



Testimony for SB841: Water Pollution Control - Discharge Permits - Industrial Poultry Operations

Bill Sponsor: Senator Lam

Committee: Education Health and Environmental Affairs

Organization Submitting: Center for Progressive Reform

Person Submitting: Katie Tracy

Position: FAVORABLE

The Center for Progressive Reform works alongside people fighting for a variety of causes—cleaner air in their neighborhoods, a healthy Chesapeake Bay, safer workplaces for low-wage workers, and more sustainable food systems. Large-scale industrial agriculture is a problem across the board. It's time Maryland takes bold action to protect its residents and the environment.

Consolidation of corporate power and vertical integration of the poultry industry over the last half century have had a powerful impact on farmers and the communities in which they live. Growers in Maryland and around the country have begun to speak out about the pressures they endure, risking their livelihoods to call attention to the ways modern poultry farming drives economic inequality. It starts with the production contracts, which demand specific practices to get the birds to market size and massive capital investments in chicken houses that meet the integrator's specifications. As a result, contract growers frequently incur more than \$1 million in debt as the price of admission to the industry. Entering any business venture involves risk, but in the poultry industry, limited guarantees of future flocks, a tournament payment system, inconsistent building standards across integrators, and limited competition among integrators in a given area leave growers in a precarious state of dependence on the integrator.

More attention should be paid to the true magnitude of social and economic benefits that derive from the poultry industry in Maryland. A 2018 report by economists at Salisbury University suggests that the jobs and economic output attributable to the industry are lower than most Marylanders would assume. While their analysis aggregated multiple fields within the agriculture industry (i.e., poultry as well as other farming, crop production), it shows that the state's entire agriculture sector contributes less than 1 percent of jobs and has a total economic output

amounting to less than 1 percent of the state's GDP.¹ In the Lower Shore counties where the social, economic, and environmental impacts are most acute, the researchers determined the agriculture industry supported 6,241 direct jobs (e.g., on-farm labor), 2,374 indirect jobs (e.g., labor in the supporting supply chain), and 1,924 induced jobs (e.g., employment driven by household spending by workers from the "direct" and "indirect" categories).² Every job is vital to the person who holds it, her family, and her surrounding community, but continuing to allow the poultry industry to grow creates problems that outweigh the likely benefits.

The expansion of concentrated animal feed operations (CAFOs) on the Delmarva Peninsula is a barrier to Maryland meeting its obligations under the Bay TMDL.

Approximately 95 percent of the CAFOs in the state are located in the Chesapeake Bay watershed.³ According to the Delmarva Land and Litter Collaborative, poultry CAFOs in the region produced 550,000 tons of poultry litter in 2018, an 18 percent increase from 2012.⁴

Modeling from the Chesapeake Bay program shows that agriculture is the single largest source of nutrient pollution to the Bay from Maryland and the watershed as a whole.⁵ Data on nutrient loads in large basins shows that the Eastern Shore has made the least amount of progress in reducing phosphorus pollution compared to other large basins.⁶

According to the U.S. Geological Survey, nitrogen concentrations in the Choptank, Marshyhope, and Nanticoke rivers have increased under the Bay TMDL.⁷ Fifty-three percent of the nitrogen that reaches the Shore is from inorganic fertilizers or fixed directly from the atmosphere, and an additional 37 percent is from manure.⁸ An analysis of Maryland's FY 2021 Executive Budget for the Chesapeake Bay found that bay jurisdictions did not achieve nitrogen reduction goals for 2017. In fact, nitrogen loads in Maryland's Eastern Shore actually increased by 1 percent. To achieve the state's nitrogen reduction goals by 2025, these jurisdictions must reduce over twice as much nitrogen in the next eight years than was done in the previous eight years.⁹

¹ Diriker M, Guy S, Chambers D. *The Impact of Resource Based Industries on the Maryland Economy*. The Maryland Agricultural and Resource-Based Industry Development Corporation. 2018. https://www.marbidco.org/pdf/2018/Full_Report_All_Maryland_Resource_Based_Industries_Beacon_2018.pdf. Accessed February 28, 2020.

² Diriker, 2018.

³ U.S. Environmental Protection Agency. *Maryland Animal Agriculture Program Assessment*. 2015. <https://www.epa.gov/sites/production/files/2015-09/documents/marylandanimalagricultureprogramassessment.pdf>. Accessed February 28, 2020.

