



Consortium of  
Aquatic Science Societies

November 3, 2014

To Whom It May Concern:

We are writing today on behalf of CASS (the Consortium of Aquatic Scientific Societies), a group of scientific societies including the American Fisheries Society, the Association for the Sciences of Limnology and Oceanography, the Phycological Society of America, the Society for Freshwater Science, and the Society of Wetland Scientists. Our societies founded CASS in recognition of the integration among all aquatic systems. While water, and the scientists who study it, can sometimes be categorized by terms such as “lake”, “river” or “ground water”, our societies and scientists acknowledge the fundamental integration of aquatic ecosystems. The goal of CASS is to promote scientific study, education, and outreach about aquatic ecosystems. Our member societies represent more than 12,000 professional aquatic scientists from academia, government agencies, private industry, NGOs, and elsewhere. Most of the leading freshwater scientists in the United States belong to at least one of our societies.

We thank you for the opportunity to comment on the proposed definition of the “Waters of the United States” (Docket identification (ID) No. EPA-HQ-OW-2011-0880). This definition is central to the protection of the ecological quality of our waters and the benefits that they provide to the citizens of the United States, and we appreciate the care and time that has been put into developing the proposed definition. We agree that it would be highly desirable to have a definition that would allow for transparent, predictable, and consistent application of the Clean Water Act, and we applaud the critical and extensive use of scientific information in preparing the new rule.

In general, we believe that the proposed definition is reasonable, and is well supported by scientific studies, many of which are cited in the proposed rule. In particular, we strongly support many aspects of the proposed definition. Here are our specific comments on the proposed rule.

- ***We strongly support inclusion of headwater streams, including intermittent or temporary streams that do not have perennial flow.*** There is now ample scientific evidence (much of it cited in the proposed rule) that there are strong and varied physical, chemical, and biological connections between headwater streams, whether they have perennial flow or not, and downstream navigable or interstate waters. This clearly satisfies the requirement for “significant nexus”. Furthermore, the proposed use of the presence of bed, banks, and an ordinary high-water mark to identify stream channels that should be included seems both practical to apply in the field and consistent with the scientific evidence regarding strong connections.
- ***We strongly agree that is important to include some “ditches” as “Waters of the United States”.*** We acknowledge it may be politically necessary to exclude “ditches that are excavated wholly in uplands, drain only uplands, and have less than perennial flow” and ditches that do not contribute water to jurisdictional waters from “Waters of the United

States” (but see our next comment). However, “ditches” that have perennial flow or that currently drain or formerly drained wetlands or lakes in many cases were built to modify or replace existing natural drainage features that would have qualified as “Waters of the United States”, and typically are well connected with downstream waters, thereby satisfying the “significant nexus” criterion.

- ***We are concerned that the requirement for ditches excavated wholly in and draining only uplands to have perennial flow (p. 22203, 22219 of the Federal Register listing) is too restrictive.*** This requirement seems more restrictive than the guidance from *Rapanos* that ditches should have “*relatively* [emphasis added] permanent flow of water” to be included under “Waters of the United States”, and at odds with the scientifically supported recognition elsewhere in the proposed rule of the importance of tributaries having non-perennial flow. We suggest that ditches excavated wholly in and draining only uplands be included in “Waters of the United States” if they contain flowing water more than 75% of the time.
- ***The criteria for determining that waters in riparian areas and floodplains are “adjacent waters” and therefore included in the “Waters of the United States” look reasonable, and are well supported by scientific research showing that waters in these areas have strong ecological connections to jurisdictional waters or their tributaries.*** A key question raised by this definition is how to define “floodplain” in terms of return intervals or other criteria (p.22209 of the Federal Register listing). The suggestion that the extent of the floodplain be determined “by best professional judgment” seems problematic, and allows for considerable uncertainty and inconsistency in the delineation of “adjacent waters”, which seems incompatible with your broad goal of transparency, predictability, and consistency. We suggest that you adopt a more uniform approach, and choose a standard return interval (we suggest 100 years, because 100-year floodplains are widely mapped, and because bodies of water within the 100-year floodplain usually have obvious connections to jurisdictional waters) with which to define floodplains, perhaps allowing this standard to be overridden in exceptional cases by best professional judgment. Alternatively, if floodplain extent is to be determined by best professional judgment, the rule should more explicitly state what considerations are to be taken into account in applying this best professional judgment.
- As the draft rule notes, some “other waters” outside of waters that will be included by rule do in fact have a significant nexus with jurisdictional waters, particularly when certain kinds of these “other waters” (e.g., prairie potholes, Carolina bays) are considered in combination with other similarly situated waters. ***We encourage the USEPA to sponsor research to develop better indicators of ecological connectivity that allow for easier identification of significant nexus and therefore less case-by-case analysis of these “other waters”.***
- ***The definition of “In the Region” (p. 22212 of the Federal Register listing) could be problematic and should be modified.*** The current definition (“in the region” [means] the watershed that drains to the nearest traditional navigable water, interstate water, or the territorial seas through a single point of entry.”) would seem to imply that if a body of water along a small tributary of a navigable water were being considered, only the watershed of that small tributary would be considered to be “the region”. It would seem more natural, and more in keeping with the remainder of the proposed rule, to define “the region” as the watershed of the navigable water rather than the tributary.

- *Finally, we are disappointed that the proposed rule fails to recognize the strong and ecologically vital connections between ground waters and surface waters.* Ground water, shallow aquifers, and hyporheic waters (those immediately below streams, lakes and wetlands) are connected to those surface waters and determine their flows during dry periods. Essentially, such ground waters are underground tributaries of lakes, streams, rivers, and wetlands. Groundwater upwelling is crucial for successful spawning of trout and salmon in lakes, and creates cool-water refuges in summer for juvenile and adult salmonids as well as warm-water refuges in winter when streams and lakes are ice covered. Ground water inputs are critical to most wetlands, lakes and streams, as well as spatially intermittent streams, and thereby affect the quality and quantity of those waters and the biota and fisheries that surface waters support. Inadequately regulated mining, fossil fuel extraction, agriculture, and industrialization have all contributed to groundwater depletion and contamination. Therefore exempting ground waters from “Waters of the United States” makes no sense from a scientific perspective.

Thank you for your attention. Please do not hesitate to contact us if we may be of assistance. We may be reached via David Strayer ([strayerd@caryinstitute.org](mailto:strayerd@caryinstitute.org)), or through our current CASS coordinator, Dr. Adrienne Sponberg ([sponberg@aslo.org](mailto:sponberg@aslo.org)).

Sincerely,



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James J. Elser, Ph.D.  
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John W. Stiller, Ph.D.  
President, Phycological Society of America

A handwritten signature in black ink that reads "David Strayer". The letters are cursive and connected, with a long horizontal stroke at the end of the word "Strayer".

David L. Strayer, Ph.D.  
President, Society for Freshwater Science

A handwritten signature in black ink that reads "James E. Perry". The letters are cursive and connected, with a long horizontal stroke at the end of the word "Perry".

Jim Perry, Ph.D.  
President, Society of Wetland Scientists