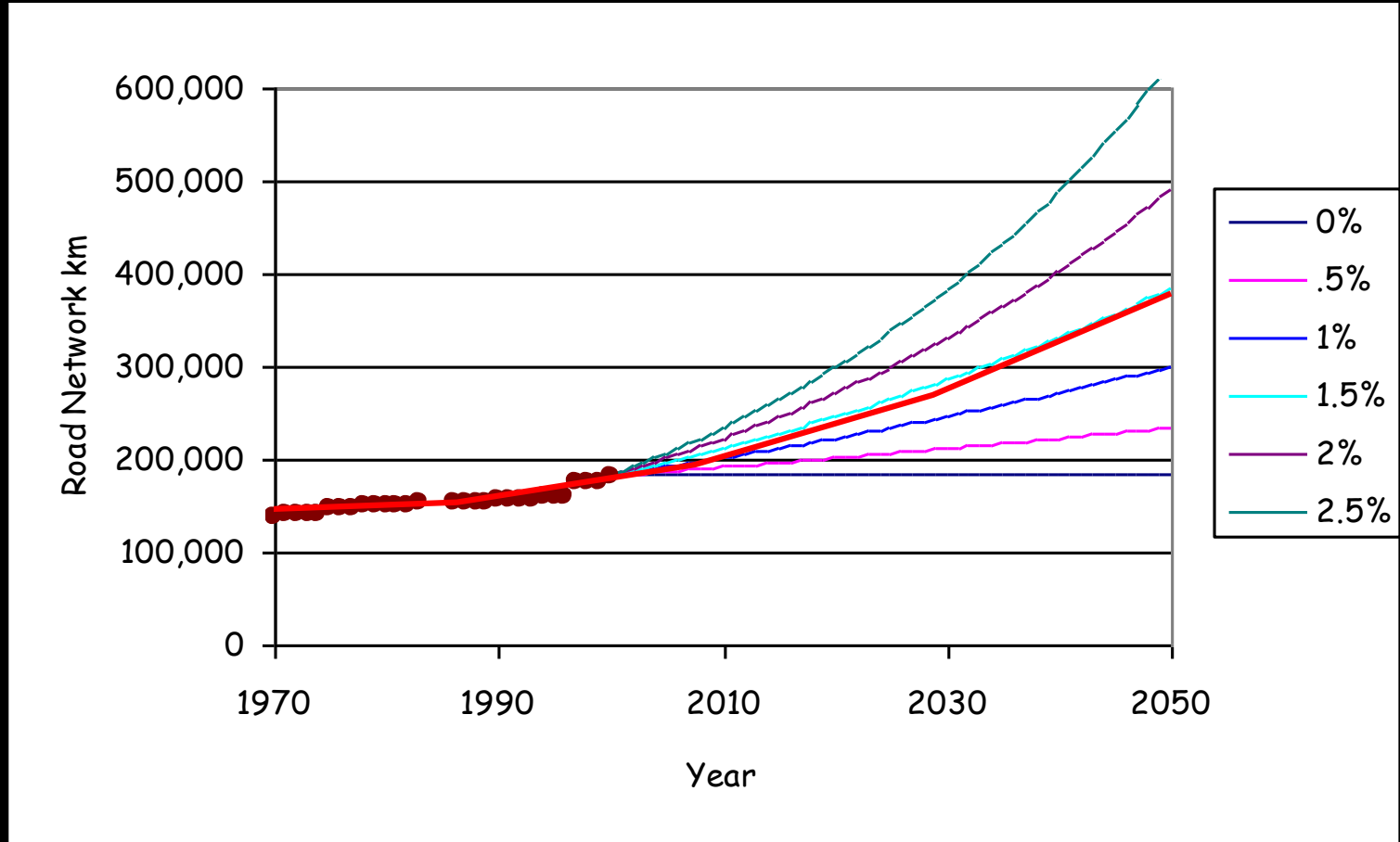


10 miles

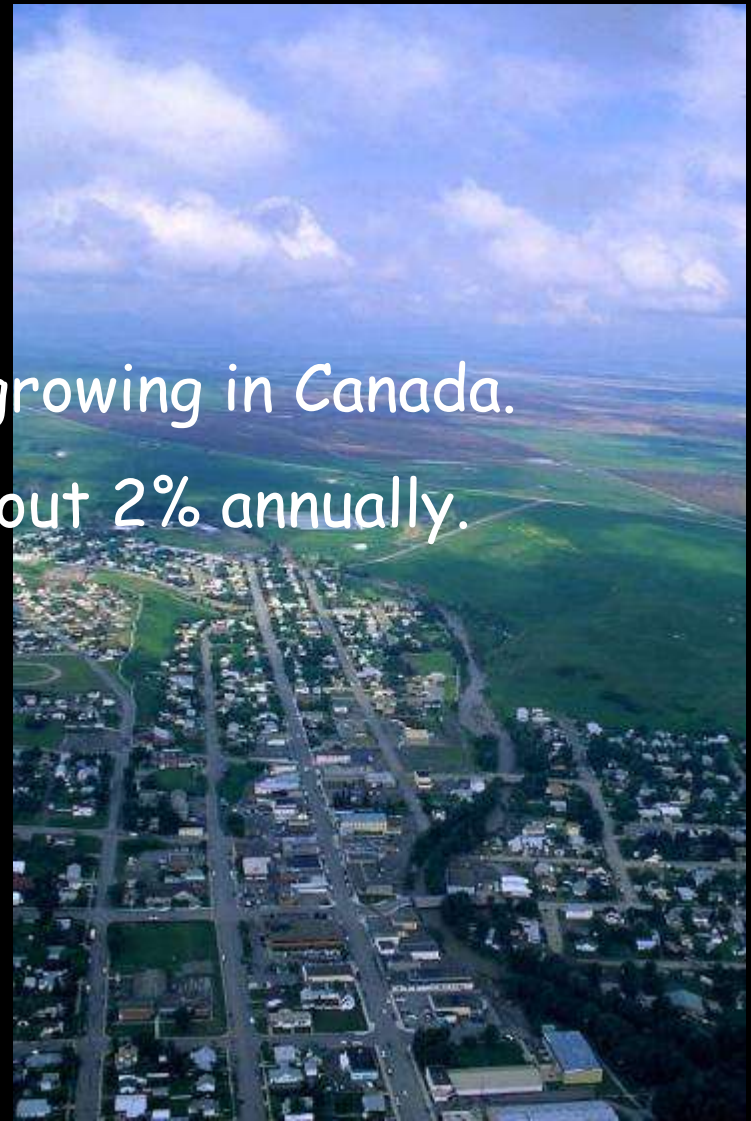
Historic and Projected Urban Population



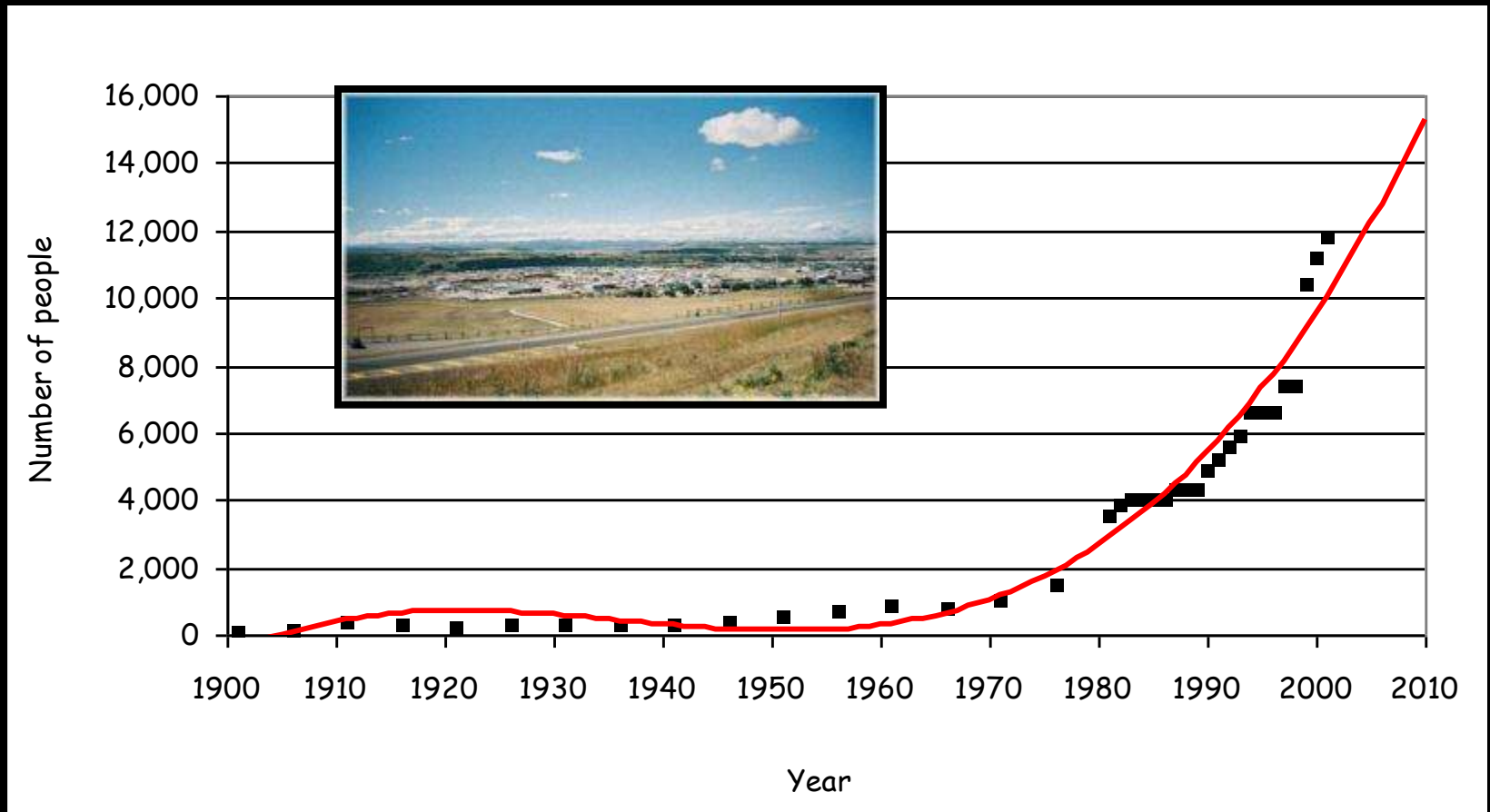
Historic and Projected Road Network km



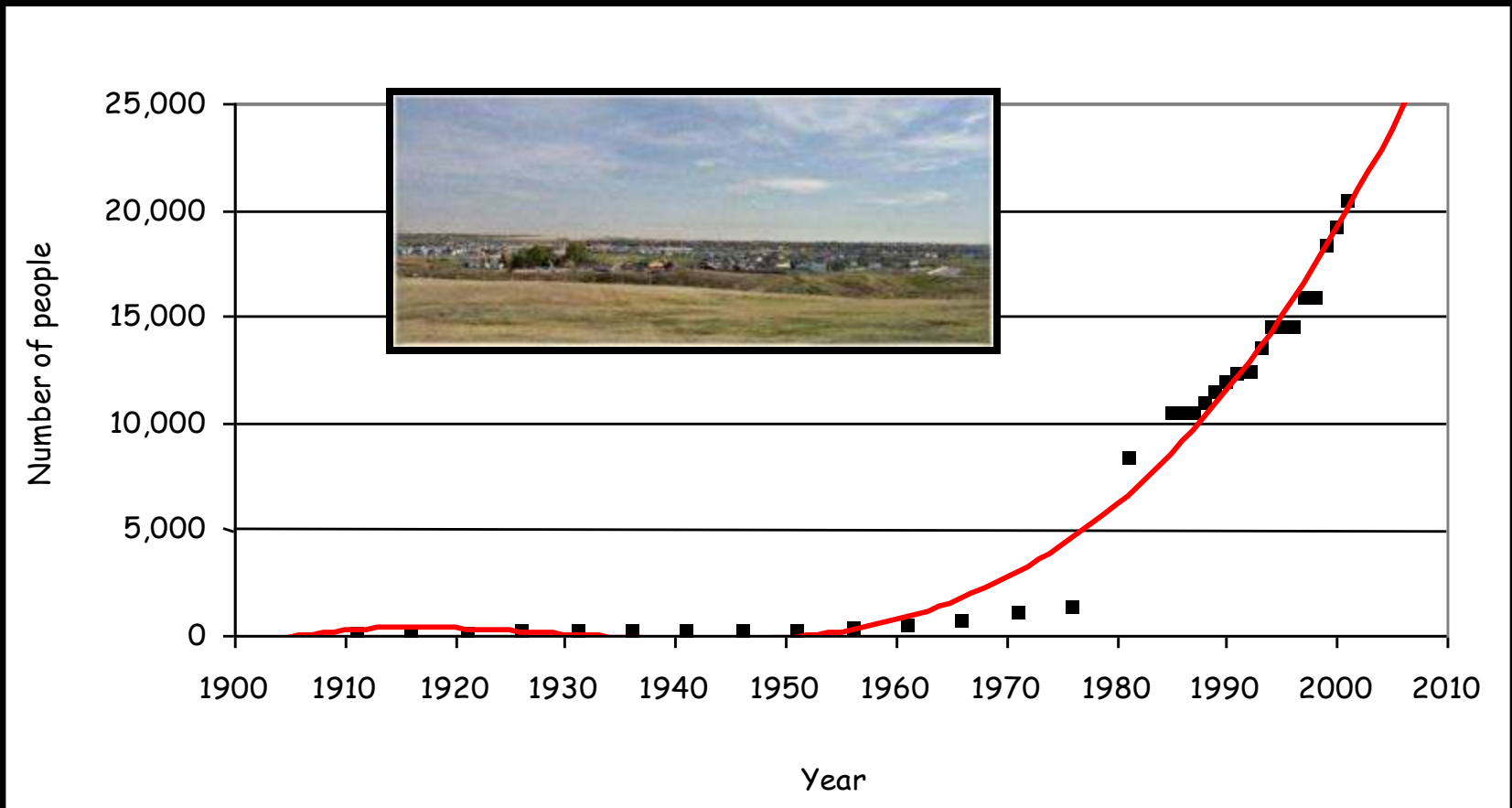
Satellite Towns and Acreage Development



