



Controlling the timing and intensity of grazing by rotating animals among paddocks to give pastures sufficient rest and regrowth

Why should I Adapt?

Heavy rain events in the Northeast have increased dramatically and are causing greater erosion and more nutrient runoff. Increasing temperatures may amplify future summer plant stress and limit productivity as well.

Consider adapting to these climate trends on your farm through a rotational stocking system.

Compared to continuous stocking, rotational stocking improves forage yield, and increases forage utilization and animal productivity per acre. Additionally, this practice promotes soil health, carbon sequestration, and maintenance of a farm's environmental resources. Plant communities in a rotational stocking environment can be managed in ways to improve adaptation to different climates, landscape positions and soils. As a result, root structure of forage can be greatly improved, which can mean greater water infiltration, deeper roots, and much less susceptibility to drought. Increased insulation from more productive plant canopies can also cool soils and help maintain forage growth as the climate continues to warm in the Northeast.





A Herd of Benefits

Soil structure, soil cover, and soil organic matter will all be enriched, enhancing life in the soil. This will reduce runoff, limit soil erosion, and promote improved water quality. Better uniformity of manure distribution increases manure management effectiveness and efficiency.

Social benefits include producing a scenic landscape and healthier food products. In combination with low-stress livestock management and by frequently moving livestock, animals become easier to handle reducing the risk of injury to animals and humans.

Grazing decreases feed, equipment, fuel, labor, fertilizer, and pesticide costs compared to confinement dairies, and can improve profitability.

The economic benefits include fewer herd health problems which lowers veterinary and animal replacement costs. Niche markets for grass-fed products also sell for a premium to health conscious consumers.

Risks to Rotation

High livestock densities need to be properly managed to avoid soil compaction, degradation to plant cover and animal habitat, and water quality issues.

2 Rotationally stocking is more labor, capital, and management intensive than a continuous stocking system, as it requires more fencing, watering systems and laneways.

Poorly managed grazing can impair animal health and productivity, which can negatively impact profitability. Any errors in layout and execution can heighten costs. With dairy cattle, if this practice isn't implemented properly, milk production may decrease more quickly than costs. This could result in potential cash flow issues.





This factsheet was developed through collaborative, crowdsourced efforts by Northeast grazing experts: Juan Alvez, Pasture Technical Coordinator, Center for Sustainable Agriculture, University of Vermont; James B. Cropper, Executive Director, Northeast Pasture Consortium; Lynn G. Knight, Agricultural Economist, USDA-NRCS; Ed Rayburn, Extension Specialist, West Virginia University; Howard Skinner, Physiological Plant Ecologist, USDA-ARS; Kathy Soder, Animal Scientist, USDA-ARS; and Mike Westendorf, Extension Specialist, Rutgers University,

Image descriptions and credits: [front, top] Portable water trough for Holstein dairy cows, James B. Cropper; [front, bottom] Horses grazing in a managed grazing system, Lynn G. Knight; [back, top] Cows on pasture lane, Kathy Soder; [back, middle] Nose pump for watering livestock on rotational pasture, James B. Cropper; and [back, bottom] Diverse grass species in rotational pasture, James B. Cropper

Produced by the USDA Northeast Climate Hub for people who manage livestock and land

Application Methods & Tips

Keep rotational paddock layouts simple. Consult with farmers currently practicing rotational stocking, specialists from University Extension and Natural Resources Conservation Service, or other reputable grazing consultants. Work with them on a layout and a total system that fits your farm and pastures.

Where possible, any hayland that is not currently grazed could be brought into the pasture system for grazing during the summer and fall to extend the grazing season. Try to use improved forage species and diversity in pastures, and remember to allow for more forage residual (not grazing as closely to the ground) and appropriate rest time per rotation. Allow animals with higher nutritional requirements access to the best forage possible. You should also consider supplemental feeding (e.g. concentrate) to meet the nutrient needs of animals.

A good perimeter fence is a must. Electrified fencing such as single strand high tensile wire works well on pasture subdivisions. Movable or fixed water tubs connected to main pipelines can fulfill livestock water needs. Supply lines can be PE tubing that is laid on the ground surface at fence lines to serve multiple paddocks. In places where livestock traffic is frequent, laneways will help cut down on mud and erosion. Heavily used laneways may need underlayment with geotextile fabric and surfacing with crushed limestone or shale, or a more durable material. Dairy cows should be moved to a fresh paddock after each milking. Beef cattle, horses, sheep, and goats can be moved less frequently; daily or every two to four days. Protect animals from severe weather elements by giving them access to shade or shelter.

Additional National & Regional Resources



NRCS Pasture Resource Guides and Tools

Gain pasture management information, tools and economics. nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/rangepasture/pasture nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/econ/tools/#RangePasture0

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Graze Magazine

Management focused; covers subjects from achieving life and business success on grass-based farms to animal injury. grazeonline.com

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Northeast Pasture Grazing Guide

Dedicated to improving pasture management. grazingguide.net

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On Pasture

Shares information from research and farmer experiences on pasture management.

onpasture.com



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WVU Pasture and Hay

Discover resources on forage production and management. anr.ext.wvu.edu/forage

UVM Extension

Collection of blog posts on grazing and pasture management. blog.uvm.edu/cvcrops/fact-sheets/grazing-pastures