Something in the Air: The Case For CAFO Emissions Regulation

By “Coach Vance” Trefethen

Something in the Air: The Case For CAFO Emissions Regulations 3

OBSERVATION 1. We offer the following DEFINITIONS. 3

OBSERVATION 2. INHERENCY, the structure of the Status Quo. Two key FACTS 4

FACT 1. Transitions and emissions. 4

Animal agriculture has transitioned to concentrated mega-farms producing high levels of air pollution emissions 4

FACT 2. No Clean Air standards. 4

There are no air pollution emission standards or regulations for CAFOs under the Clean Air Act, or CAA 4

OBSERVATION 3. The HARMS. 4

HARM 1. Asthma & Breathing problems 4

Citizens living near CAFOs suffer breathing problems caused by CAFO emissions 4

HARM 2. Workplace deaths. 5

Farm workers die from exposure to hydrogen sulfide 5

HARM 3. Infant mortality 5

CAFOs increase infant mortality in exposed populations 5

OBSERVATION 4. The PLAN, implemented by Congress, the President and the Environmental Protection Agency 5

OBSERVATION 5. SOLVENCY. EPA regulation under the Clean Air Act solves. 6

A“ Best Demonstrated Technology” standard is the solution 6

B. We achieve 83% - 86% reduction in pollution gases 6

2A Evidence: CAFO Emissions 7

OPENING QUOTES / AFFIRMATIVE PHILOSOPHY 7

The odor comes through the walls of your house and burns your eyes 7

INHERENCY 7

EPA admits it doesn’t regulate CAFO emissions, they’re just doing a study 7

EPA knows ammonia and hydrogen sulfide are dangerous but doesn’t regulate them under the Clean Air Act 7

State regulations aren’t enough and nothing less will do: We need CAFO’s put under the federal Clean Air Act 7

Legal background for why CAFOs aren’t regulated by EPA under the Clean Air Act 8

A/T “The 2006 EPA study” – Study was flawed. It even reported negative emissions (less than zero) in some cases 8

A/T “The 2006 EPA study” – It’s not a reason to delay applying the Clean Air Act 8

Legal background on why EPA doesn’t regulate animal feeding operations under the Clean Air Act 9

California successful regulation doesn’t prove states alone solve: We still need federal regulation 9

State regulations and lawsuits won’t solve for farm odor 9

Local regulations on CAFOs aren’t effective or get blocked 9

HARMS / SIGNIFICANCE 10

CAFOs reduce air quality by emitting multiple polluting gases 10

Farms release 50-80% of all the ammonia emissions in the US 10

Significant part of US agriculture: CAFOs produce >50% of US food animals 10

Iowa Study: CAFOs are linked to significantly higher rates of childhood asthma 10

Odors from CAFO emissions cause numerous health symptoms in addition to respiratory illness 11

N. Carolina Study: CAFOs cause respiratory and gastrointestinal illness 11

CAFO emissions hurt the quality of life for nearby communities 11

Hydrogen sulfide causes numerous threats to human health and life 11

SOLVENCY / ADVOCACY 12

CAFOs should be regulated under the Clean Air Act and CERCLA (Superfund) 12

EPA should regulate hydrogen sulfide from CAFOs 12

Details on how EPA regulation of CAFO air quality would work 13

EPA should regulate CAFO emissions under section 111 of the Clean Air Act because CAFOs today are escaping air quality regulations 13

EPA should make an endangerment finding for CAFO emissions – now, without further study 13

Technology exists today to reduce or eliminate CAFO emissions 14

California success: State regulations reduced CAFO emissions successfully 14

EPA regulation of ammonia and hydrogen sulfide would improve air quality around CAFOs 14

A/T “More study needed” – We should not delay regulating CAFO emissions, even while research continues 14

DISAVANTAGE RESPONSES 15

A/T “Farm community economic benefits” – Communities get the pollution, not the benefits 15

A/T “Farm community economic benefits” – CAFOs have a negative effect on local economies 15

Something in the Air: The Case For CAFO Emissions Regulations

The romantic vision of a quiet picturesque countryside with fresh air and family farms is a distant memory of the past. Journalist Bridget Huber in 2014 brings us up to date when she writes QUOTE:

"It's like being held prisoner," says Elsie Herring, a Middleton and Speer client from Wallace, North Carolina, who has been dealing with hog stench for years. The odor means her family can no longer enjoy sitting on the porch, having cookouts, or even hanging laundry on the line. "We were here before the pork industry even came in here, so what about our rights?" she asks. "It's as if we have none."[[1]](#footnote-1)

END QUOTE. Please join my partner and me as we affirm that The United States federal government should substantially reform its agriculture and/or food safety policy in the United States.

OBSERVATION 1. We offer the following DEFINITIONS.