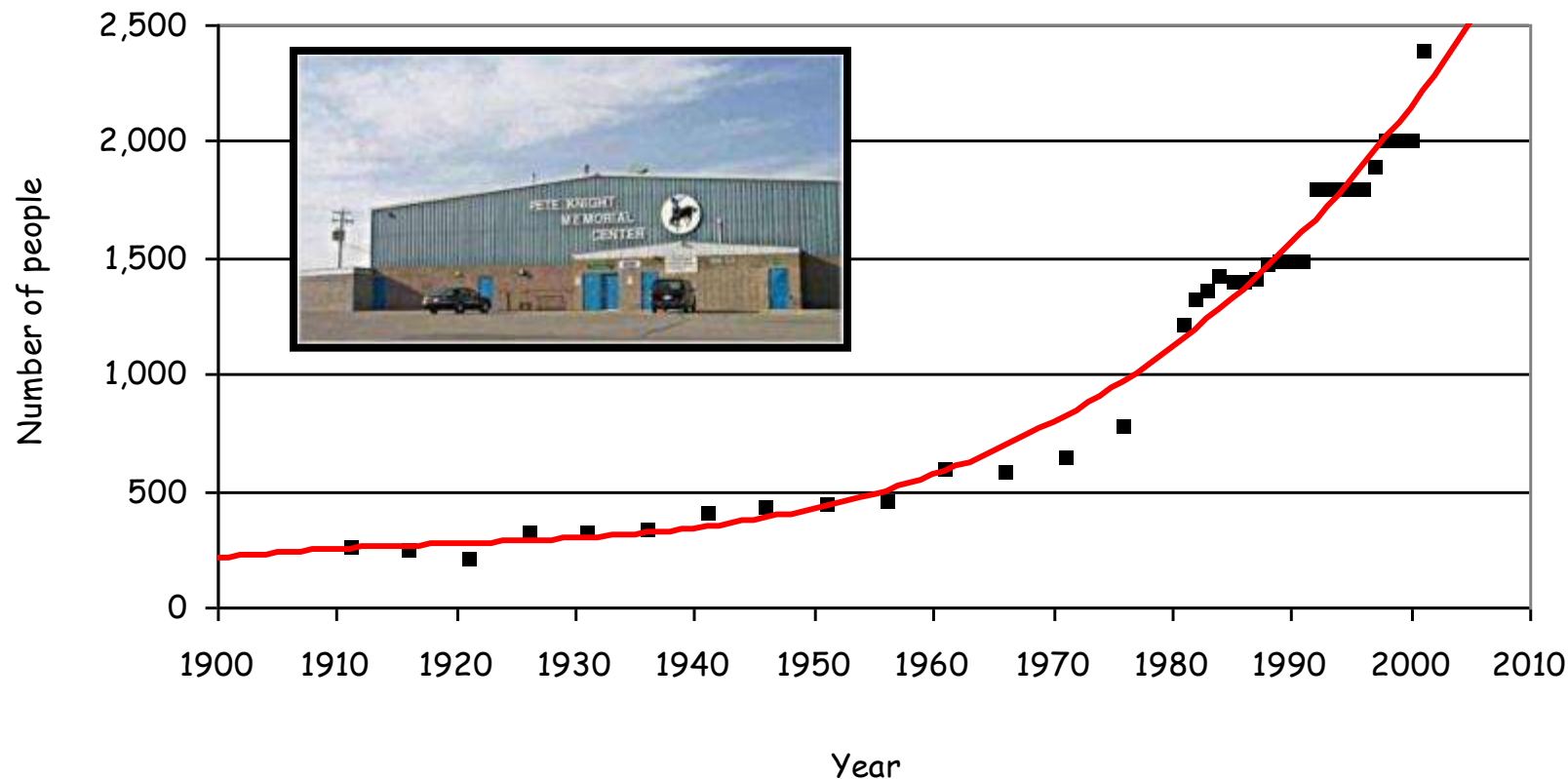
Cochrane Population



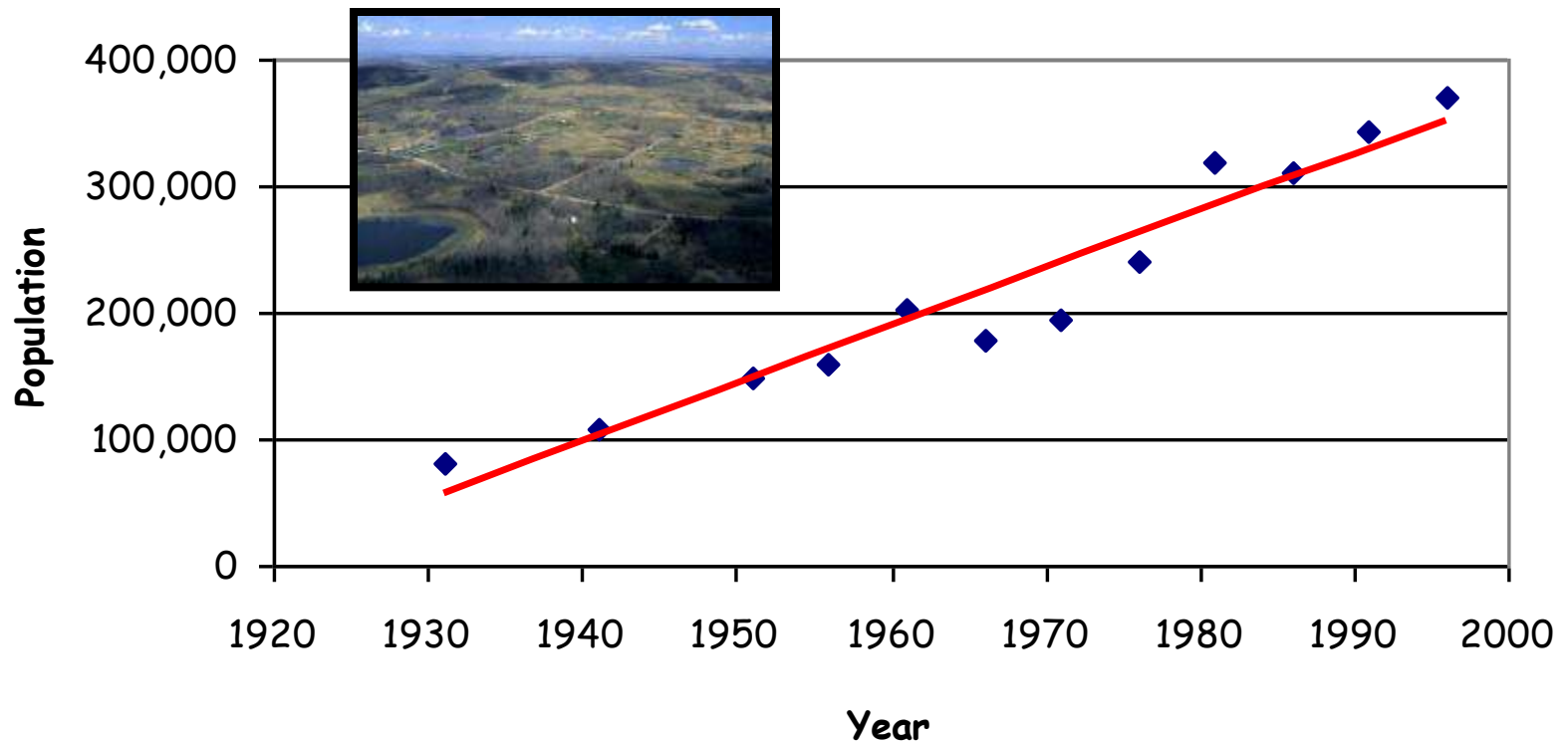
Airdrie Population



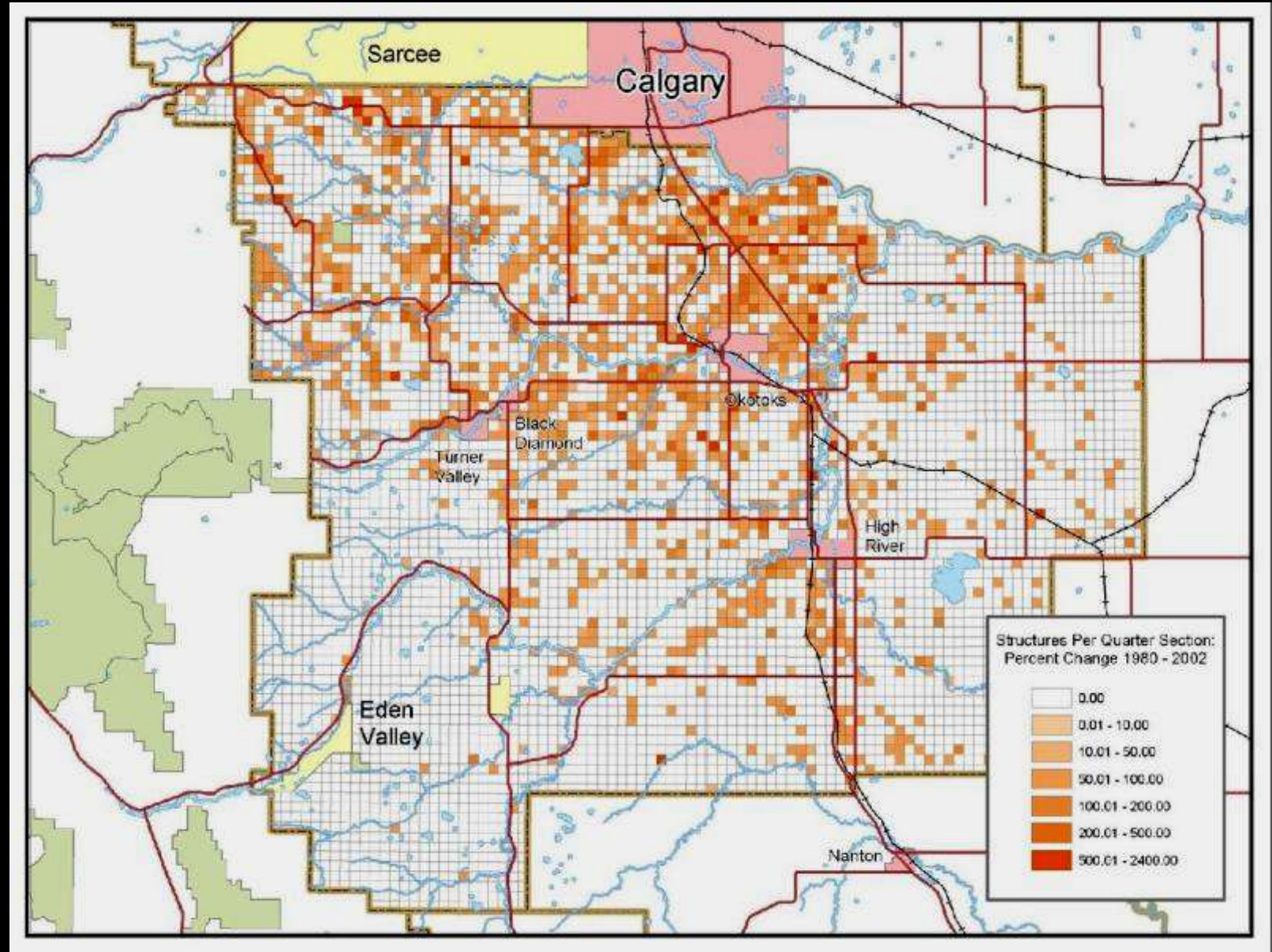
Crossfield Population



Historical Trend in Alberta's Rural Residential Population

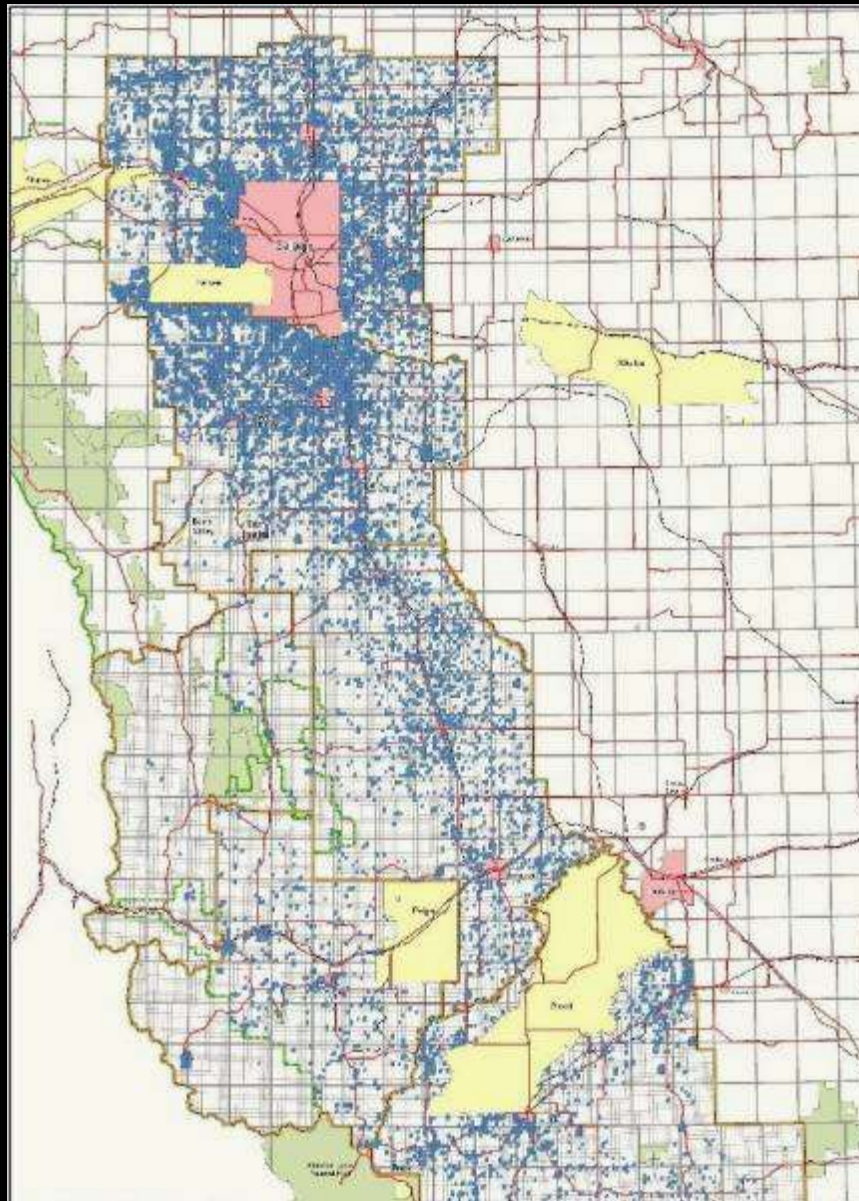
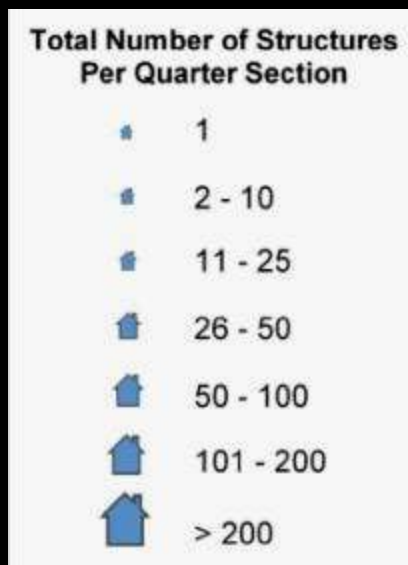


