

Agricultural Classes of Land and The Green Energy Act

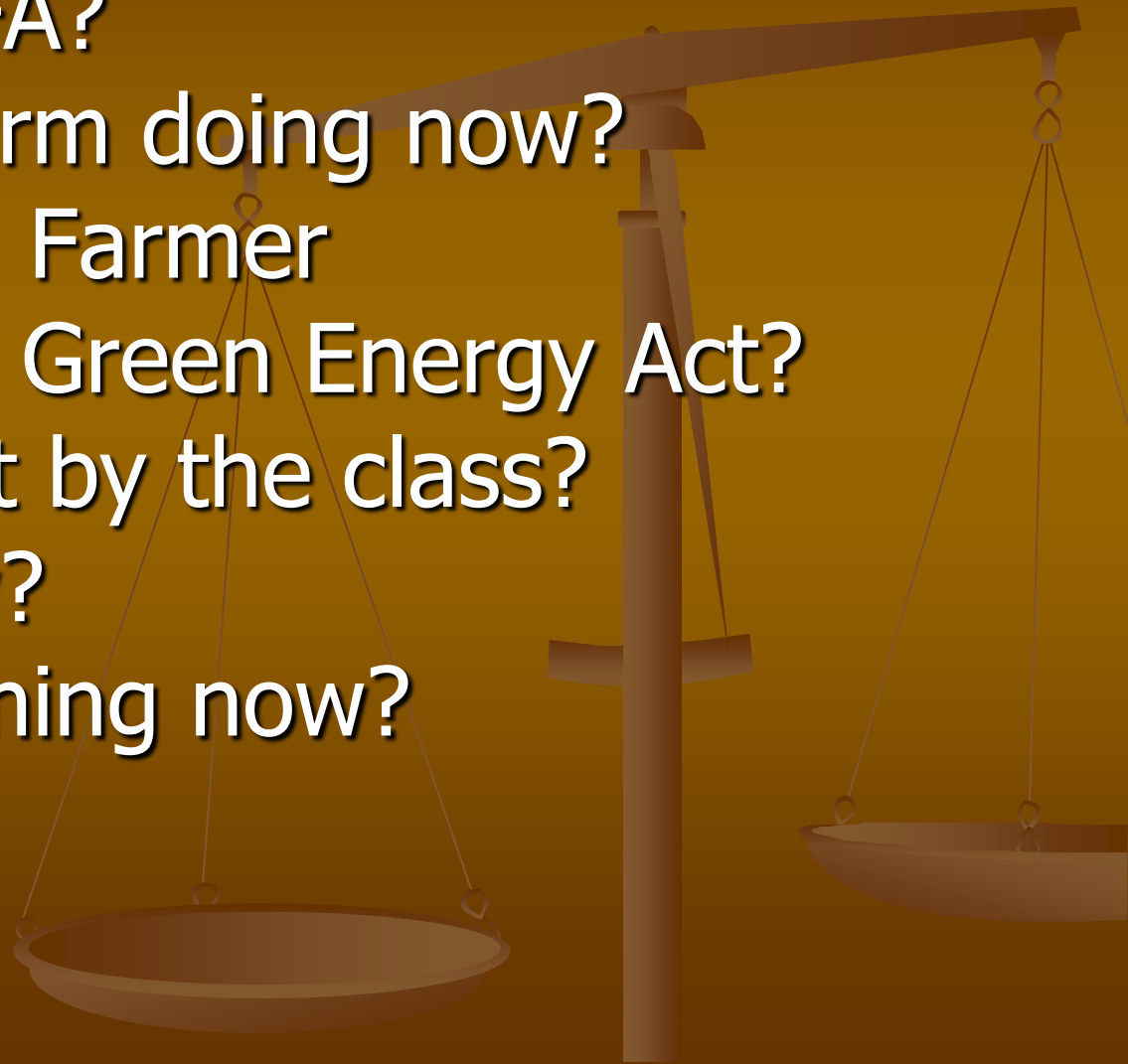


Alternate Energy and the Family Farm
A Symposium

November 16, 2010
Don McCabe
Ontario Federation of Agriculture

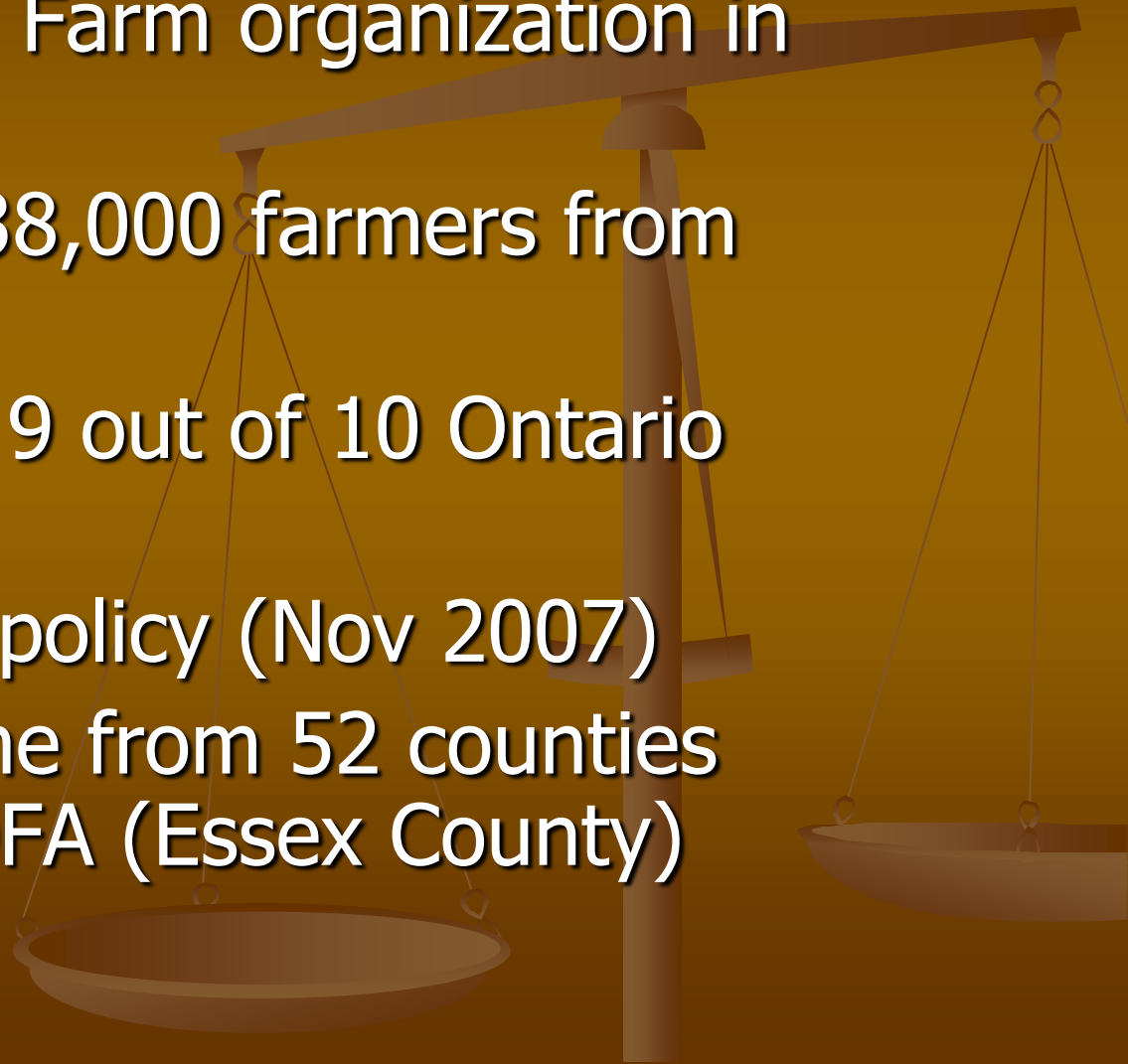
•Presentation Outline

- Who is the OFA?
- What is the farm doing now?
- Definition of a Farmer
- What is in the Green Energy Act?
- What is meant by the class?
- Where to now?
- What's happening now?
- The Balance



Who is The OFA?

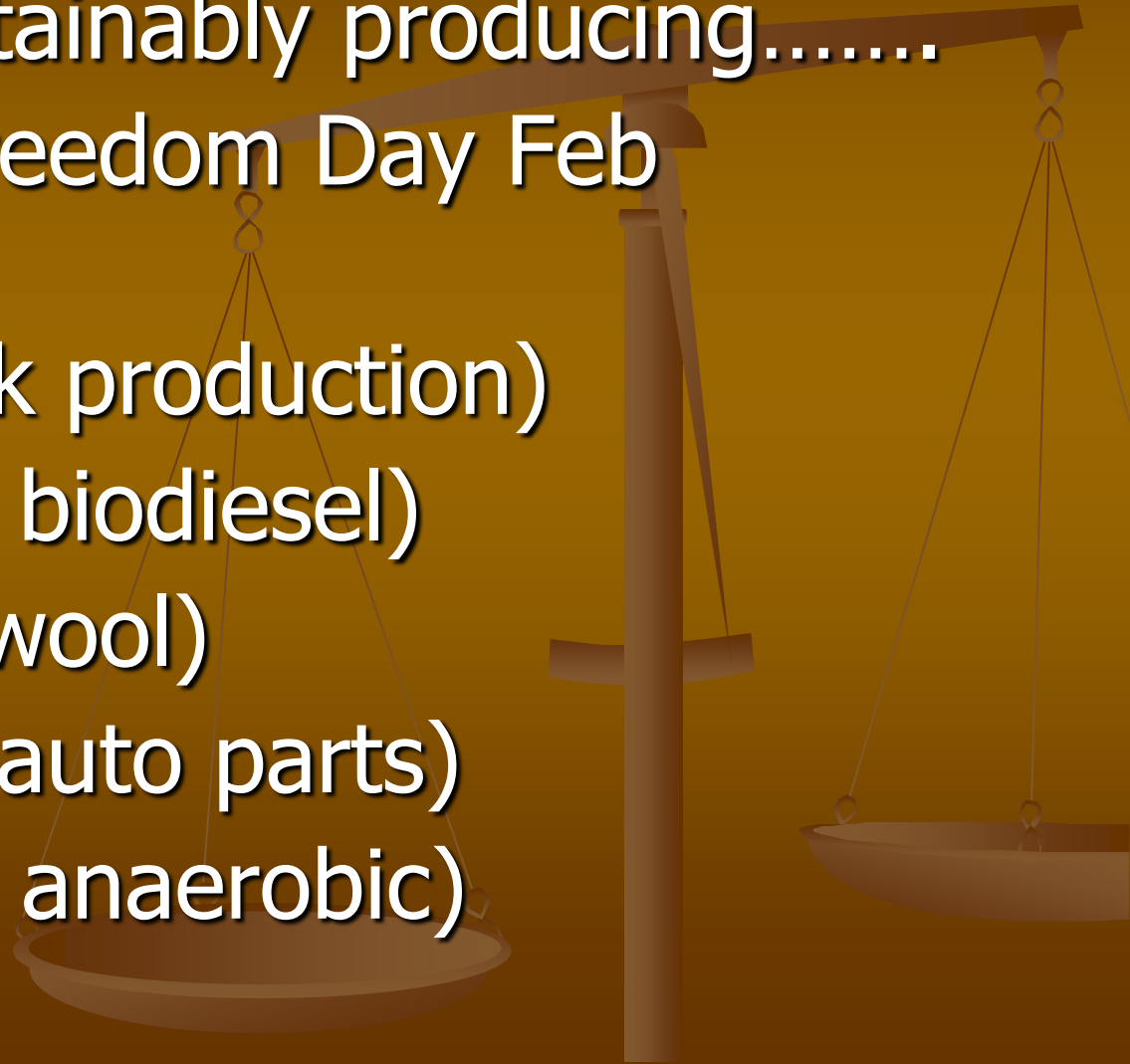
- Largest General Farm organization in Ontario
- Approximately 38,000 farmers from Ontario
- OFA represents 9 out of 10 Ontario farmers
- Resolutions set policy (Nov 2007)
- Resolutions come from 52 counties affiliated with OFA (Essex County)



What is the farm doing now?

The farm is sustainably producing.....