**Policy**: “a high-level overall plan embracing the general goals and acceptable procedures especially of a governmental body” (*Merriam Webster Online Dictionary, copyright 2016* [*http://www.merriam-webster.com/dictionary/policy*](http://www.merriam-webster.com/dictionary/policy))  
  
**Substantial**: “large in amount, size or number” (*Merriam Webster Online Dictionary, copyright 2016* [*http://www.merriam-webster.com/dictionary/substantially*](http://www.merriam-webster.com/dictionary/substantially)*)*

**Agriculture:** “the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products” (*Merriam Webster Online Dictionary, copyright 2016* [*http://www.merriam-webster.com/dictionary/agriculture*](http://www.merriam-webster.com/dictionary/agriculture))

**CAFO:**

Ariel Kapplan 2012 (JD candidate, Univ. of Connecticut Law School) American Bar Association, STATE & LOCAL LAW NEWS, “CAFOs: Five Essential Tools for Local Regulation” Summer 2012 <https://www.americanbar.org/publications/state_local_law_news/2011_12/summer_2012/cafos_tools_regulation.html>

“Concentrated Animal Feed Operations (CAFOs), as defined by the Environmental Protection Agency, are lots or facilities where animals are confined for 45 or more days of the year and vegetation is not sustained during the normal growing season.”

OBSERVATION 2. INHERENCY, the structure of the Status Quo. Two key FACTS

FACT 1. Transitions and emissions.

Animal agriculture has transitioned to concentrated mega-farms producing high levels of air pollution emissions

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Over the last seventy-five years, the locus of American animal agriculture has shifted from iconic “red barns” operated by family farmers to a consolidated industry of vertically-integrated “mega-farms” that keep large numbers of livestock in frequent confinement. These modern facilities compare more readily to streamlined industrial manufacturing operations than to traditional farms, and emit significant quantities of numerous air pollutants, including ammonia, hydrogen sulfide, nitrous oxide, methane, particulate matter, and volatile organic compounds (VOCs).

FACT 2. No Clean Air standards.

There are no air pollution emission standards or regulations for CAFOs under the Clean Air Act, or CAA

Abel Russ and Patton Dycus 2016 (attorneys for Environmental integrity Project, Iowa Citizens for Community Improvement, and Clean Wisconsin) 1 Feb 2016 Letter to Gina McCarthy, Administrator of the US Environmental Protection Agency <https://www.epa.gov/sites/production/files/2016-02/documents/icci_noi_02012016.pdf>

Despite the significant and growing body of scientific research demonstrating that ambient ammonia pollution emitted by animal feeding operations (AFOs), concentrated animal feeding operations (CAFOs), and other sources cause and contribute to air pollution that endangers public health and welfare, EPA has not acted to directly regulate this pollutant under the CAA, and, as a result, thousands of sources continue to emit ammonia pollution unabated. CAFOs are not currently required to meet any testing, performance, or emission standards under the CAA.

OBSERVATION 3. The HARMS.

HARM 1. Asthma & Breathing problems

Citizens living near CAFOs suffer breathing problems caused by CAFO emissions

Katie Valentine 2015 (journalist) 30 Jan 2015 “Groups Sue EPA Over Failure To Regulate Emissions From Factory Farms” <http://thinkprogress.org/climate/2015/01/30/3617172/epa-cafos-lawsuit/> (CDC = Centers for Disease Control & Prevention, part of the US Dept of Health & Human Services)

Studies have documented some of the impacts of living near major livestock operations: one study from 2006 [found](http://www.news-releases.uiowa.edu/2006/june/062106-asthma-cafo.html) that children who attended school near a CAFO had a higher risk of asthma than kids who didn’t, and [according to the CDC](http://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf), the ammonia emitted by CAFOs can build up in a person’s airways, causing severe coughing and even scarring of the airways. “When the emissions are at their worst, we have had to leave our home for days at a time,” Rosie Partridge, an Iowa resident who has 30,000 hogs within four miles of her home, said in a [statement](http://environmentalintegrity.org/archives/7147) on the lawsuits. “The ammonia and hydrogen sulfide are so strong that my husband has trouble breathing.”

HARM 2. Workplace deaths.

Farm workers die from exposure to hydrogen sulfide

Dr Michael Greger and Gowri Koneswaran 2010 (Greger – M.D. Koneswaran – attorney) “The Public Health Impacts of Concentrated Animal Feeding Operations on Local Communities” <http://www.birdflubook.org/resources/Greger_2010_FCH_33_373-382.pdf>

Of all the gaseous by-products of farm animal manure decomposition, hydrogen sulfide is regarded as the most dangerous, creating a risk of both unconsciousness and death for those who work in or near manure pits. The National Institute for Occupational Safety and Health (NIOSH) has deemed hydrogen sulfide to be “a leading cause of sudden death in the workplace.” A number of reports on the NIOSH Web site document worker fatalities caused by exposure to the chemicals in manure pits. Indeed, the agency issued an alert in 1990 titled “Preventing Deaths of Farm Workers in Manure Pits,” which details the harmful effects of the chemicals commonly found in these excrement pits.

HARM 3. Infant mortality

CAFOs increase infant mortality in exposed populations

Dr Michael Greger and Gowri Koneswaran 2010 (Greger – M.D. Koneswaran – attorney) “The Public Health Impacts of Concentrated Animal Feeding Operations on Local Communities” <http://www.birdflubook.org/resources/Greger_2010_FCH_33_373-382.pdf>

Pregnant women and children are susceptible populations who may be at particular risk for exposures related to CAFO operations. In a 2008 study by Sneeringer that assessed the impact of industrial farm animal operations on infant health, the author found that doubling of production could lead to a 7.4% increase in infant mortality, deaths driven by elevated levels of respiratory diseases.