MD Foothills 1980 - 2000

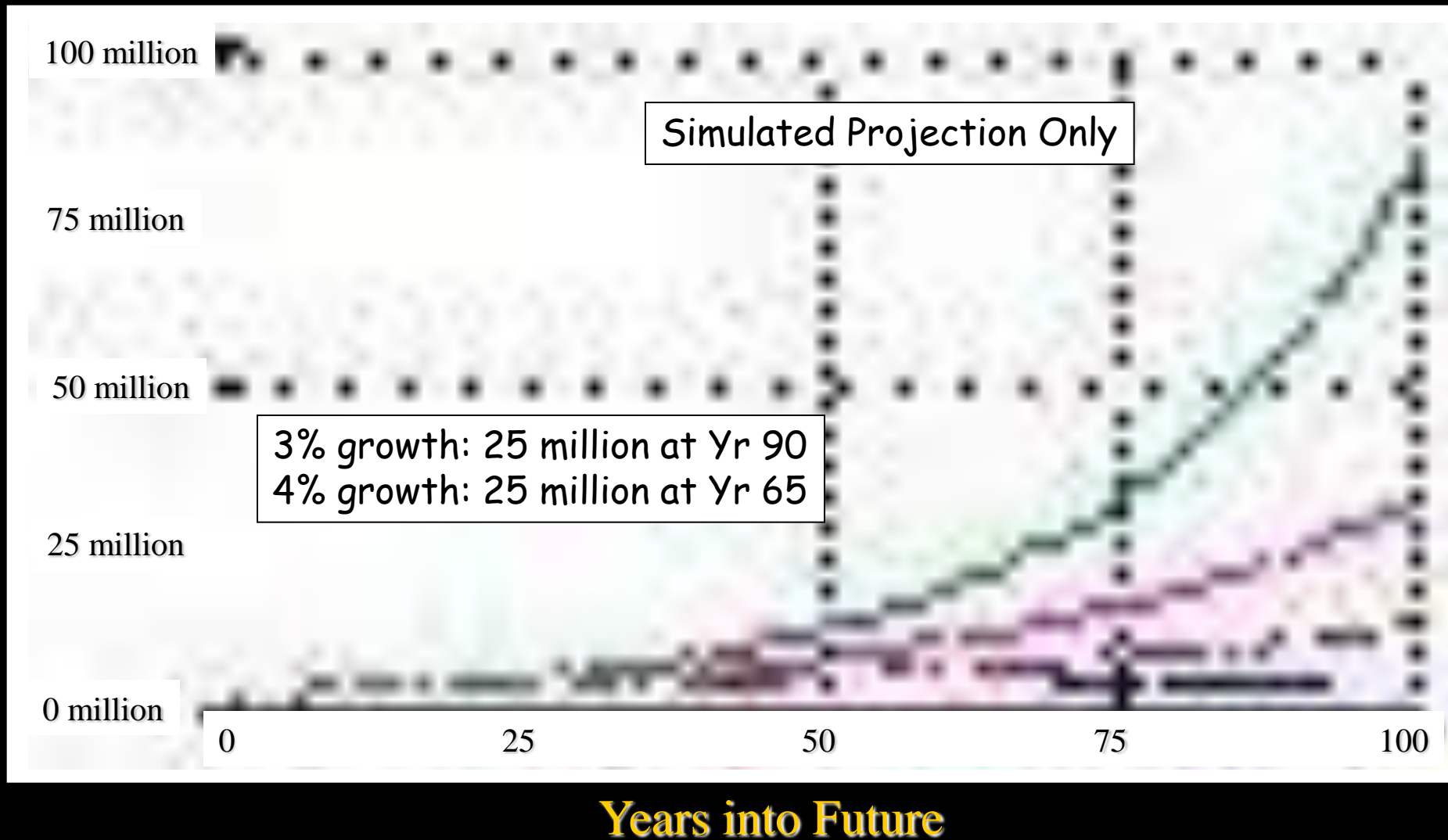


The Subdivision Phenomenon

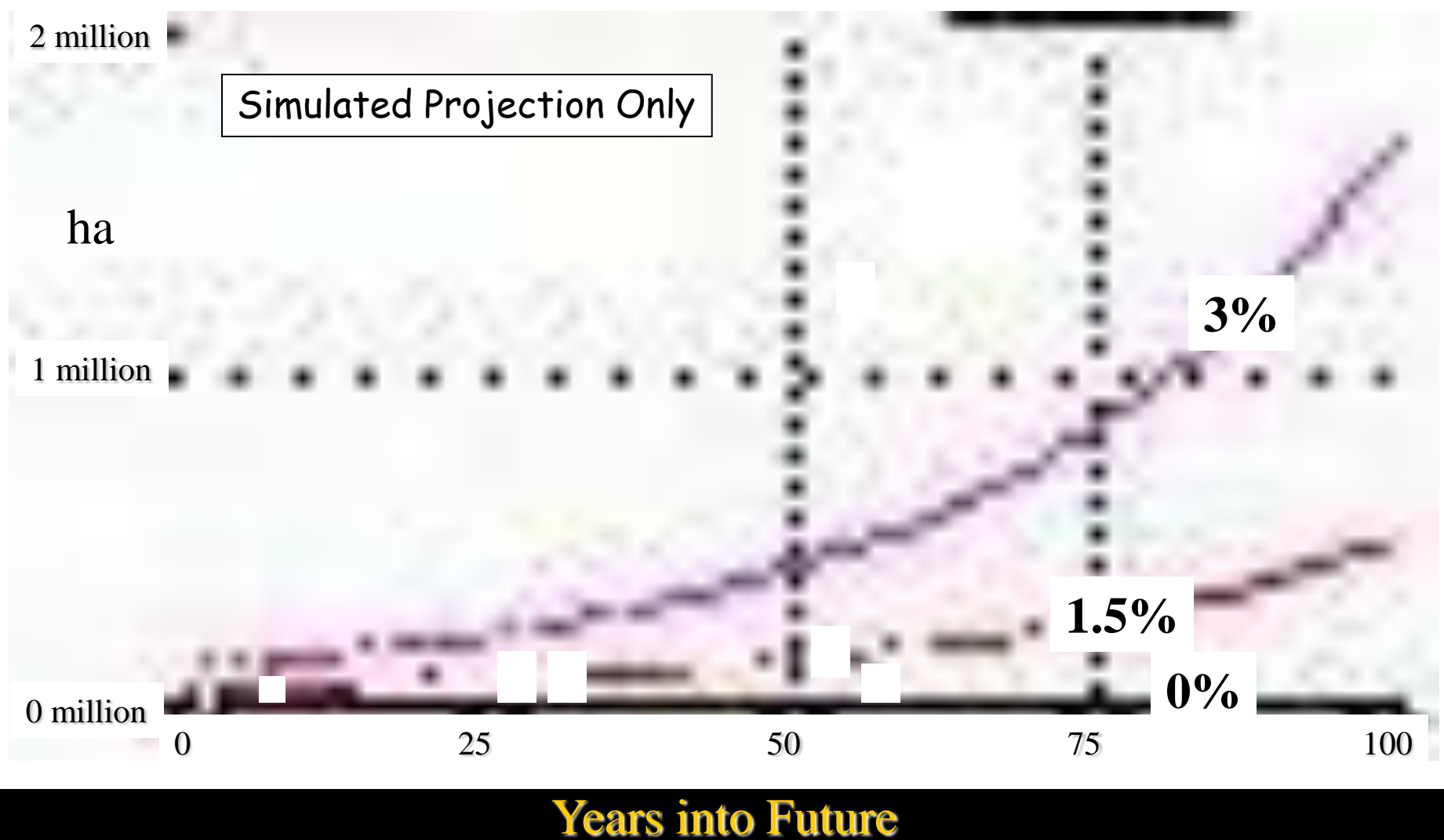
1950 - 2000



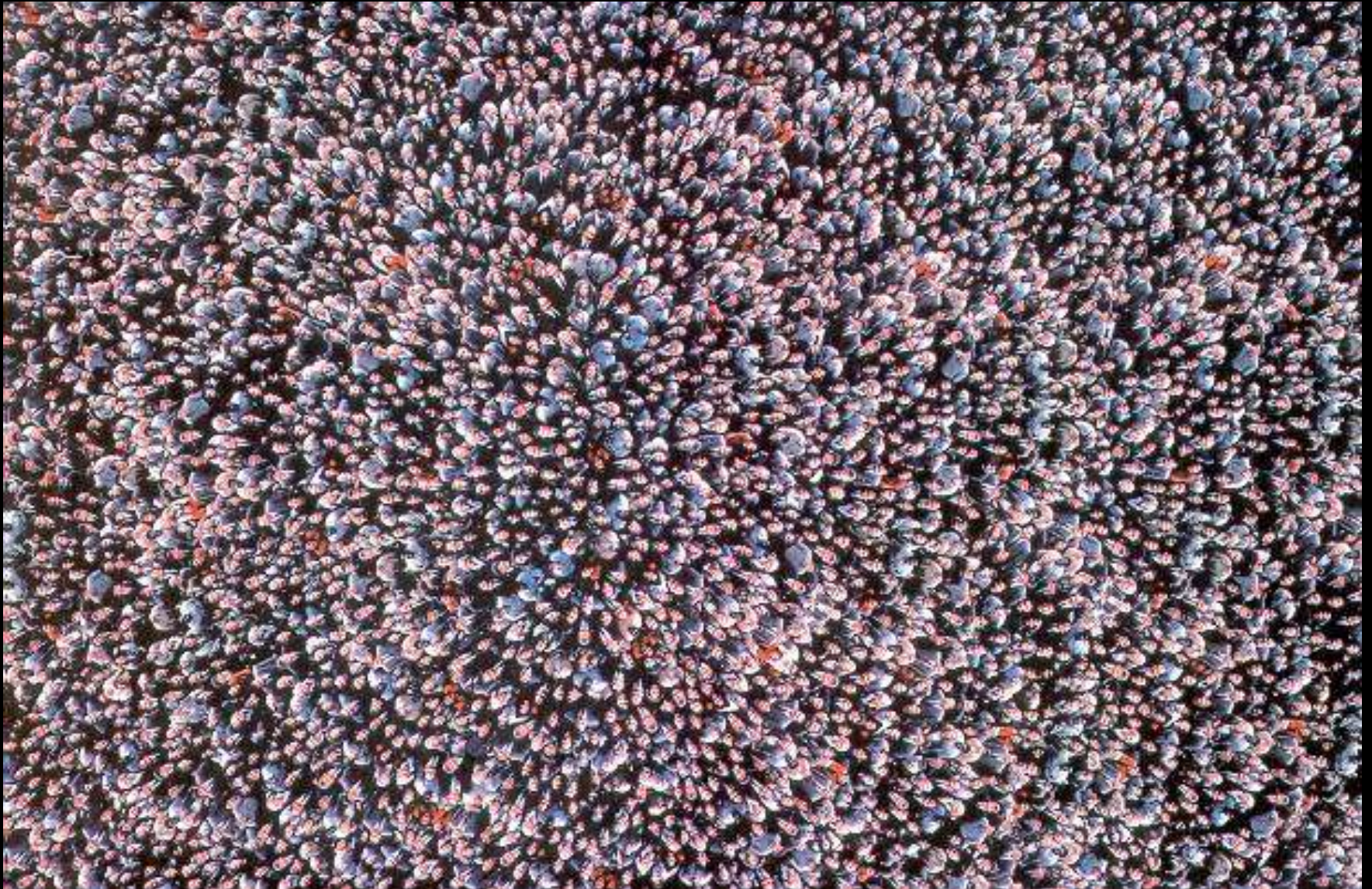
Human Population Growth (1,2,3,4%)



Human Settlement Footprint (ha) (0, 1.5, 3% annual growth)



Maximizing Human Biomass



The Agricultural Sector



The Energy Sector



Human Activity in the West

- Transforming landscapes
- Environmental sustainability challenges
- Governance challenges
- Provincial overviews
- Choice and values



Modified Hydrology



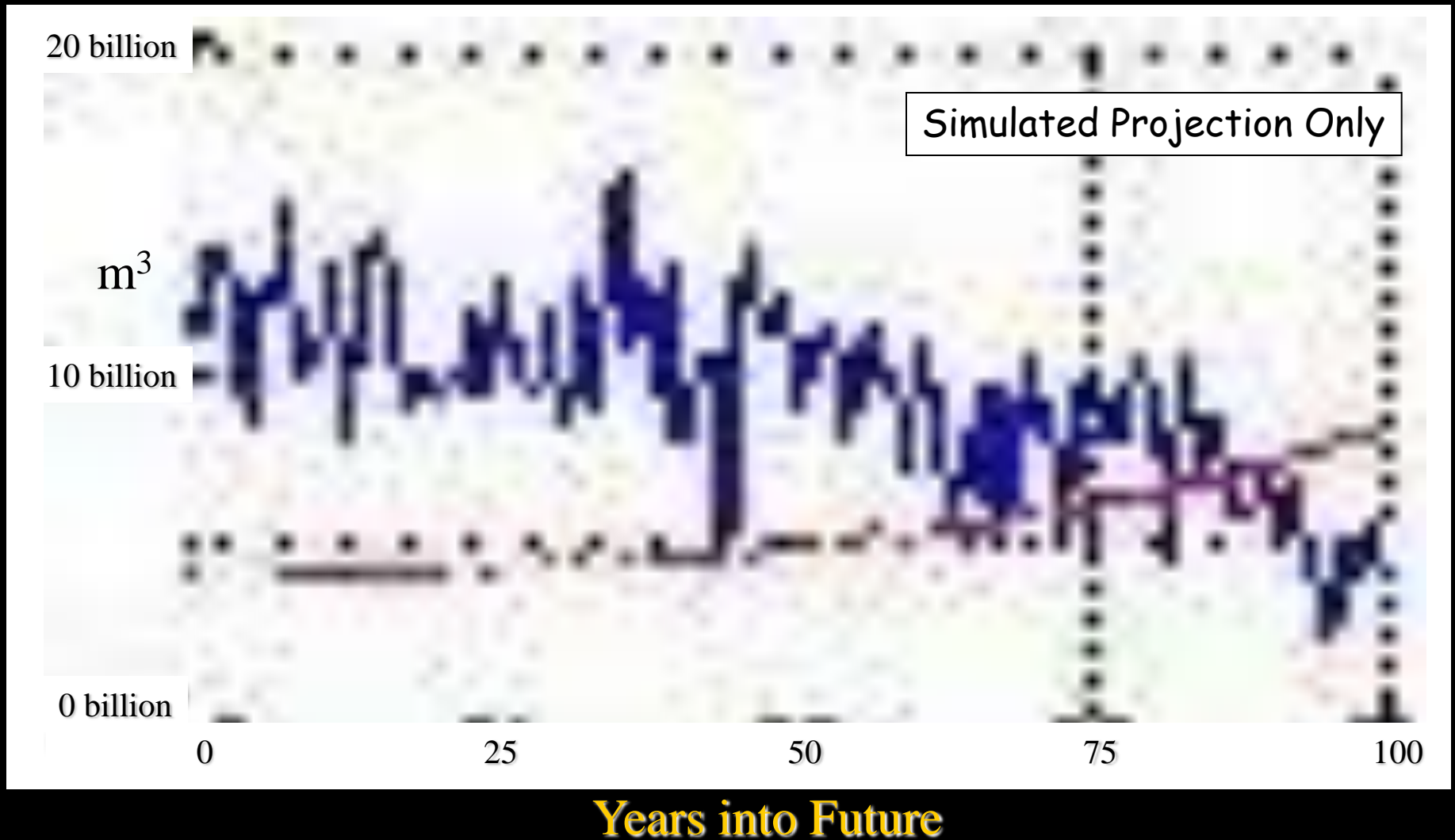
Upstream of St Mary Reservoir



Downstream of St Mary Reservoir



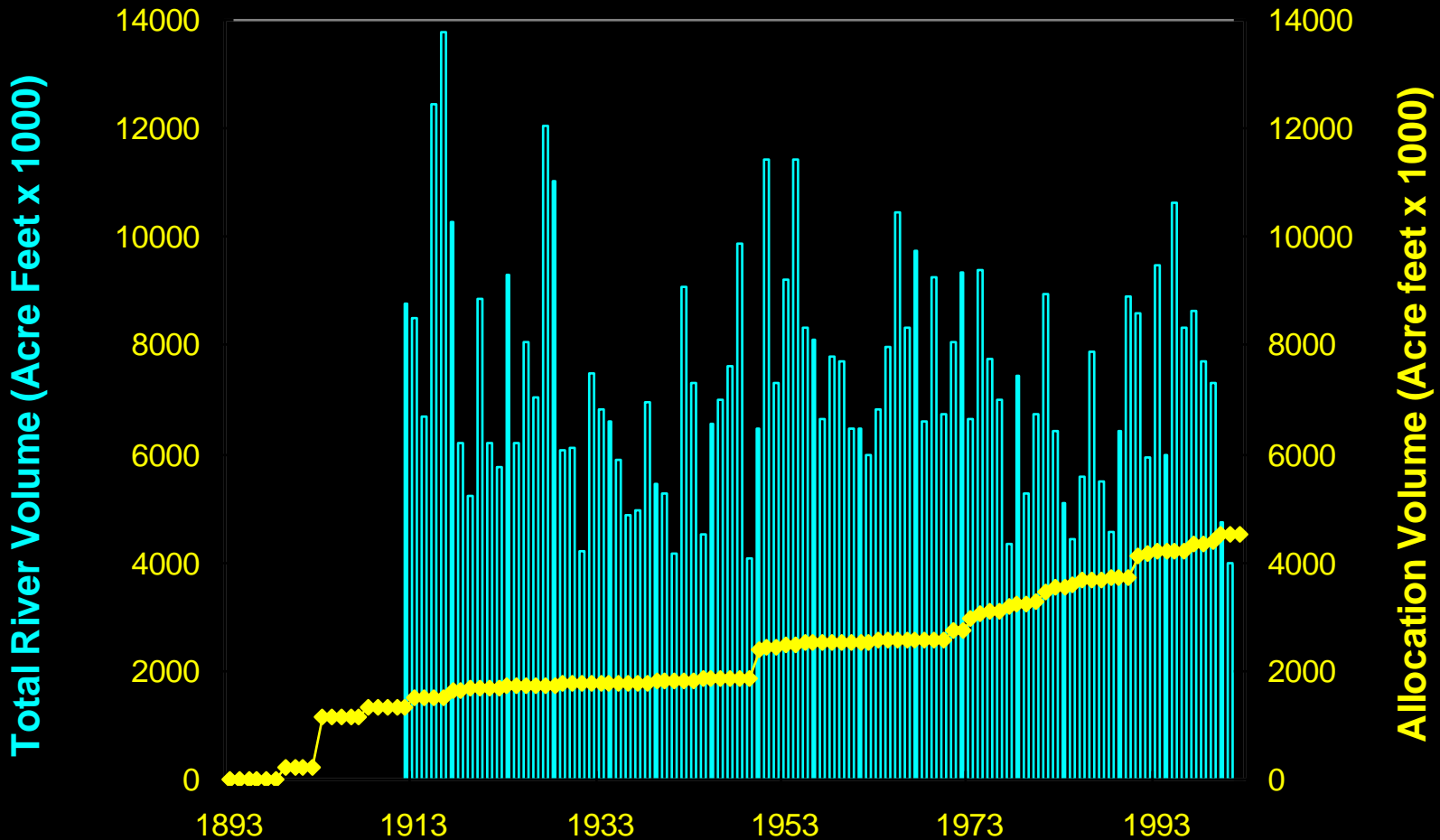
Lotic Water Volume (blue) and Demand (red)





