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## Fights Over Continuity - In Life and Law

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# FIGHTS OVER CONTINUITY—IN LIFE AND LAW

JAMISON E. COLBURN\*

## ABSTRACT

What is the whole: a river or that river and its tributaries? There is no “natural” answer to the question, only so many answers as there are reasons for asking. Lately, the Clean Water Act has been the captive of such diversions in our Supreme Court’s agenda. Changing it will not free it from that captivity. For whatever reforms we choose could still provide boundless opportunities for frustration in questions like the above. If the Court is as eager to cause that frustration as it has appeared lately, maybe we should help the Court to its fight with this iconic statute. Continuity is everywhere in life, but it is fleeting in law. For tribunals trading on the strength and clarity of reasons that have neither strength nor clarity, it is probably even more so. In a race against time like the Chesapeake Bay’s restoration, success may turn on how fast such an agent can be expelled from the fray. And that turns on how quickly more Americans recognize judges who have ceased judging and begun, instead, to dictate.

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## INTRODUCTION

The more our Supreme Court has labored to right what it thinks wrong with our Clean Water Act (“CWA”), the more tenuous the Act’s goals have seemed and the more convinced many have grown that it is the Court that must change. The more the Court has demanded clear boundaries in CWA “jurisdiction,” the more often our waters have proven the limits of sovereign power, especially those of our “one supreme Court.”<sup>1</sup> One thing this Court now promises above all, however, is more hostility

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<sup>1</sup> U.S. CONST. art. III, § 1.

toward the CWA.<sup>2</sup> Thus, almost as clearly, the longer Chesapeake Bay states have labored to restore its “chemical, physical, and biological integrity,”<sup>3</sup> the less continued progress in the endeavor has seemed assured. The Bay’s supposedly most derelict partner, Pennsylvania, has always faced a unique dilemma. Its portion of the watershed—roughly the middle half of the state—contains neither of its population centers, and the state itself doesn’t even border the Bay. As Pennsylvania’s pollution has continued to degrade the Bay, interstate frictions forty years in the making have kept rising. In short, the more things have changed, the more they’ve stayed the same. (If we still had watches to set, this could be how.) Even the cliché is probably right twice a day, though, and, in the case of the CWA and the Chesapeake, the cliché may be all that’s left. I will argue in this Article, in fact, that the Bay has become the Act’s ultimate bellwether.

Our sense of natural kinds has long been a potent source of frustration in our law of waters—a force of nature, so to speak. Although rivers, streams, lakes, seas, and most other kinds of waters have typically served as legal boundaries, they are the worst sort of boundary, at least if conflict and uncertainty aren’t the objective. Waters are characteristically ambulatory, and their edges form gradients in any event. The “water’s edge” is normally a zone, full of variation and change. It is only humanity’s exclusion of that zonation with riprap, berms, dams, and the like that give it a determinate edge over time. Even our notion of “ground” versus “surface” water is often hopelessly confused.<sup>4</sup>

Furthermore, designating water “quality” in the face of the powerful forces that most waters possess to absorb, transport, attenuate, and even eliminate insults like pollution is a trying process politically and legally. Life is adaptive by nature, biotic exchange unceasing. As biota comes, other biota goes. All of this has forced us to segment things that are, in fact, continuous, interrelated, even whole. We biennially label “segments” of our waters for whether they meet their designated water quality standards (“WQSs”) or are rather “impaired.”<sup>5</sup> Water quality segments are just the beginning, however, for as waters’ attenuation of our insults

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<sup>2</sup> Andrew Teegarden, *Sackett v. EPA: How the Supreme Court Decimated the Clean Water Act*, UNIV. OF COLO. L. SCH. GETCHES-WILKINSON CTR. FOR NAT. RES., ENERGY & THE ENV'T (Aug. 29, 2023), <https://www.colorado.edu/center/gwc/2023/08/29/sackett-v-epa-how-supreme-court-decimated-clean-water-act> [<https://perma.cc/ZD6R-8D4V>].

<sup>3</sup> 33 U.S.C. § 1251(a).

<sup>4</sup> Both the Army Corps of Engineers and Environmental Protection Agency (“EPA”) have long, convoluted histories with groundwater. See James Stuhltrager, *Is Groundwater Different?*, NAT. RES. & ENV'T, Winter 2010, at 39, 39.

<sup>5</sup> See 33 U.S.C. §§ 1313(c)(2)(A), 1313(d).

continues and evolves, we are induced to forget the favor and add insult to injury. Eventually, many of the natural processes upon which we rely are broken down, centering the temporal dimension in water quality designations and reminding us of what we have here in the moment.

Finally, water quality in Chesapeake Bay has long been a tale of degradation by nutrient: the addition of too much food for microorganisms that in turn flourish and, in the process, exhaust the water's dissolved oxygen ("DO"). DO is the source of life for so much other biota in this system that DO deficits leading to hypoxia in the Bay are among its worst forms of impairment.<sup>6</sup> For as old as this tale is, however, our effective means of rewriting it are much younger. For that, we have relied on both innovative new technologies in wastewater treatment and old-fashioned farming practices like planting "cover crops" on fallow fields and better managing manure and other fertilizers.

Part I traces several important continuities comprising the riverine network we call the Susquehanna and its connections to the Bay. Part II reviews the aged legal disputes over those continuities and their resolution(s) over the past half century, leading to the Bay's current status quo. Finally, Part III peers into an uncertain future for the CWA and the Bay that, more likely than not, promises more of the same and offers some hard takeaways on continued progress.

## I. CONTINUITY IN LIFE: EXERCISES IN DELINEATION

European exploration of our Atlantic rivers like those flowing into the Chesapeake was bound up with projections of old-world sovereignty.<sup>7</sup> Their geography taught them that "estuaries would lead to interior riches, trading opportunities, or bodies of freshwater where colonizers might find or settle, prosperous and stable communities."<sup>8</sup> Indeed, it may have been the rivers that drew the Virginia Company to the Chesapeake's shores in the seventeenth century.<sup>9</sup> The Chesapeake's largest tributary,

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<sup>6</sup> See Walter R. Boynton, *Impact of Nutrient Inflows on Chesapeake Bay*, in *AGRICULTURE AND PHOSPHOROUS MANAGEMENT: THE CHESAPEAKE BAY* 23, 23–24 (Andrew N. Sharpley ed., 2000) ("[C]urrent loads in Chesapeake Bay are sufficient to cause severe seasonal hypoxia and large declines in seagrass communities.").

<sup>7</sup> See LAUREN BENTON, *A SEARCH FOR SOVEREIGNTY: LAW AND GEOGRAPHY IN EUROPEAN EMPIRES, 1400–1900*, at 41 (2010).

<sup>8</sup> *Id.* Cartier's expeditions up the St. Lawrence River were widely studied throughout the colonial enterprise. See *id.* at 49–59. "News of the French reconnaissance of the . . . River—which, after all, did lead to a region of interconnected lakes as large as imagined interior seas—circulated widely in Europe and among mariners." *Id.* at 51.

<sup>9</sup> *Id.* at 50.

the Susquehanna, drains some 71,000 square kilometers in Maryland, Pennsylvania, and New York and annually contributes about 35 trillion liters of water to the Bay.<sup>10</sup> By those metrics, it is larger than the Bay's six other major tributaries (including the James) combined. Indeed, at over 700 kilometers in length, the Susquehanna is the longest river on our East Coast.<sup>11</sup> But it is comprised of a vast network of tributaries totaling almost 773,000 stream and river kilometers.<sup>12</sup>

The North Branch of the Susquehanna, which starts at the outlet of Otsego Lake in Cooperstown, New York, receives flows from the Unadilla, Chenango, Chemung, and Lackawanna Rivers and the Oaks, Otego, Cherry Valley, Schenevus, Charlotte, Ouleout, Starrucca, Salt Lick, Snake, Choconut, Apalachin, Nanticoke, Owego, Wappasening, Cayuta, Sugar, Towanda, Wysox, Wyalusing, Meshoppen, Mehoopany, Bowman, Tunkhannock, Nescopeck, Catawissa, Roaring, and Fishing Creeks. The North Branch meets the West Branch in Northumberland, Pennsylvania. Rising in Cambria County and receiving the Anderson, Chest, Clearfield, Sinnemahoning, Moshannon, Mosquito, Kettle, Young Woman's, Bald Eagle, Pine, Larry's, Lycoming, Loyalsock, White Deer Hold, Muncy, Buffalo, and Chillisquaque Creeks, the West Branch emerges from a series of massive ridges capped in Tuscarora quartzite, a rock extremely resistant to erosion.<sup>13</sup>

From the two branches' confluence, the river turns southwest to receive the Shamokin, Penns, Mahanoy, Middle, Mahantango, and Wiconisco Creeks, the Juniata River, and the Sherman, Conodoguinet, and Swatara Creeks, and then flows southeast to receive the West Conewago, Codorus, Muddy, Chiques, Pequea, Octoraro, and Deer Creeks and the Conestoga River before finally flowing into the Chesapeake Bay at Havre de Grace, Maryland.<sup>14</sup> Several of these main tributaries themselves

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<sup>10</sup> SUSQUEHANNA RIVER BASIN COMM'N, SUSQUEHANNA RIVER BASIN FACTS (2016), <https://www.srbc.gov/our-work/fact-sheets/docs/river-basin-facts.pdf> [<https://perma.cc/SR72-ZQ5B>].

<sup>11</sup> *Id.*

<sup>12</sup> *Susquehanna River*, ENCYC. BRITANNICA (Jan. 23, 2024), <https://www.britannica.com/place/susquehanna-river> [<https://perma.cc/J9JK-5363>].

<sup>13</sup> See SUSAN Q. STRANAHAN, SUSQUEHANNA, RIVER OF DREAMS 22–25 (1995).

Geologically, the West Branch is a far simpler river than the North Branch. Glaciers occupied only its northernmost tributaries, and the rocks along its route were spared intensive folding. The dominant geologic event that occurred here is impossible to see: massive erosion of the layers of sandstone and shale that leveled land surfaces.

*Id.* at 22. But as all that erosion occurred, the “entire region lifted and erosion began anew, forming deep valleys.” *Id.*

<sup>14</sup> See SUSQUEHANNA RIVER BASIN COMM'N, MAJOR WATERSHEDS IN THE LOWER

start from an array of branches, some flowing over 160 kilometers. The river's zigzagging in its upstream reaches reflects the mountainous, ridge-hemmed plateaus and valleys it drains—plateaus and valleys that were forested, farmed, logged, and now (for many of them) are being forested again.<sup>15</sup> In its last third, the landscape levels out considerably into a Piedmont province where the river is dominated by massive rocks, riffles, broken channels and, eventually, a final run of steep descents.<sup>16</sup>

Like their cousins to the west (the Allegheny and Monongahela's confluence forming the Ohio River of Pittsburgh's "Three Rivers" fame), the Susquehanna's branches were named from their direction of European exploration: from the Bay.<sup>17</sup> The Pittsburgh "cousins" may be no less naturally continuous with each other than the branches of the Susquehanna, but they are considerably younger. Indeed, the Susquehanna may be a unique instance in continuity, for it is believed to be among the world's oldest rivers at over 300 million years old!<sup>18</sup> Also unlike its counterpart, the Ohio, the Susquehanna never divided North from South—or indeed any state from another.

European settlements on both the Ohio and the Susquehanna grew steadily in the eighteenth century, but the misery of navigating the latter was unrelenting. It has always been the least navigable large river Europeans discovered from the Atlantic. Captain John Smith's voyage up the river in 1608 made it less than two miles yet lived long in British lore.<sup>19</sup> Rivers "held a privileged place" in Europeans' "strategies of claims making," their occupation and settlement constituting a "symbolic language of possession that was widely shared across European empires."<sup>20</sup>

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SUSQUEHANNA SUBBASIN (2006), <https://www.srbc.gov/portals/susquehanna-atlas/data-and-maps/major-watersheds/docs/watersheds-lower-susquehanna.pdf> [<https://perma.cc/Y6EC-FV9Z>]; PA. DEPT OF ENV'T PROT., LOWER SUSQUEHANNA WATER PLAN (2007), [https://files.dep.state.pa.us/water/Division%20of%20Planning%20and%20Conservation/StateWaterPlan/WaterAtlas/07-lower\\_susquehanna\\_region.pdf](https://files.dep.state.pa.us/water/Division%20of%20Planning%20and%20Conservation/StateWaterPlan/WaterAtlas/07-lower_susquehanna_region.pdf) [<https://perma.cc/P7AJ-M7GK>].

