

Mr. Andrew Sawyers, Director
Ms. Wynne Miller, Deputy Director
Environmental Protection Agency
Office of Water, Office of Wastewater Management
1200 Pennsylvania Avenue, NW, 4204M
Washington, DC 20460

Disclaimer: The opinions expressed herein are our own and do not necessarily reflect the views of The Johns Hopkins University.

Re: [Docket ID Number EPA-HQ-OW-2021-0128](#)

October 7, 2021

Dear Mr. Sawyers and Ms. Miller,

Thank you for the opportunity to comment on *Docket ID No. EPA-HQ-OW-2021-0128 Comment Request; Clean Watersheds Needs Survey (CWNS) (Reinstatement)*. The [Johns Hopkins Center for a Livable Future](#) (CLF) is an interdisciplinary research center based at the Johns Hopkins Bloomberg School of Public Health. CLF applies science and systems thinking to help build healthy, just, equitable, resilient, and sustainable food systems.

Our recommendations are briefly summarized here and detailed further throughout this letter. The Environmental Protection Agency (EPA) Office of Wastewater Management (OWM) should expeditiously:

- **Reinstate the Clean Watershed Needs Survey (CWNS), as it is instrumental to adequately understand and address the critical needs of localities, states, and regions to protect watersheds.**
- **Enhance monitoring and surveillance of manure and wastewater from animal agriculture and animal production facilities to better quantify water impacts and community health.**
- **Increase permitting and enforcement by EPA and state and local agencies under the Clean Water Act to address pollution from animal agriculture and animal production facilities.**
- **Prioritize and specifically target animal agriculture and animal production facilities for wastewater management in the reinstated CWNS reporting, Congressional funding and agency rulemaking.**

The Clean Water Act (CWA) was enacted in 1972 to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.”¹ It is critical that we continuously recommit to protecting our invaluable water resources and we applaud the Biden Administration’s Executive Order 13990 that initiated new rulemakings to revise the Waters of the US (WOTUS) definition earlier this year.² The revision of this definition is necessary to protect public health and the environment, prioritize environmental justice, and hold polluters accountable.² To protect the WOTUS, the OWM is responsible for various factors that affect watershed quality, such as animal agriculture and the Clean Watershed Needs Survey (CWNS).

We agree with the EPA that the CWNS must be reinstated, as the CWNS is instrumental to adequately understand the critical needs of localities, states, and regions to protect the WOTUS and to collect specific information on factors that affect watershed quality. The reports generated from the data collected by the CWNS help identify solutions and can inform Congressional funding allocations needed to protect the WOTUS.

Our comment focuses on one specific sector which OWM manages, animal feeding operations (AFO) and the need to prioritize this sector in the scope of the CWNS. Non-point source discharges from animal agriculture have historically been underestimated by the EPA and State agencies and the application of administrative and regulatory control on animal agriculture has been minimized by many regulating agencies.^{3, 4} A review of the most recently available 2012 CWNS online data contains reporting of 48,807 facilities, of those, there are 113 programs/projects listed related to non-point source “Agriculture-animal” and 116 programs/projects listed as non-point source “Agriculture-crop”, (0.23% and 0.24% respectively)⁵. For perspective, in 2016, the Centers for Disease Control reported 450,000 AFO in the US based on EPA data.⁶ The contrast of just 113 CWNS programs/projects to the ~450,000 AFOs clearly reflects a significant gap in examining and understanding the contributions from animal agriculture to watershed quality. The majority of this manure and liquid wastewater is applied to fields or stored in manure lagoons for later application creating multiple opportunities for surface, ground and drinking water contamination^{7, 8, 9} and it is widely recognized that agriculture is a primary polluter of surface and ground water, as manure and liquid wastewater from animal production is not subject to requirements for treatment. These facts illustrate the need to prioritize and enhance monitoring and management of animal and crop agriculture given their known influence on watershed quality, specifically if we intend to adequately meet the goals and vision of the CWA.