- Food (Food Freedom Day Feb 12,2009)
- Feed (livestock production)
- Fuel (ethanol, biodiesel)
- Fiber (hemp, wool)
- Plastics (PLA, auto parts)
- Energy (wind, anaerobic)
- Exports



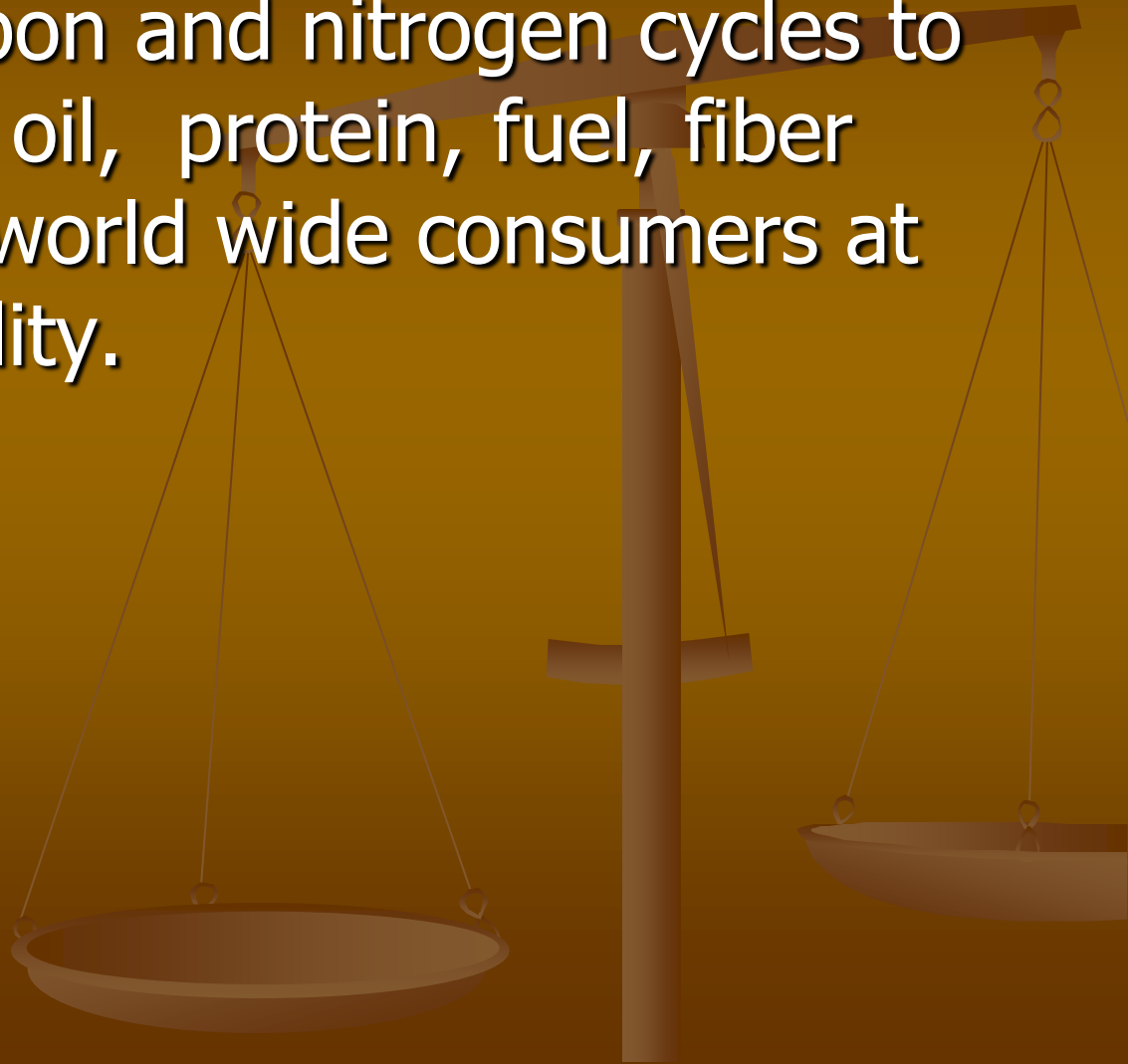
Definition of a Farmer

- Cash crop
- Corn, soybeans, wheat farmer
- Beef farmer
- Fruit and vegetable producer
- Egg producer
- Or.....

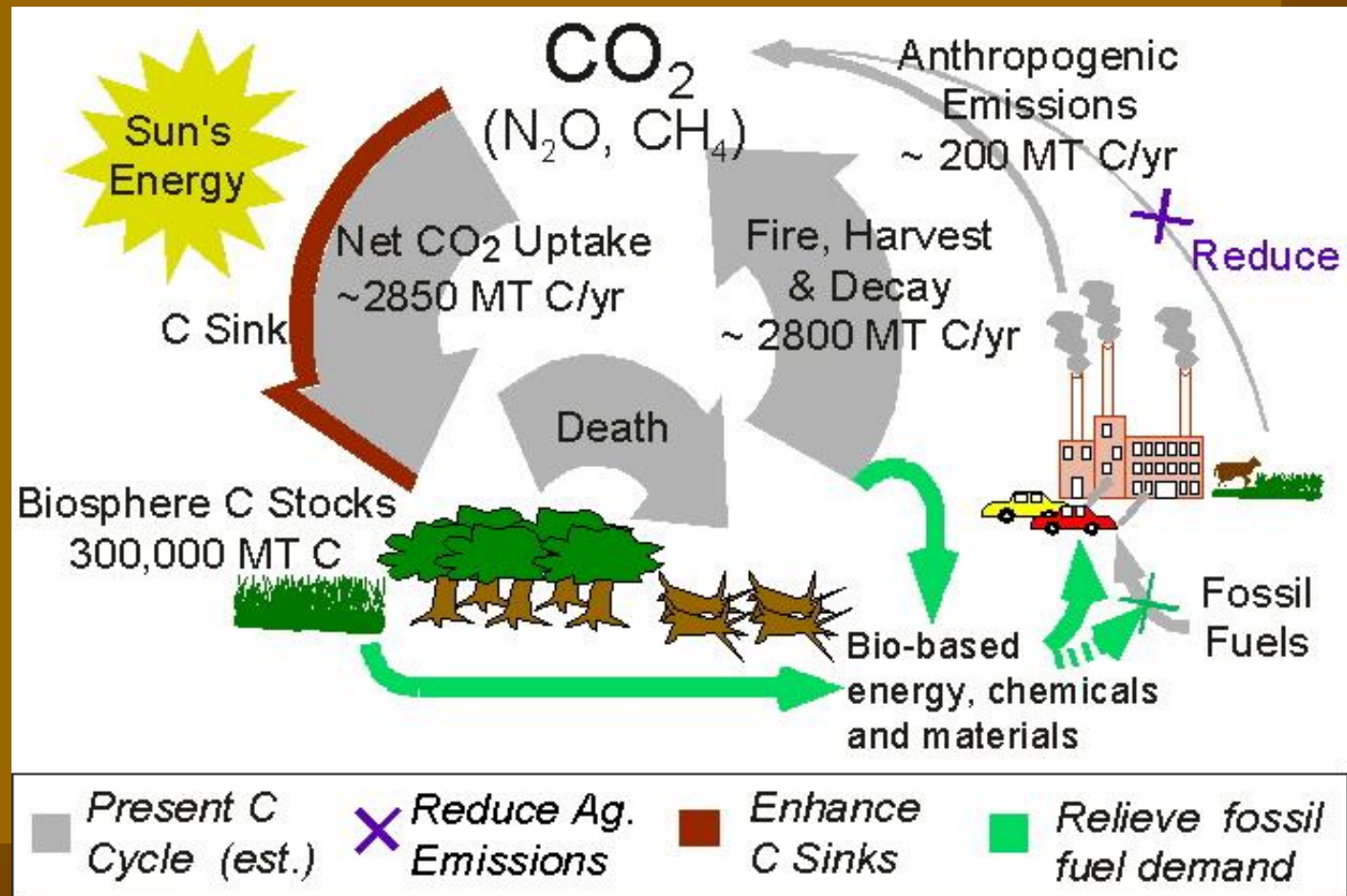


Definition of a Farmer

- Manager of carbon and nitrogen cycles to produce starch, oil, protein, fuel, fiber and energy for world wide consumers at the highest quality.



The Canadian Biosphere



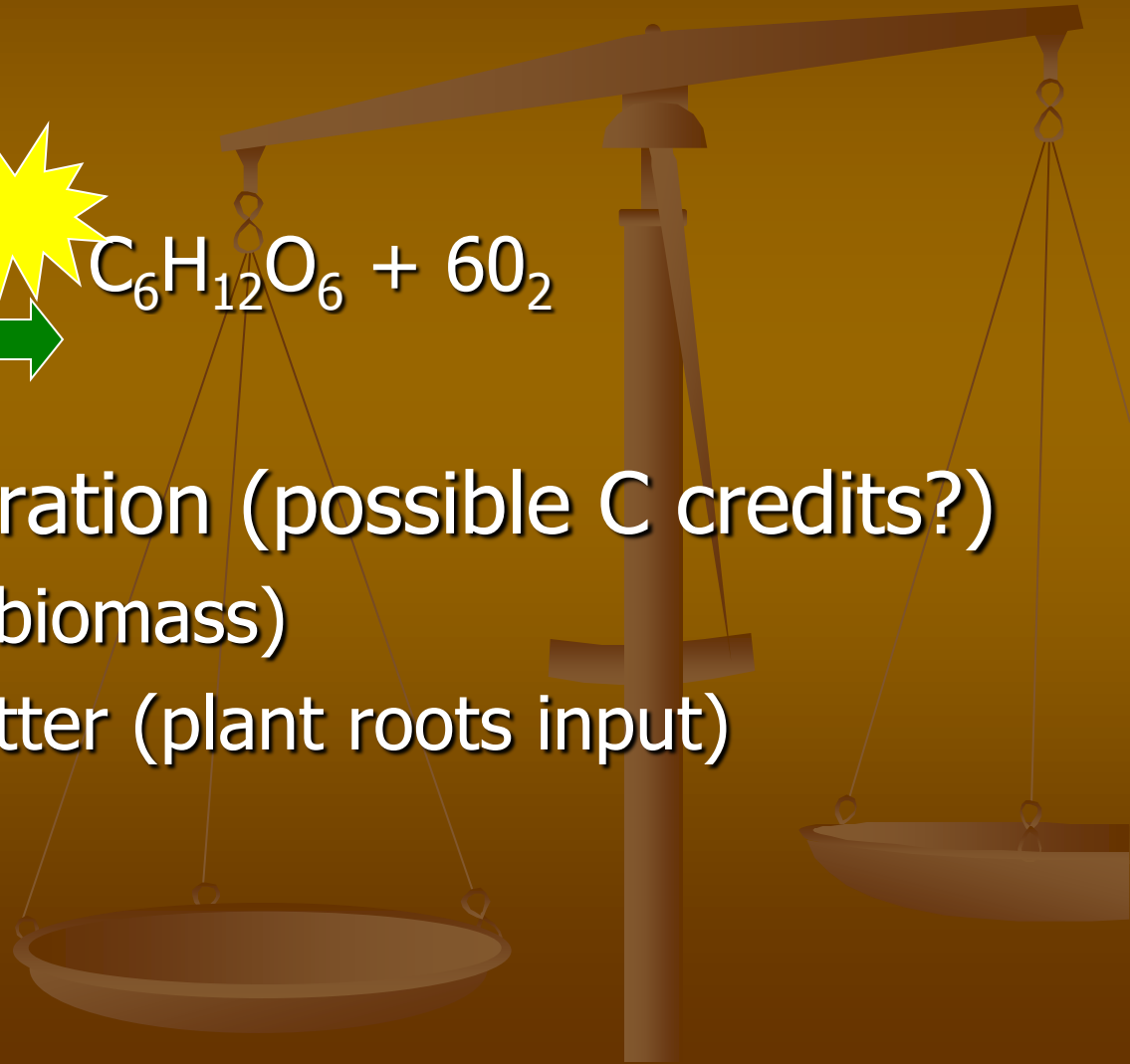
Capturing Environmental Value

- Photosynthesis



- Carbon Sequestration (possible C credits?)





- Plant material (biomass)
 - Soil organic matter (plant roots input)