<sup>15</sup> See STRANAHAN, *supra* note 13, at 22–24.

<sup>16</sup> See *id.* at 33–37.

<sup>17</sup> *E.g.*, Melissa Cagan, *What's in the Rivers?*, CARNEGIE MUSEUM OF NAT. HIST., <https://carnegiemnh.org/whats-in-the-rivers> [<https://perma.cc/T2KB-E4YX>] (last visited May 6, 2024) (explaining Pittsburgh is known for its three rivers: the Allegheny and Monongahela Rivers, and the Ohio River, which is formed by the convergence of the Allegheny and Monongahela); *The Susquehanna River*, SUSQUEHANNA RIVER VALLEY VISITORS BUREAU, <https://www.visitcentralpa.org/things-to-do/parks-trails-nature/lakes-rivers/the-susquehanna-river> [<https://perma.cc/8T82-HZVY>] (last visited May 6, 2024) (explaining that there are two main branches of the Susquehanna: the North Branch and the West Branch).

<sup>18</sup> See STRANAHAN, *supra* note 13, at 15.

<sup>19</sup> See *id.* at 36–37, 40–41.

<sup>20</sup> BENTON, *supra* note 7, at 56–57.

A river like the Susquehanna, so bitterly divided by impassable falls, long stretches of slack water over a mile wide, and seasonal flows that vary from virtually nothing to raging floods of unimaginable violence, must have been an awful disappointment to them.<sup>21</sup> Nonetheless, claim it they did.

By the nineteenth century, dams and canals had beset the watershed. The Columbia Dam seventy kilometers upstream of the Bay was completed in 1839, cleaving the river and stranding migratory fish like eels and American shad.<sup>22</sup> By the twentieth century, several large dams scored the mainstem, segmenting its flows and mean elevations, contributing to its navigability in the confined reaches yet simultaneously assaulting its biotic and physical continuities.<sup>23</sup> From 1837–1878, the 155-kilometer-long Chenango Canal linked the river to the Erie Canal system to the north in a single hydraulic works, constituting the longest such system in North America.<sup>24</sup> Shipping times from Binghamton to Albany were cut in half, costs cut even more so.<sup>25</sup> That system kept expanding to the dawn of the rail age, the same beginning that would, starting in the 1880s, become a colossal abandonment of farms throughout the watershed (like much of New England, New York, and the Delaware Valley).<sup>26</sup> Ironically, the Chenango Canal probably carried all the material, engines, men, and everything else used to build the rails that obsoleted it.

By then, Congress was soon to make the first standing delegations to the Army Corps of Engineers to guide and protect navigation and navigability—and to do so even on rivers like the Susquehanna.<sup>27</sup> The

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<sup>21</sup> See STRANAHAN, *supra* note 13, at 39–73.

<sup>22</sup> See RICHARD GERSTELL, *AMERICAN SHAD IN THE SUSQUEHANNA RIVER BASIN: A THREE-HUNDRED-YEAR HISTORY* 13–14 (1998).

<sup>23</sup> See Gabriel Lee, *Overview: The Big Dam Era*, YALE ENERGY HIST. ONLINE (2023), <https://energyhistory.yale.edu/the-big-dam-era> [<https://perma.cc/85Z6-LJBR>].

<sup>24</sup> See 1 NOBLE E. WHITFORD, *HISTORY OF THE CANAL SYSTEM OF THE STATE OF NEW YORK* 683 (1906).

<sup>25</sup> See Gerald Smith, *Serialization: Chenango Canal and Railroad Brought New Commerce to Binghamton*, PRESS & SUN-BULL. (Sept. 28, 2014), <https://www.pressconnects.com/story/news/connections/history/2014/09/28/broome-county-history/16077725> [<https://perma.cc/AHF9-8XR8>].

<sup>26</sup> See GORDON G. WHITNEY, *FROM COASTAL WILDERNESS TO FRUITED PLAIN: A HISTORY OF ENVIRONMENTAL CHANGE IN TEMPERATE NORTH AMERICA FROM 1500 TO THE PRESENT* 245–49 (1994).

<sup>27</sup> The Rivers and Harbors Act of 1890, ch. 907, §§ 1–18, 26 Stat. 426 (1890), prohibited “obstructing navigation by deposits of refuse, etc., in navigable waters.” *Id.* at 453. The Rivers and Harbors Act of 1894, ch. 299, §§ 1–13, 28 Stat. 338 (1894), prohibited filling “in the waters of any harbor or river of the United States.” *Id.* at 363. It was the Rivers and Harbors Act of 1899, ch. 425, §§ 1–22, 30 Stat. 1121 (1899), that delegated power to



watershed in Pennsylvania hosted thousands of milldams, probably the highest concentration of dams in the nation. And the era of hydroelectric dam-building was just beginning.<sup>28</sup> A century after that the abandonment and removal of most of those dams would become the single most significant unknown in understanding the river's transport and attenuation of pollutants—nitrogen, phosphorous, and sediment—amid dire water quality struggles in the Bay.<sup>29</sup>

In 2010, at the adoption of the pollution budget, or total maximum daily load (“TMDL”) for the Bay, most were looking ahead—many to 2025, the year the Bay was finally to achieve its water quality standards.<sup>30</sup> And many of those were looking squarely at the Susquehanna, the ostensible cause of so much of the hypoxic “dead zones” recorded annually in the Bay.<sup>31</sup> The watershed implementation plans (“WIPs”) set for the Susquehanna and its major tributaries were arguably the most important in the Bay.

Looking back, the Susquehanna watershed had changed dramatically by 2010. The cumulative impacts of the arrival, rise, and eventual retreat of agriculture, fuelwood forestry, and mining were matched only by their piecemeal replacement with abandoned farms, urban and semi-urban landscapes, and atmospheric nitrogen deposition.<sup>32</sup> Agriculture's boom, the first of European-American settlers' economy, took up residence in the valleys much as the tributaries' names were patterned: alternating in

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the Department of the Army to permit and regulate such filling. *See id.* at 1151 (codified as amended at 33 U.S.C. § 403). Notably, that Act only came from Congress after the Supreme Court had held unequivocally that no “federal common law” prohibited the building of bridges or other obstructions to navigability. *See Willamette Iron Bridge Co. v. Hatch*, 125 U.S. 1, 8–12 (1888).

<sup>28</sup> *See* Peter S. Foote, Senior Env't Sci., Louis Berger Grp., Presentation at FERC Fish Passage Workshop: History of the Development of Fish Passage Facilities at FERC Licensed Projects on the Lower Susquehanna River (July 2020), <https://www.ferc.gov/sites/default/files/2020-07/ferc-fish-passage-workshop-foote.pdf> [<https://perma.cc/S69B-MSDA>].

<sup>29</sup> *See* Patrick M. Fleming, Dorothy J. Merritts & Robert C. Walter, *Legacy Sediment Erosion Hot Spots: A Cost-Effective Approach for Targeting Water Quality Improvements*, 74 J. SOIL & WATER CONSERVATION 67A, 67A–68A (2019).

<sup>30</sup> A TMDL is a calculated value of pollutant volumes added to a water that are consistent with that water attaining its designated WQSS. As many have observed, TMDLs are not self-executing and only make a practical difference to the extent they are translated into permit conditions and other measures. *See, e.g., Pronsolino v. Nastri*, 291 F.3d 1123, 1129 (9th Cir. 2002).

<sup>31</sup> *See, e.g.,* Oliver A. Houck, *The Clean Water Act Returns (Again): Part I, TMDLs and the Chesapeake Bay*, 41 ENV'T L. REP. 10,208, 10,213 n.58, 10,222 (2011).

<sup>32</sup> MD. DEP'T OF NAT. RES., LOWER SUSQUEHANNA RIVER WATERSHED ASSESSMENT, MARYLAND AND PENNSYLVANIA, at ES-1 (2015).



native and English roots.<sup>33</sup> Later, as extractive industries dominated the landscape, old fields succeeded to new kinds of forest, with species mixes theretofore unknown.<sup>34</sup> Planning to cut the pollutants the Susquehanna delivers to the Bay has thus been an unprecedented challenge, eliciting an extraordinary scientific and technical response, equally a matter of storm-water, sewage, erosion, manure, and toxin management, forestry, and other aspects, each with major interannual variations and uncertainties.<sup>35</sup>

Can there be continuity in change? One such continuity has surely been the regenerative powers of the Susquehanna watershed's trees and their ongoing evolution with the river. By species composition, these forests have changed a great deal in the past four centuries. The (mistaken) idea that this watershed was in "equilibrium" and unchanged in its pre-European contact era, however, gives quarter to all manner of mistakes about what needs fixing.<sup>36</sup> Even our notions that its forests are plural—not one—and that they have come and gone have long divided ecologists studying vegetative associations.<sup>37</sup> Indeed, forest ecologists

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<sup>33</sup> See *Susquehanna River Basin: Major Watersheds*, SUSQUEHANNA RIVER BASIN COMM'N (2006), <https://www.srbc.gov/portals/susquehanna-atlas/data-and-maps/major-watersheds> [<https://perma.cc/C492-PTB6>].

<sup>34</sup> See Hedley S. Grantham, Paolo Tibaldeschi, Pablo Izquierdo, Karen Mo, David J. Patterson, Hugo Rainey, J.E.M. Watson & Kendall R. Jones, *The Emerging Threat of Extractives Sector to Intact Forest Landscapes*, FRONTIERS IN FORESTS & GLOB. CHANGE, July 16, 2021, at 1, 6–7.

<sup>35</sup> See Lewis C. Linker, Richard A. Batiuk, Gary W. Shenk & Carl F. Cerco, *Development of the Chesapeake Bay Watershed Total Maximum Daily Load Allocation*, 49 J. AM. WATER RES. ASS'N 986, 997–1000 (2013); Jamison E. Colburn, *Coercing Collaboration: The Chesapeake Bay Experience*, 40 WM. & MARY ENV'T L. & POL'Y REV. 677, 698–708 (2016).

<sup>36</sup> Oliver A. Houck, *supra* note 31, provides an account of the Chesapeake that is emblematic, though by no means unique. To the assertion that the Bay, "like all other estuaries, lived in equilibrium until humans started adding their wastes and destroying its natural filters of bottom grasses, adjacent wetlands, and upstream vegetation," *id.* at 10,214, Houck added that "[s]ince the arrival of Captain John Smith and the settlement of the Bay, its forests, wetlands, and underwater grasses have declined by nearly 100%." *Id.* at 10,214 n.64. Joseph Rothrock's pioneering Pennsylvania campaign beginning in the nineteenth century to reacquire its forest-lands and reforest them, evidenced today by more than 2 million acres of state forests in Pennsylvania (much of that in the Susquehanna basin), was a model on which our national forests were later built and was directly responsible for tremendous restoration. See SAMUEL P. HAYS, WARS IN THE WOODS: THE RISE OF ECOLOGICAL FORESTRY IN AMERICA 119–22 (2007). Further, the evidence that the watershed and the Bay existed in some lasting equilibrium prior to the arrival of people is overwhelmed by the evidence to the contrary. See Hazel R. Delcourt & Paul A. Delcourt, *Quaternary Landscape Ecology: Relevant Scales in Space and Time*, 2 LANDSCAPE ECOLOGY 23, 31–34 (1988); WHITNEY, *supra* note 26, at 33–38, 53–97, 100–20.

<sup>37</sup> See Robert P. McIntosh, *The Continuum Concept of Vegetation*, 33 BOTANICAL REV. 130,

would eventually agree that, if permitted, forests are as much a function of decomposition as they are of growth—one more continuity in life it took us generations to notice.<sup>38</sup> The massive white pines (*Pinus strobus*) of the region that first drew colonials into the river’s southern reaches with cash values higher than any other tree’s may have dawned an age of logging here.<sup>39</sup> By late in the nineteenth century, most of the watershed had been logged down to a small fraction of its pre-settlement volume, much of that by horribly wasteful uses of trees.<sup>40</sup> Today, over 60% of the Susquehanna’s watershed is forested and home to more than 4 million people.<sup>41</sup> Much of the reason they live here is for the forested ridges and valleys, streams, and their totality as an environment.