South Sask. Basin Allocations

Water



What Species might be advantaged?

- Those preferring landscapes that are:
 - Agricultural
 - Fragmented
 - Structurally simple
 - Accessible to Humans



What Species might be disadvantaged?

- Those preferring landscapes that are:
 - Dominated by native prairies
 - Continuous
 - Structurally complex
 - Inaccessible by humans





Current Issues in Wildlife

Wildlife

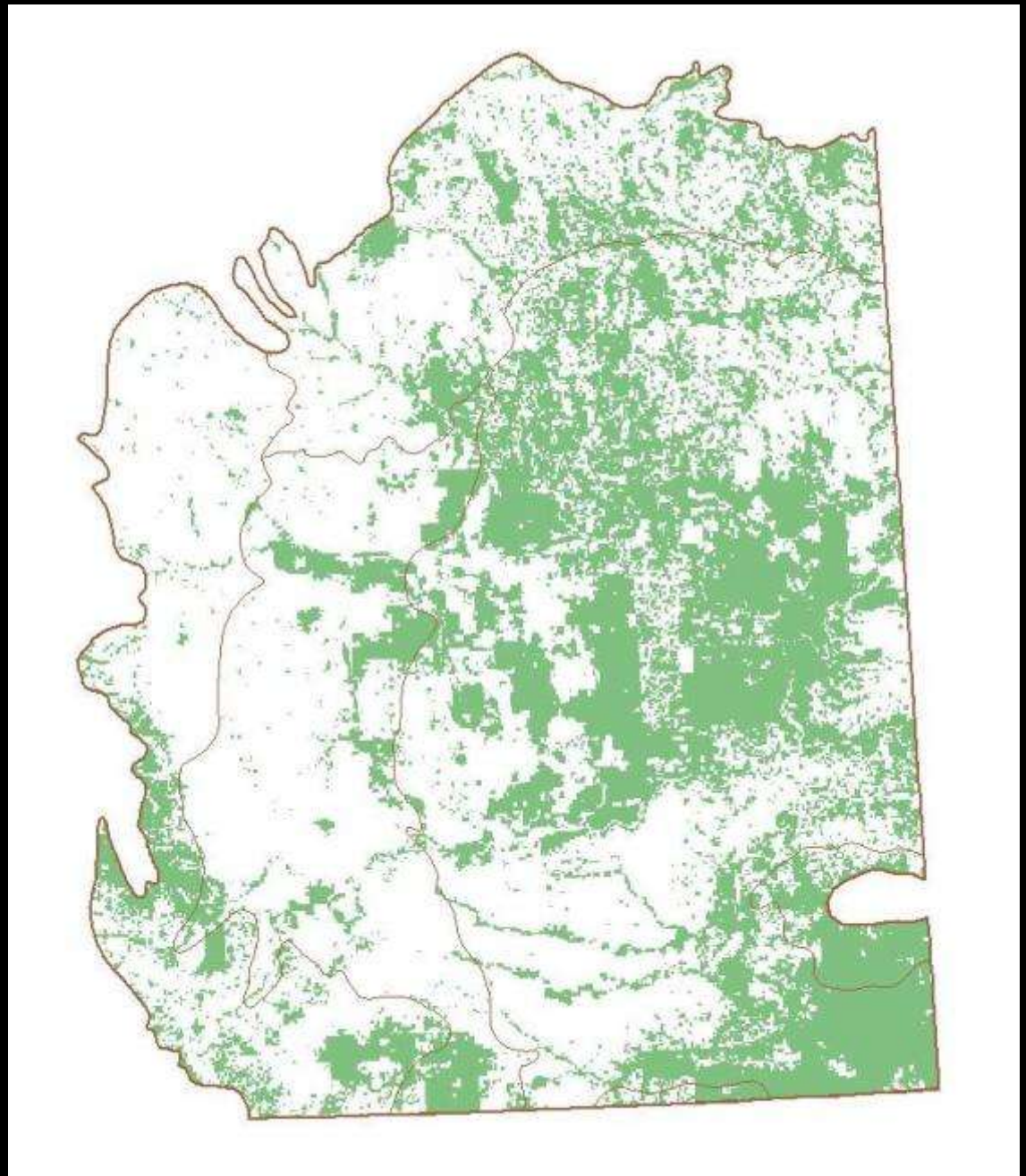
- Land base to support wildlife is diminishing
 - loss of native parklands/grasslands
- Habitat loss and fragmentation
- Loss of natural processes
- Land use decisions and quality of management
- Wildlife diseases
- Impacts of exotic species
- Increasing wildlife-human conflicts

