



Freedom To Create. Spirit To Achieve.

# Irrigated Crop Production Update - 2010

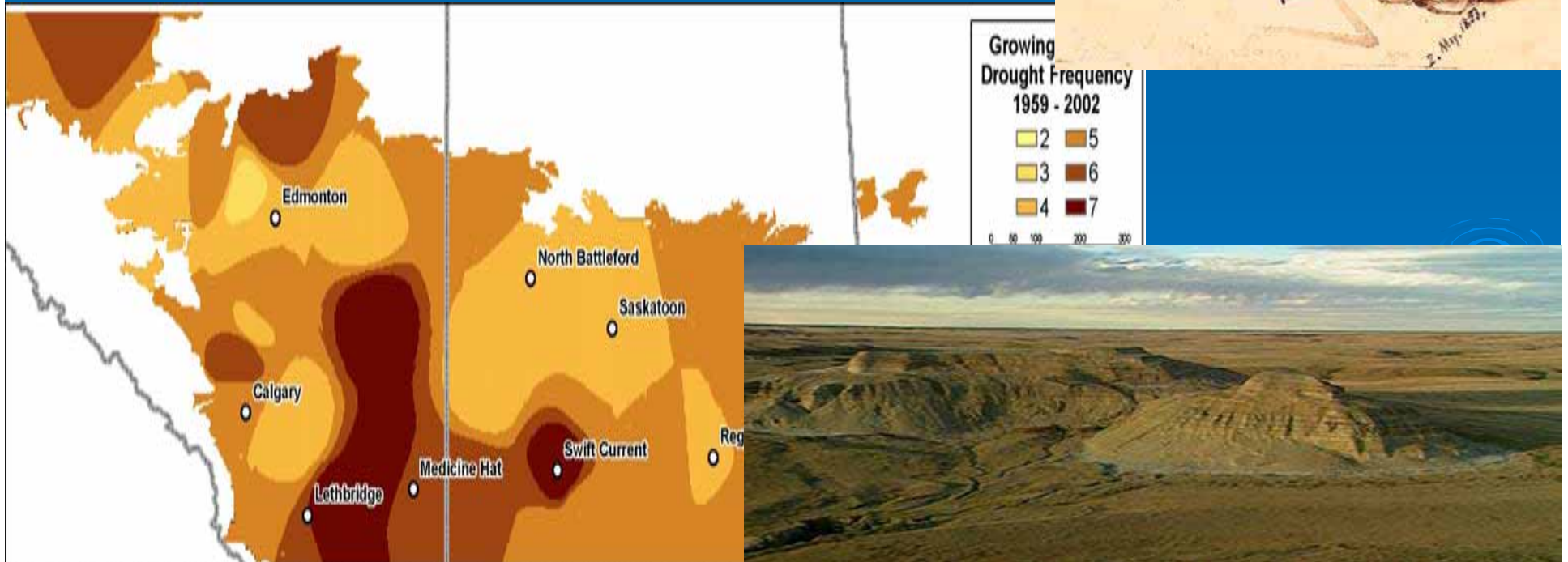
## Irrigation Outlook

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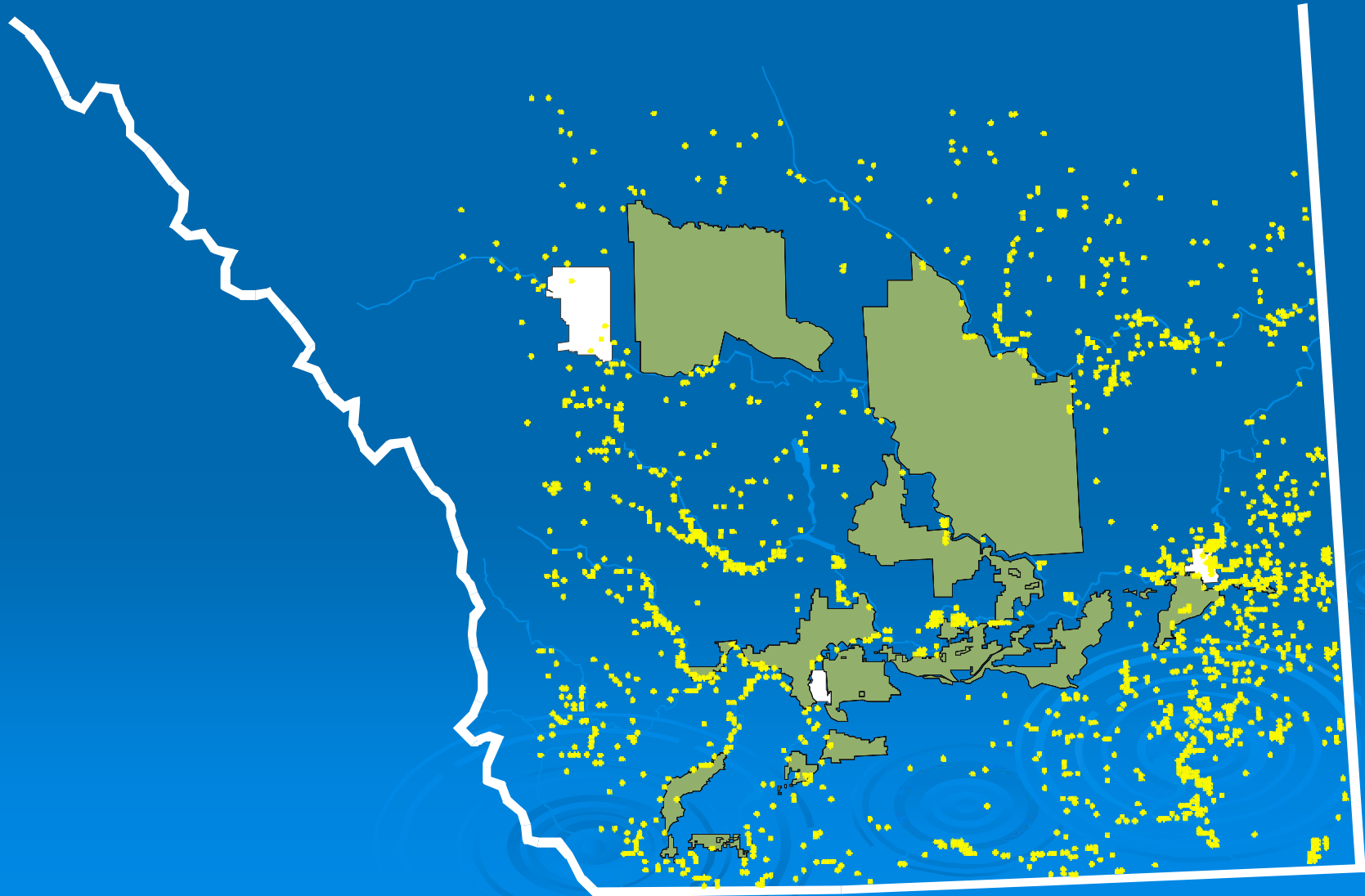


# 1858 Palliser Declares the Prairie as a Dry Waste Land

It was dry then and it's  
still dry today.



