

The Environmental Injustice of CAFOs

A polluted and toxic living, working, playing, worshipping, and learning environment undeniably threatens human health and community wellbeing. Residence geography, encompassing ruralness and locations downwind and downstream of a CAFO, is notable as an independent determinant of environmental justice. Given the lower population density compared to urban areas, the collective rural voice is less easily heard by officials responsible for determining fairness to non-farm residents and farmers who do not subscribe to the CAFO model.

Rural residents are disadvantaged due to their proximity to CAFOs, their cesspits, and their manure spray and spread-fields near their rural residence. These fields are agricultural land where CAFO excrement, wash-water, and other production waste are repeatedly applied. Overspray from application of the excrement can land on the properties and homes of innocent neighbors who lived there before the CAFO was sited. Volatized ammonia hangs in the air, making it unbearable for residents to enjoy their own yards. What goes up must come down and volatized ammonia settles onto land and water, adding unregulated and unaccounted-for nitrogen pollution. Ammonia is a hazardous pollutant that causes respiratory harm. Runoff from the fields can contaminate waterways, and nitrogen compounds from manure can leach into groundwater, polluting private drinking wells.

Unfortunately, weak regulatory policies relating to CAFOs, mismanagement, and overapplication of waste can contribute to ground and surface water pollution such as high nitrogen, phosphorus, organic matter, heavy metals, and harmful pathogens like E. coli, Salmonella, and Cryptosporidium. Rural drinking water wells can become contaminated with nitrate. Wastewater runoff can cause fish kills, spawn toxic algal blooms, and render local waterways unsafe for swimming, fishing, boating, and other recreation.

The Great Lakes-driven economy which relies on clean water, is already negatively impacted by CAFOs and their spread-fields. Lake Erie is one prime Michigan example, among other locations, of nutrient pollution carried downstream by the River Raisin. The voluntary Best Management Practice by farmers has had disappointing results. They installed drain water management control structures at farms in the Western Lake Erie basin to reduce total phosphorus and dissolved reactive phosphorus, the chemical responsible for Harmful Algae Blooms. As reported by Circle of Blue:

“A [report](#) [Page. 5] published in March 2022 by the Michigan Department of Environment, Great Lakes, and Energy concluded that [Best Management Practices] BMPs in the River Raisin showed “little to no progress” in reducing nutrient flows to Lake Erie.

Even if BMPs worked, data shared by the federal government and the states show not nearly enough farmers participate. In 2021, USDA spending on conservation reached 29 of Lenawee County’s 1,300 farms. The programs were applied to less than 15,000 of the county’s 386,000 acres of farmland, according to federal figures.

Just 7 percent of the state’s 47,500 farms participate in the Michigan Agriculture Environmental Assurance Program, which is promoted as one of the best state farm conservation projects in the country. The program served 138 farms in Lenawee County.” <https://www.circleofblue.org/2022/world/farms-in-six-southeast-michigan->

[counties-are-major-sources-of-lake-erie-toxic-blooms/](#) **Farms in Six Southeast Michigan Counties Are Major Sources of Lake Erie Toxic Blooms**, September 13, 2022 by Keith Schneider, Circle of Blue

Environmental Harms to Rural Residents

Repeated damage is done to the waters of the Michigan, Ohio, and Indiana areas by too much manure being overapplied to farm fields in addition to a large concentration of animals in one watershed. Too many animals producing too much manure for the farm fields to uptake allows phosphorus and nitrogen to erode off, drain through, melt off farm soil during weather events into waterways and wells. Voluntary efforts by farmers are not working to decrease nutrient overloading of waterways. Lakes and streams and Great Lakes beaches used for the fishing industry and recreation become subject to harmful algae blooms and E.coli closures.

