



October 9, 2026

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Office of Water (4504-T)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue NW, Washington, DC 20460

Submitted via [www.regulations.gov](http://www.regulations.gov)

**RE: U.S. Environmental Protection Agency's and U.S. Army Corps of Engineers' Supplemental Notice of Proposed Rulemaking, Updated Definition of "Waters of the United States," Docket ID No. EPA-HQ-OW-2025-0322**

The National Agricultural Aviation Association (NAAA) appreciates the opportunity to comment on the Environmental Protection Agency's (EPA) and U.S. Army Corps of Engineers' (collectively, the Agencies) Supplemental Notice of Proposed Rulemaking (SNPRM) regarding the definition of "waters of the United States" (WOTUS) under the Clean Water Act (*Updated Definition of "Waters of the United States,"* 91 Fed. Reg. 57,284 (Sept. 9, 2026)). We appreciate the Agencies' proposal to provide additional certainty around the definition of a WOTUS and support the proposed definitions of "continuous surface connection" and "relatively permanent."

**U.S. Aerial Application Industry Background**

NAAA represents the interests of the 1,560 aerial application industry owner/operators and 2,028 non-operator agricultural pilots throughout the United States licensed as commercial applicators that use aircraft to enhance the production of food, fiber and bio-energy; protect forestry; protect waterways and rangeland from invasive species; and provide services to agencies and homeowner groups for the control of mosquitoes and other health-threatening pests.

Within agriculture and other pest control situations, manned aerial application is an important method for applying pesticides, because it permits large areas to be covered rapidly and is by far the fastest application method of crop inputs, when it matters most. More than any other application method, manned aerial application capitalizes on the often limited windows of suitable spraying weather and allows for timely treatment of pests while they are in critical developmental stages, often over terrain that is too wet or otherwise inaccessible for terrestrial applications. It also treats above the crop canopy, thereby not disrupting the crop and damaging it. Aerial application has greater productivity, accuracy, speed, and is unobtrusive to the crop compared to ground application<sup>1</sup>. Although the average aerial application company is comprised of only six employees and two aircraft, as an industry these small businesses treat nearly 127 million acres of U.S. cropland each season, which is about 28% of all cropland used for crop production in the U.S. In addition to the cropland acres, aerial applicators annually apply to 5.1

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<sup>1</sup> Kováčik, L., and A. Novák, 2020. "Comparison of Aerial Application vs. Ground Application." *Transportation Research Procedia* 44 (2020) 264–270.

million acres of forest land, 7.9 million acres of pasture and rangeland, and 4.8 million acres for mosquito control and other public health concerns.

While there are other application methods available to growers, aerial application has several advantages over these other options. In addition to the speed and timeliness advantage aerial application has over other forms of application, there is also a yield difference. Driving a ground sprayer through a standing crop results in a significant yield loss. Research from Purdue University<sup>2</sup> found that yield loss from ground sprayer wheel tracks varied from 1.3% to 4.9% depending on boom width. While this study was conducted in soybeans, similar results could be expected in other crops as well. Data from a Texas A&M University economics study<sup>3</sup> and the 2019 NAAA industry survey<sup>4</sup> were used to calculate that the aerial application industry is directly responsible for the production of 1.69 billion bushels of corn, 199 million bushels of wheat, 548 million pounds of cotton, 295 million bushels of soybeans, and 3.33 billion pounds of rice annually that would be lost every year without the aerial application of pesticides. The value in additional crop yield that the aerial application industry brings to farmers, input suppliers, processors, and agricultural transportation and storage industries for corn, wheat, cotton, soybean, and rice production in the U.S. is estimated to be about \$37 billion<sup>5</sup>.

Research summarized by the University of Minnesota<sup>6</sup> describes how soil compaction from ground rigs can negatively affect crop yields due to nitrogen loss, reduced potassium availability, inhibition of root respiration due to reduced soil aeration, decreased water infiltration and storage, and decreased root growth. Aerial application offers the only means of applying a crop protection product when the ground is wet and when time is crucial during a pest outbreak. A study on the application efficacy of fungicides on corn applied by ground, aerial, and chemigation applications<sup>7</sup> further demonstrates that aerial application exceeds ground and chemigation application methods in terms of yield response. The aerial application of crop protection products results in greater harvest yields of crops. This in turn results in less land being used for agricultural production, preserving more wetlands for natural water filtration, forest ecosystems for carbon sequestration and habitat for threatened and endangered species.

