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EPA and the Army Corps' Rule to Define "Waters of the United States"

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Summary

On May 27, the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) jointly announced a final rule defining the scope of waters protected under the Clean Water Act (CWA). The rule revises regulations that have been in place for more than 25 years. Revisions are being made in light of 2001 and 2006 Supreme Court rulings that interpreted the regulatory scope of the CWA more narrowly than the agencies and lower courts were then doing, and created uncertainty about the appropriate scope of waters protected under the CWA.

According to the agencies, the new rule revises the existing administrative definition of "waters of the United States" consistent with the CWA, legal rulings, the agencies' expertise and experience, and science concerning the interconnectedness of tributaries, wetlands, and other waters and effects of these connections on the chemical, physical, and biological integrity of downstream waters. Waters that are "jurisdictional" are subject to the multiple regulatory requirements of the CWA. Non-jurisdictional waters are not subject to those requirements.

This report describes the final revised rule—which the agencies refer to as the Clean Water Rule—and includes a table comparing the existing regulatory language that defines "waters of the United States" with the revisions. The rule is particularly focused on clarifying the regulatory status of surface waters located in isolated places in a landscape. It does not modify some categories of waters that are jurisdictional under existing rules (traditional navigable waters, interstate waters and wetlands, the territorial seas, and impoundments). The rule also lists waters that would not be jurisdictional, such as prior converted cropland and certain ditches. It makes no change to existing statutory exclusions, such as CWA permit exemptions for normal farming and ranching activities. The rule will replace EPA-Corps guidance that was issued in 2003 and 2008, which has guided agency interpretation of the Court's rulings but also has caused considerable confusion. Much of the controversy since the Supreme Court rulings has focused on the degree to which isolated waters and small streams are jurisdictional. Under the EPA-Corps guidance, many of these waters have required case-specific evaluation to determine if jurisdiction applies. Under the final rule, some of these waters would continue to need case-specific review, but fewer than under the existing agency guidance documents. The final rule also explicitly excludes specified waters from the definition of "waters of the United States" (e.g., prior converted croplands, stormwater management systems, and groundwater).

Changes in the final rule would increase the *categorical* assertion of CWA jurisdiction, in part as a result of expressly declaring some types of waters jurisdictional by rule (such as all waters adjacent to a jurisdictional water), making these waters subject to the act's permit and other requirements if pollutant discharges occur. Nevertheless, the agencies believe that the rule does not exceed the CWA's lawful coverage or protect new types of waters that have not been protected historically (i.e., under existing rules that the new rule will replace). While it would enlarge jurisdiction beyond that under the existing EPA-Corps guidance, they believe that it would not enlarge jurisdiction beyond what is consistent with the Supreme Court's current reading of jurisdiction and would reduce jurisdiction over some waters, as a result of exclusions and exemptions. The agencies estimate that the new rule will result in positive jurisdictional assertion over approximately 3%-5% more U.S. waters, compared with current field practice.

Congressional interest in the rule has been strong since it was proposed in 2014 and is continuing in the 114th Congress. After the proposed rule was announced in 2014, some groups that had criticized the status quo in the past seemingly preferred it to the proposal, which they believed

was ambiguous and overly broad. The agencies contend that the final rule responds to those criticisms. Their stated intention has been to clarify the rules and make jurisdictional determinations more predictable, less ambiguous, and more timely. Based on press reports of stakeholders' reactions to the final rule, some believe that the agencies largely succeeded in that objective, while others do not. The rule becomes effective on August 28, 2015.

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Introduction

On May 27, the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) jointly announced a final rule defining the scope of waters protected under the Clean Water Act (CWA). The rule would revise regulations that have been in place for more than 25 years.[1] Revisions were proposed in March 2014 in light of Supreme Court rulings in 2001 and 2006 that interpreted the regulatory scope of the CWA more narrowly than the agencies and lower courts were then doing, and created uncertainty about the appropriate scope of waters protected under the CWA.[2]

In April 2011, EPA and the Corps proposed guidance on policies for determining CWA jurisdiction to replace guidance previously issued in 2003 and 2008; all were intended to lessen confusion over the Court's rulings for the regulated community, regulators, and the general public. The guidance documents sought to identify, in light of the Court's rulings, categories of waters that remain jurisdictional, categories not jurisdictional, and categories that require a case-specific analysis to determine if CWA jurisdiction applies. The 2011 proposed guidance identified similar categories as in the 2003 and 2008 documents, but it would have narrowed categories that require case-specific analysis in favor of asserting jurisdiction categorically for some types of waters. The new rule will replace the existing 2003 and 2008 guidance, which had remained in effect because the 2011 proposed guidance was not finalized.[3]

The 2011 proposed guidance was extremely controversial, especially with groups representing property owners, land developers, and the agriculture sector, who contended that it represented a massive federal overreach beyond the agencies' statutory authority. Most state and local officials were supportive of clarifying the extent of CWA-regulated waters, but some were concerned that expanding the CWA's scope could impose costs on states and localities as their own actions (e.g., transportation projects) become subject to new requirements. Most environmental advocacy groups welcomed the proposed guidance, which would more clearly define U.S. waters that are subject to CWA protections, but some in these groups favored even a stronger document. Still, both supporters and critics of the 2011 proposed guidance urged the agencies to replace guidance, which is non-binding and not subject to full notice-and-comment rulemaking procedures, with revised regulations that define "waters of the United States." Three opinions in the 2006 Supreme Court *Rapanos* ruling similarly urged the agencies to initiate a rulemaking, as they did subsequently.

In the 112th and 113th Congresses, a number of legislative proposals were introduced to bar EPA and the Corps from implementing the 2011 proposed guidance or developing regulations based on it; none of these proposals was enacted. Similar criticism followed almost immediately after release of the proposed rule on March 25, 2014, with some Members asserting that it would result in job losses and damage economic growth. Supporters of the Administration, on the other hand,

[1] Definition of "waters of the United States" is found at 33 C.F.R. §328.3 (Corps) and 40 C.F.R. §122.2 (EPA). The term is similarly defined in other EPA regulations, as is the term "navigable waters." It is not defined in the CWA. See **Table 1**.

[2] Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC), 531 U.S. 159 (2001), and Rapanos v. United States, 547 U.S. 715 (2006).

[3] For background on the Supreme Court rulings, subsequent guidance, and other developments, see CRS Report RL33263, *The Wetlands Coverage of the Clean Water Act (CWA):* Rapanos *and Beyond*, by Robert Meltz and Claudia Copeland.

defended the agencies' efforts to protect U.S. waters and reduce frustration that has resulted from the unclear jurisdiction of the act.[4] Support was expressed by environmental and conservation organizations, among others.[5]

The CWA and the Revised Rule

The proposed rule was published in the *Federal Register* on April 21, 2014. The public comment period closed on November 14, 2014.[6] **Table 1** on page 15 in this report provides a comparison of the existing regulatory language promulgated in 1986 that defines "waters of the United States" with language in the proposed rule and the final rule. The revised rule will become effective August 28, 2015, 60 days after publication in the *Federal Register*, to allow time for review under the Congressional Review Act.[7] Judicial review and legal challenges to the rule can be filed beginning on July 13, 2015.[8]

The CWA protects "navigable waters," a term defined in the act to mean "the waters of the United States, including the territorial seas."[9] Waters need not be truly navigable to be subject to CWA jurisdiction. Both the legislative history and the case law surrounding the CWA confirm that jurisdiction is not limited to traditional navigable waters, that is, waters that are, were, or could be used in interstate or foreign commerce.[10] Waters that are jurisdictional are subject to the multiple regulatory requirements of the CWA: standards, discharge limitations, permits, and enforcement. Non-jurisdictional waters, in contrast, are not subject to these federal legal requirements. The act's single definition of "navigable waters" applies to the entire law. In particular, it applies to federal prohibition on discharges of pollutants except in compliance with the act's requirements (§301), requirements for point sources to obtain a permit prior to discharge (§§402 and 404), water quality standards and measures to attain them (§303), oil spill liability and oil spill prevention and control measures (§311), certification that federally permitted activities comply with state water quality standards (§401), and enforcement (§309). It impacts the Oil Pollution Act and other environmental laws, as well.[11] The CWA leaves it to the agencies to define the term "waters of the United States" in regulations, which EPA and the Corps have done several times, most recently in 1986.

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[4] Anthony Adragna and Amena Saiyid, "Republicans Contend EPA Overreached on Clean Water Act Jurisdiction Proposal," *Daily Environment Report*, vol. 58 (March 26, 2014), p. A-7.

[5] U.S. Environmental Protection Agency, "Here's What They're Saying About the Clean Water Act Proposed Rule," press release, March 26, 2014, http://yosemite.epa.gov/opa/admpress.nsf/3881d73f4d4aaa0b85257359003f5348/3f954c179cf0720985257ca7004920fa.

[6] Department of Defense, Department of the Army, Corps of Engineers, and Environmental Protection Agency, "Definition of 'Waters of the United States' Under the Clean Water Act, Proposed Rule," 79 *Federal Register* 22188-22274, April 21, 2014. The agencies extended the original 90-day comment period twice for a total of 207 days.

