

# SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220  
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

November 16, 2020

***Via Regulations.gov***

David Olson  
U.S. Army Corps of Engineers  
Docket No. COE- 2020-0002

*RE: Proposal To Reissue and Modify Nationwide Permits*

Dear Mr. Olson:

The Southern Environmental Law Center submits these comments on the U.S. Army Corps of Engineers' September 15, 2020 Proposal To Reissue and Modify Nationwide Permits. These comments are submitted on behalf of St. Marys EarthKeepers, Glynn Environmental Coalition, Savannah Riverkeeper, Mountain True, Rappahannock League for Environmental Protection, Friends of Georgia State Parks & Historic Sites, Defenders of Wildlife, Georgia Conservation Voters, Coosa River Basin Initiative, SouthWings, Center for Biological Diversity, Virginia Conservation Network, Chattooga Conservancy, North Carolina Coastal Federation, Georgia ForestWatch, Rockbridge Area Conservation Council, Georgia Audubon, Georgia Interfaith Power and Light, Piedmont Environmental Council, The Amphibian Foundation, Ogeechee Riverkeeper, Chattahoochee Riverkeeper, National Wildlife Refuge Association, Our Santa Fe River, Center for a Sustainable Coast, Chesapeake Legal Alliance, Back Bay Restoration Foundation, Georgia Conservancy, NC Child, Haw River Assembly, Allegheny-Blue Ridge Alliance, Highlanders for Responsible Development, Georgia Canoeing Association, Georgia River Network, Dogwood Alliance, Virginia Chapter of the Sierra Club, Tennessee Scenic Rivers Association, Tennessee Chapter of the Sierra Club, Harpeth Conservancy, Tennessee Chapter of the American Canoe Association, One Hundred Miles, Winyah Rivers Alliance, Lumber Riverkeeper, Friends of Buckingham, The Clinch Coalition, Alliance for the Shenandoah Valley, Potomac Riverkeeper Network, Center for Progressive Reform, Wild Virginia, Tennessee Clean Water Network, Virginia Wilderness Committee, Waterkeepers Chesapeake, Rivanna Conservation Alliance, Tree Fredericksburg, Wetlands Watch, Appalachian Voices, and Protect Our Aquifer. The proposed nationwide permits ("NWPs"), if issued, would result in widespread, significant harm to our Nation's waters. These impacts cannot be authorized under Section 404(e) or under the cover of an environmental assessment. Doing so as proposed would violate the Clean Water Act ("CWA"), the National Environmental Policy Act ("NEPA"), the Endangered Species Act, and Administrative Procedure Act ("APA"). Importantly, there is no reason for the Corps to take this step—the permits issued in 2017 remain in effect until March 2022. We urge the agency to withdraw these proposed permits.

## I. The South Has Significant Resources at Stake in This Rulemaking

Southern streams, rivers, lakes, estuaries, and oceans are central to our region's history, culture, and economy. Compared to other regions, the South has more miles of streams and more acres of wetlands. North Carolina, South Carolina, and Georgia alone have approximately 18 million acres of wetlands, many of which are pocosins, Carolina bays, cypress domes, or other unique wetland types that are only found in the South. Because of our tremendous natural resources, the agency's proposal would have a significant effect on our region.

In 2016, the Southeast was recognized as one of only two Global Biodiversity Hotspots in the United States. To qualify for such a title, an area must have over 1,500 endemic plant species, and must have lost at least 70 percent of its natural habitat. The Southeast exceeds these requirements, hosting over 1,800 endemic plant species, and having 85.5 percent of its natural habitat "highly altered or converted to anthropogenic land cover." The waters of the southeastern United States support an astounding level of such plants and animals, containing some of the most species-rich amphibian, reptilian, and freshwater fish communities in North America.<sup>1,2</sup> Freshwater biodiversity in this region is the highest in the nation. Alabama alone supports 38 percent of native freshwater fish species, 60 percent of native mussel species, 43 percent of snail species, and 52 percent of turtle species.<sup>3</sup>

