

Ecological Goods & Services 101

What Are Ecological Goods And Services (EGS)?

Why Are They Important to Value?

Who Benefits From Their Valuation?

Where And How Are EGS Being Valued?

The Future of EGS Programs



What Are Ecological Goods & Services?

Goods...

- Food (crops, livestock)
- Timber and Fibre
- Clean Water
- Healthy Air
- Fertile Soil
- Fish and Wildlife
- Biodiversity

Services...

- Photosynthesis
- Water Purification
- Flood Control
- Air Quality Regulation
- Carbon Sequestration
- Erosion Control
- Decomposition
- Detoxification
- Nutrient Cycling
- Pollination
- Pest Control

Note: EGS = 'Natural Capital'

Why Are EGS Important To Value?

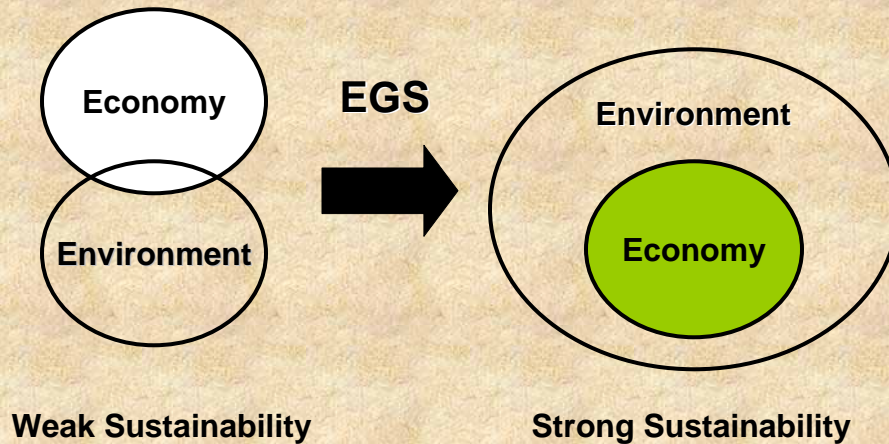
- **Critical to long term human well-being**
- **EGS largely taken for granted until recently**
- **EGS are being lost at non-sustainable rate**
- **Lost EGS are expensive to replace**
- **Some may be impossible to replace**

Honeybee Economics - Pollination



- **150+ food crops in North America require pollination**
- **Pollination of crops in the U.S. worth ~ \$14 billion/year**
- **The Honeybee's contribution is \$8 billion/year**
- **Wild Honeybees have declined 25% since 1990**
- **Domestic Honeybees have declined 50% since 1945**
- **Continuing declines in pollinators is leading to higher costs for food and disrupted ecosystems**

EGS Programs Promote Integration of Environment and Economy



Who Benefits From Valuing EGS?

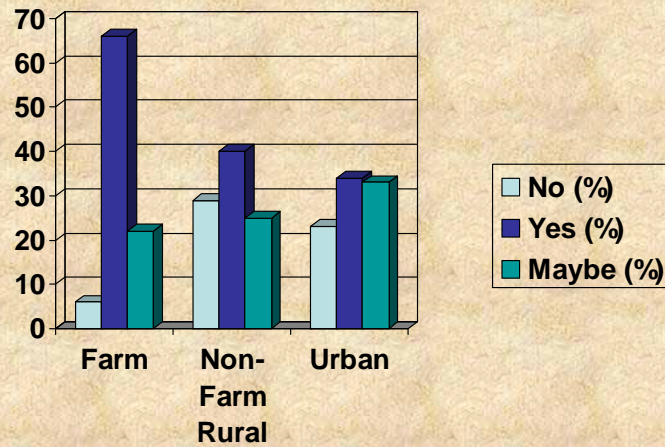
To Date:

- Benefits of EGS enjoyed by society largely for free
- Costs of producing EGS borne mostly by producers

In The Future:

