

Grassland Agriculture & Our Environment: What the Public Needs to Know

Protein, iron, B₁₂, and calcium from meat and milk are more bioavailable in the human body than are plant-based sources. Additionally, *grass-fed* meat and milk can contain phytonutrients at levels comparable to plant foods with anti-inflammatory, anti-carcinogenic, and cardioprotective effects.¹¹

Well-managed perennial pastures can sequester up to 0.75 metric tons/acre of CO₂ annually, enabling livestock farms to more than offset the methane produced by ruminants (about 0.5 tons/acre CO₂-eq).⁹

Pastures managed under rotational grazing build soil health, improve plant growth, and absorb heavy rainfall, which reduces nutrient loss and soil erosion by up to 40%.¹

*Roughly one quarter of Virginia's grazing acres are currently managed with rotational grazing practices.*²



Grass and forested buffers filter up to 60% of sediment and nutrient pollutants from surface and shallow groundwater flows.⁴ They also mitigate flooding and protect aquatic habitats.

Over 90% of a beef animal's lifetime diet (regardless of grain- or grass-finished) comes from pasture and fibrous feeds that cannot otherwise be used by people. Most pastures and rangelands are on sites that are unsuitable for growing grain or vegetable crops.⁸

Pastures and hayfields are home to vulnerable grassland bird species such as Bobwhite quail, American kestrel, and the grasshopper sparrow.⁶

Hedgerows and windbreaks of native plants create refuges, travel corridors, and food for wildlife and pollinators.

Every acre of silvopasture or farm woodlot sequesters enough carbon annually to offset the greenhouse gases emitted by 3 cars.³

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Grassland Agriculture & Our Environment: What Farmers Can Do to Help

Use rotational stocking to enhance soil nutrient holding capacity and cycling of available carbon and nitrogen. The result: healthier soil and sustained forage productivity with lower nitrogen fertilizer inputs.¹³

Use strategies that extend the grazing season, such as fall stockpiling, to reduce feed costs and help mitigate climate change.⁵ 1/3 of greenhouse gas emissions produced by beef systems result from fertilizing, processing, and transporting feeds.

Reduce the need for nitrogen fertilizer by maintaining at least 20% clover in pastures (the manufacture of N fertilizer is a large emitter of CO₂). Doing so on 10 acres is the equivalent of annually removing about 1 car from the road.^{3,5,7}

Summer-stockpile a portion of pasture acres through mid-July, or incorporate native grass paddocks to provide emergency forage for livestock and create habitat for ground-nesting birds such as the Eastern meadowlark and Bobwhite quail.⁶



Maintain a minimum average grass height of 4" and rest grazed pastures for 30-45 days to improve plant growth and support strong root systems—which reduces nutrient loss and soil erosion by up to 40%.¹

Incorporate trees, windbreaks, and hedgerows into grazing systems to reduce heat and cold stress on livestock while creating wildlife habitat and increasing carbon sequestration.

Install stream fencing with off-stream water developments to enhance grazing management while protecting water quality for downstream communities of people and wildlife.^{4,10}

About 19,000 miles of perennial streams flow through pastures & hayfields in Virginia, roughly 40% of which are currently protected with livestock exclusion fencing.¹²

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