“Growing plants take up only 15 to 30 percent of the phosphorus applied in commercial fertilizer and in liquid manure. The rest accumulates in soil. The excess not absorbed by plants or soil converts to dissolved reactive phosphorus. About a third of the total phosphorus that drains into Lake Erie is dissolved reactive phosphorus. That is the form of phosphorus that is “bioavailable,” meaning cyanobacteria gobble it up like kids feasting on cookies. Cyanobacteria, in turn, multiply to form blue-green algal blooms that generate dangerous toxins more poisonous than strychnine. Exposure to the toxins at barely detectable levels are known to cause serious digestive disorders like vomiting and diarrhea. Recent studies indicate that long-term exposures are potential causes of liver failure and some cancers.” <https://www.circleofblue.org/2022/world/farms-in-six-southeast-michigan-counties-are-major-sources-of-lake-erie-toxic-blooms/>

Human Consequences

The neighbors and rural communities suffer the pollution, yet, for example, Michigan’s Department of Agriculture and Rural Development only allows non-farm residents who live within a mere one-half mile of a proposed CAFO site to officially appeal site suitability determinations. This rule leaves potentially affected communities downstream of CAFOs and CAFO manure land-application sites without a say.

Resident groups have organized to bring the facts of CAFO harms to the attention of the regulatory agencies. They have developed regular water sampling protocols sent to laboratories for testing of Nitrate, Phosphorus, Potassium, E. Coli, and animal DNA. These residents conduct and volunteer their labor and pay for the water testing themselves and are thus additionally disadvantaged.

Rural residents also suffer from more than putrid odors when living near a CAFO. [LINK TO: Fact Sheet https://www.sierraclub.org/sites/default/files/2024-12/air-quality-and-cafo-regulation_1.pdf] Air quality is a measurable problem near CAFOs, and some neighbors are known to wear hydrogen sulfide meters when going outdoors on their own property.

Disproportionate Impact

Environmental injustice can be understood as the disproportionate exposure of certain populations to environmental harms. The exploitation of rural residents living near a CAFO occurs every time a CAFO is built to house hundreds to thousands of animals. The neighboring quality of life suffers increasingly

as each year goes by and the manure is continuously applied. Neighbors' financial well-being based on their property values is also affected.

By studying the characteristics that contribute to the value of home property values (hedonic method), researchers at Duke University in North Carolina wrote:

“Using the universe of farm characteristic and housing transaction data in North Carolina, we recover hedonic estimates of property value impacts from exposure to these industrial livestock operations. Our results show large and significant negative impacts on nearby home values, particularly when those properties are dependent on private wells.”

<https://le.uwpress.org/content/wple/early/2024/07/15/le.101.1.011224-0003.full.pdf>

The Costs of Exposure to Industrial Livestock Operations

Kay Jowers, Yu Ma

Christopher Timmins (Corresponding Author) Wisconsin School of Business

This costs-study in 2024 includes the impacts on home values in both rural and the nearby urban periphery properties with CAFO locations in 43 counties of eastern North Carolina.

Many North Carolina studies come to the same conclusion as cited in “**CAFOs and Environmental Justice: The Case of North Carolina**” by Wendee Nicole:

“The clustering of North Carolina’s hog CAFOs in low-income, minority communities—and the health impacts that accompany them—has raised concerns of environmental injustice and environmental racism.²⁰ As one pair of investigators explained, “[P]eople of color and the poor living in rural communities lacking the political capacity to resist are said to shoulder the adverse socio-economic, environmental, or health related effects of swine waste externalities without sharing in the economic benefits brought by industrialized pork production.”²¹

<https://ehp.niehs.nih.gov/doi/10.1289/ehp.121-a182>

Environmental injustice continues to plague disadvantaged lower-income communities of Black, Native American, and Latinx disproportionately, as exemplified by North Carolina, the Yakima Valley of Washington, and the San Joachim Valley of California. These areas are notable for the number of CAFOs that populate their areas with air and water pollution from too much untreated animal manure and too many animals located in one spot.