[7] Department of the Army, Corps of Engineers, and Environmental Protection Agency, "Clean Water Rule: Definition of 'Waters of the United States,' Final Rule," 80 *Federal Register* 37054-37127, June 29, 2015. Hereinafter, Final Rule. Documents related to the rule on the EPA website include an economic analysis of the Clean Water Rule and a technical support document; see http://www2.epa.gov/cleanwaterrule/documents-related-clean-water-rule.

[8] See 40 C.F.R. §23.2.

[9] CWA §502(7); 33 U.S.C. §1362(7).

[10] United States v. Riverside Bayview Homes, Inc., 474 U.S. §121, 133 (1985).

[11] For example, the reach of the Endangered Species Act (ESA) is affected, because that act's requirement for consultation by federal agencies over impacts on threatened or endangered species is triggered through the issuance of federal permits.

According to the agencies, the new rule—which they now refer to as the Clean Water Rule—revises the existing administrative definition of "waters of the United States" in regulations consistent with legal rulings—especially the recent Supreme Court cases—and science concerning the interconnectedness of tributaries, wetlands, and other waters to downstream waters and effects of these connections on the chemical, physical, and biological integrity of downstream waters. The agencies assert that the rule also reflects their expertise and experience in administering the CWA, including making more than 120,000 case-specific jurisdictional determinations since 2008. The rule is particularly focused on clarifying the regulatory status of surface waters located in isolated places in a landscape (the types of waters with ambiguous jurisdictional status following the Supreme Court's 2001 ruling in *SWANCC*) and small streams, rivers that flow for part of the year, and nearby wetlands (the types of waters affected by the Court's 2006 ruling in *Rapanos*).

In developing the rule, EPA and the Corps relied on a synthesis prepared by EPA's Office of Research and Development of more than 1,200 published and peer-reviewed scientific reports; the synthesis discusses the current scientific understanding of the connections or isolation of streams and wetlands relative to large water bodies such as rivers, lakes, estuaries, and oceans. The purpose of the scientific synthesis report was to summarize current understanding of these connections, the factors that influence them, and the mechanisms by which connected waters affect the function or condition of downstream waters. The document was reviewed by EPA's Science Advisory Board (SAB), which provides independent engineering and scientific advice to the agency and which completed its review in October 2014. A number of EPA's critics suggested that the agencies should have deferred developing or proposing a rule until a final scientific review document was complete. Some also expressed concern that the final report would not be available during the public comment period on the rule, which closed on November 14, 2014. Based on completion of the SAB review, EPA issued a final scientific assessment report in January 2015, saying that it would assist the agencies in developing the final rule. (See the **Appendix** for discussion of the connectivity report.)

A key conclusion in the science report that was also emphasized by the SAB review is that streams and wetlands fall along a gradient of connectivity that can be described in terms of frequency; duration; magnitude; timing; and rates of change of water, material, and biotic fluxes to downstream waters. However, science cannot in all cases provide "bright lines" to interpret and implement policy. In the preamble to the final rule, EPA and the Corps acknowledge this point.

> ... the agencies' interpretive task in this rule ... requires scientific and policy judgment, as well as legal interpretation. The science demonstrates that waters fall along a gradient of chemical, physical, and biological connection to traditional navigable waters, and it is the agencies' task to determine where along that gradient to draw lines of jurisdiction under the CWA. In making this determination, the agencies must rely, not only on the science, but also on their technical expertise and practical experience in implementing the CWA during a period of over 40 years. In addition, the agencies are guided, in part, by the compelling need for clearer, more consistent, and easily implementable standards to govern the administration of the Act, including brighter line boundaries where feasible and appropriate.[12]

[12] Final Rule, p. 37057.

Overview of the Revised Rule

The final rule announced on May 27 retains much of the structure of the agencies' existing definition of "waters of the United States." Like the 2003 and 2008 guidance and the 2014 proposal, it identifies categories of waters that are and are not jurisdictional, as well as categories of waters that require a case-specific evaluation. The final rule revises parts of the 2014 proposed rule; the text box, below, lists the key changes in the final rule.

Key Changes in the Final Rule from the Proposed Rule

In the preamble to the final rule, EPA and the Corps observe that—

> many ... commenters and stakeholders urged EPA to improve upon the April 2014 proposal, by providing more bright line boundaries and simplifying definitions that identify waters that are protected under the CWA, all for the purpose of minimizing delays and costs, making protection of clean water more effective, and improving predictability and consistency for landowners and regulated entities. (Prepublication Final Rule, p. 14)

To that end, the final rule revises parts of the proposal.

- Adjacent waters—the final rule establishes distance limits, based on waters that are defined as "neighboring," which is an aspect of "adjacent."
- Tributaries—the final rule removes wetlands and other waters that typically lack a bed and bank and an ordinary high water mark from the definition of "tributary" and moves such waters to "adjacent waters."
- The final rule identifies two sets of waters for purposes of conducting a case-specific significant nexus analysis to determine if CWA jurisdiction applies, narrowing the scope of waters that could be assessed under a case-specific significant nexus analysis compared with the proposed rule. First are five specific subcategories of waters (prairie potholes, Carolina bays and Delmarva bays, pocosins, western vernal pools, and Texas coastal prairie wetlands). Second are waters located in whole or in part within the 100-year floodplain of a traditional navigable water, interstate water, or the territorial seas and within 4,000 feet of the high tide line or ordinary high water mark of a jurisdictional water.
- The final rule redefines excluded ditches.
- The final rule refines proposed exclusions (e.g., artificial lakes and ponds, certain water-filled depressions).
- The final rule adds exclusions for features that were not previously excluded (e.g., stormwater management structures and systems, water distributary and wastewater recycling structures, groundwater recharge basins, puddles).

Waters That Are Categorically Jurisdictional

Under the first section of the revised regulation, the following six categories of waters would be jurisdictional by rule without additional or case-specific analysis:

- Waters susceptible to interstate commerce, known as traditional navigable waters (no change from existing rules or the 2014 proposal);
- All interstate waters, including interstate wetlands (no change from existing rules or the 2014 proposal);
- The territorial seas (no change from existing rules or 2014 the proposal);
- Tributaries of the above waters if they meet the definition of "tributary" (these waters are jurisdictional under existing rules, but the term "tributary" is newly defined in the proposed and final rule);

- Impoundments of the above waters or a tributary, as defined in the rule (no change from existing rules or the 2014 proposal); and
- All waters, including wetlands, ponds, lakes, oxbows, and similar waters, that are adjacent to a water identified in the above categories (these are considered jurisdictional under the final rule because the agencies conclude that they have a significant nexus to a traditional navigable water, interstate water, or the territorial seas; the final rule provides a revised definition that for the first time sets limits on what will be considered "adjacent").

The concept of significant nexus is critical because courts have ruled that, to establish CWA jurisdiction of waters, there needs to be "some measure of the significance of the connection for downstream water quality," as Justice Kennedy stated in the 2006 *Rapanos* case. He said, "Mere hydrologic connection should not suffice in all cases; the connection may be too insubstantial for the hydrologic linkage to establish the required nexus with navigable waters as traditionally understood."[13] However, as EPA and the Corps observed in the proposed and final rules, significant nexus is not itself a scientific term, but rather a determination made by the agencies in light of the law, science, and the agencies' experience and expertise. Functions that might demonstrate significant nexus include sediment trapping and retention of flood waters. In the rule, the agencies note that a hydrologic connection is not necessary to demonstrate significant nexus, because the function may be demonstrated even in the absence of a connection (e.g., pollutant trapping is another such function).

In the final rule, the agencies responded to comments that had requested some limits on the definition of adjacent waters. Under the rule, a water that is adjacent to a jurisdictional water is itself jurisdictional if it meets the related definition of "neighboring" (see **Table 1**). The final rule establishes maximum distances, or specific boundaries from jurisdictional waters, for purposes of defining "neighboring:"

1. all waters located in whole or in part within 100 feet of the ordinary high water mark (OHWM)[14] of a jurisdictional water;
2. all waters located in whole or in part within the 100-year floodplain[15] that are not more than 1,500 feet from the OHWM of a jurisdictional water;
3. all waters located in whole or in part within 1,500 feet of the high tide line of a jurisdictional water and within 1,500 feet of the OHWM of the Great Lakes.

The entire water is "neighboring" if a portion of it is located within these defined boundaries. Also, for purposes of adjacency, an open water such as a pond includes any wetlands within or abutting its ordinary high water mark.

Under existing regulations, tributaries have been jurisdictional without qualification and were not defined. In the final rule, a tributary can be natural or constructed, but it must have both a bed and bank[16] and ordinary high water mark to be categorically jurisdictional. A tributary as defined by

[13] 547 U.S. at 784-785.

[14] Ordinary high water mark (OHWM) generally defines the lateral limits of a water. The term is defined in the final rule; see **Table 1**.

