July 8, 2025

Environmental Working Group comments to the Minnesota Pollution Control Agency; request for comments on the Animal Feedlots Rule.

The Environmental Working Group (EWG) thanks you for requesting input about Minnesota's Animal Feedlots Rule. EWG offers the following comments on the rule.

EWG, a nonprofit research and policy organization with teams in Minneapolis, Minn., Washington, D.C. and Sacramento, Calif., has conducted research into agricultural pollution and farm policy programs for over three decades. Our expertise focuses on the environmental and climate impacts of agricultural practices, with a particular emphasis on water quality.

Additionally, we are deep experts in using aerial imagery to geolocate animal feeding operations and we have developed a peer-reviewed methodology[i] that allows us to calculate the number of animals produced in an animal feeding operation and the manure amounts that each feedlot produces in a year. We also have considerable experience modeling which farm fields near feedlots likely receive manure. We analyzed the number of feedlots and animals, the manure they produced, and modeled manure application to nearby farm fields in Minnesota in a 2020 report[ii] and then updated that report in May of 2025.[iii]

We recommend that MPCA makes these changes to the Animal Feedlots Rule:

- Require all feedlots with 600 or more animal units to get a National Pollutant Discharge Elimination System or State Disposal System permit.
- Require the largest feedlots with 1,000 animal units or more to monitor discharges to groundwater as well as discharges to surface water through drain tile.
- Ensure feedlots cannot avoid permit requirements by splitting feedlots.
- Establish stricter manure land application requirements and lower manure application rates in Vulnerable Groundwater Areas[iv]. These requirements should include requiring conservation practices like cover crops or diversified crop rotations if a farmer applies manure in the fall, and no liquid manure application to frozen or snow-covered ground, in Vulnerable Groundwater Areas. Additionally, manure application rates should not be allowed to exceed the agronomic rate in Vulnerable Groundwater Areas.

- Close the manure transfer loophole. Currently, transferred manure is exempt from tracking, so the application location, rate, and date of transferred manure are unknown. Tracking requirements of transferred manure should be established and enforced.

Justification for recommendations

Manure from feedlots causes significant damage to nearby water quality, especially in conjunction with synthetic fertilizer use. The manure these facilities generate are often applied to nearby farm fields as a fertilizer and can wash off farm fields, leach through soil into drainage systems that empty into nearby streams, or get into groundwater.

Nitrogen forms in drinking water as nitrate and consuming this water can increase the risk of birth defects and cancer[v]. This is a particularly widespread issue in Minnesota's Vulnerable Groundwater Areas like the Southeast karst region[vi] and the Central Sands region[vii]. The harm that nitrate in drinking water causes to communities throughout the state is a well-known problem[viii].

Manure runoff can also create potentially toxic algae blooms in recreational waters when nutrients are applied in excess of crops' uptake capacity. EWG has previously reported on algae toxins in bodies of water throughout Minnesota[ix]. When manure is applied to meet the nitrogen recommendation for crops, phosphorus is often overapplied. Algae blooms in recreational water sources can pose a health hazard for humans and pets, as well as the ecosystem harm.

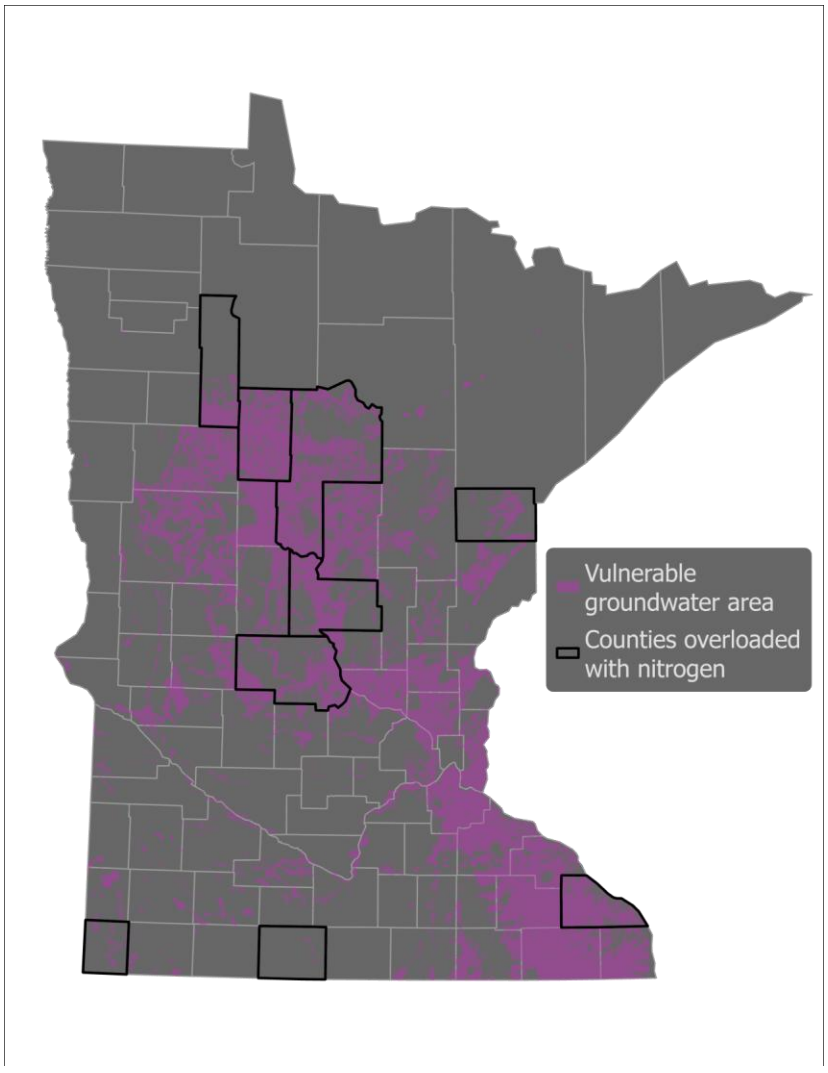
Over-applying nitrogen and phosphorus above crop needs from both animal manure and commercial fertilizer, as well as applying manure at high-risk times of the year such as fall when the ground is bare or winter when ground is frozen, leads to more nitrogen and phosphorus from manure ending up in bodies of water as well as groundwater sources.