# Irrigation in Alberta



# World Food Production

• The long-term ability to feed the world's growing population will increasingly depend on:

- An ever-shrinking land base; and
- Increased competition for limited water supplies.

• By 2025, 80% of the additional food supplies required will be produced on irrigated land.

Image © 2009 TerraMetrics

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

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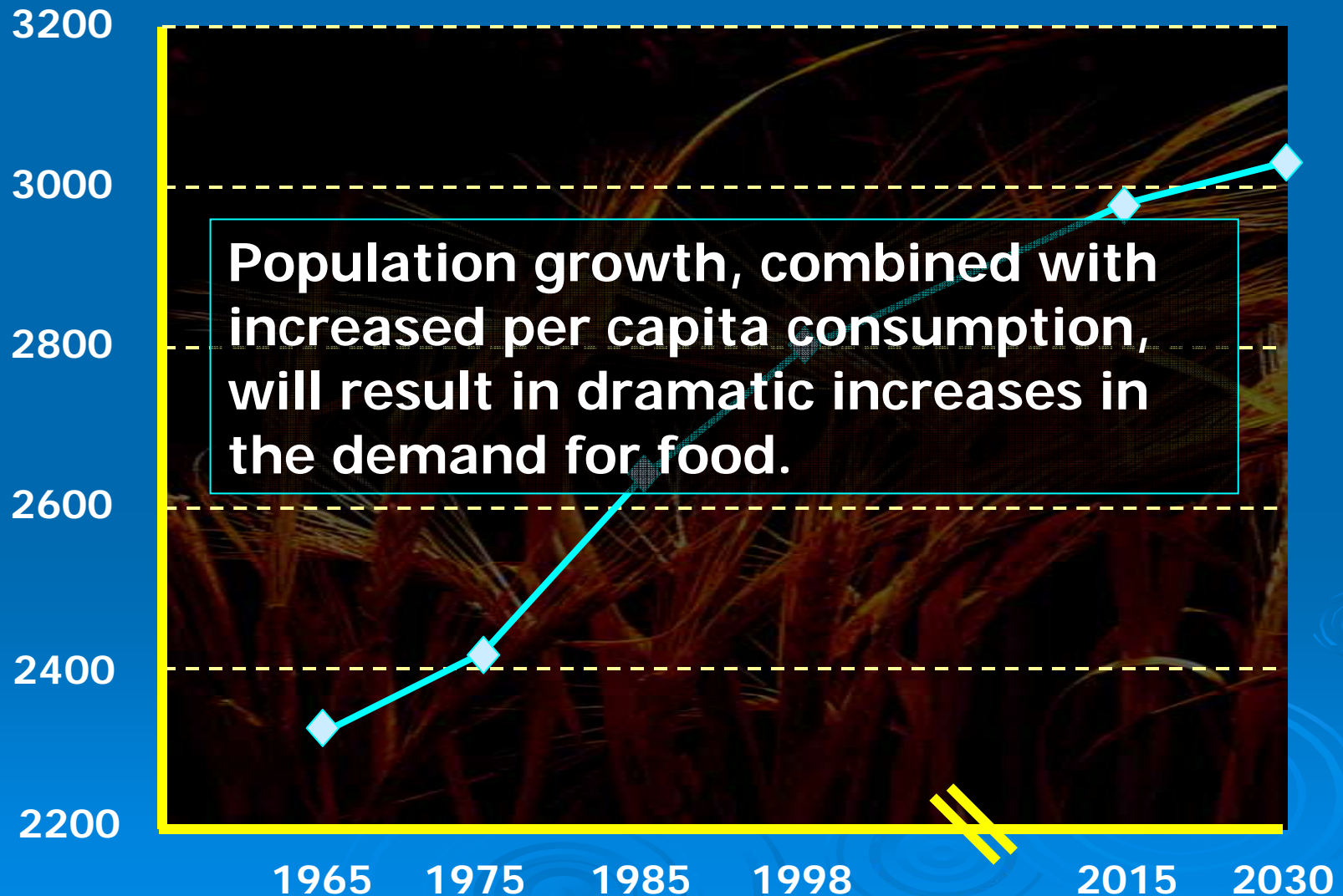
elev 850 m