[15] The 100-year floodplain is the land that is predicted to flood during a 100-year storm, that is, a storm which has a 1% chance of occurring in any given year.

[16] In many tributaries, the bed is that part of the channel below the OHWM, and the banks often extend above the (continued...)

the rule does not lose its jurisdictional status even if there is one or more natural breaks (e.g., a debris pile) or constructed/man-made breaks (e.g., a bridge or dam).

Waters Requiring Significant Nexus Analysis

Beyond the categories of waters that would be categorically jurisdictional under the rule are waters that will be jurisdictional based on a determination that there is a significant nexus to a jurisdictional downstream water. Under existing rules, the regulatory term "other waters" applies to wetlands and non-wetland waters that do not fall into the category of waters that are susceptible to interstate commerce (traditional navigable waters), interstate waters, the territorial seas, tributaries, or waters adjacent to waters in one of these four categories. Existing regulations contain a non-exclusive list of "other waters," such as intrastate lakes, mudflats, prairie potholes, and playa lakes (see **Table 1**). Headwaters, which constitute most "other waters," supply most of the water to downstream traditional navigable waters, interstate waters, and the territorial seas.

EPA and the Corps recognize that the Supreme Court decisions in *SWANCC* and *Rapanos* put limitations on the scope of waters that may be determined to be jurisdictional under the CWA. Much of the controversy since the Court's rulings has focused on uncertainty as to what degree "other waters" are jurisdictional, either by definition/rule, or as determined on a case-by-case basis to evaluate significant nexus to a jurisdictional water. In his opinion in the *Rapanos* case, Justice Kennedy concluded that wetlands have the requisite significant nexus to a jurisdictional water if the wetlands "either alone or in combination with similarly situated [wet]lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'"[17]

Since *SWANCC*, intrastate, non-navigable waterbodies (often referred to as geographically isolated waters) for which the sole basis for asserting jurisdiction is interstate commerce are excluded from jurisdiction, unless Corps and EPA Headquarters jointly approve case-specific assertion of jurisdiction. Under the 2003 and 2008 guidance, which will be replaced by the new rule, all other "other waters" have required a case-by-case evaluation to determine if a significant nexus exists, thus providing a finding of CWA jurisdiction. There likewise has been uncertainty as to what degree "other waters" that are not excluded from jurisdiction are similarly situated and thus may be aggregated or combined for a significant nexus determination, as described by Justice Kennedy in *Rapanos*.

In the proposed rule, "other waters," including wetlands, that are adjacent to a jurisdictional water were categorically jurisdictional. Non-adjacent "other waters" and wetlands would continue to require a case-by-case determination of significant nexus. Also, the proposed rule allowed broader aggregation of "other waters" that are similarly situated than under the existing guidance,[18] which could result in more "other waters" being found to be jurisdictional following a significant nexus evaluation.

(...continued)

OHWM.

[17] 547 U.S. at 780.

[18] Under the proposed rule, "other waters" could be aggregated for a significant nexus determination if they perform similar functions and are located sufficiently close together to be evaluated as a single landscape unit in the same watershed with regard to their effect on a jurisdictional downstream water.

Some in the regulated community urged EPA and the Corps to provide metrics, such as quantifiable flow rates or minimum number of functions for "other waters," to establish a significant nexus to jurisdictional waters. The agencies declined to do so in the proposed rule, saying that absolute standards would not allow sufficient flexibility to account for variability of conditions and the varied functions that different waters provide.

The agencies acknowledged that there may be more than one way to determine which "other waters" are jurisdictional, and they requested comment on alternate approaches, combinations of approaches, scientific and technical data, case law, and other information that would clarify which "other waters" should be considered categorically jurisdictional or following a case-specific significant nexus determination. In addition, they asked for public comment on whether to conclude by rule that certain types of "other waters"—prairie potholes, pocosins, and perhaps other categories of waters—have a significant nexus and are *per se* jurisdictional. These waters would not require a case-by-case analysis.

The final rule no longer refers to "other waters," but it establishes two defined sets of additional waters that will be a "water of the United States" if they are determined to have a significant nexus to a jurisdictional water. Under the rule, only these waters will require case-specific evaluation, as others are either categorically jurisdictional or categorically excluded from jurisdiction.

First are five subcategories of waters previously considered "other waters": prairie potholes, Carolina bays and Delmarva bays, pocosins, western vernal pools, and Texas coastal prairie wetlands. Historically under existing rules (which the new rule will replace), these were "other waters" and were jurisdictional if their use, degradation, or destruction could affect interstate or foreign commerce. Since 2008, some waters in these categories (e.g., vernal pools, pocosins) that are adjacent to a tributary system have been subject to case-specific significant nexus evaluation to determine if jurisdiction applies. According to the Corps, broadly speaking, when a significant nexus evaluation has been completed under the 2008 guidance on any type of aquatic resource, a high percentage of those evaluations resulted in a finding of jurisdiction.[19]

In the final rule, based on reviewing the science concerning these types of waters, the agencies concluded that waters within the five subcategories are "similarly situated" in areas of the country where they are located (following Justice Kennedy's opinion). Under the rule, they will be jurisdictional if a significant nexus to downstream waters is found, based on case-specific evaluation in combination with waters from the same subcategory in the same watershed. While these subcategories of waters are not jurisdictional as a class under the final rule—as some environmental advocates would prefer—the rule allows for case-specific analysis that may find them to be a "water of the United States"[20] and is likely to find them jurisdictional in most cases, according to EPA.[21]

The second set of additional waters that require a significant nexus evaluation under the final rule are waters located in whole or in part within the 100-year floodplain of a traditional navigable water, interstate water, or the territorial seas and within 4,000 feet of the high tide line or OHWM

[19] U.S. Army Corps of Engineers, personal communication, June 5, 2015.

[20] Also under the final rule, if a water in any of these subcategories meets the rule's definition of "adjacent," it is jurisdictional without requiring a significant nexus determination.

[21] Annie Snider, "In Major Shift, new Rule Excludes Some Wetlands, Ponds," *E&E News*, May 28, 2015.

of a jurisdictional water. However, because waters located in the 100-year floodplain and within 1,500 feet of the OHWM of a jurisdictional water are "adjacent" under the new rule, they are categorically jurisdictional. Thus, this second set of waters requiring a significant nexus analysis really applies to waters located within the 100-year floodplain of a traditional navigable water, interstate water, or the territorial seas that are between 1,500 feet and 4,000 feet of the OHWM of a jurisdictional water.

As noted previously, one of the agencies' goals in developing the new rule was to clarify its requirements and lessen the number of instances requiring a time-consuming analysis to determine if CWA jurisdiction applies. The final rule provides two specific categories or subcategories of waters that will need a significant nexus evaluation, which is more limited than under current field practice and the existing EPA-Corps guidance documents. Under the final rule, waters other than these two types are either categorically jurisdictional or categorically excluded from jurisdiction.

Exclusions and Definitions

The second section of the final rule excludes specified waters from the definition of "waters of the United States." The listed waters and features are not jurisdictional even if they would otherwise be included within categories that are jurisdictional. The exclusions are:

- Waste treatment systems, including treatment ponds or lagoons that are designed to meet CWA requirements (no substantive change from existing rules or the 2014 proposal);
- Prior converted cropland (no change from existing rules or the 2014 proposal);
- A list of features that have been excluded by long-standing practice and guidance and would now be excluded by rule, such as artificially irrigated areas that would revert to dry land should application of irrigation water to the area cease; artificial reflecting pools or swimming pools created in dry land; and puddles (see **Table 1** for the full list);
- Groundwater (traditionally not regulated under the CWA and expressly excluded under the rule);
- Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land (new provision in the final rule responding to concerns that the rule would adversely affect the ability of municipalities to operate and maintain stormwater systems, including rain gardens and green infrastructure);
- Constructed detention and retention basins created in dry land used for wastewater recycling, as well as groundwater recharge basins and percolation ponds built for wastewater recycling (new in the final rule, in response to public comments); and
- Three types of ditches: ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary; ditches with intermittent flow that are not a relocated tributary, or excavated in a tributary, or that do not drain wetlands, regardless of whether or not the wetland is a jurisdictional water; and ditches that do not flow, either directly or through another water, to a traditional navigable water, interstate water, impoundment, or the territorial seas, regardless of whether the flow is ephemeral, intermittent, or perennial. The treatment of ditches was

one of the largest controversies of the proposed rule (see "Concerns of Agriculture and Local Governments"). Under existing rules and long-standing practice, many but not all ditches have been jurisdictional. The proposed rule for the first time attempted to define which ditches are and are not protected under the CWA, but the proposal was confusing and widely criticized. Under the final rule, a ditch may be a "water of the United States" only if it meets the definition of "tributary" and is not otherwise excluded under this provision.

The final rule makes no change to and does not affect existing statutory and regulatory exclusions: exemptions for normal farming, ranching, and silviculture activities such as plowing, seeding, and cultivation (CWA §404(f)); exemptions for permitting of agricultural stormwater discharges and return flows from irrigated agriculture; or exemptions for water transfers that do not introduce pollutants into a waterbody. Nor would it directly change permitting processes.

