



# Maryland Department of Agriculture

*Office of Resource Conservation*



**Greener  
Pastures**



**Cleaner  
Streams**



**Healthier  
Livestock**





If you own pasture-land that borders a creek or stream, you could be compromising the health and productivity of

your animals by letting them drink or congregate in waterways. While the environmental benefits of keeping animals away from sensitive shoreline areas and streambeds have been widely touted, there are substantial animal health benefits that result when farmers restrict livestock access to waterways.

It is commonly known that stream protection practices such as watering troughs, stream crossings, livestock fencing and stream buffers help reduce sediments and livestock nutrients from entering our waterways. Just as importantly, however, these practices can reduce health problems,

increase milk production and minimize infectious diseases and physical damage to dairy and beef herds.

Cost-share assistance of up to 87.5 percent is available through the Maryland Agricultural Water Quality Cost-Share (MACS) Program to help farmers cover the costs of installing stream protection practices that also benefit livestock health. In addition, through Maryland's Conservation Reserve Enhancement Program (CREP), eligible farmers can receive attractive annual rental payments to take streamside property out of production for 10 to 15 years and plant buffers or install stream protection practices. Please read on to learn more about the environmental, economic and animal health benefits of installing stream protection measures on your farm.



Greener Pastures • Cleaner Streams  
Healthier Livestock





Watering Trough



Stream Crossing



Livestock Fencing



Stream Buffer

A watering trough provides a safe, clean, reliable water supply for animals away from streams. Most farmers report that livestock prefer watering troughs to streams and springs.

*Environmental Benefits*

- A selectively placed watering trough can make pasture management easier.
- Watering troughs help reduce erosion from messy or muddy areas caused by animal traffic.

*Animal Health Benefits*

- Watering troughs reduce mastitis problems caused when livestock enter muddy streams or spring heads seeking water.
- A healthy supply of clean water can stimulate appetite and improve milk production in dairy cows.
- Watering troughs reduce the risk of livestock ingesting toxic and potentially fatal algae—particularly blue-green algae—that bloom along the edges of streams where animals drink.
- High levels of nitrates found in many streams are unhealthy for livestock and can threaten the health of unborn calves. A watering trough will help minimize this risk.

A stream crossing provides safe animal access to pastures while helping to control streambank and streambed erosion.

*Environmental Benefits*

- Livestock are encouraged to use the crossing instead of the streambed to navigate streams, thereby reducing erosion and enhancing water quality.
- Crossings allow vegetation to stabilize streambanks while promoting wildlife habitat.

*Animal Health Benefits*

- The risk of livestock injury due to unstable footing in stream channels is reduced.
- Crossings minimize the risk of livestock breaking through frozen stream surfaces in the winter and becoming stuck or injured.
- The number of bacterial infections caused by wet hooves is minimized.

Fencing protects streambanks from being eroded by animal traffic while fostering vegetation and streambank habitat.

*Environmental Benefits*

- Fencing encourages livestock to graze in upland areas that are not environmentally sensitive.
- Fencing helps stabilize streambanks and improves water quality by reducing the amount of nutrients and sediment entering streams.

*Animal Health Benefits*

- Upland forage is more nutritious than streamside vegetation and can result in improved herd health.
- Lactating cows benefit greatly from eating upland forage instead of streamside vegetation, which has a high water content and lower nutrient value.
- Improved livestock production counterbalances the slightly reduced grazing area.

Strips of grass, shrubs or trees planted next to streams help filter runoff and prevent erosion.

*Environmental Benefits*

- Grass, trees and shrubs provide cover for small birds and animals.
- Vegetation prevents sediment and nutrients from entering waterways.
- Vegetation provides shade, food and habitat for aquatic life and reduces stream temperature.

*Animal Health Benefits*

- Buffers reduce water borne pathogens that can cause mastitis, miscarriage, gastrointestinal diseases and toxemia.
- Buffers improve the general health of animals.

Can Stream Protection Practices Reduce the Risk of Mastitis in My Herd?

In a word, yes. Mastitis is the inflammation of the mammary gland caused by bacteria that invade the udder and produce harmful toxins that can reduce milk production and quality and cause swelling, fever, dehydration and sometimes death in dairy cattle. There are two types of mastitis—contagious and environmental. While antibiotics and improved milking procedures go a long way toward preventing contagious mastitis, environmental mastitis is most easily controlled by reducing the animal’s exposure to bacteria. This involves keeping the cow’s environment as clean and dry as possible and limiting access to mud, ponds or streams. The stream protection practices in this brochure can help in this effort.

ESTIMATED ANNUAL LOSSES DUE TO MASTITIS

SOURCE OF LOSS	LOSS PER COW
Reduced production	\$ 121.00
Discarded milk	\$ 10.45
Replacement cost	\$ 41.73
Extra labor	\$ 1.14
Treatment	\$ 7.36
Veterinary services	\$ 2.72
TOTAL	\$ 184.40 x 100 cow herd = \$18,440.00

Source: Current Concepts of Bovine Mastitis, 1996. The National Mastitis Council.

## Soil Conservation Districts

Allegany	(301) 777-1747, ext. 3
Anne Arundel	(410) 571-6757
Baltimore County	(410) 666-1188, ext. 3
Calvert	(410) 535-1521, ext. 3
Caroline	(410) 479-1202, ext. 3
Carroll	(410) 848-8200, ext. 3
Catoctin	(301) 695-2803, ext. 3
Cecil	(410) 398-4411, ext. 3
Charles	(301) 934-9588, ext. 3
Dorchester	(410) 228-5640, ext. 3
Frederick	(301) 695-2803, ext. 3
Garrett	(301) 334-6951
Harford	(410) 838-6181, ext. 3
Howard	(410) 313-0680
Kent	(410) 778-5150, ext. 3
Montgomery	(301) 590-2855
Prince George's	(301) 574-5162, ext. 3
Queen Anne's	(410) 758-3136, ext. 3
St. Mary's	(301) 475-8402, ext. 3
Somerset	(410) 651-1575, ext. 3
Talbot	(410) 822-1577, ext. 3
Washington	(301) 797-6821, ext. 3
Wicomico	(410) 546-4777, ext. 3
Worcester	(410) 632-5439, ext. 3

Financial assistance provided by the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration (NOAA).



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