## II. CONTINUITY IN LAW: STRUGGLES OVER WATERS

Our law has always reflected a need to allocate nature spatially, temporally, and functionally. It’s the specific allocations that keep changing. This Part surveys the landscape as to water and waters, natural kinds that have challenged that endeavor from the beginning.

Navigability and “navigable waters” as a technological and legal threshold stretch back in our constitutional traditions almost unimaginably far, reaching the very first disputes over vertical (intergovernmental) and horizontal (interbranch) distributions of authority.<sup>42</sup> Part of our

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130 (1967); Peter S. White, *Pattern, Process, and Natural Disturbance in Vegetation*, 45 BOTANICAL REV. 229, 236–37 (1979).

<sup>38</sup> See Jerry F. Franklin, Thomas A. Spies, Robert Van Pelt, Andrew B. Carey, Dale A. Thornburgh, Dean Rae Berg, David B. Lindenmayer, Mark E. Harmon, William S. Keeton, David C. Shaw, Ken Bible & Jiquan Chen, *Disturbances and Structural Development of Natural Forest Ecosystems with Silvicultural Implications, Using Douglas-Fir Forests as an Example*, 155 FOREST ECOLOGY & MGMT. 399, 399 (2002); Jack Ward Thomas, Leonard F. Ruggiero, R. William Mannan, John W. Schoen & Richard A. Lancia, *Management and Conservation of Old-Growth Forests in the United States*, 16 WILDLIFE SOC’Y BULL. 252, 256–57 (1988); JERRY F. FRANKLIN, KERMIT CROMACK, JR., WILLIAM DENISON, ARTHUR MCKEE, CHRIS MASER, JAMES SEDELL, FRED SWANSON & GLEN JUDAY, U.S. FOREST SERV. PAC. NW. FOREST & RANGE EXPERIMENT STATION, ECOLOGICAL CHARACTERISTICS OF OLD-GROWTH DOUGLAS-FIR FORESTS 7 (1981).

<sup>39</sup> *The Susquehanna Log Boom, Williamsport, PA, 1890*, EXPLOREPAHIST. (1993), <https://explorepahistory.com/displayimage.php?imgId=1-2-34C> [<https://perma.cc/9Z6N-HJLM>].

<sup>40</sup> *Id.*

<sup>41</sup> SUSQUEHANNA RIVER BASIN COMM’N, *supra* note 10.

<sup>42</sup> The literature is vast. An accessible and lively introduction is Robert W. Adler, *The Ancient Mariner of Constitutional Law: The Historical, yet Declining Role of Navigability*, 90 WASH. U. L. REV. 1643, 1651–82 (2013).

judicial power's scope depends on navigability.<sup>43</sup> Part of Congress's power depends on it.<sup>44</sup> And much of the states' enjoyment of the waters within their boundaries depends on it as well.<sup>45</sup> The Supreme Court's protection of sovereign ownership of the submerged lands beneath waters to the states depended on their navigability.<sup>46</sup> But each has persisted and even

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<sup>43</sup> Article III of the Constitution's admiralty jurisdiction, an early original contest over navigability's scope, expanded from only those waters affected by the tides (the sometime English rule) to eventually reach the Great Lakes, all waters serving as commercial byways, and finally all waters navigable-in-fact and bearing some "interstate nexus." See U.S. CONST. art. III, § 2, cl. 1 ("The judicial Power shall extend to all Cases . . . of admiralty and maritime Jurisdiction . . ."); *The Propeller Genesee Chief v. Fitzhugh*, 53 U.S. (12 How.) 443, 458 (1851) (overruling *The Thomas Jefferson*, 23 U.S. (10 Wheat.) 428 (1825), and holding that admiralty jurisdiction may extend above the tidewaters); *The Eagle*, 75 U.S. (8 Wall.) 15, 19–24 (1868) (holding that admiralty jurisdiction extended to all navigable waters); *The Montello*, 87 U.S. (20 Wall.) 430, 441 (1874) (holding that navigability is not defeated by non-navigable reaches of a river); *Foremost Ins. Co. v. Richardson*, 457 U.S. 668, 674–77 (1982) (affirming a "traditional" locality test for Article III admiralty jurisdiction); see also Daniel J. Hulsebosch, *Writs to Rights: "Navigability" and the Transformation of the Common Law in the Nineteenth Century*, 23 CARDOZO L. REV. 1049, 1097–1105 (2002); THOMAS J. SCHOENBAUM, *ADMIRALTY & MARITIME LAW* §§ 1–3 (6th ed. 2019) (discussing admiralty jurisdiction, the definition of "navigability," and the historic cases that shaped that definition).

<sup>44</sup> The federal navigation servitude, for example, was held to originate from Congress's commerce clause power. See *Gibson v. United States*, 166 U.S. 269, 276 (1897). But that was only one of several early struggles over navigability's geographic extent for Article I purposes. From *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1 (1824), and *The Daniel Ball*, 77 U.S. (10 Wall.) 557 (1870), to *United States v. Appalachian Electric Power Co.*, 311 U.S. 377 (1940), the nineteenth and twentieth centuries saw a steady expansion of the extent of navigable waters for purposes of Article I. All of it, of course, stemmed from the Court. On the Commerce Clause's reach to non-navigable headwaters and tributaries, see *United States v. Twin City Power Co.*, 350 U.S. 222, 224–25 (1956); *Oklahoma ex rel. Phillips v. Guy F. Atkinson Co.*, 313 U.S. 508, 523 (1941); and *Appalachian Electric*, 311 U.S. at 408–19.

*The Daniel Ball's* "navigable-in-fact" test eventually grew to include waters that could be rendered navigable-in-fact through "reasonable improvements." See 311 U.S. at 406–08; see also *Ashwander v. Tenn. Valley Auth.*, 297 U.S. 288, 328–30 (1936). That would later expand to include waters navigable only by very small craft. See, e.g., *FPL Energy Me. Hydro LLC v. Fed. Energy Regul. Comm'n*, 287 F.3d 1151, 1159 (D.C. Cir. 2002) (affirming the agency's finding that a stream was navigable-in-fact because substantial evidence had been adduced that a canoeist could navigate the stream easily given its many artificial enhancements).

<sup>45</sup> The Court's equitable apportionments and protection of state interests in shared waters began on the Ohio River in a struggle over navigation on the river in the *Wheeling Bridge* case, *Pennsylvania v. Wheeling & Belmont Bridge Co.*, 54 U.S. (13 How.) 518 (1852). See Jamison E. Colburn, *Rethinking the Supreme Court's Interstate Waters Jurisprudence*, 33 GEO. ENV'T L. REV. 233, 237–41 (2021); see also ELIZABETH BRAND MONROE, *THE WHEELING BRIDGE CASE: ITS SIGNIFICANCE IN AMERICAN LAW AND TECHNOLOGY* (1992).

<sup>46</sup> See *Martin v. Waddell's Lessee*, 41 U.S. (16 Pet.) 367, 413–14 (1842); *Pollard's Lessee*

worsened as a source of legal uncertainty, serving as a highly evolved foil for the rational allocation of authority to declare and adjudicate the law of waters as resources.<sup>47</sup>

Beginning from a famous 1870 decision adopting a new test for the geographic scope of Congress's Commerce Clause navigation power,<sup>48</sup> congressional authority over rivers like the Susquehanna was decoupled from the impracticality of actually navigating it. That authority was ratified repeatedly by a Supreme Court that viewed commerce as a touchstone of federal supremacy.<sup>49</sup> From that day, if not before, legal fictions of navigability overshadowed the river itself.

Navigable waters comprised the territorial reach of the Army Corps of Engineers' power to regulate waterborne commerce from the end of the Gilded Age to the emergence of the modern CWA.<sup>50</sup> The Supreme Court was long a willing partner in that expansion of federal power.<sup>51</sup> As even the Court has admitted, House and Senate differences over the geographic scope of the gargantuan changes they were considering in 1972 resulted

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v. Hagan, 44 U.S. (3 How.) 212, 223 (1845). Interstate waters have featured in several of the Court's "equal footing" doctrine landmarks, including *Pollard's Lessee*. See *Barney v. City of Keokuk*, 94 U.S. 324, 333–34 (1877); *Ill. Cent. R.R. Co. v. Illinois*, 146 U.S. 387, 451–59 (1892); *Shively v. Bowlby*, 152 U.S. 1, 57 (1894); *Phillips Petrol. Co. v. Mississippi*, 484 U.S. 469, 473–76 (1988) (reviewing prior case holdings); Leah M. Litman, *Inventing Equal Sovereignty*, 114 MICH. L. REV. 1207, 1210 (2016) (finding at the core of cases like *Pollard's Lessee* and *United States v. Louisiana*, 363 U.S. 1, 16 (1960), a "historic tradition that all the States enjoy equal sovereignty").

<sup>47</sup> See Jamison E. Colburn, *Don't Go in the Water: On Pathological Jurisdiction Splitting*, 39 STAN. ENV'T L.J. 3, 11–12, 14–15, 18–19 (2019).

<sup>48</sup> See *The Daniel Ball*, 77 U.S. (10 Wall.) at 563.

<sup>49</sup> See Richard W. Bartke, *The Navigation Servitude and Just Compensation—Struggle for a Doctrine*, 48 OR. L. REV. 1, 6, 8–10 (1968). Importantly, *Appalachian Electric*, not *The Daniel Ball*, was the Court's most recent authoritative statement of the Commerce Clause's relationship to navigation and navigability prior to the CWA's enactment in 1972. See 311 U.S. 377, 408–19 (1940). Besides finding navigable-in-fact waters within the scope of Congress's power, the Court had held that waters that could be rendered navigable by "reasonable improvements" like dams also fell within Congress's reach. See *id.* at 407–08. That Congress's purposes in asserting jurisdiction need not be about navigation and that this "plenary power" extended over waters whether they were actually used for commerce or not also found their way into the holding in *Appalachian Electric*. See *id.* at 433 (Roberts & McReynolds, JJ., dissenting) ("If this test be adopted, then every creek in every state of the Union which has enough water, when conserved by dams and locks or channeled by wing dams and sluices, to float a boat drawing two feet of water, may be pronounced navigable . . .").

<sup>50</sup> See Sam Kalen, *Commerce to Conservation: The Call for a National Water Policy and the Evolution of Federal Jurisdiction over Wetlands*, 69 N.D. L. REV. 873, 879–97 (1993).

<sup>51</sup> See MONROE, *supra* note 45, at 163–76.

in a deliberate choice by the Conference Committee to define “navigable waters” as “the waters of the United States, including the territorial seas.”<sup>52</sup> It is the *purpose* of this choice more than its legal form that has kept it in focus ever since, from a first turn by the lower courts ordering the Corps to assert its authority to the limits of the Commerce Clause through the definition’s (now) four trips to the Supreme Court.<sup>53</sup>

The contours of those trips are familiar. In 1985, a unanimous Court held that wetlands could fall within the Act’s definition of “navigable waters” because the Corps and Environmental Protection Agency (“EPA”) had found that wetlands “may affect water quality of adjacent lakes, rivers, and streams even when the waters of those bodies do not actually inundate the wetlands.”<sup>54</sup> It so held on the theory that “[w]ater moves in hydrologic cycles, and the pollution of this part of the aquatic system, regardless of whether it is above or below an ordinary high water mark, or mean high tide line, will affect the water quality of the other waters within that aquatic system.”<sup>55</sup> Yet sixteen years later in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC)*, a majority of the Court declared its hostility to what it viewed as creeping federal tyranny inhering in that theory.<sup>56</sup> By then, the same five Justices who less than a month earlier had held that George W. Bush should be president characterized the CWA’s jurisdictional scope as a matter of urgent constitutional concern, affected with deep suspicions were it to be so extended on such theories.<sup>57</sup> In holding that

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<sup>52</sup> See *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 133–34 (1985) (discussing the CWA’s definition of “navigable waters”).