Definitions of key terms are included in the third section of the rule. Because definitions often are critical to interpreting statutory law and regulations, some stakeholder groups criticized the proposed rule, suggesting that the definitions would enable broader assertion of CWA jurisdiction than is consistent with law and science. Many argued that several of the defined terms in the proposal were confusing, and further that the proposed rule failed to define terms such as "upland," "gullies," and "rills," which they believed needed to be clarified.

The agencies responded in several ways (See **Table 1**):

- In some cases, a particular term that was controversial with public commenters is not used in the final rule, therefore no definition is needed (e.g., "upland").
- In some cases, the term is clarified in the preamble to the rule (e.g., "ephemeral, intermittent, and perennial," "bed and banks," "dry land," and "puddle").
- In some cases, the rule was modified to clarify the term (e.g., "significant nexus").
- In some cases, the agencies declined to add a definition if they concluded that doing so might lead to more confusion (e.g., "ditch").
- Two terms defined in other Corps regulations are carried forward into the final rule, without change, at the request of commenters ("ordinary high water mark" and "high tide line").
- Finally, the agencies declined to define some terms that might have a narrow or geographic-specific application that would not be appropriate for a national rule.

Definitions of two terms in the proposed rule ("riparian area" and "floodplain") are omitted from the final rule, although they are defined in the preamble to the new rule. Both terms had been criticized by commenters for vagueness or ambiguity. Many requested that a specific floodplain interval or other clear limitation be established. In the final rule, the agencies reference the "100-year floodplain," in part because the Federal Emergency Management Agency (FEMA) and Natural Resources Conservation Service (NRCS) have mapped large portions of these areas in the United States, producing maps that are publicly available, well known, and well understood. Also,

the agencies concluded that the use of "riparian area" was unnecessarily complicated and that, as a general matter, waters in a riparian area will also be in the 100-year floodplain.[22]

Impacts of the Proposed Rule

Overall, EPA and the Corps say that their intent in the Clean Water rule was to clarify their jurisdiction, in light of the Supreme Court's ruling, not to expand it. Nevertheless, the agencies acknowledge that the rule would increase the *categorical* assertion of CWA jurisdiction, when compared to a baseline of current practices under the 2003 and 2008 EPA-Corps guidance. This results in part from the agencies' expressly declaring some types of waters categorically jurisdictional and not requiring case-specific evaluation of them (such as all waters adjacent to a jurisdictional water).

In changing the regulatory definition of "waters of the United States," there may be instances in which the CWA applies categorically for the first time, and there also may be instances in which the CWA no longer applies (i.e., as a result of exemptions and exclusions). The agencies intend that the rule will result in less ambiguity about whether the CWA applies than under existing regulations, legal rulings, and guidance.

The agencies believe that the rule does not protect any new types of waters that have not been protected historically (that is, beyond the existing regulations, which the new rule will replace) and that it does not exceed the CWA's coverage. That is, while it would enlarge *categorical* jurisdiction beyond that under the 2003 and 2008 EPA-Corps guidance, which the agencies believe was narrower than is justified by science and the law, they believe that it would not enlarge jurisdiction beyond what is consistent with the Supreme Court's current reading of jurisdiction.

The agencies' categorical assertion of waters that are jurisdictional, compared to current practice, does not identify specific waters that will be found to be jurisdictional—i.e., a particular stream or pond—but the rule attempts to draw more of a bright line of CWA jurisdiction than in the past. Moreover, the agencies made a number of changes in the final rule to provide more certainty and clarity, including "bright lines" of jurisdictional demarcation in several parts of the rule.

In an Economic Analysis document accompanying the final rule, the agencies estimate that the new rule will result in positive jurisdictional assertion over 2.84%-4.65% more U.S. waters, compared with current field practice.[23] However, compared with the agencies' existing regulations, the final rule reflects a reduction in waters protected by the CWA, according to EPA and the Corps.

According to the analysis, costs to regulated entities and governments (federal, state, and local) are likely to increase as a result of the rule, but the rule itself does not impose direct costs. Indirect costs would result from additional permit application expenses (for CWA Section 404

[22] Final Rule, p. 37082. The rule does not address changes that might result from future revisions to or updating of FEMA and NRCS maps.

[23] U.S. Environmental Protection Agency and U.S. Department of the Army, *Economic Analysis of the EPA-Army Corps Clean Water Rule*, May 2015, http://www2.epa.gov/cleanwaterrule/final-clean-water-rule-economic-analysis, p. 53. Hereinafter, Economic Analysis.

permitting; stormwater permitting for construction and development activities; and permitting of pesticide discharges and confined animal feeding operations [CAFOs] for discharges to waters that would now be determined jurisdictional) and additional requirements for oil storage and production facilities needing to develop and implement spill prevention, control and countermeasure (SPCC) plans. Federal and state governments would likely experience about $1 million annually in additional costs to administer and process permits. Other costs would likely include compensatory mitigation requirements for permit impacts (if applicable), affecting land developers and state and local governments. The economic analysis considered two scenarios for analyzing impacts of the rule. The agencies estimate that indirect costs associated with the final rule range from $158 million to $307 million per year under a "low end" estimate and $237 million to $465 million per year under a "high end" estimate.[24]

The Section 404 program would see the greatest potential impact as a result of revised assertion of CWA jurisdiction. Most of the projected costs are likely to affect landowners and development companies, state and local governments investing in infrastructure, and industries involved in resource extraction.

The agencies believe that indirect benefits accruing from the proposed rule include the value of ecosystem services provided by the waters and wetlands protected as a result of CWA requirements, such as habitat for aquatic and other species, support for recreational fishing and hunting, and flood protection. Other benefits would include government savings on enforcement expenses, because the rule is intended to provide greater regulatory certainty, thus reducing the need for government enforcement. Business and government may also achieve savings from reduced uncertainty concerning where CWA jurisdiction applies, they believe. In all, the agencies estimate that benefits of the final rule range from $339 million to $350 million per year under a "low end" estimate and $555 million to $572 million under a "high end" estimate. However, they note that there is uncertainty and there are limitations associated with the results, due to data and information gaps, as well as analytic challenges. The analysis does not quantify all possible costs and benefits, and values are meant to be illustrative, not definitive.[25] Overall, they conclude that benefits would exceed costs.

Concerns of Agriculture and Local Governments

The agriculture sector has been vigorous in criticizing and challenging EPA regulatory actions that may affect the sector's operations, making potential impacts of the proposed rule on agriculture a likely focus of controversy. Even before release of the proposed rule, one of the sector's concerns about a new "waters of the United States" rule has been whether it would modify existing statutory provisions that exempt "normal farming and ranching" practices from dredge and fill permitting or others that exclude certain agricultural discharges, such as irrigation return flow and stormwater runoff, from all CWA permitting. As described above, the final rule makes no change and does not affect these exemptions, which are self-implementing. An EPA fact sheet discusses the continued exclusions and exemptions.[26] Another of agriculture's concerns was

[24] See the Economic Analysis for explanation and details.

[25] Ibid., p. v.

[26] See http://www2.epa.gov/sites/production/files/2014-03/documents/cwa_ag_exclusions_exemptions.pdf. Comments submitted to the docket for the interpretive rule (Docket ID No. EPA-HQ-OW-2013-0820) are available at http://www.regulations.gov.

the proposed rule's exclusion of some ditches; many said that the proposal was confusing and could be interpreted as extending CWA jurisdiction to agricultural drainage ditches.

Simultaneous with announcing the Clean Water Rule in March 2014, EPA and the Corps issued an interpretive rule that identified 56 conservation practices approved by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) that qualify for exemption under the CWA Section 404(f)(1)(A) exclusion of "normal farming and ranching" activities from Section 404 permit requirements and do not require determination whether the discharge involves a "water of the United States." Essentially, the interpretive rule was intended to provide guidance to determine activities that qualify for 404(f)(1)(A) exemptions. The 56 practices, which are a subset of all NRCS conservation practices, are practices such as stream crossings and wetland restoration that take place in aquatic, riparian, or wetland environments. Through this interpretive rule, the agencies intended to resolve uncertainties about "normal farming" activities that are exempt from permitting when these conservation practices are used. In other words, effective immediately, producers who utilize any of the 56 identified practices according to NRCS technical standards would not need to seek a determination of CWA jurisdiction nor seek a CWA permit. The three agencies also signed a Memorandum of Understanding detailing implementation of the interpretive rule and identifying a process for reviewing and updating the list of qualifying NRCS conservation practices. Although the interpretive rule became effective immediately, EPA and the Corps accepted public comment until July 7, 2014.[27]

The interpretive rule was intended to clarify agricultural practices that are exempt from CWA Section 404 permitting. Nevertheless, there was confusion about many issues, including NRCS's role in providing technical assistance to farmers with respect to 404 permitting, and the apparent requirement that these practices had to meet NRCS technical standards to qualify for the exemption. Public comments submitted on the interpretive rule were uniformly critical—including comments submitted by agriculture stakeholder groups, environmental groups, and some state environmental agencies. Agriculture groups argued that it was procedurally flawed, because it would have substantive impact on farmers, and thus should have been subject to notice-and-comment rulemaking procedures under the Administrative Procedure Act. Many also argued that the interpretive rule narrowed the CWA 404(f)(1)(A) statutory exemptions, because the practices listed in the rule already were excluded from Section 404. Under the interpretive rule, farmers would have to comply with NRCS standards in order to qualify for exemption, resulting in a disincentive to conservation, they said. On the other hand, environmental groups and some state environmental agencies were critical of the interpretive rule for different reasons. They contended that it would exempt activities from permitting that are not truly associated with ongoing farming and that the rule was thus too broad. Some of the listed practices, such as stream crossings, can have significant harmful impacts on water quality and result in violations of state water quality standards, they said.