As the EPA has committed to advance environmental justice and equity and the Biden administration has prioritized the inclusion of equity and environmental justice in all federal governmental agencies and programs, these animal agriculture and animal production facilities and their associated practices also have serious environmental justice and equity implications for proximal communities and workers that can lead to environmental injustices and public health harms. Below we review some of environmental justice, environmental and public health consequences associated with animal agriculture and animal production.

Environmental Justice Interests

Agriculture is a major contributor to the degradation of local community environments and water sources in the US. Animal agriculture, (AFO and concentrated animal feeding operation (CAFO)) are particularly illustrative in this regard –and are associated with serious environmental and health impacts on proximal ecosystems and communities.¹⁰ Research has shown that many of these communities bear the undue burdens of poor environmental quality, poor health and poor economic conditions and that this is experienced disproportionately more by communities of color, low-socioeconomic status and vulnerable populations.¹¹ These conditions are emblematic of the environmental justice issues faced by many rural communities.¹²

Contaminants Associated with Animal Agriculture, Environment, Water and Public Health

In terms of potential contaminants, the agricultural application of manure and liquid wastewater associated with animal agriculture facilities are two key sources of environmental and water pollution that compromise our environment and harm public health,¹³ disproportionately affecting vulnerable populations. Overapplication of manure and liquid wastewater from these facilities can contaminate surface and groundwater with nitrates, drug and hormone residues, chemicals and other hazards^{14, 15, 16, 17} and studies have demonstrated that humans can be exposed to waterborne contaminants from animal agriculture facilities through the recreational use of contaminated surface water and the ingestion of contaminated drinking water.^{18, 19, 20}

The EPA's National Water Quality Monitoring Report to Congress in 2017 reported that nitrogen and phosphorous, primarily from agricultural processes, are the most widespread chemical stressors in rivers and streams (46% of which are in poor biological condition) and lakes, ponds and reservoirs (21% of which are in poor biological condition), conditions that can lead to eutrophication and dead zones in water bodies.²¹ The United States Geological Survey (USGS) has attributed 41% of the nitrogen in the Gulf of Mexico to farm fertilizers.²² Of the few contaminants that are measured, in the National Assessment of Water Quality project, the USGS found that at least one inorganic constituent exceeded a health benchmark in 3 to 50 percent of samples collected from the nation's principal groundwater aquifers, and that nitrate was the only man-made source that exceeded known human-health benchmarks.

Exposure to elevated levels of nitrates in surface and ground water used for drinking is associated with adverse health effects, including cancer,^{23, 24, 25, 26} birth defects, and other reproductive problems,^{27, 28, 29, 30} thyroid problems,^{31, 32} and methemoglobinemia.^{33, 34} Nutrient runoff (including nitrogen and phosphorus) has also been implicated in the growth of harmful algal blooms,^{35, 36} may pose health risks for people who swim or fish in recreational waters, or who consume contaminated water, fish and shellfish. Exposure to algal toxins has been linked to neurological impairments, liver damage, gastrointestinal illness, severe dermatitis, and other adverse health effects.³⁷ Harmful algal blooms are expected to occur more frequently due to climate change and nutrient pollution.³⁸

Given the USGS estimate that almost half of the nation's population depend on groundwater for their source of potable drinking water, it is important to protect both surface and groundwater from point and non-point sources, overapplication of agricultural fertilizers, manure, and production liquid wastewater. Additionally, millions of sources of pollution remain outside existing agricultural discharge regulatory programs because their discharges do not directly reach, or cannot be traced to, a surface water. These sources such as manure and liquid wastewater storage areas, application fields, irrigated fields, and adjacent areas may be highly vulnerable to run-off and weather events. It is estimated that the frequency and intensity of storms due to extreme weather, and climate change are highly likely to increase overland flow from point and non-point sources impacting surface waters.³⁹ The impacts and volatility of climate change are evident and are expected to increase and intensify. To prevent the continued contamination of surface, ground waters and watersheds, programs must be reinstated and expanded, that support federal and state implementation to protect the WOTUS through regulatory mechanisms and enhanced OWM programs informed by the CWNS.