<sup>53</sup> Sam Kalen’s review of the events, cited by the dissent in *Solid Waste Agency of North Cook County v. U.S. Army Corps of Engineers (SWANCC)*, 531 U.S. 159, 177 (2001), is exhaustive. See *supra* note 50, at 882–97 (discussing *Nat. Res. Def. Council, Inc. v. Callaway*, 302 F. Supp. 685 (D.D.C. 1975)).

<sup>54</sup> See *Riverside Bayview*, 474 U.S. at 134.

<sup>55</sup> *Id.* (quoting *Navigation and Navigable Waters*, 42 Fed. Reg. 37,122, 37,128 (July 19, 1977)).

<sup>56</sup> 531 U.S. 159, 173 (2001) (claiming that the extension of jurisdiction to “isolated,” artificial waters would “raise significant constitutional questions” about congressional authority, and refusing to permit it).

<sup>57</sup> See *id.* (stating that such “arguments raise significant constitutional questions”). In the majority’s opinion, “[w]here an administrative interpretation of a statute invokes the outer limits of Congress’ power,” the Court had “expect[ed] a clear indication that Congress intended that result.” *Id.* at 172 (citing *Edward J. DeBartolo Corp. v. Fla. Gulf Coast Bldg. & Constr. Trades Council*, 485 U.S. 568, 575 (1988)).

In *Bush v. Gore*, 531 U.S. 98 (2000), Chief Justice Rehnquist and Justices O’Connor, Scalia, Kennedy, and Thomas signed a per curiam opinion holding that the continued



the “isolated,” artificial (some of them seasonal) ponds and wetlands at issue there were beyond the statute’s reach, the majority reasoned that were the CWA to be so extensive in scope, it should have a “clear statement” made in the Act’s text to that precise effect.<sup>58</sup> Five years later, the Court failed to agree in a pair of consolidated cases—which were fundamentally similar to, arose in the same Corps district as, and were but a few miles from, the events in *Riverside Bayview*—why wetlands found on four different sites should be beyond the reach of the CWA.<sup>59</sup> The disagreements in that case would become a turning point for our judicial power and the CWA’s geography, but probably not for the reasons the Justices imagined.

Four votes (Chief Justice Roberts and Justices Scalia, Thomas, and Alito) began from the bare assertion that “[o]ver \$1.7 billion is spent each year by the private and public sectors obtaining wetlands permits.”<sup>60</sup> From there, the opinion reasoned the parcels at issue, each bearing some form of connection to what they termed “traditional navigable waters,” could not be within the reach of the Act because the connections linking them to those waters were insufficient to make them “waters” within a definition of that term taken from *Webster’s New International Dictionary*.<sup>61</sup> The resort to the dictionary stemmed from the nature of the tributaries connecting the sites to broad, deep, navigable-in-fact waters like the Great Lakes. They were relatively small, uneven in flow, and included ditches dug to drain much of the surrounding landscape.<sup>62</sup> Besides the dictionary, these four argued that “[t]he restriction of ‘the waters of the United States’ to exclude channels containing merely intermittent or

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recount of ballots in Florida was an unconstitutional denial of equal protection, effectively declaring George W. Bush the winner of that state’s balloting in the 2000 presidential election. Rather infamously, the opinion declared that “[o]ur consideration is limited to the present circumstances,” *id.* at 109, evidently trying to discourage future litigants from citing it in other equal protection cases or controversies. See Laurence H. Tribe, *eroG .v hsuB and Its Disguises: Freeing Bush v. Gore from Its Hall of Mirrors*, 115 HARV. L. REV. 170, 171 (2001).

<sup>58</sup> See *SWANCC*, 531 U.S. at 172.

<sup>59</sup> See *Rapanos v. United States*, 547 U.S. 715 (2006). *Rapanos* was a consolidation of the complaints against John Rapanos and of petitions for review brought by June Carabell and others, also adjudicated by the Sixth Circuit. See *Carabell v. U.S. Army Corps of Eng’rs*, 257 F. Supp. 2d 917 (E.D. Mich. 2003), *aff’d*, 391 F.3d 704 (6th Cir. 2004).

<sup>60</sup> *Rapanos*, 547 U.S. at 721.

<sup>61</sup> *Id.* at 732 (plurality opinion) (defining “waters” as water “found in streams and bodies forming geographical features such as oceans, rivers, [and] lakes,” or “the flowing or moving masses, as of waves or floods, making up such streams or bodies”) (quoting WEBSTER’S NEW INTERNATIONAL DICTIONARY 2882 (2d ed. 1954)).

<sup>62</sup> *Id.* at 756–57.

ephemeral flow also accords with the commonsense understanding of the term.”<sup>63</sup> Tributaries, to these four, necessarily must possess some minimal flow, continuity over time, etc., and their lack thereof was determinative.<sup>64</sup>

Another four votes (Justices Stevens, Souter, Ginsburg, and Breyer) would have affirmed the Sixth Circuit and the Corps in its applications of the CWA at the sites. They reasoned that the term “waters” was extensionally vague, that its geographic scope decided a tremendous range of matters under the Act, that it entailed considerable technical and practical ambiguities which the agencies were better suited to resolving, and that the Corps’ and EPA’s long-standing definitions had been repeatedly affirmed by Congresses since their adoption.<sup>65</sup> They dissented and did so with several tart jabs of their own.<sup>66</sup>

And then there was Justice Kennedy. He filed an opinion for himself. Kennedy thought the lower court insufficiently attentive to the limits of “waters” under the Act.<sup>67</sup> And he thought he could best state the “test” to be drawn from the Court’s two prior precedents on point: whether the waters or wetlands in question bore some “significant nexus” to downstream waters that were themselves navigable-in-fact.<sup>68</sup> (In the second of the two cases below, this “significant nexus” test was precisely what

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<sup>63</sup> *Id.* at 733–34. The plurality further reasoned that “the [CWA]’s use of the traditional phrase ‘navigable waters’ (the defined term) further confirms that it confers jurisdiction only over relatively *permanent* bodies of water.” *Id.* at 734 (emphasis in original). How the Act’s substitution of “the waters” for “navigable waters” in § 502(7) could non-circularly do so, however, was apparently lost on this plurality, even as it reasoned the latter term had a long, complicated history by the time of the CWA’s enactment in 1972.

<sup>64</sup> *Id.* at 739 (“[T]he phrase ‘the waters of the United States’ includes only those relatively permanent, standing or continuously flowing bodies of water ‘forming geographic features’ that are described in ordinary parlance as ‘streams[,] . . . oceans, rivers, [and] lakes.’”).

<sup>65</sup> *Id.* at 787–810 (Stevens, J., with Souter, Ginsburg & Breyer, JJ., dissenting).

<sup>66</sup> Justice Stevens wrote that the plurality opinion, though “creative,” was “revisionist,” “utterly unpersuasive,” “tangential,” “mystifying,” filled with “arbitrary” lines, and that its assertion about permitting costs was deeply misleading. 547 U.S. at 787–88, 793, 800, 802, 802 n.12. He also took the extraordinary step of observing that, “given that all four Justices who have joined [the] opinion would uphold the Corps’ jurisdiction in . . . all . . . cases in which either the plurality’s or Justice Kennedy’s test is satisfied—on remand each of the judgments should be reinstated” under either of the tests proposed in the opinions—“significant nexus” or “surface connections.” *Id.* at 810 & n.14.

<sup>67</sup> *See id.* at 759 (Kennedy, J., concurring in the judgment) (arguing the court of appeals “did not consider all the factors necessary” to determine whether the lands had the proper navigability nexus).

<sup>68</sup> *See id.* at 759–83. Kennedy also allowed, confusingly, that waters or wetlands at issue, “either alone or in combination with similarly situated lands in the region, [may] significantly affect the chemical, physical, or biological integrity of other covered waters more readily understood as ‘navigable,’” and thereby become jurisdictional. *Id.* at 779–80.



the courts had already derived from *SWANCC* and *Riverside Bayview*.<sup>69</sup>) In drawing out this test, he began from the premise that wetlands are “not simply moist patches of earth,” but are instead a union of chemical, physical, and biotic characteristics that the agencies had taken care to define in a manual several hundred pages strong.<sup>70</sup> Like the dissenters, he also thought a dictionary the wrong place to look to define a tributary, certainly where the tributary itself may be the requisite biotic or other continuity with downstream waters. He said his test was suggested by those prior decisions.<sup>71</sup> He concluded the parcels at issue in the cases *might* bear such a connection to downstream waters but that it was a considerable factual unknown from the two records that had reached the Court.<sup>72</sup> So he noted that he *would* vacate “and remand for consideration whether the specific wetlands at issue possess a significant nexus with navigable waters,” stated counterfactually, one supposes, to reflect his refusal to join the plurality, and that plurality’s incapacity as to any *reasons* for the judgment.<sup>73</sup>

In their need to justify themselves, the Justices’ fractious result in *Rapanos* made less out of our “judicial Power,” not more. For, as a (failed) test of reasons over power, Kennedy’s concurrence joined a trend some have called “deplorable” in its confusion of the judgment’s practical effect.<sup>74</sup> The Justices struggled more over their reasons than they did to establish a judgment. When the Court acts in this fashion, as in cases like these where it is manipulating a doctrine like *Chevron* and the appropriate “deference” to pay the executive, the maneuvering is often defended as sending vital signals to inferior courts.<sup>75</sup> (The orderly administration of

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<sup>69</sup> See *Carabell v. U.S. Army Corps of Eng’rs*, 391 F.3d 704, 710 (6th Cir. 2004).

<sup>70</sup> See *id.*; *Rapanos*, 547 U.S. at 761.

<sup>71</sup> See *Rapanos*, 547 U.S. at 779–81.

<sup>72</sup> See *id.* at 783–87.

<sup>73</sup> *Id.* at 787. Justice Scalia’s opinion closed by stating it was vacating the judgments below and “remand[ing] . . . for further proceedings.” *Id.* at 757. The parties settled the cases in both *Rapanos* and *Carabell*. See *Rapanos Clean Water Act Settlement*, EPA, <https://www.epa.gov/enforcement/rapanos-clean-water-act-settlement> [<https://perma.cc/PD5R-R4G5>] (Aug. 17, 2023).

<sup>74</sup> See RICHARD A. POSNER, *THE FEDERAL COURTS: CHALLENGE AND REFORM* 359 (1985).

<sup>75</sup> Since *SWANCC* and *Rapanos*, the Court’s adherence to its own “*Chevron* doctrine” has taken on a broader significance than perhaps even the consequences to the CWA. Administrative lawyers have long understood the Court to be on a tilt toward narrowing or perhaps overruling *Chevron*. See Kristin E. Hickman & Aaron L. Nielson, *Narrowing Chevron’s Domain*, 70 DUKE L.J. 931, 931–33 (2021). Between the CWA and the Clean Air Act, the EPA has been a consistent cast member in that drama. See, e.g., *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 457 (2001); *Alaska Dep’t of Env’t Conservation v.*

the statute is merely collateral damage.) But signals of the kind have long been less than meets the eye. For this Court is increasingly being identified with power, not reason, likely because its reasons seem from the Court's *behavior* to be so impermanent, even for the Justices themselves. And, in fact, a long run of cases adjudicating a tributary's legal status as CWA "waters of the United States" predated and continued virtually uninterrupted following *Rapanos*.<sup>76</sup>

In American legal parlance, a "tributary" has long denoted a body of water smaller than that into which it flows.<sup>77</sup> It is one way—from smaller to larger, tributary to whatever receives that tributary. As aggregates, however, tributaries are much the larger natural phenomenon and motile organisms have always moved upstream.<sup>78</sup> Zeno could have derived more paradoxes from a river and its tributaries than he did from the continuity of motion. For what is a river or a stream without its tributaries? Any causal account of either would identify it with them. And where do a tributary's effects end? We have all seen headwaters of great rivers—the

EPA, 540 U.S. 461, 461 (2004); *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 218 & n.4 (2009); *EPA v. EME Homer City Generation*, 572 U.S. 489, 489 (2014); *Michigan v. EPA*, 576 U.S. 743, 743 (2015); *County of Maui v. Haw. Wildlife Fund*, 590 U.S. 165, 165 (2020); *West Virginia v. EPA*, 597 U.S. 697, 697 (2022).

