

## PolicyPennings by Daryll E. Ray & Harwood D. Schaffer

# Scientific literature used to clarify which U.S. waters are within EPA's jurisdiction

In enforcing the Clean Water Act (CWA), the US Environmental Protection Agency (EPA) and the US Army Corps of Engineers (COE) have clear jurisdiction over “[1] traditional navigable waters; [2] interstate waters, including interstate wetlands; [3] the territorial seas; [and 4] impoundments of traditional navigable waters, [and] interstate waters, including interstate wetlands, [and] the territorial seas.” The further upstream a water body, intermittent stream, or wetland is from one of these, the less clear it becomes that the EPA and the COE have jurisdiction.

This lack of clarity has resulted in lawsuits on behalf of landowners, several of which have ended up before the US Supreme Court. In the 2001 and 2006 cases, justices argued that there must a “significant nexus” between other waters and those over which the agencies have clear jurisdiction for the agencies to exercise regulatory control. The purpose of the April 21, 2014 proposed rule, “Definition of ‘Waters of the United States’ Under the Clean Water Act,” is in part to clarify what that “significant nexus” is and what waters would fall under the jurisdiction of the EPA and/or the COE. All quoted material in this article comes from the Proposed Rule.

To accomplish this goal, the “EPA’s Office of Research and Development prepared a draft peer-reviewed synthesis of published peer-reviewed scientific literature discussing the nature of connectivity and effects of streams and wetlands on downstream waters.... The draft Report provides a review and synthesis of the scientific information pertaining to chemical, physical, and biological connections from streams, wetlands, and open waters such as oxbow lakes, to downstream larger water bodies such as rivers, lakes, and estuaries in watersheds across the United States and the strength of those connections.” For the EPA, the first step is to identify the ways in which the scientific literature makes the connection between upstream tributaries and adjacent wetlands and downstream larger waters.

“**Connectivity** (emphasis added) is the degree to which components of a system are joined, or connected, by various transport mechanisms and is determined by the characteristics of both the physical landscape and the biota of the specific system. The structure and function of downstream waters are highly dependent on the constituent materials contributed by and transported through waters located elsewhere in the watershed. Connectivity for purposes of interpreting the scope of ‘waters of the United States’ under the CWA serves to demonstrate the ‘nexus’ between upstream water bodies and the downstream traditional navigable water, interstate water, or the territorial sea.

“Based on the literature, the Office of Research and Development was able to assess the types of connections between the tributaries and adjacent waters and the chemical, physical, and biological integrity of downstream traditional navigable waters, interstate waters, and the territorial seas.”

But identifying the nexus alone is not enough to satisfy the court’s concern. “as Justice Kennedy found...a mere hydrologic connection may not suffice in all cases to establish CWA jurisdiction and there needs to be ‘some measure of the **significance** (emphasis added) of the connection for downstream water quality.’”

In the proposed rule the agencies write, “The data and conclusions in the Report concerning the strength of the relevant **connections** (emphasis added) and effects of certain types of waters on downstream waters provide a foundation for the agencies’ determinations that certain waters have effects on the chemical, physical, and biological integrity of traditional navigable waters, interstate waters, or the territorial seas that are ‘**significant**’ (emphasis added) and **thus constitute a significant nexus** (emphasis added).”

The proposed rule says, “the Report concludes that the scientific literature clearly demonstrates that streams, regardless of their size or how frequently they flow, strongly influence how downstream waters function. Streams supply most of the water in rivers, transport sediment and organic matter, provide habitat for many species, and take up or change nutrients that could otherwise impair downstream waters.

“The Report also concludes that wetlands and open waters in floodplains of streams and rivers and in riparian areas (transition areas between terrestrial and aquatic ecosystems) have a strong influence on downstream waters. Such waters act as the most effective buffer to protect downstream waters from nonpoint source pollution (such as nitrogen and phosphorus) [it should be noted that much of the potential pollution caused by farming is nonpoint source pollution], provide habitat for breeding fish and aquatic insects that also live in streams, and retain floodwaters, sediment, nutrients, and contaminants that could otherwise negatively impact the condition or function of downstream waters.

“Regarding wetlands and open waters located outside of floodplains and riparian areas, the Report finds that they provide many benefits to rivers, lakes, and other downstream waters. If the wetland or open water has a surface or shallow subsurface water connection to the river network, it affects the condition

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of downstream waters.

“Where the wetland or open water is not connected to the river network through surface or shallow subsurface water, the type and degree of connectivity varies geographically, topographically, and ecologically, such that the significance of the connection is difficult to generalize across the entire group of waters.

“Lastly, the Report concludes that to understand the health, behavior, and sustainability of downstream waters, the effects of small water bodies in a watershed need to be considered in aggregate. The contribution of material by, or an important water-retention function of, a particular stream, other open water, or wetland might be small, but the aggregate contribution by an entire class of streams, other open waters, and wetlands (e.g., all ephemeral streams in the river network) can be substantial.”

Based on the draft report, the agencies conclude that both “tributary streams” and “adjacent waters,” as defined in the proposed rule, “perform the requisite functions for them to be considered ‘waters of the United States’ by rule.” In addition, “other waters” may, in some cases, perform these requisite functions.” But the agencies are proposing that these would be evaluated on a case-specific basis.

The agencies assert that the scientific literature shows that the included waters “supply sediment, wood, organic matter, nutrients, chemical contaminants, and many of the organisms found in downstream traditional navigable waters, interstate waters, and the territorial seas.”

Furthermore, “These chemical, physical, and biological connections affect the integrity of downstream traditional navigable waters, interstate waters, and the territorial seas through the export of channel-forming sediment and woody debris, storage of local groundwater sources of baseflow for downstream waters and their tributaries, and transport of organic matter. Wetlands and open waters located in riparian and floodplain areas remove and transform nutrients such as nitrogen and phosphorus. They provide nursery habitat for fish, and colonization opportunities for stream invertebrates.

“Adjacent waters, including those located in riparian and floodplain areas, serve an important role in the integrity of traditional navigable waters, interstate waters, and the territorial seas because they also act as sinks for water, sediment, nutrients, and contaminants that could otherwise negatively impact traditional navigable waters, interstate waters, and the territorial seas.”

In the next column, we will examine the definition that the agencies have developed for the term “waters of the United States.”

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