OBSERVATION 4. The PLAN, implemented by Congress, the President and the Environmental Protection Agency

1. The EPA makes a finding that CAFOs meet the endangerment standard for air pollution emissions
2. EPA sets “best demonstrated technology” and specific practices emissions reduction standards for CAFO emissions under Section 111 of the Clean Air Act.

3. Congress amends any necessary legislation to authorize the Affirmative plan.

4. Funding through existing agencies, existing budgets and general federal revenues.

5. Enforcement through existing EPA Clean Air Act mechanisms, and all Affirmative mandates will be upheld by federal courts.   
6. Plan takes effect 30 days after an affirmative ballot.  
7. Affirmative speeches may clarify

OBSERVATION 5. SOLVENCY. EPA regulation under the Clean Air Act solves.

1. “Best Demonstrated Technology” standard is the solution

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” (brackets added) <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Once the EPA makes an endangerment finding, NSPS [New Source Performance Standards] would allow the agency to set the performance standards for CAFOs: emission standards that reflect the emissions achievable with the best system of adequately demonstrated technology, taking into consideration cost, non-air health and environmental impacts, and energy requirements. These standards are known as as "best demonstrated technology" (BDT), and require that the emissions be achievable through a non-theoretical, non-experimental system that is reasonably reliable and efficient without being exorbitantly costly. In the event the EPA finds it impractical to measure or estimate emissions from CAFOs, the EPA could instead require certain work practices.

B. We achieve 83% - 86% reduction in pollution gases

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Technologies and methodologies for decreasing pollution from CAFOs are well known, and some are measurably effective and inexpensive. Factors affecting CAFO emissions include "whether waste storage conditions are aerobic or anaerobic; the diet fed to the animals; the pH of the manure; and time and temperature of animal waste in storage." By using bio-filters in ventilation systems, CAFOs can remove up to 83% of ammonia and 86% of hydrogen sulfide from the air. Acidification of manure can suppress ammonia formation by as much as 70%. Switching from a traditional lagoon to wastewater treatment and manure composting can reduce GHG emissions by 96.9%. Numerous other techniques have also proven effective in removing high percentages of emissions of multiple pollutants. Other methods for minimizing emissions include washing walls, windbreaks, sprinkling vegetable oil on building floors, use of bedded solid manure, frequent manure removal, covering lagoons, aerating manure, and separating solids from liquids in manure.

2A Evidence: CAFO Emissions

OPENING QUOTES / AFFIRMATIVE PHILOSOPHY

The odor comes through the walls of your house and burns your eyes

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” (brackets and ellipses in original) <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

A year later, Minnesota public health officials urged residents living within a mile of a massive dairy farm to evacuate after hydrogen sulfide fumes spiked to more than 200 times the state air quality limits, causing headaches, nausea, and weakness. "I used to be happy all the time, and now I feel like I'm drowning," one affected resident later told the state legislature. "[The odor] burns your eyes, your throat . . . . It is so brutal, it takes your breath away, [and] it goes through the walls of your home."

INHERENCY

EPA admits it doesn’t regulate CAFO emissions, they’re just doing a study

Mateusz Perkowski 2015 (journalist) “Environmental groups sue EPA over CAFOs” 3 Feb 2015 <http://www.capitalpress.com/Livestock/20150203/environmental-groups-sue-epa-over-cafos>

CAFOs are already regulated under the Clean Water Act and must obtain permits intended to prevent discharges. The EPA acknowledged it does not directly regulate air emissions from CAFOs but said that a “National Air Emissions Monitoring Study” developed with the cooperation of livestock groups “is a first step in improving emissions estimates from this sector.”

EPA knows ammonia and hydrogen sulfide are dangerous but doesn’t regulate them under the Clean Air Act

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

However, while the EPA categorizes hydrogen sulfide and ammonia as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act, which is better known as Superfund, and as extremely hazardous substances under the Emergency Planning and Community Right-to-Know Act, it has elected not to regulate hydrogen sulfide and ammonia as HAPs under CAA section 112(b) and thereby deprives itself of important tools to safeguard health and welfare.

State regulations aren’t enough and nothing less will do: We need CAFO’s put under the federal Clean Air Act

Amanda Peterka 2014 (journalist) EPA study of CAFO emissions grinds on with no end in sight 25 June 2014 <http://www.eenews.net/stories/1060001938> (brackets added)

In the absence of federal regulations, states have put in a patchwork of regulations over CAFO emissions. Some local air quality control districts in California, for example, have put in place permitting and emission reduction requirements. Minnesota requires large livestock facilities to have air emissions plans. Idaho requires dairies that meet a certain threshold in size to employ best management practices to reduce ammonia emissions. [Vermont Law School Professor Patrick] Parenteau said that anything less than a Clean Air Act regulatory regime is not going to address the problem of pollutants from CAFOs.