<sup>76</sup> *See, e.g.*, *United States v. Hamilton*, 952 F. Supp. 2d 1271, 1273–75 (D. Wyo. 2013); *United States v. Donovan*, 661 F.3d 174, 180–88 (3d Cir. 2011); *United States v. Brink*, 795 F. Supp. 2d 565, 574–79 (S.D. Tex. 2011); *United States v. Moses*, 496 F.3d 984, 988–89 (9th Cir. 2007); *United States v. Johnson*, 437 F.3d 157, 161–81 (1st Cir. 2006); *United States v. Chevron Pipe Line Co.*, 437 F. Supp. 2d 605, 610–13 (N.D. Tex. 2006); *United States v. Hubenka*, 438 F.3d 1026, 1030–32 (10th Cir. 2006); *Save Our Sonoran, Inc. v. Flowers*, 408 F.3d 1113, 1123–24 (9th Cir. 2005); *Treacy v. Newdunn Assocs., LLP*, 344 F.3d 407, 417 (4th Cir. 2003); *United States v. Deaton*, 332 F.3d 698, 710–12 (4th Cir. 2003); *FD&P Enters. v. U.S. Army Corps of Eng'rs*, 239 F. Supp. 2d 509, 509 (D.N.J. 2003); *United States v. Buday*, 138 F. Supp. 2d 1282, 1285–92 (D. Mont. 2001); *Quivira Mining Co. v. EPA*, 765 F.2d 126, 128–29 (10th Cir. 1985); *United States v. Lambert*, 695 F.2d 536, 538–39 (11th Cir. 1983); *United States v. Tex. Pipe Line Co.*, 611 F.2d 345, 347 (10th Cir. 1979); *United States v. Earth Scis., Inc.*, 599 F.2d 368, 374–75 (10th Cir. 1979); *United States v. Phelps Dodge Corp.*, 391 F. Supp. 1181, 1187 (D. Ariz. 1975); *United States v. Ashland Oil & Transp. Co.*, 504 F.2d 1317, 1323–29 (6th Cir. 1974). I could find only one reported opinion in which any court rejected the United States' case in full that a target tributary constituted CWA "waters of the United States." *See United States v. RGM Corp.*, 222 F. Supp. 2d 780, 783–88 (E.D. Va. 2002).

<sup>77</sup> *See Tributary*, BLACK'S LAW DICTIONARY (11th ed. 2019) (defining "tributary" as a "stream flowing directly or indirectly into a river").

<sup>78</sup> *Tributaries*, WATER EDUC. FOUND., <https://www.watereducation.org/aquapedia-background/tributaries> [<https://perma.cc/XY73-VQRV>] (last visited May 6, 2024) ("Although tributaries feed into larger water bodies, they themselves are often of substantial size and frequently named as rivers.").

accidents of naming and (European-American) history being all that bestowed their status as such. They are rarely more voluminous than the tributaries joining the flow even within a short reach downstream. The Susquehanna's North Branch headwaters at Otsego Lake 700+ river kilometers from the Bay<sup>79</sup> could easily have been named a tributary of the Chemung River, the larger of the two at their confluence near the New York–Pennsylvania border, or just another “creek” in a network spanning an area roughly the size of South Carolina.

The river's many West Branch tributaries were once among the most polluted in the world, little more than sewers to the coal mines dotting their basins. But with each abandoned coal mine the state (and the United States) rehabilitates, those tributaries are reclaiming lives and reputations of their own.<sup>80</sup> In these smaller streams, the aquatic environment is scaled down, often unique chemically, but the living profile of each remains a part of its larger riverine network.<sup>81</sup>

I do not like our chances of clarifying the properties of tributaries if the term's future includes more trips to the Supreme Court, though. Several of the Justices have made their disdain for the CWA known, and tributaries are a big part of that. Ironically, the Court itself knew of tributaries from its earliest encounters with navigation and “navigable waters,” repeatedly using them to assert federal jurisdiction to declare and adjudicate the law.<sup>82</sup> But the deeper irony may be how much of the complexity of the foregoing stemmed from the nature of our judiciary—its legal geography, its favor for analogical reasoning, our resultant conception of precedent, and the “law” that results from all of it. In truth,

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<sup>79</sup> *Susquehanna River Basin*, SUSQUEHANNA RIVER BASIN COMM'N, <https://www.srbc.gov/portals/susquehanna-atlas/data-and-maps/susquehanna-basin> [<https://perma.cc/NV2L-2JQV>] (last visited May 6, 2024) (“The river meanders 444 miles from its origin at Otsego Lake . . . until it empties into the Chesapeake Bay . . .”).

<sup>80</sup> STRANAHAN, *supra* note 13, at 176–77; Timothy A. Wertz & Matthew K. Shank, *Land Use from Water Quality: Development of a Water Quality Index Across Pennsylvania Streams*, ECOSPHERE, Nov. 2019, at 1, 9.

<sup>81</sup> See Mark Taylor, *Measuring Restoration Success in PA's West Branch Susquehanna Watershed*, TROUTMAG. (Mar. 6, 2018), <https://www.tu.org/magazine/uncategorized/measuring-restoration-success-in-pas-west-branch-susquehanna-watershed> [<https://perma.cc/ES7G-EZBS>].

<sup>82</sup> See, e.g., *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1, 221 (1824); *Cooley v. Bd. of Wardens*, 53 U.S. (12 How.) 299, 321 (1852); *United States v. Rio Grande Dam & Irrigation Co.*, 174 U.S. 690, 696 (1899); *Scranton v. Wheeler*, 179 U.S. 141, 155–65 (1900); *Harrisonville v. W.S. Dickey Clay Mfg. Co.*, 289 U.S. 334, 334–35 (1933); *United States v. Republic Steel Corp.*, 362 U.S. 482, 485–93 (1960); *United States v. Standard Oil Co.*, 384 U.S. 224, 224 (1966); *United States v. Pa. Indus. Chem. Corp.*, 411 U.S. 655, 655 (1973).

the jurisdictional mess touted by the Justices who have attacked the CWA since 2001 is in largest part our judiciary's mess.<sup>83</sup>

Unsurprisingly, when the fractious opinions and conflicting reasons of the Court's work in *Rapanos* reached the lower courts' adjudications of CWA coverage, all hell broke loose. The Army Corps and EPA convinced lower courts repeatedly that tributaries and wetlands connected to navigable-in-fact waters fell within the CWA's geography.<sup>84</sup> The *Rapanos* Court had not constricted that geography so much as Justice Kennedy's test, combined with the dissenters' four votes to affirm the agencies in their expert assessments of watersheds and the biotic, chemical, and physical continuities thereof, had dared the agencies to *prove* the extent of covered waters.<sup>85</sup> Kennedy's version of continuity, the significant nexus, became but a proof problem. This was evidently a bitter disappointment to the *Rapanos* plurality and to their successors. However, before they found their riposte, the agencies undertook a complex joint rulemaking in 2015, mounting yet another attempt to settle the CWA's jurisdictional scope by rule—the Clean Water Rule (“CWR”).<sup>86</sup>

EPA began by reviewing roughly all the published scientific literature on the “connectivity”—continuities—of headwater streams and wetlands to their downstream waters, publishing a massive “synthesis” of the evidence.<sup>87</sup> It collected and digested over 1200 peer-reviewed papers on the mechanisms of connectivity.<sup>88</sup> Presumably, EPA was motivated to prove that these attenuated waters and wetlands are *integral* to the restoration and maintenance of the integrity of the downstream waters: those “traditional navigable waters” that even skeptics had acknowledged were “jurisdictional” under the Act.<sup>89</sup> A large symposium emphatically

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<sup>83</sup> See Colburn, *supra* note 47, at 56, 66; Jamison E. Colburn, *Governing the Gradient: Clarity and Discretion at the Water's Edge*, 62 VILL. L. REV. 81, 95–115, 123–25 (2017).

<sup>84</sup> See Colburn, *supra* note 83, at 82–83.

<sup>85</sup> Although the results were mixed, the agencies succeeded in showing a “significant nexus” linking a targeted parcel to downstream waters much more often than they failed. See J.B. Ruhl, *Proving the Rapanos Significant Nexus*, NAT. RES. & ENV'T, Summer 2018, at 51, 52.

<sup>86</sup> Clean Water Rule, 80 Fed. Reg. 37,054 (June 29, 2015).

<sup>87</sup> See OFF. RSCH. & DEV., EPA, EPA/600/R-14/475F, CONNECTIVITY OF STREAMS & WETLANDS TO DOWNSTREAM WATERS: A REVIEW & SYNTHESIS OF THE SCIENTIFIC EVIDENCE, at ES-1 to -2 (2015).

<sup>88</sup> *Id.* at ES-2.

<sup>89</sup> See *id.* at 4-6; Laurie C. Alexander, Ken M. Fritz, Kate A. Schofield, Bradley C. Autrey, Julie E. DeMeester, Heather E. Golden, David C. Goodrich, William G. Kepner, Hadas R. Kiperwas, Charles R. Lane, Stephen D. LeDuc, Scott G. Leibowitz, Michael G. McManus, Amina I. Pollard, Caroline E. Ridley, Melanie K. Vanderhoof & Parker J.

reiterated the agency's conclusions: the chemical, physical, and biological connections linking watersheds to headwaters and headwaters to downstream waters were numerous, reciprocal, and robust.<sup>90</sup> “[D]espite being distant from downstream waters, headwater streams make up the majority of stream channels in most river networks and cumulatively supply most of the water in rivers.”<sup>91</sup> Wetlands, by “filling and spilling,” “filling and merging,” and sometimes by creating vital *discontinuities* from downstream waters that sequester pollutants for attenuation, are the other principal variables in water quality.<sup>92</sup> The CWR was the result.

The CWR was quickly attacked in court and enjoined from operation in thirteen states (and eventually nationwide), abrogated by the Trump administration, and replaced with another rule, whereupon that replacement rule was challenged and enjoined in several lower courts.<sup>93</sup>

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Wigington, Jr., *Featured Collection Introduction: Connectivity of Streams and Wetlands to Downstream Waters*, 54 J. AM. WATER RES. ASS'N 287, 289–90 (2018).

<sup>90</sup> See Alexander et al., *supra* note 89, at 294–95; Scott G. Leibowitz, Parker J. Wigington, Jr., Kate A. Schofield, Laurie C. Alexander, Melanie K. Vanderhoof & Heather E. Golden, *Connectivity of Streams and Wetlands to Downstream Waters: An Integrated Systems Framework*, 54 J. AM. WATER RES. ASS'N 298, 298–99 (2018); Ken M. Fritz, Kate A. Schofield, Laurie C. Alexander, Michael G. McManus, Heather E. Golden, Charles R. Lane, William G. Kepner, Stephen D. LeDuc, Julie E. DeMeester & Amina I. Pollard, *Physical and Chemical Connectivity of Streams and Riparian Wetlands to Downstream Waters: A Synthesis*, 54 J. AM. WATER RES. ASS'N 323, 323 (2018).

<sup>91</sup> Fritz et al., *supra* note 90, at 339.

<sup>92</sup> See Alexander et al., *supra* note 89, at 294 (“There is robust evidence that the movement of organisms between streams, wetlands, open waters, and downstream waters is an integral component of the river food webs that support aquatic life.”); Leibowitz et al., *supra* note 90, at 306–15 (collecting factors that affect connectivity and attempting to quantify connectivity); Fritz et al., *supra* note 90, at 326–33. Of course, “the degree of connectivity between streams and riparian wetlands and downstream waters varies over space and time. The expansion and contraction of river networks in response to storm events, seasonality, and multiannual phenomena . . . results in different degrees of hydrologic connectivity . . .” *Id.* at 333.