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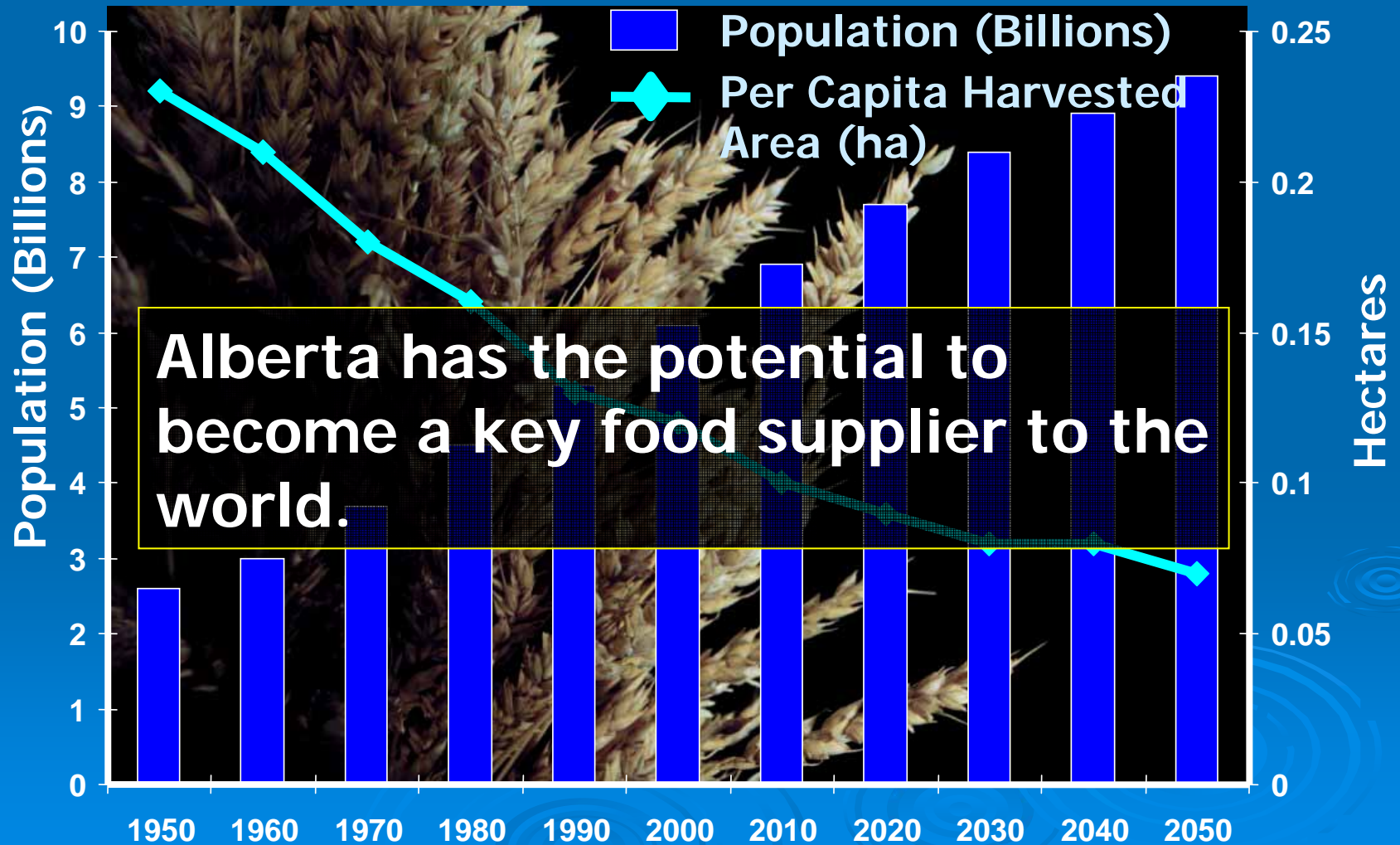
1°30.00" N 28°31'52.02" E

Eye alt 11451.08 km

# Global Food Consumption (kcal/capita/day)



# World's Grain Harvested Area



# U.N. PREDICTIONS 2025

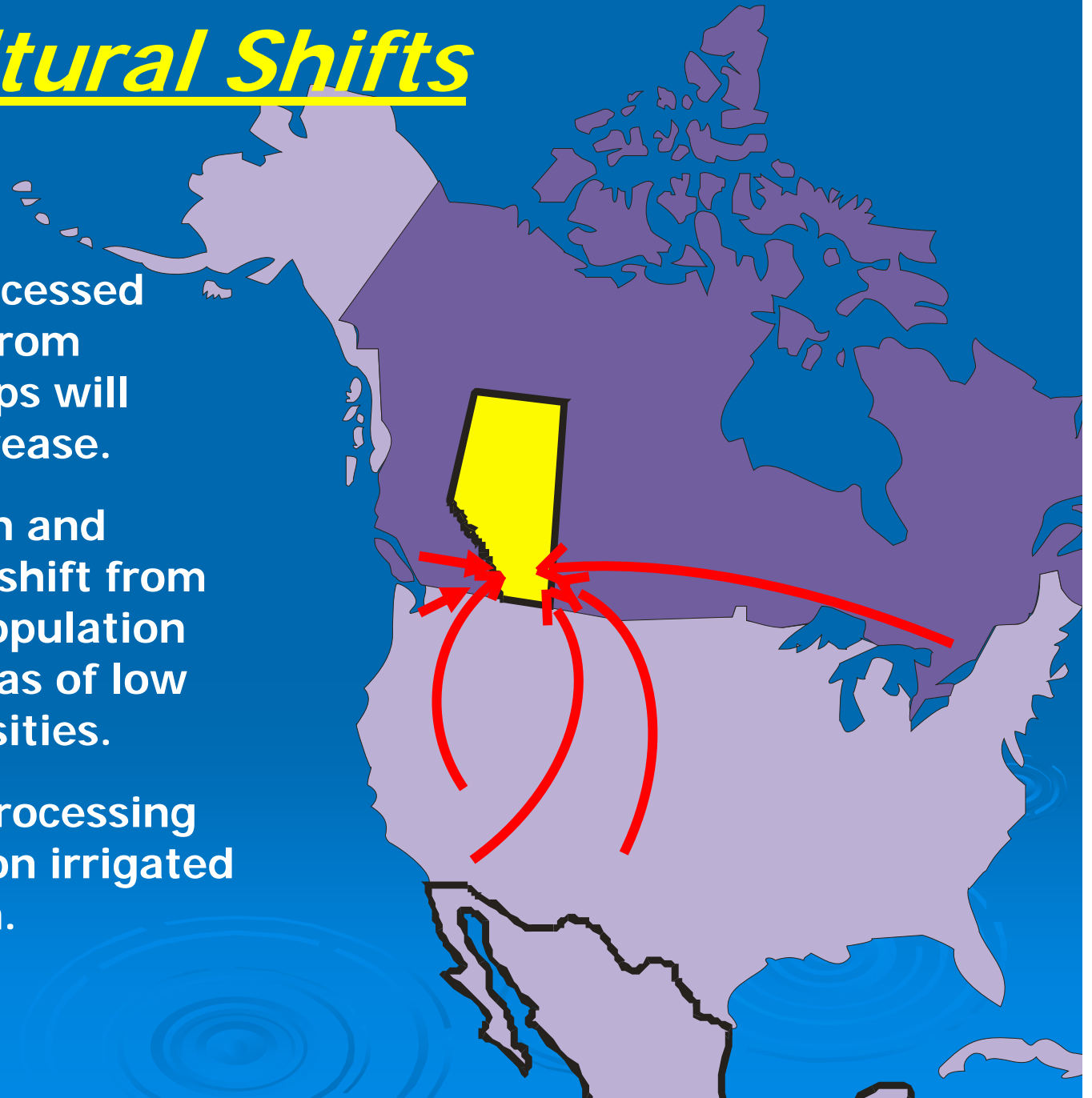
- **Population will increase by 2.2 billion**
- **Increase in affluence results in diet change**
- **Cereal grain consumption will double by 2025**
- **Meat consumption will triple by 2025**
- **By 2030 only 5 countries in the World will be food exporters – Canada is one**

# World Agri-Food Trade

- 
- Over the past 20 years, the world's annual agri-food trade increased by 150%, from \$222 Billion to \$556 Billion (U.S.)
  - Trade in value-added products increased from 66% of the total to 75%.
  - Primary product trade declined from 34% to 25%.