EPA and Corps officials acknowledged that the 2014 interpretive rule did not appear to have had the intended benefits of clarifying agricultural exemptions and exempting, not contracting, the number of exempted activities, and they said that the agencies and U.S. Department of

[27] Department of Defense, Department of the Army, Corps of Engineers, and Environmental Protection Agency, "Notice of Availability Regarding the Exemption From Permitting Under Section 404(f)(1)(A) of the Clean Water Act to Certain Agricultural Conservation Practices," 79 *Federal Register* 22276, April 21, 2014.The list of practices, the Memorandum of Understanding, and the interpretive rule are available at http://water.epa.gov/lawsregs/guidance/wetlands/agriculture.cfm. USDA had no formal role in developing the Corps-EPA proposed rule, but it was among the federal agencies commenting on it during interagency review.

Agriculture (USDA) were weighing alternatives to the rule. However, before the agencies proposed or took action on the interpretive rule, in the FY2015 omnibus appropriations act, passed in December 2014 (H.R. 83/P.L. 113-235), Congress included a provision directing EPA and the Corps to withdraw it (see "Conclusion" below). On January 29, 2015, the agencies signed a memorandum withdrawing the interpretive rule, effective immediately.[28] Following Congress's action in December, the EPA Administrator indicated that the agency would work with USDA to provide certainty to the regulated community, in a way that provides value both to the government and the agriculture community. No further actions have been announced.

Local Government Concerns

Some local governments also criticized the proposed "waters of the United States" rule. In particular, the National Association of Counties (NACo) argued that counties and other local governments would be affected by the proposed rule in the arena of ditches. NACo pointed out that local governments own and maintain public infrastructure including roadside ditches, flood control channels, and stormwater management structures. Because the proposed rule would have defined some ditches as "waters of the United States" if they meet certain conditions, NACo contended that the proposal potentially increases the number of county-owned ditches under federal jurisdiction. Permit requirements are not an issue, NACo says, but permitting can be time-consuming and expensive.

EPA and Corps officials believed that exclusion of most ditches in the proposed rule actually would decrease federal jurisdiction over ditches. But the issue remained controversial and was addressed with modifications in the final rule. The agencies believe that the exclusions included in the final rule will address the vast majority of roadside and other transportation ditches, as well as ditches on agricultural lands.[29]

Conclusion

The EPA Administrator stated at a congressional hearing in 2014 that it generally takes about one year to finalize a rule. Complex and controversial rules often take much longer from proposal to promulgation. This rule to define "waters of the United States" was finalized 14 months after the proposed rule was announced. It takes effect 60 days after publication in the *Federal Register*.

Once the final rule takes effect, legal challenges are likely, possibly delaying implementation of any rule for years. New regulations may clarify many current questions, but they are unlikely to please all of the competing interests, as one environmental advocate observed.

> However, a rulemaking would only benefit wetlands if it did not reduce the jurisdiction offered by current regulations and if the Administration remained faithful to sound science. If politics were to trump science in the rulemaking process, the likelihood of such a protective rule would not be promising. Also, rules are subject to legal challenge and can be tied up in court for years before they are implemented.[30]

[28] Environmental Protection Agency and Department of Defense, "Notice of Withdrawal," 80 *Federal Register* 6705, February 6, 2015.

[29] Final Rule, p. 37097.

[30] James Murphy, "*Rapanos v. United States*: Wading Through Murky Waters," *National Wetlands Newsletter*, vol. 28, (continued...)

Another consideration is possible action by Congress, even though a final rule has been announced. Congressional interest in the rule has been strong since the proposed rule was announced in March 2014. Hearings were held during the 113th Congress and have continued in the 114th Congress; bills to bar the agencies from finalizing the proposed rule or otherwise alter the agencies' course regarding the rule have been introduced. (For information, see CRS Report R43943, *EPA and the Army Corps' "Waters of the United States" Rule: Congressional Response and Options*, by Claudia Copeland.)

Many critics in Congress and elsewhere urged that the proposed Clean Water Rule be withdrawn, or that the agencies propose a supplemental rule, subject to another round of public comments. EPA and Corps officials pointed out that doing so would leave in place the status quo—with determinations of CWA jurisdiction being made by 38 Corps districts pursuant to existing regulations, coupled with non-binding agency guidance, and many of these determinations involving time-consuming case-specific evaluation.

Some industry and agriculture groups that had criticized the status quo in the past said more recently that they preferred it to the 2014 proposed rule, which they believed was ambiguous and overly broad. EPA and Corps officials believe that the final rule responds to those criticisms. The agencies' intention has been to clarify the rules and make jurisdictional determinations more predictable, less ambiguous, and more timely. Based on press reports of stakeholders' early reactions to the final rule, some believe that the agencies largely succeeded in that objective, while others believe that they did not.[31] Legal challenges to the rule are considered inevitable and will test whether the agencies' interpretation of CWA jurisdiction is consistent with the Supreme Court's recent rulings.

(...continued)

no. 5, September-October 2006, p. 19.

[31] See, for example, Amena H. Saiyid, "Obama Says Water Jurisdiction Rule Provides Clarity, Certainty; Critics Claim Overreach," *Daily Environment Report*, May 28, 2015, p. A-1. Also see releases from organizations such as the American Farm Bureau Federation, "Final 'Waters of the U.S.' rule: No, No, No! No Clarity, No Certainty, No Limits on Agency Power," June 11, 2015 (http://www.fb.org/index.php?action=newsroom.news_article&id=311); and the National Association of Counties, "NACo Voices Concern on Final 'Waters of the U.S.' Rule," June 8, 2015 (http://www.naco.org/legislation/WW/Lists/Posts/Post.aspx?ID=1037).

Table 1. Comparison of "Definition of Waters of the United States" Regulatory Language

Existing Regulatory Language, 2014 Proposed Rule, and Revised Language in Final Rule Announced May 27, 2015

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
(a) The term *waters of the United States* means	(a) For purposes of all sections of the Clean Water Act, 33 U.S.C. 1251 *et seq.* and its implementing regulations, subject to the exclusions in subsection (b) of this section, the term "waters of the United States" means:	(a) For purposes of all sections of the Clean Water Act, 33 U.S.C. 1251 *et seq.* and its implementing regulations, subject to the exclusions in subsection (b) of this section, the term "waters of the United States" means:	
(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;	(1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;	(1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;	These waters are often referred to as "traditional navigable waters" (TNWs), which include but are not limited to the "navigable waters of the United States" within the meaning of Section 10 of the Rivers and Harbors Act of 1899. No change from the existing rule or 2014 proposal.
(2) All interstate waters including interstate wetlands;	(2) All interstate waters, including interstate wetlands;	(2) All interstate waters, including interstate wetlands;	These waters include tributaries to interstate waters, waters adjacent to interstate waters, waters adjacent to tributaries of interstate waters, and others that have a significant nexus to interstate waters. No change from the existing rule or 2014 proposal. Interstate waters would continue to be "waters of the United States" even if they are not navigable in fact and do not connect to such waters.
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign	(7) On a case-specific basis, other waters, including wetlands, provided that those waters alone, or in combination with other similarly situated waters, including wetlands, located in the same region, have a significant nexus to a water identified in paragraphs (a)(1)	(7) All waters in paragraphs (i) through (v) of this paragraph where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. The waters identified in paragraphs (i) through (v) of this paragraph are similarly situated and shall	In the existing rule, there is a non-exclusive list of the types of "other waters" which may be found to be "waters of the U.S." The existing description is omitted under the final rule as unnecessary and confusing because it has been incorrectly

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are or could be used for industrial purpose by industries in interstate commerce;	through (3) of this section.	be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required. (i) *Prairie potholes*. Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest. (ii) *Carolina bays and Delmarva bays*. Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain. (iii) *Pocosins*. Pocosins are evergreen shrub- and tree-dominated wetlands found predominantly along the Central Atlantic coastal plain. (iv) *Western vernal pools*. Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers. (v) *Texas coastal prairie wetlands*. Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of	read as an exclusive list. Under the final rule, the five subcategories of waters listed in this paragraph are not jurisdictional as a single category or class, but the agencies have determined that they are similarly situated because they perform similar functions and are located sufficiently close to each other to function together in affecting downstream waters. Therefore, EPA and the Corps believe that it is reasonable that these waters be evaluated in combination (i.e., prairie potholes with prairie potholes) for purposes of a case-specific significant nexus. They may be evaluated either individually or as a group of waters in a region, meaning the watershed that drains to the nearest traditional navigable water, interstate water, or the territorial seas through a single point of entry.

