

Grazing and Pasture Lands

The proper management of northeast pasture lands can both meet individual farm livestock production goals and play a role in nationwide efforts to increase soil carbon sequestration. Atmospheric carbon fixed by growing forage plants is translocated to roots and incorporated into the soil carbon pool via humification. The most important management decision affecting carbon sequestration is stocking rate (grazing animals/land unit/yr); balancing animal numbers with forage supply insures optimal plant production and supply of carbon to soil microorganisms to maintain and increase soil carbon. Other adjustments, such as plant species choices, fertility management, and season of use and distribution, can contribute to improved C sequestration. However, the dynamics of flux between the soil and atmosphere are driven by year-to-year variation in climate and inherent regional differences in climate and soils. University and Agency research has repeatedly demonstrated the importance of climatic variability in determining carbon flux directions (+ or -) and rates on grass dominated systems. Good management can sequester more carbon in above average years and lose less carbon in below average years, but it cannot overcome the effects of weather. Soil carbon sequestration can also be increased by restoring degraded land to perennial vegetation. Restoration in the northeast mainly occurs by planting improved species and intensively managing as pasture with additions of supplemental nutrients and/or water.

Goal: Establish grazing management plans on an additional 9 million acres nationwide for a total of 27 million acres by 2025. This is expected to sequester an additional 1.6 MMT CO₂ yr⁻¹.

Core issues and questions for workshop:

- Given the constraints to soil C sequestration mentioned above, how can we best target the acres where grazing management plans are established to maximize soil C sequestration?
- Conservation of sensitive lands through CRP and conservation easements is a building block not being directly addressed in this workshop but has important consequences for grazing lands. How do grazing lands fit in with the conservation of sensitive lands? What is the potential in the northeast to restore degraded land to high quality grazing land and what is the potential for conversion of annual crops to perennial vegetation where appropriate?
- What are the options to reduce enteric methane emissions from grazing cattle both in the short term and over the lifetime of the animal?
- What are the barriers and opportunities within USDA agencies and programs to promote managed grazing and soil C sequestration?
- How do we monitor and measure building block success over both the short and long term?