For many years the **Lower Yakima Valley** was polluted by CAFO dairy and cattle waste. The area is populated by a majority of Hispanic people, many of them farm workers. Local environmental activist groups were finally forced to bring suit in U.S. District Court in Washington state against two dairies when state regulators did not stop the manure discharges.

“A settlement was reached in order “to clean up and limit water pollution in response to the lawsuit brought by Community Association of Restoration of the Environment (CARE), Friends of Toppenish Creek, and Center for Food Safety. Yakima residents affected by ongoing factory farm pollution brought the lawsuit in 2019 to stop contamination of local drinking water with animal waste from factory farm dairy

operations.” <https://www.centerforfoodsafety.org/press-releases/6832/washington-state-dairies-agree-to-clean-up-groundwater-in-response-to-lawsuit> June 12, 2023, Washington State Dairies Agree to Clean Up Groundwater in Response to Lawsuit

In the **San Joaquin Valley**, a 2017 study at Santa Clara University included interviews with residents. The Environmental Studies & Sciences, Food & Environmental Justice Capstone partnered with the [Center on Race, Poverty, and the Environment](#) (CRPE) and reported:

“We identified 55 CAFOs currently operating in Kern County: 33 of these were found to be within three miles of a public school, and 20 were permitted without being subject to environmental review in compliance with the California Environmental Quality Act (CEQA). The results of our community surveys and interviews indicate that residents of Kern County are concerned with the presence of CAFOs located in close proximity to their communities and are aware of specific health and environmental risks posed by nearby CAFOs. The majority of participants (61.4%) reported experiencing negative effects from living near CAFOs. Lastly, our review of publicly available records indicated discrepancies between the perceived significance of environmental and human health impacts by community members versus the county and regulatory bodies.”

Intensive Dairy and Cattle Production Operations: Assessing Risks to Communities in Kern County, California

<https://www.scu.edu/media/environmental-justice-initiative/New-CRPE-Poster-Draft.pdf>

Data on Kern County shows that, “Kern County, California, is located in Central California, and home to 55 Concentrated Animal Feeding Operations (CAFOs or Factory Farms). In addition to this, the majority of Kern County citizens are People of Color, and 22% live below the poverty line (Freeman et al.). Due to CAFO operations in this county, Kern residents face environmental injustice through air and water pollution, miscommunication, and lack of CAFO regulations.”

<https://leadershipcounsel.org/central-valley-residents-condemn-decision-by-assembly-agriculture-committee/>

Legal and Regulatory Challenges

Proper regulation could prevent and mitigate the negative impacts of CAFOs upon rural residents. There are federal laws upon which public protections from pollution are based [LINK TO: CAFO Legislation and Regulation Fact Sheet]. However, regulators across the U.S. differ in how and what they are willing to enforce on agricultural pollution.

State CAFO immunity laws commonly known as “Right-to-Farm,” preempt local zoning ordinances and public health policies aimed at keeping CAFOs in check to prevent and mitigate their negative impacts. [Link to “Right to Farm History of Harm Fact Sheet] Right-to-farm laws also thwart legal proceedings by residents, citizens’ groups, farm workers, and even the local governments justifiably fighting to protect themselves from CAFO harms. Right-to farm makes it difficult to challenge the animal industry, thereby constituting environmental injustice.

As a last resort to achieving justice when regulation fails, rural residents must possess the wherewithal to organize together, find and pay for environmental specialist attorneys and the research needed to bring suit. Bold residents are not cowed by large agricultural concerns with deep pockets for CAFO

legal defense. However, establishing their legal challenge must be done while their lives are being impacted daily by CAFO pollution.

A CAFO in the area means manure spray and spreadfields. Those fields that hold the highest concentration of applied untreated animal feces can extend beyond 1-mile from the barns. The odors and dangerous pollutants can waft for miles. Communities downstream of waterbodies near CAFOs and their fields, but not neighbors in the strict sense, are stuck due to declining property values in an unhealthy living environment. Neighbors and rural towns can become victims of CAFO-related environmental injustice.