The Texas A&M<sup>5</sup> study revealed that the total area of cropland needed to replace the yield lost if aerial application was not available for corn, wheat, soybean, cotton, and rice production is 27.4 million acres, an area roughly the size of Tennessee. Aerial applicators seed 3.8 million acres of cover crops annually<sup>5</sup>. This means that aerial applicators are responsible for helping to sequester 1.9 million metric tons of CO<sub>2</sub> equivalent annually, which, according to the EPA, would be the

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<sup>2</sup> Hanna, S., S. Conley, J. Santini, and G. Shaner. 2007. "Managing Fungicide Applications in Soybean." Purdue University Extension Soybean Production Systems SPS-103-W. <https://www.extension.purdue.edu/extmedia/sps/sps-103-w.pdf>

<sup>3</sup> Dharmasena, S. 2020. "How Much is the Aerial Application Industry Worth in the United States?" Research presented at the 2020 Ag Aviation Expo, Savannah, GA. <https://www.agaviation.org/education/aerial-application-technology-research-sessions/>

<sup>4</sup> National Agricultural Aviation Association. May 2019. "2019 NAAA Aerial Application Industry Survey: Operators." <https://www.agaviation.org/wp-content/uploads/2024/04/NAAA-2019-Operator-Survey.pdf>

<sup>5</sup> Dharmasena, S. 2021. "Value of the Agricultural Aerial Application Industry in the United States" Research presented at the 2021 Ag Aviation Expo, Savannah, GA. <https://www.agaviation.org/education/aerial-application-technology-research-sessions/>

<sup>6</sup> University of Minnesota. "Soil Compaction." Accessed April 29, 2021. <https://extension.umn.edu/soil-management-and-health/soil-compaction>

<sup>7</sup> Thomas, D. 2009. Unpublished research results submitted to EPA. <https://www.agaviation.org/wp-content/uploads/2023/06/2009-Fungicide-Efficacy-Results.pdf>

equivalent of removing approximately 412,000 cars with carbon-combustion engines from the roads each year.

The aerial application industry is also actively involved in education and research efforts to improve the accuracy and safety of aerial applications. The National Agricultural Aviation Research and Education Foundation (NAAREF) is a non-profit organization dedicated to promoting research, technology transfer and advanced education among aerial applicators, allied industries, government agencies and academic institutions. NAAREF's Professional Aerial Applicators' Support System (PAASS) program is a four-hour course offered annually at all state and regional agricultural aviation association conventions. The curriculum is brand new every year and a minimum of one hour of PAASS is focused on environmental professionalism. This ensures aerial applicators are kept up to date on the latest information related to making accurate applications and drift mitigation. Nozzle selection, buffer zones, inversions, precision application technology, dissection of real-life drift incidents, and proper spray boom setup are some of the environmental professionalism topics that have been covered in PAASS.

Five years after PAASS became part of the aerial application annual curriculum in 1999, there was a 26% drop in drift incidents according to the Association of American Pest Control Officials' drift surveys. In addition, ag aircraft accidents have also significantly declined. From 1999 to 2010, the accident rate per 100,000 hours flown dropped by 21.6% compared to pre-PAASS accident rates. From 2011 to 2019, the accident rate dropped even more—30.8%—compared to pre-PAASS accident rates. Each year, we continue to see a drop in our accident rate since pre-PAASS days, but now it declines more incrementally. While aviation safety is the domain of the FAA and not the EPA, the reduction in accidents proves PAASS has had, and continues to have, a significant positive impact on the aerial application industry.

Another NAAREF program is Operation SAFE (Self-regulating Application & Flight Efficiency). The primary component of Operation SAFE is a fly-in clinic, where aerial applicators have their aircraft calibrated and application patterns (both liquid and dry) measured and evaluated for accuracy and uniformity. Spray droplet size is also measured at a fly-in to ensure the agricultural aircraft is creating the droplet size required by the labels for products to be applied by the aircraft. Many of the concepts used to mitigate the risk of drift from agricultural aircraft have originated from ideas first tested at Operation SAFE fly-ins.

NAAA has created a professional certification program for the aerial application industry named Certified Aerial Applicator (CAA). To be certified under CAA, aerial applicators must take the PAASS program annually and Operation SAFE biennially, in addition to belonging as a member to their state/regional agricultural aviation association and the NAAA. CAA professionals are also required to take and be tested on additional aviation safety and environmental stewardship curriculum offered on-line through a learning management system software managed by NAAA. The purpose of CAA is to enhance professionalism in the aerial application industry as our statistics show that those who participate in our educational programs are safer from both an aviation and environmental perspective.