# *Agricultural Shifts*

- ❑ Demand for processed goods derived from agricultural crops will continue to increase.
- ❑ Food production and processing will shift from areas of high population densities to areas of low population densities.
- ❑ Most of these processing industries rely on irrigated crop production.



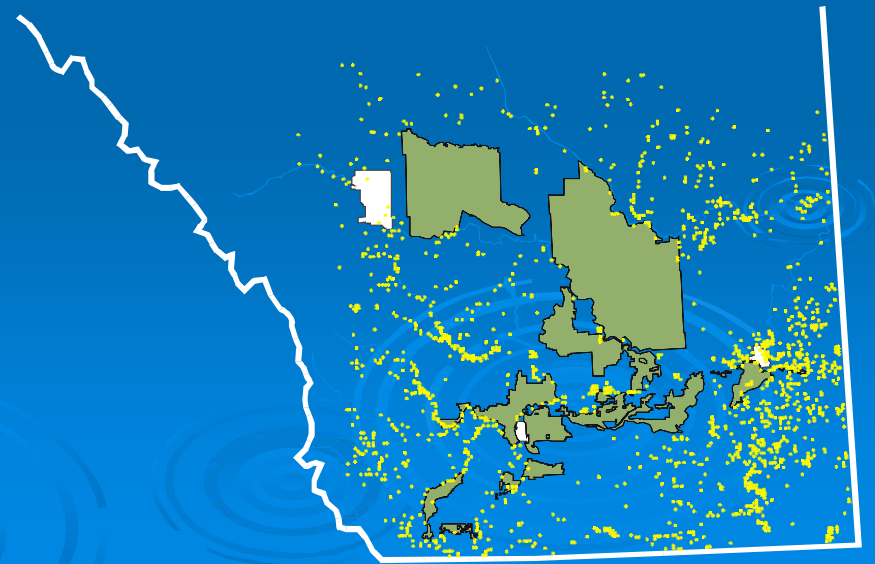
# *Alberta's Economy*



- ❑ Alberta's economy depends on having a strong, global export base.
- ❑ Our economy is therefore shaped by what happens in the rest of the world.

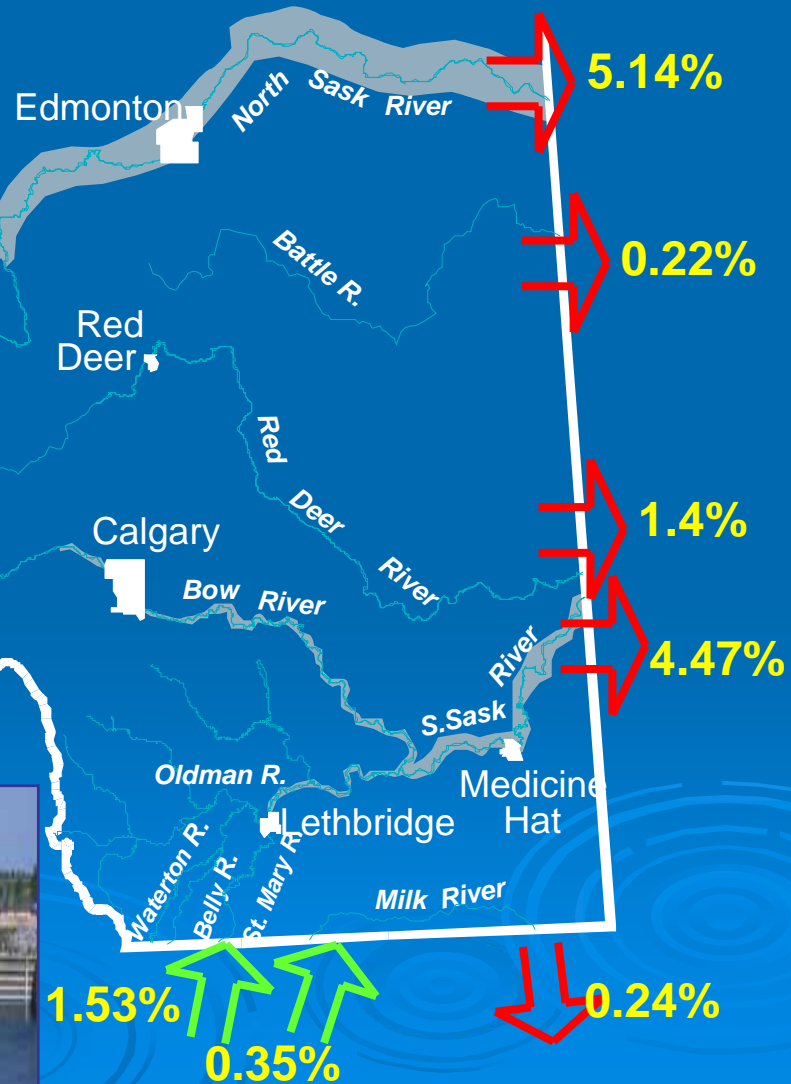
# Irrigation in Alberta - Background

- 640,000 ha. (1,580,000 acres)
- 9,000+ irrigators
- 99% surface water, 1% wells
- 87% sprinkler irrigation
- 13% flood irrigation



# Renewable Water Supply

Only 10% of the renewable water supply serves more than 90% of the province's population.



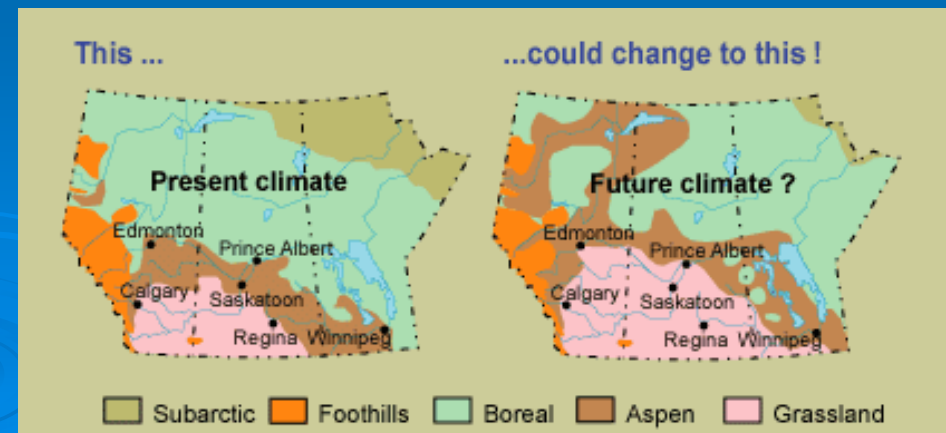
# South Saskatchewan Review

(early 2000's)

- Closure of the Southern Tributaries in 2003 – no new application for water.
  - Waterton
  - Belly
  - St. Mary
- Closure of the Bow, Oldman and lower South Saskatchewan 2007 – no new applications for water.