Unfortunately, these habitats are just as imperiled as they are diverse. Eleven of the 20 fastest-growing metropolitan areas in the nation are found in the Southeast.<sup>4</sup> As these cities expand, urban sprawl is contributing significantly to the fragmentation and destruction of wetlands, rivers, and streams, diminishing water quality and hindering resilience from disturbance.<sup>5</sup> Out of all the federally threatened and endangered species in the Southeast, over *half* inhabit freshwater ecosystems.<sup>6</sup> In fact, no state east of Colorado has more listed species than Alabama.

Our fisheries and recreation industries benefit when small streams and wetlands, which are integral for fish and wildlife habitat, are protected. In 2011, in the six states where SELC works—Virginia, North Carolina, South Carolina, Georgia, Alabama, and Tennessee—the U.S. Fish and Wildlife Service reported that a total of \$19 billion was spent on wildlife recreation, including \$5.7 billion on fishing; more than 15.9 million people participated in these recreational

---

<sup>1</sup> References cited in this letter have been submitted separately to [www.regulations.gov](http://www.regulations.gov).

<sup>2</sup> Clinton N. Jenkins et al., U.S. Protected Lands Mismatch Biodiversity Priorities, PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, 5081 (2015); Guinessey et al., A Literature Review: The Chemical, Physical and Biological Significance of Geographically Isolated Wetlands and Non-Perennial Streams in the Southeast 11, 12, 28 (Apr. 12, 2019) ("Literature Review").

<sup>3</sup> Charles Lydeard & Richard L. Mayden, A Diverse and Endangered Aquatic Ecosystem of the Southeast United States, CONSERVATION BIOLOGY 802 (Aug. 1995); Literature Review at 28.

<sup>4</sup> U.S. Census Bureau, U.S. Dep't of Commerce, Release No. CB15-56, New Census Bureau Population Estimates Reveal Metro Areas and Counties that Propelled Growth in Florida and the Nation (2015), <https://www.census.gov/newsroom/press-releases/2015/cb15-56.html>.

<sup>5</sup> Adam J. Terando et al., The southern megalopolis: Using the past to predict the future of urban sprawl in the Southeast U.S., PLOS ONE (July 23, 2014).

<sup>6</sup> SELC analysis of the Environmental Conservation Online System (ECOS), online database managed by the U.S. Fish & Wildlife Service.

activities throughout the six-state region.<sup>7</sup> The Ecological Economics Journal estimates the Clean Water Act has been responsible for adding as much as \$15.8 billion in economic benefits for the Commonwealth of Virginia, alone.<sup>8</sup> And a host of Virginia industries rely on access to clean water—including tourism, which employs 350,000 Virginians and generates \$18 billion for the economy.<sup>9</sup>

The Southeast's coast encompasses over 12,500 miles of sandy beaches, barrier islands, marshes, tidal creeks, maritime forests, and estuaries,<sup>10</sup> accounting for almost a quarter of the total coastline of the contiguous United States. Each year, visitors from across the country vacation on southern beaches. In 2018 alone, tourism around our beaches generated \$17.68 billion in spending and over 169,000 jobs.<sup>11</sup> Atlantic coastal communities are highly dependent upon commercial fisheries for their economic wellbeing. In 2016 alone, Virginia, North Carolina, South Carolina, and Georgia generated a total of \$4.1 billion from seafood sales.<sup>12</sup> The region is also a prime destination for recreational fishing. In 2015, recreational fishing expenditures in these four states generated more than \$1.8 billion in total value added.<sup>13</sup> Our populations are growing as people move to our expanding cities and our developing retirement communities. The continued success of the commercial and recreational fishing industries relies heavily on healthy and robust fish stocks and extensive fish habitat. Each of these parts of the southern economy depends on clean water.

