

DITCHING OUR INNOCENCE: THE CLEAN WATER ACT IN THE AGE OF THE ANTHROPOCENE

BY

RACHAEL SALCIDO* & KARRIGAN BÖRK**

Humanity has entered the Age of the Anthropocene, a geologic era marked by the emergence of human activity as the single most dominant influence on Earth's environment. Every ecosystem shows signs of anthropogenic influence, and the environments we experience everyday are often shaped almost entirely by human actions and decisions. The new discipline of reconciliation ecology recognizes this reality and suggests that we must manage the new habitats we create in order to protect species diversity and ecosystem services. But the 2015 rule defining the jurisdiction of the Clean Water Act explicitly excludes many manmade environments, including many artificial lakes, farm ponds, reflecting pools, and most ditches, treating these landscape features as faux nature somehow unworthy of protection. This treatment is a marked departure from past Environmental Protection Agency and U.S. Army Corps of Engineers practices, which allowed for consideration of such places on a case-by-case basis. This departure finds no support in the Supreme Court precedent leading up to the new rule and seems to be based entirely on a shortsighted view of these places as somehow unimportant to protecting the waters of the United States. Based on the law and science surrounding ditches, we conclude that such places merit protection under the Clean Water Act.

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* Professor of Law, University of the Pacific, McGeorge School of Law.

** Visiting Assistant Professor of Law, University of the Pacific, McGeorge School of Law, and Visiting Assistant Professor of Environmental Sciences, University of the Pacific. The authors would like to thank Patrick Lewis, Class of 2016, for research assistance.

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I. INTRODUCTION

At the University of California, Davis, the UC Davis Arboretum stretches along the campus’s southern border. The Arboretum covers more than one hundred acres and hosts the largest assemblage of California native plants in the California interior.¹ The Arboretum houses more than thirty species of mammals, seven fish species, three amphibian species, nineteen kinds of reptiles, and more than 135 species of birds have been observed nesting or roosting in the Arboretum.² At a campus focused on the environment, the Arboretum serves as a constant reminder of the stakes in our environmental debates. And the living heart of the Arboretum is a long, narrow waterway, which broadens in several locations into picturesque reflecting pools. The Arboretum Waterway and associated ponds cover ten acres and hold roughly 1.8 million cubic feet of water at full capacity.³ A path runs the roughly one and one third mile length of the Arboretum Waterway, through the length the Arboretum, crossing and recrossing the stream. In the summer, when temperatures soar over one hundred degrees Fahrenheit and the campus hasn’t seen a raindrop in months, this stretch of water feels like the only thing keeping the Arboretum from burning up. The Arboretum Waterway gives the Arboretum the feeling of an oasis in California’s seasonal desert.

¹ Univ. of Cal. Davis Arboretum, *About Us*, http://arboretum.ucdavis.edu/about_us.aspx (last visited Apr. 9, 2016); Barbara Anderson, *In Our Own Backyard: A History of the UC Davis Arboretum*, UC DAVIS MAGAZINE, Spring 1997, http://ucdavismagazine.ucdavis.edu/issues/sp97/Feature/Feature_Arbo_1.html (last visited Apr. 9, 2016).

² Univ. of Cal. Davis Arboretum, *Wildlife in the Arboretum*, <http://arboretum.ucdavis.edu/wildlife.aspx> (last visited Apr. 9, 2016).

³ UNIV. OF CAL. OFFICE OF RES. MGMT. AND PLANNING, ARBORETUM WATERWAY IMPROVEMENTS PROJECT 11 (May 2006) [hereinafter WATERWAY IMPROVEMENTS PROJECT]; UNIV. OF CAL. DAVIS, 2003 LONG RANGE DEVELOPMENT PLAN: FINAL ENVIRONMENTAL IMPACT REPORT 4.8-10 (2003) [hereinafter LONG RANGE DEVELOPMENT PLAN FIER], *available at* http://sustainability.ucdavis.edu/local_resources/docs/enviroreview/lrdpeir/4.08_hydrowtrqual.pdf.

The problem with this image, of course, is that this isn't real nature. It's all just a human construction. The waterway running through the Arboretum is a ditch, or maybe a drainage pond, running along what was once roughly the course of the North Fork of Putah Creek, the Creek's historic main stem. The city of Davis, California,⁴ experienced regular flooding from the North Fork of Putah Creek until the 1890s, when the stream was rerouted to a manmade streambed running south of the city.⁵ Rerouting the stream left an empty streambed through the city. The Corps of Engineers finished the rerouting in the 1940s, with the addition of permanent levees along the new southern route for the creek and the historic North Fork.⁶ Volunteers created the "creek" running through the Arboretum in 1969, along the empty channel of the North Fork of Putah Creek.⁷ The water in the Arboretum Waterway comes from the campus's central drainage system, which collects storm water runoff and sends it, via large pipes, into the Arboretum Waterway.⁸ During major rain events, the storm water may flow via pipe into a pump pond and then into an underground storm drain; aside from these events, the creek has no flow.⁹ So this isn't a real creek, or real nature. It's just something we made to look pretty on campus. Faux nature,¹⁰ if you will.

But here's the rub: for the 250,000 people who visit the Arboretum Waterway every year,¹¹ for the more than 100 UC Davis classes that use the arboretum,¹² and for the thousands of school children who visit annually, this place, with its manmade creek, may be the closest they come to nature.¹³ And certainly, to the fish, wildlife, and plants that call the Arboretum home, the waterway's unnatural origin doesn't matter at all.

More broadly, most of our natural places have some degree of human impact—every ecosystem we have studied shows pervasive human impacts.¹⁴ A few examples: nearly all of the larger rivers in the northern third

⁴ Davis began its life as Davisville in the 1860s. City of Davis, Cal., *History & Symbols*, <http://cityofdavis.org/about-davis/history-symbols> (last visited Apr. 9, 2016).

⁵ LONG RANGE DEVELOPMENT PLAN FIER, *supra* note 3, at 4.8-1 to 4.8-2.

⁶ *Id.* at 4.8-2.

⁷ CITY OF DAVIS, NISHI GATEWAY PROJECT DRAFT ENVIRONMENTAL IMPACT REPORT 4.9-1 (2015), available at <http://documents.cityofdavis.org/Media/Default/Documents/PDF/CDD/ED/projects/Innovation-Centers/Nishi/Draft-EIR/4.09-Hydrology-and-Water-Quality.pdf>.

⁸ WATERWAY IMPROVEMENTS PROJECT, *supra* note 3, at 56.

⁹ MOORE IACOFANO GOLTSMAN, INC., UC DAVIS LONG RANGE DEVELOPMENT PLAN 18 (2003), available at <http://sustainability.ucdavis.edu/progress/commitment/planning/lrdp.html>.

¹⁰ "Faux nature" is "a landscape created or restored by humans to mimic as nearly as possible the natural environment that may have existed there or somewhere else at a prior time." Rachael E. Salcido, *The Rocky Mountain Arsenal National Wildlife Refuge: On a Rocky Road to Creating a Community Asset*, 47 J. MARSHALL L. REV. 1401, 1413-14 (2014).

¹¹ Anderson, *supra* note 1.

¹² Univ. of Cal. Davis Arboretum, *UC Davis Courses and Faculty Use of Arboretum*, <http://arboretum.ucdavis.edu/classes.aspx> (last visited Apr. 9, 2016).

¹³ See Oliver R.W. Pergams & Patricia A. Zaradic, *Is Love of Nature in the US Becoming Love of Electronic Media? 16-Year Downtrend in National Park Visits Explained by Watching Movies, Playing Video Games, Internet Use, and Oil Prices*, 80 J. ENVTL. MGMT. 387, 388 (2006) (documenting a significant downturn in per capita national park visitation since 1988, suggesting a wider trend of societal disconnect with nature).

¹⁴ Josh Dunlan et al., *Re-Wilding North America*, 436 NATURE 913, 913 (2005).

of the world are now regulated by dams, which control most or all of their flow;¹⁵ as early as the 1950s, the United States Department of Agriculture (USDA) estimated that 189,000 miles of open ditches had been constructed to drain agricultural lands;¹⁶ and estimates for loss of riparian habitats in the United States range as high as 70%, due in large part to channelization.¹⁷ We are entering the Age of the Anthropocene, a period in which human activity has become the dominant influence on climate and the environment. We are “curating” our environments and have the capacity to contribute to resilient, intact systems or ensure the demise of all ecosystem services. Increasingly, the old separatist view that considers humans as something quite apart from nature is falling away,¹⁸ as ecologists recognize that we must determine what our natural environment will look like.¹⁹ Our efforts to preserve pristine environments are falling short; there simply aren’t enough pristine places left, and our ecological footprint, through global crises like climate change, encompasses the whole earth. Most of our interactions with the natural world now occur in environments that we have either created out of whole cloth or deeply influenced, and our efforts at environmental protection must recognize the central role of manmade environments in our future. Many of our environmental statutes and regulations are based on the outmoded view of humans as something outside of nature,²⁰ and the new Environmental Protection Agency (EPA) and Army Corps of Engineers (Corps) regulations defining the waters of the United States for jurisdictional purposes under the Clean Water Act (CWA or the Act)²¹ are no exception.²² Although evident in the agencies’ decision to exclude manmade structures like farm ponds and reflecting pools, this paradigm is perhaps clearest in the regulation’s treatment of the lowly ditch. Ditches, and the agricultural processes they

¹⁵ Mats Dynesius & Christer Nilsson, *Fragmentation and Flow Regulation of River Systems in the Northern Third of the World*, 266 SCL 753 (1994).

¹⁶ U.S. DEP’T OF AGRIC., FARM DRAINAGE IN THE UNITED STATES: HISTORY, STATUS AND PROSPECTS 5 (1979), available at <http://files.eric.ed.gov/fulltext/ED295043.pdf>.

¹⁷ *Id.* at 128.

¹⁸ See, e.g., Timothy H. Profeta, *Managing Without a Balance: Environmental Regulation in Light of Ecological Advances*, 7 DUKE ENVTL. L. & POL’Y F. 71, 74 (1996) (discussing how “society’s perspective on environmental regulation must change . . . [to recognize] humans as part of, rather than separate from nature”).

¹⁹ MICHAEL L. ROSENZWIEG, WIN-WIN ECOLOGY: HOW THE EARTH’S SPECIES CAN SURVIVE IN THE MIDST OF HUMAN ENTERPRISE 7 (2003).

²⁰ See, e.g., Jonathan Baert Wiener, *Beyond the Balance of Nature*, 7 DUKE ENVTL. L. & POL’Y F. 1, 12–13 (1996) (discussing the new paradigms of ecology and their connection to environmental law at the first annual Cummings Colloquium on Environmental Law).

²¹ Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2012).

²² As discussed elsewhere in this symposium issue, through a series of cases the U.S. Supreme Court has addressed the extent of the reach of the federal CWA. Most recently, in *Rapanos v. United States*, 547 U.S. 715 (2006), the Justices were split over extent of jurisdiction for overland flows and invalidated a previous regulatory interpretation. The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency, responsible for implementation of the CWA, adopted a new rule, the Clean Water Rule, defining “waters of the United States.” Clean Water Rule: Definition of “Waters of the United States,” 80 Fed. Reg. 37,054 (June 29, 2015) [hereinafter Clean Water Rule] (codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

facilitate, have important impacts on the natural environment that may require regulatory attention, and ditches may serve in and of themselves as important “natural” habitats for species of conservation concern.

The proposed Clean Water Rule attempted to clarify the agencies’ practice related to regulation of ditches, and agricultural activities more broadly.²³ However, the proposed rule’s treatment of ditches became one of the most controversial pieces of the proposed rule, and the agencies revised the final rule to largely excluded ephemeral and intermittent ditches that flow only when it rains, and it include the narrow class of ditches that are also tributaries.²⁴

The controversy over ditches illustrates a confluence of factors. Ditches refer to a manmade hole used to move or hold water,²⁵ and some agitated for the CWA rule to exclude all manmade features from jurisdiction.²⁶ A public campaign designed to ridicule the scope of jurisdiction over ditches and other mandmade features proposed for coverage by the new rule²⁷ illustrates a general strategy of obscuring the actual scope of interconnectedness of certain manmade features, focusing instead on their unnatural origin, as if that origin precluded their having an important role in the ecosystem.

Our thesis is that this view—a view that considers our manmade habitats as not worthy of protection—fails to recognize our role in habitat creation and modification, and simply does not make sense in the Age of the Anthropocene. Treating manmade features as second-class environmental habitats under this rule excludes waters that would otherwise contribute to

²³ Compare Definition of “Waters of the United States” under the Clean Water Act, 79 Fed. Reg. 22,188, 22,272–73 (proposed Apr. 21, 2014) (excluding ditches that are “excavated wholly in uplands, drain only uplands, and have less than perennial flow”), with 33 C.F.R. § 328.3(b)(3)(i)–(ii) (excluding ditches “with ephemeral flow that are not a relocated tributary or excavated in a tributary,” and ditches “with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands”).

²⁴ 80 Fed. Reg. at 37,059; 33 C.F.R. § 328.3(b)(3)(i)–(ii) (2015). As a practical matter, identifying which ditches are excavated in or relocate a tributary will be a difficult, fact-driven determination. The extent of channelization and manipulation of natural features is extensive and the historical antecedents may not be well documented. Moreover, the agency will need to conduct case-specific determinations for what particular stretches of a ditch are jurisdictional and which upstream and downstream portions of the stretches are non jurisdictional. 80 Fed. Reg. at 37,098 (noting that this approach “balances the exclusion with the need to ensure that covered tributaries, and the significant functions they provide, are preserved”).

²⁵ Merriam-Webster, *Ditch*, <http://www.merriam-webster.com/dictionary/ditch> (last visited Apr. 9, 2016) (defining the term “ditch” as “a long narrow hole that is dug along a road, field, etc., and used to hold or move water”). The term “ditch” is not defined in the final rule; the agencies declined to define it, reasoning that doing so would cause more confusion. CLAUDIA COPELAND, CONG. RESEARCH SERV., R43455, EPA AND THE ARMY CORPS’ RULE TO DEFINE “WATERS OF THE UNITED STATES” 10 (2016).

²⁶ 80 Fed. Reg. at 37,079 (noting that “[s]everal commenters suggested that the rule exclude all constructed waters from the definition of ‘waters of the United States’”). The agencies then note that some constructed waters are excluded from jurisdiction, but constructed tributaries are jurisdictional “unless expressly excluded in paragraph (b)” *Id.* The Rule also exempts many other manmade water features in section. See 33 C.F.R. § 328.3(b)(4).

²⁷ See Am. Farm Bureau, *It’s Time to Ditch the Rule*, http://ditchtherule.fb.org/custom_page/its-time-to-ditch-the-rule/ (last visited Apr. 9, 2016) (summarizing the campaign).

the biological, chemical, and physical integrity of the waters of the United States.²⁸

In this Article, Part II briefly covers the statutory, regulatory, and case law background leading up to the new Clean Water Rule, with particular attention to the Supreme Court's discussion of ditches. Part III provides specific analysis of the regulation of ditches as agricultural features under the CWA. Part IV discusses the scientific rationale for protecting ditches, and Part V expands on the argument that regulators are facing resistance to employing legal tools to manage actions affecting manmade features and explains why these features must be protected to effectively address environmental degradation in the United States. Part VI concludes.