# South Saskatchewan River Basin

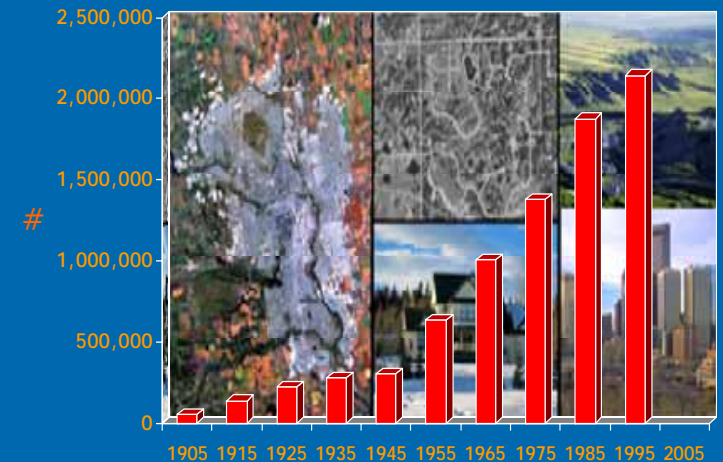
- Expansion within irrigation district has considerable potential
- Irrigation expansion will impact instream flows
- Deficits to junior priority users increases if districts expand
- Additional storage would reduce or eliminate deficits in the Oldman sub-basin
- Global Warming could change the flows in the major rivers.



# South Saskatchewan River Basin Water Demand

- **Current water use is estimated to be 1.93 billion cubic meters**
- **2030 demand is expected to be 3.04 billion cubic meters**
- **2030 non-irrigation use to increase from current 315 million to 410 million cubic meters**

Urban Population



# Potential Growth of the Irrigation Industry

- ❑ Expansion
- ❑ Intensification



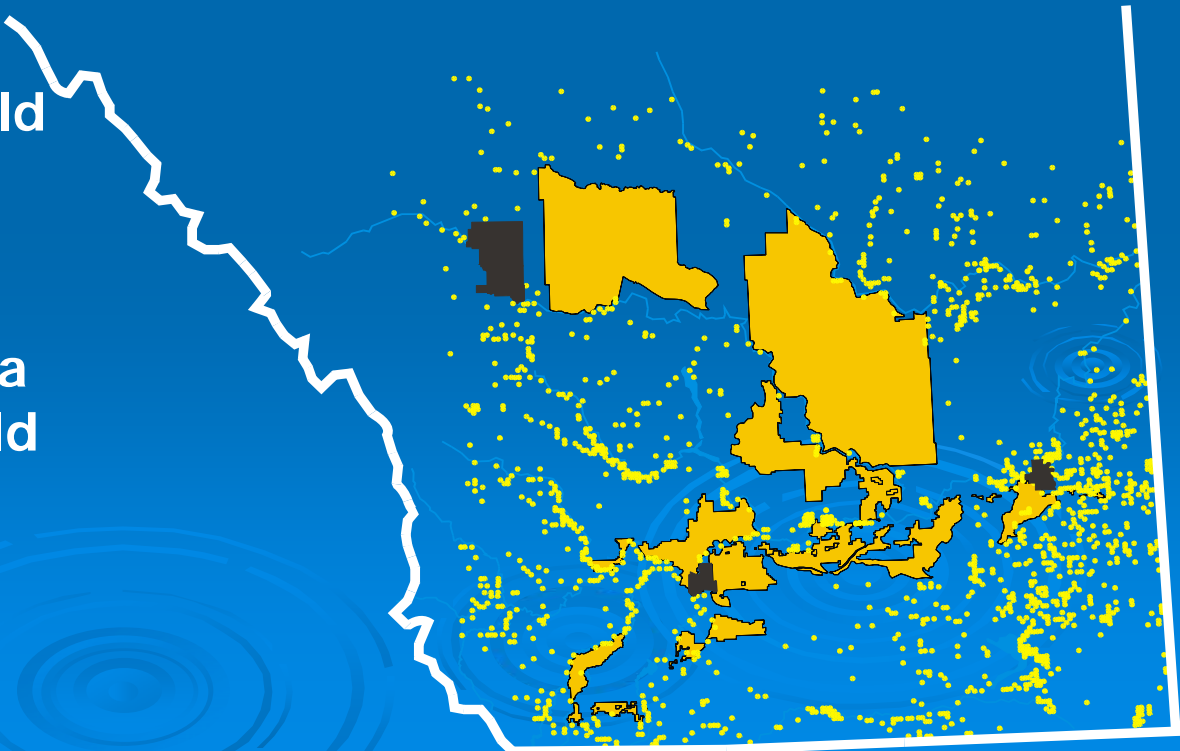
# Expansion Potential

- Water, not land, is the limiting factor restricting irrigation expansion.
- Interest by producers to irrigate far exceeds current water supplies in southern Alberta.