⁴ Delmarva Land and Litter Collaborative. *Exploring Chicken Farming on Delmarva*. <https://www.arcgis.com/apps/MapSeries/index.html?appid=ea25550135f04151bd8bee3c247188b2>. Accessed March 2, 2020.

⁵ Chesapeake Bay Program. 2017 Watershed Implementation Plans (WIPs). <https://www.chesapeakeprogress.com/clean-water/2017-watershed-implementation-plans>. Accessed March 2, 2020.

⁶ Chesapeake Bay Program. *Chesapeake Assessment and Scenario Tool (CAST) Version 2017d*. <https://cast.chesapeakebay.net/>. Accessed November 2019.

⁷ U.S. Geological Survey. Short-Term Trends in Loads Between 2007 and 2016. https://cbrim.er.usgs.gov/pdf_maps/ST_Trend/ST-NTN2016_TN_Bars.pdf. Accessed December 2019.

⁸ Ator SW, Denver JM. *Understanding Nutrients in the Chesapeake Bay Watershed and Implications for Management and Restoration—the Eastern Shore*. U.S. Geological Survey. 2015. <https://pubs.usgs.gov/circ/1406/pdf/circ1406.pdf>. Accessed February 19, 2020.

⁹ Maryland Department of Legislative Services. *Chesapeake Bay FY 2021 Budget Overview*. 2020. <http://mgaleg.maryland.gov/pubs/budgetfiscal/2021fy-budget-docs-operating-CHESBAY-Chesapeake-Bay-Overview.pdf>. Accessed March 2, 2020.

Air and water emissions from CAFOs pose a significant risk to the health of surrounding communities. The large volume of animal waste produced by CAFOs often sits in open pits or lagoons, or is applied to the land in concentrations exceeding the needs of crops. Runoff from irrigation or rainfall can contaminate drinking water, which is of particular concern for communities with self-supplied water. A recent study by NC State researchers predicted that 72 percent of ammonia emissions from Maryland poultry CAFOs are deposited on land or in water in the nine Eastern Shore Counties.¹⁰

Nitrate, which is formed by soil microorganisms breaking down nitrogen in fertilizer or manure, has been detected at levels above EPA's maximum contaminant level (MCL) of 10 mg/L in private wells on Maryland's Eastern Shore.¹¹ EPA's MCL was set at a level to protect against methemoglobinemia, or blue baby syndrome, which can be fatal to infants.¹² However, recent public health research shows that nitrate exposure at levels below the MCL are associated with colorectal cancer, thyroid disease, and developmental issues in infants.¹³ Eastern Shore counties—Dorchester, Caroline, Somerset, and Worcester—which have a high concentration of CAFOs also have the highest incidence rate of colorectal cancer in the state. Colorectal cancer incidence rates in these counties ranges from 23.3-27.5 cases per 100,000, exceeding the state incidence rate of 17.3 cases per 100,000.¹⁴

CAFOs also increase community exposure to particulate matter, volatile organic compounds, hydrogen sulfide, and ammonia.¹⁵ These air pollutants can cause or worsen conditions such as asthma, eye irritation, wheezing, sore throat, chest tightness, nausea, bronchitis, and allergic reactions.^{16,17} One study in Pennsylvania found that proximity to industrial animal agriculture was associated with clinically documented asthma exacerbations.¹⁸ Odors emanating from CAFOs can also cause stress and minimize quality of life and social cohesion.^{19,20} CAFOs may also contribute to the spread of communicable diseases. Contact with pathogens present in

¹⁰ Jordan Baker, et. al. *Modeling and Measurements of Ammonia from Poultry Operations*. 2020; 706:2. <https://www.sciencedirect.com/science/article/pii/S0048969719352829>

¹¹ Wicomico County Health Department. *Wells with High Nitrates (2008-2014)*. 2019. <https://www.wicomicohealth.org/wp-content/uploads/2019/06/HighNitrates2008-2014.pdf>. Accessed February 24, 2020.

¹² Temkin A, et al. Exposure-Based Assessment and Economic Valuation of Adverse Birth Outcomes and Cancer Risk Due to Nitrate in United States Drinking Water. *Environ Res*. 2019;176:1-14.

¹³ Ward MH, et al. Drinking Water Nitrate and Human Health: An Updated Review. *Int J Environ Res Public Health*. 2018;15(7):1-31.