In our report released in May of 2025, EWG analyzed which fields near feedlots likely received manure in 2024. The analysis found nine counties that are hot spots for nitrogen overload. This happens when nitrogen from manure, combined with nitrogen in fertilizer sold in the county, exceeds crop recommendations by more than 40 percent.

Nitrogen overload can be a particular problem in Vulnerable Groundwater Areas. In these areas, nitrate applied to farm fields through fertilizer or manure can easily get through soil and pollute groundwater. Many counties with nitrogen overload are within

the Central Sands and Southeast regions of Minnesota. These two regions have a high percentage of land with the MPCA Vulnerable Groundwater Area distinction. In 2024, 6,480 feedlots in the state were located within a vulnerable groundwater area, as can be seen in EWG's map below.

Minnesota counties and vulnerable groundwater areas at risk of nitrogen overload



In our analysis we also found that most feedlots in the state are small, but the medium and large facilities produce a disproportionate amount of manure. While 78 percent of facilities were small, they produced just 24 percent of manure in 2024. Medium facilities

made up only 18 percent of all operations but produced the largest share of manure, at 43 percent. Four percent of facilities were large but generated 33 percent of manure.

Because of the large quantities of manure that medium facilities produce, they should also be required to get a NPDES or SDS permit. In Minnesota, 983 facilities housed between 750 and 999 animal units in 2024 – just a few hundred units under the 1,000 animal unit level that requires stricter regulation. These facilities still produced a lot of manure, as they are 14 percent of all facilities in the state, but are hardly regulated. And among these, there were 374 operations that were between 950 and 999 animal units - just 50 animal units short of the large CAFO designation and more stringent permits. So almost 400 facilities are producing manure at levels close to the amounts from large facilities, but are not regulated in the same way.

We recommend requiring NPDES or SDS permits for all feedlots that house at least 600 animal units. According to our calculations, there were 2,316 feedlots with between 600 and 999 animal units in Minnesota in 2024, and these facilities produced 12,640,899 tons of manure. Of those, 329 feedlots were in a Vulnerable Groundwater Area.

In fact, out of the 6,480 total feedlots that are in a Vulnerable Groundwater Area, only 161 are above the 1,000 animal unit threshold, so most feedlots in these areas do not have many restrictions. A significant amount of manure is being produced by facilities that are not regulated stringently because they are not required to get NPDES or SDS permits.

A significant number of facilities, housing animals and producing manure, are also close to the Vulnerable Groundwater Areas while not being directly in the area. The above number only includes the facilities located directly within a Vulnerable Groundwater Area. Over 50% of all feedlots in Minnesota are either in a Vulnerable Groundwater Area or within 1 mile of a Vulnerable Groundwater Area.

In conclusion, we believe that MPCA should make the changes to the Animal Feedlots Rule that we have listed above in the recommendations section. Making these changes would significantly improve water quality and public health throughout Minnesota.

We appreciate the opportunity to comment.

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[i] https://www.mdpi.com/2073-4395/10/4/480
[ii] https://www.ewg.org/interactive-maps/2020-manure-overload/
[iii] https://www.ewg.org/research/five-years-after-ewgs-first-analysis-manure-still-overloads-minnesota
[iv] https://www.mda.state.mn.us/chemicals/fertilizers/nutrient-mgmt/nitrogenplan/mitigation/wrpr/wrprpart1/vulnerableareamap
[v] https://ehsrc.public-health.uiowa.edu/wp-content/uploads/2024/09/Nitrate-Environmental-Health-and-Cancer-Fact-Sheet.pdf
[vi] https://www.mncenter.org/protecting-drinking-water-in-MNs-karst-region
[vii] https://www.ewg.org/interactive-maps/2020_nitrate_in_minnesota_drinking_water_from_groundwater_sources/
[viii] https://investigatemidwest.org/2023/01/12/a-public-health-crisis-in-the-making-agriculture-pollutes-underground-drinking-water-in-minnesota-well-owners-pay-the-price/
[ix] https://www.ewg.org/research/more-monitoring-needed-keep-people-safe-algae-toxins-iowa-minnesota-and-wisconsin