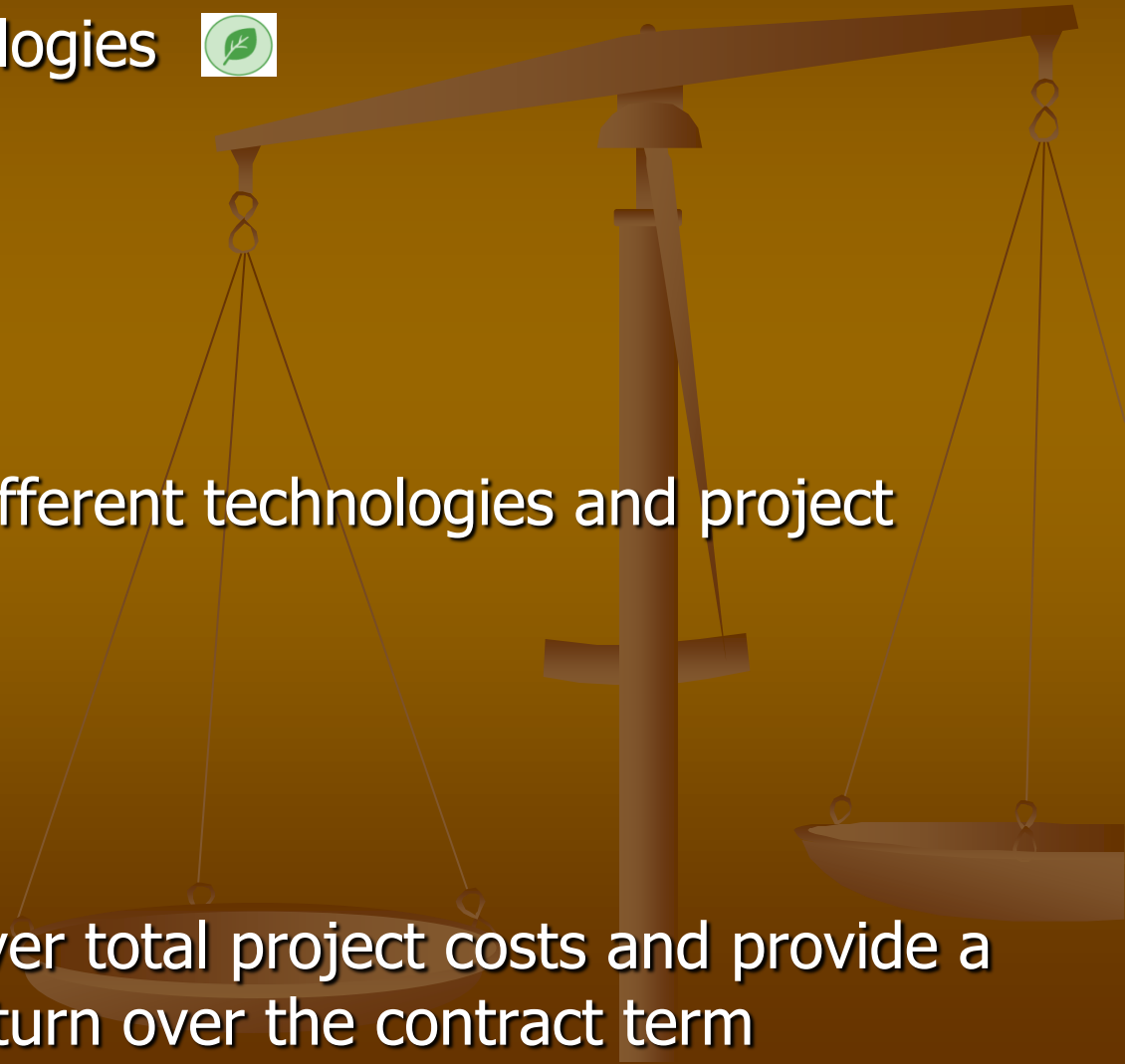


Green Energy and Green Economy Act, 2009

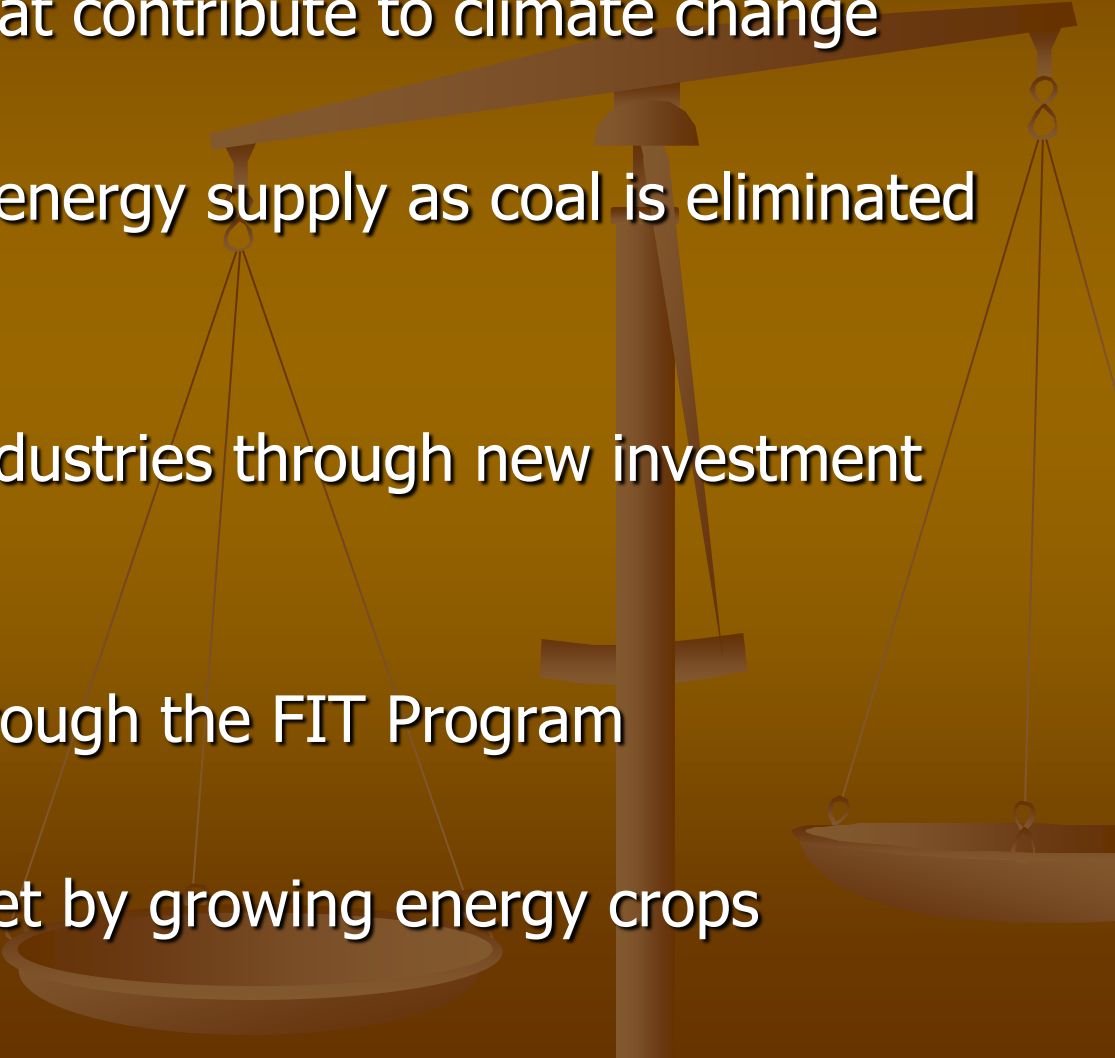
- Recent legislation creates a new electricity paradigm for renewable energy:
 - Streamlined permitting and approvals process
 - Priority connection – “Right to Connect”
 - Fixed price contracts for power production
 - Ownership opportunities for private sector, municipalities, utilities, aboriginal and community groups
 - Creates lots of opportunities for the agricultural sector
- 

FIT Program Key Features

- Open to various renewable energy supply technologies
 - Bio-energy technologies 
 - Solar PV 
 - Waterpower 
 - Wind 
- Different prices for different technologies and project sizes
- Long-term contracts
- Prices that aim to cover total project costs and provide a reasonable rate of return over the contract term



Green Energy Benefits to the Agricultural Community

- Reduces emissions that contribute to climate change
 - Increases renewable energy supply as coal is eliminated from the supply mix
 - Creates new green industries through new investment and job creation
 - Generates income through the FIT Program
 - Diversifies your market by growing energy crops
- 

FIT and microFIT Program

- The FIT Program is divided into two streams – FIT and microFIT

FIT Program stream	microFIT Program stream
Small, medium and large renewable energy projects Generating over 10 kW of electricity.	Very small renewable projects such as home or a small business installations Generating 10 kW or less.

- The microFIT program is highly simplified and the contract issuance process is different from the FIT program

Environmentally Preferable

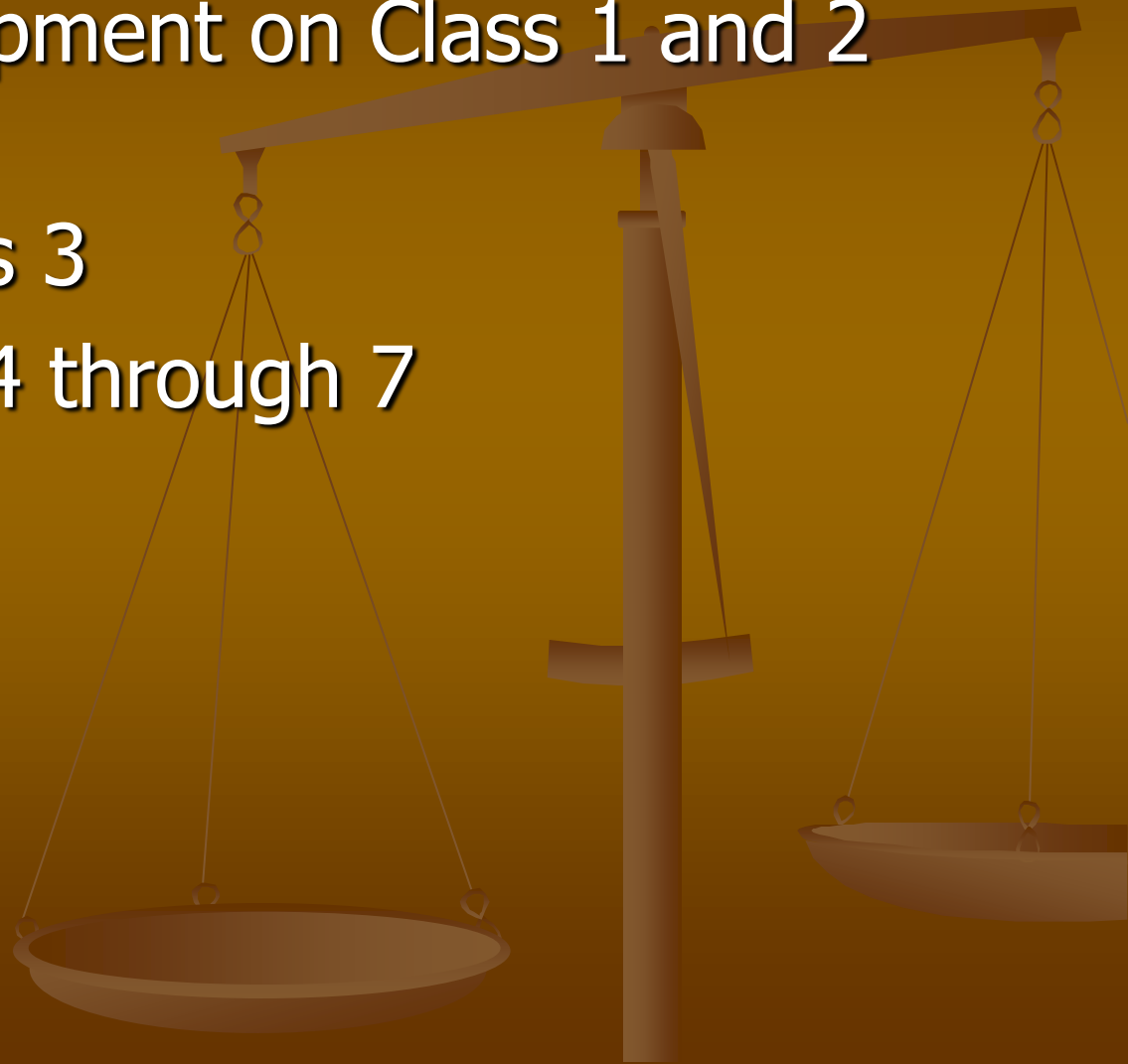
Lifecycle greenhouse gas emission estimates for electricity generators^[1]

Technology	Description	Estimate (g CO ₂ /kWh _e)
Wind	2.5 MW offshore	9
Hydroelectric	3.1 MW reservoir	10
Wind	1.5 MW onshore	10
Biogas	Anaerobic digestion	11
Hydroelectric	300kW run-of-river	13
Solar thermal	80 MW parabolic trough	13
Biomass	various	14-35
Solar PV	Polycrystalline silicon	32
Geothermal	80 MW hot dry rock	38
Nuclear	various reactor types	66
Natural gas	various combined cycle turbines	443
Diesel	various generator and turbine types	778
Heavy oil	various generator and turbine types	778
Coal	various generator types with scrubbing	960
Coal	various generator types without scrubbing	1050

ONTARIOPOWER
GENERATION

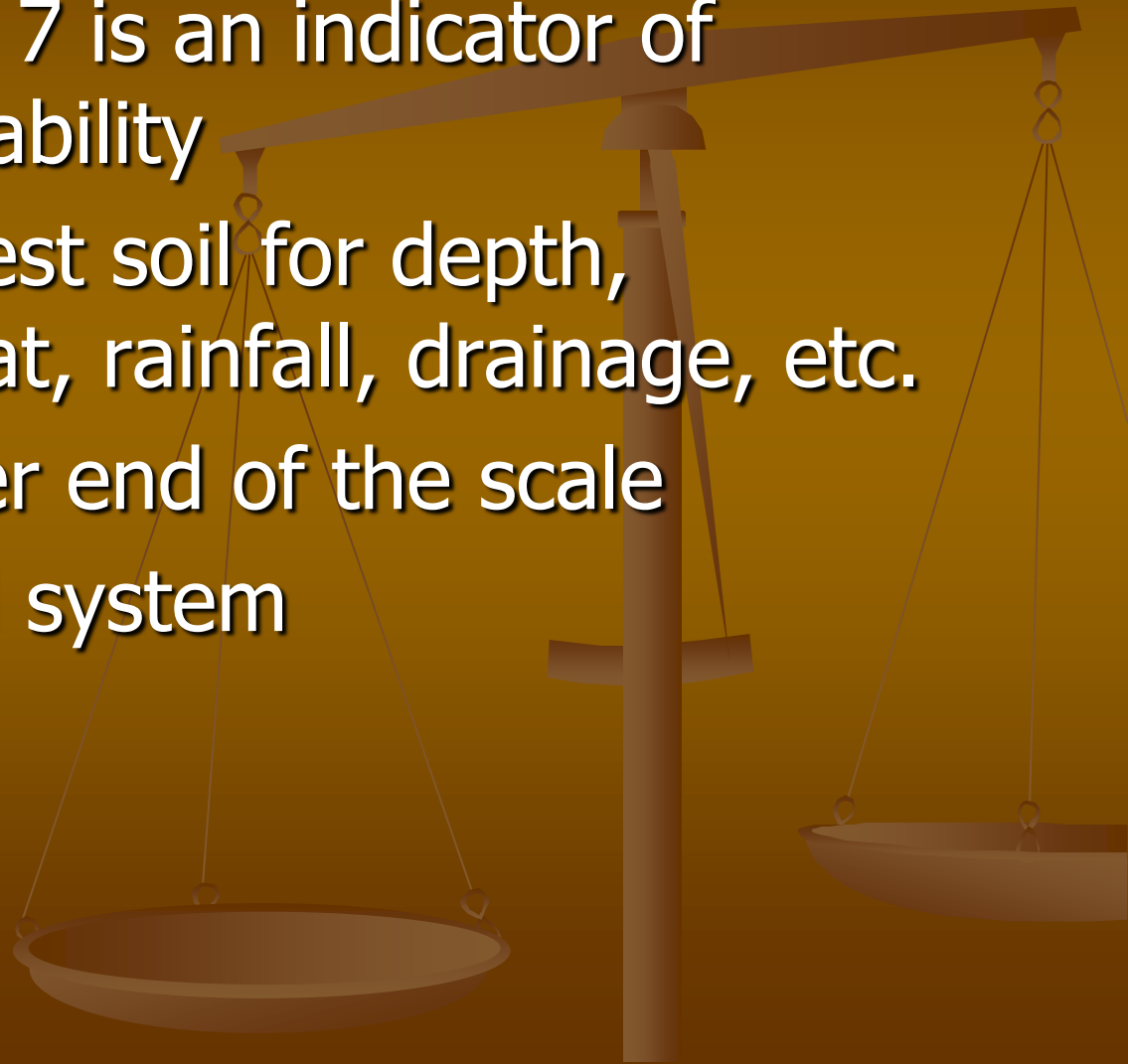
What is in the Green Energy Act specific to land use?