In addition to the impacts on tourism and industry, the agency's proposal threatens drinking water sources for seven out of ten southerners, over 32 million people.<sup>14</sup> Southern states simply do not have the resources to protect the waters at risk under the agency's proposal. Our states have some of the largest budget shortfalls in the country.<sup>15</sup> Even where Southern states are able to take action, they cannot address water quality issues on their own. Virginia regulators, for example, have worked hard to clean up the Chesapeake Bay. But without a strong, consistent level of nationwide protections for clean water, that effort stands to be undone. A patchwork of state laws would not maintain water quality in the many tributaries feeding the Chesapeake Bay from multiple states, and weaker protections imposed by other states would both unfairly add to Virginia's burden and prevent progress in the Bay.

---

<sup>7</sup> See U.S. Department of the Interior, U.S. Fish and Wildlife Service, U.S. Department of Commerce, and U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, 95-97 (Feb. 2014); see also, Literature Review at 22.

<sup>8</sup> Jim Epstein, *Clean Water Is Vital for Success of Virginia Business*, The Daily Progress, [https://www.dailyprogress.com/opinion/opinion-column-clean-water-is-vital-for-success-of-virginia/article\\_54a3fad0-71c6-11e4-ab71-23593a302e82.html](https://www.dailyprogress.com/opinion/opinion-column-clean-water-is-vital-for-success-of-virginia/article_54a3fad0-71c6-11e4-ab71-23593a302e82.html) (last visited Nov. 14, 2020).

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

<sup>10</sup> U.S. CENSUS BUREAU, *Statistical Abstract of the U.S.: 2011*, Table 360: Coastline and Shoreline of the United States by State, <https://www2.census.gov/library/publications/2010/compendia/statab/130ed/tables/geo.pdf>.

<sup>11</sup> National Ocean Economics Program, *Ocean Economy Data* (GA, NC, SC, VA) (2016).

<sup>12</sup> Nat'l Marine Fisheries Serv., *Fisheries Economics of the United States: Economics and Sociocultural Status and Trends Series*, U.S. DEP'T OF COMMERCE (Dec. 14, 2018), <https://www.fisheries.noaa.gov/content/fisheries-economics-united-states-2016>, at 132, 152, 156, 160.

<sup>13</sup> *Id.* at 133, 153, 157, 161.

<sup>14</sup> SELC GIS, Population Served by Drinking Water in the Southeast – Methodology and SELC GIS, Drinking Water Analysis Data (collectively, "SELC GIS Analysis").

<sup>15</sup> Truth in Accounting, *Financial State of the States* (September 2018).

To further complicate these issues, climate change is predicted to significantly transform the Southeast's streams, rivers, lakes, estuaries, and ocean in the near future, introducing additional threats to the already imperiled species and habitats in the region.<sup>16</sup> Climate change will lead to habitat degradation and/or loss in myriad ways, including higher temperatures, increased drought, sea level rise, and increased storm frequency and intensity.<sup>17</sup> Development and urban sprawl in the Southeast will almost certainly hamper the ability of species to move in response to these threats.<sup>18</sup>

North Carolina, South Carolina, and Georgia are already among the U.S. states historically most hard hit by tropical storm systems, and there has been a substantial increase in the severity of Atlantic hurricane activity in the last several decades.<sup>19</sup> The Atlantic coast presently sees more Category 4 and Category 5 hurricanes compared to the 1980s, and further increases are projected.<sup>20</sup> Coming on the heels of hurricanes Florence and Michael, we have never depended more on our wetlands for flood control and storm surge protection.