<sup>93</sup> The nationwide injunction of the CWR came in *Ohio v. U.S. Army Corps of Engineers (In re EPA & Department of Defense Final Rule)*, 803 F.3d 804, 808 (6th Cir. 2015). The Supreme Court reversed, holding that any such rule is subject to direct review, if at all, in district court. See *Nat'l Ass'n Mfrs. v. Dep't of Def.*, 583 U.S. 109, 114, 131 (2018). That sent challenges back to a district court in North Dakota and an eventual injunction there against the CWR in thirteen states, along with several other later challenges in district courts from Texas and Tennessee to Ohio and Oregon. The Trump administration's “Navigable Waters Protection Rule,” which purported to replace the CWR, once finalized, was challenged in district courts in Colorado, Arizona, and New Mexico. See *Navajo Nation v. Regan*, 563 F. Supp. 3d 1164, 1165–66 (D.N.M. 2021). By early 2023, fourteen cases challenging either the CWR or the Trump administration's replacement remained active in courts around the country. See Revised Definition of “Waters of the United States,” 88 Fed. Reg. 3004, 3016–17, 3016 n.39 (Jan. 18, 2023).



The Biden administration's replacement of the Trump administration's replacement awaits its fate in the courts and, as of this writing, was operative in its own right in twenty-two states.<sup>94</sup>

So last June, in *Sackett v. EPA*, another slim majority of the Court returned to the dictionaries (several of them), defining waters as “bodies of water” while complaining about Congress’s “frustrating drafting choice” in using *waters* as the definition of navigable waters.<sup>95</sup> Dismissing the statute’s own express reference to “wetlands adjacent” to waters as “jurisdictional,” the majority held that its dictionaries required “bodies of water” to include only wetlands that *adjoin* those water bodies, and which are “as a practical matter, indistinguishable from waters of the United States.”<sup>96</sup>

Harvard professor Richard Lazarus has said that the *Sackett* Court “[devastated] the Clean Water Act,” reducing “the Act’s coverage of the nation’s streams by as much as 80%, and of the nation’s wetlands by at least 50%.”<sup>97</sup> If so, *Sackett* was a gargantuan break from the past indeed. From that, Lazarus was understandably moved to a scathing assessment of the majority’s opinion, striking out at its dubious canons of construction,

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<sup>94</sup> See Revised Definition of “Waters of the United States,” 88 Fed. Reg. at 3016–17; see also *Definition of “Waters of the United States”: Rule Status and Litigation Update*, EPA, <https://www.epa.gov/wotus/definition-waters-united-states-rule-status-and-litigation-update> [<https://perma.cc/B82K-ZYV3>] (Sept. 8, 2023).

<sup>95</sup> 143 S. Ct. 1322, 1336–37 (2023).

<sup>96</sup> *Id.* at 1341. This inverted *Riverside Bayview*’s holding that adjoining wetlands were jurisdictional to a holding excluding all other wetlands as non-jurisdictional. In closing that part of the opinion (Part III), Justice Alito wrote the “adjacent wetlands” that remain jurisdictional are those the party asserting jurisdiction can prove are adjacent to “‘water[s] of the United States,’ (i.e., a relatively permanent body of water connected to traditional interstate navigable waters); and that the wetland has a continuous surface connection with that water, making it difficult to determine where the ‘water’ ends and the ‘wetland begins.’” *Id.* at 1341. That passage’s mention of an *interstate* element was arguably unintentional (and careless), but if not, was dicta as the case involved no interstate aspect and had not been briefed as such. Alito, again curiously, also included an acknowledgment “that temporary interruptions in surface connection may sometimes occur because of phenomena like low tides or dry spells,” *id.* at 21, and that that presumably would *not* defeat the necessary continuity for jurisdiction.

<sup>97</sup> *Judicial Destruction of the Clean Water Act: Sackett v. EPA*, U. CHI. L. REV. ONLINE (Aug. 11, 2023), <https://lawreview.uchicago.edu/judicial-destruction-clean-water-act-sackett-v-epa> [<https://perma.cc/2VW5-3UJ4>]. Lazarus maintained that these estimates were “fairly based on an internal analysis conducted by EPA experts in 2017” and which appeared in an email from EPA to Army Corps personnel, released to someone pursuant to a Freedom of Information Act inquiry. See *id.* at n.19. Having not seen the underlying data, the assumptions behind them, or the writer’s purposes in estimating, I put no stock in their accuracy here.

tendentious uses of dictionaries to interpret the Act’s “waters,” and its overt hostility to the Act.<sup>98</sup> Lazarus’s outrage was matched by that of professor Dave Owen.<sup>99</sup> After an (admirable) demolition of a concurring opinion by Justices Thomas and Gorsuch that was riddled with errors, Lazarus returned to the majority and finished with his sense that the “best explanation for the *Sackett* . . . opinion is unfortunately the distasteful one that the justices in the majority simply do not like the [CWA] as a matter of policy,” concluding the opinion’s rhetoric, like that of Thomas and Gorsuch, was “the stuff of an undisciplined political campaign rally and not the kind of serious, thoughtful, careful, and rigorous legal analysis expected of Supreme Court justices.”<sup>100</sup>

I am not sure the *Sackett* majority deserves that much credit, although the best explanation of their opinions is probably as Lazarus had it. Congress could unanimously amend the Act tomorrow with the clearest-ever statement of its intent that we restore streams and wetlands as the vital organs of our major water bodies and the *Sackett* five would no doubt find some other obstruction. But lower federal courts have shown themselves adroit at cutting this Court’s opinions down to size, especially when they are nonsense.<sup>101</sup>

Apparently exhausted from defending the Act, in September 2023 the agencies abruptly amended their rules a few months after *Sackett* to forego any use of Kennedy’s “significant nexus” test, restricting their

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<sup>98</sup> See *id.* Justice Alito’s opinion for the majority opened by referring to the Act as a “potent weapon,” continuing a derogatory theme he has struck several times before. See, e.g., *Sackett v. EPA*, 566 U.S. 120, 132 (2012) (Alito, J., concurring) (“The reach of the [CWA] is notoriously unclear. Any piece of land that is wet at least part of the year is in danger of being classified by EPA employees as wetlands covered by the Act . . . .”); *U.S. Army Corps of Eng’rs v. Hawkes Co.*, 578 U.S. 590, 602–03 (2016) (Kennedy, J., joined by Thomas and Alito, JJ., concurring) (stating that the “reach and systemic consequences of the [CWA] remain a cause for concern” and are “ominous”).

<sup>99</sup> *Sackett v. Environmental Protection Agency and the Rules of Statutory Misinterpretation*, 48 HARV. ENV’T L. REV. (forthcoming 2024).

<sup>100</sup> Lazarus, *supra* note 97.

<sup>101</sup> See Richard M. Re, *Narrowing Supreme Court Precedent from Below*, 104 GEO. L.J. 921, 921 (2016) (describing how Court opinions are often trimmed substantially by lower court avoidance and reconstruction); William Baude, *The Judgment Power*, 96 GEO. L.J. 1807, 1845 (2008) (“Judicial opinions cannot claim authority from the same sources as judicial judgments do. Judgments derive their authority from the combination of judicial power and jurisdiction enshrined by the originally understood text and structure of the Constitution. Opinions must find another path to authority, if they find one at all.”); Evan H. Caminker, *Why Must Inferior Courts Obey Superior Court Precedents?*, 46 STAN. L. REV. 817, 849–56 (1994) (finding that, in many cases, inferior courts need not obey superior court precedents).



jurisdictional tributaries to those that are “[r]elatively permanent, standing, or continuously flowing bodies of water” and their definition of “adjacent” to those waters having a “continuous surface connection” to otherwise covered “waters.”<sup>102</sup> The agencies evidently did not care much to trim the *Sackett* majority’s opinions. If members of the regulated community were hoping for some sort of settlement or finality from *Sackett* or that rulemaking, though, they will have to look elsewhere.<sup>103</sup>

In the wetter parts of the nation—where the Act has been nothing short of transformative—most wetlands and streams will continue to be “jurisdictional.” Here, things may change, but they will also stay the same. The Act’s long-standing troubles here have been less about geography than politics—appropriations, the Electoral College, and (most recently) the exodus of EPA personnel—leaving an administration hellbent on their subordination. By the 1990s, the Susquehanna was supplying almost 16 billion liters per day in free cooling services to 33 thermoelectric installations, a function of EPA’s failure to implement basic controls on cooling water intakes under CWA § 316(b).<sup>104</sup> That had nothing to do with the scope of “waters of the United States.” Indeed, the Susquehanna is again exemplifying such water under the bridge. Even if it had been about the Act’s extension, Pennsylvania’s own clean streams law has much longer governed such installations, wetland fills, and discharges to the smallest tributaries irrespective of “waters of the United States.”<sup>105</sup> (Its administration, too, has been more about politics than legal geography.<sup>106</sup>)

Two lawsuits alleging EPA has not been penalizing Pennsylvania enough for failing to meet its TMDL commitments to the Chesapeake were settled in July 2023. The alleged failures had less to do with available “jurisdiction” than with EPA’s evident reluctance to use permitting

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<sup>102</sup> See Revised Definition of “Waters of the United States”; Conforming, 88 Fed. Reg. 61,964, 61,966 (2023).

<sup>103</sup> Not only will the legal challenges continue unabated, but also over 100 members of Congress have already pledged their interest in amending the Act to restore the lost geographic scope. See Clean Water Act of 2023, H.R. 5983, 118th Cong. (2023).

<sup>104</sup> See STRANAHAN, *supra* note 13, at 197; Reed W. Super & David K. Gordon, *Minimizing Adverse Environmental Impact: How Murky the Waters*, 2 SCI. WORLD J. 219, 219–20 (2002).

<sup>105</sup> David G. Mandelbaum, *Wetlands Regulation in Pennsylvania After ‘Sackett’ Ruling*, LEGAL INTELLIGENCER (2023), *republished at* GREENBERGTRAUIG, <https://www.gtlaw.com/en/insights/2023/6/published-articles/wetlands-regulation-in-pennsylvania-after-sackett> [https://perma.cc/52KB-U678].

<sup>106</sup> See Hannah Schroer, Comment, *When Going Green Means Going into the Red: Pennsylvania’s Struggle Funding Stormwater Regulations Creates Water Woes for MS4s*, 65 VILL. L. REV. 223, 255–56 (2020).

leverage it surely possesses to coerce its intergovernmental partner.<sup>107</sup> In settling the cases, EPA committed to paying more attention to both point and non-point sources of nutrients and sediment in the lower Susquehanna basin—something it and Pennsylvania have both been doing for decades now.<sup>108</sup> One day, this same old story may finally end when Pennsylvanians within the Susquehanna’s basin decide that the river is due more protection for its own sake than it seems to have been due for its effects on the Chesapeake.

On more arid western landscapes in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming, where the CWA has long played a subordinate role in any event, that role may diminish still further. Western rivers are no less a function of their tributaries. Far from forming fixed “geographic features,” headwaters, small tributaries, and riparian wetlands form, along with their rivers, ambulatory gradients in the West no less than in the East.<sup>109</sup> Yet restoring western rivers’ integrity is today—as it has long been—far more a function of high dams, so-called invasive species, and dewatering than it is wetland fills or discharge permits on third-order tributaries.<sup>110</sup> Here there will be changes from *Sackett*, but also more of

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<sup>107</sup> See Danielle E. Gaines & Cassie Miller, *Feds, States Reach Settlement in Lawsuit over Chesapeake Bay Pollution from PA*, PENN. CAP.-STAR (July 12, 2023), <https://www.penn.capital-star.com/energy-environment/feds-states-reach-settlement-in-lawsuit-over-chesapeake-bay-pollution-from-pa> [<https://perma.cc/VVY8-99U8>]. As I have written about before, in its TMDL for the Bay, EPA has maintained that any Bay jurisdiction failing to control non-point sources of sediment or nutrients in compliance with its watershed implementation plans would face enhanced EPA enforcement of national pollutant discharge elimination system permits within its watershed, beginning with municipal storm sewers and publicly owned treatment works. See Colburn, *supra* note 35, at 709–20. The “collaborative” elements of the WIPs focused on non-point sources’ adoption of best management practices were backed by that more coercive threat. *Id.*

<sup>108</sup> In a recent “consequences” communication with Pennsylvania, EPA evaluated the state’s WIP, which included a fiscal year 2022–23 “budget commitment” of \$154 million in new statewide agriculture conservation assistance funding, as how the state would address its nitrogen duties in the Bay. See EPA, EVALUATION OF PENNSYLVANIA’S FINAL AMENDED PHASE III WATERSHED IMPLEMENTATION PLAN (WIP) 1, 3 (Nov. 15, 2022), [https://www.epa.gov/system/files/documents/2022-11/Evaluation\\_of\\_Pennsylvania%27s\\_FINAL\\_Amended\\_Phase\\_III\\_WIP\\_11.15.2022%20%28002%29.pdf](https://www.epa.gov/system/files/documents/2022-11/Evaluation_of_Pennsylvania%27s_FINAL_Amended_Phase_III_WIP_11.15.2022%20%28002%29.pdf) [<https://perma.cc/4D2Q-SLGS>].

