

REDUCING BACTERIA WITH BEST MANAGEMENT PRACTICES FOR LIVESTOCK: PRESCRIBED GRAZING

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Description

The controlled harvest of vegetation with grazing or browsing animals, managed with the intent to achieve a specified objective. This practice employs utilization of grazing management principles that define stocking rate; rest periods; and intensity, frequency, duration, and season of grazing to promote ecologically and economically stable plant communities that meet both the land manager's objectives and resource needs. Moderate stocking has been shown to not significantly increase *E. coli* levels above background levels and provide additional benefits to producers. This, in combination with deferred grazing on creek pastures during rainy periods and use of other practices, can significantly reduce bacterial runoff.

Benefits to Producer

- ▶ Greater distribution of grazing and utilization of forage.
- ▶ Reduces supplemental feed costs.
- ▶ Improves property aesthetics and increases property value.
- ▶ Improves water quality by reducing sediment, nutrient, bacterial, organic, and inorganic loading to the stream.
- ▶ Reduces stream bank destabilization and associated erosion due to trampling and overgrazing of banks.
- ▶ Improved health and vigor of desired plants to maintain a stable plant community.
- ▶ Provides and maintains food, cover, and shelter for wildlife.



Intensive grazing system where cattle have grazed for 3 weeks on the left side of the fence and will be moved to the other side after a 3-week grazing rotation.
Photo by Jeff Vanuga, NRCS.



Paddock fencing is used to implement a rotational grazing system. *Photo by Bob Nichols, NRCS.*

- ▶ Maintains and improves surface and/or subsurface water quantity and quality.
- ▶ Reduces accelerated soil erosion and maintains or improves soil condition.
- ▶ Improves or maintains animal health and productivity by providing better quantity and quality of forage for grazing.
- ▶ Allows for regeneration of riparian zone vegetation to act as a full or partial buffer.

Bacterial Removal Efficiency

- ▶ Prescribed grazing resulted in the following bacterial reductions based on scientific research:
 - *E. coli*: 66 to 72%
 - Fecal coliform: 90 to 96%
- ▶ Prescribed grazing is typically used in conjunction with other practices such as fencing and alternate watering facilities. These practices have been shown to reduce concentrations of bacteria.

Other Benefits

- ▶ Increased potential for ranch profits.
- ▶ Reduced suspended sediment by 8% and nitrogen loads by 34% when combined with other practices.
- ▶ Runoff from a heavily grazed pasture (1.35 AUM/acre) was 1.4 times greater than from a moderately grazed pasture (2.42 AUM/acre), and 9 times greater than from a lightly grazed pasture (3.25 AUM/acre).
- ▶ Increased fish production by 184% where livestock use was light.
- ▶ Reduced soil compaction under light to moderate grazing intensities.

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- ▶ Increased infiltration, runoff attenuation, and soil moisture retention when appropriate rest periods are utilized.
- ▶ Enhanced herbaceous plant diversity.
- ▶ Control of noxious weeds.

Estimated Installation Costs

- ▶ If additional fencing is required:
 - Permanent electric cross fence: \$1.80/foot (on normal soils).
 - Four-strand barbed-wire cross fence: \$2.16/foot (on normal soils).
 - Four-strand barbed-wire fence: \$3.05/foot (on steep or rocky soils).
- ▶ Prices are estimates and can vary depending on location and economic conditions.

For Technical or Possible Financial Assistance

- ▶ Contact your local County Extension Agent, Soil and Water Conservation District (<https://www.tsswcb.texas.gov/swcds>) or the Natural Resources Conservation Service (<https://www.nrcs.usda.gov/>).

For More Information

- ▶ Visit <http://forages.tamu.edu/pubs.html> for publications related to grazing and forage management.



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