

Monetizing Soil Carbon Storage in Canadian Grassland Systems

**Manitoba Regenerative
Agriculture Conference
November 27-28, 2018
Brandon, MB**



Organizational History

- Created to address the need for a national voice on forage related issues and opportunities
- 9-years young
- Funded entirely through project administration and memberships
- Driven by *Passion for Grassland Systems*



Forage Industry Scope

- Canada's cultivated forages for pasture, feed and seed production account for 33.8 million acres
 - 39% of Canadian agriculture production
 - The next largest crop - wheat - accounts for 20.4 million acres or 23% of cropland acres
- Over 36 million acres of land devoted to native or unimproved rangelands
- ~70 million acres of influence



Forage Industry Value

- The economic value of the Canadian forage industry is \$5.09 billion, third largest crop after wheat and canola.
- A foundation of the dairy and beef industries, creating over \$11 billion in direct value to Canadian farmers
 - *National Forage and Grassland Assessment. 2012. Douglas Yungblut, Ph.D., P.Ag., Yungblut & Associates Inc*



Forage Industry Environmental Impact

- Canadian forage sector provides an indirect value of \$894.5 million - \$1.9 billion annually in Saskatchewan alone
 - *National Forage and Grassland Assessment. 2012. Douglas Yungblut, Ph.D., P.Ag., Yungblut & Associates Inc*



AGGP Project Delivery

- Application submitted in July 2016
- Approved for February 2, 2017 start date
- 4-Year Project
- Designed to align with CFGA/Provincial priorities
- Will support Expert Committee engagement at CFGA Annual Conference



Major Project Deliverables

1. Complete current state of science literature review (2017-2018)
2. Develop carbon sequestration protocol for Canadian forage production systems (2018-2019)
3. Develop Best Management Practices guide for enhancing carbon storage in forage systems (2018-2019)
4. Pilot protocol deployment on Canadian farms (2018-2019)



Why Carbon Quantification?

- Significant contribution to Canada's EG&S value, current not being recognized
- Carbon tax program deployment
- Carbon value for offset/tax credit
- Provide forum for carbon policy discussion
- Promote next generation forage management systems



Regulated Carbon Marketplace

- Required to secure offset credits to meet regulatory requirements
- Must meet a number of Criteria:
 - Additional
 - Quantifiable
 - Validated
 - Verified
 - Unique
 - Owned
 - Permanent



The Great Rangeland Divide

- Rangeland
 - 36-million+ acres
 - Generally permanent
 - Long-Term Carbon Sink
 - Semi-arid dryland ecosystems
- Avoided Conversion Protocol (Phase-1)
- Capitalizes on the opportunity to monetize current carbon stock value



Something for the Rest of Us

- Improved Pasture and Stored Forage
 - 36-million acres
 - Can be non-permanent
 - Rotated with Annuals
 - Include stand termination, tillage and/or rejuvenation
- Measurement Based Protocol (Phase-2)
- Quantification of carbon storage in more dynamic/complex cropping systems



A Larger Context...

- Two types of value to be generated
 - Dollars in YOUR jeans
 - Public trust & dedication to grassland conservation
- The Task at Hand: Maintain Carbon Stocks
 - 3-million acres of grasslands converted to annual cropping: 2011-2016 census of agriculture
- Towards Integration
 - Annual-Perennial Systems
 - Cropping-Livestock Systems



Next Generation Forage Management

What's Old is New Again

1. Use of certified seed for highly digestible forage species and varieties
2. Intensive rotational grazing systems
3. Intensive forage harvesting systems
4. Forage stand establishment, fertility and management for high performance yields
5. Advanced crop production systems for perennial and annual forages (no-till cropping, crop covers)



Questions, Comments, Ideas?

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