#### Aerial Pesticide Applications and Clean Water Act Regulation

In 2009, the U.S. 6<sup>th</sup> Circuit Court of Appeals drastically expanded the enforcement reach of the Clean Water Act (CWA) in *National Cotton Council, et al., v. EPA, et al.*, by ruling that pesticide applications require National Pollution Discharge Elimination System (NPDES) permits

whenever they occur “into, over or near” one of the many types of “waters of the U.S” (WOTUS). Following the 6th Circuit Court decision, EPA implemented its NPDES Pesticide General Permit (PGP) for aquatic pesticide applications for control of mosquitoes, aquatic weeds, invasive aquatic animals, and forest canopy pest control. These PGPs impose a gamut of unnecessary performance and recordkeeping requirements on aerial applicators across the country without providing any additional environmental benefit. The Federal Insecticide Fungicide and Rodenticide Act (FIFRA) regulates pesticide use to water. FIFRA requires, through years of extensive testing, demonstration that registered pesticides can be safely applied according to product labels in a manner that poses no unreasonable risk to humans or the environment. NAAA continues to call on Congress to eliminate these duplicative and costly permits.

While we disagree with the court decision and the permit regime, NAAA members take seriously our obligation to comply with the permit requirements. Our members need a clear and easy to understand definition of waters that are subject to federal jurisdiction to ensure that they comply with the law. Years of rulemakings and court challenges have created a great deal of confusion over which waters are subject to federal regulation. This constantly changing definition makes it difficult to know whether an application is subject to a permit. We appreciate the Agencies’ November 20, 2025, proposed rule, *Updated Definition of “Waters of the United States,”* 90 Fed. Reg. 52,498 (Nov. 20, 2025) and this supplemental notice of proposed rulemaking, both of which are intended to provide additional clarity around jurisdictional waters.

#### November 20, 2025, proposed rule, Updated Definition of “Waters of the United States”

The question of whether a water feature is a WOTUS significantly impacts NAAA members’ operations. For decades, the Agencies’ regulations and guidance steadily expanded the definition of WOTUS well beyond constitutional and statutory boundaries. The proposed rule and the supplemental SNPRM ensure that the regulatory definition of WOTUS aligns with Congress’s intended scope of federal regulatory authority under the CWA and Supreme Court precedent. It clearly defines “navigable” and preserve the states’ traditional and primary authority over land and water use. It clearly defines key terms that are central to determining the scope of the CWA’s scope.

#### Comments on September 9, 2026 SNPRM

NAAA appreciates the Agencies’ efforts to improve regulatory predictability and consistency by further clarifying the scope of a WOTUS. The SNPRM supplements the Agencies’ November 20, 2025, proposal, *Updated Definition of “Waters of the United States,”* by proposing additional the definitions of “continuous surface connection” and “relatively permanent.” The supplemental proposed definition of “relatively permanent,” would generally limit jurisdiction to perennial waters. The supplemental proposed definition of “continuous surface connection” would generally require perennial surface water in a wetland that is continuously connected with the surface water in a jurisdictional water. NAAA supports both definitions because they are clear, administrable, and faithful to the text of the CWA as interpreted by the Supreme Court in *Sackett v. EPA*, 598 U.S. 651 (2023), and *Rapanos v. United States*, 547 U.S. 715 (2006) (plurality opinion).

The proposed new definitions are clear and understandable, which is critical to NAAA members as they seek to determine if a water is subject to federal regulation. The supplemental definitions

are focused on perennial waterbodies—water that is standing or continuously flowing every day of the year during ordinary conditions—with narrow, well-defined exceptions for anomalous events (e.g., drought) and non-anomalous temporary interruptions (e.g., low tide or a regularly occurring dry spell lasting no more than 30 consecutive days in any given year). These definitions will enhance national consistency, promote transparency, and reduce the need for our members and landowners to retain expert consultants to assess jurisdiction.

### Conclusion

NAAA supports the supplemental proposed definitions of “relatively permanent” and “continuous surface connection” in the SNPRM. These definitions are clear, administrable, and faithful to the CWA’s text and Supreme Court precedent. NAAA appreciates the Agencies’ efforts to provide additional certainty to determinations about when a waterbody is considered a WOTUS. This certainty is critical to NPDES permit and CWA compliance. Thank you for the opportunity to submit these comments.

Thank you for this opportunity to comment.

Sincerely,

A handwritten signature in cursive script that reads "Scott Bretthauer".

Scott Bretthauer, PhD  
Director of Policy, Education, and Safety