- No solar development on Class 1 and 2 lands
- Limited on Class 3
- Future is Class 4 through 7

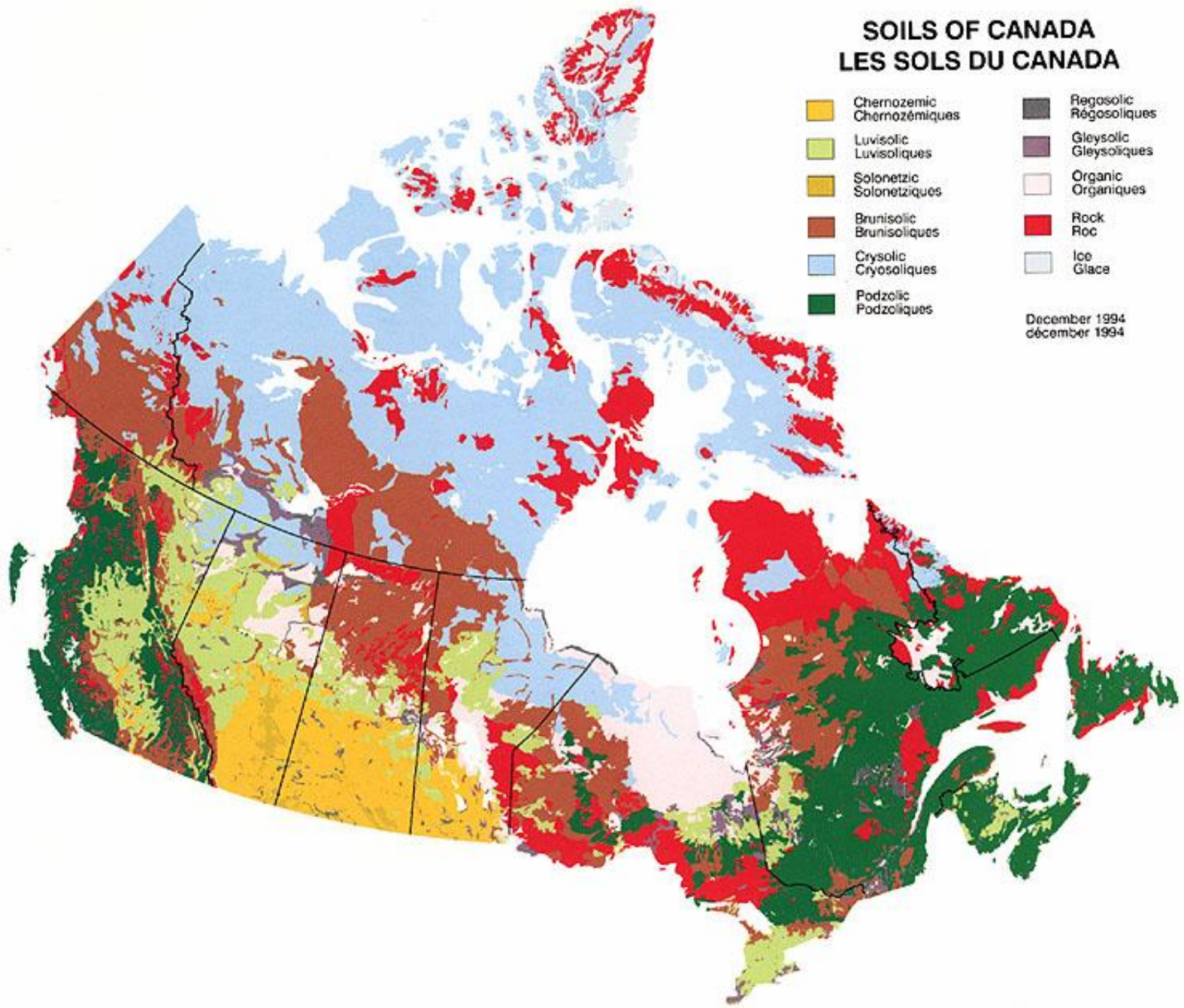


What is meant by the class

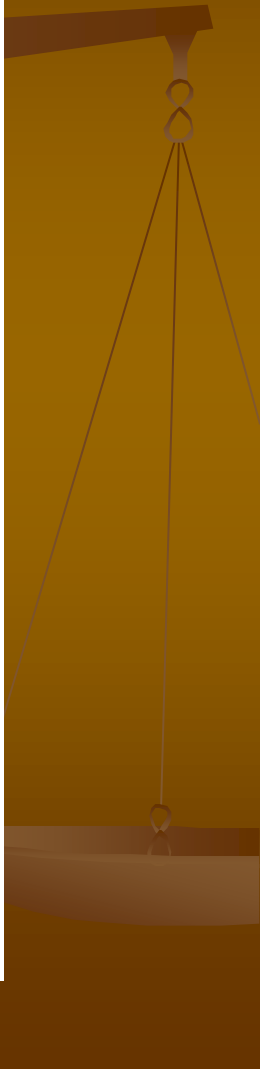
- Class 1 through 7 is an indicator of agricultural suitability
- Class 1 is the best soil for depth, topography, heat, rainfall, drainage, etc.
- Class 7 the other end of the scale
- This is a federal system



SOILS OF CANADA LES SOLS DU CANADA

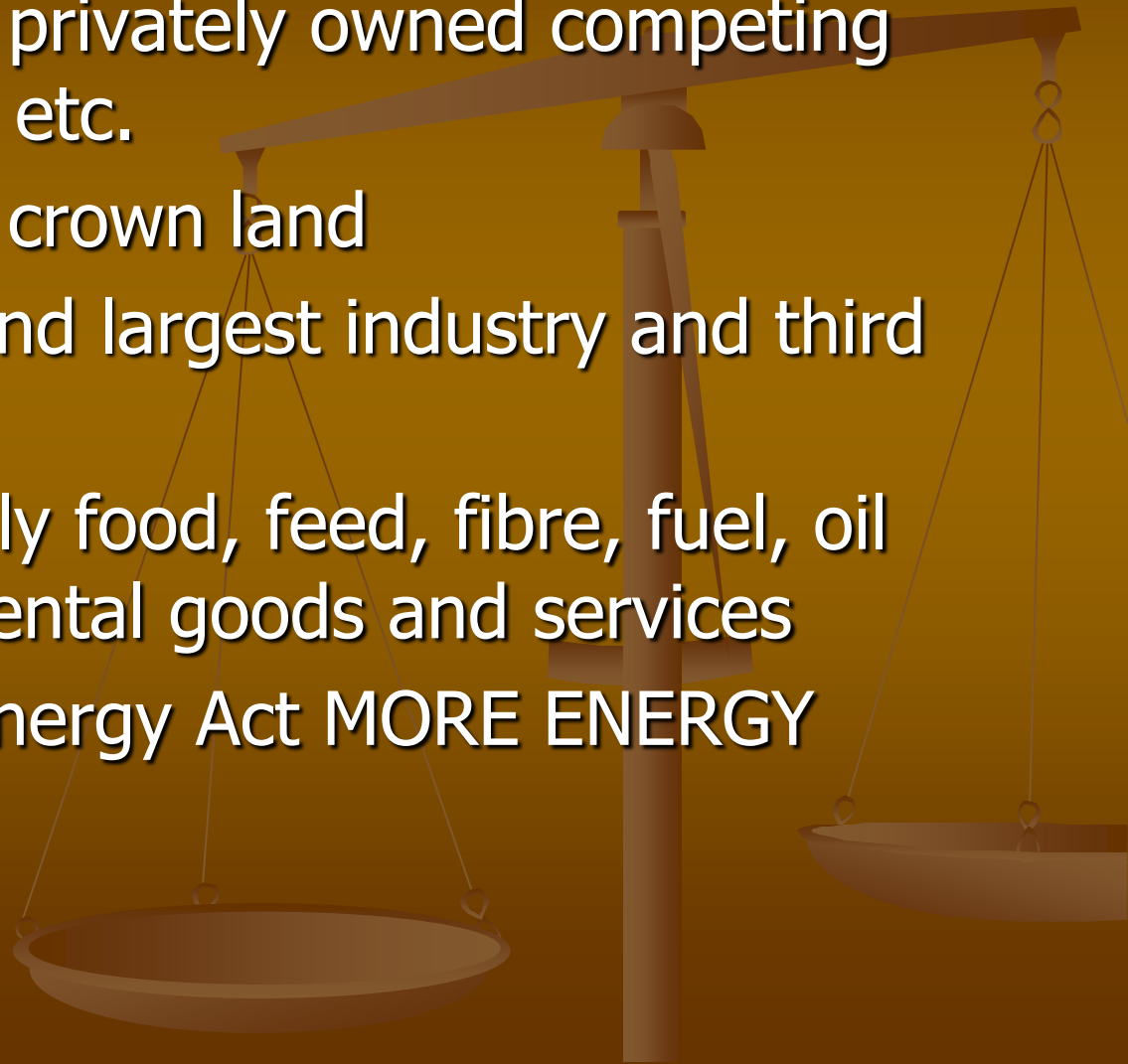


What is the Ontario Arable Landscape?

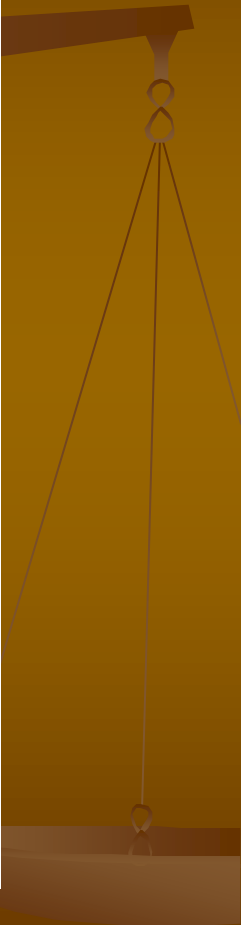


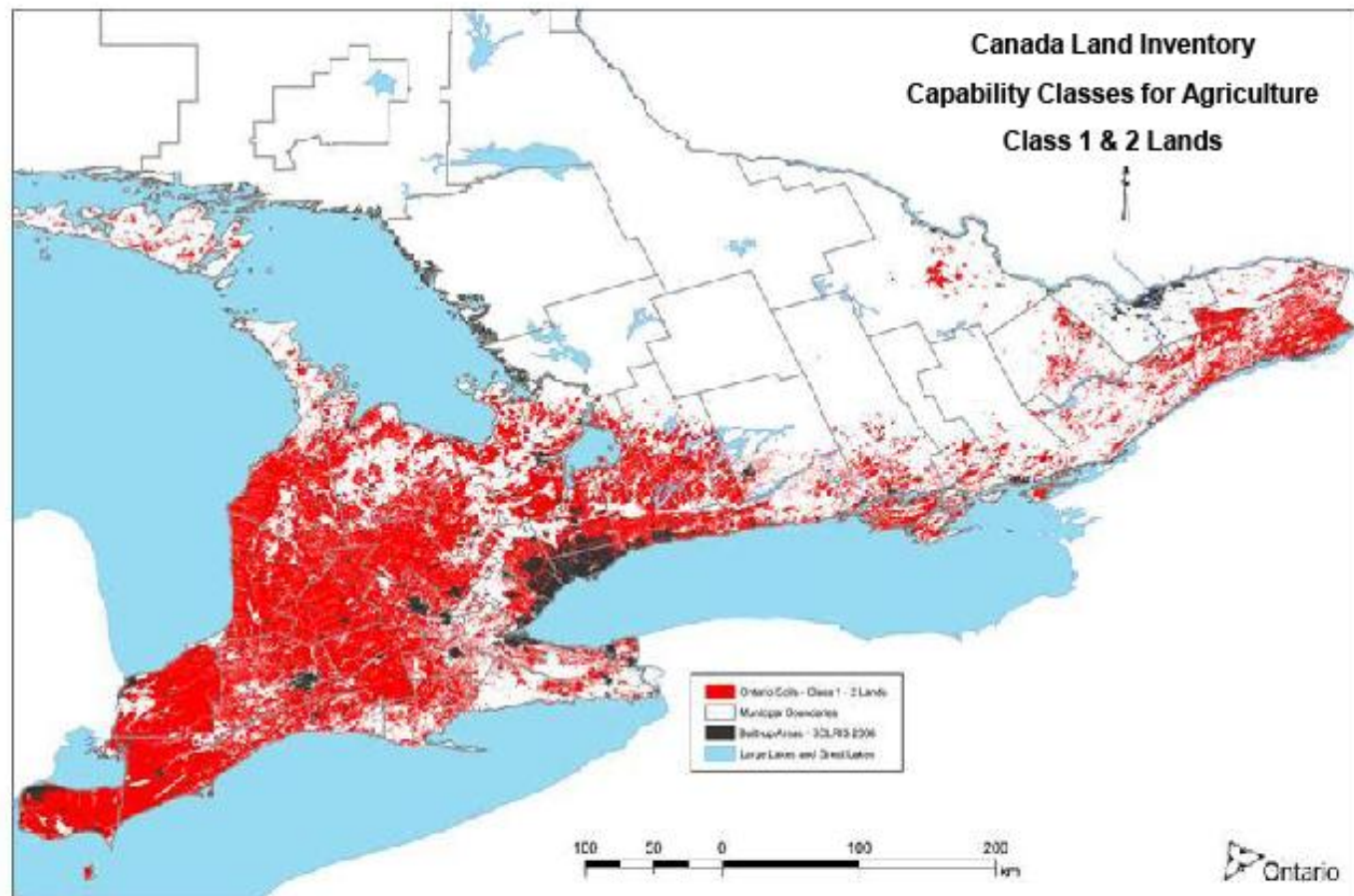
Ontario Arable Landscape

- 13% of Ontario is privately owned competing with urbanization, etc.
- 87% of Ontario is crown land
- Ontario ag is second largest industry and third largest employer
- Provider of not only food, feed, fibre, fuel, oil habitat, environmental goods and services
- BUT with Green Energy Act MORE ENERGY

