

To: Lee Zeldin, Administrator, Environmental Protection Agency
Lieutenant General William H. Graham, Jr., Chief of Engineers and Commanding General,
U.S. Army Corps of Engineers

From: Woodwell Climate Research Center

Date: October 7, 2026

Re: Updated Definition of “Waters of the United States”
Docket ID No. EPA-HQ-OW-2025-0322-15447

Woodwell Climate Research Center (Woodwell) appreciates the opportunity to comment on the U.S. Environmental Protection Agency’s (EPA) and the U.S. Army Corps of Engineers’ (Army Corps) proposed rule to further update the definition of “Waters of the United States” (WOTUS). As a scientific research organization dedicated to understanding risk and promoting resilience, Woodwell consistently advocates for robust, science-informed, and publicly accessible data for long-lasting sustainability and the benefit of local communities.

Introduction

The *Sackett v. EPA* decision in 2023 substantially limited federal protections for many wetlands and streams under the Clean Water Act (CWA). However, this proposed rule attempts to define terms critical to the definition of “waters of the United States” (WOTUS) as outlined in the CWA in ways that detrimentally narrow the definition of WOTUS even far beyond what is legally required by *Sackett*.

The *Sackett* decision maintains that the legal definition of WOTUS includes wetlands with a "continuous surface connection" to waters that otherwise qualify as WOTUS (streams, oceans, rivers, and lakes). This proposal attempts to define this "continuous surface connection" in terms of surface water, which unjustly extrapolates legal language and defies scientific expertise. In turn, this proposal would reduce vital protections provided by these waters that aid local communities and economies by improving resilience and reducing flooding, improving water quality, protecting fish and wildlife, and sequestering carbon.

Woodwell strongly opposes narrowing the definition of WOTUS beyond what is legally required by *Sackett*. This proposed rule rejects the science, the critical role of wetlands related to carbon sequestration, and the impact of wetlands on resilience. Failing to protect these waters will result in long-term economic and environmental costs that far outweigh any short-term “regulatory certainty.”

Scientific Objection to the Proposed Definitions

The three definitions outlined in this proposal, “relatively permanent,” “perennial,” and “continuous surface connection,” would each significantly limit the definition of WOTUS, exposing numerous ecosystems to undue harm and sacrificing vital ecosystem services.

This proposed rule aims to define the term “**relatively permanent**” as a “**perennial body of water**,” meaning a body of water that flows year round. The only outlined exception is when a body of water does not flow for “no more than a single period of up to 30 consecutive days in any given year as a result of non-anomalous events resulting in a temporary interruption such as low tide or a regularly occurring dry spell.” This does not provide nearly enough flexibility for the unpredictability of water flows under increasing conditions of climate change.

This new definition of “**relatively permanent**” will exclude many rivers that provide important temporary connections to other bodies of water. Ephemeral rivers, short-lived streams formed only during precipitation events that carry water and pollution downstream, are integral to the health of the ecosystem¹ and yet will be excluded under this definition. Further, this rule may even exclude the many rivers across the West that no longer flow year round due to increasingly dire drought conditions and overextraction, yet are vitally important to the economies and livelihoods of Western states. Woodwell research has found that the socioeconomic and ecological exposure to extreme drought unequivocally increases with increased temperatures,² meaning that as climate change continues to increase local temperatures, the drought effects observed in the West will only increase. Under this proposed rule and the requirement of a year-round flow, such conditions will further degrade and disqualify these temporary rivers from the protections afforded by WOTUS.

The proposed rule also seeks to codify a requirement that a “**continuous surface connection**” of surface water be maintained year-round, barring exceptional circumstances for up to 30 consecutive days. This detrimentally narrows the definition of WOTUS. However, hydrological connectivity is not just surface level. High functioning wetlands that are connected to other surface waters only seasonally, briefly, or not at all, such as river floodplains, ponds, and prairie pothole wetlands, are often highly connected to sources of groundwater through subsurface flow.