Legal background for why CAFOs aren’t regulated by EPA under the Clean Air Act

Taft Stettinius & Hollister Law Firm 2014. “Clean Air Act Does Not Require EPA to Regulate Emissions From Animal Feeding Operations” 17 July 2014 <http://www.taftlaw.com/news/publications/detail/1160-clean-air-act-does-not-require-epa-to-regulate-emissions-from-animal-feeding-operations>

Animal feeding operations (“AFOs”), which include confined animal feeding operations (“CAFOs”), emit a host of chemicals into the air, including ammonia, hydrogen sulfide, particulate matter and volatile organic compounds (“AFO emissions”). Air emissions studies have found a correlation between AFO emissions and potential negative health impacts, such as increased rates of asthma. Yet, despite knowledge of these studies, the United States Environmental Protection Agency (“EPA”) has not made a finding that AFO emissions can “reasonably be anticipated to endanger public health or welfare.” Therefore, the agency has not added AFO emissions to the list of pollutants under Section 108 of the Clean Air Act (“CAA”) and has not established limits (known as National Ambient Air Quality Standards or “NAAQS”) for the maximum allowable concentrations of AFO emisions. See 42 U.S.C. §§ 7408(a)(1)(A)-(C) & 7409. Several residents of Winneshiek County, Iowa, who — as it turns out — teach at, have attended or have children that attend a school that was the focus of one of the studies, sued the EPA to force the agency to regulate AFO emissions. They argued that the CAA places a “nondiscretionary duty” on the agency to regulate AFO emissions and to designate AFOs as stationary sources. On June 28, 2014, the United States District Court for the District of Columbia disagreed and held that the CAA does not impose a nondiscretionary duty on the EPA to regulate emissions from AFOs or to designate AFOs as emissions sources. Zook v. EPA, No. 13-1315 (D.D.C. June 30, 2014). Due to the lack of a statutory duty, the court dismissed the complaint for failure to state a claim for which relief could be granted under Federal Rule of Civil Procedure 12(b)(6).

A/T “The 2006 EPA study” – Study was flawed. It even reported negative emissions (less than zero) in some cases

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

The study's shortcomings have been widespread. Initial data was not released until 2011 – a full six years after the EPA announced the study. That delay was reason for concern that the consent agreement would continue to drag out, as the agreement allows CAFOs to extend their compliance deadline indefinitely by agreement with the EPA. As it turns out, however, the primary problem with the study was the unsoundness of the experiment itself and the resulting data. The study was non-exhaustive, failing to include either turkey or beef cattle operations or manure land applications (as opposed to lagoons). The emissions methodologies could be considered incomplete, even for the categories they cover, on grounds including: the small number of farms involved in the study, the EPA's choice not to begin with a process-based modeling approach as suggested by a government-sponsored study, the lack of accounting for numerous variables that can affect emissions, and the taking of incomplete measurements. The results of the study themselves are also suspect. For example, the study measured negative emissions for some days – an impossible result. In turn, state regulators, the EPA’s own Science Advisory Board, the livestock industry, and others have urged quick fixes to what they perceive as a flawed study.

A/T “The 2006 EPA study” – It’s not a reason to delay applying the Clean Air Act

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” (brackets in original) <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Regardless of the study’s internal problems, however, even its premise and purpose (the improvement of poor emissions estimating methodologies) lack sound bases in the CAA as cause for delaying regulation. Legislative history of the CAA indicates that it was meant to be a precautionary statute, a force for regulation "even in the face of uncertain science." As one commentator has noted, "[t]o delay regulation of an entire industry known to emit substantial levels of dangerous pollutants is [thus] to subvert the very precautionary essence upon which the CAA was formulated."

Legal background on why EPA doesn’t regulate animal feeding operations under the Clean Air Act

Taft Stettinius & Hollister Law Firm 2014. “Clean Air Act Does Not Require EPA to Regulate Emissions From Animal Feeding Operations” 17 July 2014 <http://www.taftlaw.com/news/publications/detail/1160-clean-air-act-does-not-require-epa-to-regulate-emissions-from-animal-feeding-operations>

Ultimately, the court dismissed the plaintiffs’ citizen-suit because it did not have authority to compel the EPA to make a policy determination that emissions from AFOs endanger the public’s health (quoting Envtl. Def. Fund v. Thomas, 870 F.2d 892, 899 (2d Cir, 1989)). The court found that Sections 108 and 111 explicitly grant judgment-making responsibility to the agency. Furthermore, the court determined that mere knowledge of a pollutant’s negative effects is not a policy determination under Section 108. The district court explained that if the EPA has not made an affirmative determination that AFO emissions endanger public health, then there is no mandatory duty to regulate them.

