Manitoba Forage and Grassland Association
March 6, 2017

MFGA Carbon Position Statement

Carbon sequestration is a key component of how the world, nation and provinces deal with changing climate trends and climatic events. As an agricultural producer-based group focused on natural solutions, the Manitoba Forage and Grassland Association (MFGA) recognizes that Manitoba's forages and grasslands provide a highly practical and strong economic opportunity to absorb and store carbon. MFGA advocates for the role of forages, grasslands and cover crops and the soils these plants grow in for reducing greenhouse gas accumulation while increasing the resilience of the landscape to climate extremes and improving the profitability of Manitoba farmers and ranchers.

Well-managed, diverse grasslands are carbon sinks[1,2]. The Canadian Prairies' soils have great potential to sequester significant amounts of carbon. The extensive root systems of forages can be managed in a way that provides the necessary habitat for diverse, abundant and active microbial populations to fix carbon in the soil throughout the soil profile and in relatively stable forms[3].

Livestock are an essential component of a well-functioning, carbon sequestering grassland ecosystem. Grazing animals can stimulate the plants, which in turn stimulates the soil microbial population, thereby leading to more rapid carbon accumulation in the soil[4, 5]. These soil microbial populations can also be established on annual crop land with the addition of cover crops, though the rate of carbon accumulation is slower. MFGA believes croplands need to be managed more sustainably with cover crops and perennial stages in crop rotations. As carbon is added to the soil, soil structure improves, greatly enhancing water infiltration and water holding capacity of the landscape. Over time, carbon changes in the soil can be monitored using standard soil tests measuring soil organic matter.

The MFGA recommends that the following needs should be addressed with regards to understanding and promoting carbon sequestration in grasslands, forages, cover crops and annual crops and the soils they grow in:

- As a producer-led group, MFGA should be involved in all policy and partnership discussions around carbon sequestration and other ecosystem services provided by well-managed forage and grasslands, cover crops and annual crop production.
- Soil carbon benchmarking and monitoring should be done across the Manitoba agricultural lands and the potential benefits of increased soil carbon on a landscape scale should be modelled.
- Research and testing for Manitoba producers needs to be conducted within Manitoba to quantify the amount of carbon sequestered across a variety of landscapes using forage and grasslands as well as cover crops and perennial stages in crop rotation.
- Reward or compensation should be provided for producers who are able to retain or restore forages and grasslands and/or manage their soils to store and sequester carbon via incentive programs such as Alternative Land Use Services. This also applies to any other ecosystem

services (water retention, flood prevention, biodiversity, etc.) that forages, grasslands and soils provide to society from Manitoba's agricultural lands.

- The MFGA Aquanty Project Model in the Assiniboine River Basin should be used to run simulations for demonstrating the role that organic carbon stored under forages and grasslands plays in flood and drought mitigation. The MFGA Aquanty Project is on schedule for completion March 2018. http://mfga.net/aquanty/
- Rotational grazing, cover crops and zero-till farming practices for soil health should continue to be supported and promoted by government and industry.
- An emphasis needs to be placed, in policy and public communications, on the positive linkages of livestock production, well-managed grasslands and sustainably-managed crop lands to soil health, carbon sequestration and other ecosystem services.

References

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