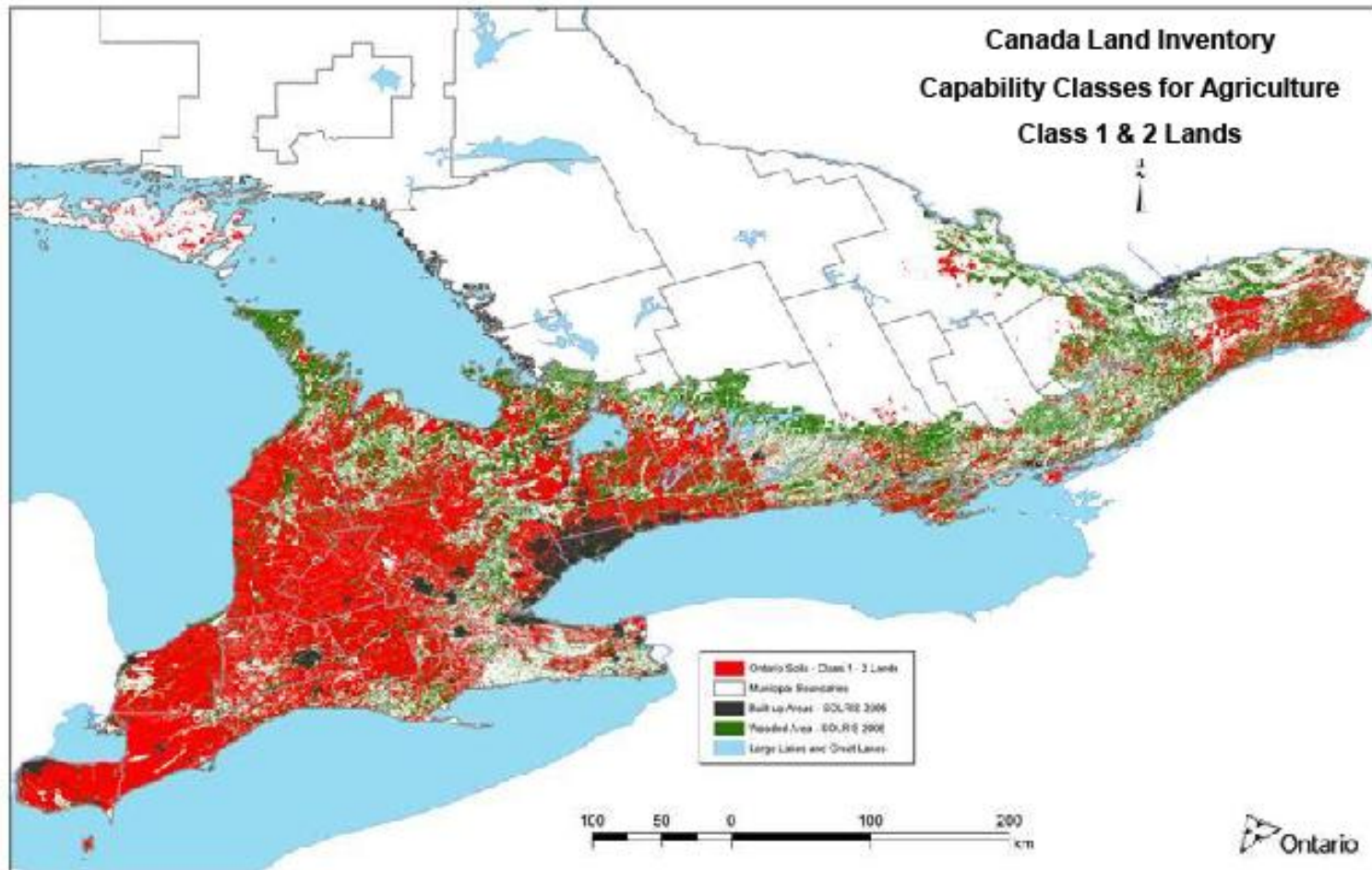


What is the Ontario Arable Landscape?

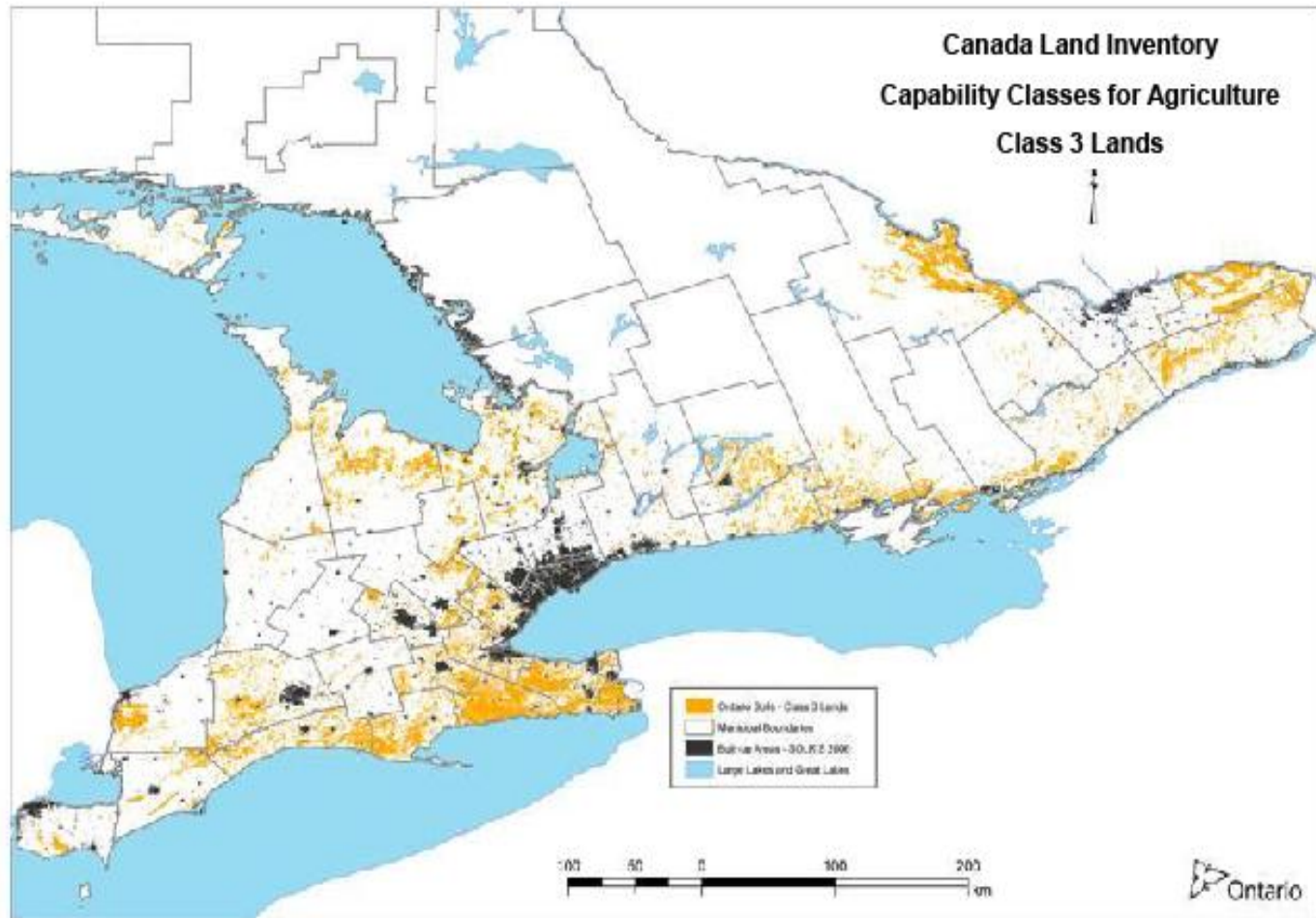




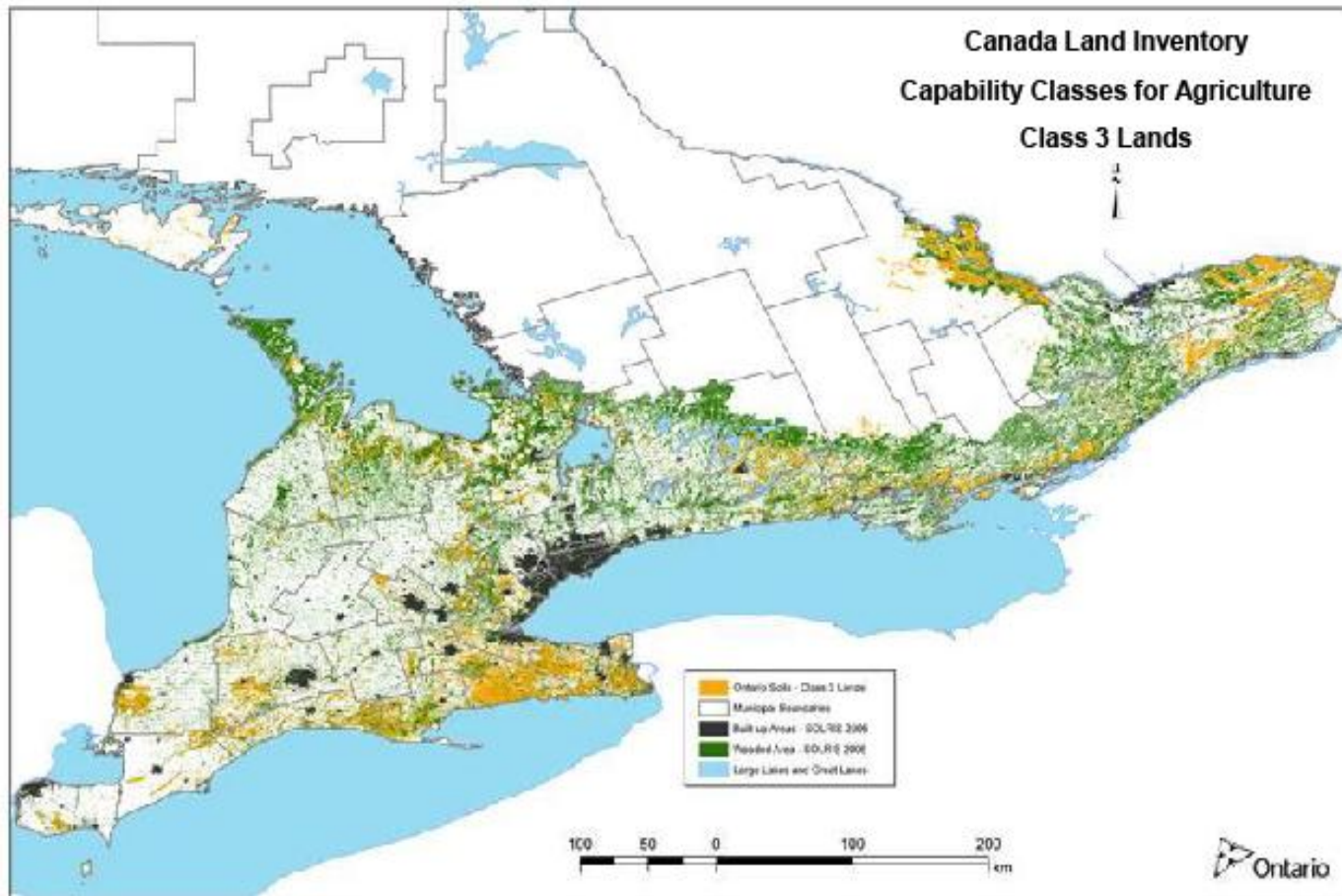
**Canada Land Inventory
Capability Classes for Agriculture
Class 1 & 2 Lands**