Native Grassland Communities

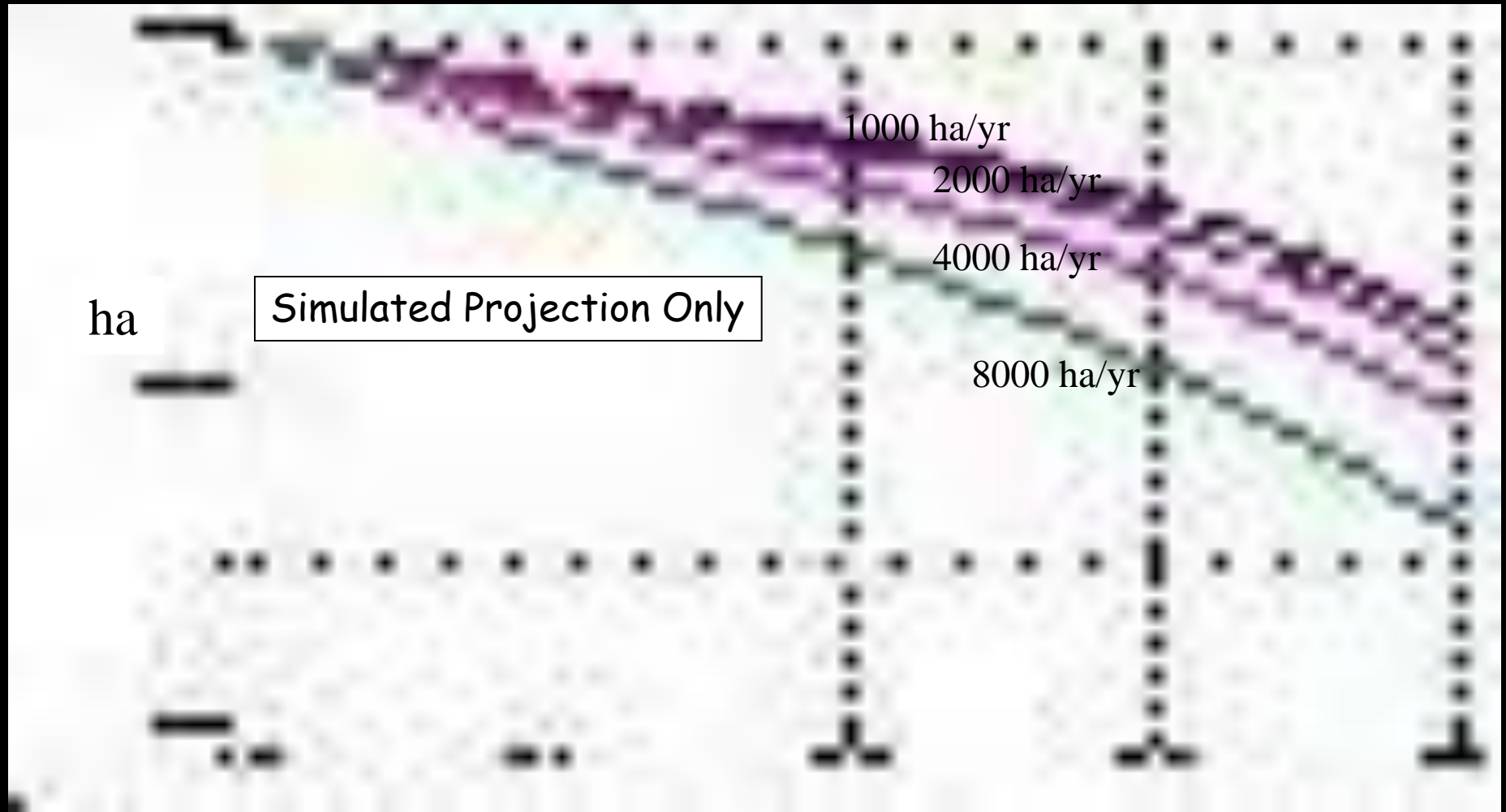


Remaining Native Prairie

1992
 $\frac{1}{4}$ sections >75%
NPVBI



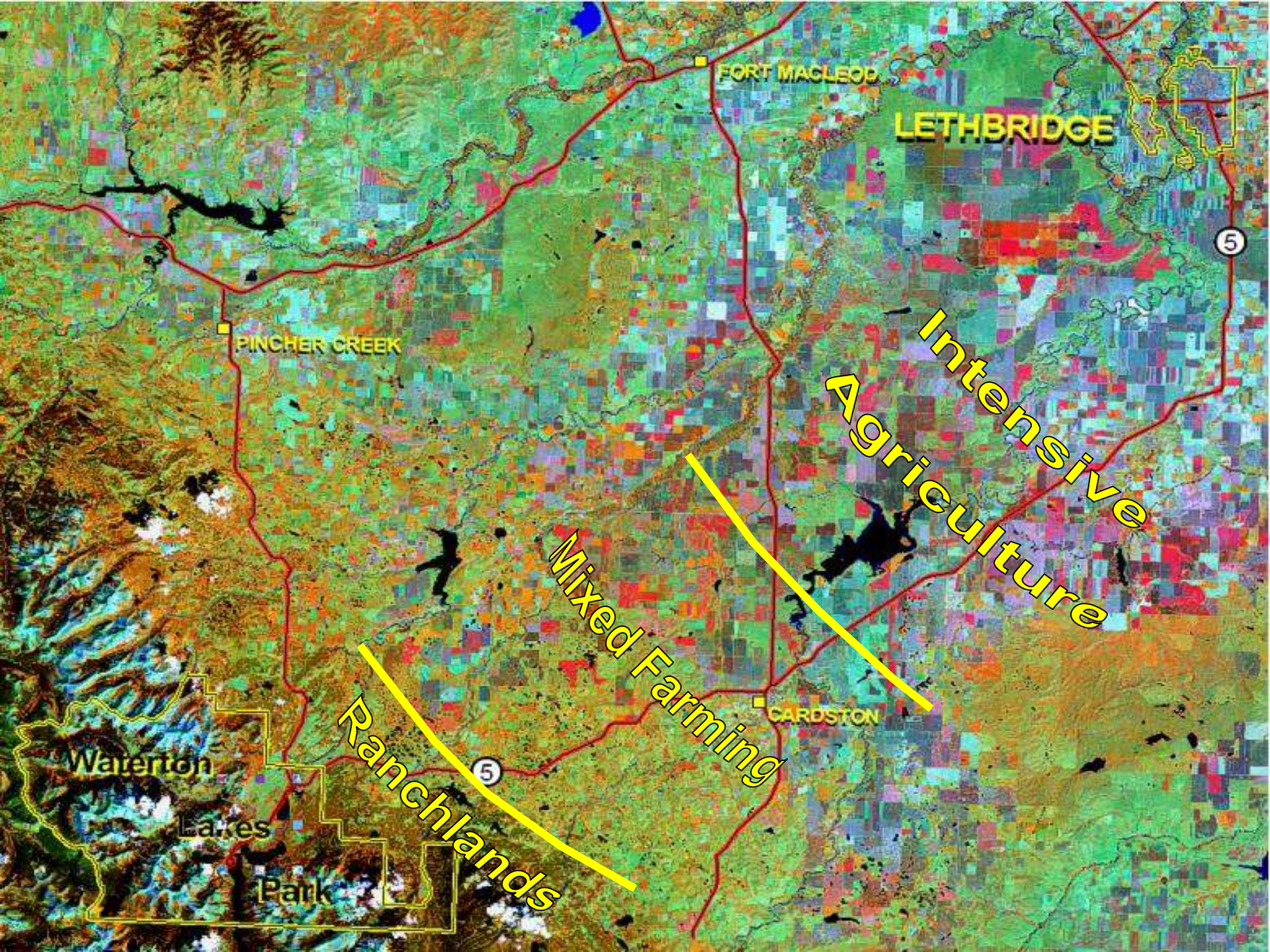
Hypothetical Native Grasslands Loss to Expanding Agriculture



