

Livestock Debate Highlights Need to Improve Water Quality Protections

by Linda D. Appelgate (5/1/1997)

How do you feel about a 6000-head livestock confinement facility 201 feet from the shore of Spirit Lake? Or 201 feet from the edge of Big Creek, Lake Rathbun, or the Iowa River? Or 201 feet uphill from an agricultural drainage well leading directly into groundwater that supplies thousands of urban and rural Iowans?

Under current Iowa law, as long as other permit requirements are met, each of these would be allowed. To their credit, local officials in Humboldt County are doing their best to protect water quality based on unique local conditions while the state has opted for a "one-size-fits-all" approach.

We have a long way to go to achieve adequate water quality protection in Iowa. Whether we decide on local, state, or shared control of agricultural enterprises and livestock production, a significant part of this debate is about water. It is about our most precious resource and how we choose to protect it. The outcome of this debate will affect all Iowans - urban, rural, and farm. Without water, all life ceases; without good water in Iowa, life as we know it will change. Slowly, gradually, it will change. We won't even know we've missed wading in a creek, operating a family dairy farm, fishing, or drinking anything but treated water. Businesses, communities, health, and habitat will all be affected.

Humboldt County

For most rural landowners in Humboldt county, their water comes pure and drinkable from the ground. Yet, Humboldt County also has unique local conditions making this water vulnerable to contamination. Bedrock lies close to the surface in much of the county. Sinkholes and rock fractures are common providing conduits for groundwater contamination.

In addition, early in the century, at least 130 agricultural drainage wells (ADWs) were drilled in Humboldt County to drain surface water into the groundwater aquifer so the land could be farmed. Local farmers estimate dozens more wells are unknown or unreported.

In one of the three ordinances under attack, the Humboldt County Supervisors try to address this concern. Ordinance #24 requires that landowners wishing to apply manure identify the land they will use and any sinkholes or ADWs present. Each landowner must then test the water in any ADW before applying manure. In following years, if manure is applied each well must again be tested. If contamination occurs, the permit is suspended until evaluation, remediation, and a plan to prevent future contamination is complete.

Is this reasonable? Or, as some suggest, does it harm the livestock industry? No current or proposed state law includes the requirements in Ordinance #24. The Humboldt County supervisors believe public health is not protected by state rules that require only that lagoons to

be at least 500 feet from an ADW and that manure be applied at least 200 feet away. In the recent district court ruling, the judge upheld this ordinance and two others as "valid exercises of county home rule authority."

The Humboldt County supervisors support animal agriculture and the value it adds to cropping systems and the local economies while recognizing the vulnerability of their water. Their voices must be heard and respected by state officials. They are, after all, elected by the same voters.

While the ADW ordinance in Humboldt County addresses a concern unique to north central Iowa, related issues of water quality and livestock waste must also be addressed, either locally or by the state.

- We must take regional differences into account. While Humboldt County strives to protect their water from contamination through sinkholes and agricultural drainage wells, concerns will be different in other counties. We must recognize the diversity of our state whether in soil type, geology, water bodies, or natural areas. This means drawing upon local knowledge, expertise, and values regarding unique local conditions and resources. Additional protections like increased setbacks may be needed for sensitive areas such as Lake Rathbun.
- Prohibit construction of earthen lagoons below the water table. According to Dean Richard Miller and faculty members of the University of Iowa's College of Engineering, "to minimize the possibility of groundwater contamination, the groundwater table should never be above the bottom seal (of a lagoon)." (their emphasis)
- Adopt adequate standards for lagoon construction. Current EPA recommendation for liner thickness is three feet. Iowa has no minimum thickness requirement, instead relying on a seepage standard of no more than 1/16" per day. This seepage rate, Iowa's only measure of lagoon performance, is measured by a lab test. According to John Pitt, Associate Professor of Civil and Construction Engineering at Iowa State University, "laboratory tests underestimate the permeability of soil liners by factors ranging from 10 to 100,000." He adds, "Little credence should be given to laboratory permeability tests for design or quality control of earthen containments."
- Require groundwater monitoring wells at facilities with new earthen lagoons and broaden DNR authority to monitor existing lagoons. Current rules allow monitoring only when there is "extraordinary potential for groundwater pollution." In research on municipal earthen sewage lagoons in Minnesota, all five in the study were leaking in excess of standards; two were contaminating groundwater. In Iowa, almost no data is available although we have permitted hundreds of earthen lagoons. In the only current research in Iowa, two of the three earthen manure structures being monitored show fluid movement outside the structure.
- Inspect permitted earthen lagoons at least once a year to assure they are maintained and operated properly. In 1995 after a major lagoon failure and fish kill, North Carolina decided to

inspect lagoons on 4606 farms. They found significant problems at 20% of them, including seepage, erosion, and 145 instances where landowners were piping manure directly to streams. Current Iowa law requires annual inspection only for "habitual violators."