¹⁴ National Cancer Institute. *Incidence Rate Report for Maryland by County: Colon & Rectum, 2012-2016*. <https://statecancerprofiles.cancer.gov/incidencerates/index.php?stateFIPS=24&areatype=county&cancer=020&race=00&sex=0&age=006&stage=999&type=incd&sortVariableName=rate&sortOrder=default#results>. Accessed February 26, 2020.

¹⁵ Heederik D, et al. Health effects of airborne exposures from concentrated animal feeding operations. *Environ Health Perspect*. 2007;115:298–302.

¹⁶ Cambra-Lopez M, et al. Airborne particulate matter from livestock production systems: a review of an air pollution problem. *Environ Pollut*. 2010;158:1–17.

¹⁷ Schinasi L, et al. Air pollution, lung function, and physical symptoms in communities near concentrated swine feeding operations. *Epidemiology*. 2011;22:208–215.

¹⁸ Poulsen MN, et al. High-density poultry operations and community-acquired pneumonia in Pennsylvania. *Environ Epidemiol*. 2018;2:e013.

¹⁹ Wing S, Horton RA, Rose KM. Air pollution from industrial swine operations and blood pressure of neighboring residents. *Environ Health Perspect*. 2013;121:92–96.

²⁰ Donham KJ, et al. Community health and socioeconomic issues surrounding concentrated animal feeding operations. *Environ Health Perspect*. 2007;115:317–320.

animal waste can cause severe gastrointestinal disease that may be fatal.²¹ In addition, administering antibiotics to animals can result in the proliferation of antibiotic-resistant pathogens, which may spread to communities located near CAFOs.^{22,23}

The workers who tend to the hundreds of thousands of birds in a modern CAFO also face health and safety risks that are not being adequately addressed. Insufficient protections against retaliation and the industry’s reliance on workers who face socioeconomic disadvantages compound the problem.

Working at a Maryland poultry CAFO involves a range of activities including feeding and watering chickens, ensuring the temperature inside the houses is suitable, controlling ammonia emissions, removing dead and diseased chickens from the houses, and checking that all machinery is working correctly. In addition to on-site CAFO workers, third-party contractors work at most CAFO sites, primarily as catch crews that catch the chickens and take them to a poultry processing plant.

CAFO workers and third-party catchers are at risk of numerous hazards on a CAFO site, including from machinery, animals, and environmental exposures.²⁴ Tractors and other equipment can roll over and cause workplace injuries, including deaths, and chickens may peck workers.²⁵ Environmental exposures, primarily from manure, also raises significant concerns for worker health. Manure not only has the potential to spread disease but also emits dangerous levels of ammonia and hydrogen sulfide, among other pollutants.²⁶ According to the National Association of Local Boards of Health, studies show that “[o]ccupational asthma, acute and chronic bronchitis, and organic dust toxic syndrome can be as high as 30% in factory farm workers. Other health effects of CAFO air emissions can be headaches, respiratory problems, eye irritation, nausea, weakness, and chest tightness”.²⁷

Workers have little say in the work they perform or the health and safety of the conditions in which they work. Rather, absentee owners who do not live in the state or near the farm hire workers to live on the farm and perform all operations pursuant to a contract between the owner and the poultry company. The contract dictates the exact specifications of the operations. To fulfill the contract, in many cases, the CAFO owners expect workers to live on-site and be prepared to respond to any emergencies 24 hours a day. CAFO workers are often

²¹ U.S. Environmental Protection Agency. Literature Review of Contaminants in Livestock and Poultry Manure and Implications for Water Quality. 2013.

²² Casey JA, et al. Industrial food animal production and community health. *Curr Environ Health Rep.* 2015;2:259–271.

²³ Nadimpalli M, et al. Livestock-associated, antibiotic-resistant *Staphylococcus aureus* nasal carriage and recent skin and soft tissue infection among industrial hog operation workers. *PLoS One.* 2016;11:e0165713.

²⁴ Food Empowerment Project. *Factory Farm Workers.* <https://foodispower.org/human-labor-slavery/factory-farm-workers/>. Accessed February 27, 2020.

²⁵ Mitloehner FM, Calvo MS. *Worker Health and Safety in Concentrated Animal Feeding Operations.* *J Agric Saf Health.* 2008;14(2):163-187.

²⁶ Gurian-Sherman D. *CAFOs Uncovered: The Untold Costs of Confined Animal Feeding Operations.* Union of Concerned Scientists. 2008. <https://www.ucsusa.org/sites/default/files/2019-10/cafos-uncovered-full-report.pdf>. Accessed February 27, 2020.

