PASTURE-RAISED LIVESTOCK

AN INNOVATIVE STRATEGY FOR FARMERS TO COMPLY WITH THE CLEAN WATER ACT

How can the Clean Water Act influence farming practices?

Section 303 of the Clean Water Act requires states, territories and tribes to identify and list lakes, rivers and streams that are not suitable for designated uses — recreation, wildlife, and drinking water, for example — because of excess pollutants. When a body of water does not meet water quality standards for the designated uses, then states, territories or tribes are required to establish a total maximum daily load (TMDL) for the specific pollutants considered to be in violation. The goal of establishing a TDML is to help comply with the Clean Water Act by limiting the amounts of a specific pollutant from point (e.g., municipal wastewater systems) and non-point (e.g., lawns and farms) sources. Common problems related to TMDLs in areas with farms include runoff of sediment, phosphorus, nitrogen, and fecal coliform bacteria.

How can pasture-raised livestock systems help communities meet TMDL load requirements?

Because pasture-raised livestock systems keep soil in place and reduce input demands, they reduce the amount of sediment and fertilizer that leaves the farm and pollutes water in several ways:

- Reduced sediment loss — Farming systems relying on grass and permanent cover can effectively reduce erosion, especially when compared to row crops and continuous grazing systems. Healthy grass and other perennial covers have great power to absorb water and hold soil in place, which reduces wind and water erosion that happens during large storms and throughout the year.[1]

- Reduced reliance on highly fertilized feed crops — Feeding animals grass translates into fewer row crops, which are used to grow food for animals raised in confinement, including large factory farms. The reduction in row crops can lead to less fertilizer and herbicide use, less pollution and reduced greenhouse gas emissions (from the nitrogen as well as fuels needed to produce and distribute the fertilizers and grow the feed crops).

Pasture-raised livestock systems make it economically viable for farmers to maintain permanent perennial cover on the landscape, which increases the soil's water-holding capacity and helps recharge the groundwater supply. Landscape cover also filters nutrients before water reaches streams, lakes, and other important bodies of water. A study of farms in southern and western Minnesota, using monitoring and long-term modeling, predicted that sediment, nitrate-N, and phosphorus runoff from pasture-raised livestock systems would be significantly lower than corn systems when rains were hard enough to cause erosion. This pattern was expected to increase dramatically during heavy rains.[1]

Continuous grazing v. raising livestock on rotational pastures

Usually, continuous grazing systems involve releasing livestock into an open pasture during the growing season. The animals are allowed to roam the entire pasture and sometimes have free access to stream corridors, which can lead to overgrazing, erosion, and water pollution. Rotational pasture livestock systems involve moving cattle into different areas to control how the land is grazed, which results in more efficient land use and less water pollution.

Can pasture-raised livestock systems reduce fecal coliform bacteria contamination?

Fecal coliform bacteria (which includes Escherichia coli) come from animal and human feces,[1] and measuring them is one way to tell how much manure has washed into various bodies of water. Knowing how much manure is reaching streams, lakes, ponds and rivers is important because too much can cause human and animal health problems. A study conducted in Minnesota found that fecal coliform levels in waterways were consistently lower in rotationally grazed sites than in continuously grazed sites.[2]

Perhaps a more telling fact about the roles that pasture-raised systems can play in reducing fecal coliform bacteria in waterways involves the Mississippi River. The Minnesota Pollution Control Agency (MPCA) lists 20 stream reaches in the Lower Mississippi River Basin in Minnesota as impaired for swimming under Section 303(d) of the Clean Water Act. The main cause is excessive amounts of fecal coliform bacteria. Many of the streams in the area also have excessive levels of sediment, nitrogen and phosphorus pollution.

Citing evidence generated by the study of runoff from farms in southern and western Minnesota using rotational grazing, the MPCA included rotational grazing as an approved implementation practice to reduce fecal coliform in streams. Grazing also reduces sedimentation, turbidity and associated pollutants. This can help communities meet TMDLs and leads to improvements in the health of streams and rivers — and for the wildlife that live there.

* E. Coli is a common strain of fecal coliform bacteria, and is one of the markers used to determine whether or not a body of water is safe for recreation. See www.epa.gov/OWOW/monitoring/volunteer/stream/vms511.html for more discussion and guidance on sampling methods.

Does pasture-raised farming offer other benefits to farmers?

Aside from helping comply with the Clean Water Act, shifting to pasture-raised livestock systems makes sense for farmers logistically and financially. Studies show that livestock production based on grass dramatically cuts the cost of an operation's most expensive input: feed. Because pasture-raised operations also reduce the need for expensive housing and manure handling facilities, they are also much cheaper to set up and manage. Additionally, farmers who graze can get cost -share or other funding through various farm programs, such as EQIP, the Grassland Reserve Program and the Conservation Security Program, when implemented.

How do pasture-raised livestock systems work?

Raising animals using systems that utilize planned rotations allows grass to recover completely between grazing periods, spreads manure evenly over the land, and the fulfills animals' nutritional requirements. These systems involve dividing a pasture into a series of smaller grazing areas or "paddocks," and farmers move cattle among the paddocks to control how the land is grazed. The farmer allows plant growth to determine when cattle are moved and to which paddock they go.

How is pasture-based farming good for the environment?

Research shows that converting a portion of corn and soybean crops — ingredients found in typical confined factory farm feeds — to diverse rotations including pastures has substantial environmental benefits.[4] They can be:

- Soil erosion reduction of 50 to 80 percent.
- Pollutant run-off cut in half.
- Small to moderate flooding, resulting from farmland run-off, reduced by over 30 percent.
- Bird and wildlife habitats increased by five times.
- Greenhouse gasses reduced by up to 40 percent.

SOURCES

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