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
		depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.	
		(8) All waters located within the 100-year floodplain of a water identified in (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in (a)(1) through (3) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water, and no case-specific significant nexus is required.	For these waters, the agencies have not made a determination that the waters are "similarly situated" (unlike the waters described in paragraph (a)(7)). As a result, a significant nexus analysis for these waters will include a case-specific assessment of whether there are any similarly situated waters, as well as whether the water, alone or in combination with any waters determined to be similarly situated, has a significant nexus to a traditional navigable water, interstate water, or territorial seas. In a change from the proposed rule, the final rule sets a distance threshold for case-specific evaluation of these waters for significant nexus. In addition to distance, aquatic functions will play a prominent role in determining whether specific waters covered by this paragraph have a significant nexus.
(4) All impoundments of waters otherwise defined as waters of the United States under the definition;	(4) All impoundments of waters identified in paragraphs (a)(1) through (3) and (5) of this section;	(4) All impoundments of waters otherwise identified as waters of the United States under this section;	Impoundments of a traditional navigable water, interstate water, the territorial seas, or a tributary are jurisdictional by rule. As a matter of policy and law, impoundments do not de-federalize a water, even where there is no longer flow below the impoundment. That is,

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
			damming or impounding a water of the United States does not make the water non-jurisdictional.
(5) Tributaries of waters identified in paragraphs (a)(1) through (4) of this section;	(5) All tributaries of waters identified in paragraphs (a)(1) through (4) of this section;	(5) All tributaries, as defined in paragraph (c)(3) of this section, of waters identified in paragraphs (a)(1) through (3) of this section;	Tributaries, as defined in the final rule, of a traditional navigable water, interstate water, the territorial seas, or an impoundment would be jurisdictional by rule and do not require a case-specific significant nexus analysis. Unless excluded under subsection (b) of the rule, any water that meets the rule's definition of tributary is a water of the United States. Waters that meet the rule's definition of tributary remain tributaries even if there is a manmade or natural break at some point along the connection to the traditional navigable water, interstate water, or the territorial sea, so long as bed and banks and an ordinary high water mark are present upstream of the break. "Tributary" is defined below. It includes natural, undisturbed waters and those that have been man-altered or constructed, but which science shows function as a tributary.
(6) The territorial seas;	(3) The territorial seas;	(3) The territorial seas;	This term establishes the seaward limit of "waters of the United States." Jurisdictional by rule; no change from the existing rule. The term generally refers to the part of the ocean immediately adjacent to shoreline and extending seaward up to 12 miles.

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.	(6) All waters, including wetlands, adjacent to a water identified in paragraphs (a)(1) through (5) of this section; and	(6) All waters adjacent to a water identified in paragraphs (a)(1) through (5) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;	All waters adjacent to a traditional navigable water, interstate water, the territorial seas, impoundment, or tributary would be jurisdictional by rule. Under the rule, an adjacent water includes wetlands within or abutting its ordinary high water mark. Waters separated by a berm or other similar feature remain "adjacent."
	(b) The following are not "waters of the United States"	**(b) The following are not "waters of the United States"**	
(8) Waters of the United States do not include prior converted cropland.[c] Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.	(2) Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.	(2) Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.	No change proposed.
Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. 423.11(m) which also meet the criteria of this definition) are not waters of the United States.[d]	(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act.	(1) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act.	The agencies do not believe that omitting the parenthetical reference to 40 C.F.R. 423.11(m) is a change in substance to the waste treatment exclusion or how it is applied.
	(3) Ditches that are excavated wholly in uplands, drain only uplands or non-jurisdictional waters, and have less than perennial flow. (4) Ditches that do not contribute flow, either directly or through another water, to a water identified in paragraphs (a)(1)	(3) The following ditches: (i) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary. (ii) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands. (iii) Ditches that do not flow, either	Under the final rule, a ditch may be a "water of the United States" only if it meets the definition of "tributary" and is not excluded under this subparagraph. The final rule codifies and clarifies long-standing practice and guidance (including 1986 and 1988 preamble language), which has been to exclude these waters from jurisdiction.

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
	through (4) of this section.	directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section.	A ditch that relocates a stream is not an excluded ditch, and a stream is relocated either when at least a portion of its original channel has been physically moved, or when the majority of its flow has been redirected. If a ditch has been cut to carry intermittent or perennial flow from a wetland, the ditch is serving as a conduit for transferring flow from a wetland to a downstream water. Thus, the ditch has changed the wetland's hydrologic regime, and the segment of the ditch that physically intersects the wetland would be considered jurisdictional. The final rule confirms long-standing policy that ditches may function as point sources that discharge pollutants, thus subject to CWA Section 402.
	(5) The following features: (i) Artificially irrigated areas that would revert to upland should application of irrigation water to that area cease; (ii) artificial lakes or ponds created by excavating and/or diking dry land and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing; (iii) artificial reflecting pools or swimming pools created by excavating and/or diking dry land; (iv) small ornamental waters created by excavating and/or diking dry land for primarily aesthetic reasons;	(4) The following features: (i) Artificially irrigated areas that would revert to dry land should application of water to that area cease; (ii) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds; (iii) Artificial reflecting pools or swimming pools created in dry land; (iv) Small ornamental waters created in dry land; (v) Water-filled depressions created in	The final rule codifies long-standing practice and guidance (including 1986 and 1988 preamble language), which has been to exclude these waters from jurisdiction. These waters would not be jurisdictional by rule. The final rule is revised to omit terms that were confusing in the proposal (e.g., "upland") and clarify others (e.g., "water-filled depressions"). The list of excluded features is illustrative, not exhaustive.

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
	(v) water-filled depressions created incidental to construction activity; (vi) groundwater, including groundwater drained through subsurface drainage systems; and (vii) gullies and rills and non-wetland swales.	dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water; (vi) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and (vii) Puddles.	
		(5) Groundwater, including groundwater drained through subsurface drainage systems.	The exclusion does not apply to surface expressions of groundwater, such as where groundwater emerges on the surface and becomes baseflow in streams or spring fed ponds.
		(6) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.	The exclusion is intended to address engineered stormwater control structures in municipal or urban environments. It is intended to exclude the diverse range of stormwater control features that are currently in place, such as rain gardens, low impact development and flood control systems, and may be developed in the future.
		(7) Wastewater recycling structures constructed in dry land; detention and retention basins build for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.	This exclusion codifies long-standing agency practice and encourages water management practices that the agencies agree are important and beneficial.
	(c) Definitions—	**(c) Definitions—**In this section, the following definitions apply:	

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
(b) The term *wetlands* means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.	(6) **Wetlands**: The term *wetlands* means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.	(4) *Wetland*s. The term *wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that, under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.	No change. Wetlands are ecosystems that often occur at the edge of aquatic (water, fresh or salty) or terrestrial (upland) systems. Wetlands typically represent transitional zones between aquatic and upland systems.
(c) The term *adjacent* means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands."	(1) **Adjacent**: The term *adjacent* means bordering, contiguous or neighboring. Waters, including wetlands, separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent waters."	(1) *Adjacent*. The term *adjacent* means bordering, contiguous, or neighboring a water identified in paragraphs (a)(1) through (5) of this section, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of adjacency, an open water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified in paragraphs (a)(1) through (5) of this section. Adjacent waters also include all waters that connect segments of a water identified in paragraphs (a)(1) through (5) or are located at the head of a water identified in paragraphs (a)(1) through (5) of this section and are bordering, contiguous, or neighboring such waters. Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent.	The rule includes wetlands and other waters that meet the definition of adjacent, including "neighboring," which is defined separately. Only waters, not land, are adjacent. Within the definition of "adjacent," the terms bordering and contiguous are well understood, and the agencies will continue to interpret and implement those terms consistent with current policy and practice.
(d) The term *high tide line* means the line of intersection of the land with the water's surface at the maximum height	No change proposed	(7) *High tide line*. The term *high tide line* means the line of intersection of the land with the water's surface at the maximum	

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds, such as those accompanying a hurricane or other intense storm.		height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.	
(e) The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area.	No change proposed	(6) *Ordinary high water mark*. The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area.	"Ordinary high water mark" sets the boundary of adjacent non-wetland waters (e.g., open waters such as lakes and ponds). Physical indicators of ordinary high water mark can be created by perennial, intermittent, and ephemeral flows.
	(2) **Neighboring**: The term *neighboring*, for purposes of the term "adjacent" in this section, includes waters located within the riparian area or floodplain of a water identified in paragraphs (a)(1) through (a)(5) of this section, or waters with a surface or shallow subsurface hydrologic connection to such a	(2) *Neighboring*. The term *neighboring* means: (i) All waters located within 100 feet of the ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section. The entire water is neighboring if a portion is located within	"Neighboring" is the key determinant of whether a water is "adjacent," and thus jurisdictional by rule. Where the 100-year floodplain is greater than 1,500 feet, all wetlands within 1,500 feet of the tributary's ordinary high water mark are jurisdictional because