<sup>109</sup> See Schroer, *supra* note 106, at 252–54; Gaines & Miller, *supra* note 107.

<sup>110</sup> See ROBERT W. ADLER, RESTORING COLORADO RIVER ECOSYSTEMS: A TROUBLED SENSE OF IMMENSITY 172, 175–76, 188, 198–99 (2007). Because of its infamous “Wallop Amendment” in § 101(g), the CWA has never governed water allocations as such, but (at least for now) includes dams and other hydromodifications within the scope of a state’s § 401

the same. Western states are fully capable of acting on the same science of waters' connectivity that underlies the 2015 Clean Water Rule. The (political) question is whether they have the will to do so.

### III. CONTINUITY FROM DISCONTINUITY: A FUTURE FOR THE CHESAPEAKE

While no one seems happy as a clam with the Bay TMDL, and while we “may restore the Chesapeake or we may not,” for at the least the last decade “we can say that we really tried.”<sup>111</sup>

Quite unsurprisingly, as scientists have hypothesized, sampled, experimented with, and catalogued various mechanisms linking land use to water quality (up- and downstream), EPA and the Army Corps have adapted how and what they regulate.<sup>112</sup> This was precisely what the 92nd Congress anticipated and intended in legislating the scheme they did. Otherwise, they would have left the legal adaptation to the judiciary—as Congresses had done countless times before. The 1972 amendments to the Federal Water Pollution Control Act were a rejection of “common law”—like administration of the nation's waters.<sup>113</sup> Even the regulated community in its push for settlement and relative legal clarity understands that that will not come from more judicial opinions.<sup>114</sup> This Supreme Court's dispatching of *Chevron* and other doctrines shielding agencies from judicial overreach<sup>115</sup> will surely introduce more vagaries of precedent-driven change, district-by-district, circuit-by-circuit. That

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WQS certification power. *See, e.g.*, *S.D. Warren Co. v. Me. Bd. of Env't Prot.*, 547 U.S. 370 (2006); *Am. Rivers, Inc. v. Fed. Energy Regul. Comm'n*, 129 F.3d 99 (2d Cir. 1997).

<sup>111</sup> Houck, *supra* note 31, at 10,228.

<sup>112</sup> *Id.* at 10,208.

<sup>113</sup> STEPHEN P. MULLIGAN, CONG. RSCH. SERV., R44585, EVOLUTION OF THE MEANING OF “WATERS OF THE UNITED STATES” IN THE CLEAN WATER ACT, at Summary, 14 (2019).

<sup>114</sup> *See* Richard M. Glick & Olivier F. Jamin, *Waters of the United States: Nearly 50 Years of Jurisdictional Uncertainty, and More to Come*, 26 J. WATER L. 147, 152 (2021) (“The problem is that the interconnection of natural systems is by nature complex.”). For a good overview, see generally Gregory B. Noe, Matthew J. Cashman, Katie Skalak, Allen Gellis, Kristina G. Hopkins, Doug Moyer, James Webber, Adam Benthem, Kelly Maloney, John Brakebill, Andrew Sekellick, Mike Langland, Qian Zhang, Gary Shenk, Jeni Keisman & Cliff Hupp, *Sediment Dynamics and Implications for Management: State of the Science from Long-Term Research in the Chesapeake Bay Watershed, USA*, WIRES WATER, July–Aug. 2020, at 1.

<sup>115</sup> Amy Howe, *Supreme Court Likely to Discard Chevron*, SCOTUSBLOG (Jan. 17, 2024), <https://www.scotusblog.com/2024/01/supreme-court-likely-to-discard-chevron> [https://perma.cc/4DYB-BVHZ].

will be good for lawyers, perhaps, but not for profits and not for the integrity of the nation's waters.

The Chesapeake's most urgent troubles have long been the transport of too much sediment and too much nutrient from its watershed into the (relatively) shallow waters of the estuary. These alter the water's biochemistry, degrading it as habitat and spoiling its appearance.<sup>116</sup> (Sediments are often vectors for toxins as well as nutrients.<sup>117</sup>) Lancaster County, home to much of the Conestoga River's watershed, has for just as long been ground zero for both rampant urbanization and the overapplication of manure to farm fields leading to an unchecked flow of nitrogen to the Bay.<sup>118</sup> Since long before the TMDL in 2010, the county, state, and EPA worked overtime trying to induce best management practices ("BMPs") for manure on *all* farms, including those of Old Order communities.<sup>119</sup> We say "induce" because most of that effort must be subsidized for it to be made at all. Farming and the loss of farms to new subdivisions bringing their impervious surfaces, street sewers, and sewage have long been the twin threats foremost in everyone's mind. Lancaster County farming is thus an uncanny proxy for the larger watershed's troubles: a confidence game with payoffs and penalties that is equal parts individual and collective action, equally a function of market and enforcement pressures, equally vulnerable to predictable interruptions and surprise discoveries.<sup>120</sup>

The nutrient/sediment calculus, for example, is not so settled as some have had it. Indeed, since the TMDL's finalization in 2010, that calculus has arguably grown less, not more, assured. The Susquehanna watershed's thousands of milldams left a complicated legacy. "While many of these small milldams have breached or have been removed, their sediment-infilled upstream reservoirs continue to erode, resulting in highly incised contemporary streams with exposed vertical streambanks that are vulnerable to erosion."<sup>121</sup> Some researchers estimate that essentially all of

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<sup>116</sup> See Peter J. Tango & Richard A. Batiuk, *Deriving Chesapeake Bay Water Quality Standards*, 49 J. AM. WATER RES. ASS'N 1007, 1007–08 (2013).

<sup>117</sup> See Noe et al., *supra* note 114, at 4–5.

<sup>118</sup> See STRANAHAN, *supra* note 13, at 215–32; DONALD KAUTZ, *THE CONESTOGA RIVER: A HISTORY* 101–12 (2021).

<sup>119</sup> See STRANAHAN, *supra* note 13, at 218–32.

<sup>120</sup> See Colburn, *supra* note 35, at 681–84, 735–41.

<sup>121</sup> Grant Jiang, Alyssa Lutgen, Katie Mattern, Nathan Sienkiewicz, Jinjun Kan & Shreeram Inamdar, *Streambank Legacy Sediment Contributions to Suspended Sediment-Bound Nutrient Yields from a Mid-Atlantic, Piedmont Watershed*, 56 J. AM. WATER RES. ASS'N 820, 821 (2020). See Robert C. Walter & Dorothy J. Merritts, *Natural Streams and*

the nitrogen Pennsylvania may send to the Bay consistent with the TMDL is contributed by such erosion of streambanks left as the legacy of milldam building.<sup>122</sup> Others are not so sure, finding significant variability in the bioavailability of nutrients from legacy sediments up- and downstream of those dams.<sup>123</sup> Relict low-head dams generally resulted in deeper and wider stream channels above them, exposing more sediments and increasing water residence time and depositions of organic matter.<sup>124</sup> But this can mean both more nitrogen removal and more nitrogen uptake into the water column, depending on a variety of other causal mechanisms.<sup>125</sup> Until more is known about these riparian soil terraces and their nutrient dynamics, more specific targeting of nitrogen and sediment sources from streambanks upstream of the Bay will remain out of reach.

The Act is and has always been an extension of what we know about watersheds and waters' continuities. If anything has changed for certain since the 92nd Congress, it is our knowledge of aquatic networks' interconnections and the disruptions thereof.<sup>126</sup> We now know a considerable

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*the Legacy of Water-Powered Mills*, 319 SCI. 299, 300 (2008). Walter and Merritts estimated some 16–18,000 milldams throughout Pennsylvania by the end of the nineteenth century. For them, the ubiquity of dams and dam breaching in the region, only recently quantified, significantly complicate causal accounts of streams' geomorphology and sediment transport. See Dorothy Merritts et al., *Anthropocene Streams and Base-Level Controls from Historic Dams in the Unglaciated Mid-Atlantic Region, USA*, 369 PHIL. TRANSACTIONS ROYAL SOC'Y A. 976, 982–85 (2011). Quite simply:

If upland soil erosion were the dominant source of sediment to streams, and if the resultant sediment loads were the predominant control on channel geometry, then stream channels should be more stable after many decades of soil-conservation practices. Yet, many streams in the [region] continue to be unstable and degrading, with both bed scour and bank erosion observed as widespread phenomena.

*Id.* at 984.

<sup>122</sup> Jiang and colleagues found that streambank, sediment-bound nitrogen (“N”) and phosphorus (“P”) accounted for 26% and 32% of all sediment-bound N and P, respectively. *Supra* note 121, at 831–32. If their results were scaled up watershed-wide, this could consume essentially all of the N and P discharges Pennsylvania is permitted under the TMDL and Phase III WIPs.

<sup>123</sup> See Erin K. Peck, Shreeram P. Inamdar, Marc Peipoch & Arthur J. Gold, *Influence of Relict Milldams on Riparian Sediment Biogeochemistry*, 23 J. SOILS & SEDIMENTS 2584, 2590–94 (2023).

<sup>124</sup> *Id.*

<sup>125</sup> See Johanna Hripto, S. Inamdar, M. Sherman, E. Peck, A.J. Gold, S. Bernasconi, K. Addy & M. Peipoch, *Effects of Relic Low-Head Dams on Stream Denitrification Potential: Seasonality and Biogeochemical Controls*, AQUATIC SCIS., Sept. 2022, at 1, 2, 12.

<sup>126</sup> See Robert L. Glicksman & Matthew R. Batzel, *Science, Politics, Law, and the Arc of the Clean Water Act: The Role of Assumptions in the Adoption of a Pollution Control Landmark*, 32 WASH. U. J.L. & POL'Y 99, 105–09 (2010).

fraction of the Bay's nitrogen reaches it through atmospheric deposition and groundwater, for example.<sup>127</sup> It would be absurd if the legal consequences of Congress's choice to define "navigable waters" as *waters* had not changed in step with such discoveries. Contrary to the old adage, everything is *not* connected to everything else, but some things are connected to many other things, causally, vitally, undeniably. Land use affects water quality considerably even if quantifying and disentangling its many mechanisms—by tributaries or otherwise—remains costly and difficult. The agencies' approach to that fact in the CWR, a rule that drew even more political fire than the Bay TMDL, was too short on political strategy and perhaps too long on Federal Register notices.<sup>128</sup> It did not help that the rule's coverage exclusions attracted a small band of enemies, either.

EPA and the Corps must swim in the waters as they find them, though. EPA's defense of the Chesapeake TMDL from the Farm Bureau's overcooked rhetoric and half-hearted attacks on its factual underpinnings linking upstream land uses to Bay water quality prevailed on lunch-pail administrative law doctrine alone.<sup>129</sup> It was predicated on the best available science, and courts found that that was both rational and legally sound.<sup>130</sup> Much of why courts decided eons ago that statutory terms like "waters" ought not be construed principally by rifling through dictionaries remains true still today. If this Court next overrules its *Chevron* doctrine—which the CWA seems to have played a leading role in prompting and which seems more likely by the Term—it owes us all the courtesy of not pretending otherwise.

The so-called "migratory bird rule," which was never a rule and involved much more than migratory birds in any event despite its infamy among those in the *SWANCC* majority, was but a reflection of wildlife-habitat continuity. Without habitat, wildlife does not persist. Without

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<sup>127</sup> See Douglas A. Burns, Gopal Bhatt, Lewis C. Linker, Jesse O. Bash, Paul D. Capel & Gary W. Shenk, *Atmospheric Nitrogen Deposition in the Chesapeake Bay Watershed: A History of Change*, ATMOSPHERIC ENV'T, Feb. 2021, at 1, 5.