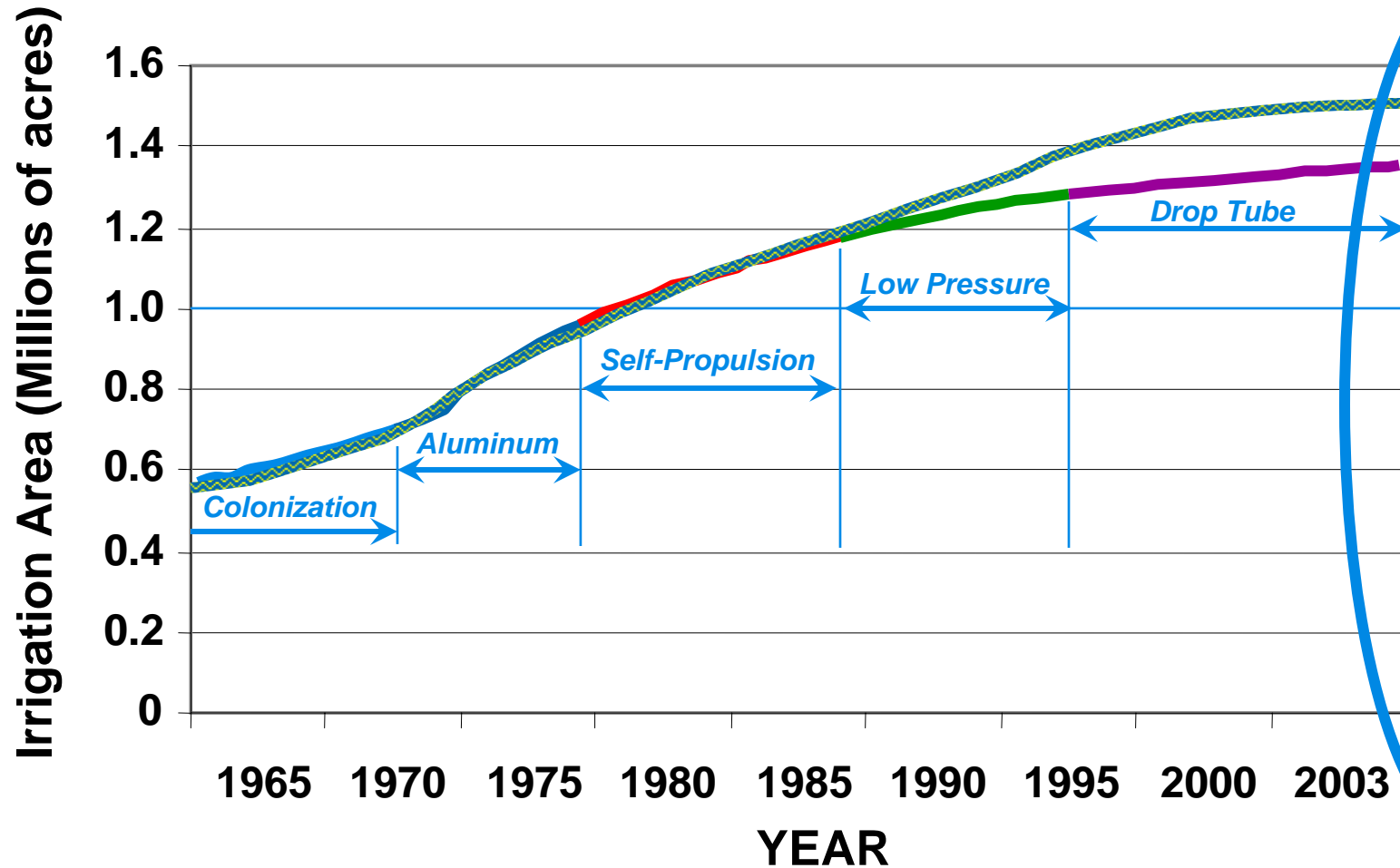


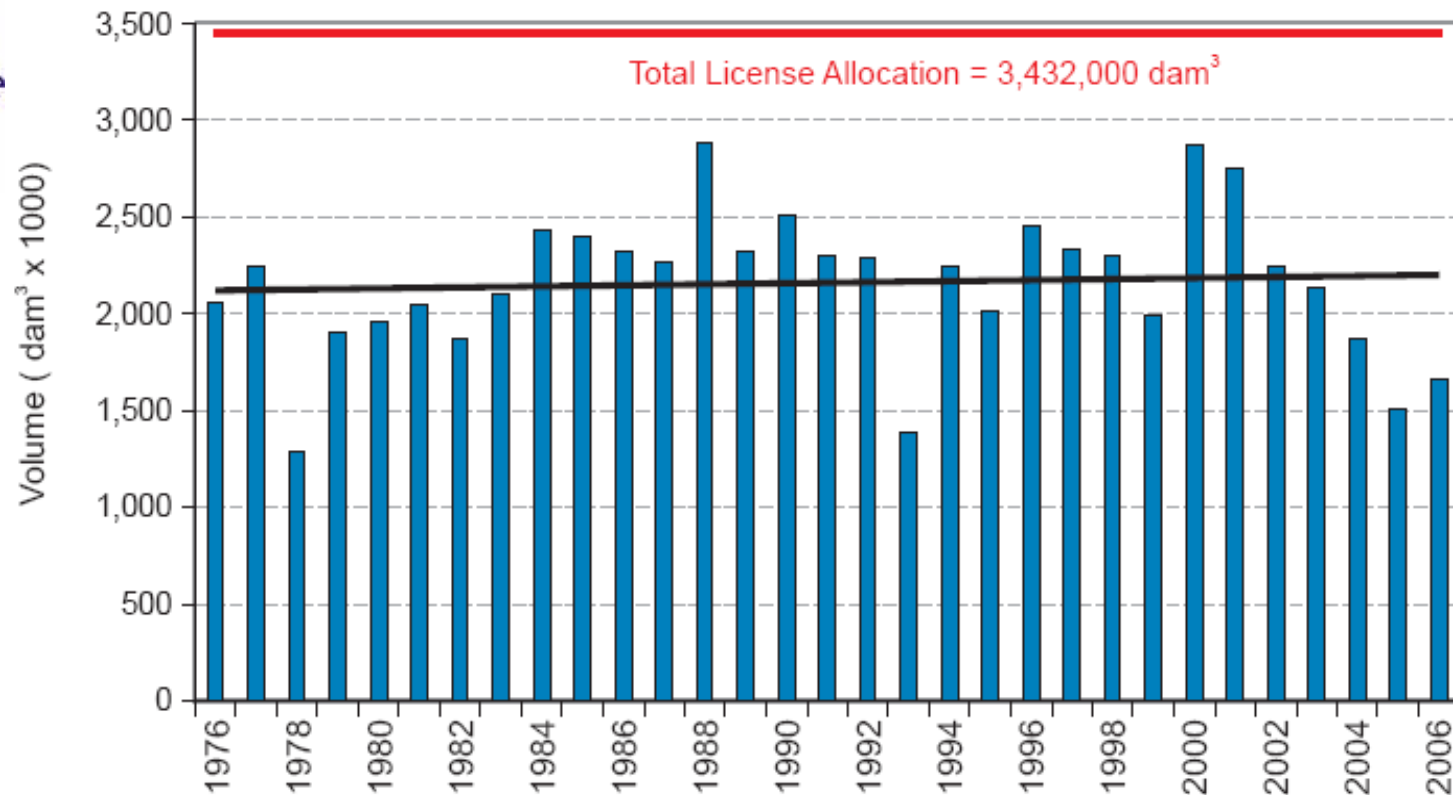
# Irrigation Expansion Potential using existing allocations

- About 640,000 ha of land is currently irrigated in both organized districts and private schemes.
- Irrigation Districts could expand by 10-20% (50,000-100,000 ha)
- An additional 50,000 ha in private projects could be developed.