Research in watersheds across the globe demonstrates that “isolated” wetlands are often anything but. As demonstrated by EPA scientists in 2023, wetlands can be limitedly connected at the surface while maintaining connection through subsurface flow as well as the same ecosystem functions in regards to acidification, eutrophication and sedimentation.³ The “**continuous surface connection**” as defined under this proposed rule does not consider subsurface connections and thus excludes these continentally

¹ Brinkerhoff, C., Gleason, C., Kitchen, M., Kysar, D., and Raymond, P. (2024). Ephemeral stream water contributions to United States drainage networks. *Science*. 384(6703). DOI: 10.1126/science.adg9430

² Runde, R., Zobel, Z., & Schwalm, C. (2022). Human and natural resource exposure to extreme drought at 1.0 °C - 4.0 °C warming levels. *Environmental Research Letters*. 17(6). DOI: 10.1088/1748-9326/ac681a

³ Leibowitz, S., et al. (2023). National hydrologic connectivity classification links wetlands with stream water quality. *Nature Water*. 1. DOI: 10.1038/s44221-023-00057-w

important wetland types. Scientists have stated that if enacted, this definition would exclude more than half of the wetlands in the United States from WOTUS protections.⁴

In Woodwell’s studies of river chemistry and watershed discharge, we have consistently found that wetlands have a strong influence on the health of entire watersheds, regardless of water surface connection.^{5, 6, 7} For example, Woodwell’s TIDE Project spent over two decades studying the Plum Island Estuary.⁸ The research shows that nutrient runoff from agriculture and development—even if it originates near seemingly “isolated” wetlands—eventually impacts the health of the entire estuary. By removing federal protections from wetlands that do not “touch” navigable water, the agencies are inviting a surge in nutrient pollution that will lead to eutrophication, algal blooms, and the eventual collapse of downstream aquatic ecosystems.

The Critical Role of Wetlands in Carbon Sequestration

The proposed rule fails to account for the immense value of wetlands as carbon sinks. Terrestrial and tidal wetlands sequester and store more carbon per unit area than almost any other ecosystem on Earth, including forests.⁹

Woodwell’s research identifies wetlands as high-carbon ecosystems that provide immediate climate benefits. “Terrestrial wetlands (i.e. non-tidal freshwater wetlands) cover about 71 million hectares in the U.S. About half of this area is forested wetland and 23% is peatland, which contains very high carbon stocks (Kolka et al. 2018). Terrestrial wetlands are significant carbon sinks, sequestering about 55 million metric tons of carbon per year both above- and belowground.”¹⁰ Protecting these areas is a top priority for global carbon management because the carbon stored in wetland soils and biomass can be lost rapidly through drainage or surface hardening¹¹—actions that become much more likely without federal CWA oversight.

⁴ Former EPA Scientist Warns New WOTUS Rules Stripes Protections from Wetlands and Puts Clean Water at Risk. (2025). Environmental Protection Network.

https://www.environmentalprotectionnetwork.org/20251117_wotus_release/

⁵ Yi, Y., et al. (2012). Isotopic signals (¹⁸O, ²H, ³H) of six major rivers draining the pan-Arctic watershed. *Global Biogeochemical Cycles*. 26(1). DOI: 10.1029/2011GB004159

⁶ Castello, L., et al. (2012). The vulnerability of Amazon freshwater ecosystems. *Conservation Letters*. 6(4). DOI: 10.1111/conl.12008

⁷ Costa Penatti, N., Isnard Ribeiro de Almeida, T., Guimarães Ferreira, L., Elias Arantes, A., & Coe, M. (2015). Satellite-based hydrological dynamics of the world’s largest continuous wetland. *Remote Sensing of Environment*. 170. DOI: 10.1016/j.rse.2015.08.031

⁸ The Tide Project. *Woodwell Climate Research Center*. <https://thetideproject.org/>

⁹ Mozdzer, T., Drew, S., Caplan, J., Weber, P., & Deegan, L. (2021). Rapid Recovery of carbon cycle processes after the cessation of chronic nutrient enrichment. *Science of the Total Environment*. 750. DOI: 10.1016/j.scitotenv.2020.140927

¹⁰ Principles and Safeguards for Natural Climate Solutions. (2023). *Woodwell Climate Research Center*. <https://www.woodwellclimate.org/our-impact/ncs-principles/>

¹¹ Ibid.