Years into Future

Waterton to Lethbridge





FORT MACLEOD

LETHBRIDGE

PINCHER CREEK

Intensive
Agriculture

Mixed Farming

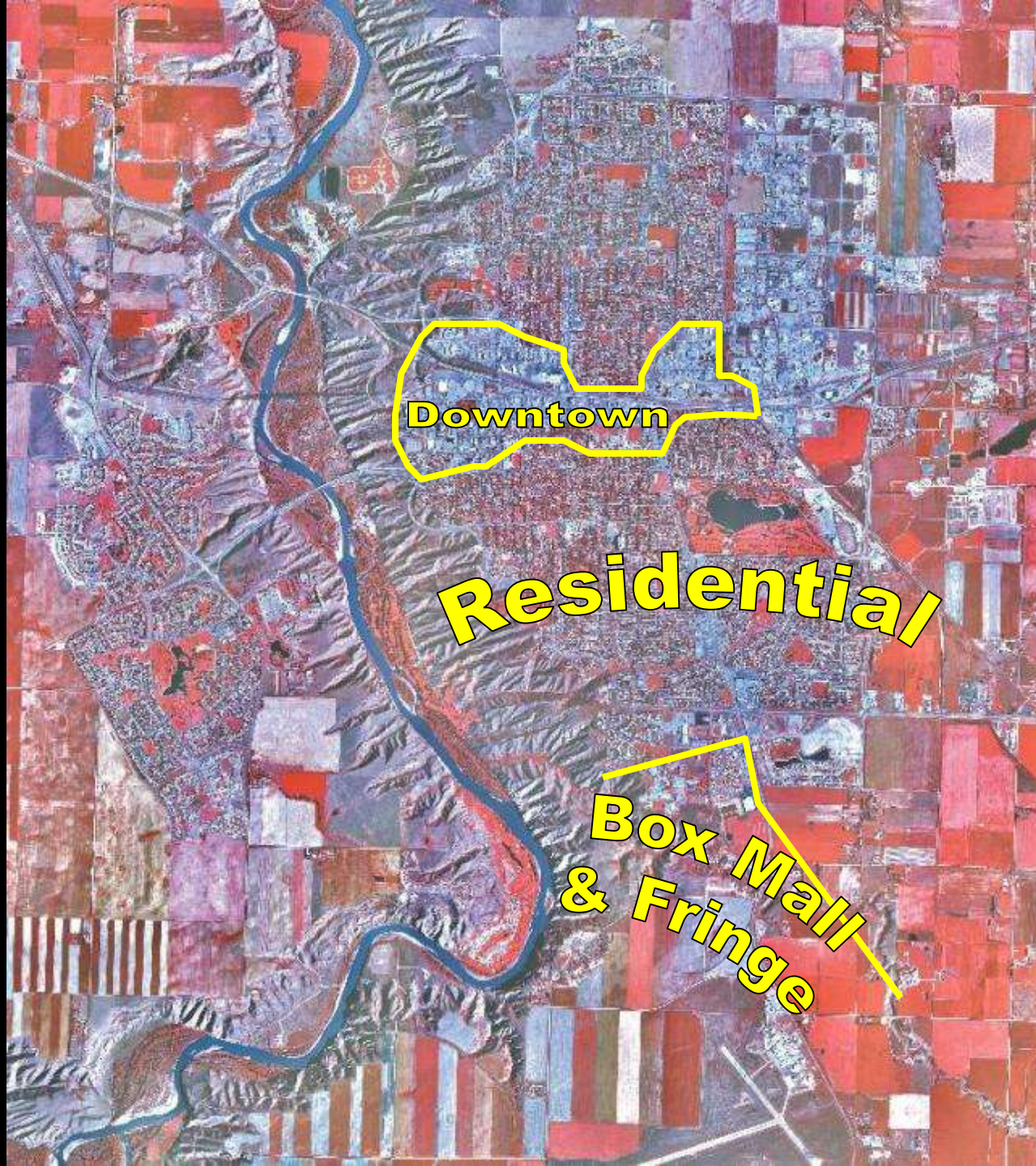
CARDSTON

Waterton

Lakes

Park

Ranchlands



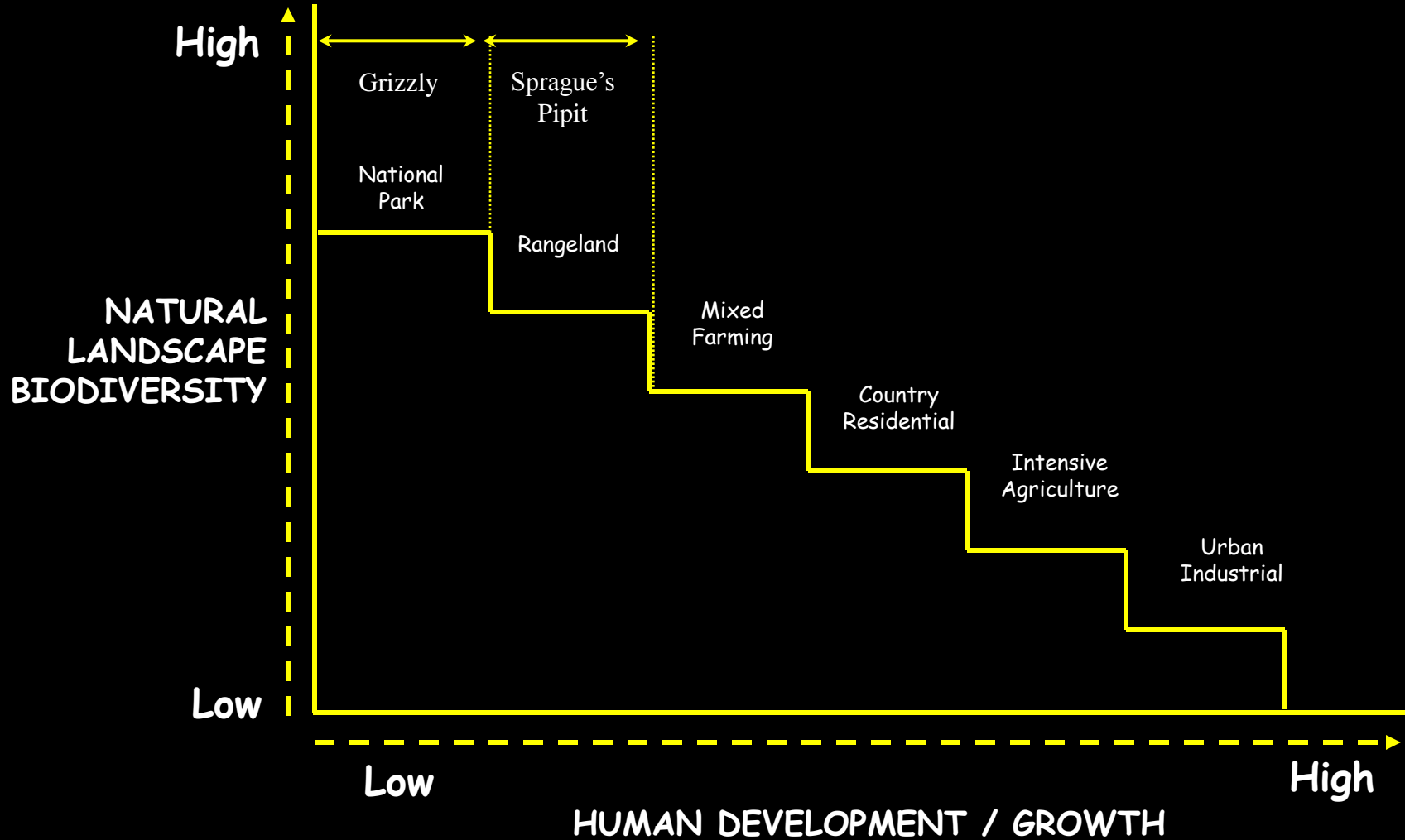
Downtown

Residential

**Box Mall
& Fringe**

The Biodiversity Gradient

Human Needs



The Importance of Biodiversity



Fish and
Wildlife



Land



Climate



Waste



Air



Forests



Water



Biodiversity

**Ecological Services
Air, Water, Carbon**

**Recreational
Demands of
Urban Centres**

Environmental Sustainability Summary

Southern Alberta has been and is being reshaped by human land use practices:

- Agricultural land use practices transformed much of the landscape in the 20th Century. Future intensification in Southern Alberta is limited by water availability
- Continuing human population growth and industrial development has major implications for traditional lifestyles and environmental quality
- As the regional human population increases, so do the demands on the landscape for recreational opportunities
- In the region as a whole, native prairie has been significantly reduced, but significant native rangelands remain.
- Species sensitive to human landscapes and linear disturbances face an uncertain future

Human Activity in the West

- Transforming landscapes
- Environmental sustainability challenges
- Governance challenges
- Provincial overviews
- Choice and values





Where does the Government wish to go?

Being Stewards of our Environment

We must ensure that economic growth and resource development take place in an environmentally sensitive manner and that decisions taken reflect government's role as steward of the environment for current and future generations.

*Progressive Conservative Party of Alberta.
Statement of Principles, March 2001, Provincial
Election*

Things we Do

- Develop and enforce hunting and fishing regulations.



Things we Do

- Provide approvals and conditions for industrial developments.



Things we Do

- Monitor air and water quality.



Things we Do

- License all consumptive uses of water.



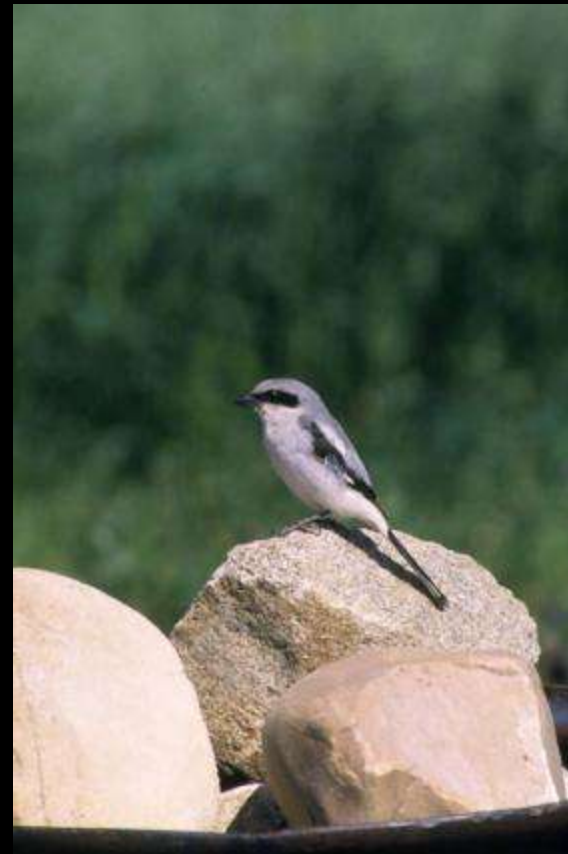
Things we Do

- Fight forest fires.



Things we Do

- Prepare management and recovery plans for species of concern.



Things we Do

- Establish public service standards in parks and protected areas.



Things we Do

- Provide emergency response to hazardous spills.



Things we Do

- Administer private, commercial and industrial dispositions on Public Lands.



Things we Do

- Issue reclamation and remediation certificates.



Things we Do

- Operate and maintain the water management infrastructure.



Elusive Goals

Approvals + conditions + monitoring + licensing + plans +
standards + dispositions + reclamation + maintain
infrastructure