**Canada Land Inventory
Capability Classes for Agriculture
Class 3 Lands**

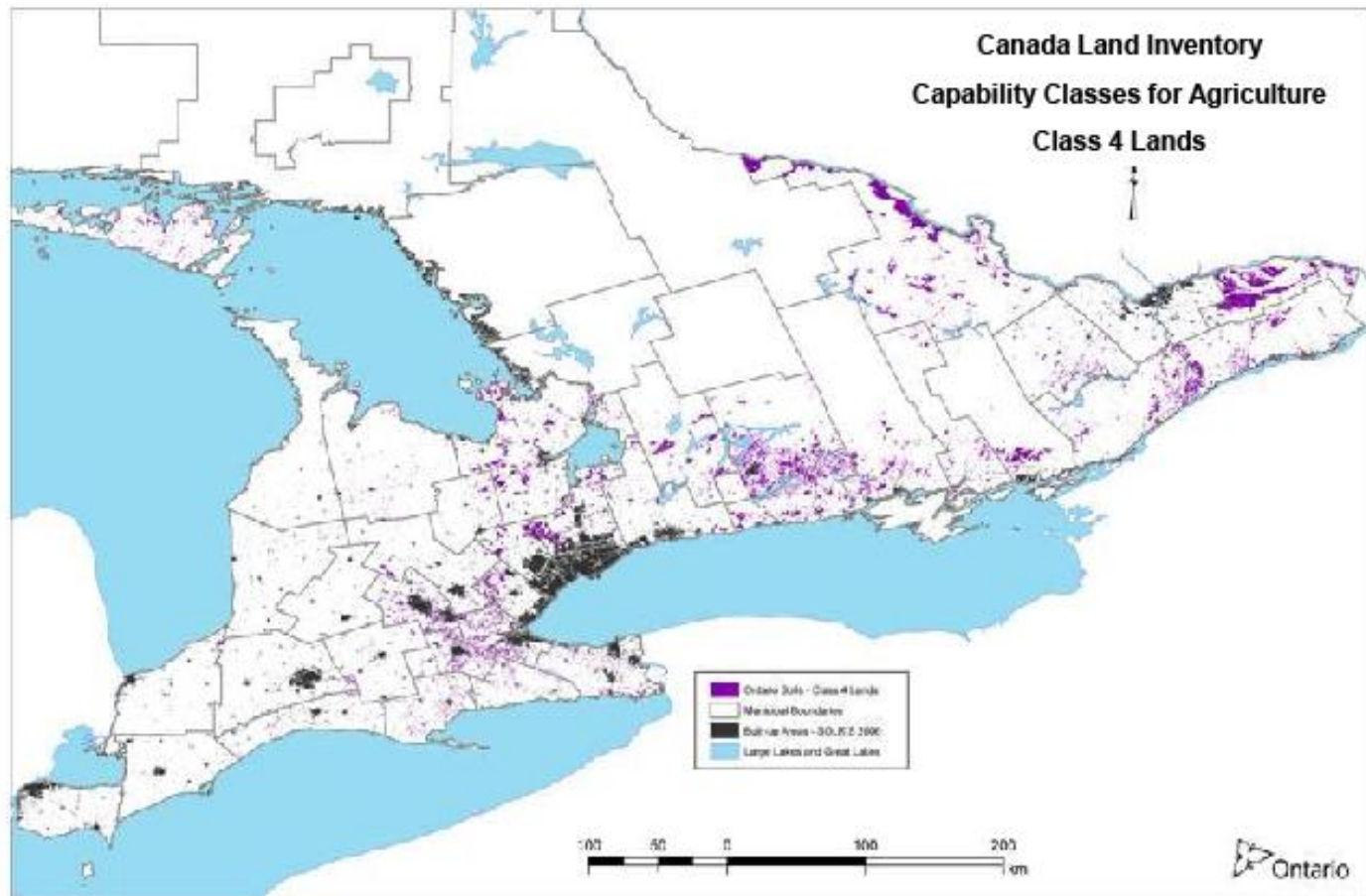


**Canada Land Inventory
Capability Classes for Agriculture
Class 3 Lands**

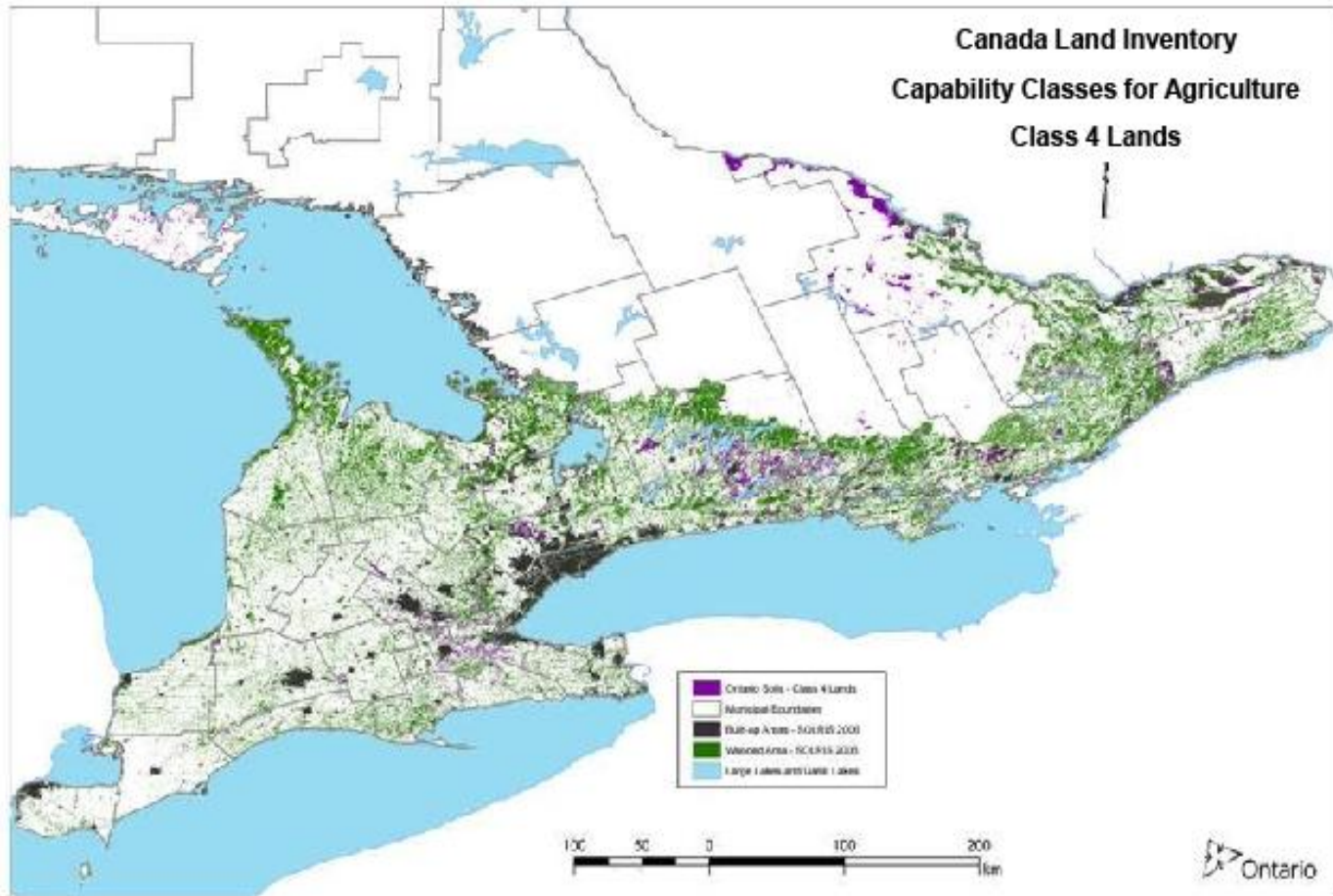


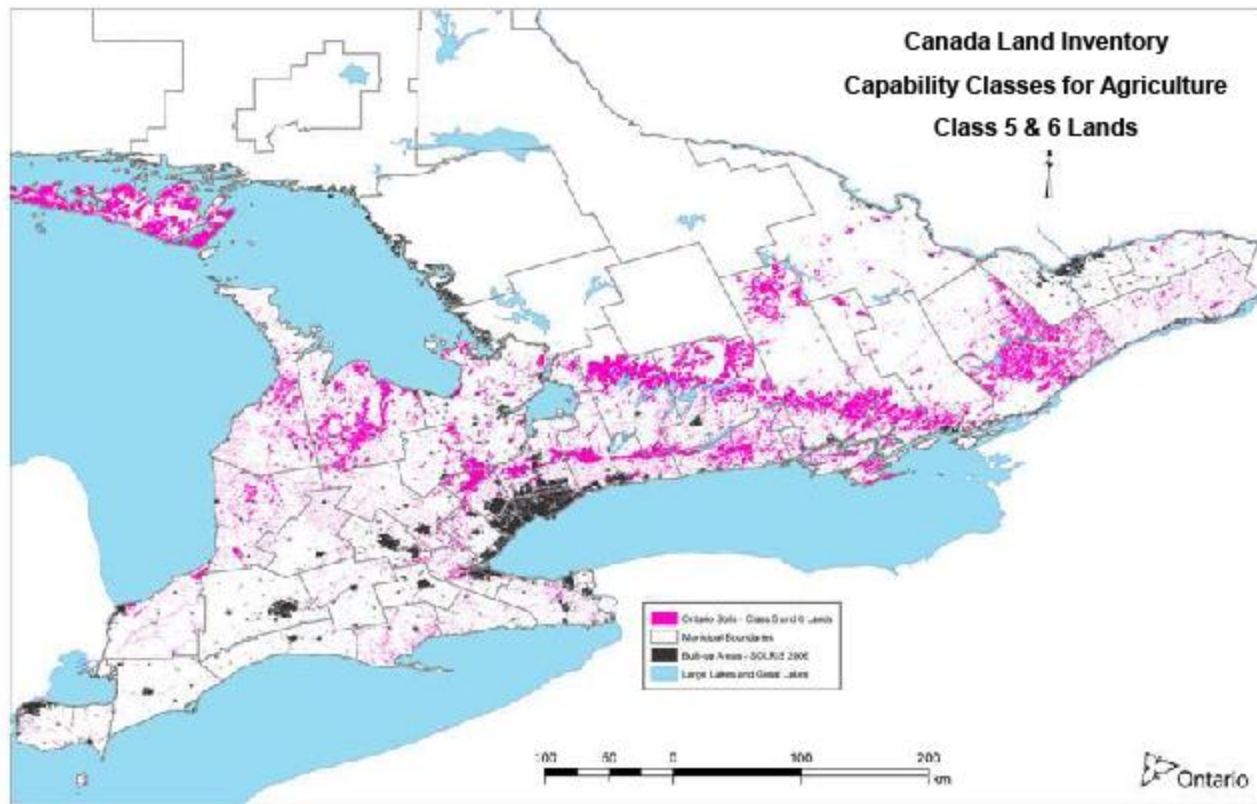
Where to now?