California successful regulation doesn’t prove states alone solve: We still need federal regulation

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” (brackets added) <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

However, despite their potential success, San Joaquin Valley's requirements also demonstrate how state-focused plans required by pollutant-specific regulatory regimes are an incomplete remedy to CAFO pollution. The district's requirements are so high only because the area is in extreme eight-hour ozone non-attainment, and the requirements only seek to regulate VOC [volatile organic compound] emissions, not other pollutants, even though California's CAFOs account for 38% of the state's emissions of ammonia. NSPS [New Source Performance Standards] would tackle both. California, too, is but one state, and the San Joaquin Valley one region within it. Many states have yet to adopt or enact programs that specifically affect AFO [animal feeding operations] emissions at all under the NAAQS, [National Ambient Air Quality Standards] and those that do regulate various combinations of pollutants to varying degrees. NSPS would be national. An NSPS – and BDT[Best Demonstrated Technology] – for CAFOs could do significantly more, on a national scale and for a wider variety of pollutants, than California's partially effective yet fragmentary NAAQS-based solution.

State regulations and lawsuits won’t solve for farm odor

CNBC 2014 (journalist Mark Koba) 9 May 2014 “Oh the smell! Zoning battle rages over farm odors” <http://www.cnbc.com/2014/05/09/smelly-farms-the-battle-to-keep-bad-odors-down-on-the-farm.html>

What residents can or can't do to shut down or stop farm industrialization varies from state to state. Most agriculture states have right-to-farm laws, which in theory shield agricultural operations from legal actions such as nuisance lawsuits over issues like bad odor. Right-to-farm laws can also prevent local governments from passing zoning laws that are more strict than those already in place at the state level.

Local regulations on CAFOs aren’t effective or get blocked

Carrie Hribar 2010 (M.A., Project Coordinator – Education & Training, National Association of Local Boards of Health) “Understanding Concentrated Animal Feeding Operations and Their Impact on Communities” <https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf>

Boards of health in many states can adopt health-based regulations about CAFOs, however, they may be met with some resistance. Humbolt County, Iowa, adopted four health-based ordinances concerning CAFOs that became models for regulations in other states, but the Iowa Supreme Court ruled the ordinances were irreconcilable with state laws. Boards of health that choose to regulate CAFOs can also be subject to pressure from outside forces, including possible lawsuits or withdrawal of funding.

HARMS / SIGNIFICANCE

CAFOs reduce air quality by emitting multiple polluting gases

Carrie Hribar 2010 (M.A., Project Coordinator – Education & Training, National Association of Local Boards of Health) “Understanding Concentrated Animal Feeding Operations and Their Impact on Communities” <https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf>

In addition to polluting ground and surface water, CAFOs also contribute to the reduction of air quality in areas surrounding industrial farms. Animal feeding operations produce several types of air emissions, including gaseous and particulate substances, and CAFOs produce even more emissions due to their size. The primary cause of gaseous emissions is the decomposition of animal manure, while particulate substances are caused by the movement of animals. The type, amount, and rate of emissions created depends on what state the manure is in (solid, slurry, or liquid), and how it is treated or contained after it is excreted. Sometimes manure is “stabilized” in anaerobic lagoons, which reduces volatile solids and controls odor before land application. The most typical pollutants found in air surrounding CAFOs are ammonia, hydrogen sulfide, methane, and particulate matter, all of which have varying human health risks.

Farms release 50-80% of all the ammonia emissions in the US

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

The EPA should regulate ammonia as a hazardous air pollutant. Nitrogen in animal manure converts into ammonia by several different processes, making ammonia the "most prolific" pollutant from CAFOs.206 Animal facilities produce somewhere between half207 and eighty percent208 of the nation's overall ammonia emissions. Premium Standard Farms in Missouri releases three million pounds of ammonia annually from one of its facilities, and Threemile Canyon Farms in Oregon releases 5.7 million pounds, making them the fifth largest and largest emitters of ammonia in the country, respectively.

Significant part of US agriculture: CAFOs produce >50% of US food animals

Dr. Doug Gurian-Sherman 2008 (PhD in plant pathology; senior scientist in the Union of Concerned Scientists (UCS) Food and Environment Program) CAFOs Uncovered - The Untold Costs of Confined Animal Feeding Operations <http://www.ucsusa.org/assets/documents/food_and_agriculture/cafos-uncovered.pdf>

We need to be concerned about these excessively large feeding operations because they have become the predominant means of producing meat and dairy products in this country over the past few decades. Although they comprise only about 5 percent of all U.S. animal operations, CAFOs now produce more than 50 percent of our food animals.

Iowa Study: CAFOs are linked to significantly higher rates of childhood asthma

Dr Michael Greger and Gowri Koneswaran 2010 (Greger – M.D. Koneswaran – attorney) “The Public Health Impacts of Concentrated Animal Feeding Operations on Local Communities” <http://www.birdflubook.org/resources/Greger_2010_FCH_33_373-382.pdf>

Sigurdarson and Kline conducted a cross-sectional study of children from kindergarten through fifth grade in 2 rural Iowa schools. One school was located approximately 1/2 mile from a CAFO, while the control school was not sited near any CAFOs or other large-scale agricultural operations. The authors found that children who attended the school near the CAFO had a significantly increased prevalence of physician-diagnosed asthma (adjusted odds ratio, 5.71; P = 0.004). There was no difference in terms of severity of asthma between the 2 study populations.