≠ Healthy Environment

Imbalance



Jurisdictional Flux



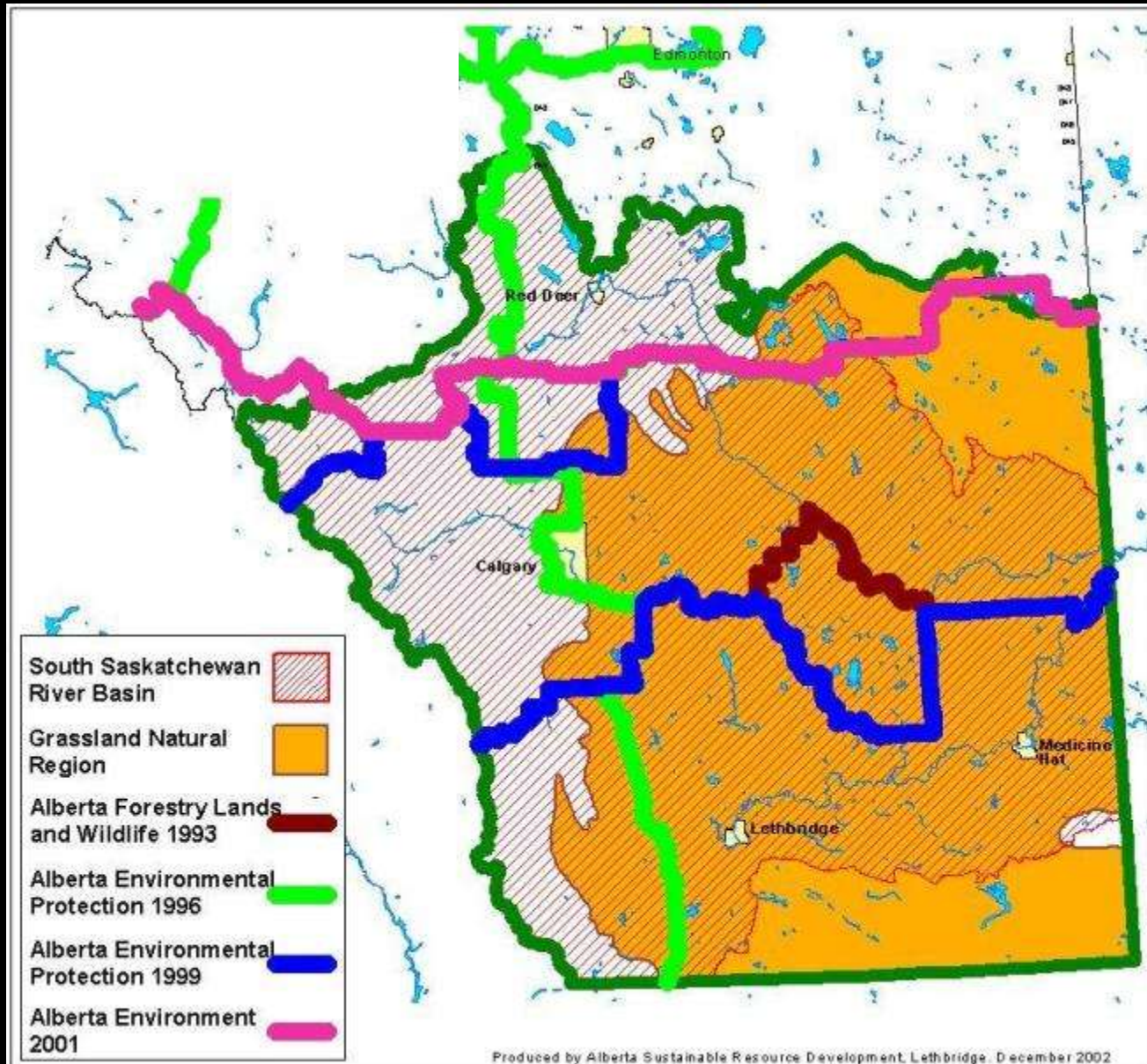
Jurisdictional Flux



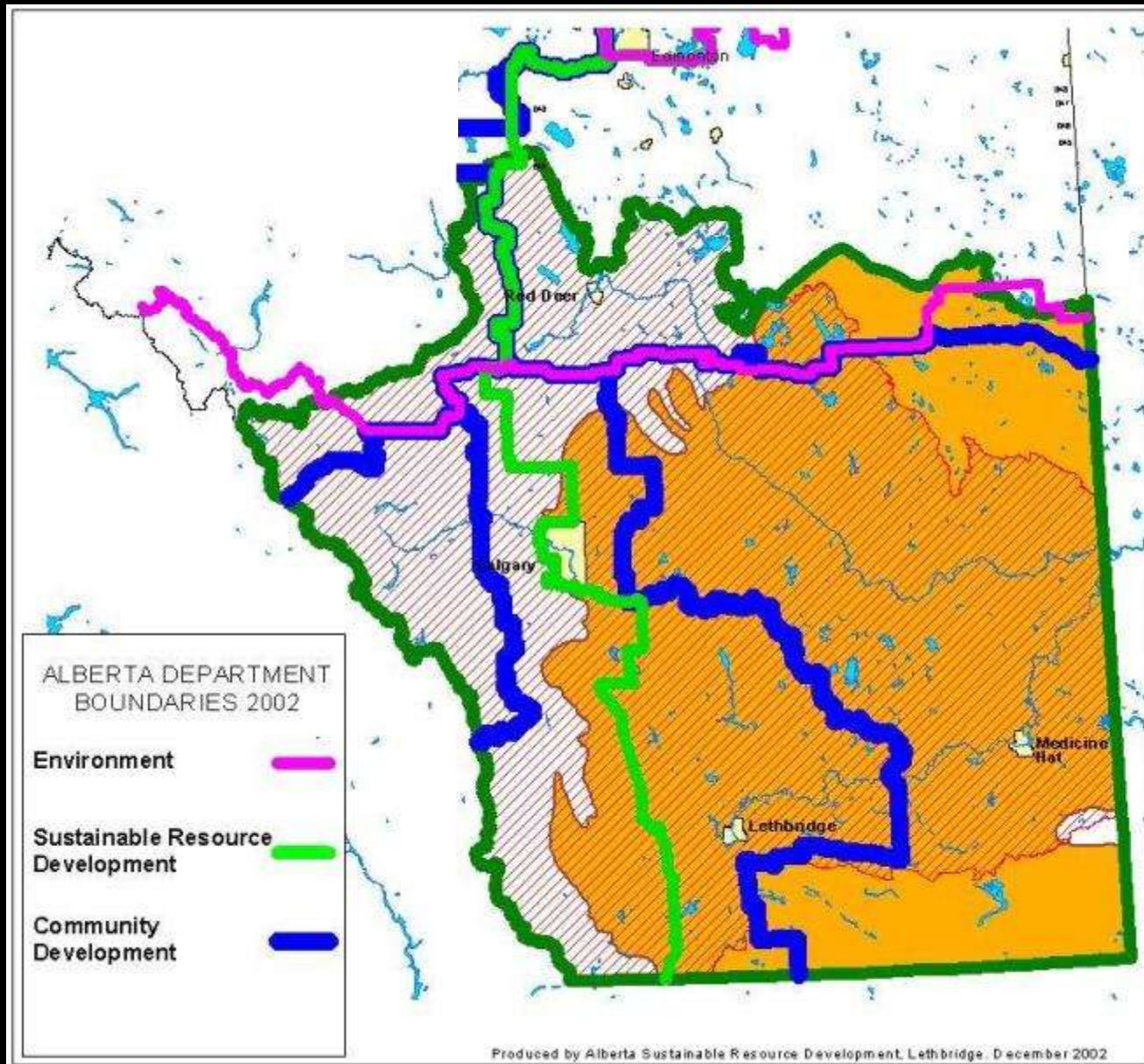
Jurisdictional Flux

- Alberta Energy and Natural Resources
- Alberta Environment
- Alberta Forestry, Lands and Wildlife
- Alberta Tourism, Parks and Recreation
- Alberta Environmental Protection
- Alberta Community Development
- Alberta Sustainable Resource Development
- Alberta Environment

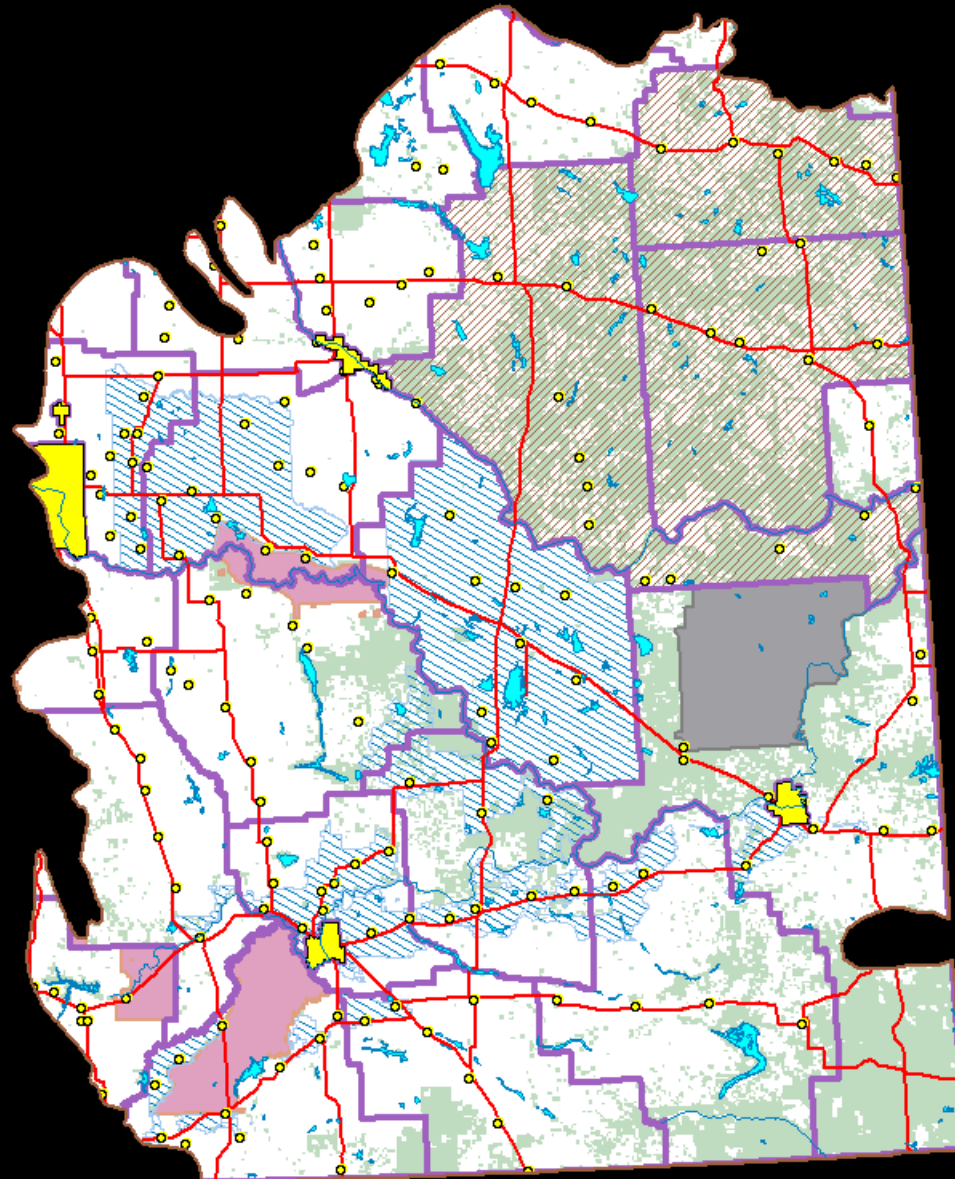
Boundaries



Boundaries



Multiple Jurisdictions



An "Ad Hoc" approach is further complicated by multiple jurisdictional mandates

Irrigation Districts, Etc.....

Municipal

Aboriginal

Provincial

Federal



Governance Summary

Institutional capacity, rather than the scope of the challenge or lack of ingenuity, is the biggest impediment:

- 'Managing the parts': will not achieve sustainable development and environmental quality over time.
- 'Influencing the whole': modern environmental governance must be capable of anticipatory, integrative, holistic, systems approaches.
- The environmental challenges of our time didn't wink into existence yesterday and won't be solved tomorrow. Institutional capacity to 'stay the course' is essential.
- Pooling mandates, resources, expertise and capacity in partnerships is essential, but requires fundamental rethinking of control and accountability.
- Ongoing transformational change is essential, but repeated administrative shuffling of the environmental pieces is problematic if effective environmental governance is the goal.

Human Activity in the West

- Traditional governance
- Transforming landscapes
 - global/regional
- Environmental and institutional challenges
- Provincial overviews
- Choice and values



Prairie Provinces

Common Issues and Projects

- Access to markets
- Species at risk
- Climate Change
- Water Issues

Prairie Provinces



Environment
Canada

Environnement
Canada

Issues

- Protecting species at risk
- Prairie conservation incentives
- State of the prairie habitat
- Native prairie restoration

Tools and Initiatives

- Habitat Stewardship Program
- Ecological Gifts Program
- PHJV Habitat Monitoring Program
- Native Prairie Restoration Program



Alberta



- Issues
- Information and tools
- Initiatives



Alberta Issues

Foothills

- Country residential
- Energy Sector - P&NG, CBM
- Rough fescue reclamation
- Recreational pressures

Agricultural landscapes

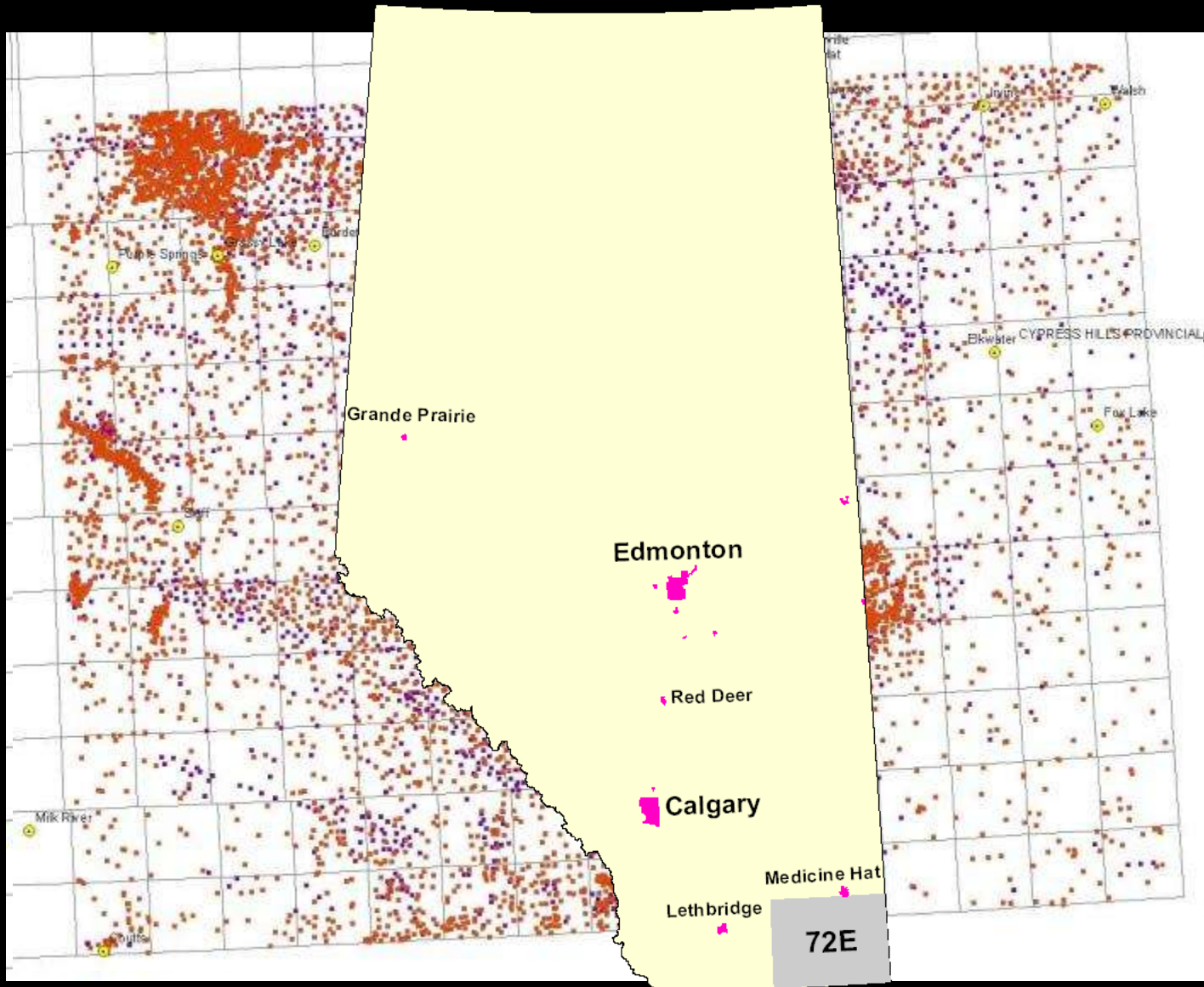
- Irrigation expansion and agricultural intensification
- Land/water interrelationships

Alberta Issues

Palliser Triangle

- Level of P&NG
- Access to markets

Wellsites 72E - 2002 & 2004



Alberta Information and Tools

- ALCES
- Grassland inventory change analysis
- GIS watersheds
- Biodiversity Monitoring Program
- Range Health
- Parkland NGP inventory

Alberta Initiatives

- Species at Risk - Milk River example
- Water for Life
- BMPs - energy and agriculture sectors
- Biodiversity Strategy
- Southern Alberta Sustainability Strategy
- Water management planning



Saskatchewan



- Issues
- Information and tools
- Initiatives



Saskatchewan Issues

- Borders closed to live cattle exports.
- Implementation of SARA -Development of ecosystem-based approaches.
- Incorporation of prairie conservation and range management into the EFP process and green cover programs.
- Exotic species invasion
- Water quality

Saskatchewan Information and Tools

- 2003 - 2008 PCAP released June '03 - annual Partner Updates to track progress.
- Sask. PCAP Partnership chaired by the SK. Stock Growers Association - 25 Partner groups representing industry, federal and provincial conservation and agricultural agencies, a diversity of NGOs and the two universities.
- Multi-Partner-led workshops and demo sites (with strong landowner participation) profiling stewardship practices that have win-win benefits for producers and the environment.