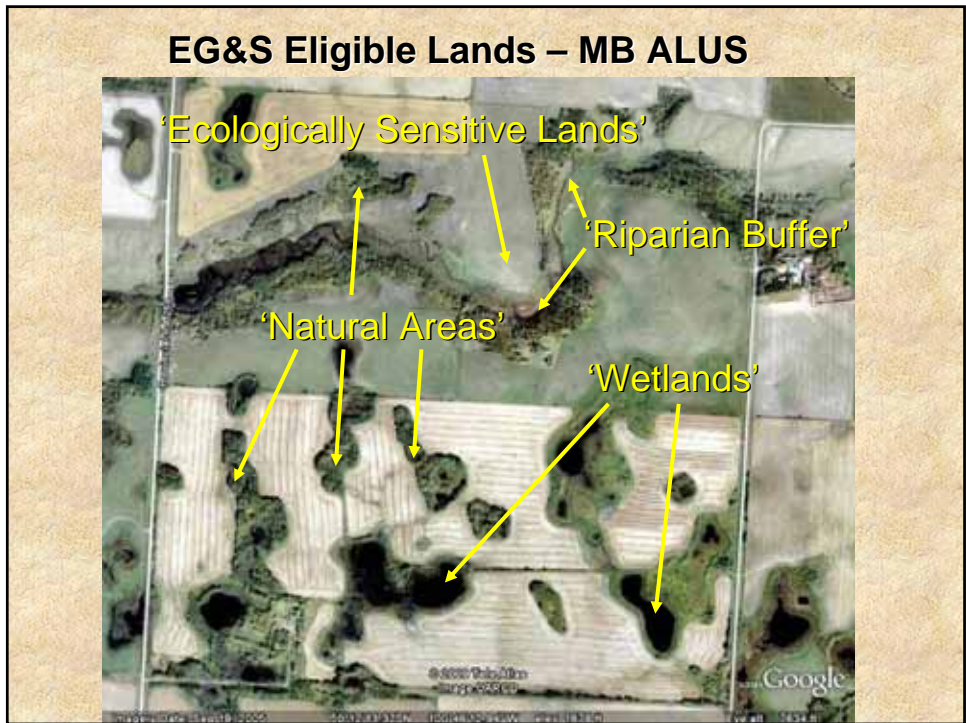
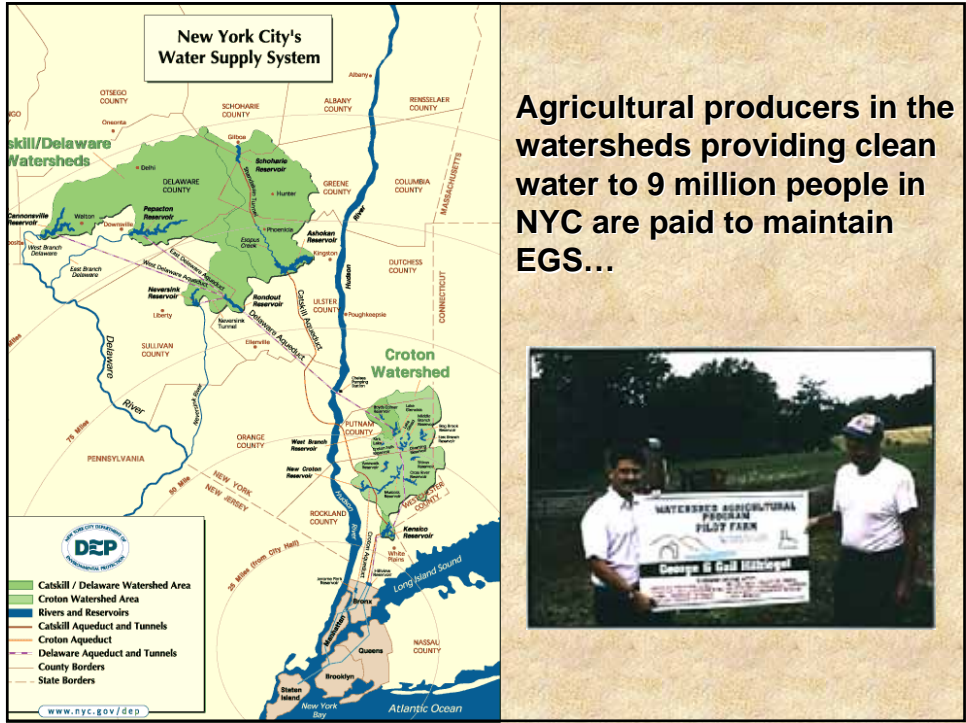
- Agricultural producers will be finally recognized and compensated by society for their efforts in conserving and building EGS

Public Support: Should Producers Be Paid to Produce Environmental Services On Their Land?



Where And How Are EGS Being Valued?

- EGS Programs in Europe, Australia, United States, Canada (MB, ON, PEI)
- Programs compensate producers for maintaining/creating areas providing EGS
- Example: New York City Water Supply
- Example: Manitoba ALUS



Annual Payment Schedule - MB

Category	% Enrollment allowed	Payment/acre no use	Payment/acre haying	Payment/acre grazing
Wetland	100%	\$15	\$7.50	\$5
Riparian	100%	\$15	\$7.50	\$5
Natural	100%	\$15	\$7.50	\$5
Ecologically Sensitive	20%	\$25	\$10	\$5

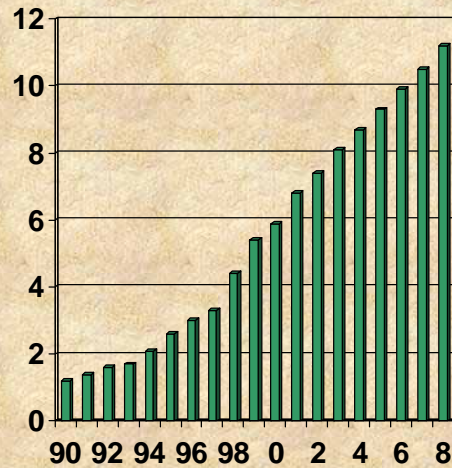
Note: 'No Use' has higher value. However, 'No Use' may be detrimental to some EGS...needs to be refined in future programs...