# Alberta Irrigation District Growth and On-Farm Water Use Efficiency Gains

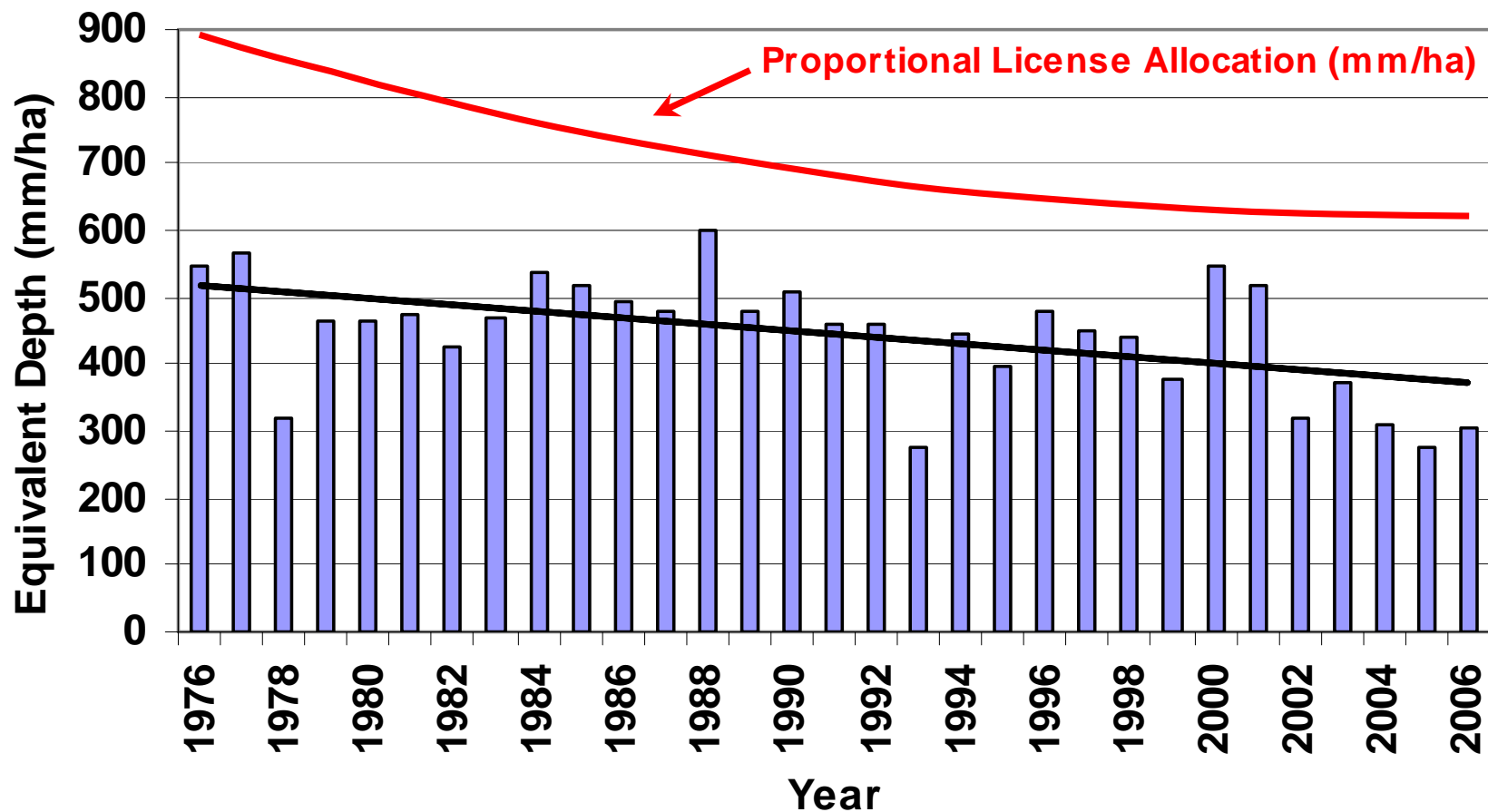




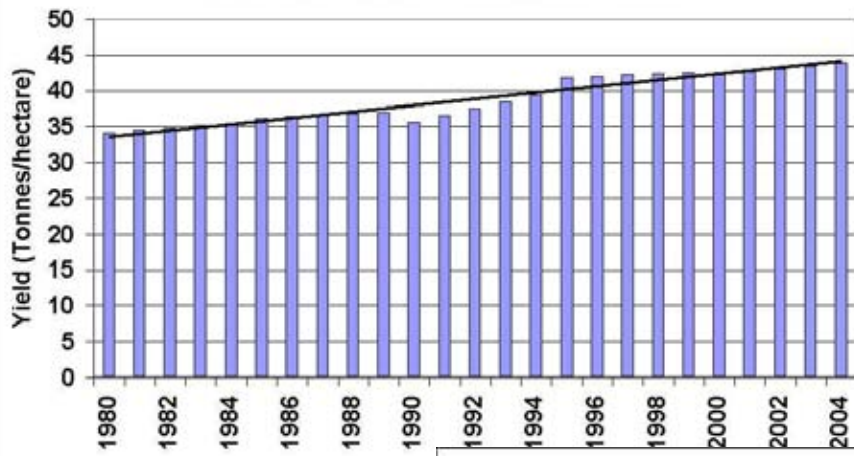
**Figure 6. Irrigation District Annual Diversions (1976 - 2006)**

Note: The annual gross diversion volumes indicated represent the gross volume of water diverted into the works of all 13 irrigation districts and includes, in addition to the volume of water actually distributed for irrigation purposes, those volumes which may have accrued as net gains in reservoir storage within the districts as well as those volumes diverted through the works of the districts for other uses such as domestic, municipal, other agricultural, industrial recreational and habitat enhancement purposes.