Saskatchewan Initiatives

- Stewardship education programs.
- Native Prairie Appreciation Week.
- Saskatchewan Biodiversity Action Plan.
- Sask. Wetland Authority - watershed plans.
- Sask. Environment - development of a provincial lands conservation strategy.

Manitoba



- Issues
- Information and tools
- Initiatives



Manitoba Issues

- Agricultural production intensification
- Industrial sized hog barns
- Nutrient loadings and protecting water quality and aquifers
- Increasing farm size and smaller margins for producers
- Rural depopulation
- Invasive species
- Effective grazing management
- Effect of BSE on conservation program uptake
- Balancing individual species at risk with landscape level initiatives.

Manitoba Information and Tools

- Manitoba Conservation Data Centre - Species at Risk inventories and population modeling.
- Comprehensive Mixed-grass Prairie Inventory

Manitoba Initiatives

- Conservation Agreements
- Mixed-grass Prairie Project
- Parkland Habitat Stewardship
- Piping Plover Project
- Northern Prairie Skink Stewardship
- Tallgrass Aspen Parklands
- Manitoba Naturescape
- Manitoba Protected Areas Initiative
- Riparian Health Initiative
- NAWMP
- Lake Winnipeg Stewardship Board
- Agriculture Policy Framework

Regional Partnerships

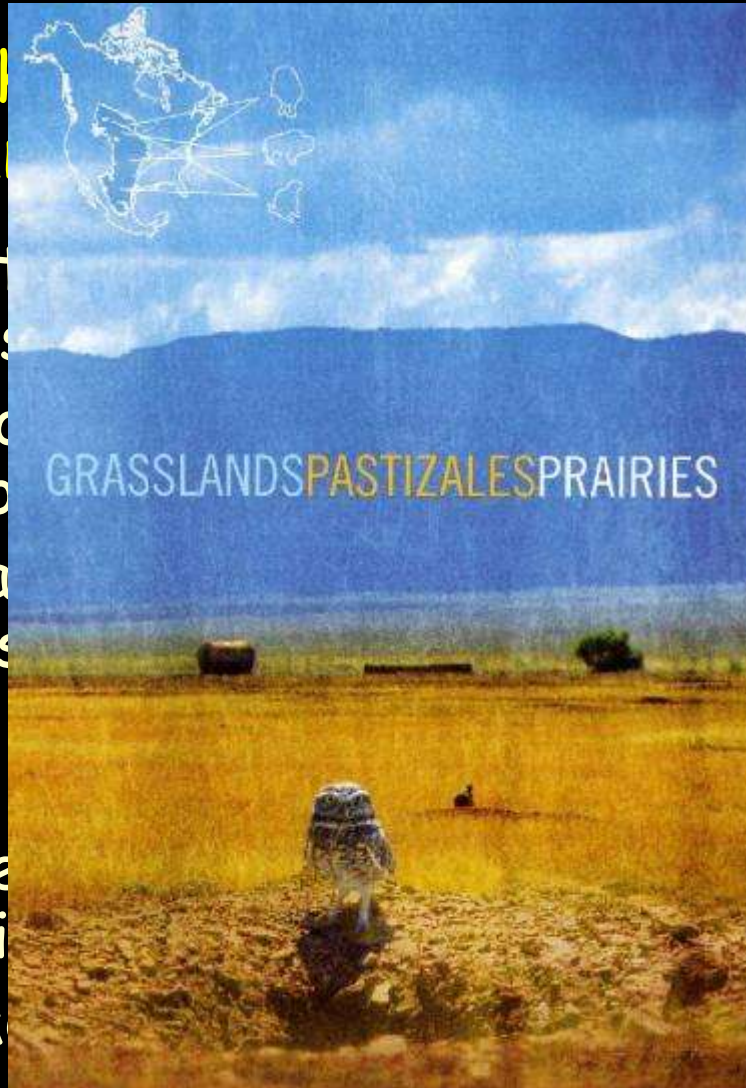
- Tri-National Grasslands Conservation Strategy
- Northern Great Plains Conservation Network
- Partners in Flight
- Prairie Conservation Action Plans

Regional Partnerships

Tri-national Grasslands Conservation Strategy

Proposed North American Grassland Network: grassland

- Share effective practices and develop cross-border initiatives.
- Enhance 3-country ranking of conservation priority
- Build regional capacity: share lessons, new management information, access to relevant resources, new
- Establish pre-agreed cooperation for
- CEC has 16 a



Priority Areas conservation

hese and
tiatives.

t priority

al capacity:
es, new
ss to relevant

ration for

the network.

Regional Partnerships

Northern Great Plains Conservation Network

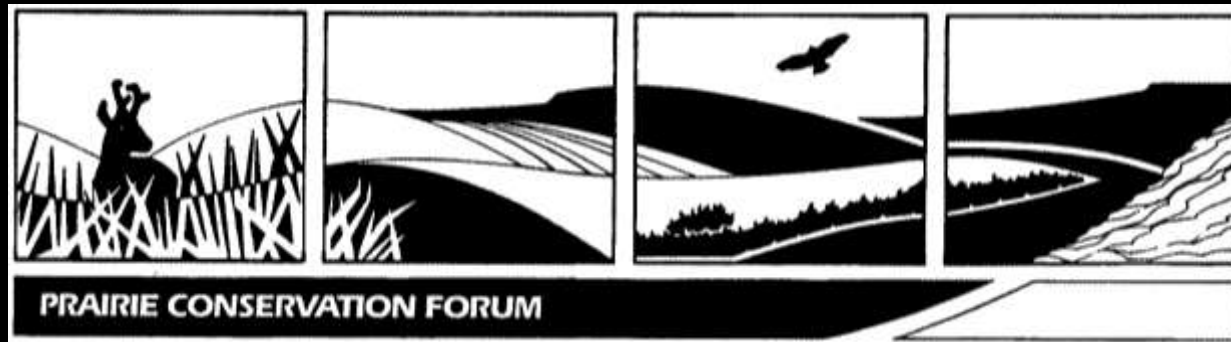
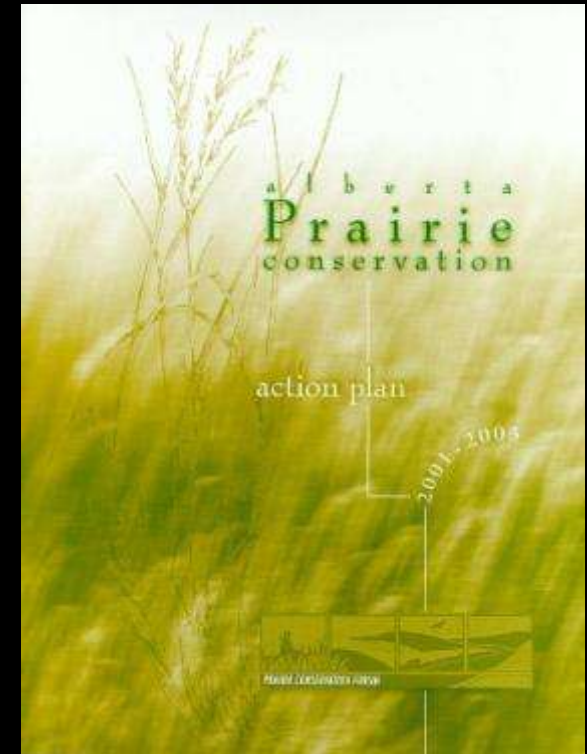
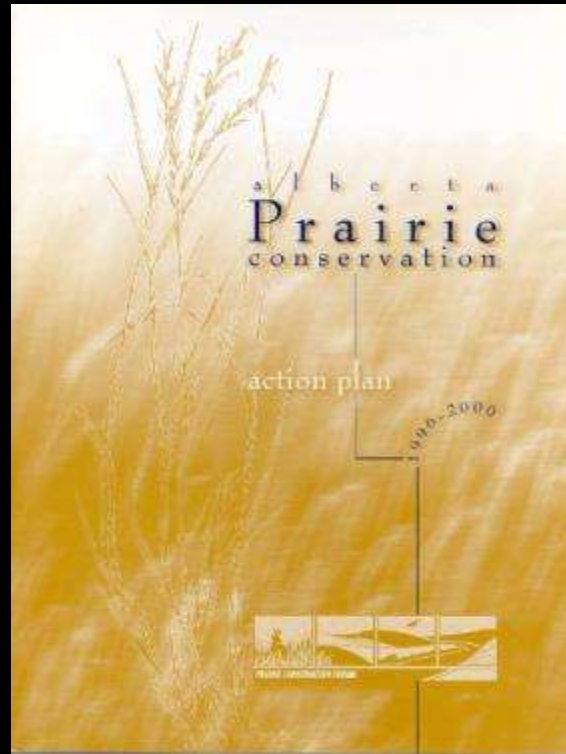
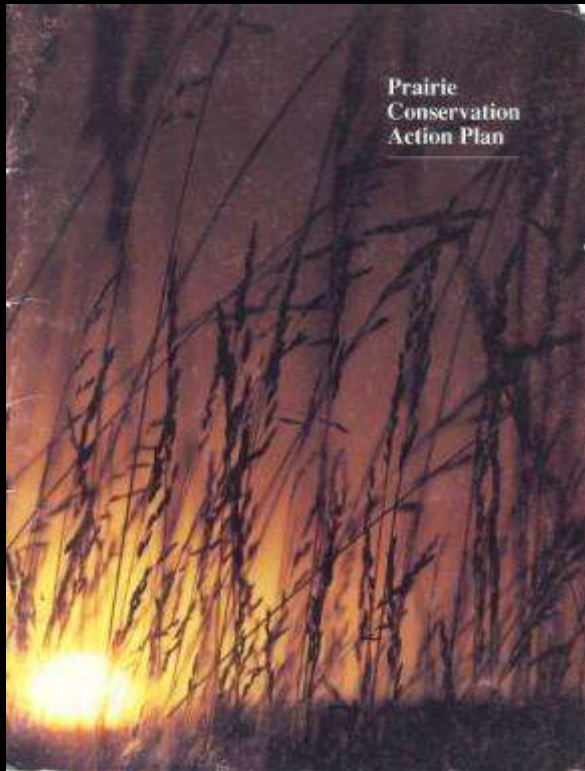
- 20+ ENGOs, U.S. and Canada. Series of protected reserves and connecting wildlife corridors, insulated from residential and industrial development by transition zones.
- Use science, public education, private sector initiatives and advocacy.
- Science based analysis has derived focal areas
- Community based action based on local conditions and preferences
- Cooperation between NGOs, agencies and landowners.
- Voluntary participation with financial incentives.



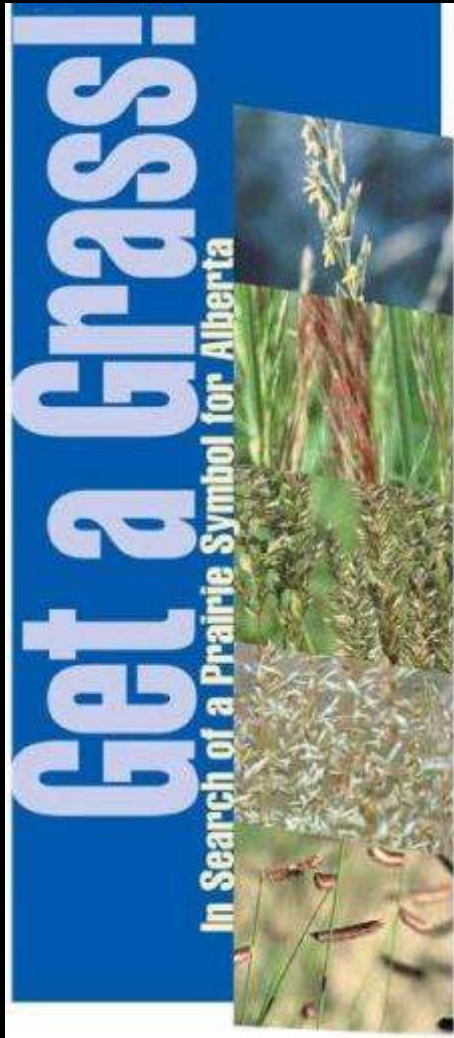
Regional Partnerships

Alberta Prairie Conservation Forum

Since 1989....



Steady as she Goes



Rough Fescue

Provincial Overview Summary

Issues

Lots of Challenges

Information and Tools

Exciting new data and tools

Initiatives

Lots of progressive activity

Human Activity in the West

- Traditional governance
- Transforming landscapes
 - global/regional
- Environmental and institutional challenges
- Provincial overviews
- Choice and values



Values and Choices



Open spaces, open roads

Values and Choices



Natural landscapes and native species

Values and Choices



Variety of landscapes, recreational opportunities and lifestyles

Values and Choices



Everything Changes



Key Messages

- Our natural environmental capital is a key strategic asset in the west.
- The land use pressures we face are real and will only intensify over time.
- Changes are inevitable, but can be positively influenced.
- Institutional capacity, rather than ingenuity, ability or information is the real limiting factor.
- People need to a) recognize that there are real issues and b) appreciate the big picture before useful progress can be made.
- Both government projects and partnership efforts can provide leadership.
- The kind of future that our society wants is a choice we can exercise, based on our values.



The End