II. BACKGROUND ON WATERS OF THE UNITED STATES

Congress passed the CWA in its current form in 1972 to help maintain and improve the quality of the nation's waters.²⁹ The Act seeks "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."³⁰ To accomplish this objective, the CWA bans the unpermitted discharge of any pollutant by any person.³¹ The "discharge of a pollutant" in part means "any addition of any pollutant to navigable waters from any point source";³² pollutants include not just the classic pollutants like chemical wastes and sewage, but also dredged spoil and rock, sand, dirt, and other fill materials.³³ EPA holds primary authority to implement the CWA and has authority to permit discharges that would otherwise violate the Act for most pollutants.³⁴ The Corps, however, has primary authority to permit discharge of dredge and fill materials—that is, the filling in of wetlands and other waters—under section 404.³⁵ These permits are required for any discharge of dredged or fill material into "navigable waters."³⁶ The legal term "navigable waters" has different meanings depending on the context, such as for state

²⁸ Indeed, the agencies emphasize that natural or constructed tributaries have the same general effect downstream. "Given the extensive human modification of watercourses and hydrologic systems throughout the country, it is often difficult to distinguish between natural watercourses and watercourses that are wholly or partly modified or constructed." 80 Fed. Reg. at 37,078.

²⁹ Prior versions of water pollution control statute addressed the issue of water quality but not until 1972 did the federal government play a significant role in implementing controls. Earlier versions were known as the Federal Water Pollution Control Act, and the popular name "Clean Water Act" comes from the amendments in 1977. ROBIN CRAIG, ENVIRONMENTAL LAW IN CONTEXT: CASES AND MATERIALS 712 (3d ed. 2012).

³⁰ CWA, 33 U.S.C. § 1251(a) (2012).

³¹ *Id.* § 1311(a).

³² *Id.* § 1362(12).

³³ *Id.* § 1362(6).

³⁴ *See id.* § 1311(a) (prohibiting discharges of pollutants without a permit); *id.* § 1342 (granting EPA authority to issue permits for the discharge of any pollutant).

³⁵ *Id.* § 1344(a) (granting the Secretary of the Army authority to issue permits for discharges of "dredged or fill material into the navigable waters").

³⁶ *Id.* §§ 1311(a), 1344(a).

title to riverbeds or for commerce.³⁷ In the CWA, Congress defined the term “navigable waters” to mean “the waters of the United States, including the territorial seas.”³⁸ EPA and the Corps understood that Congress intended this ambiguity to broaden jurisdiction beyond just those waters that were navigable-in-fact,³⁹ but the exact scope of jurisdiction based on this definition was unclear. The agencies have defined this jurisdiction through rulemaking several times since the passage of the Act, and in turn their efforts to define their jurisdiction have been challenged in the Supreme Court three times, with varied results.⁴⁰ The agencies’ most recent effort, the Clean Water Rule, builds on those three cases.

A. Supreme Court Decisions Leading to the Clean Water Rule

In 1975, the Corps promulgated a rule that defined CWA jurisdiction so as to include tributaries of navigable waters and wetlands adjacent to navigable waters or their tributaries.⁴¹ In 1985, in *United States v. Riverside Bayview Homes, Inc. (Riverside Bayview)*, a unanimous Court deferred to the Corps’ judgment that adjacent wetlands were waters of the United States and thus jurisdictional.⁴² The court said that the term “navigable” was of “limited import,”⁴³ focusing instead on the broad ambitions of the CWA, “a comprehensive legislative attempt ‘to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.’”⁴⁴ The Court noted that “Congress evidently intended to repudiate limits that had been placed on federal regulation by earlier water pollution control statutes,” and relied on “the evident breadth of congressional concern for protection of water quality and aquatic ecosystems” to find that it was “reasonable for the Corps to interpret the term ‘waters’ to encompass wetlands adjacent to waters as more conventionally defined.”⁴⁵

The Corps published new regulations in 1986, which broadened the definition of waters of the United States to include any waters, including isolated, intrastate waters that affected interstate commerce.⁴⁶ This explicitly included those waters that “are or would be used as habitat” by migratory

³⁷ Robin Craig, *Navigability and Its Consequences: State Title, Mineral Rights, and the Public Trust Doctrine*, in 60 ROCKY MOUNTAIN MIN. L. FOUND. ANN. INST. 7-1 (2015). As Professor Craig explains, federal law definitions of the term “navigable water” “serve to delineate various kinds of federal jurisdiction.” *Id.* at 7-2.

³⁸ 33 U.S.C. § 1362(7).

³⁹ See *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 132–33 (1985) (discussing Congress’s decision to “define the waters covered by the Act broadly”).

⁴⁰ *Id.*; *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001); *Rapanos v. United States*, 547 U.S. 715 (2006).

⁴¹ *Riverside Bayview Homes*, 474 U.S. at 123.

⁴² *Id.* at 139.

⁴³ *Id.* at 133.

⁴⁴ *Id.* at 132 (quoting CWA § 101, 33 U.S.C. § 1251 (2012)).

⁴⁵ *Id.* at 133.

⁴⁶ Final Rule for Regulatory Programs of the Corps of Engineers, 51 Fed. Reg. 41,206, 41,217 (Nov. 13, 1986) (codified at 33 C.F.R. pt. 329).

birds (either crossing state lines or protected by treaty).⁴⁷ This change expanded its interpretation of jurisdiction to not only adjacent wetlands, but to isolated ponds and wetlands, with no obvious connection to more conventionally defined waters of the United States.⁴⁸ This regulation became known as the Migratory Bird Rule.⁴⁹ In 2001, in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC)*,⁵⁰ the Court rejected isolated nonnavigable intrastate ponds as waters of the United States.⁵¹ The Corps had judged various ponds located at an abandoned gravel mining operation jurisdictional, and petitioners argued both that these waters were beyond the limits of federal reach under the Commerce Clause, and more narrowly that the Migratory Bird Rule went beyond the waters of the United States as envisioned by Congress when it passed the Act.⁵² The Court did not rule on the constitutional issue, instead treating the case as a somewhat more traditional statutory interpretation question.⁵³ Nevertheless, in a five-to-four decision, the Court deemed the Migratory Bird Rule unlawful and rejected respondents' urging to consider the Migratory Bird Rule an extension of the *Riverside Bayview* decision.⁵⁴ The Court relied in no small part on the words "navigable waters" from the statute, noting that upholding the Corps decision would mean "isolated ponds, some only seasonal, wholly located within two Illinois counties, fall under the section 404(a) definition of 'navigable waters' because they serve as habitat for migratory birds."⁵⁵ Though the Court emphasized that Congress's choice of the term "navigable" must be given some import, it was again unclear how broadly the agencies might validly interpret the statutory definition "waters of the United States." Still, the Court highlighted the breadth of Congress's goals in passing the CWA, and recognized that such ambitious goals would require broad jurisdiction for the agencies: "Congress'[s] concern for the protection of water quality and aquatic ecosystems indicated its intent to regulate wetlands 'inseparably bound up with the waters of the United States.' It was the significant nexus between the wetlands and 'navigable waters' that informed our reading of the CWA in [*Riverside Bayview*]."⁵⁶ This close decision offered limited guidance for

⁴⁷ *Id.* at 41,217.

⁴⁸ *Id.*

⁴⁹ *See, e.g., Leslie Salt Co. v. United States*, 55 F.3d 1388, 1392 (9th Cir. 1995) (considering the validity of the "migratory bird rule").

⁵⁰ 531 U.S. 159 (2001).

⁵¹ *Id.* at 168.

⁵² *Id.* at 164–66.

⁵³ Not entirely traditional, however. In light of the potential Commerce Clause implications, the Court "read the statute as written to avoid the significant constitutional and federalism questions raised by respondents' interpretation, and therefore reject the request for administrative deference." *Id.* at 174.

⁵⁴ *Id.* at 171–72.

⁵⁵ *Id.* *See also* Thomas W. Merrill, *The Story of SWANCC: Federalism and the Politics of Locally Unwanted Land Uses*, in ENVIRONMENTAL LAW STORIES 283, 306 (Richard J. Lazarus & Oliver A. Houck eds., 2005) (discussing the Court's avoidance of potential constitutional issues without identifying the specific constitutional question raised by the set of facts in the case).

⁵⁶ *SWANCC*, 531 U.S. 159, 167 (2001).

the agencies. The agencies sought to rewrite their definition of “waters of the United States,” publishing an “Advance Notice of Proposed Rulemaking on the Clean Water Act Regulatory Definition of ‘Waters of the United States’” in 2003,⁵⁷ but the proposed rulemaking never got off the ground,⁵⁸ and the agencies made do with what was left of their pre-SWANCC regulations.

Perhaps unsurprisingly, this approach led the Corps directly back to the Supreme Court. In 2006, in *Rapanos v. United States* (*Rapanos*), a fractured Court struggled to reach agreement or clarity concerning the coverage of the CWA. In this, the most recent Supreme Court case to interpret the term “waters of the United States,” the Court considered “four Michigan wetlands, which lie near ditches or man-made drains that eventually empty into traditional navigable waters.”⁵⁹ The Justices all agreed that the CWA jurisdiction includes more than just waters that are navigable in the traditional sense.⁶⁰ But they largely diverged at this point—the rest of the opinion stands as a terrible example of judicial balkanization, with five separate opinions addressing the issues.

A plurality, announcing the judgment of the Court and written by Justice Scalia on behalf of Chief Justice Roberts, Justice Thomas, and Justice Alito, determined that jurisdictional waters must be either traditional navigable waters, waters connected to traditional navigable waters by permanent flows (not ephemeral or intermittent flows), or wetlands adjacent to either of those water bodies.⁶¹ The plurality specifically rejected wetlands adjacent to waters that flowed only intermittently.⁶² The opinion came to this conclusion by first noting that the CWA defined “navigable waters” as “the waters of the United States,” and then suggesting that, “[i]n this form, ‘the waters’ refers more narrowly to water ‘[a]s found in streams and bodies forming geographical features such as oceans, rivers, [and] lakes.’”⁶³ The opinion concluded, without explanation, that “[o]n this definition, ‘the waters of the United States’ include only relatively permanent, standing or flowing bodies of water.”⁶⁴ The plurality drew further support for this view of “the waters” from “the commonsense understanding of the term,”⁶⁵ the Act’s use of the term “navigable waters,”⁶⁶ and, “[m]ost significant of all, [the idea that] the CWA itself categorizes the channels and conduits that typically carry intermittent flows of water separately from

⁵⁷ Advance Notice of Proposed Rulemaking on the Clean Water Act Regulatory Definition of “Waters of the United States,” 68 Fed. Reg. 1991 (proposed Jan. 15, 2003).

⁵⁸ See *Rapanos v. United States*, 547 U.S. 715, 757–58 (2006) (Roberts, C.J., concurring) (explaining that the “proposed rulemaking went nowhere”)

⁵⁹ *Id.* at 729 (plurality opinion).

⁶⁰ *Id.* at 730; *id.* at 767 (Kennedy, J., concurring); *id.* at 788 (Stevens, J., dissenting).

⁶¹ *Id.* at 739 (plurality opinion).

⁶² *Id.* at 733–36.

⁶³ *Id.* at 732 (second and third alterations in original) (quoting WEBSTER’S NEW INTERNATIONAL DICTIONARY 2882 (2d ed. 1954)).

⁶⁴ *Id.* at 733–34.

⁶⁵ *Id.* at 734.

⁶⁶ *Id.*

'navigable waters,' by including them in the definition of 'point source.'⁶⁷ Based on this categorization of conveyances that typically carry intermittent flows of water as point sources, the plurality concluded that intermittent flows were not likely to be conceived of as navigable waters because that would create overlapping potential inclusion of such features as waters of the United States.⁶⁸

After determining that the waters had to be relatively permanent water bodies, the plurality held that tributaries to traditional navigable waters could only be considered waters of the United States if they were "a relatively permanent body of water connected to traditional interstate navigable waters."⁶⁹ The plurality then concluded that jurisdictional wetlands include "only those wetlands with a continuous surface connection to bodies that are 'waters of the United States' in their own right, so that there is no clear demarcation between 'waters' and wetlands"⁷⁰ This approach led the plurality to limit jurisdiction to wetlands adjacent to tributaries with a relatively permanent flow.⁷¹

Justice Stevens wrote a dissenting opinion, joined by Justices Souter, Ginsburg, and Breyer, that would have deferred to agency expertise as per the *Chevron* doctrine.⁷² Of note here, the dissent attacked the plurality's "point source" argument, rejecting the plurality's assumption that the conveyances listed as point sources do in fact generally carry water only intermittently.⁷³ With the clarification that these sources are often continuous, the dissent suggests, "the definition of 'point source' in 33 U. S. C. § 1362(14) . . . has no conceivable bearing on whether permanent tributaries should be treated differently from intermittent ones."⁷⁴ The dissent also rejected the plurality's dictionary-based argument, noting that the term "streams" in no way requires the features to have permanent water.⁷⁵ Under this broader reading, intermittent streams would be among the waters of the United States. This would certainly include the ephemeral streams, dry arroyos, slot canyons, and many other geographical features that are created by water but only experience flows on a periodic basis.⁷⁶ As the dissent notes, the U.S. Geological Survey has symbols for such geographical features, including intermittent streams and seasonal rivers.⁷⁷ As a third strike, the dissent attacked the plurality's common sense

⁶⁷ *Id.* at 735.

⁶⁸ *Id.* at 735–36 (noting that because ditches, conduits, and other features were defined as point sources, it lent support to the view that intermittently flowing features were "by and large, not 'waters of the United States'" (emphasis in original)).

⁶⁹ *Id.* at 742.

⁷⁰ *Id.*

⁷¹ *Id.* at 732.

⁷² *Id.* at 787–88 (Stevens, J., dissenting).

⁷³ *Id.* at 802.

⁷⁴ *Id.*

⁷⁵ *Id.* at 801.

⁷⁶ *See id.* (arguing that "common sense and common usage demonstrate that intermittent streams, like perennial streams, are still streams").

⁷⁷ *Id.*

argument, suggesting instead that adoption of the plurality view would result in a reading of the Act that let the Corps “regulate polluters who dump dredge into a stream that flows year round but [not] polluters who dump into a neighboring stream that flows for only 290 days of the year,” without regard to the effects of the dumping on downstream traditionally navigable waters.⁷⁸ In short, in light of the Act’s broad purpose and language, the dissent would have deferred to the Corps’ expertise in determining the waters covered by the Act.