Odors from CAFO emissions cause numerous health symptoms in addition to respiratory illness

Dr Michael Greger and Gowri Koneswaran 2010 (Greger – M.D. Koneswaran – attorney) “The Public Health Impacts of Concentrated Animal Feeding Operations on Local Communities” <http://www.birdflubook.org/resources/Greger_2010_FCH_33_373-382.pdf>

Other health outcomes in addition to respiratory illnesses have been associated with CAFO-related exposures, including odor-related illnesses. Odorant compounds produced at CAFOs can affect health in a number of ways. At high concentrations, these chemicals can produce significant irritation of the nose, throat, and eyes and induce symptoms such as vomiting, headaches, and nausea. In addition, mixtures with non-odorant chemicals can produce inflammation as well as obstruct airflow.

N. Carolina Study: CAFOs cause respiratory and gastrointestinal illness

Dr Michael Greger and Gowri Koneswaran 2010 (Greger – M.D. Koneswaran – attorney) “The Public Health Impacts of Concentrated Animal Feeding Operations on Local Communities” <http://www.birdflubook.org/resources/Greger_2010_FCH_33_373-382.pdf>

Wing and Wolf evaluated the health status of residents living near CAFOs in North Carolina. The researchers examined 3 rural communities: 1 in the vicinity of a pig CAFO, 1 in the vicinity of 2 intensive cattle operations, and 1 in a rural agricultural area without farm animal production operations with liquid waste management systems. The authors found elevated rates of mucous membrane irritation and respiratory and gastrointestinal problems, as well as higher reporting of headaches, runny noses, sore throats, excessive coughing, diarrhea, and burning eyes among residents living near the pig CAFO than among those whose residence was not near a CAFO.

CAFO emissions hurt the quality of life for nearby communities

Dr Michael Greger and Gowri Koneswaran 2010 (Greger – M.D. Koneswaran – attorney) “The Public Health Impacts of Concentrated Animal Feeding Operations on Local Communities” <http://www.birdflubook.org/resources/Greger_2010_FCH_33_373-382.pdf> (brackets in original)

The presence of a CAFO in or near a community can negatively impact the social structure of local residents. Wing and Wolf also assessed measures of “quality of life,” as indicated by the number of times residents reported that they were prevented by odor emanating from CAFOs from opening their windows or going outside even in favorable weather. Findings were similar in the control and the community in the vicinity of the cattle CAFO, but quality of life was greatly diminished among residents near the pig CAFO. Wing et al evaluated the strength of odors from farmed pigs in the homes of 101 participants from 16 neighborhoods in eastern North Carolina sited near pig CAFOs. Study participants reported odor outside on more than half the study days in 9 of the neighborhoods, and nearly one-third of all study participants reported having their daily activities affected (either changing or ceasing the activities) due to the odor. Schiffman and colleagues studied mood disturbance related to exposure to malodorous compounds in 44 individuals residing near North Carolina CAFOs and 44 control participants who did not live near these facilities. The authors found that those living near CAFOs had higher rates of depression, anger, tension, and fatigue than those of the control population. Indeed, the Pew Commission report noted that “[r]educed civic participation rates, higher levels of stress, and other less tangible impacts have all been associated with high concentrations of industrial farm production.”

Hydrogen sulfide causes numerous threats to human health and life

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Hydrogen sulfide causes numerous negative human health and environmental effects. High concentrations kill, rapidly shutting down the brain's ability to send nerve signals to the lungs. However, even at lower levels, symptoms include eye irritation, respiratory irritation including coughing and shortness of breath, impaired reaction time and balance, insomnia, fatigue, dizziness, nausea, and vomiting. Hydrogen sulfide also creates a strong rotten egg-like odor in communities surrounding CAFOs. In terms of effects on animals, it has been held responsible for deaths of livestock.

SOLVENCY / ADVOCACY

CAFOs should be regulated under the Clean Air Act and CERCLA (Superfund)

Dr. Doug Gurian-Sherman 2008 (PhD in plant pathology; senior scientist in the Union of Concerned Scientists (UCS) Food and Environment Program) CAFOs Uncovered - The Untold Costs of Confined Animal Feeding Operations <http://www.ucsusa.org/assets/documents/food_and_agriculture/cafos-uncovered.pdf>

Public policies that support CAFOs at the expense of such alternatives should be eliminated, and policies that support these alternatives should be implemented. Needed actions include:   
Strict and vigorous enforcement of antitrust and anti-competitive practice laws under the Packers and Stockyards Act (which cover captive supply, transparency of contracts, and access to open markets)   
Strong enforcement of the Clean Water Act as it pertains to CAFOs, including improved oversight at the state level or the takeover of responsibilities currently delegated to the states for approving and monitoring and enforcement of National Pollution Discharge Elimination System (NPDES) permits; improvements could include more inspectors and inspections, better monitoring of manure-handling practices, and measurement of pollution prevention practices   
Development of new regulations under the Clean Air Act that would reduce emissions of ammonia and other air pollutants from CAFOs, and ensure that CAFO operators cannot avoid such regulations by encouraging ammonia volatilization  
Continued monitoring and reporting of ammonia and hydrogen sulfide emissions as required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly referred to as the “Superfund”) and the Emergency Planning and Community Right-to-Know Act (EPCRA)

EPA should regulate hydrogen sulfide from CAFOs

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

The EPA should regulate hydrogen sulfide as a hazardous air pollutant in order to gain control over what a study of industrial farm animal production funded by Johns Hopkins University called "possibly the most dangerous gas common to" CAFOs. At least seventy-three industrial categories, including CAFOs, emit hydrogen sulfide, which is a flammable, cyanide-like gas. At CAFOs, hydrogen sulfide forms as manure decomposes anaerobically. Hydrogen sulfide's presence in the ambient air in areas not exposed to industrial releases is at levels not associated with adverse health effects. However, the toxin's risk profile places it squarely within the definition of HAPs.