**The Future of EGS Programs:
Making Money Out of Thin Air?**

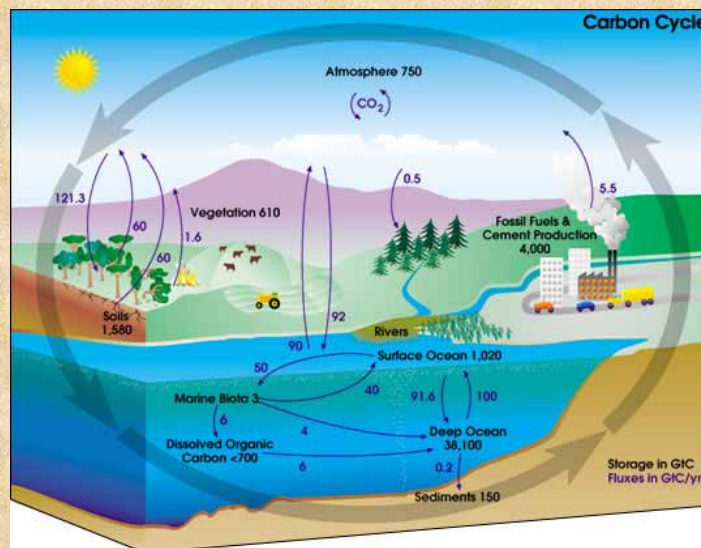


Carbon Sequestered in Saskatchewan's Cropland Soils 1990-2008



■ Tonnes Carbon (millions)

Other Ecosystems Also Sequester Carbon – Wetlands, Grasslands, Forests



The Canadian Response to Climate Change

- Current goal is to reduce 2006 GHG emissions by 20% by 2020...through 4 mechanisms including a National Domestic Offset System, that recognizes carbon sequestration in GHG reduction projects
- (Remember – carbon sequestration is an EGS)



- Since the U.S. election, the Canadian government is seeking a bilateral approach to climate change, including carbon offsets and carbon credit trading
- This will give a major boost to future EGS programs...

Canadian Carbon Credits

- One Carbon Credit = one tonne of carbon dioxide or equivalent emissions reduced or removed from the air
- Carbon credits will be issued by Environment Canada to Project Proponents for eligible GHG reductions/removals achieved from an Offset Project
- Offset credits will be generated from emission reductions that take place outside of regulated activities
 - projects must be undertaken in Canada and be incremental and verified
- Offset credits will be bankable and tradable (on climate exchanges)
- There will be unlimited use of offset credits for compliance

Treatment of Biological Carbon Sinks

- Projects will either remove GHGs from the atmosphere and store them in 'sinks' (e.g. in soil or trees) or avoid emitting GHGs to the atmosphere from a reservoir (e.g. avoided deforestation)
- Forests - afforestation/reforestation, avoided/reduced deforestation, forest management
- Agriculture - conservation tillage, crop rotations and grazing that sequester more carbon in the soil, permanent cover programs
- These types of projects will be allowed to seek registration more than once

Current Market Value of Carbon Credits (\$CAD)

- Montreal CX \$8 per tonne
- Chicago CX \$2 per tonne
- European CX \$18 per tonne
- Tianjin CX \$?



How Do These Prices Compare to EGS Programs?

It takes about 1 acre of aspen to sequester 1 tonne of carbon per year...



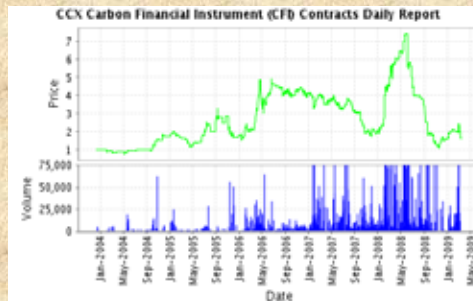
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Carbon markets are currently offering \$2-18 per acre of aspen

Historical highs were \$7-54 per acre of aspen

Future EGS program values will need to incorporate this...



In Conclusion...

- EGS Programs are Critical in Promoting Sustainable Land Management
- Canadian EGS Programs Have Gained a Foothold
- Now is the Time to More Broadly Adopt Them
- Carbon Trading Will Play a Key Role in Future EGS



**The End...
...or perhaps the beginning?**

Thank You...