Finally, but perhaps most importantly, the dissent explains the take-home message from this divided court. Because “all four Justices who have joined this opinion would uphold the Corps’ jurisdiction in . . . all other cases in which either the plurality’s or Justice Kennedy’s test is satisfied—on remand each of the judgments should be reinstated if *either* of those tests is met.”⁷⁹

Indeed, the plurality opinion became the judgment of the Court only because Justice Kennedy wrote separately to concur in the outcome. More importantly, his concurrence set out an entirely different (and generally broader) test for jurisdiction. Before reaching his own test, however, Justice Kennedy explicitly and forcefully rejected the plurality’s conclusion that the waters had to be relatively permanent water bodies.⁸⁰ On this point, he joined the dissent, holding that “the dissent is correct to observe that an intermittent flow can constitute a stream, in the sense of ‘[a] current or course of water or other fluid, flowing on the earth,’ while it is flowing. It follows that the Corps can reasonably interpret the Act to cover the paths of such impermanent streams.”⁸¹ Justice Kennedy also addressed the plurality’s textual argument concerning point sources and navigable waters, arguing that “[n]othing in the point-source definition requires an intermittent flow,” and that “certain water bodies could conceivably constitute both a point source and a water.”⁸²

After rejecting the plurality’s view, Justice Kennedy’s opinion laid out his alternative definition. He emphasized that the key factor to determine CWA jurisdiction was whether a water has a “significant nexus” to traditional navigable waters, such that “the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as ‘navigable.’”⁸³ He drew this language in large part from the Court’s earlier opinion in *Riverside Bayview*,⁸⁴ language that was also

⁷⁸ *Id.* at 800.

⁷⁹ *Id.* at 810.

⁸⁰ *Id.* at 769 (Kennedy, J., concurring).

⁸¹ *Id.* at 770 (internal citation omitted).

⁸² *Id.*

⁸³ *Id.* at 779–80.

⁸⁴ *Id.* at 779 (“[T]he Court indicated that ‘the term “navigable” as used in the Act is of limited import,’ [relying], in upholding jurisdiction, on the Corps’ judgment that ‘wetlands adjacent to lakes, rivers, streams, and other bodies of water may function as integral parts of the aquatic environment even when the moisture creating the wetlands does not find its source in the adjacent bodies of water[.]’” (quoting *Riverside Bayview*, 474 U.S. 121, 133–35 (1985))).

echoed in the *SWANCC* decision.⁸⁵ He reiterated that the status of wetlands as “integral parts of the aquatic environment” was the rationale for jurisdiction over them as waters of the United States in *Riverside Bayview*,⁸⁶ and that the lack of a significant nexus between the abandoned mines-cum-wetlands and any traditional navigable water in *SWANCC* kept those waters out of the Act’s reach.⁸⁷ In short, Justice Kennedy’s concurrence brings under CWA jurisdiction any waters—even waters with only ephemeral or intermittent flows⁸⁸—if they are “likely to play an important role in the integrity of an aquatic system comprising navigable waters as traditionally understood.”⁸⁹

B. Post-Rapanos Confusion

Exactly what constituted waters of the United States for purposes of CWA jurisdiction was an open question post-*Rapanos*. The agencies developed post-*Rapanos* guidance and initiated work for a new rulemaking.⁹⁰ In the interim, circuit courts split after *Rapanos* and took different approaches to the question of jurisdiction. Some courts adopted the significant nexus test as the exclusive test, while others found that jurisdiction could be met if either the plurality written by Justice Scalia or the significant nexus test was met.

The Supreme Court previously addressed the approach to determining a holding from a fractured decision in *Marks v. United States*.⁹¹ *Marks* held that the position to apply from a fractured decision is the position of the Justices who concurred in the judgments on the narrowest grounds.⁹² For purposes of *Rapanos*, this means the least restrictive test for finding jurisdiction under the CWA. A straightforward reading of *Marks* would not include consideration of the views of dissenting justices.

In *United States v. Johnson*,⁹³ the First Circuit determined that the Supreme Court had backed away somewhat from the *Marks* test and had considered the opinions of dissenting Justices in determining the holding of a previously fragmented court.⁹⁴ From that reasoning, the *Johnson* court said

⁸⁵ See *SWANCC*, 531 U.S. 159, 172 (2001) (“The term ‘navigable’ has at least the import of showing us what Congress had in mind as its authority for enacting the CWA: its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be made so.”).

⁸⁶ *Rapanos*, 547 U.S. at 779 (Kennedy, J., concurring).

⁸⁷ *Id.* at 766–67.

⁸⁸ *Id.* at 771–72.

⁸⁹ *Id.* at 781.

⁹⁰ See ENVTL. PROT. AGENCY & U.S. DEP’T OF THE ARMY, TECHNICAL SUPPORT DOCUMENT FOR THE CLEAN WATER RULE: DEFINITION OF WATERS OF THE UNITED STATES (2015), available at http://www.epa.gov/sites/production/files/2015-05/documents/technical_support_document_for_the_clean_water_rule_1.pdf (addressing the legal basis and existing scientific literature in support of the significant nexus determinations underpinning the Clean Water Rule).

⁹¹ 430 U.S. 188 (1977).

⁹² *Id.* at 193.

⁹³ 467 F.3d 56 (1st Cir. 2006).

⁹⁴ *Id.* at 64.

jurisdiction would be appropriate if either test—that of the plurality or Justice Kennedy’s significant nexus—were met.⁹⁵

This approach was in fact recommended by the dissenting Justices in *Rapanos*. The dissenting opinion noted that the four Justices joining in the dissent would find jurisdiction appropriate under either the plurality or Justice Kennedy’s significant nexus test.⁹⁶ Cognizant that lower courts would find it difficult to parse the holding, Justice Stevens suggested that on remand the lower court should find jurisdiction appropriate if either of those tests were met, stating:

I would affirm the judgments . . . and respectfully dissent from the decision of five Members of this Court to vacate and remand. I close, however, by noting an unusual feature of the Court’s judgments in these cases. It has been our practice in a case coming to us from a lower federal court to enter a judgment commanding that court to conduct any further proceedings pursuant to a specific mandate. That prior practice has, on occasion, made it necessary for Justices to join a judgment that did not conform to their own views. In these cases, however, while both the plurality and Justice Kennedy agree that there must be a remand for further proceedings, their respective opinions define different tests to be applied on remand. Given that all four Justices who have joined this opinion would uphold the Corps’ jurisdiction in both of these cases—and in all other cases in which either the plurality’s or Justice Kennedy’s test is satisfied—on remand each of the judgments should be reinstated if *either* of those tests is met.⁹⁷

However, in *United States v. Robison*,⁹⁸ the Eleventh Circuit felt compelled by the language of *Marks* to look only at the plurality and concurrence.⁹⁹ It rejected the option of taking the “pragmatic” approach in *Johnson*, and ultimately found that Kennedy’s significant nexus test was the narrowest grounds and thus controlling on the question of jurisdiction.¹⁰⁰ The Ninth Circuit also held that Justice Kennedy’s concurrence controlled and thus adopted the significant nexus test for jurisdiction.¹⁰¹

In contrast, the Seventh Circuit in *United States v. Gerke Excavating, Inc.*¹⁰²—following the principle that the controlling law should be “the narrowest ground to which a majority of the Justices would have assented if forced to choose”—found that Justice Kennedy’s test would be the narrowest in most situations, but not in all.¹⁰³ Indeed, a good example is *Robison*, where the facts indicated that a very small volume of continuous

⁹⁵ *Id.*

⁹⁶ *Rapanos*, 547 U.S. 715, 810 (2006) (Stevens, J., dissenting).

⁹⁷ *Id.* The dissent also noted that it was most likely that Justice Kennedy’s “significant nexus” test would “be controlling in most cases.” *Id.* at 810 n.14.

⁹⁸ 505 F.3d 1208 (11th Cir. 2007).

⁹⁹ *Id.* at 1221.

¹⁰⁰ *Id.* at 1220–21.

¹⁰¹ *N. Cal. River Watch v. City of Healdsburg*, 496 F.3d 993, 999–1000 (9th Cir. 2007).

¹⁰² 464 F.3d 723 (7th Cir. 2006).

¹⁰³ *Id.* at 724–25.

surface flow connected a creek to a downstream navigable water.¹⁰⁴ That continuous surface connection may well have made the waters in question jurisdictional under the plurality's test, although no attempt to quantify a significant nexus between the creek and downstream navigable waters had been attempted, and meeting the significant nexus standard on the facts was questionable.¹⁰⁵

In short, the specificity of the tests adopted by the plurality and Justice Kennedy in *Rapanos* make the *Marks* test particularly unhelpful.¹⁰⁶ Line drawing, for purposes of the CWA, is quite messy, not only because we are dealing with an objective as complex as preservation and improvement of water quality and statutory language susceptible to multiple interpretations, but also because of the balancing of stakeholder critiques that the Supreme Court succumbed to.¹⁰⁷ Now the agencies have also followed suit.

The agencies' rationale for the present rulemaking relies entirely on Justice Kennedy's significant nexus test, directly echoing his language.¹⁰⁸ The agencies note: "Peer-reviewed science and practical experience demonstrate that upstream waters, including headwaters and wetlands, significantly affect the chemical, physical, and biological integrity of downstream waters by playing a crucial role in controlling . . . vital chemical, physical, and biological processes."¹⁰⁹ The agencies strategically couch the significant nexus idea within the broader framework of the CWA, harkening back to the Supreme Court's broad reading of the CWA in *Riverside Bayview*, in light of its objectives.¹¹⁰ The agencies assess the significance of the nexus in terms of the CWA's objective to "restore and maintain the chemical, physical, and

¹⁰⁴ *Robison*, 505 F.3d at 1211–12.

¹⁰⁵ *Id.* at 1212 (referring to a tracer test, which is used to determine whether there is a significant nexus to a navigable body of water).

¹⁰⁶ To see the continued contest regarding the controlling test for jurisdiction in the litigation over the Clean Water Rule, the complaint filed by the States of Texas, Louisiana, and Mississippi against the Clean Water Rule in the U.S. District Court for the Southern District of Texas also charges that the agencies have adopted the incorrect standards, using both the argument that the rule does not comport with the plurality's standard and the argument that the rule does not comport with the significant nexus test. Complaint and Petition for Review at 22–23, *Texas v. U.S. Env'tl. Prot. Agency*, No. 3:15-cv-162 (S.D. Tex. June 29, 2015) (arguing that reliance on Justice Kennedy's concurrence is misplaced). The complaint reaches the issue of ditches specifically, expressing concern that agencies could assert jurisdiction over "dry ponds, ephemeral streams, intermittent channels, and even ditches" consistent with the definition of tributary. *Id.* at 13 (emphasis added).

¹⁰⁷ In *Rapanos*, even Justice Kennedy noted that the plurality's tone was unduly dismissive of the interests promoted by the Government in the case. *Rapanos*, 547 U.S. 715, 786 (2006).

¹⁰⁸ The agencies also follow along with Justice Kennedy's recasting of *Riverside Bayview* and *SWANCC* in terms of the nexus approach: "This significant nexus standard was first informed by the ecological and hydrological connections the Supreme Court noted in *Riverside Bayview*, developed and established by the Supreme Court in *SWANCC*, and further refined in Justice Kennedy's opinion in *Rapanos*." Clean Water Rule, 80 Fed. Reg. 37,054, 37,056 (June 29, 2015) (codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

¹⁰⁹ 80 Fed. Reg. at 37,055.

¹¹⁰ *Riverside Bayview*, 474 U.S. 121, 132 (1985).

biological integrity of the Nation's waters."¹¹¹ In short, the nexus between headwaters, wetlands, or tributaries and traditional navigable waters is significant when the downstream effects of those waters are not merely speculative or insubstantial.

By relying on the significant nexus approach, and particularly by focusing on the degree to which upstream waters significantly affect the chemical, physical, and biological integrity of downstream waters, the agencies are able to reduce much of this freighted jurisdictional question down to a cleaner inquiry as to the degree to which one water body (defined very broadly) influences another. This is the kind of question science is well equipped to answer, and EPA's Office of Research and Development prepared a comprehensive report addressing just this question.¹¹²

C. Scientific Study Underpinning Rulemaking

EPA released the draft scientific study discussing the interrelated nature of water and its multiple contributory sources in January 2013.¹¹³ The final report, entitled "Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence" was published on January 15, 2015.¹¹⁴ EPA noted that the report was created to support the agencies' rulemaking for defining waters of the United States for CWA purposes,¹¹⁵ and it "summarize[s] current scientific understanding about the connectivity and mechanisms by which streams and wetlands, singly or in aggregate, affect the physical, chemical, and biological integrity of downstream waters."¹¹⁶

The full report stretches an exhaustive 408 pages, but focusing on the report's examination of ditches filters the information down to a manageable level. The report suggests that ditches have two primary effects: 1) they can increase hydrological and biological connectivity;¹¹⁷ and 2) they change the way water moves through a watershed.¹¹⁸

¹¹¹ CWA, 33 U.S.C. § 1251(a) (2012).

¹¹² U.S. ENVTL. PROT. AGENCY, CONNECTIVITY OF STREAMS AND WETLANDS TO DOWNSTREAM WATERS: A REVIEW AND SYNTHESIS OF THE SCIENTIFIC EVIDENCE (2015) [hereinafter CONNECTIVITY FINAL REPORT], available at <http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=296414&CFID=47143649&CFTOKEN=93241855>.

¹¹³ The draft scientific study was provided to the Scientific Advisory Board in September 2013. Notification of a Public Meeting of the Science Advisory Board Panel for the Review of the EPA Water Body Connectivity Report, 78 Fed. Reg. 58,536, 58,536 (Sept. 24, 2013).

¹¹⁴ Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence, 80 Fed. Reg. 2100 (Jan. 15, 2015); CONNECTIVITY FINAL REPORT, *supra* note 113.

¹¹⁵ 80 Fed. Reg. at 2100.

¹¹⁶ CONNECTIVITY FINAL REPORT, *supra* note 112, at 1-1.

¹¹⁷ *Id.* at 1-11.

¹¹⁸ *Id.* at 5-7, 6-6.

1. Ditches Can Increase Hydrological and Biological Connectivity

Connectivity is “defined in this report as the degree to which components of a watershed are joined and interact by transport mechanisms that function across multiple spatial and temporal scales.”¹¹⁹ The report found that ditches increased hydrological connectivity within watersheds by creating more frequent temporary connections between surface waters, including connection from bays to downstream systems,¹²⁰ potholes to stream networks,¹²¹ and non-floodplain wetlands to the river network.¹²² These new hydrological connections “have impaired wetland habitat and functions; increased downstream export of excess nutrients and other contaminants; and decreased recharge of local and regional aquifers”;¹²³ and “increase[d] the frequencies of occurrence and transport rates of nutrients, carbon, and metals to downstream surface waters.”¹²⁴ The increased hydrological connectivity from ditches also increases biological connectivity, allowing fish and other aquatic creatures to disperse through the human-created surface water connections.¹²⁵

2. Ditches Change the Way Water Moves Through a Watershed

Ditches change the rate and path of runoff,¹²⁶ interrupting overland flow (the sheeting flow that moves across the surface of the land) and shifting it into ditches, where waters move downstream more quickly.¹²⁷ The report noted that ditches “could increase stormflow and contribute to downstream flooding. . . . [T]otal streamflow and baseflow are increased by directly connecting potholes to stream networks. The impacts of changing streamflow are numerous, including altered flow regime, stream geomorphology, habitat, and ecology.”¹²⁸ In urban areas, the “[d]ense networks of ditches and culverts in cities reduce the distance that runoff must travel overland or through subsurface flow paths to reach streams and rivers. Once water enters a drainage network, it flows faster than either overland or subsurface flow.”¹²⁹ In areas with more rapid runoff, “urban streams rise more quickly during storms and have higher peak discharge rates than do rural streams. In addition, the total volume of water discharged during a flood tends to be larger for urban streams than for rural streams.”¹³⁰

¹¹⁹ *Id.* at ES-6.