Costs Associated with Water Pollution Associated with Animal Agriculture

A recent study conducted in Wisconsin looking at the costs of impaired surface water quality found that adding one CAFO to a hydrologic unit resulted in a 1.7% increase in phosphorus and 2.7% increase in nitrogen mean water sample concentrations. Their estimated non-market cost of CAFO damages to water quality was \$203,541 per year, however the authors caution that this estimate did not include many other potential external costs associated with animal production (air pollution, greenhouse gas emissions, antimicrobial resistance, soil health, worker health and loss of productivity, community health and other economic and psychosocial factors). Another finding was that "Wisconsin households would be willing to pay between \$6.9 million and 27.9 million dollars annually for one fewer CAFO in each hydrologic unit."⁴⁰ Clearly the implications of these animal agriculture facilities on environmental quality, community health, community cohesion, and well-being are recognized by the public and there is a critical need for local, state and regional agencies to propose and implement programs to address and reduce the associated damage costs, other externalities and negative consequences associated with animal agriculture facilities.

Conclusion and Recommendations

When reinstating the CWNS, OWM should increase opportunities to prioritize projects and programs focused on reducing pollution from animal agriculture and animal production. The addition of a focus on the collection of information and data on animal agriculture/production wastewater management could have far reaching implications for addressing environmental justice and equity, environmental quality, and public health. There is plenty of evidence demonstrating harm to communities, occurring especially in communities with low levels of political power, low socioeconomic status and communities of color that have been traditionally exploited.^{41, 42} Without this prioritization, non-point source runoff from agriculture (particularly animal agriculture) and manure and liquid wastewater application means that local, regional and

national water quality will continue to be degraded and communities near these facilities and workers will continue to suffer health consequences.

Unfortunately, the scale and scope of the impacts are difficult to quantify, in part due to the lack of surveillance mechanisms to monitor community health indicators and inability to identify where manure, liquid and production wastewater are being spread, where non-permitted large-scale animal agriculture facilities exist, limited water quality data and monitoring programs. Additionally, many of these non-point sources have been previously excluded from regulation under the CWA definitions of WOTUS but it is clear these animal agricultural and animal production areas can have dramatic impacts on both surface water, groundwater and watershed chemical, physical and biological properties.⁴³ Many of these limitations could be addressed with a new focus on animal agriculture and animal production wastewater management by OWM.

Existing regulations do not adequately protect our waters and must be expanded to prevent downgradient degradation by animal agricultural and animal production facilities, to protect the environment, drinking water, and to protect public health.^{44, 45} Under CWA 212, Clean Water State Revolving Funds are available for projects that focus on “non-point source projects, national estuary projects and watershed projects” and funds could be mobilized to address the negative cost of these facilities. We recommend enhanced permitting, monitoring and enforcement by EPA, state and local agencies under the CWA that address non-point source pollution from agriculture and increased CWSRF specifically to address pollution from animal agriculture and animal production facilities. More specifically we recommend that animal agriculture and animal production facilities should be prioritized by the OWM for wastewater management and specifically targeted in the reinstated CWNS reporting, Congressional funding and agency rulemaking.

Please contact us if you have any further questions or we can provide any additional information. Thank you again for the opportunity to provide comment. We appreciate your work to ensure the integrity of our nation’s water supply and protect human health and the environment.

Sincerely,

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¹ 33 U.S.C. § 1251(a). Link: <https://www.govinfo.gov/content/pkg/USCODE-2018-title33/pdf/USCODE-2018-title33-chap26.pdf>

² Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis. Executive Order 13990. Link: <https://www.federalregister.gov/documents/2021/01/25/2021-01765/protecting-public-health-and-the-environment-and-restoring-science-to-tackle-the-climate-crisis>

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