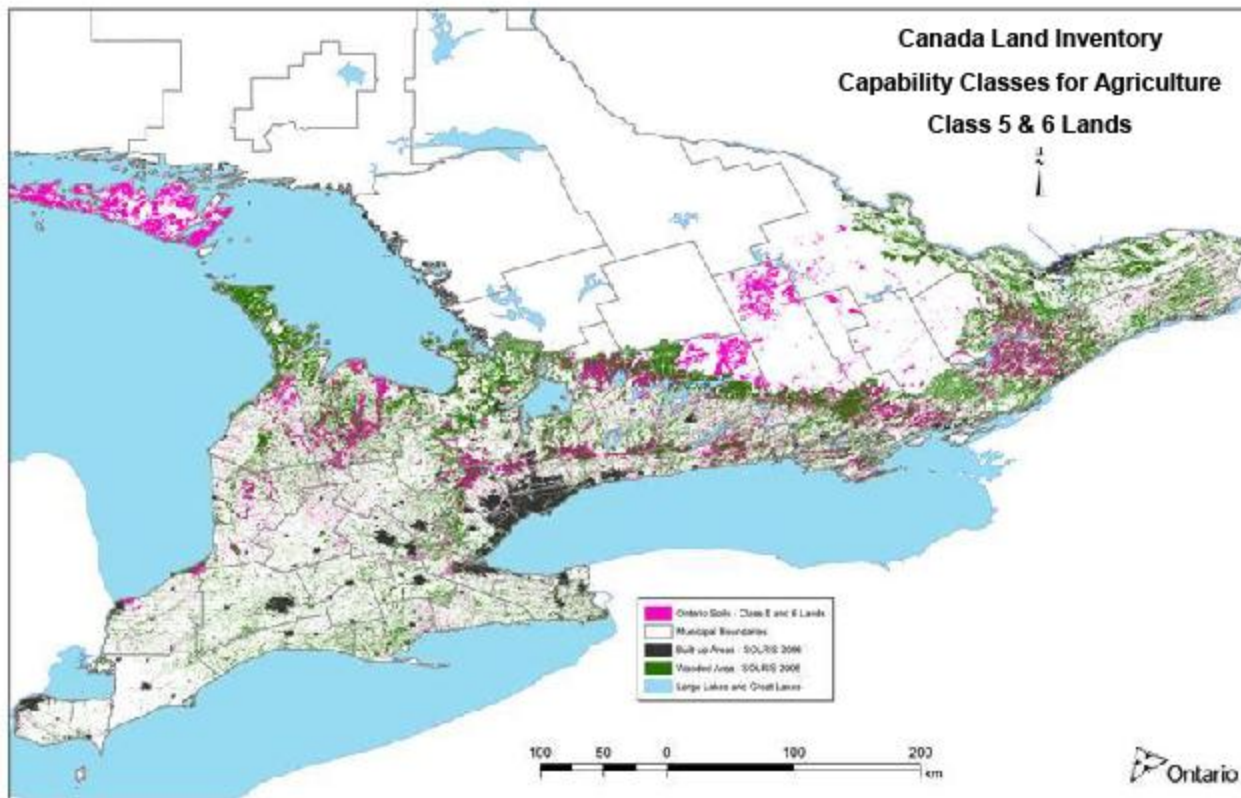


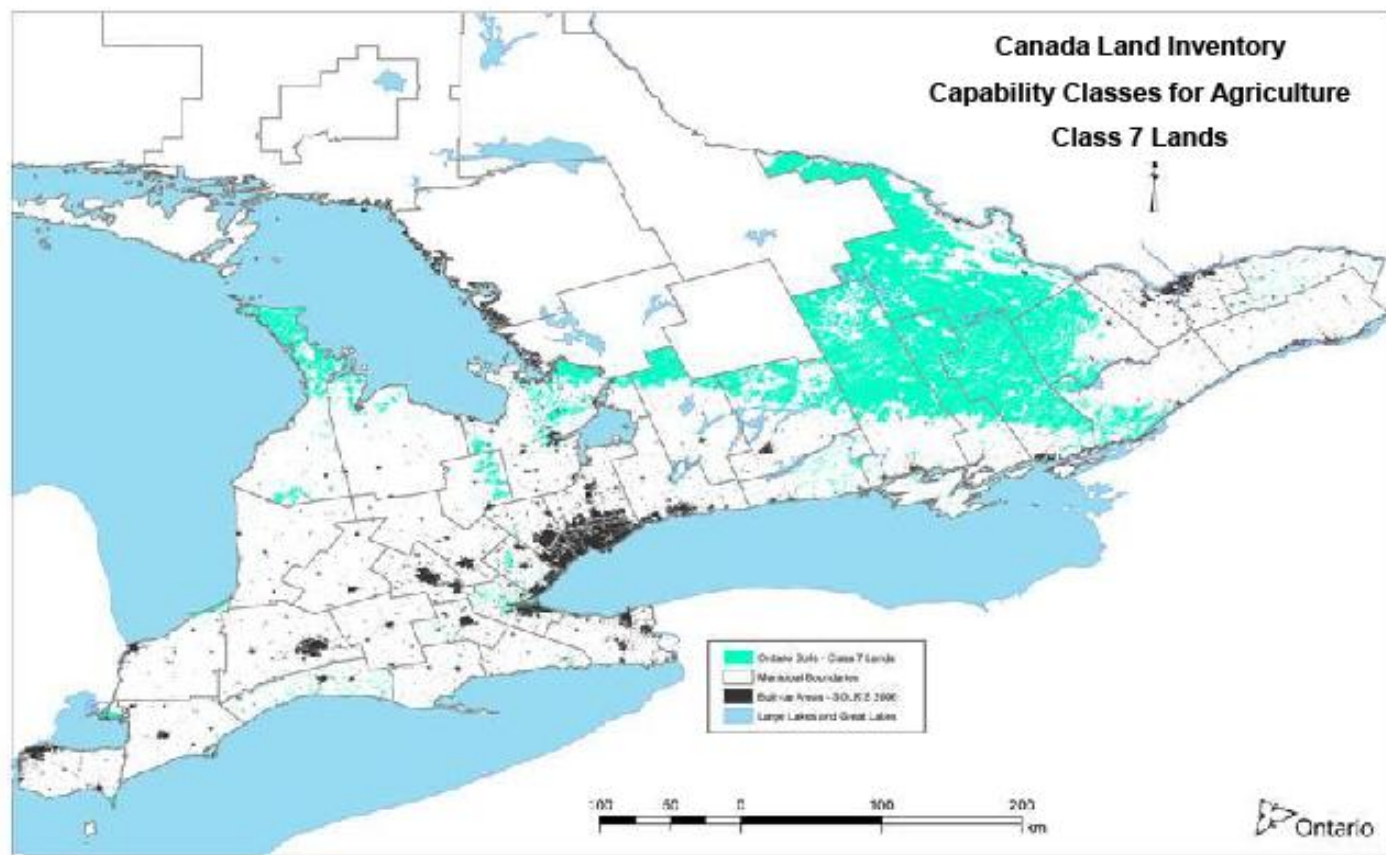


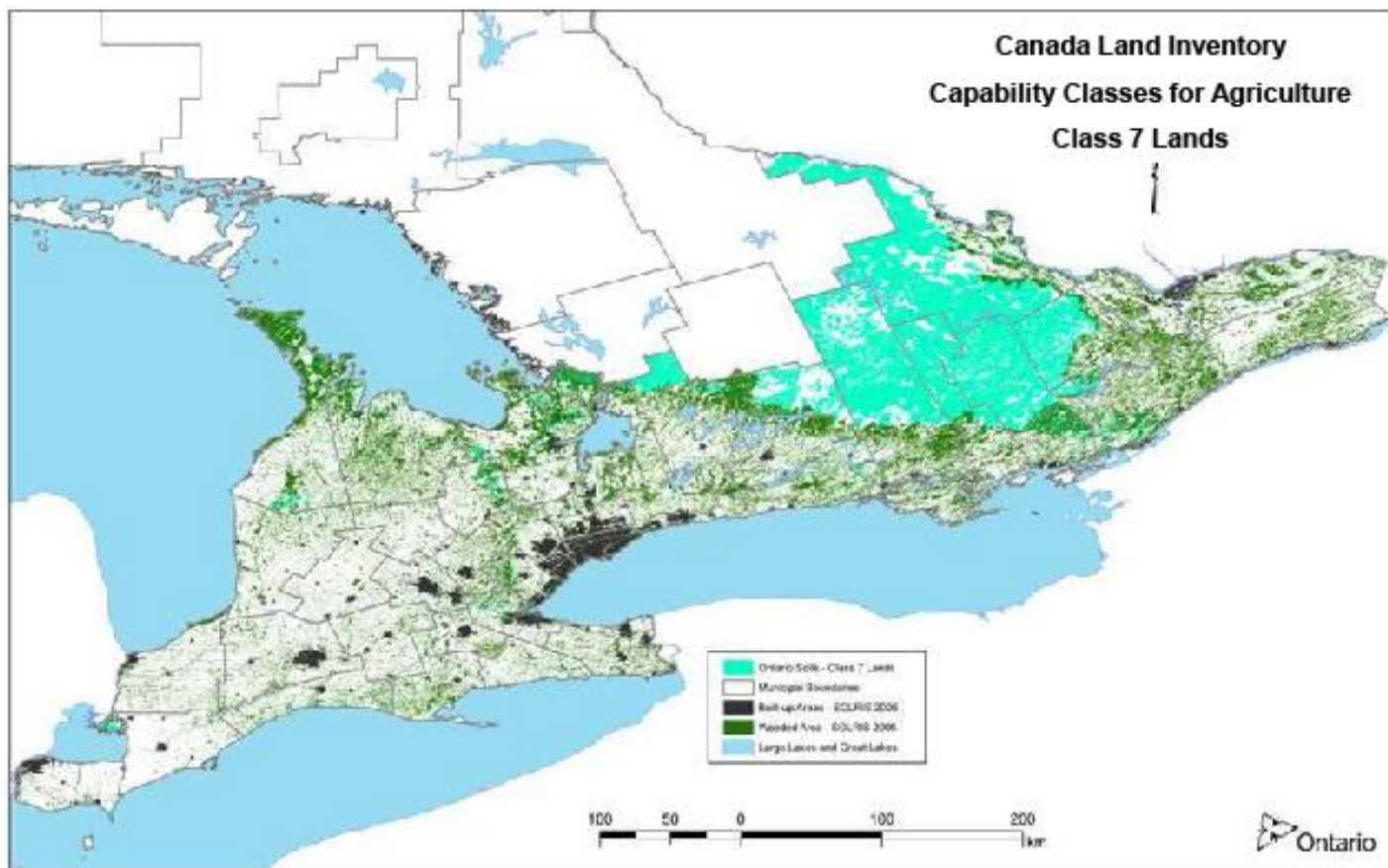
**Canada Land Inventory
Capability Classes for Agriculture
Class 4 Lands**











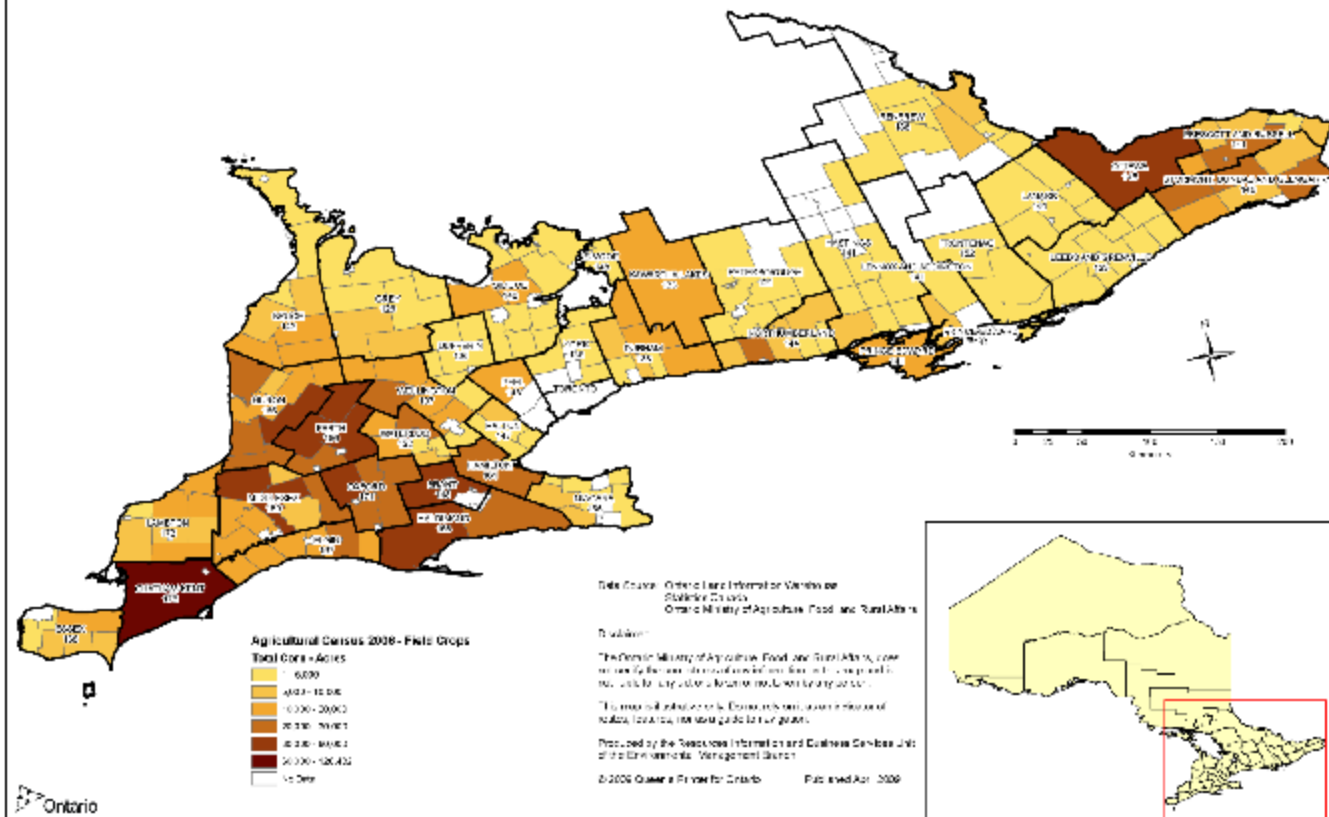
What's happening now?



2006 Agricultural Census

Corn Statistics

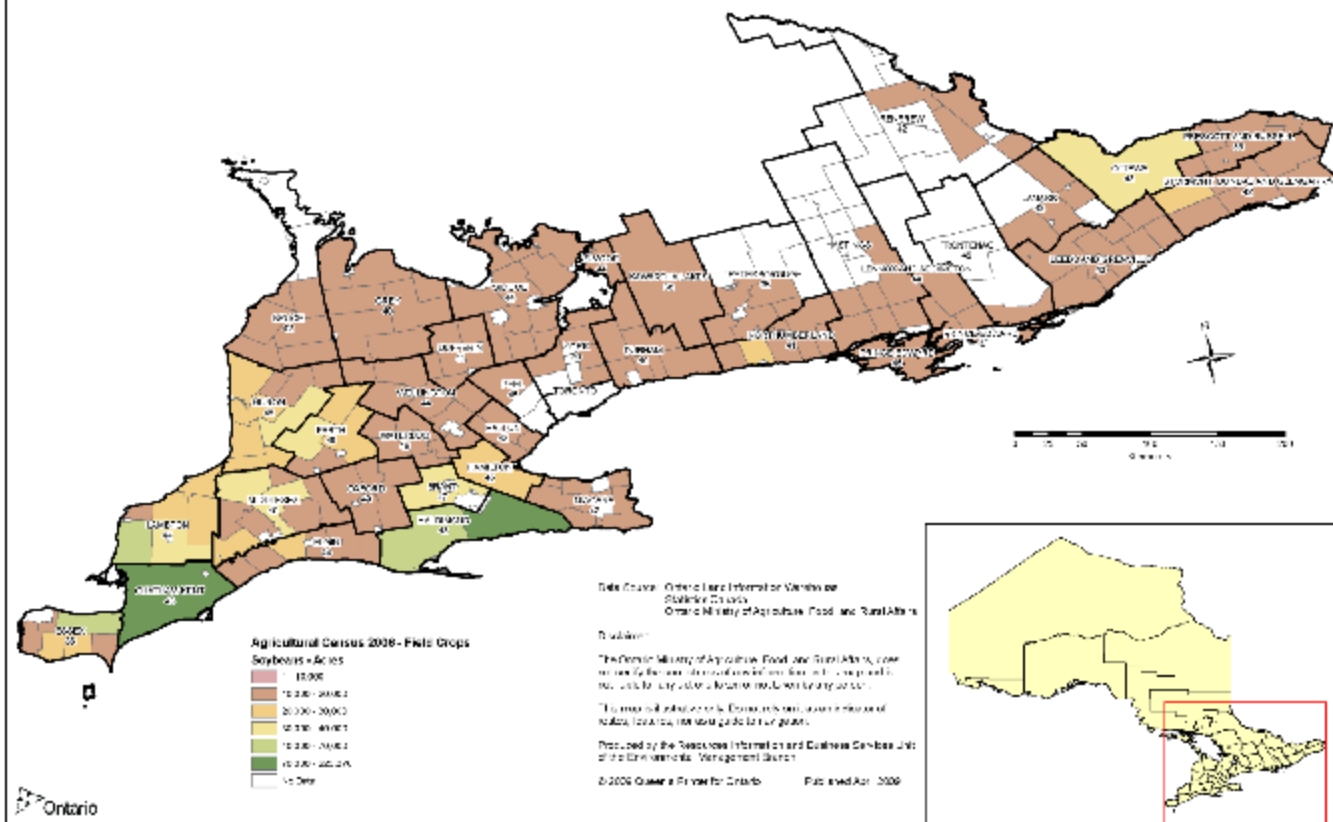
Note: Labels represent bushels per acre estimates for 2008