For each of these recommendations, adequate funding for the Department of Natural Resources is essential. We need to hire and train staff to review manure management plans, provide oversight of lagoon construction and operation, perform annual inspections, and respond to emergency spills. Last year, North Carolina Governor Jim Hunt asked the General Assembly for \$57.3 million to clean up the Neuse River, restore wetlands, and help livestock farmers comply with animal waste management rules.

In Iowa, understaffing of the Department of Natural Resources coupled with a requirement to review permits in 60-days leaves us with inadequate enforcement on top of inadequate standards. Of the 50 states, funding for the Iowa Department of Natural Resources' Environmental Protection Division ranks 50th. Can this change? Yes.

We do not need to pre-empt the ability of counties to adopt local controls. We clearly need both strong, sensible local control and a state willing to shoulder the responsibility of protecting all its citizens, its land, and its water.

There is every reason to believe we can support a healthy, growing livestock industry while talking honestly about protecting our natural resources and giving local citizens a voice. We need to talk rather than "pre-empt" honest conversation. I hope that our leaders will have the strength and vision to draw on citizens at every level. Together, we must act now to protect Iowa's future.

--

Linda D. Appelgate is Executive Director of the Iowa Environmental Council, a statewide alliance of individuals and 49 diverse organizations working to protect Iowa's natural environment through public policy, research and education, coalition-building, and advocacy. Does Iowa Have the Strictest Livestock Regulations?
by Susan Heathcote, Research Director, Iowa Environmental Council

According to State Representative John Greig in "Iowa View" (Des Moines Register, Wednesday, April 23), "Iowa's environmental protection laws (are) the most restrictive of any state in the country" for livestock production. However, according to a study comparing 22 categories of livestock regulation from six states, Iowa is most restrictive in two categories, comparable in nine, and weaker in eleven categories. (The accompanying chart shows how Iowa compares, in those eleven categories, to the states with the strongest standards.) The survey include the three top hog producing states, Iowa, North Carolina, and Minnesota. It was conducted by the Minnesota Center for Environmental Advocacy in February 1997. The survey did not address any state's total program of protections, regulations, inspection, funding, and enforcement.

Does Iowa Have the Strictest Livestock Regulations?

A Comparison of Environmental Regulations for Livestock Confinements in Iowa, North Carolina, Minnesota, Missouri, Arkansas and South Carolina

by the Iowa Environmental Council

based on a study by the Minnesota Center for Environmental Advocacy, Feb. 1997

Manure management plans required

North Carolina: 250+ swine; with annual reviews

Iowa: 200,000+ lbs (1,333 market swine at 150 lbs)

Site inspections required

North Carolina: Annually for 250+ swine

Iowa: Annually for habitual violators

Permit required

Minnesota: 50+ animal units (animal unit = 2.5 swine)

Iowa (lagoon or earthen storage basin): 200,000+ lbs (1,333 market swine at 150 lbs)

Iowa (formed storage structure): 625,000+ lbs (4,166 market swine at 150 lbs)

Setback requirements for lagoons from lakes and streams

South Carolina: 1/4 to 1/2 mile with minimum 100 foot vegetative buffer

Iowa: 200 feet

Setback requirements for land application from lakes and streams

Arkansas: 100 to 300 feet

Iowa: 50 to 200 feet

Setback requirements for land application from water wells

Missouri: 300 feet

Iowa: 50 to 200 feet

Manure application on saturated or frozen ground

Missouri: Prohibited

Arkansas: Prohibited

Iowa: Not recommended

Manure application on sloping ground

Arkansas: Prohibited on slopes >15%

Missouri: Prohibited on slopes >12%, limited on slopes >6%

Iowa: Conservation plan required for "highly erodible land"

Operator certification

North Carolina: Required

South Carolina: Required

Arkansas: Required

Iowa: Not required

Soil and manure testing for nutrients (nitrogen, phosphorus, and potassium)

Missouri: Required

Iowa: Not required

Monitoring requirements

Missouri: Monitor state waters adjoining or crossing property

South Carolina: Monitor groundwater for facilities with 420+ animal units

Iowa: Not required

Susan Heathcote is Research Director for the Iowa Environmental Council, a statewide alliance of individuals and 49 diverse organizations working to protect Iowa's natural environment through public policy, research and education, coalition-building, and advocacy.