

Development of Long-Term Soil Carbon Storage Measurement Sites Under High Performance Forage Management

Cedric MacLeod, CFGA Executive Director



Who: The Partner Players

- Provincial forage associations and associated partners
- Canadian Agriculture Universities
- Agriculture and Agri-Food Canada Research Stations
- Living-Lab Networks
- Applied Research and Extension Groups
- Watershed Groups
- Dairy Farmers of Canada
- Beef Cattle Research Council??

What: Are We Proposing? (1)

- A series of academic and applied research and demonstration farms across Canada where advanced, high performance forage management practices will be implemented and soil carbon stock changes will be measured against an adjacent baseline condition where status quo, low performance forage management is practiced
- The sites will be used as a hub for producer outreach through the provincial forage associations while providing a home of academic research to be implemented.

What: Are We Proposing? (2)

- Forage associations will be encouraged to secure funding where possible to expand the reach of the sites beyond the focus area identified here for each site.
- These sites are envisioned to become a connected and collaborative network of high performance forage management academic and applied research and demonstration.

When: What are the Necessary Timelines?

- The project should be considered for implementation and maintenance for a minimum of 10-years, with the option to extend measurement indefinitely. The long-term nature of the project necessitates that the sites are placed, in as much as possible, at secure locations such as university, AAFC research stations or *other??*

Where: How to Cover the Country? (1)

1. Maritimes 1: Nappan Research Station, Focus Area: Intensive Rotational Grazing (Temperate climate)
2. Maritimes 2: Nova Scotia Agriculture College, Focus Area: Intensive Forage Harvest Management
3. Quebec: McGill University Rotational Grazing Demonstration Site, Focus Area: Rotational Grazing and Pasture Fertility
4. Ontario: Elora Research Station, Focus Area: High Performance Forage fertility
5. Manitoba: Manitoba Beef and Forage Initiatives, Focus Area: Rotational Grazing (Semi-Arid Climate)

Where: How to Cover the Country? (2)

6. Saskatchewan: Livestock Center of Excellence , Focus Area: Annual crop integration with livestock systems?
7. Alberta 1: Lacombe Research Station, Focus Area: Forage Production and Feeding Systems (Bale Grazing/annual grazing, etc)
8. Alberta 2: Rangeland Research Institute, University of Alberta, Focus Area: Rotational Grazing (Arid Climate)
9. British Columbia 1 (Peace Region): Beaverlodge Research Station, Focus Area: Conservation Cropping Systems, ie. Forage Seed in Rotation with Annual Cereals & Oilseeds
10. British Columbia 2 (West Rockies) Thompson Rivers University, Williams Lake, Focus Area: Rotational Grazing and Forage Establishment Techniques (No-Till)

Why: Would We Do This?

- Moving towards practice based carbon sequestration estimates for Canadian grasslands
- Monetization of soil carbon stocks under Canadian grasslands
- Enhanced recognition of the societal benefits generated by grassland management
-

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)

What Comes Next?

- Develop consensus on need for such a strategy
- Develop consensus on the direction of the strategy
- Identify willing participants
- Sort out funding model