

An Inquiry Into the Rationale for Prioritizing South Carolina's Animal Feeding Operations for Water Pollution Regulation

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Considering the extent of land-use restrictions and environmental-impact-monitoring requirements associated with operating animal feedlots in South Carolina, our state now arguably leads the nation in regulatory efforts to reduce polluted runoff from these sources. The research presented here is an inquiry into the rationale the South Carolina Department of Health and Environmental Control used in its recent promulgation of new animal agriculture regulations pursuant to the 1996 Hog Act.

Unlike other previous studies, this paper does not investigate or challenge the technical merits of the threshold values chosen for setback distances, lagoon dimensions, animal units, or pollutants monitored, for example. The work questions the rationale for prioritizing South Carolina's animal feeding operations for environmental cleanup in lieu of other sources of water pollution that are known causes of streams not meeting even minimum-acceptable Federal water-quality standards.

The research first summarizes and explains the data used to establish the State's implicit finding that polluted runoff from animal agriculture degrades or poses a potential to degrade water quality in South Carolina to a degree comparable to other sources. Relevant explanatory information made available to the public in promulgating the new regulations consisted primarily of inferences made from national ambient water quality monitoring-data and anecdotal information derived from incidents in other States. No data summaries, case studies, or incidents linking animal agriculture to water pollution in South Carolina could be identified, although a multitude of data are presented that suggest pervasive problems from other specified sources.

Since no studies linking animal feeding operations to nonpoint-source-water pollution in South Carolina could be identified, the research presented here attempts to initiate efforts to determine the absolute and relative contributions of animal feedlots and other sources to the water-pollution problem in South Carolina.

Fecal coliform bacteria and oxygen-depleting compounds are the two constituents in feedlot runoff that are suspected to be polluting South Carolina's waterways; two pollutants that also are common to industrial and municipal point-source discharges and urban-land runoff.

The study uses agricultural census data to map heads of cattle and hogs and chicken farms in South Carolina. Census data also are used to map human-population concentrations in the State. Watersheds containing streams prioritized for reductions in fecal-coliform pollution or oxygen-depleting pollutants are mapped and overlain with the animal/human data.

Eight maps relating water pollution, animal agriculture, and urban areas in South Carolina are presented. The maps are categorized into two broad groupings; animals and humans related to dissolved oxygen stream impairment and animals and humans related to fecal coliform bacteria stream impairment. In general, there seems to be a high presence of fecal coliform and oxygen-depleting pollutants in the State's streams that lie in urban watersheds and a very low occurrence in the regions of the State that harbor agricultural animals.

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