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
	jurisdictional water.	100 feet of the ordinary high water mark; (ii) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (5) of this section and not more than 1,500 feet from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain; (iii) All waters located within 1,500 feet of the high tide line of a water identified in paragraphs (a)(1) or (a)(3) of this section, and all waters within 1,500 feet of the ordinary high water mark of the Great Lakes. The entire water is neighboring if a portion is located within 1,500 feet of the high tide line or within 1,500 feet of the ordinary high water mark of the Great Lakes.	they are "neighboring" to the tributary, regardless of the wetland's position relative to each other. Waters within the 100-year floodplain that are located more than 1,500 feet and up to 4,000 feet from the ordinary high water mark, or high tide line, are subject to case-specific significant nexus analysis under paragraph (a)(8).
	(3) **Riparian area**: The term *riparian area* means an area bordering a water where surface or subsurface hydrology influence the ecological processes and plant and animal community structure in that area. Riparian areas are transitional areas between aquatic and terrestrial ecosystems that influence the exchange of energy and materials between those ecosystems.		Omitted in the final rule because the agencies determined that the use of the riparian area was unnecessarily complicated and that as a general matter, waters within the riparian area will be within the 100-year floodplain.
	(4) **Floodplain:** The term floodplain means an area bordering inland or coastal waters that was formed by sediment deposition from such water under present climatic conditions and is inundated during periods of moderate to		Omitted in the final rule, which uses reference to 100-year floodplain in order to more clearly identify the outer limit of "neighborning."

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
	high water flows. (5) **Tributary**: The term *tributary* means a waterbody physically characterized by the presence of a bed and banks and ordinary high water mark, as defined at 33 C.F.R. §328.3(e), which contributes flow, either directly or through another water, to a water identified in paragraphs (a)(1) through (4) of this section. In addition, wetlands, lakes, and ponds are tributaries (even if they lack a bed and banks or ordinary high water mark) if they contribute flow, either directly or through another water to a water identified in paragraphs (a)(1) through (3) of this section. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more man-made breaks (such as bridges, culverts, pipes, or dams) or one or more natural breaks (such as wetlands at the head of or along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A tributary, including wetlands, can be a natural, man-altered, or man-made waterbody and includes waters such as rivers, streams, lakes, ponds, impoundments, canals, and ditches not excluded in paragraph (b)(3) or (4) of this section.	(3) *Tributary* and *tributaries*. The terms *tributary* and *tributaries* each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (a)(4) of this section), to a water identified in paragraphs (a)(1) through (3) of this section that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary. A tributary can be a natural, man-altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded under paragraph (b) of this section. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if it contributes flow through a water of the United States that does not meet the	This term has not previously been defined in any regulation or preamble. Bed and banks and ordinary high water mark (OHWM) are features that generally are physical indicators of flow. OHWM generally defines the lateral limits of a water. In many tributaries, the bed is that part of the channel below the OHWM, and the banks often extend above the OHWM. Man-altered and man-made tributaries perform many of the same functions as natural tributaries and provide connectivity between streams and downstream rivers.

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
		definition of tributary or through a non-jurisdictional water to a water identified in paragraphs (a)(1) through (3) of this section.	
	(7) **Significant nexus**: The term *significant nexus* means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region (i.e., the watershed that drains to a water identified in paragraphs (a)(1) through (3) of this section), significantly affects the chemical, physical or biological integrity of a water identified in paragraphs (a)(1) through (3) of this section. For an effect to be significant, it must be more than speculative or insubstantial. Other waters, including wetlands, are similarly situated when they perform similar functions and are located sufficiently close together or close to a "water of the U.S." so that they can be evaluated as a single landscape unit with regard to their effect on the chemical, physical, or biological integrity of a water identified in paragraphs (a)(1) through (3) of this section.	(8) *Significant nexus*. The *term significant nexus* means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (a)(1) through (3) of this section. The term "in the region" means the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water's effect on downstream (a)(1) through (3) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (A) through (I) of this paragraph.[e] A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (a)(1) through (3) of this section. Functions relevant to the significant nexus evaluation are the following:	In the final rule, the agencies list specific functions relevant to significant nexus evaluation to add clarity and transparency. A water does not need to perform all functions. If a water performs a single function that has significant impact on a downstream water, that is a significant nexus. Under the final rule, only waters covered by subparagraph (a)(7) or (a)(8) require case-specific analysis.

Existing Regulatory Language[a]	Proposed Regulatory Language	Revised Regulatory Language	Comments[b]
		(i) Sediment trapping, (ii) Nutrient recycling, (iii) Pollutant trapping, transformation, filtering, and transport, (iv) Retention and attenuation of flood waters, (v) Runoff storage, (vi) Contribution of flow, (vii) Export of organic matter, (viii) Export of food resources, and (ix) Provision of life cycle-dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (a)(1) through (3) of this section.	

Source: Prepared by CRS.

Notes: The proposed rule that was announced on March 25, 2014, was published in the *Federal Register* on April 21, 2014 (79 *Federal Register* 22188-22274). The final revised rule was announced jointly by EPA and the Army Corps on May 27, 2015, and was published in the *Federal Register* on June 29: Department of the Army, Corps of Engineers, and Environmental Protection Agency, "Clean Water Rule: Definition of 'Waters of the United States,' Final Rule," 80 *Federal Register* 37054-37127, June 29, 2015.

a. 33 C.F.R. 328.3, 40 C.F.R. 122.2, 40 C.F.R. 230.3, and 40 C.F.R. 232.2 (definition of "waters of the United States"). The term "navigable waters" is defined at 40 C.F.R. 110.1 (Discharge of Oil); 40 C.F.R. 112.2 (Oil Pollution Prevention); 40 C.F.R. 116.3 (Designation of Hazardous Substance); 40 C.F.R. 117.1(i) (Determination of Reportable Quantities for Hazardous Substances); 40 C.F.R. 300.5 and Appendix E 1.5 to Part 300 (National Oil and Hazardous Substances Pollution Contingency Plan); and 40 C.F.R. 302.3 (Designation, Reportable Quantities, and Notification).

b. Comments in this table are drawn from the preamble and text of the final rule.

c. The term "prior converted cropland" is included in the U.S. Department of Agriculture's administrative definition of the term "wetland" (see 7 C.F.R. 12.2).

d. A definition of "waste treatment system" is found in EPA regulations (35 C.F.R. 35.905): "Complete waste treatment system. A complete waste treatment system consists of all of the treatment works necessary to meet the requirements of title III of the Act, involved in (a) The transport of waste waters from individual homes or buildings to a plant or facility where treatment of the waste water is accomplished; (b) the treatment of the waste waters to remove pollutants; and (c) the

ultimate disposal, including recycling or reuse, of the treated waste waters and residues which result from the treatment process. One complete waste treatment system would, normally, include one treatment plant or facility, but also includes two or more connected or integrated treatment plants or facilities."

e. Probably should be "(i) through (ix) of this paragraph."

Appendix. EPA's Connectivity Report and Review by the Science Advisory Board

In September 2013, EPA released a draft report that reviews and synthesizes the peer-reviewed scientific literature on the connectivity or isolation of streams and wetlands relative to large water bodies such as rivers, lakes, estuaries, and oceans. As described below, after review and revision, this report was finalized in January 2015. The purpose of the review, according to EPA, was to summarize current understanding about these connections, the factors that influence them, and mechanisms by which connected waters affect the function or condition of downstream waters. The focus of the draft report, which was prepared by EPA's Office of Research and Development, was on small or temporary non-tidal streams, wetlands, and open waters. Based on the reviewed literature, it made certain findings.

- All tributary streams, including perennial, intermittent, and ephemeral streams, are physically, chemically, and biologically connected to downstream rivers.
- Wetlands and open waters in riparian areas and floodplains also are physically, chemically, and biologically connected with rivers and serve an important role in the integrity of downstream waters. In these types of wetlands, water-borne materials can be transported from the wetland to the river network and vice versa (e.g., water from a stream flows into and affects the wetland).
- Wetlands and open waters where water only flows from the wetland or water to a river network, (i.e., non-floodplain waters and wetlands that lack surface water inlets) such as many prairie potholes, vernal pools, and playa lakes, provide numerous functions that can benefit downstream water quality and integrity. However, because such wetlands occur on a gradient of connectivity, it is difficult to generalize, from the literature alone, about their effects on downstream waters or to generalize about the degree of connectivity (absolute or relative).