¹²⁰ *Id.* at 5-3.

¹²¹ *Id.* at 6-6.

¹²² *Id.* at 4-34.

¹²³ *Id.* at 1-11 to 1-13.

¹²⁴ *Id.* at 3-23, 3-46.

¹²⁵ *Id.* at 4-34, 4-42.

¹²⁶ *Id.* at 3-3, 3-5.

¹²⁷ *Id.*

¹²⁸ *Id.* at 6-6.

¹²⁹ CHRISTOPHER P. KONRAD, EFFECTS OF URBAN DEVELOPMENT ON FLOODS, U.S. GEOLOGICAL SURV. FACT SHEET 076-03 (Nov. 2003), available at <http://pubs.usgs.gov/fs/fs07603/pdf/fs07603.pdf>.

¹³⁰ *Id.*

In short, the quicker drainage that results from ditches shows significant downstream effects to stream flow and timing of high flow events, and thus affects sediment and nutrient transport.

EPA's Office of Research and Development (ORD) requested that the Science Advisory Board (SAB) review the draft report,¹³¹ and the SAB examined "the clarity and technical accuracy of the document; whether it includes the most relevant peer-reviewed literature; whether the literature has been correctly summarized; and whether the findings and conclusions in the Report are supported by the available science."¹³² The SAB did not discuss ditches directly, but concluded that the "EPA Report is a thorough and technically accurate review of the literature on the connectivity of streams and wetlands to downstream waters."¹³³

In a separate letter, the SAB noted that it had not been asked by EPA "to consider the adequacy of the science to support the proposed rule. Because this question was not considered during the peer review, [the SAB chose to] comment on the scientific and technical basis of the EPA proposed rule."¹³⁴ As noted below,¹³⁵ those comments included a conclusion that there was "a lack of scientific knowledge to determine whether ditches should be categorically excluded. . . . [D]itches may drain areas that would be identified as wetlands under the Cowardin classification system and may provide certain ecosystem services[,] "¹³⁶ but the adequacy comments did not provide significant additional information on the role of ditches.

The American Farm Bureau Federation (AFB) criticized the study as lacking external peer review, but the results were not met with surprise or alarm in the broader academic community.¹³⁷ And in fact, the exclusion of certain ditches from regulation disregards the inconclusive scientific information regarding their relationship to water quality, again demonstrating the Clean Water Rule is a combination of science, law, policy, and deference to principles such as federalism.¹³⁸

¹³¹ Letter from Dr. David T. Allen, Chair, Sci. Advisory Bd., to Gina McCarthy, Adm'r, U.S. Evtl. Prot. Agency (Oct. 17, 2014), *available at* [http://yosemite.epa.gov/sab/sabproduct.nsf/WebBoard/AF1A28537854F8AB85257D74005003D2/\\$File/EPA-SAB-15-001+unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/WebBoard/AF1A28537854F8AB85257D74005003D2/$File/EPA-SAB-15-001+unsigned.pdf).

¹³² *Id.* at 1.

¹³³ *Id.*

¹³⁴ Letter from Dr. David T. Allen, Chair, Sci. Advisory Bd., to Gina McCarthy, Adm'r, U.S. Evtl. Prot. Agency 2 (Sept. 30, 2014) [hereinafter SAB Consideration Letter] *available at* [http://yosemite.epa.gov/sab/sabproduct.nsf/0/518D4909D94CB6E585257D6300767DD6/\\$File/EP A-SAB-14-007+unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/0/518D4909D94CB6E585257D6300767DD6/$File/EP A-SAB-14-007+unsigned.pdf).

¹³⁵ See discussion *infra* Part III.B.

¹³⁶ SAB Consideration Letter, *supra* note 134, at 3.

¹³⁷ *Potential Impacts of Proposed Changes to the Clean Water Act Jurisdictional Rule: Hearing Before the Subcomm. on Water Res. and Env't of the H. Comm. on Transp. and Infrastructure*, 103d Cong., 2d Sess. 174 (2014) (written testimony of Bob Stallman, President, AFB) (arguing that "the agencies are not properly taking the science into account and that the outcomes have been pre-determined").

¹³⁸ See *infra* Part IV.

III. CWA REGULATION OF DITCHES

Based on this science, and the SAB review of the science, the Corps and EPA drafted the new Clean Water Rule, creating a uniform definition for “waters of the United States” to define the jurisdiction of the Act.¹³⁹ In the joint rulemaking, the agencies stated that the definitional rule would apply to all provisions of the CWA.¹⁴⁰ The regulation specifically amended EPA’s regulations implementing sections 301, 304, 306, 311, 402 (National Pollutant Discharge Elimination System (NPDES)), and 404 (dredge and fill) and the Corps’ regulations under section 404 (dredge and fill).¹⁴¹

A. Regulation of Ditches Under the Clean Water Rule

Ditches created intense controversy, but the Rule’s treatment of ditches can be difficult to parse out. To understand how ditches are covered, it is necessary to look at the definition of “waters of the United States” as a whole. The Clean Water Rule sets out all included waters in paragraph (a) of the rule. The Rule identifies the first four categories of jurisdictional waters as:

- (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;
- (2) All interstate waters, including interstate wetlands;
- (3) The territorial seas;
- (4) All impoundments of waters otherwise identified as waters of the United States under this section.¹⁴²

The waters listed under (a)(1) are the “traditional navigable waters.”¹⁴³ The waters under (a)(2) are interstate, and so affect interstate commerce;¹⁴⁴ these waters are covered even if they are nonnavigable and are isolated from all other waters. The Clean Water Rules does not appear to address the possibility that ditches may be interstate waters, so it is unclear whether interstate ditches, like the ditches that run alongside our national networks of highways, fall under this provision. The territorial seas stretch from the

¹³⁹ Clean Water Rule, 80 Fed. Reg. 37,054, 37,055 (June 29, 2015) (codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

¹⁴⁰ *Id.* at 37,104.

¹⁴¹ *Id.*

¹⁴² *Id.* (enacting 33 C.F.R. § 328.2(a)).

¹⁴³ *Id.* at 37,073.

¹⁴⁴ *Id.* at 37,074. These waters have been included in previous versions of the regulation, and do not appear to be a source of contention, even though they appear to lie outside the nexus requirement established in *Rapanos*. *Id.* The final rule provides extensive and convincing discussion of why these waters are included under the Act’s jurisdiction. *Id.*

ordinary low water line three miles out into the sea.¹⁴⁵ Impoundments include both impoundments of waters of the United States (that is, the waters listed anywhere else in paragraph (a)) and impoundments of waters that do not qualify as waters of the United States, if the impoundment itself becomes navigable-in-fact or otherwise makes the water qualify under other provisions of paragraph (a).¹⁴⁶ These first four categories are not new to the definition of “waters of the United States,” instead reflecting the agencies’ long-standing practice.¹⁴⁷ However, the remaining categories reflect the agencies’ response to the Supreme Court’s interpretations discussed above.

According to the new Clean Water Rule, waters of the United States”also include: “(5) All tributaries . . . of waters identified in paragraphs (a)(1) through (3) of this section; [and] (6) All waters adjacent to a water identified in (a)(1) through (5).”¹⁴⁸

These first six categories of covered waters are all covered “by rule,” meaning that the agencies have determined that they are either traditional waters of the United States or categorically have a significant nexus to those waters, as required by Justice Kennedy’s rule.¹⁴⁹

Paragraph (a)(5), covering tributaries, is both controversial and involved, but the definition of tributaries is where *Rapanos* really begins to influence the new rule.¹⁵⁰ The agencies define tributary as follows:

The term 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 paragraph (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.¹⁵¹

In short, then, any water body that contributes water to a water falling under (a)(1) though (3) and that shows the physical indicators of a bed and banks and an ordinary high water mark is a tributary and thus is covered by the Act

¹⁴⁵ CWA, 33 U.S.C. § 1362(8) (2012).

¹⁴⁶ 80 Fed. Reg. at 37,075.

¹⁴⁷ See National Pollutant Discharge Elimination System, 40 C.F.R. § 122.2 (1983) (EPA); Definition of Waters of the United States, 33 C.F.R. § 328.3 (1987) (Army Corps).

¹⁴⁸ 80 Fed. Reg. at 37,104.

¹⁴⁹ *Id.* at 37,058.

¹⁵⁰ Previously, the Corps regulations, at issue in *Rapanos* discussed above, included traditional interstate navigable waters, “[a]ll interstate waters including interstate wetlands[,] [a]ll 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 commerce[,]” tributaries of such waters, and wetlands adjacent to such waters and tributaries. 33 C.F.R. § 328.3 (2015).

¹⁵¹ 80 Fed. Reg. at 37,105–06.

under (a)(5). And once a water is a tributary, it stays a tributary, even if downstream it flows through sections that are not waters of the United States or if it empties into a water that is not a water of the United States, as long as the water eventually enters a water of the United States:

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 definition of a tributary or through a non-jurisdictional water to a water identified in paragraphs (a)(1) through (3) of this section.¹⁵²

The rule's definition of adjacent water is much simpler: the agencies use it to mean "bordering, contiguous, or neighboring,"¹⁵³ and include those waters separated from other waters of the United States "by constructed dikes or barriers, natural river berms, beach dunes, and the like."¹⁵⁴ Further, neighboring waters include all waters located in whole, or in part, "within 100 feet of the ordinary high water mark of" waters listed under (a)(1) through (5);¹⁵⁵ all waters within the 100-year floodplain (out to the edge of the 100-year floodplain or a distance of 1,500 feet from the ordinary high water mark, whichever is closer) of waters listed under (a)(1) through (5);¹⁵⁶ and waters within 1,500 feet of the high tide line of a traditional navigable water, sea, or the Great Lakes.¹⁵⁷ Finally, waters are considered adjacent if any part of the water is adjacent to a water of the United States, even if most of the water is not adjacent.¹⁵⁸ However, the definition of adjacent specifies that waters "being used for established normal farming, ranching, and silviculture activities" are explicitly not adjacent.¹⁵⁹

Finally, the regulations include a set of "case-specific" waters of the United States, in paragraphs (a)(7) and (a)(8), which lay out the waters that will require a specific determination as to whether they have a significant nexus with waters listed under paragraphs (a)(1) to (3). Paragraph (a)(7)

¹⁵² *Id.* at 37,105.

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.* This addition reflects the agencies' concern that "[m]any tidally-influenced waters do not have floodplains[.]" *Id.* at 37,085. Neighboring waters would not otherwise be included if the rule relied entirely on floodplains. *See id.* at 37,085-06 (noting that "the agencies include[d] a separate provision within the definition of 'neighboring' to protect the 'adjacent' waters that have a significant nexus to tidally-influenced traditional navigable waters or the territorial seas or the Great Lakes").

¹⁵⁸ *Id.* at 37,105.

¹⁵⁹ *Id.*

lists several types of waters that are to be considered as similarly situated, so that they are analyzed as one unit for significant nexus purposes.¹⁶⁰ Paragraph (a)(8) lists the additional waters that will be analyzed for a significant nexus with waters listed under paragraphs (a)(1) to (3): waters that are located within the 100-year floodplain of a traditional navigable water, interstate water, or the territorial seas, or within 4,000 feet of the high tide line or ordinary high water mark of a traditional navigable water, interstate water, the territorial seas, impoundment, or covered tributary.¹⁶¹

The regulations define significant nexus at paragraph (c)(5):

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 traditional navigable water, interstate water, or the territorial seas. A water may be determined to have a significant nexus based on performing any of the following functions: sediment trapping, nutrient recycling, pollutant trapping, transformation, filtering, and transport, retention and attenuation of floodwaters, runoff storage, contribution of flow, export of organic matter, export of food resources, or 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 traditional navigable water, interstate water, or the territorial seas.¹⁶²

Waters not falling under any of these eight categories are not protected by the CWA.¹⁶³ Moreover, many waters that do fall under categories (a)(4) through (8) are still not protected by the CWA, because the new rule explicitly excludes them. The exclusions include the longstanding exclusions for some agricultural waters,¹⁶⁴ new exclusions for a variety of manmade features,¹⁶⁵ and the new exclusions at issue here—the additional exclusions for particular ditches.¹⁶⁶ Exclusions are meant to take precedence over inclusion, so that if one of the exclusions is triggered it removes the feature from jurisdiction even if the feature would otherwise meet the categories of inclusion under (a)(4) through (8).¹⁶⁷ Waters described in paragraphs (a)(1) through (3) are not subject to exclusion.¹⁶⁸

The Clean Water Rule did not change the statutory or regulatory exemptions from NPDES permitting requirements for agricultural stormwater discharges, prior converted cropland, return flows from irrigated agriculture, or the lack of required permitting for water transfers.¹⁶⁹

¹⁶⁰ *Id.* at 37,104–05.

¹⁶¹ *Id.* at 37,105.

¹⁶² *Id.* at 37,093.

¹⁶³ *Id.* at 37,096.

¹⁶⁴ *Id.* at 37,105.

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ Collectively these exemptions have been much criticized as agricultural activities have caused serious environmental harms and degradation. See Jan G. Laitos & Heidi Ruckriegle,

The regulations exclude a number of manmade features that were generally susceptible to case-by-case determinations under prior rules:

- (i) Artificially irrigated areas that would revert to dry land should application of irrigation water to that area cease;
- (ii) Artificial, constructed lakes or ponds created by excavating and/or diking dry land such as farm and stock watering ponds, irrigation ponds, settling basins, log cleaning ponds, cooling ponds, or fields flooded for 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;
- (v) Water-filled depressions created in 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) Puddles¹⁷⁰

The exclusion that is the focus of this Article is the specific exclusion of specified ditches. This provision excludes:

- (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 directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section.¹⁷¹

The Clean Water Act and the Challenge of Agricultural Pollution, 37 VT. L. REV. 1033, 1067 (2013) (noting significant exemptions from CWA for agriculture and identifying alternative means to regulate pollution through remaining CWA authorities). Some water transfers may require a NPDES permit, although the Supreme Court in *South Florida Water Management District v. Miccosukee Tribe*, 541 U.S. 95 (2004), declined to rule on the interpretation promoted by the government that water bodies in the U.S. should be viewed as one unit. *Id.* at 108–09. *See also* Mary Jane Angelo & Jon Morris, *Maintaining a Healthy Water Supply While Growing a Healthy Food Supply: Legal Tools for Cleaning Up Agricultural Water Pollution*, 62 U. KAN. L. REV. 1003 (2014) (emphasizing impacts to water quality from agricultural activities and examining intersection of CWA and agriculture for potential improvements).