Impacts on Climate Resilience and Risk Mitigation

The 2025 proposal, upon which this proposed rule expands, argues that narrowing the definition of WOTUS will provide “regulatory certainty.” However, in reality, these revisions create profound environmental uncertainty by increasing the risk of catastrophic flooding and storm surges.

Wetlands absorb excess rainfall and buffer communities from the intensified flooding events caused by climate change. Woodwell scientists have documented how the loss of wetland capacity exacerbates flood risks for homes and businesses.¹² The economic impacts are staggering: wetland losses over the past 40 years have increased flood insurance claims by an estimated total of \$10.1 billion dollars.¹³ The proposed “relatively permanent” criteria under this jurisdiction is particularly dangerous as it ignores the fact that ephemeral and seasonal wetlands provide vital flood-attenuation services during extreme weather events despite not existing year-round, let alone maintaining a “continuous surface connection.”

Additionally, coastal marshes are the first line of defense against rising sea levels. Woodwell’s research has shown that excess nitrogen (often filtered by upstream wetlands) causes marsh edges to collapse.¹⁴ By deregulating upstream “non-permanent” waters, the agencies will increase the nutrient load reaching the coast, weakening the very marshes that protect coastal infrastructure from storm surges.

Further, Woodwell is concerned by the proposal’s impact on the scope of “permafrost wetlands” through these “relatively permanent” and “continuous surface connection” requirements. The Arctic is warming three to four times faster than the rest of the planet.¹⁵ These increasing temperatures may threaten the permanence of these wetlands, thus excluding them from the vital protections afforded by WOTUS. Permafrost wetlands are critical for stabilizing the soil and sequestering vast stores of carbon, meaning they are critically important for maintaining the safety and livelihoods of local communities, as well as lessening the global effects of climate change.

Conclusion

The proposed rule rejects scientific evidence and treats the landscape as a collection of disconnected parts rather than a single, integrated hydrological and biological system. Such oversight will lead to the degradation of wetlands and other bodies of water that provide critical ecosystem services to both local and global populations. Woodwell Climate Research Center thus urges the EPA and Army Corps to:

¹² Huff, J. (2025). Climate Risk Assessment: New Bedford, Massachusetts. *Woodwell Climate Research Center*. <https://www.woodwellclimate.org/wp-content/uploads/2026/01/Woodwell-Climate-Risk-Assessment-New-Bedford-MA-2025.pdf>

¹³ Gourevitch, J., Gold, A., & Garcia, H. (2026). The economic value of wetlands in reducing riverine flood losses in the USA. *Nature Water*. 4. DOI: 10.1038/s44221-026-00656-3

¹⁴ Mozdzer, T., et al. (2021).

¹⁵ Severe Weather & Arctic Warming. *Woodwell Climate Research Center*. <https://www.woodwellclimate.org/project/extreme-weather-and-climate-change/severe-weather-arctic-warming/>

1. Maintain protections for ephemeral and seasonal waters, which are essential for water quality and flood control in a changing climate.
2. Reevaluate “continuous surface connection” test in favor of a definition that recognizes subsurface and biological connectivity.
3. Incorporate the value of carbon sequestration and climate resilience into the Regulatory Impact Analysis.

The narrowing of this definition beyond what is legally required by *Sackett v. EPA* will detrimentally endanger the communities who rely on these increasingly threatened waters to endure the impacts of climate change. Failing to protect these waters will result in long-term economic and environmental costs that far outweigh any short-term “regulatory certainty.”

About Woodwell Climate Research Center

Woodwell Climate Research Center (Woodwell) is a nonpartisan scientific research organization that works with a network of partners across 20 countries on six continents to understand the challenges and risks associated with climate change. Scientists from Woodwell collaborate with a wide range of partners, including national and local governments, nonprofit organizations, universities, and private sector companies. We bring together hands-on research experience and over 40 years of policy impact to find societal-scale solutions that can be put into immediate action by policymakers and decision makers.

Thank you for your consideration of these comments. Please contact Laura Uttley, Vice President of Policy & Government Relations, at luttley@woodwellclimate.org, if Woodwell can provide additional information or resources.