Grazing as a Soil Carbon and Climate Solution: Soil4Climate Contribution to the Livestock Cluster of UNFSS AT3

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Livestock, when managed properly, can play a vital role in mitigating climate change by stimulating grassland plants to sequester carbon in soil. Indeed, the coevolution of ruminant ungulates and perennial grasses over the past 40 million years is believed to have resulted in the Cenozoic Cooling[1] necessary for human evolution to occur.

The “proper” management of livestock for ecological as well as social and economic benefits is referred to in literature as Holistic Planned Grazing[2][3] and Adaptive Multi-Paddock (AMP) Grazing[4]. This approach should not be confused with practices such as rotational grazing or management-intensive grazing (MIG), which may or may not include managing for ecological outcomes.

Properly managed grazing of this type has been found to sequester carbon in soil at the following levels: 1.2 tC/ac/yr[5], 1.5 tC/ac/yr[6] and 0.93 tC/ac/yr[7]. Teague (2016) suggests the drawdown potential for AMP grazing in North America is 0.79 GtC/yr.

Other ecological enhancements of well-managed grazing include increases in nitrogen stocks[8], soil moisture[9] and fine litter cover and forage biomass[10].

Meat and milk from properly grazed cows was found to be more nutritious than meat and milk from cows in less well managed grazing operations and feedlots[11].

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