¹⁷⁰ 80 Fed. Reg. at 37,105.

¹⁷¹ *Id.*; 33 C.F.R. § 328.3(a)(4)–(8), (b)(3) (2015).

The agencies did not adopt formal definitions of “ephemeral,” “intermittent,” or “perennial” flow, instead asserting that the terms are commonly used scientific terms.¹⁷² According to the preamble to the Clean Water Rule, ephemeral waters “have flowing water only in response to precipitation events in a typical year, and are always above the water table.”¹⁷³ Intermittent waters “have both precipitation and groundwater providing part of the stream’s flow, and flow continuously only during certain times of the year (e.g., during certain seasons such as the rainy season).”¹⁷⁴ A ditch relocates a stream if at least a portion of the stream’s original channel has been physically moved, or when the majority of its flow has been redirected.¹⁷⁵ A ditch that is a relocated stream is a water of the United States if it meets the definition of tributary and is not otherwise excluded.¹⁷⁶

As the exclusion notes, even if the ditch is an impoundment of waters, an adjacent water, or a water meeting the significant nexus test, it is nevertheless excluded under this provision.¹⁷⁷ For the first two exclusions, the ephemeral and intermittent flowing ditches not relocating a tributary or excavated in a tributary (or for intermittent flowing ditches not draining a wetland), the ditch “is not jurisdictional even when the ditch connects directly or through another water to a traditional navigable water, interstate water, or the territorial seas.”¹⁷⁸ Finally, the regulation notes that all “[d]itches protected by the rule *must meet the definition of tributary*, having a bed and banks and ordinary high water mark, and contributing flow directly or indirectly through another water to a traditional navigable water, interstate water, or the territorial seas.”¹⁷⁹

From another angle, this means that the only ditches covered by the CWA are those that “meet the definition of tributary,”¹⁸⁰ and are a relocated or an excavated tributary, or have intermittent flows and drain a wetland, or have perennial flows.¹⁸¹ In sum, a ditch must both be a tributary and not be excluded in order to be jurisdictional.

B. Rationale for Using “Exclusion” to Address Ditches

The agencies explained that the definition of “waters of the United States” for purposes of the CWA reflects a combination of the statute, best available peer-reviewed science, the Supreme Court’s decisions, and agency

¹⁷² 80 Fed. Reg. at 37,076.

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ *Id.* at 37,078.

¹⁷⁶ *Id.*

¹⁷⁷ *See id.*; 33 C.F.R. § 328.3(a)(4)–(8), (b)(3) (ditch exclusion).

¹⁷⁸ 80 Fed. Reg. at 37,096 (explaining that waters and features excluded under paragraph (b) are not “waters of the United States” even if they would otherwise qualify under paragraphs (a)(4)–(a)(8)).

¹⁷⁹ *Id.* at 37,078 (emphasis added). This is not an exclusion per se, but an artifact of EPA’s categorical treatment of tributaries, the class to which a ditch would almost certainly belong.

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

technical expertise and experience.¹⁸² The agencies admit that their exclusion decisions in particular are not based solely on the science, in a particularly inchoate explanation at the beginning of the summary of the exclusions.¹⁸³ And even this admission falls short; the exclusion of ditches is not primarily for the purpose of maintaining environmental integrity of water resources or a reflection of the science.¹⁸⁴ The agencies admit as much. Instead, the exclusions are justified primarily by reference to the agencies' past practice and the interest in clarity and consistency.¹⁸⁵ Indeed, the SAB review of the rule emphasized that there is not conclusive evidence that the excluded ditches fail to have an important influence on downstream waters.¹⁸⁶ In its response to comments on the Proposed Rule, the agencies recognized the balance of interests at stake in adopting the ditch exclusions.¹⁸⁷

Regarding the scientific basis of the ditch exclusions, EPA stated:

[T]he agencies recognize that many ditches provide similar functions as tributaries. In its review of the science support for the Proposed Rule, the EPA Science Advisory Board stated, "certain other exclusions listed in the Proposed Rule and the current regulation do not have scientific justification. There is, for example, a lack of scientific knowledge to determine whether ditches should be categorically excluded" Nonetheless, while there may remain some uncertainty in the science, the agencies have determined that it is important to clarify the status of ditches to make implementation of the Act more understandable and consistent, and to reinforce long-standing practices and priorities. As a result, the rule codifies the longstanding policy of the agencies to consider certain ditches as not subject to regulatory protection as "waters of the United States."¹⁸⁸

The agencies' quotation of the SAB scientific adequacy review perhaps undersells the criticism.

The SAB went on to note that:

Many ditches in the Midwest would be excluded under the proposed rule because they were excavated wholly in uplands, drain only uplands, and have less than perennial flow. However, these ditches may drain areas that would be identified as wetlands . . . and may provide certain ecosystem services. . . .

¹⁸² *Id.* at 37,055.

¹⁸³ *Id.* at 37,097 (noting that the agencies rely, alternately, on longstanding agency practice, the plurality (but not the concurrence) in *Rapanos*, the difficulty of line drawing, and the benefits of simplifying the process). All of the factors relied upon are legitimate, perhaps, but the list certainly suggests the agencies had a difficult time finding a solid footing for the exclusion.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 37,065.

¹⁸⁷ *Id.* at 37,097.

¹⁸⁸ U.S. ENVTL. PROT. AGENCY & DEP'T OF THE ARMY, CLEAN WATER RULE RESPONSE TO COMMENTS, TOPIC 6: DITCHES 23 (2015), available at http://www.epa.gov/sites/production/files/2015-06/documents/cwr_response_to_comments_6_ditches.pdf [hereinafter EPA RESPONSE TO COMMENTS] (quoting SAB Consideration Letter, *supra* note 134, at 3).

Also, although excluded from jurisdiction under the proposed rule, artificial lakes or ponds, or reflection pools, created by excavation, diking, or construction can be directly connected to jurisdictional waters by groundwater, which may be shallow as well as deep groundwater in unconfined aquifers.¹⁸⁹

The science suggests that ditches would have been best placed with the waters under paragraph (a)(8), those waters for which a case-by-case determination must be made.¹⁹⁰ Even the structure of the rule suggests that the exclusion lacks a scientific rationale; if the waters identified in (a)(4) though (6) are waters that, as a rule, have a significant nexus with the waters of the United States, and the ditches must be *excluded* from those categories, then the ditches must generally also have a significant nexus with the waters of the United States. There would be no need to exclude them if they wouldn't merit coverage under those paragraphs. Finally, the agencies continued the policy of regulating certain ditches: ditches that are constructed in or relocate tributaries; certain ditches that drain wetlands; and ditches that function as a tributary.¹⁹¹

If not for science, then, what is the purpose of an exclusion for specific ditches? The agencies suggest it is for the sake of certainty and clarity: "The rule further reduces existing confusion and inconsistency regarding the regulation of ditches by explicitly excluding certain categories of ditches, such as ditches that flow only after precipitation."¹⁹² To support the assertion that clarity would be achieved by following past practice, the agencies note that an exclusion for particular ditches has been in preamble language documents since 1986 for the Corps and EPA in 1988, and suggest that this is simply the first time the exclusions are being established by rule.¹⁹³ This does not appear to be true. The largely identical 1986 and 1988 preambles exempted, "[c]onstruction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance (but not construction) of drainage ditches,"¹⁹⁴ but only if those activities were not for the purpose of "convert[ing] an area of the waters of the United States into a use to which it was not previously subject,"¹⁹⁵ and not if "the proposed discharge will result in significant discernible alterations to flow or circulation."¹⁹⁶ The 1986 and 1988 preambles also excluded irrigation ditches excavated on dry land,¹⁹⁷ but gave the agencies the right to determine whether those ditches were covered

¹⁸⁹ SAB Consideration Letter, *supra* note 134, at 3.

¹⁹⁰ 80 Fed. Reg. at 37,105; CONNECTIVITY FINAL REPORT, *supra* note 112, at 1-11 to 1-13 (discussing the hydrological connectivity of ditches).

¹⁹¹ 80 Fed. Reg. at 37,078.

¹⁹² *Id.* at 37,058.

¹⁹³ *Id.* at 37,059.

¹⁹⁴ Final Rule for Regulatory Programs of the Corps of Engineers, 51 Fed. Reg. 41,206, 41,234 (Nov. 13, 1986); Clean Water Act Section 404 Program Definitions and Exemptions, 53 Fed. Reg. 20,764, 20,775 (June 6, 1988).

¹⁹⁵ 51 Fed. Reg. at 41,234; 53 Fed. Reg. at 20,774-75.

¹⁹⁶ 51 Fed. Reg. at 41,234; 53 Fed. Reg. at 20,775.

¹⁹⁷ 51 Fed. Reg. at 41,217; 53 Fed. Reg. at 20,765.

by the Act on a case-by-case basis.¹⁹⁸ These “preamble exclusions” exclude far fewer ditches and are certainly not the exclusions contained in the current iteration of the regulations. The exclusions under consideration here are new and represent a contraction of the agencies’ claimed jurisdiction under the CWA. What would drive the agencies to give up these waters?

C. Role of Ditches in Agriculture

Moving water is critical for farming. Farmers must move both dirt and water as a regular part of operations.¹⁹⁹ Ditches are often used for irrigation purposes so that crops receive water needed to grow.²⁰⁰ AFB specifically identified concerns that the rule would capture irrigation ditches, which AFB emphasized flow either perennially or intermittently.²⁰¹ In stakeholder meetings and consultations, the farming community sought assurances from EPA Administrator Gina McCarthy that these ditches would be excluded from regulation, but the Clean Water Rule does not specifically exempt a ditch based on whether the ditch is for irrigation purposes.²⁰²

The agencies nonetheless emphasized the continuation of existing exemptions for agriculture. As noted above, ditches must meet the definition of a tributary and not be otherwise excluded to be waters of the United States.²⁰³ Moreover, the definition of adjacent waters specifically excludes waters being used for established “normal farming, ranching, and silviculture activities.”²⁰⁴ Irrigation return flows continue to receive an exemption from section 402 NPDES permitting requirements pursuant to section 402(l)(1).²⁰⁵ Under section 404(f)(1)(A) farmers are exempted from otherwise applicable CWA permitting provisions for moving dirt such as is necessary for plowing and planting and for minor drainage.²⁰⁶ Section 404(f)(1)(C) asserts that

¹⁹⁸ 51 Fed. Reg. at 41,217; 53 Fed. Reg. at 20,765.

¹⁹⁹ See W.R. WALKER, U.N. FOOD AND AGRIC. ORG., GUIDELINES FOR DESIGNING AND EVALUATING SURFACE IRRIGATION SYSTEMS 6.1 (1989), available at <http://www.fao.org/docrep/t0231e/t0231e08.htm#6.1>.

²⁰⁰ *Id.* at 2.4.2, available at <http://www.fao.org/docrep/t0231e/t0231e04.htm#2.4.2>.

²⁰¹ AM. FARM BUREAU FED’N, *FACT OR FICTION: SHEDDING THE LIGHT ON EPA’S “FACTS” ABOUT THE NEW “WATERS OF THE U.S.” RULE* 5–6 (2015) available at http://www.fb.org/tmp/uploads/FACT_or_FICTION-Copy.pdf [hereinafter *Fact or Fiction*].

²⁰² *Id.*; Christine Souza, *Clean Water Act: Farm Bureau Takes Its Case to Head of EPA*, AGALERT, May 28, 2014, <http://www.agalert.com/story/?id=6794> (last visited Apr. 9, 2016).

²⁰³ Clean Water Rule, 80 Fed. Reg. 37,054, 37,076 (June 29, 2015).

²⁰⁴ *Id.* at 37,055.

²⁰⁵ CWA, 33 U.S.C. § 1342(l)(1) (2012).

²⁰⁶ *Id.* § 1344(f)(1)(A). The statute makes these activities “[n]on-prohibited discharge[s] of dredged or fill material[s]” so long as the recapture provision of section 404(f)(2) is not triggered. That section provides that the activities cannot bring navigable waters into a new use or change the flow, circulation or reach of navigable waters. Specifically:

[a]ny discharge of dredged or fill material into the navigable waters incidental to any activity having as its purpose bringing an area of the navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters be reduced, shall be required to have a permit under this section.

“construction or maintenance of . . . irrigation ditches, or the maintenance of drainage ditches” are non-prohibited discharges of dredged or fill material.²⁰⁷ The agencies also noted that, as these exemptions specific to ditches were adopted by Congress in 1977, it confirmed the understanding that ditches would be covered by the Act, and identified only specific activities (and parameters for those activities) that are exempted from a section 404 permit.²⁰⁸

Agriculture presents a continuing challenge for water quality based particularly on its nonpoint source nature which largely brings it outside of federal control under the CWA.²⁰⁹ Typical water pollutants include sediment, nutrients, fertilizers, pesticides, minerals, and pathogens.²¹⁰ Despite producing harm to the environment such as water quality impacts, sedimentation, and habitat fragmentation, agriculture is subject to less regulation than activities that produce similar environmental harms.²¹¹ Agriculture plays a particularly important role in the economy of many states. As noted by other scholars, “because agriculture is economically important to local economics, county and municipal governments hesitate to place restrictions on the farming operations.”²¹²

D. Reception of the Rule

The proposed rule had two explicit exemptions for ditches, first for ditches draining only uplands not excavated in or relocating a tributary, and second for ditches not connected to categories (a)(1)–(4)—traditional navigable waters, intrastate waters, territorial seas, and impoundments of the prior categories.²¹³ From the agricultural community, including ranchers and farmers, reaction was swift and negative.²¹⁴ Many comments addressed

Id. § 1344(f)(2). The exemption has been interpreted by the agencies to be applicable to ongoing farming operations. U.S. ENVTL. PROT. AGENCY, THE CLEAN WATER RULE FACT CHECK, *available at* www.epa.gov/sites/production/files/2015-05/documents/fact_sheet_fact_check_clean_water_rule.pdf.

²⁰⁷ 33 U.S.C. § 1344(f)(1)(C). This section is also subject to the limitation on recapture. *Id.* § 1344(f)(2).

²⁰⁸ EPA RESPONSE TO COMMENTS, *supra* note 188, at 22.

²⁰⁹ *See* 33 U.S.C. § 1311 (prohibiting discharges of pollutants without a permit); *id.* § 1362(12) (defining “discharge of a pollutant” as “any addition of any pollutant to navigable waters from any point source”).

²¹⁰ J.B. Ruhl, *Sustainable Agriculture: Food for the Future*, 9 WASH. U. J.L. & POL’Y 1, 13 (2002).

²¹¹ J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 ECOLOGY L.Q. 263, 266, 293–305 (2000) (inventorying the farmer exemptions from the CWA).

²¹² Jan G. Laitos & Heidi Ruckriegle, *The Clean Water Act and the Challenge of Agricultural Pollution*, 37 VT. L. REV. 1033, 1069 (2013).

