

REDUCING BACTERIA WITH BEST MANAGEMENT PRACTICES FOR LIVESTOCK: HEAVY USE AREA PROTECTION

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Description

The stabilization of areas frequently and intensively used by people, animals, or vehicles by establishing vegetation cover, surfacing with suitable materials, and/or installing needed structures.

Benefits to Producer

- ▶ Reduces accelerated soil erosion and maintains or improves soil condition.
- ▶ Improves aesthetic appearance of land.
- ▶ Reduces herd health risks associated with livestock standing in muddy areas, such as foot disease and injuries due to unstable footing.



A water tank is an example of an area that receives heavy use. The soil surface can be protected by using geotextile materials and a layer of gravel.

Photo by Gary Wilson, NRCS.

Bacterial Removal Efficiency

- ▶ Heavy use area protection resulted in the following bacterial reductions based on scientific research:
 - Fecal coliform: 92% to 99% with use of mulch, straw, and seed on high use areas.
- ▶ Heavy use area protection is typically used in conjunction with other practices such as fencing, prescribed grazing, and filter strips depending on the intended purpose of the heavy use area protection. These practices have been shown to reduce concentrations of bacteria.

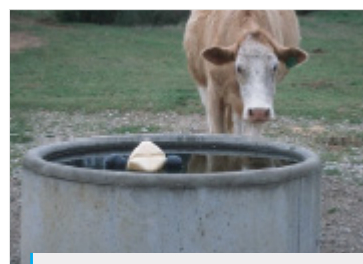
Other Benefits

- ▶ Reduced bank erosion by 50% with installation of a grade control structure to protect stream banks from heavy use by cattle.

- ▶ Near 50% reduction in total phosphorus levels in runoff collected in plots using woven geotextile fabric to protect soil surface.
- ▶ Over 99% of nutrients were retained on the surface of geotextile pads used in study.
- ▶ Reduced soil erosion by 75% to 80% on a plot mulched with wheat straw (provided 61% cover) as compared to an unmulched plot.
- ▶ Increased surface water storage and protected soil surface from raindrop impact using mulch cover.
- ▶ Increased soil porosity between 48% to 59% with application of rice straw.
- ▶ Reduced total nitrogen concentrations in runoff by 86% with use of geotextile fabric and highly porous gravel.
- ▶ Reduced sediment discharge by 98% with use of compost/mulch blend.

Estimated Installation Costs

- ▶ \$4.98/square foot.
- ▶ Cost information obtained from the Texas NRCS Electronic Field Office Technical Guide for Zone 4; costs may vary for other zones.
- ▶ Prices are estimates and can vary depending on location and economic conditions.



Gravel placed around this water tank helps protect the soil surface and prevent soil erosion.

Photo by Jeff Vanuga, NRCS.

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>).



<http://lshs.tamu.edu/>

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