²⁷ Hribar C. *Understanding Concentrated Animal Feed Operations and Their Impact on Communities.* National Association of Local Boards of Health. 2010. https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf. Accessed February 27, 2020.

undocumented or ex-felons who know that if they speak up about poor conditions, the owner will fire them, they may be threatened, and they will likely be blacklisted across the industry.

These facilities raise significant environmental justice concerns, as the adverse health impacts disproportionately affect low-income, underserved communities, as well as communities of color. As a result of these and other public health concerns associated with CAFOs, in 2019 the American Public Health association published a policy statement supporting moratoriums on new and expanding CAFOs.²⁸

To add insult to injury, the effects of the climate crisis, such as sea level rise, sunny day flooding, more frequent and intense storms and precipitation, and saltwater intrusion exacerbate the air and water quality impacts of CAFOs. The State of Maryland has failed to revise regulations for CAFOs to account for the climate-driven increase in pollution and the risk of harm to communities and natural resources.

Maryland's current and proposed stormwater pollution permits for CAFOs do not address how increased precipitation affects the pollution removal efficiency of required controls, even though the State has already acknowledged to EPA and the public that this climate impact is undermining stormwater controls and efforts to restore the Bay.²⁹ A recent study by University of Maryland scientists demonstrates that climate change will continue driving increases in the volume and intensity of rainfall on the Eastern Shore, in particular, undermining the effectiveness of stormwater and other pollution control practices.³⁰ To date, there is no indication that intensifying precipitation or other climate impacts have been considered, let alone addressed, in the design of regulatory controls for CAFOs. As a result, the current required pollution controls for CAFOs are likely technically and legally deficient. Furthermore, it remains unclear whether Maryland regulators have considered other climate studies in their design of CAFO permits and regulations, such as recent state reports on sunny day flooding, saltwater intrusion, and sea level rise.

Flooding is another climate impact that has not been clearly addressed in Maryland's regulation of pollution discharges from CAFOs. Climate change has increased the present-day risk of wet-weather, tidal, and extreme weather induced flooding in Maryland. While climate scientists have documented 13 inches of sea level rise over the last 100 years, federal scientists now project another two feet of sea level rise in Maryland by 2050.³¹ Floodwaters may damage or render ineffective CAFOs' stormwater and other pollution controls, or cause spills that contaminate

²⁸ American Public Health Association. *Precautionary Moratorium on New and Expanding Concentrated Animal Feed Operations*. November 5, 2019. <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2020/01/13/precautionary-moratorium-on-new-and-expanding-concentrated-animal-feeding-operations>. Accessed February 20, 2020.

²⁹ Maryland Department of Environment. *Maryland's Phase III Watershed Implementation Plan to Restore the Chesapeake Bay by 2025*. 2019. <https://mde.maryland.gov/programs/Water/TMDL/TMDLImplementation/Pages/Phase3WIP.aspx>.

³⁰ Eastern Shore Land Conservancy on behalf of the Eastern Shore Climate Adaptation Partnership. *Preparing for Increases in Extreme Precipitation Events in Local Planning and Policy on Maryland's Eastern Shore*. 2020. <https://www.eslc.org/wp-content/uploads/2020/01/ExtremePrecipitationReport.pdf>. Accessed March 1, 2020.

³¹ Eastern Shore Land Conservancy on behalf of the Eastern Shore Climate Adaptation Partnership. *Mainstreaming Sea Level Rise Preparedness in Local Planning and Policy on Maryland's Eastern Shore*. 2019. <http://www.eslc.org/wp-content/uploads/docs/coastal-resilience/regional-sea-level-rise-study-2019.pdf>. Accessed March 1, 2020.

sources of drinking water with hazardous chemicals and animal manure. Under Maryland's regulatory scheme for industrial agriculture, CAFOs are permitted to apply manure to farm fields, but the increasing risk of slow and sudden flooding may also contribute to manure pollution downstream. Maryland's CAFO permit and regulations do not even consider these flood impacts, and the State continues to permit new CAFO facilities in locations that are already at risk of flooding. Restricting CAFO expansion will limit the public health and environmental harms posed by these facilities.

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In conclusion, we urge the Committee to adopt a **FAVORABLE** report to SB841. Thank you.

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About the Center for Progressive Reform

The Center for Progressive Reform is a "think-and-do tank" with a network of more than 60 Member Scholars working to build thriving communities on a resilient planet. CPR drives policy reform with rigorous and accessible legal analysis designed for changemakers.

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