²¹³ Clean Water Rule: Definition of “Waters of the United States” Under the Clean Water Act, 79 Fed. Reg. 22,188, 22,193 (proposed Apr. 21, 2014) (to be codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

²¹⁴ Ron Nixon, *EPA’s Proposed Rules on Water Worries Farmers*, N.Y. TIMES, Mar. 13, 2014, at A17.

ditches and asked specifically for the exclusion of roadside ditches.²¹⁵ The rule was criticized as unduly confusing.²¹⁶ In particular, comments addressed the use of the ambiguous term “uplands,” which was part of the first of the two exemptions.²¹⁷ The agencies revised the proposed rule, eliminating the term uplands and breaking exemptions into three categories as identified above.²¹⁸

AFB began a campaign to “Ditch the Rule.” AFB created social media and a website to promote the message encouraging the agencies to abandon the rulemaking process.²¹⁹ AFB also emphasized that the agencies, by proposing the rule, did not have knowledge about farming activities and were seeking to manage land uses by way of CWA regulation.²²⁰ The campaign was a means to put the agencies on the defensive about the scope of the rule.

EPA in response released more fact sheets to “Ditch the Myth.”²²¹ The fact sheets emphasized the continued exemptions for certain agricultural activities and that the exemptions for ditches specifically were meant to clarify that activities near ditches that only filled when it rained would not be subject to regulation.²²² The agencies also emphasized their effort to work with the USDA to incorporate concerns of agricultural stakeholders into the new rule.²²³

Using the notion of ditches and “ditching” the rulemaking effort was an effective public campaign against the rule.²²⁴ AFB and related supporters raised alarm at the extent to which previously unregulated drainage and irrigation features may be regulated, and emphasizing the term helped to trivialize the impacts from manmade features.²²⁵ The president of AFB, Bob Stallman is quoted as saying that “we build a lot of fences in Texas . . . [a]nd

²¹⁵ Clean Water Rule, 80 Fed. Reg. 37,054, 37,097 (June 29, 2015) (codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, & 401).

²¹⁶ COPELAND, *supra* note 25, at 9.

²¹⁷ 80 Fed. Reg. at 37,057.

²¹⁸ *Id.*

²¹⁹ Am. Farm Bureau Fed’n, *It’s Time to Ditch the Rule*, <http://ditchtherule.fb.org/> (last visited Apr. 9, 2016).

²²⁰ Timothy Cama, *Farm Bureau Pledges to Fight EPA’s Water Rule*, HILL Apr. 22, 2014, <http://thehill.com/policy/energy-environment/204096-farm-bureau-pledges-to-fight-epas-water-rule> (last visited Apr. 9, 2016).

²²¹ U.S. ENVTL. PROT. AGENCY, DITCH THE MYTH (2014), *available at* http://www.epa.gov/sites/production/files/2014-07/documents/ditch_the_myth_wotus.pdf.

²²² *Id.* at 3. These efforts were rebuked by a GAO legal opinion that concluded EPA had violated the law in its social media campaign to “ditch the myth.” U.S. GOV’T ACCOUNTABILITY OFF., B-326944, OPINION STATEMENT: ENVIRONMENTAL PROTECTION AGENCY—APPLICATION OF PUBLICITY OR PROPAGANDA AND ANTI-LOBBYING PROVISIONS (2015), *available at* <http://www.gao.gov/assets/680/674163.pdf>.

²²³ U.S. ENVTL. PROT. AGENCY, CLEAN WATER ACT EXCLUSIONS AND EXEMPTIONS CONTINUE FOR AGRICULTURE 1–2 (2014), *available at* http://www.epa.gov/sites/production/files/2014-03/documents/cwa_ag_exclusions_exemptions.pdf.

²²⁴ Cama, *supra* note 220 (noting that AFB President Bob Stallman stated that AFB would focus on “work . . . in the public arena” to point out the consequences of the rule).

²²⁵ *Id.*

somehow, that we're going to need a permit from the EPA and the Corps of Engineers . . . is just laughable."²²⁶

After EPA released fact sheets to help explain and garner support for the rule, AFB continued to emphasize the confusion that may be caused by the definition of "tributary" and how that could lead to regulation of farming activities.²²⁷ Moreover, AFB emphasized that the agencies were playing defense, because it would not otherwise have to build public support for the rule, but given the strength of opposition to the rule there had already been congressional attention and bill drafting to overturn the agencies' rulemaking effort to define "waters of the United States."²²⁸

E. Ditches and the Significant Nexus

Regulation of ditches is controversial because they are manmade, and they often flow intermittently. At the outset of this analysis of the ditches exclusion, one must first dispel any fear that the existing Supreme Court case law somehow treats ditches or other manmade features differently than natural features. To the contrary, when they address the question even obliquely, the Supreme Court cases leading up to this rulemaking actually presume that manmade features are treated no differently than natural water bodies under the Act.

The first case, *Riverside Bayview*, appears to have neither explicitly nor implicitly considered the manmade question.²²⁹ In contrast, in *SWANCC* the issue is conspicuous by its absence. The water at issue was an "abandoned sand and gravel pit in northern Illinois,"²³⁰ a conspicuously manmade landscape feature, but the majority never mentions the lake's origin in its decision excluding the lake from the Act's jurisdiction. And the dissent decides that the lake's anthropogenic origin does not even merit mention.

Finally, in *Rapanos*, a willingness to ignore the anthropogenic origins of a water body is perhaps the only bit of reasoning that the plurality, concurrence, and dissent all share, beyond reading navigable waters more broadly than was traditional prior to the passage of the CWA. The plurality spends a long 400-word footnote examining and bolstering its argument that point sources, which would be excluded from consideration as navigable waters under its reading of the Act, are characterized in part by their intermittent flow.²³¹ The plurality was seeking to give the traditional phrase "navigable water" more value, emphasizing that giving the phrase a limited effect would at minimum require "the ordinary presence of water."²³² The opinion took particular aim to criticize the expansive definition of tributary

²²⁶ *Id.*

²²⁷ *Fact or Fiction*, *supra* note 201.

²²⁸ *Id.* AFB also suggested that the agencies had named the rule "the Clean Water Rule" because no one would want to challenge the need for clean water. *Id.*

²²⁹ See *Riverside Bayview*, 474 U.S. 121 (1985).

²³⁰ *SWANCC*, 531 U.S. 159, 162 (2001).

²³¹ *Rapanos*, 547 U.S. 715, 736–37, 737 n.7 (2006) (plurality opinion).

²³² *Id.* at 734.

including intermittent streams, citing to lower court decisions discussed below.²³³ The opinion is very critical of the Corps' determinations in the field including as jurisdictional various "man-made, intermittently flowing features."²³⁴

Yet nowhere does the plurality suggest that manmade features should be excluded *because they are manmade*. In fact, the plurality (by way of footnote) suggests that manmade features like moats or canals would fall under the Act's jurisdiction.²³⁵ The footnote also suggests that the Act "does not treat such elaborate, man-made, enclosed systems [such as pipes or sewer systems] as 'waters' on a par with 'streams,' 'rivers,' and 'oceans.'"²³⁶ Certainly, these examples suggest that manmade systems that are not enclosed, but rather interact with the traditionally navigable waters, are almost certainly jurisdictional. If there were any question, the plurality cleans it up in its conclusion. There, the plurality drew no distinction between manmade tributaries and natural tributaries, telling the lower courts that they "should determine, in the first instance, whether the *ditches or drains* near each wetland are 'waters' in the ordinary sense of containing a relatively permanent flow."²³⁷

Similarly, the dissent and the concurrence by Justice Kennedy discuss ditches and other manmade features with no suggestion that they should be excluded.²³⁸ For his part, Justice Kennedy rejected the plurality's narrow view that would exclude intermittent waters.²³⁹ After giving one example from California—the Los Angeles River—he concludes that the Corps could

²³³ *Id.* at 725–29.

²³⁴ *Id.* at 727–28.

²³⁵ *Id.* at 736 n.7.

²³⁶ *Id.* at 736–37, 737 n.7.

²³⁷ *Id.* at 757 (emphasis added).

²³⁸ *Id.* at 804 (Stevens, J., dissenting) ("Because there is ambiguity in the phrase 'waters of the United States' and because interpreting it broadly to cover such ditches and streams advances the purpose of the Act, the Corps' approach should command our deference."); *id.* at 787 (Kennedy, J., concurring) (remanding for consideration of the significance of the connections between the wetlands at issue and the traditional navigable waters, a connection mediated entirely by manmade ditches).

²³⁹ *Id.* at 768–69 (Kennedy, J., concurring). The Court's breakdown on the importance of water in defining a stream may have some relationship to the Justices' sense of place. In the west, many of our streams only flow for a short time each year, and much of our geography centers on streams that, at first glance, look like dry gravel beds. See CRAIG CHILDS, *THE SECRET KNOWLEDGE OF WATER 195–97* (Back Bay Books 2001) (noting that the iconic geography of some of the driest places on Earth, the deserts of the southwest, are created in large part by ephemeral water flows). In the West, then, perhaps the idea of a stream simply doesn't rely on a relatively permanent flow of water. This is reflected in the Justices' opinions in *Rapanos*: Of all the Justices, only "Breyer and Kennedy[] grew up west of the Mississippi River, and only Kennedy spent any part of his professional career there." A. E. Dick Howard, *The Changing Face of the Supreme Court*, 101 VA. L. REV. 231, 250 (2015). Most of the other Justices come from wet states that border the Atlantic Ocean. *Id.* at 250–51; see also William J. Daniels, *The Geographic Factor in Appointments to the United States Supreme Court: 1789–1976*, 31 W. POL. Q. 226, 232 (1978) (finding that the eastern United States is more represented on the Supreme Court than the western United States, by a ratio of nearly six to one); MARC REISNER, *CADILLAC DESERT 12* (1986) (discussing generally the different ways that folks in the eastern and western United States look at streams, rivers, and water).

“reasonably interpret the Act to cover the paths of such impermanent streams.”²⁴⁰ The Clean Water Rule also uses the Los Angeles River as an example—that of a river that has been manipulated, yet, does not lose its character as a tributary “even where it has been ditched, channelized, or concreted.”²⁴¹ However, Justice Kennedy was also skeptical of the Corps definition of tributary—which included waters that feed into a traditional navigable water (or its tributary) and have an ordinary high water mark (OHWM).²⁴² Justice Kennedy questioned inclusion of—as he called it—“minor tributaries,” whose flows are so small they would be unable to meet the significant nexus test he outlines.²⁴³ He questioned whether the definition used by the Corps that relied on OHWM was a reasonable measure of “volume and regularity of flow” such that consistent application would in fact ensure the significant nexus with traditional navigable waters required to find that a minor tributary is a jurisdictional water.²⁴⁴ Two facts animate his concern—the remoteness of the tributary to navigable water, and the irregularity of flow.²⁴⁵ In criticizing the definition of tributary (incorporating OHWM standard) and rejecting adjacency to nonnavigable tributaries as per se sufficient to claim a wetland is also jurisdictional, Justice Kennedy asserts:

The breadth of this standard—which seems to leave wide room for regulation of drains, ditches, and streams *remote* from any navigable-in-fact water and *carrying only minor water volumes toward it*—precludes its adoption as the determinative measure of whether adjacent wetlands are likely to play an important role in the integrity of an aquatic system comprising navigable waters as traditionally understood.²⁴⁶

Comparing the situation to the facts in SWANCC, he notes that wetlands adjacent to such tributaries may bear less relation than the ponds rejected as beyond jurisdiction in that case.²⁴⁷

²⁴⁰ *Rapanos*, 547 U.S. at 770 (Kennedy, J., concurring). Justice Kennedy argues that the majority’s definition including continuously flowing waters would arguably be too inclusive by potentially regulating waters without a significant nexus to traditional navigable waters. *Id.* at 769 (noting that the “merest trickle, if continuous, would count as a ‘water’ subject to federal regulation, while torrents thundering at irregular intervals through otherwise dry channels would not”).

²⁴¹ Clean Water Rule, 80 Fed. Reg. 37,054, 37,078 (June 29, 2015) (codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

²⁴² *Rapanos*, 547 U.S. at 781 (Kennedy, J., concurring).

²⁴³ *Id.*

²⁴⁴ *Id.*

²⁴⁵ Justice Kennedy characterizes the Corps’ theory of jurisdiction in the consolidated cases as “adjacency to tributaries, however remote and insubstantial.” *Id.* at 780.

²⁴⁶ *Id.* at 781 (emphasis added).

²⁴⁷ *Id.* at 781–82. He asserts that adjacency to a navigable-in-fact water alone is sufficient but “[a]bsent more specific regulations, however, the Corps must establish a significant nexus on a case-by-case basis when it seeks to regulate wetlands based on adjacency to nonnavigable tributaries.” *Id.* at 782.

Justice Kennedy's suggestion was that adjacency might be sufficient not just for traditional navigable waters, but also for "major tributaries." He noted that, either by rulemaking or adjudication, the

Corps may choose to identify categories of tributaries that, due to their volume of flow (either annually or on average), their proximity to navigable waters, or other relevant considerations, are significant enough that wetlands adjacent to them are likely, in the majority of cases, to perform important functions for an aquatic system incorporating navigable waters.²⁴⁸

The Corps had previously interpreted its regulations as including as jurisdictional those ditches that had an ordinary high water mark.²⁴⁹ Applying the Corps' interpretation of intermittent tributaries, many circuit courts endorsed the view that manmade ditches and canals are tributaries to navigable waters, even when flows from these features are intermittent.²⁵⁰ Unlike the Justices in the *Rapanos* plurality, lower courts working with the facts in particular cases had no trouble explaining the rationale behind this regulatory approach. Neither the underlying fact of its manmade character or the lack of permanent flow prevented the features in question from having a substantial influence over the physical, chemical, and biological integrity of downstream natural waters. It is simply unprincipled to draw a line at manmade or at intermittently flowing to define jurisdiction.

For example, in *Headwaters Inc. v. Talent Irrigation District*,²⁵¹ the Ninth Circuit concluded that tributaries that flow intermittently are waters of the United States.²⁵² In *Headwaters*, the defendant applied an aquatic herbicide to manmade irrigation canals.²⁵³ The irrigation canals exchanged waters with a natural creek and at least one lake that were uncontested waters of the United States.²⁵⁴ Thus, the irrigation canals were found to be waters of the United States themselves as tributaries.²⁵⁵ The Ninth Circuit refused to apply the logic of *SWANCC*, as these were not "isolated waters" but actually connected to other waters from which they exchanged and diverted water.²⁵⁶ The defendant contested the conclusion because the canals were engineered to be a closed loop system separated from natural waters during herbicide application.²⁵⁷ The defendant argued that its system of waste gates prevented the herbicide from reaching natural streams.²⁵⁸ The Ninth Circuit noted that the effectiveness of the gates in preventing flows to natural streams was

²⁴⁸ *Id.* at 780–81.

²⁴⁹ *Id.* at 725 (plurality opinion).

²⁵⁰ *See, e.g., infra* notes 251–272 and accompanying text.