Details on how EPA regulation of CAFO air quality would work

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” (brackets added) <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Under NSPS, [New Source Performance Standards] EPA can regulate both regulated pollutants and pollutants not otherwise regulated by CAA [Clean Air Act] section 108 or 112 (the latter are known as "designated pollutants)" so they could regulate all pollutants emitted by CAFOs, not just those listed as criteria pollutants or HAPs [Hazardous Air Pollutants]. No threshold would need to be reached for those pollutants, either. The standards also apply regardless of ambient air quality, and so would apply to CAFOs nationwide. Under this section, the EPA has made endangerment findings for more than sixty stationary sources and developed NSPS for a total of seventy categories and subcategories, and thus could easily do the same for CAFOs. Upon listing CAFOs as a source, the EPA would establish “standards of performance” that apply to all CAFOs that are newly constructed, modified, or reconstructed, and slightly lesser standards for existing CAFOs. These standards would require CAFOs to institute practices that protect public health and welfare and would allow enforcement when factory farms violate emission limits under the standard. NSPS prohibits the operation of any new source in violation of the standard of performance. If the EPA determines that setting an emissions-based standard would not be feasible – such as where, in the case of CAFOs, emissions may be hard to measure and the science of estimating such emissions may be incomplete – the EPA may also prescribe particular design, equipment, work practice, or operational requirements that would apply to CAFOs across the board.

EPA should regulate CAFO emissions under section 111 of the Clean Air Act because CAFOs today are escaping air quality regulations

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Section 111 of the Clean Air Act provides the EPA with the tool most suitable for CAFO regulation under the Act. While CAA sections 108 and 112(b) can only be used to tackle pollutants one by one, CAA section 111 authorizes the EPA to establish detailed requirements (New Source Performance Standards or “NSPS”) for controlling various emissions from particular categories of stationary sources of pollution. CAFOs typically escape Clean Air Act enforcement since many do not reach thresholds necessary for them to be declared "major sources" under the act and therefore rarely get regulated under the NAAQS or as major sources of HAPs. NSPS provide the EPA with a tool to draw all CAFOs into a regulatory scheme that ameliorates a wide variety of CAFO air pollutants and avoids unnecessary or untenable regulation of other possible pollution sources.

EPA should make an endangerment finding for CAFO emissions – now, without further study

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” (brackets in original) <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Before gaining this regulatory power and flexibility, the EPA must first prove that CAFOs meet the so-called "endangerment standard." An endangerment finding requires the EPA to determine that air pollution of the type emitted by CAFOs "may reasonably be anticipated to endanger public health or welfare" and that CAFOs cause or contribute to this pollution. Listing under the NSPS requires only an endangerment finding for the source category, not for particular pollutants. Such a finding should not prove difficult. CAFOs emit numerous pollutants already regulated under the CAA. More than 70 published studies link air emissions from CAFOs to harm to public health and welfare. The Centers for Disease Control and Prevention have determined that CAFO air pollution "constitute[s] a public health problem." The EPA has also recognized that AFOs "contribute[ ] to negative environmental and health impacts." Furthermore, the CAA "does not require absolute scientific certainty or proof of actual harm when making an endangerment finding," so the weight of evidence justifying an endangerment finding from CAFOs arguably goes far beyond what is required.

Technology exists today to reduce or eliminate CAFO emissions

Christopher Weber 2014 (journalist) 27 Jan 2014 “Stink Wars: When a Foul Wind Wafts From a Farm, Is it a Problem?” <http://modernfarmer.com/2014/01/stink-wars-foul-wind-wafts-farm-problem/> (brackets added)

[Director of the Penn State Odor Assessment Laboratory, Robin] Brandt has researched and helped teach farmers to use an odor-reducting technique called shallow-disk injection. It’s a bit like no-till farming. Instead of spraying manure on top of a field, it is placed beneath the surface in a narrow slot that is pushed closed immediately, cutting odors by up to 60 percent, according to Brandt. Besides better odor management, technology can sometimes help. Installing an anerobic digester is expensive — averaging more than $1 million — but it eliminates odors by allowing the manure to rot in a sealed chamber. Over the long term, farmer can earn back a good deal of his or her investment through the methane produced by the digester. For instance, a Pennsylvania farmer named [Steve Reinford](http://www.sierraclub.org/sierra/201203/innovate-manure-to-money-132.aspx) makes $200,000 a year with his digester by accepting waste for a fee and selling electricity back to the local utility.