<sup>128</sup> Charlie Passut, *EPA, Corps Say Rule to Clarify CWA Moving Forward*, NAT. GAS INTEL. (Apr. 7, 2015), <https://www.naturalgasintel.com/epa-corps-say-rule-to-clarify-cwa-moving-forward> [<https://perma.cc/2B3Y-ZT42>].

<sup>129</sup> See Colburn, *supra* note 35, at 710–29. It should be said that Judge Rambo's opinion rejecting Farm Bureau's many arguments was first and foremost a meticulous review of the factual record about the Bay and the TMDL's strategy for its restoration. See *Am. Farm Bureau Fed'n v. EPA*, 984 F. Supp. 2d 289, 313–33 (M.D. Pa. 2013), *aff'd*, 792 F.3d 281, 309 (3d Cir. 2015).

<sup>130</sup> Michael McCloskey, *American Farm Bureau et al. v. EPA*, CHESAPEAKE BAY FOUND., <https://www.cbf.org/about-cbf/our-mission/litigate/american-farm-bureau-et-al-v-epa.html> [<https://perma.cc/7KHD-PNNV>] (last visited May 6, 2024).



wildlife, the biotic “integrity” of the nation’s waters is what?<sup>131</sup> Decreasing dissolved oxygen in the Chesapeake left unchecked will cause the extirpation of the shortnose sturgeon there, likely along with many other species.<sup>132</sup> No matter how many of the CWA’s sworn enemies attack inferences like these, their validity is unaffected. Can we say the same for the Court? If the Chief Justice and Justices Thomas, Alito, Gorsuch, and Barrett really want a war with the CWA, we should help them to it. It should be more express and more widely known that their “judging” in these cases has become nothing of the kind. Perhaps their personal animosities should become the basis of arguments made to and about them and their nonsense opinions.

More constructively, we could all acknowledge that our legal culture’s obsession with splitting the jurisdiction to declare or to adjudicate the law where waters and water go has become deeply pathological. How many terms in the CWA’s provisions delegating permitting power to EPA and the Corps have already been or will soon be a matter of Supreme Court controversy? From what is a “discharge,”<sup>133</sup> a “pollutant,”<sup>134</sup> a “point source,”<sup>135</sup> “addition,”<sup>136</sup> and a “limitation,”<sup>137</sup> to what is *from* a point source,<sup>138</sup> and what is “stormwater,”<sup>139</sup> the Act’s terms have begotten their own ecosystems of judicial line drawing. Published decisions on

<sup>131</sup> As the district court opinion in *SWANCC* recognized, the protection of such habitats and the cumulative losses thereof justified permitting wetland fills like that one. *See* 998 F. Supp. 946, 949–51 (N.D. Ill. 1998), *rev’d*, 531 U.S. 159, 196–97 (2001); *see also* Hoffman Homes, Inc. v. EPA, 999 F.2d 256, 260–61 (7th Cir. 1993); Leslie Salt Co. v. United States, 896 F.2d 354, 357–60 (9th Cir. 1990); Utah v. Marsh, 740 F.2d 799, 802–04 (10th Cir. 1984).

<sup>132</sup> Dissolved oxygen levels in the Bay and their effects on resident wildlife were major drivers in the setting of the TMDL. *See* Richard A. Batiuk, Denise L. Breitburg, Robert J. Diaz, Thomas M. Cronin, David H. Secor & Glen Thursby, *Derivation of Habitat-Specific Dissolved Oxygen Criteria for Chesapeake Bay and Its Tidal Tributaries*, 381 J. EXPERIMENTAL MARINE BIOLOGY & ECOLOGY S204, S209 (2009).

<sup>133</sup> *See* L.A. Cnty. Flood Control Dist. v. Nat. Res. Def. Council, Inc., 568 U.S. 78, 81–84 (2013); S.D. Warren Co. v. Me. Bd. of Env’t Prot., 547 U.S. 370, 375–87 (2006).

<sup>134</sup> *See* Coeur Alaska, Inc. v. Se. Alaska Conservation Council, 557 U.S. 261, 302 (2009); Train v. Colo. Pub. Int. Rsch. Grp., Inc., 426 U.S. 1, 11–25 (1976).

<sup>135</sup> *See* County of Maui v. Haw. Wildlife Fund, 590 U.S. 165, 179 (2020); *L.A. Cnty.*, 568 U.S. at 82.

<sup>136</sup> *See* S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95, 107, 109–12 (2004).

<sup>137</sup> *See* PUD No. 1 of Jefferson Cnty. v. Wash. Dep’t of Ecology, 511 U.S. 700, 710–27 (1994).

<sup>138</sup> *See* *County of Maui*, 590 U.S. at 198–99 (Alito, J., dissenting).

<sup>139</sup> *See* Decker v. Nw. Env’t Def. Ctr., 568 U.S. 597, 623 (2013).



these terms in the lower courts are now legion. Indeed, there have been so many of these proxies for the CWA's purposes extended spatially and functionally across the country that it may now be the most contentious environmental statute of all—and that is quite a superlative. None of its programs are more contentious than the race to stem wetland loss and get “non-point source” pollution under control<sup>140</sup>—each a reflection of watersheds' continuities and what we have learned about waters' chemical, physical, and biological *integrity* since 1972.

In one light, this may be unsurprising. Sovereignty became something very different in the twentieth century, something more exclusionary, interest-driven, and spatially explicit.<sup>141</sup> To many judges today, sovereignty is a zero-sum game, and if the United States is asserting it, a state or local government is losing it. But this is a deeply misleading map of our legal and political landscape—one that will seal the fate of many of the nation's most precious resources like the Chesapeake—perversely drawn in the name of “We the People.” The heedless *dispersal* of legal authority has been known to threaten popular sovereignty for as long as we have subscribed to it.<sup>142</sup> Indeed, our Constitution's division of the people's sovereignty has embarrassed the Court over its history as it has struggled without conspicuous success to maintain coherence in doctrines like “sovereign immunity” despite the notion's origins in dynastic monarchy and the Court's own frequent changes of heart.<sup>143</sup> If the Court ever decides what about sovereign immunity is worth continuing today, it might enable important breakthroughs in allocating the authority to

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<sup>140</sup> Robert W. Adler, *Addressing Barriers to Watershed Protection*, 25 ENV'T L. 973, 978–79 (1995).

<sup>141</sup> See STEPHEN D. KRASNER, SOVEREIGNTY: ORGANIZED HYPOCRISY 3 (1999).

<sup>142</sup> See, e.g., F.H. HINSLEY, SOVEREIGNTY 152–57 (2d ed. 1986).

<sup>143</sup> The continuing tension in that immunity reflects its source and purpose as transposed into a legal system founded on the concept of popular sovereignty. Compare EDMUND S. MORGAN, INVENTING THE PEOPLE: THE RISE OF POPULAR SOVEREIGNTY IN ENGLAND AND AMERICA 243 (1988) (“To deny that Great Britain and the colonies formed a single community was not to deny all connections between them. There remained their subjection to a common king.”), with David L. Shapiro, *Ex Parte Young and the Uses of History*, 67 N.Y.U. ANN. SURV. AM. L. 69, 87–94 (2011) (reviewing scholars', advocates', and the Court's selective uses of history in the constructions of sovereign immunity and proposing that inquiries undertaken outside of court should be free to explore the ways in which the Court's precedents should be trimmed or overruled). Indeed, to judge from its record at the Court, “the usefulness of the idea of sovereignty in discussing the governmental system of the United States at any level, be it state or federal, is also quite limited.” Andrzej Rapaczynski, *From Sovereignty to Process: The Jurisprudence of Federalism After Garcia*, 1985 SUP. CT. REV. 341, 357.

declare and adjudicate the law of our waters. Regardless, it is not a judge's role to concoct obstructions to our resolution of immense public concerns that, by their nature, necessitate complex forms of collective action. In assuming that role, s/he has stopped adjudicating law and begun making it.

Still more constructively, we might purge the idea of "jurisdictional" terms in statutes delegating powers to agencies like EPA and the Army Corps from our constructions of those terms and their boundaries. The notion has always been a deceptive bid to make certain agency actions transgressive by nature, an invention of some metalegal significance to camouflage bias or worse. It is obtuse to label an interpretation of the CWA as jurisdictional or non-jurisdictional. The question is whether it is permissible, defensible, valid, or best. For, as no less a *Chevron* partisan than Justice Scalia argued, under these statutes the "jurisdiction" label lacks any sense—every single one of their terms could be "jurisdictional."<sup>144</sup> If more of our judges are inclined to hostilities toward the CWA's effectuation, they should at least have spine enough to forego the camouflage and make their attack in the open.

As the Bay partners struggle to curb nutrient and sediment flows, confronting huge challenges like the lower Susquehanna dams that are fast becoming net-sediment sources, creative partnering is increasingly determinative.<sup>145</sup> Water quality monitoring throughout the Susquehanna basin has shown disturbing trends on DO levels and several other indicators, even as non-point source controls have ramped up.<sup>146</sup> An "all source"

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<sup>144</sup> See *City of Arlington v. FCC*, 569 U.S. 290, 296–98 (2013).

The argument against deference rests on the premise that there exist two distinct classes of agency interpretations: Some interpretations—the big, important ones, presumably—define the agency's "jurisdiction." Others—humdrum, run-of-the-mill stuff—are simply applications of jurisdiction the agency plainly has. That premise is false, because the distinction between "jurisdictional" and "nonjurisdictional" interpretations is a mirage.

*Id.* at 297. Notably, another *Chevron* partisan, Justice Breyer, wrote separately but agreed completely with Justice Scalia's assessment on this point. See *id.* at 310–12 (Breyer, J., concurring).

<sup>145</sup> See Noe et al., *supra* note 114, at 15 (noting dams begin as net-sediment traps but age through to a stage where high-flow events like tropical storms scour their trapped sediments up into the water column and downstream). "The issue of decreased reservoir trapping, thereby increasing sediment and nutrient loads downstream, has posed new challenges to the attainment of TMDL goals for the . . . Bay, and is currently being factored in the assessment of regulatory load reduction requirements by the [partners]." *Id.*

<sup>146</sup> See DAWN R. HINTZ, GRAHAM D. MARKOWITZ & LUANNE Y. STEFFY, SUSQUEHANNA RIVER BASIN COMM'N, WATER QUALITY TRENDS ADJUSTED FOR SEASONALITY AND STREAMFLOW

approach requires candid, frequent communication between partners, fast-changing estimative analyses, and, perhaps most importantly, good will toward all—at least until it is demonstrably unwarranted. No one *wants* to harm the Bay, but everyone has reason to believe that someone else is the bigger cause of its decline. As BMPs, WIPs, and the other measures implementing the TMDL have been at work, it still may be some time before results become apparent. Nutrients may persist long after their addition to waters, and this nutrient “memory” may mask progress.<sup>147</sup> More recriminations against a jurisdiction that stands little to gain directly from the Bay’s restoration probably won’t help matters much.

Finally, one supremely practical point bears mentioning in this nexus. It remains exceedingly difficult to quantify anyone’s legal duties, numbers derived from what domain experts take to be best available facts about systems like watersheds, while simultaneously—forthrightly—acknowledging that those numbers are at best rough estimates. Nobody *wants* to create tens of thousands of dollars in regulatory costs for an already marginal small business from what is a best guess. But that is what we have to work with. Demonizing regulators for using the best available science should be beneath anyone who calls herself a professional in this field. That should have gone without saying for anyone in a robe and, at one time, it did. The *Sackett* majority gave us at least one big discontinuity in that. As implementation of the Bay TMDL continues to evolve, the hostility will be duly noted.

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USING CONTINUOUS INSTREAM DATA IN THE SUSQUEHANNA RIVER BASIN 8–16 (2023) (showing thirteen of forty-five monitoring locations with decreasing DO trends, and zero with increasing trends, over at least a ten-year period).

<sup>147</sup> See Boynton, *supra* note 6, at 35–36.