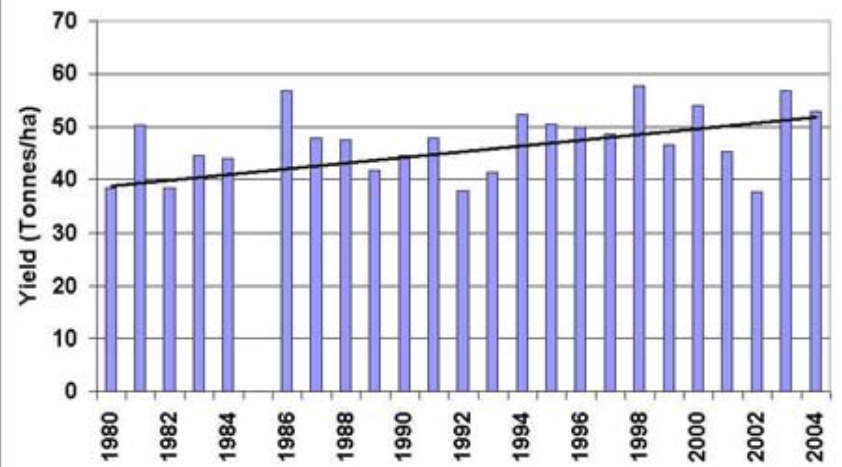
## Irrigation District Water Use and Allocation Trends Assessed Area



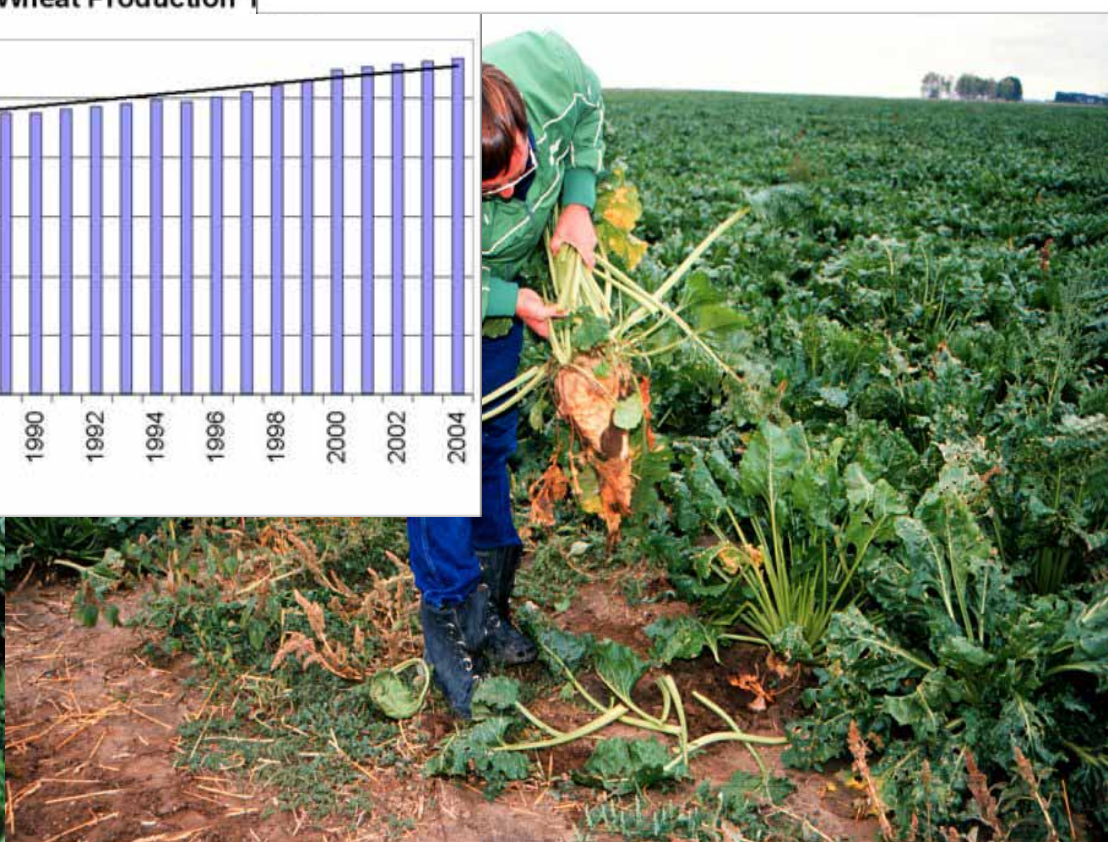
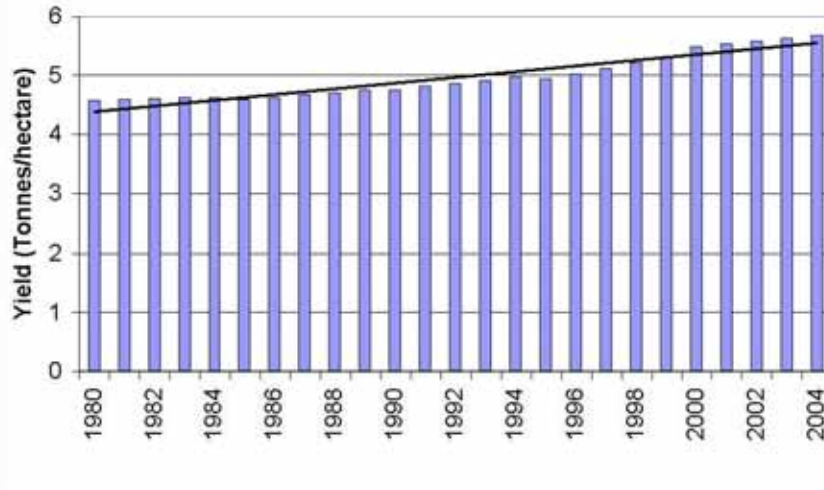
### Historical Potato Production Yields



### Historical Sugar Beet Production Yields



### Historical Soft Wheat Production Yields



## ***Economic Benefits of Irrigation***

- ❑ **The total agricultural benefits resulting from irrigation are in excess of \$5 Billion and more than 13,000 full time jobs.**
- ❑ **It is estimated that at least 40% of these benefits result from the intensive irrigation development within in the St. Mary Project.**

# Change the way we think about water and agriculture

- Feeding the World is important but.....will not change access to water in the future.
- Public pressures and interests must be acknowledged when dealing with water issues.
- Must be prepared to ensure water is available for other uses – people, livestock and the environment

# World Food Production

The background of the slide is a composite image. The top half shows a bright sunset over a flat landscape, with a combine harvester in the center. The bottom left corner shows the silhouettes of several cows grazing in a field against a dark, reddish-orange sky.

**In future, regions such Alberta will be increasingly called upon to supply the additional food requirements for much of the world.**

**Thank You**

**Questions?**

