

Poultry Operations: Water & Air Pollution

Multiple studies have shown that poultry operations are a source of water and air pollution. Although the North Carolina legislature rejected a 2019 proposal to study dry waste poultry operations in NC,¹ notable research from other parts of the Atlantic Coast indicate these operations cause harm to the environment and surrounding communities.

Sources of Pollution

- Poultry litter is a mix of feathers, bedding, spilled feed, feces, and other waste.
 - This litter is often used as a fertilizer for growing crops, which may runoff into nearby surface waters, triggering algal blooms and the creation of dead zones.²
 - Due to chickens being selectively bred for meat production, increasing broiler weights have also caused an increase in manure.³
 - In 2009, the amount of poultry manure produced in Maryland and Delaware had the capacity to fill the U.S. Capitol Building nearly 50 times.⁴
- If done improperly, mass burials of poultry flocks could leach into groundwater.⁵
- In emergency situations, such as flooding or hurricanes, poultry waste and dead birds may be swept away from CAFOs into the surrounding landscape.⁶

Water Quality

- Bacteria such as *E. coli* and enterococcus, known to cause gastrointestinal issues and various types of infections, have been found in waterways on Virginia's eastern shore, likely in part due to pollution from the area's poultry CAFOs.⁷
- According to a report from the Environmental Working Group, North Carolina's poultry operations outweigh swine in terms of nitrogen and phosphorus tons per year.⁸
 - A similar conclusion was drawn by the NC Department of Environmental Quality, as poultry operations produced more pounds of phosphorus and nitrogen than either swine or cattle.⁹
- Further down the production line, poultry slaughterhouses often release high amounts of nitrogen into the environment.
 - These processing plants may also pollute groundwater sources by spraying their waste on fields, rather than discharging directly into rivers or other surface waters.¹⁰

Air Quality

- Ammonia (NH₃) emissions have a dual impact on the environment, as they not only affect air quality, but they also deposit back onto the surface.
 - This deposition leads to further nitrate pollution in places like the Chesapeake Bay, where farms are densely concentrated.¹¹
- Other emissions—indirect and direct—from poultry operations, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), contribute to global climate change.¹²
- The EPA is currently conducting the "National Air Emissions Monitoring Study" on air emissions near animal feeding operations, including dry-waste poultry farms.¹³

Sources

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- ³ Pelton, Tom, Maria Lamm, and Abel Russ. "Poultry Industry Pollution in the Chesapeake Region." Washington, DC: Environmental Integrity Project, April 22, 2020. <https://environmentalintegrity.org/reports/poultry-industry-pollution-in-the-chesapeake-region/>.
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- ⁵ Oh, Junseop, Ho-Rim Kim, Soonyoung Yu, Kyoung-Ho Kim, and Seong-Taek Yun. "Delineating the Impacts of Poultry Burial Leachate on Shallow Groundwater in a Reclaimed Agro-Livestock Farming Area, Using Multivariate Statistical Analysis of Hydrochemical Data." *Environmental Science and Pollution Research*, March 26, 2020. <https://doi.org/10.1007/s11356-020-08178-5>.
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- ⁸ Rundquist, Soren, and Don Carr. "Under the Radar: New Data Reveals N.C. Regulators Ignored Decade-Long Explosion of Poultry CAFOs." Washington, DC: Environmental Working Group, February 2019. <https://www.ewg.org/research/under-radar>.
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- ¹⁰ Burkhart, Kira, Courtney Bernhardt, Tom Pelton, Eric Schaeffer, and Ari Phillips. "Water Pollution from Slaughterhouses." Washington, DC: Environmental Integrity Project, October 11, 2018. <https://environmentalintegrity.org/reports/water-pollution-from-slaughterhouses/>.
- ¹¹ See #2 (Pelton, Tom) and #6 (Lamm, Mariah)
- ¹² Hu, Yuanan, Hefa Cheng, and Shu Tao. "Environmental and Human Health Challenges of Industrial Livestock and Poultry Farming in China and Their Mitigation." *Environment International* 107 (October 2017): 111–30. <https://doi.org/10.1016/j.envint.2017.07.003>.
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- ¹³ US EPA. "National Air Emissions Monitoring Study." Overviews and Factsheets. US EPA, June 3, 2016. <https://www.epa.gov/afos-air/national-air-emissions-monitoring-study>.