²⁵¹ 243 F.3d 526 (9th Cir. 2001).

²⁵² *Id.* at 534.

²⁵³ *Id.* at 528.

²⁵⁴ *Id.* at 528–29, 532.

²⁵⁵ *Id.* at 533 (affirming the district court's conclusion that irrigation canals were waters of the United States as tributaries to waters of the United States).

²⁵⁶ *Id.*

²⁵⁷ *Id.*

²⁵⁸ *Id.* at 533–34.

contested.²⁵⁹ Past incidents of leaks from the canals had resulted in fish kills on two prior occasions.²⁶⁰ The Ninth Circuit then concluded that regardless of whether the system was effective at preventing exchange of waters with natural streams at some times (making flow intermittent) did not overcome its definition as waters of the United States, and thus regulation of discharges to the irrigation canal.²⁶¹ The Ninth Circuit in *Headwaters* cited to the Eleventh Circuit, which reached the same conclusion regarding intermittent flows from manmade ditches and canals.²⁶²

The *Rapanos* plurality also criticized the reasoning of *United States v. Deaton*.²⁶³ The plaintiffs challenged application of the tributary regulation to their roadside ditch in *Deaton*.²⁶⁴ They argued that the ditch did not meet the definition of “tributary” or that it was not a “tributary of a navigable water” because the ditch did not discharge directly to a navigable water but indirectly through other nonnavigable tributaries.²⁶⁵ The plaintiffs contended that “tributary” meant only the nonnavigable branches that empty directly into navigable waters.²⁶⁶ This interpretation was roundly rejected.²⁶⁷

In *Treacy v. Newdunn Associates, LLP*,²⁶⁸ the Fourth Circuit emphasized its earlier holding in *Deaton*.²⁶⁹ “To the extent that Newdunn challenges the Corps’ decision to label the manmade, I-64 ditch a ‘tributary,’ that argument has also been foreclosed by *Deaton*. . . . That the I-64 ditch at issue in the present case is a manmade rather than a natural watercourse is an irrelevant distinction.”²⁷⁰ The Fourth Circuit explained therein that the fact it is a manmade watercourse makes no principled difference. The court cited the Corps rationale directly:

As the Corps has explained: The discharge of a pollutant into a waterway generally has the same effect downstream whether the waterway is natural or manmade. Indeed, given the extensive human modification of watercourses and hydrologic systems throughout the country, it would be difficult to identify a principled basis in this case for distinguishing between natural watercourses and watercourses that are wholly or partly manmade or modified.²⁷¹

²⁵⁹ *Id.* at 533.

²⁶⁰ *Id.*

²⁶¹ *Id.* at 534.

²⁶² *Id.* (noting that manmade ditches and canals flowing intermittently into a creek could be tributaries (citing *United States v. Eidson*, 108 F.3d 1336, 1342 (11th Cir. 1997))).

²⁶³ 332 F.3d 698 (4th Cir. 2003); *Rapanos*, 547 U.S. 715, 726–27 (2006) (plurality opinion).

²⁶⁴ 332 F.3d at 704.

²⁶⁵ *Id.* at 704, 708 (emphasis omitted).

²⁶⁶ *Id.* at 710.

²⁶⁷ *Id.* at 710–12.

²⁶⁸ 344 F.3d 407 (4th Cir. 2003).

²⁶⁹ *Id.* at 417.

²⁷⁰ *Id.*

²⁷¹ *Id.* (quoting Brief for United States at 48–49, *Treacy*, 344 F.3d 407 (4th Cir. 2003) (No. 02-1480, 02-1594)).

This exact explanation is provided in support of the new Clean Water Rule approach to tributaries and ditches.²⁷²

IV. THE ECOLOGICAL SIGNIFICANCE OF DITCHES

The agencies exclude several types of ditches outright. Examples of ditches that would be excluded under the new rule include most roadside ditches,²⁷³ ditches dug to redirect flows away from croplands,²⁷⁴ and many kinds of irrigation ditches.²⁷⁵ The legal kerfuffle over these ditches and other manmade waters may not matter at all, of course, if what we do with our ditches has no impact on water quality and ecosystem health. But the science on these ditches, as outlined in EPA's supporting documents and the two SAB reviews, suggests that ditches may play a significant role in connectivity and ecosystem health. Further, our independent review of the science highlights many instances where our ditches have meaningful impacts on their ecosystems and watersheds.

For example, a study of seven roadside ditches in central New York examined *Escherichia coli* (*E. coli*) concentrations in water samples following storm events.²⁷⁶ The streams bordered either forested lands or manure-amended fields, and the scientists found concentrations of *E. coli* in both types of ditches that often exceeded New York State and EPA standards.²⁷⁷ The study noted,

The cumulative pollutant contribution from the ditch network was estimated to be large enough to produce detectable and sometimes high concentrations in a receiving stream in a small, rural watershed. Roadside drainage networks need to be actively managed for water quality improvements, because they capture and rapidly shunt stormwater and associated contaminants to streams.²⁷⁸

More broadly, the study found that “22% of the watersheds are draining to the roadside ditch network rather than to the natural stream channels,” and noted that “[r]oadside ditches can therefore act as a pathway for non-point source pollution transport from the road surface itself, which is frequently characterized by low water quality.”²⁷⁹ The description of the studied ditches—vegetated bottoms, water present only after rainfall events—strongly suggests that these ditches, like other roadside ditches, would fall within the agencies' exclusion and thus would not be covered by

²⁷² Clean Water Rule, 80 Fed. Reg. 37,054, 37,078 (June 29, 2015) (codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

²⁷³ *Id.* at 37,105.

²⁷⁴ *Id.*

²⁷⁵ *Id.*

²⁷⁶ Kimberly Falbo et al., *Roadside Ditches as Conduits of Fecal Indicator Organisms and Sediment: Implications for Water Quality Management*, 128 J. ENVTL. MGMT. 1050 (2013).

²⁷⁷ *Id.* at 1052, 1056.

²⁷⁸ *Id.* at 1050.

²⁷⁹ *Id.*

the CWA, even though they make a significant contribution to watershed water quality: “When scaled up to a small, rural watershed, the loads from the roadside ditch network for [*E. coli* was] estimated to be large enough to degrade stream water quality.”²⁸⁰ In the scientists’ own words, “we conclude that roadside ditches are acting as conduits for bacterial and sediment water pollution from lands high up in the watershed and are contributing to downstream degraded water quality.”²⁸¹ And manmade networks of ditches and other water channels are a “very significant contribution” to a basin’s hydrologic response; absent these features, “the peak discharges would be lower and the recession longer, and nearly all runoff would be surface runoff.”²⁸² Change in water quality? In flow dynamics? That certainly sounds like these ditches do in fact have an impact on water quality and ecosystem health.

Ditches also make significant contributions to biodiversity within their watersheds. One study found that invertebrate and fish communities between ditches with perennial flow that were not connected to a water of the United States had comparable biodiversity and abundance to nearby streams and connected ditches,²⁸³ and the authors cautioned that “[d]itches, while not natural within the environment, should be removed with caution since the loss of species richness may have large and unintended consequences on the system.”²⁸⁴ Other studies examined the importance of ditches to small mammal diversity²⁸⁵ and frog and toad diversity.²⁸⁶ Ditches have even provided refuge habitats for endangered species during periods of drought.²⁸⁷ Ditches are an understudied geographic feature, as noted in the SAB review,²⁸⁸ but every time we look closely at a ditch, we seem to find connections to the surrounding ecosystem and watershed. Of course, not

²⁸⁰ *Id.* at 1056.

²⁸¹ *Id.* at 1057.

²⁸² Nadia Carluer & Ghislain De Marsily, *Assessment and Modeling of the Influence of Man-Made Networks on the Hydrology of a Small Watershed: Implications for Fast Flow Components, Water Quality and Landscape Management*, 285 J. HYDROLOGY 76, 93 (2004).

²⁸³ Troy N. Simon & Joseph Travis, *The Contribution of Man-Made Ditches to the Regional Stream Biodiversity of the New River Watershed in the Florida Panhandle*, 661 HYDROBIOLOGIA 163, 169 (2011).

²⁸⁴ *Id.* at 174.

²⁸⁵ Justin D. Hoffman et al., *Effects of Land Use and Soil Texture on Distributions of Pocket Gophers in Kansas*, 52 SW. NATURALIST 296, 300 (2007) (“In most agricultural areas of Kansas, small mammal species are abundant and widespread in refugia provided by roadside ditches This illustrates the importance of protecting roadside ditches and other patches of natural vegetation from agricultural development.”).

²⁸⁶ Jessica A. Homyack et al., *Anuran Assemblages Associated with Roadside Ditches in a Managed Pine Landscape*, 334 FOREST ECOLOGY & MGMT. 217, 225 (2014) (“[I]n managed forests of the Atlantic Coastal Plain, roadside ditches are contributing to regional occupancy of anurans and likely population persistence of a group of species reportedly in decline.”). Anurans are frogs and toads. WEBSTER’S NEW INTERNATIONAL DICTIONARY 97 (3d ed. 1971).

²⁸⁷ See U.S. FISH & WILDLIFE SERV., RIO GRANDE SILVERY MINNOW DRAFT REVISED RECOVERY PLAN 25 (2007), available at http://www.fws.gov/southwest/es/Documents/R2ES/Rio_Grande_Silvery_Minnow_DRAFT_Recovery_Plan_Jan-2007.pdf (indicating that an endangered minnow survives in ditches during periods when the middle Rio Grande has no flow).

²⁸⁸ SAB Consideration Letter, *supra* note 134, at 3.

every ditch is going to be significant, but to the extent that some are, a case-by-case analysis would more accurately identify which should be regulated.

Excluding ditches without any analysis simply has no basis in science, and is likely to exclude many waters with a significant nexus to traditional navigable waters. Leaving these waters out of the Act exposes them both to total destruction through the addition of fill and to discharge of pollutants into wet and dry ditches.²⁸⁹

V. PROTECTING CREATED LANDSCAPE FEATURES IN THE AGE OF THE ANTHROPOCENE

Many possibilities beyond an unwillingness to regulate manmade places could explain the Agencies' decision to exclude most ditches from CWA coverage—federalism and deference to state control of land use, deference to private property rights, or even an unwillingness to take on agricultural interests are all potential explanations.

Some measure of the controversy over ditches is animated by the structure of the CWA, which authorizes the federal government to address point source pollution and the states to address nonpoint source pollution, which includes much of the pollution that ends up in ditches.²⁹⁰ But this structure doesn't prevent the rule from including ditches, and the evidence suggests it must do so if they are to receive protection, because states will not do so on their own. States are ill-equipped—even if politically inclined—to address the powerful dynamics that have entrenched the acceptance of agricultural pollution. Section 208 of the CWA requires states to adopt plans that would control pollution from nonpoint sources, including agriculture, but has no effective means for requiring states to do so.²⁹¹ Thus, “[l]eft to their own discretion and faced with significant opposition by agricultural, mining, and construction lobbies, most states have chosen not to adopt meaningful management plans under section 208.”²⁹²

²⁸⁹ See *United States v. Tex. Pipe Line Co.*, 611 F.2d 345, 347 (10th Cir. 1979) (oil spill into tributary that did not have running water at the time of spill involved a discharge to “waters of the United States”).

²⁹⁰ *Id.* at 178. Many states, such as Ohio and Texas, have challenged the new rule ideologically as an invasion of traditionally state (and locally) regulated land activities. Cameron Langford, *18 States Challenge Clean Water Rule*, COURTHOUSE NEWS SERV., June 30, 2015, <http://www.courthousenews.com/2015/06/30/18-states-challenge-clean-water-rule.htm> (last visited Apr. 9, 2016). Federalism in its many forms has animated environmental regulation conflicts. Merrill, *supra* note 55, at 283–84. The CWA is perceived as a cooperative federalism framework, and to look at history it seems that approach is aptly descriptive. *Id.*; *Arkansas v. Oklahoma*, 503 U.S. 91, 101 (1992) (acknowledging “[t]he Clean Water Act anticipates a partnership between the States and the Federal Government”). For example, once *SWANCC* delivered a defeat to Corps regulation of remote wetlands some states scrutinized their efforts to help fill in the gap. Merrill, *supra* note 55, at 309.

²⁹¹ CWA, 33 U.S.C. § 1288 (2012) (requiring Governors to identify areas with water quality control issues and develop management plans); see also JAMES SALZMAN & BARTON H. THOMPSON, JR., *ENVIRONMENTAL LAW AND POLICY* 162 (3d ed. 2010).

²⁹² SALZMAN & THOMPSON, *supra* note 291, at 162.

Related to arguments over states' rights is the admonition to respect private property. Critics of the rule emphasize that the federal government is attempting to regulate land use through a more expansive definition of "waters."²⁹³ This argument is so paper-thin it is somewhat remarkable it has so much support. The CWA, as with most other environmental law, regulates human activities. Yes, the CWA does not just regulate activities occurring on waters, but necessarily activities out of water—where people manufacture goods, generate power, and farm²⁹⁴—which when left unregulated allowed our waters to become a garbage receptacle. It is in all ways a pollution control statute. If property law were to become more internally reflective of an ecological ethic, the CWA would not have to be *the* impediment to certain ill-sited, unsustainable development, as it is currently vilified.

The power of the agricultural industry also creates a hurdle. As this Article has highlighted, the Act and the regulations create exemptions for agricultural activities that would otherwise require a permit to persist after the Clean Water Rule's adoption.²⁹⁵ As Professors Salzman and Thompson note, "[t]he agricultural lobby, in particular, has been very successful in weakening or killing off proposals to regulate nonpoint pollution more rigorously."²⁹⁶ This means continued and effective point source regulation under the CWA is necessary to maintain if not actually improve water quality in the United States, be it from nonexempted agricultural activities or otherwise.

But these other explanations fall short. As a general rule, the agencies do not simply leave the regulation of nonpoint source pollutants entirely to the states, instead requiring efforts to address polluted waters, even if those waters are only polluted by nonpoint sources. The agencies have taken politically uncomfortable positions in other cases, regulating agriculture under the Act. What, then, drives the exclusions? Significant evidence suggests, that the primary motivation for resistance to the regulation of ditches by EPA and the Corps is their unwillingness to recognize our increasingly formative role in our interconnected world.

The best evidence for this view comes from the other exclusions, beyond just ditches, in the new rule:

- Groundwater and erosional features;²⁹⁷
- "Artificially irrigated areas that would revert to dry land should application of irrigation water to that area cease;"²⁹⁸

²⁹³ See, e.g., Ben Wolfgang & Steven Dinan, *EPA Expands Powers Over Land Use in Bid to Control Water Pollution*, WASH. TIMES, May 27, 2015, <http://www.washingtontimes.com/news/2015/may/27/epa-expands-powers-over-land-use-bid-control-water/?page=all> (last visited Apr. 9, 2016).

²⁹⁴ SALZMAN & THOMPSON, *supra* note 291, at 147.

²⁹⁵ See *supra* note 170 and accompanying text.

²⁹⁶ SALZMAN & THOMPSON, *supra* note 291, at 163.

