

Grazing Bites

November 2024

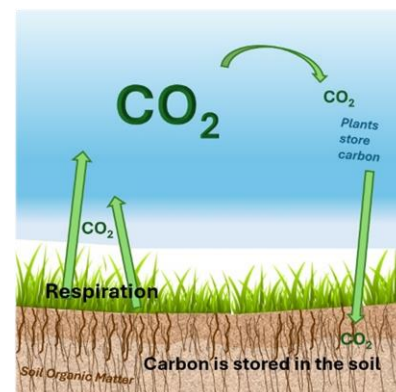


Victor Shelton, Retired NRCS Agronomist/Grazing Specialist

Not long after the October issue of *Grazing Bites* was released, I had a conversation with someone in Ohio about the concept of “normal.” He mentioned a presentation by Jim Gerrish, who noted that “normal precipitation is not average precipitation. In continental climates, seven out of ten years will see below-average precipitation, and normal conditions are often 10-15% below the long-term average.”

I agree with Jim. “Normal” weather typically refers to expected conditions based on long-term averages, such as temperature and precipitation patterns for a specific location and time of year. In contrast, “average” weather denotes the statistical mean over a defined period, like 30 years. Essentially, “normal” reflects expected weather, while “average” is a specific measurement.

However, perceptions of “normal weather” can vary among individuals in the same location, influenced by personal experiences, cultural backgrounds, health considerations, daily activities, and seasonal expectations. There’s considerable variation in weather; over the past six decades, I’ve witnessed both extremely cold, snowy winters and warm, dry ones, often without a discernible pattern. When discussing “climate,” I believe we should focus more on the water cycle than the air. The water cycle influences precipitation patterns, droughts, and floods, all of which significantly impact ecosystems, agriculture, and water availability – the more water and carbon we store in the soil, the more stable it is.



Soil health helps to sequester carbon!

This conversation led us to the topic of carbon sequestration in grazing systems. Healthy ecosystems benefit from ruminant grazing, which stimulates vegetative growth in response to increased CO₂, ultimately enhancing plant quality. This process helps maintain soil organic matter and reduces evaporation, effectively mitigating climate destabilization. By boosting carbon sequestration, improving water retention, and increasing resilience to extreme weather, we can foster a more sustainable environment.

I often discuss the benefits of more cover, cooler soil temperatures and evaporation management contributing to soil and plant health – sequestering carbon is an important part of it all.

Increased CO₂ levels stimulate vegetative growth through a process known as CO₂ fertilization where it acts as a sort of “fertilizer” from the air, enhancing photosynthesis and leading to increased biomass. Several forage plants respond well to this, including cool-season grasses like fescue, ryegrass, and timothy, which thrive in cooler, wetter conditions. Legumes such as clover, alfalfa, and vetch also benefit from higher CO₂ levels, improving soil nitrogen and forage quality. Warm-season grasses like big bluestem and switchgrass also respond positively to increased CO₂, particularly in warmer climates, while perennial species, which often have deeper root systems, enhance carbon sequestration and soil health.

The impact of ruminant grazing on ecosystems is complex and fascinating. When managed properly, grazing can promote plant growth, enhance soil health, and contribute to increased carbon sequestration. Practices like rotational grazing help to maintain vegetation and soil quality, but improper management can lead to overgrazing, resulting in soil degradation, loss of vegetation, and reduced carbon storage. This underscores the importance of sustainable grazing management to balance benefits and minimize negative impacts.

Effective grazing management practices can significantly enhance carbon sequestration by creating conditions that enable increased CO₂ capture. Healthy plant growth from well-managed grazing encourages effective photosynthesis, while improving soil health through practices like rotational grazing enhances soil structure and organic matter, leading to greater carbon storage. Additionally, healthy plants develop deeper root systems that sequester more carbon and improve soil resilience. Proper management maintains ground cover, reduces erosion, and promotes biodiversity, further enhancing ecosystem resilience and productivity. Overall, effective grazing management is vital for mitigating climate change by capturing carbon in both plants and soil.

While healthy ecosystems can sequester significant carbon dioxide and improve resilience, factors like changes in land use and climate variability also play crucial roles. In the last decade or more, I've observed a lot of marginal pasture and hay land being converted to cropland, which may become even more marginal.

That said, if soils haven't been degraded and cover crops and no-till practices are used, carbon sequestration can still occur, though not as effectively as with permanent vegetation. Cover crops enhance soil health, increase organic matter, and promote microbial activity, all contributing to carbon storage. No-till practices help protect soil structure and reduce erosion, further supporting carbon sequestration. However, permanent vegetation, like forests or perennial grasslands, tends to sequester carbon more effectively due to continuous growth and deeper root systems. While good cropland management can still facilitate carbon sequestration, the rate and capacity may not match those of more stable, permanent vegetation systems.

Now is an opportune time to evaluate marginal cropland and consider converting it to forages. By analyzing yield data from your combine, you can identify low-yielding areas. Removing these less productive zones from row cropping often results in increased average yields for the remaining acres. Additionally, these marginal lands typically struggle to cover input costs, leading to negative income in those areas. Transitioning them to forages can enhance profitability, improve overall soil health, and sequester more carbon in the process. The four principles of soil health benefit carbon sequestration – keep the ground covered, maintain living roots, increase diversity of plants, and keep soil disturbance to a minimum.

Converting marginal cropland back to forages is not only good for the ecosystem but it can also make more grazing or hay land available and add more diversity to the operation. There are Environmental Quality Incentives Program funds available to help with this transition. Contact your local Soil and Water Conservation District office or USDA Service Center for more information.

Remember, it is not about maximizing a grazing event but maximizing a grazing season! Be thankful for rain and keep on grazing!

Reminders & Opportunities

Purdue Hay Quality Seminar – Understanding Forage Quality - November 12, 2024 – 6:30 - 8:00 PM ET. <https://ag.purdue.edu/department/agry/agry-extension/forages/hay-quality-seminar-2024.html>

National GLCI Grazing Conference Dec 4-6, 2024, Tucson, AZ
<https://www.grazinglands.org/grazing-conference/>



American Forage and Grassland Council Annual Conference Jan 12-15, 2025, Kissimmee, FL
<https://www.afgc.org/annual-conference/>

Please send comments or questions to grazingbites@gmail.com.

