

## Harms Caused by Manure Management

CAFOs that hold a National Pollution Discharge Elimination System (NPDES) permit are required to develop and implement a comprehensive nutrient management plan (CNMP). [https://www.cdc.gov/nceh/ehs/docs/understanding\\_cafos\\_nalboh.pdf](https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf) 2003 & 2008 Rule-changes). Although a multistage, aerated facility is generally required to treat human sewage, no such treatment is required for livestock waste.

Animal cultivation in the United States produces 133 million tons of manure per year (on a dry weight basis) representing 13-fold more solid waste than human sanitary waste production.

[\(https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/\)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/)

Since the 1950s (poultry) and the 1970s–1980s (cattle, swine), most animals are now produced for human consumption in concentrated animal feeding operations (CAFOs).

Excrement and urine from laying chickens and ducks, meat poultry, milking cows, beef cattle, and hogs contain nutrients, and some of the Nitrogen, Phosphorus, and Potassium is used by growing crops in fields. CAFOs must identify ways to process waste in order to maintain nutrient levels for their fields at the appropriate amount.

CAFOs first capture their animal waste by storing it in lagoons or in pits under the caged animals' slatted floors, or for poultry, scooping up the bird poop from the floor of the enclosed building holding thousands of chickens. The vast majority of CAFOs then spray or spread that untreated waste onto farm fields, and land application of raw sewage becomes a CAFOs principal means of waste management.

Nutrients overloaded onto farm fields can harm the soil and water. These nutrients can also slide off from a frozen or saturated field during a thaw or an extreme rain event directly onto roadways or into streams and lakes. Nutrients can also migrate directly down through soil without attaching to the soil and end up in under-field drain tiles that connect directly to drainage ditches that flow into our surface waters.

Additionally, manure storage structures can break or become faulty, or rain and storm events can cause holding lagoons to overflow. CAFOs are required to have a NPDES permit (in some states) that limits the levels of manure discharge. But holding the large quantity of manure that hundreds to tens of thousands of animals create each day at one CAFO has caused accidental releases which can impact humans.

There is also the opportunity for a CAFO to receive a “no discharge certification” if they claim not to discharge. Discharges from the CAFO include discharges of manure, litter, or process-wastewater from land application areas under the control of the CAFO.

[https://www3.epa.gov/npdes/pubs/cafo\\_implementation\\_guidance.pdf](https://www3.epa.gov/npdes/pubs/cafo_implementation_guidance.pdf)

CAFOs can give away or sell their manure to other farms, called “manifesting” waste. The CAFO that manifests and farm that accepts that waste then has no requirements for preventing pollution discharges.

As much as 1.4 billion tons of manure is produced by the 9.8 billion heads of livestock and poultry produced yearly in the U.S.

<https://www.ars.usda.gov/research/publications/publication/?seqNo115=364421>

and most of it comes from CAFOs. Livestock in the U.S. produce each year somewhere between 3 and 20 times more manure than people in the U.S. produce.

[https://www.cdc.gov/nceh/ehs/docs/understanding\\_cafos\\_nalboh.pdf](https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf) Because of the shift from pastured livestock farms to CAFOs, the production of manure has grown substantially.

CAFOs often need more and more land each year on which to apply the growing amount of manure, and this has led to environmental harms:

- Poor ground and surface water quality including elevated levels of nitrate in area wells and harmful algae blooms in lakes and streams
- Odorous and non-odorous air contaminated with high emissions of hydrogen sulfide and ammonia and fine particles coated with dangerous pathogens.
- Methane, a greenhouse gas, produced in agriculture from the digestive processes of ruminant animals and the storage, treatment and handling of manure

CAFO operators are not required to test for the level of pathogens and irritants in their animal waste such as E. coli, growth hormones, antibiotics, chemical cleaning agents, animal blood, silage leachate from corn feed, or copper sulfate used in footbaths for cows.

Residents near a CAFO and the general public should have protection under the Clean Water Act which prohibits anybody from discharging "pollutants" through a "point source" into a "water of the United States" unless they have an NPDES permit. The term point source is also defined very broadly in the Clean Water Act and it has been through 25 years of litigation. It means any discernible, confined and discrete conveyance, such as a pipe, ditch, channel, tunnel, conduit, discrete fissure, or container.

By law, the term "point source" includes CAFOs, which are the places where animals are confined and fed. However, regulators have created a loophole, called the agricultural stormwater runoff exemption that allows CAFOs to escape the point source designation while covering farm fields with manure or wastewater that often contaminates surface water.

CAFOs are required to create nutrient management plans which are included with permit applications for new CAFOs. Permits are approved by the CAFO's State environmental protection agency. There is a built-in time period for public review and comment. In many cases, the CAFO is approved before the public becomes aware of the permit review process and the right to make comment. The public has then lost their one chance to ask for better environmental protections.

**Information assembled from the following Sources with Links**

Understanding Concentrated Animal Feeding Operations and Their Impact on Communities  
National Association of Local Boards of Health (Author)

[https://www.cdc.gov/nceh/ehs/docs/understanding\\_cafos\\_nalboh.pdf](https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf)

Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/>

Animal manure production and utilization: impact of modern concentrated animal feeding operations (2020)

<https://www.ars.usda.gov/research/publications/publication/?seqNo115=364421>

Implementation Guidance on CAFO Regulations – CAFOs That Discharge or Are Proposing to Discharge

[https://www3.epa.gov/npdes/pubs/cafo\\_implementation\\_guidance.pdf](https://www3.epa.gov/npdes/pubs/cafo_implementation_guidance.pdf)

### **Additional Resources**

NPDES Permit Basics

<https://www.epa.gov/npdes/npdes-permit-basics>