²⁹⁷ Clean Water Rule, 80 Fed. Reg. 37,054, 37,107 (June 29, 2015) (codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

²⁹⁸ *Id.* at 37,105.

- “Artificial, constructed lakes or ponds created by excavating and/or diking dry land such as farm and stock watering ponds, irrigation ponds, settling basins, log cleaning ponds, cooling ponds, or fields flooded for rice growing;”²⁹⁹
- “Artificial reflecting pools or swimming pools created by excavating and/or diking dry land;”³⁰⁰
- “Small ornamental waters created by excavating and/or diking dry land for primarily aesthetic reasons;”³⁰¹
- “Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand or gravel that fill with water;”³⁰²
- “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;”³⁰³
- “Puddles;”³⁰⁴ and
- “Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.”³⁰⁵

With the exception of groundwater, these new exclusions cover landscape features that, under the old regulations, “could be determined on a case-specific basis to be ‘waters of the United States,’”³⁰⁶ but which are now entirely off limits to the protections of the Act. Most of these exceptions—seven of the nine, on our count—are manmade features, and it beggars belief to claim this is a coincidence. This certainly appears to be a capitulation by the agencies to the easy argument that manmade places often are not worth protecting

Humankind has remade our environment through a series of changes, both monumental and small but creeping.³⁰⁷ Facing up to and managing these changes brings us to a central challenge of the Age of the Anthropocene: how we should deal with an environment that we have fundamentally changed and which, in most cases, we are unable or unwilling to restore to a

²⁹⁹ *Id.* at 37,107.

³⁰⁰ *Id.*

³⁰¹ *Id.* at 37,098.

³⁰² *Id.* at 37,107.

³⁰³ *Id.*

³⁰⁴ *Id.*

³⁰⁵ *Id.*

³⁰⁶ *Id.* at 37,098.

³⁰⁷ See, e.g., Dave Owen, *Critical Habitat and the Challenge of Regulating Small Harms*, 64 FLA. L. REV. 141, 189–90 (2012) (examining regulatory protection of critical habitat and the potential for incremental degradation). Professor Owen explains this as the challenge of line-drawing between large and small harms, which is inherent in environmental law because harm lies along a continuum: “The distinction is even harder to draw if, as is often the case, no one knows how much harm each action will cause.” *Id.* at 189. This is certainly the case with the lowly ditch, and its thus far understudied and undervalued impacts on water quality.

pristine state. The burgeoning field of reconciliation ecology addresses this question. We define reconciliation ecology as the “science of inventing, establishing, and maintaining new habitats to conserve species diversity in places where people live, work, and play.”³⁰⁸ This is not a “giving up” on protection of our wilderness, our national parks, or our untrammelled places—we must continue to protect these places as pristine environments, largely devoid of human impacts. But in many areas, we must recognize that although much historic habitat has been irreversibly altered, the habitats we have created have value, and we should act to protect those places.

No where is this clearer than in the regulation of our water resources. Clean water is central to our survival,³⁰⁹ to the protection of the natural environment, and in short, to the maintenance of every other natural resource. But “[s]treams and rivers are among the most highly altered ecosystems worldwide,”³¹⁰ and these alterations are largely permanent. California, the state known as the country’s breadbasket (at least before the ongoing drought), has lost approximately 94% of its historic wetlands, some to urban development and some to agriculture.³¹¹ Similar transformation has occurred in the Everglades of Florida.³¹² While most policymakers believe some restoration of these seriously degraded environments would benefit society in the short- and long-term,³¹³ the prospects of making heavily farmed areas a semblance of their former ecosystems is unlikely. We will never fallow our farmlands or take down all our dams. The California Delta will never return to its naturally functioning state.

It is in these areas that many promote reconciliation ecology over other aggressive, but improbable, forms of restoring ecosystems to historic conditions.³¹⁴ If we accept, then, that these places will not and cannot be

³⁰⁸ ROSENZWIEG, *supra* note 19, at 7.

³⁰⁹ The most powerful recognition of the centrality of water to mankind is the relatively recent acceptance by the U.N. General Assembly of an independent Human Right to Water. JOHN SCANLON ET AL., INT’L UNION FOR CONSERVATION OF NATURE AND NAT. RES., WATER AS A HUMAN RIGHT? 3–4 (Environmental Policy and Law Paper No. 51, 2004) (tracing development of a human right to water in international law and noting no explicit mention of “water” in right to life). The right requires adequate quality and quantity of water for domestic use. *Id.* at 4. The right to water is also implicitly required as necessary for the right to a standard of living adequate for health and well-being. *Id.* The General Comment adopted by the U.N. committee on Economic, Social and Cultural Rights asserts plainly that “the human right to water is indispensable for leading a life in human dignity. It is prerequisite for the realization of other human rights.” U.N. Comm. on Econ., Soc. & Cultural Rights, Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights, General Comment No. 15, ¶ 1, U.N. Doc E/C.12/2002/11 (Jan. 20, 2003).

³¹⁰ Peter B. Moyle, *Novel Aquatic Ecosystems: The New Reality for Streams in California and Other Mediterranean Climate Regions*, 30 RIVER RES. APPLICATIONS 1335, 1335 (2013).

³¹¹ David Gilmer et al., *California’s Central Valley Wintering Waterfowl: Concerns and Challenges*, in TRANSACTIONS OF THE FORTY-SEVENTH NORTH AMERICAN WILDLIFE AND NATURAL RESOURCES CONFERENCE 441, 444 (1982) (describing native wetlands in the Central Valley in particular as “small islands in a sea of agricultural and urban development”).

³¹² SOC’Y FOR ECOLOGICAL RESTORATION INT’L, LARGE-SCALE ECOSYSTEM RESTORATION: FIVE CASE STUDIES FROM THE UNITED STATES 8–10 (Mary Doyle & Cynthia A. Drew eds., 2008).

³¹³ *Id.* at iv.

³¹⁴ *Id.* at 47.

restored to some kind of historical condition,³¹⁵ where does that leave us? Reconciliation ecology suggests we “acknowledge[] that humans increasingly dominate most ecosystems on the planet, which leaves us with the responsibility to determine what we want these integrated ecosystems to look like and what species we want them to contain.”³¹⁶ These ecosystems “require considerable human intervention if they are to support desirable, usually native, species.”³¹⁷ These ecological principles provide some guidance—we should recognize that our actions have unalterably changed many aquatic habitats; some of these changed habitats have ecological value, and these valuable, new habitats must be protected and managed if they are to function as a constructive part of our ecosystem. The same principles extend to the structure and function of our watershed—our actions have unalterably changed the way that water moves through our watersheds;³¹⁸ some of the changes we have made create landscape features that now serve a beneficial role in the altered watershed;³¹⁹ and beneficial landscape features must be protected and managed if they are to function as a part of our watersheds.

If we are to protect and manage these places, the CWA must be the vehicle. The CWA is the primary act protecting water quality *in situ* in the United States, and it plays a central role in controlling the feckless filling in of wetlands, streams, lakes, and rivers that had, prior to passage of the Act, characterized agriculture’s relationship with wet places.³²⁰ This, then, is the central question for the management of manmade beneficial landscape features: Does the Act provide them the same treatment accorded to natural beneficial landscape features? When it does, those places are protected and can continue to serve a beneficial role in the function of our ecosystems and our watersheds, and a thoughtful rule defining the Act’s jurisdiction should move us in that direction. But when it does not, as seen here where the

³¹⁵ Even if we attempted this, determining which historical condition to aim for would be difficult. Since the earliest stages of agriculture, mankind has battled to tame the natural world for our benefit. Early efforts by white settlers in the United States were really just a second or third wave of farmers, following the earlier Native Americans that were here and changing landscapes before us. WILLIAM CRONAN, *CHANGES IN THE LAND: INDIANS, COLONISTS, AND THE ECOLOGY OF NEW ENGLAND* 11–12 (1983). The scale and degree of change has been orders of magnitude greater, *see id.*, but overlooking this history encourages us to think of our actions as something outside of the natural system, when they are not.

³¹⁶ Moyle, *supra* note 310, at 1337.

³¹⁷ *Id.*

³¹⁸ As discussed above, these changes result in increased connectivity; higher, faster flows; decreased residence time; and degraded functions in terms of pollutant removal and water filtering. *See* discussion *supra* Part II.C.1–2. *See also* Rosenzweig, *supra* note 19 at 7. *See e.g.*, CWA, 33 U.S.C. § 1251(a) (2012) (noting that the goal of the CWA is to both “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters”) (emphasis added).

³¹⁹ *See also* Rosenzweig, *supra* note 19 at 7. *See e.g.*, CWA, 33 U.S.C. § 1251(a) (2012) (noting that the goal of the CWA is to both “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters”).

³²⁰ SALZMAN & THOMPSON, *supra* note 291, at 178–79.

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regulations largely exclude manmade ditches from protection, we sacrifice the benefits they provide.

In the Age of the Anthropocene, we cannot exclude manmade environmental features simply because they are manmade. This is the future we have created, and the only one we can even hope to control. Reconciliation requires us to account for all these inputs; it would be antithetical to deregulate manmade environmental features and doing so is a major hamstring on our ability to preserve functioning ecosystems. The rule defining CWA jurisdiction should be changed to evaluate ditches and other manmade features on a case by case basis.

VI. CONCLUSION

Though the Clean Water Rule makes certain ditches jurisdictional, the approach of excluding some ditches and including others will likely require future litigation to help define the precise scope of inclusion over these important, although manmade features. On a scientific basis alone, the accumulation of many small contributions from ditches supports a broader inclusion to limit impairment of water quality. The public campaign against the Rule reflects a strategy of obscuring the known impacts of discharges from natural and manmade tributaries to downstream waters. It is time to come into our maturity, ditch the charades, and take up responsibilities commensurate with our role as the dominant force on Earth.

Feature	Section ³²¹	Explanation
Traditional Navigable Waters	(a)(1)	All waters currently used, used in the past, or susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide. Exclusions under (b) do not reach (a)(1).
Interstate Waters	(a)(2)	All interstate waters, including wetlands. Exclusions under (b) do not reach (a)(2).
Territorial Seas	(a)(3)	The territorial seas. Exclusions under (b) do not reach (a)(3).
Impoundments	(a)(4)	Impoundments of all waters identified as jurisdictional.
Tributaries	(a)(5)	All tributaries, (defined in (c)(3)) of waters identified in (a)(1)–(3).
Adjacent Waters	(a)(6)	All waters adjacent to waters identified in (a)(1) through (5), including wetlands, ponds, lakes, oxbows, impoundments, etc. (c)(1) defines “adjacent.” Excludes waters used in established farming, ranching, and silviculture. ³²²
Significant Nexus Waters—Case-by-Case	(a)(7)	Prairie potholes, Carolina/Delmarva bays, Pocosins, Western vernal pools, and Texas coastal prairie wetlands where determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1)–(3). ³²³ If these waters fall under (a)(1)–(a)(6), they are included on that basis.

³²¹ References for sections relating to Definition of Waters of the United States are taken from 33 C.F.R. § 328.3 (2015).

³²² See CWA, 33 U.S.C. § 1344(f)(1)(A) (2012) (exempting from regulation discharges of dredged or fill material from normal farming, ranching, and silviculture activities).

³²³ These waters are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1)–(3) of this section.

Table 1: Jurisdictional “Waters of the United States” (continued)

Feature	Section	Explanation
Significant Nexus Waters—Waters located in 100-year floodplain of (a)(1)–(a)(3) or within 4,000 feet of a high tide line (HTL) or ordinary high water mark (OHWM) of (a)(1)–(a)(5)	(a)(8)	All waters within the 100-year floodplain of waters in (a)(1)–(3) and all waters located within 4,000 feet of the HTL or OHWM of waters in (a)(1)–(5) where determined, on a case-specific basis, to have a significant nexus to waters in (a)(1)–(3). ³²⁴ For waters determined to have a significant nexus, the entire water is a water of the United States if any portion is within the 100-year floodplain of waters in (a)(1)–(3) or within 4,000 feet of the HTL or OHWM of waters in (a)(1)–(5).

³²⁴ Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) when performing a significant nexus analysis.

Feature	Section ³²⁶	Explanation
Ephemeral Ditches	(b)(3)(i)	Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary. Ephemeral waters “have flowing water only in response to precipitation events in a typical year, and are always above the water table.” ³²⁷ A ditch relocates a stream if at least a portion of the stream’s original channel has been physically moved or the majority of its flow has been redirected.
Intermittent Ditches	(b)(3)(ii)	Ditches with intermittent flow that are not a relocated tributary, not excavated in a tributary, and not draining wetlands. Intermittent waters “have both precipitation and groundwater providing part of the stream’s flow, and flow continuously only during certain times of the year (e.g., during certain seasons such as the rainy season).” ³²⁸
Non-Tributary Ditches	(b)(3)(iii)	Ditches that do not flow, either directly or indirectly, into waters in (a)(1)–(3).

³²⁵ Many activities or discharges are also excluded from permit requirements, including: irrigation return flows, 33 U.S.C. § 402(1)(1) (2012); normal farming and minor drainage, *id.* § 404(f)(1)(A), construction or maintenance of farm ponds, *id.* § 404(f)(1)(C); construction or maintenance of irrigation ditches, *id.*; maintenance of drainage ditches, *id.*; construction or maintenance of farm roads, *id.* § 404(f)(1); and agricultural stormwater discharges, *id.* § 502(14). As of 2012, several activities related to ditches are authorized pursuant to a nationwide permit. These activities include ditch maintenance, agricultural activities, and reshaping existing drainage ditches. U.S. ARMY CORPS OF ENGINEERS, 2012 NATIONWIDE PERMITS, CONDITIONS, DISTRICT ENGINEER’S DECISION, FURTHER INFORMATION, AND DEFINITIONS, *available at* http://www.usace.army.mil/Portals/2/docs/civilworks/nwp/2012/NWP2012_corrections_21-sep-2012.pdf.

³²⁶ References for sections relating to definition of “waters of the United States” are taken from 33 C.F.R. § 328.3 (2015).

³²⁷ Clean Water Rule, 80 Fed. Reg. 37,054, 37,076 (June 29, 2015) (codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

³²⁸ *Id.*

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Other Manmade Features	(b)(1)(b) (4)(i)–(vi); (b)(5)–(7)	Includes waste treatment systems (recycling structures, percolation basins, etc.); irrigated areas that would be dry absent irrigation; constructed lakes/ponds, reflecting pools, or swimming pools created on dry land; irrigation ponds; settling basins; log cleaning ponds; cooling ponds; flooded rice fields; small ornamental waters created on dry land for aesthetic reasons; water-filled depressions in dry land from mining or construction (includes gravel pits); erosional features that do not meet the definition of tributary; lawfully constructed grassed waterways; and stormwater control features constructed to convey, treat, or store stormwater on dry land.
Ground- water	(b)(5)	Includes groundwater drained through subsurface drainage systems.
Puddles	(b)(4)(vii)	None.
Prior Converted Farmland	(b)(2)	Based on EPA determination.