2006 Agricultural Census

Soybean Statistics

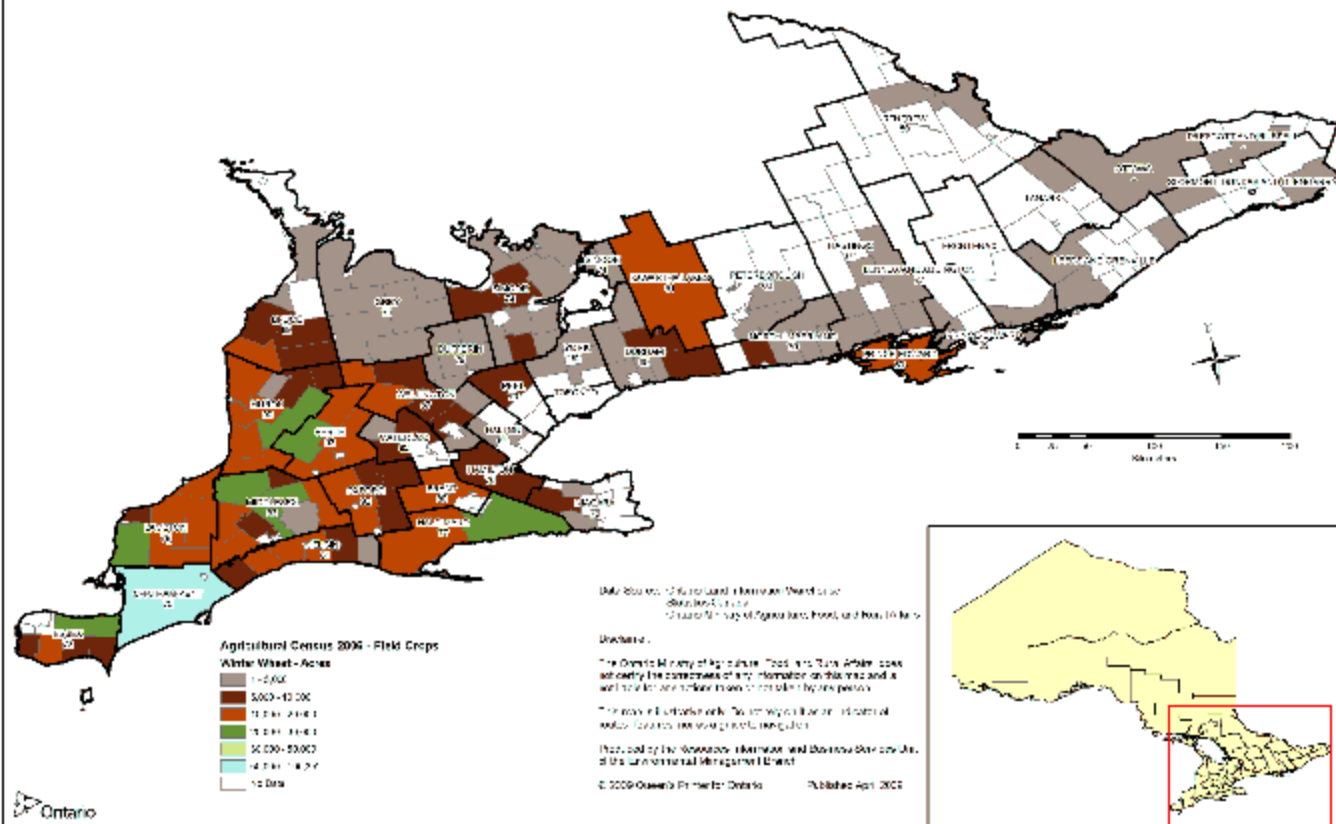
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2006 Agricultural Census

Winter Wheat Statistics

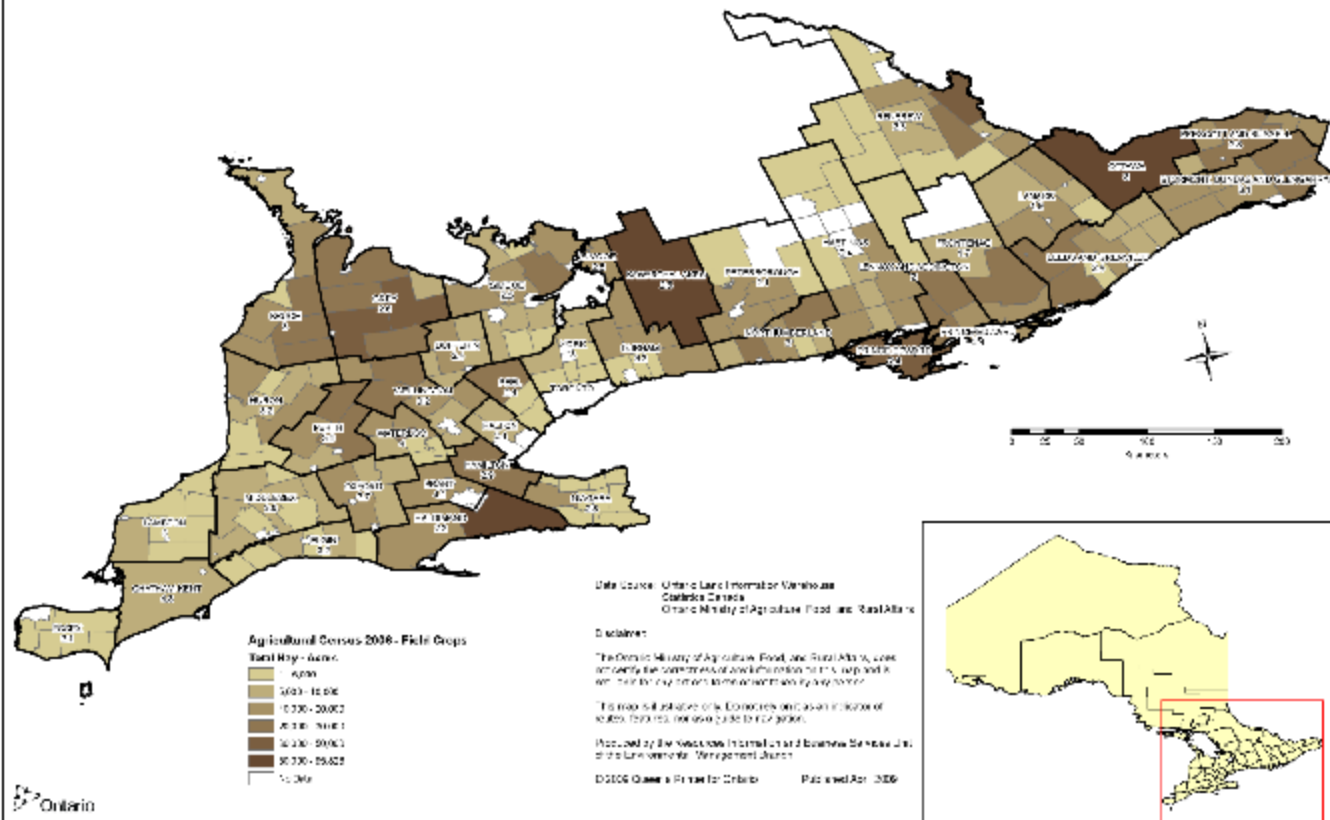
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2006 Agricultural Census

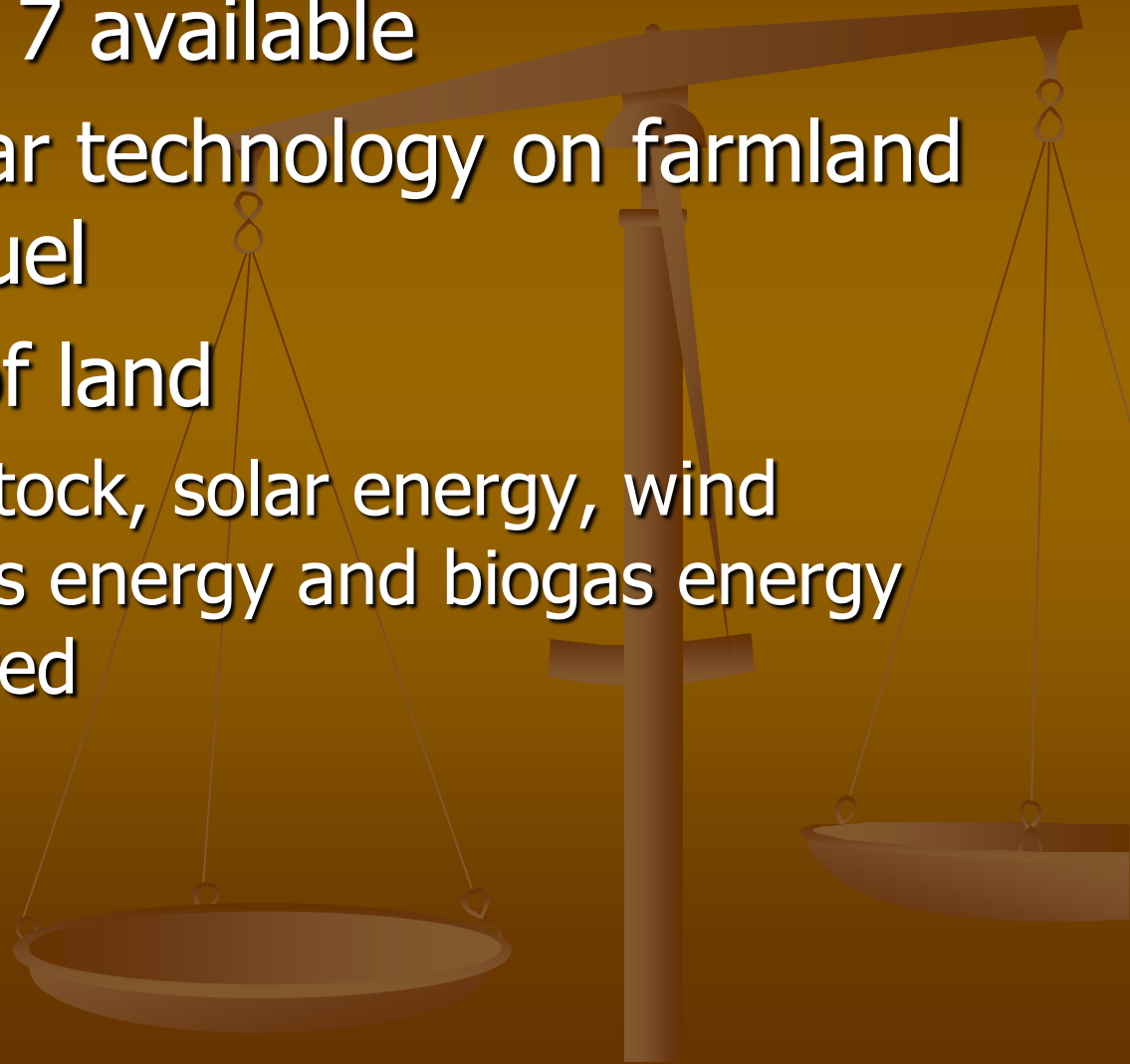
Hay Statistics

Note: Labels represent bushels per acre estimates for 2008



The Balance

- Class 4 through 7 available
- Widespread solar technology on farmland is food versus fuel
- On one parcel of land
 - food, fuel, livestock, solar energy, wind energy, biomass energy and biogas energy could be achieved



The Balance



- Class 4 through 7 available
- Widespread solar on farmland is food versus fuel
- On one parcel of land
 - food, fuel, livestock, solar energy, wind energy, biomass energy and biogas energy could be achieved
- LET'S MAKE THIS ACT WORK IN BALANCE
- 825 million sq.ft. of corporate roof in GTA alone (approx. 19,000 acres that can't be planted!)

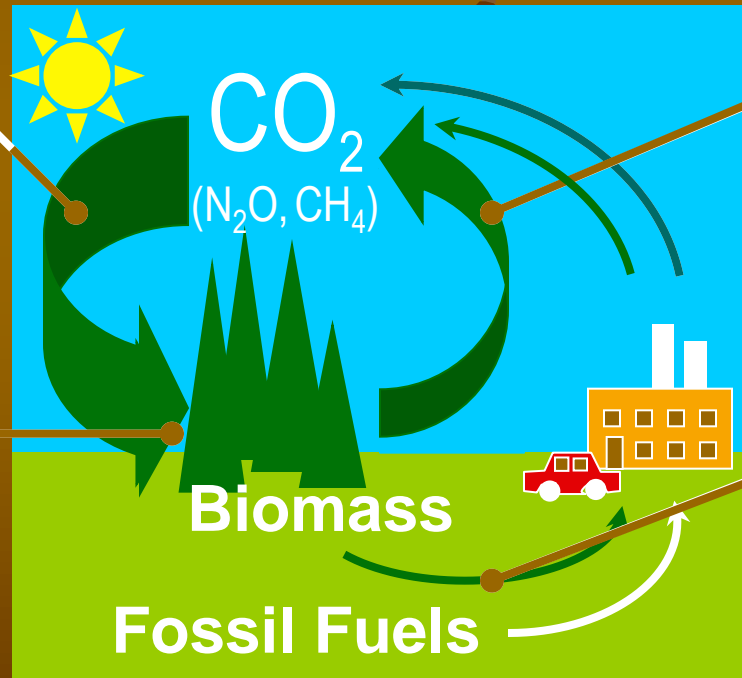
Capturing Canada's Green

Advantage: Biosphere Solutions

... the improved management and use of our biological cycles to provide environmental values, energy, chemicals and materials (the Bioeconomy) in addition to food, feed and fibre.

SEQUESTER
Atmospheric C
& solar energy
into biomass.

ADAPT
biosphere to
changing climate
& atmosphere



REDUCE CH₄ &
N₂O associated
with biosphere
management

COMPLEMENT
fossil energy (&
chemicals, materials)
with biomass

Thank You!