EPA asked its Science Advisory Board (SAB) to review the draft report and to comment on whether its conclusions and findings are supported by the available science.[32] The EPA draft report is not intended as a policy document—it does not reference either the Scalia plurality or Kennedy tests in *Rapanos*, nor does it address legal standards for CWA jurisdiction. Nevertheless, the report is important to EPA and the Corps because, when finalized, it will provide a scientific basis needed to clarify CWA jurisdiction and, thus, to inform the "waters of the United States" rulemaking.[33] The SAB convened a special panel of scientists to review the draft synthesis document. This ad hoc panel held meetings and teleconferences from late 2013 through mid-2014 and prepared a report with recommendations.

[32] The SAB was established pursuant to the Environmental Research, Development, and Demonstration Authorization Act (42 U.S.C. 4365) to provide independent scientific and technical advice to the EPA Administrator on the technical basis for agency positions and regulations.

[33] See U.S. Environmental Protection Agency, "Clean Water Act Definition of 'Waters of the United States,'" http://water.epa.gov/lawsregs/guidance/wetlands/CWAwaters.cfm.

In its report,[34] the SAB ad hoc panel found strong support for the first two of EPA's major conclusions in the synthesis document and concluded that it is a thorough and technically accurate review of the literature on the connectivity of streams and wetlands to downstream waters. In particular, the panel agreed with EPA's conclusions that ephemeral, intermittent, and perennial streams exert a strong influence on the character and functioning of downstream waters and that tributary streams are connected to downstream waters. Further, the panel agreed with EPA that streams and wetlands in floodplain settings are physically, chemically, and/or biologically connected to downstream navigable waters.

The ad hoc panel found that the peer-reviewed literature supports EPA's conclusions in the synthesis report that connectivity occurs along a gradient or continuum between fully connected and completely isolated, with a transition in between that varies case-by-case. However, the panel concluded that the EPA report often refers to connectivity as though it is a binary property (connected versus not connected). Instead, the panel found that there are four dimensions to connectivity (longitudinal, lateral, vertical, and temporal). It is technically more accurate to state that the consequences to downstream waters are determined by variation in the frequency, duration, predictability, and magnitude of connections and that relatively low levels of connectivity can be meaningful in terms of impacts.

The ad hoc panel disagreed with EPA's third major conclusion, that it is difficult to generalize from currently available literature the degree of connectivity or the downstream effects of non-floodplain waters and wetlands that are not connected to a river network through surface or shallow subsurface water. The SAB panel found that "the scientific literature supports a more definitive statement that reflects how numerous functions of non-floodplain wetlands sustain the physical, chemical, and/or biological integrity of downstream waters, although the degree of connectivity can vary widely."[35] The report would be strengthened, the ad hoc panel said, if it framed the discussion of connectivity gradients and their consequences as a function of the magnitude, duration, and frequency of connectivity pathways among wetlands and downstream waters and if it quantified each connection, to the degree possible, while identifying research and data gaps. The panel found that at sufficiently large spatial and temporal scales, all waters and wetlands are connected. More important are the degree of connection (e.g., frequency, duration) and the extent to which those connections affect the chemical, physical, and biological integrity of downstream waters. Within non-floodplain wetlands, the degree of connectivity and implications for integrity of downstream waters vary considerably.

> The EPA Report suggests that determining the connectedness of each non-floodplain wetland must be done on a case-by-case basis. The SAB suggests that the vast majority of non-floodplain wetlands can be classified with respect to some degree of hydrologic, chemical or biological connections to downstream waters; however, some hydrologically and spatially disconnected wetlands may need to be considered on a case-by-case basis. The challenge for the EPA is to describe the hierarchy of decisions and the tools necessary to assess the degree of connection necessary to warrant case-by-case analysis.[36]

[34] Science Advisory Board, "SAB Review of the Draft EPA Report *Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence*, Draft Report," August 11, 2014, 105 pp., http://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006be86e/212BB1480331835285257D350041A1C0/$File/SAB+Connectivity+Panel+Draft+Report_8_11_14_%28quality+review+draft%29.pdf.

[35] Ibid., pp. 1, 6.

[36] Ibid., p. 56.

The full, chartered SAB reviewed the ad hoc panel's report in September 2014. SAB members said that the panel's review of the draft EPA study was technically accurate and clear and that it accurately established linkages between streams, wetlands, and downstream waters. The SAB members asked for several minor revisions to the ad hoc panel's report, which were reflected in an October 17, 2014, letter to the EPA Administrator with its findings and recommendations regarding the synthesis document.[37]

Based on the SAB review, EPA's scientists revised the draft scientific assessment report and released a final report in January 2015.[38] As revised, the report endorses the SAB recommendation in full by interpreting the literature on connectivity of streams to downstream waters as reflecting a gradient approach that recognizes variation in the frequency, duration, magnitude, predictability, and consequences of those connections. In the final report, EPA says that connectivity of streams and wetlands to downstream waters occurs along a continuum, and that variation in the degree of connectivity influences the range of functions provided by streams and wetlands. The final report no longer concludes that there is insufficient science to find that there are connections between non-floodplain wetlands and downstream waters, suggesting that case-specific analysis may not be needed for all such waters to determine that CWA jurisdiction applies.

SAB Review of the Proposed "Waters of the U.S." Rule

In addition to advising the EPA Administrator on the "connectivity" report, the chartered SAB agreed to review the adequacy of the scientific and technical basis of the proposed "waters of the United States" rule. As input to the SAB, members of the ad hoc panel that reviewed the "connectivity" report subsequently reviewed the proposed rule. (Unlike their formal review of the "connectivity" report, the panel did not seek consensus on their views of the scientific basis of the proposed CWA rule.) The ad hoc panel sought to bring their scientific expertise to questions of law and policy in the proposed rule, but at the same time, members' comments highlighted some difficulties in doing so.

Members of the ad hoc panel found general agreement that, based on available science, tributaries and adjacent waters and wetlands are appropriately jurisdictional under the proposed rule. They generally agreed that from a scientist's perspective, key terms in the proposed rule need clarification and better definition, including "significant," "similarly situated," "floodplain," and "adjacent." The definition of "adjacent" is important, for example, because where "adjacent" is determined then determines the beginning of "other waters" that require case-by-case evaluation of jurisdiction. Several said that the proposed definition of "tributary" should be broader, that is, that it should specify a bed and bank (as proposed) and *in some cases* an ordinary high water mark (but not in all cases, as proposed in the rule). Several referred to the panel's review of the "connectivity" report and said that the rule should equally reflect the importance of chemical and biological connections between waters, as well as hydrological connections, in determining significant nexus, as the panel's report did. Similarly, several noted the emphasis in the panel's

[37] The October 17, 2014, letter and SAB final peer review of the draft "connectivity" report is available at http://yosemite.epa.gov/sab/sabproduct.nsf/WebReportsLastFiveBOARD/AF1A28537854F8AB85257D74005003D2/$File/EPA-SAB-15-001+unsigned.pdf.

[38] Environmental Protection Agency, Office of Research and Development, *Connectivity of Streams & Wetlands to Downstream Waters: A Review & Synthesis of the Scientific Evidence*, EPA/600/R-14-475F, January 2015, http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=296414.

report on connections resulting from groundwater pathways—shallow subsurface, shallow or deep groundwater—in questioning the categorical exclusion of federal jurisdiction over groundwater in the proposed rule.[39] Likewise, some on the panel said that the distinction between ditches that would and would not be jurisdictional under the proposed rule is unclear and may not be adequately supported by the science, although they recognized that the agencies may have policy reasons for including some ditches as jurisdictional and excluding others.

The full chartered SAB also considered the ad hoc panel's review of the proposed "waters of the United States" rule in September, and it approved an advisory letter to be sent to the EPA Administrator.[40] The letter also supports case-by-case consideration of most "other waters" as "waters of the United States," but it finds that there is adequate scientific evident to support a determination that certain types of waters in particular U.S. regions (e.g., prairie potholes, Texas coastal prairie wetlands) could be categorically considered waters of the United States, thus not requiring case-specific analysis. In the letter, the SAB urged EPA to reconsider the definition of tributaries, which the proposed rule defines as having a bed, a bank, and an ordinary high water mark, because in the SAB's judgment, not all tributaries have ordinary high water marks. Finally, the letter disagrees with certain categorical exclusions in the proposed rule, saying that science does not justify excluding waters such as groundwater, ditches with only intermittent or ephemeral flow, gullies, rills, and non-wetland swales, because in many cases they can be connected to jurisdictional waters or can be conduits for moving water between jurisdictional waters.

[39] In addition to uncertainty over the scope of CWA jurisdiction in general, courts are split on the question of whether EPA and the Corps may assert jurisdiction over groundwater connected to navigable waters. The statutory language is ambiguous when discussing groundwater. See Anna Makowski, "Beneath the Surface of the Clean Water Act: Exploring the Depth of the Act's Jurisdictional Scope of Groundwater Pollution," *Oregon Law Review*, vol. 91 (2012), pp. 495-526.

[40] The text of the SAB letter concerning the proposed rule is available at http://yosemite.epa.gov/sab/sabproduct.nsf/518D4909D94CB6E585257D6300767DD6/$File/EPA-SAB-14-007+unsigned.pdf.

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