California success: State regulations reduced CAFO emissions successfully

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” (brackets added) <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

In response to the high levels of air pollution, the San Joaquin Valley Air Pollution Control District adopted what are currently arguably the most restrictive air pollution regulations for CAFOs in the country. The rule targets VOCs [Volatile Organic Compounds] as precursors to ozone, regulating their emissions through a comprehensive regime of requirements, including mandatory feeding and housing processes for feeding dairy cows, manure pile size management, more frequent monitoring of beef feed lots, and more. For example, the rule requires dairy CAFOs to maintain manure lagoon pH between 6.5 and 7.5. The district estimates that the regulations, amended last year, will lower its VOC emissions by 20.6% in the first year alone.

EPA regulation of ammonia and hydrogen sulfide would improve air quality around CAFOs

J. Nicholas Hoover 2013 (JD Candidate at Univ of Maryland Francis King Carey School of Law) STANFORD JOURNAL OF ANIMAL LAW & POLICY Vol 6 “Can’t You Smell That Smell?Clean Air Act Fixes for Factory Farm Air Pollution” <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1043&context=student_pubs>

Ammonia and hydrogen sulfide are among the most deadly, dangerous and plentiful of CAFOs’ emissions and command new Clean Air Act regulation. Both ammonia and hydrogen sulfide qualify as regulable pollutants under Clean Air Act standards, and their regulation would improve air quality around CAFOs, as factory farms emit both substances through the degradation of waste at levels "well above federal health-based standards."

A/T “More study needed” – We should not delay regulating CAFO emissions, even while research continues

Claudia Copeland 2014 (Specialist in Resources & Environmental Policy with Congressional Research Service) 22 Dec 2014 “Air Quality Issues and Animal Agriculture: A Primer” <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf> (brackets added)

In an interim report released in 2002, the NRC [National Research Council] responded to several of the EPA questions. Nitrogen emissions from production areas are substantial, the committee found, and control strategies aimed at decreasing emissions should be designed and implemented now. It recommended developing improved approaches for estimating and measuring emissions of key air pollutants from AFOs and initiating long-term coordinated research by EPA and USDA with the goal of eliminating release of undesirable air emissions. The committee said that implementation of feasible management practices that are designed to decrease emissions, such as incorporating manure into soil, should not be delayed while research on mitigation technologies proceeds.

DISAVANTAGE RESPONSES

A/T “Farm community economic benefits” – Communities get the pollution, not the benefits

Dr. John A. Kilpatrick 2015 (PhD; visiting scholar in real estate finance at the Zicklin School of Business, Baruch College.) THE APPRAISAL JOURNAL Winter 2015 “Animal Operations and Residential Property Values” <http://www.myappraisalinstitute.org/webpac/pdf/TAJ2015/TAJ_WI15_p041-050_Feat3-AnimalOperations.pdf> (Brackets added)

Gomez and Zhang state that AOs [animal operations] exacerbate the economic negative impact by “importing” large quantities of pollution and the attendant costs; they also find AOs cause “disruption of local social and economic systems, pollution problems resulting from intensive agriculture, and negative impacts on the quality of life in rural communities.” This finding replicates those of an earlier study by Abeles-Allison and Connor, which showed AOs have the effect of crowding out more traditional farmers and decreasing purchases in local stores. Hence, local communities suffer the negative economic byproducts without the attendant economic benefits.

A/T “Farm community economic benefits” – CAFOs have a negative effect on local economies

Prof. Jan L. Flora, Dr Carol Hodne, Prof Willis Goudy, Prof. David Osterberg, Prof James Kliebenstein, Prof Kendall Thu, Prof Shannon Marquez 2002 ( Flora and Goudy are both: Professor, Dept of Sociology, Iowa State U. Hodne – postdoctoral research fellow, Enviornmental Health Sciences Research Center, Univ of Iowa. Osterberg and Marquez are both: Associate Prof., Dept of Occupational & Environmental Health, U. of Iowa. Kliebenstein – professor of economics, Iowa State U. Thu – assistant prof. of anthropology, Northern Illinois Univ.) IOWA CONCENTRATED ANIMAL FEEDING OPERATIONS AIR QUALITY STUDY Feb 2002 <http://cph.uiowa.edu/ehsrc/CAFOstudy/CAFO_7.pdf>

Recent studies, including those in the Midwest, reveal tendencies of economic decline in communities with greater concentration of CAFOs, similar to Goldschmidt’s thesis of greater rural community decline with greater industrialization of agriculture. The econometric analysis conducted by Gomez and Zhang (2000) over a decade revealed the negative impact of swine CAFOs on economic growth in rural Illinois counties, as indicated by sales tax receipts. They found that purchases from small businesses declined as concentration of CAFOs intensified. In a Michigan study, Abeles-Allison and Connor (1990) found that local purchases of supplies for swine production decrease as CAFO concentration increases.

1. Bridget Huber 2014 (journalist) May/June 2014 MOTHER JONES « Law and Odor: How to Take Down a Terrible-Smelling Hog Farm” http://www.motherjones.com/environment/2014/04/terrible-smell-hog-farms-lawsuits [↑](#footnote-ref-1)