Coastal populations and ecosystems in the Southeast are also threatened by sea level rise, which will erode shorelines, inundate wetlands, and facilitate saltwater intrusion. Using intermediate projections with emission rates similar to today, the interagency report led by NOAA anticipates 1.5 to 2 feet of sea level rise by 2050 along the South Atlantic coast.<sup>21</sup> By 2030, between 16 and 60 percent of all current nesting beach habitat for sea turtles and shorebirds in the Southeast is projected to be more vulnerable to erosion due to sea level rise.<sup>22</sup>

## **II. The Clean Water Act Was Passed With Bipartisan Support to Restore and Maintain the Integrity of the Nation's Waters.**

By the late 1960s, the Nation's rivers, lakes, wetlands, and streams suffered mightily as the result of industrial pollution, municipal waste, and indiscriminate filling.<sup>23</sup> Rivers and streams were "little more than open sewers."<sup>24</sup> The Cuyahoga River was so polluted with industrial waste it caught fire.<sup>25</sup> Massive algae blooms choked the Great Lakes, killing millions of fish and tainting the water supplies of millions of people.<sup>26</sup> Biologically, Lake Erie was

---

<sup>16</sup> Jennifer Costanza et al., *Assessing climate-sensitive ecosystems in the southeastern United States*, U.S. GEOLOGICAL SURVEY (2016), <https://pubs.er.usgs.gov/publication/ofr20161073>.

<sup>17</sup> *See, e.g., id.* at 4, 7, 9, 13.

<sup>18</sup> Lee Hannah, Climate change, connectivity, and conservation success, *CONSERVATION BIOLOGY* (Dec. 2011).

<sup>19</sup> Xing Chen et al., Variations in streamflow response to large hurricane-season storms in a southeastern U.S. watershed, *J. HYDROMETEOROLOGY* (Feb. 2015).

<sup>20</sup> *See* Peter J. Webster et al., Changes in tropical cyclone number, duration, and intensity in a warming environment, *SCI.* (Sept. 16, 2005); Kevin J.E. Walsh et al., Tropical cyclones and climate change, *WIRES CLIMATE CHANGE* (Nov. 2015).

<sup>21</sup> Projections are relative to sea level in the year 2000. William V. Sweet et al., *Global and Regional Sea Level Rise Scenarios for the United States*, NOAA (Jan. 2017),

[tidesandcurrents.noaa.gov/publications/techrpt83\\_Global\\_and\\_Regional\\_SLR\\_Scenarios\\_for\\_the\\_US\\_final.pdf](https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf).

<sup>22</sup> Betsy von Holle et al., *Effects of future sea level rise on coastal habitat*, *J. WILDLIFE MGMT.* (Feb. 3, 2019).

<sup>23</sup> *See, e.g.,* H.R. Rep. No. 92-911, at 1 (1972); S. Rep. No. 92-414, at 7 (1971).

<sup>24</sup> S. Rep. No. 111-361, at 1 (2010).

<sup>25</sup> *Id.*

<sup>26</sup> *Id.* (citing 138 CONG. REC. D612 (daily ed. Sept. 22, 1992) (Prepared Statement of LaJuana S. Wilcher, Assistant Administrator for Water, at EPA, Hearing Before the Committee on Environment and Public Works, United States Senate)).

“dead.”<sup>27</sup> Wetlands were disappearing at an alarming rate, depriving coastal areas and river valleys of critically important flood control protection and ecological benefits.<sup>28</sup> Of the estimated 221 million acres of wetlands that were originally present in the coterminous states, more than half had been lost to dredging, filling, draining, and flooding.<sup>29</sup>

The proverbial race to the bottom was underway, and the public was losing. Many of the states tasked with addressing water pollution had shirked their responsibility. To remedy the national crisis, Congress passed the Federal Water Pollution Control Act Amendments of 1972, commonly known as the Clean Water Act. The Act marked a major turning point—and instituted the national goal to eliminate all pollution to waters of the United States.

Congress replaced the prior system—“a patchwork of ineffective state laws, and the Federal Water Pollution Control Act that dated to 1948,”<sup>30</sup>—with comprehensive legislation “to restore and maintain the . . . integrity of the Nation’s waters.”<sup>31</sup> “[T]o achieve this objective,” Congress listed seven broad goals, including “protection and propagation of fish, shellfish, and wildlife,” “recreation in and on the water,” elimination of “the discharge of toxic pollutants in toxic amounts,” and “the control of nonpoint sources of pollution.” 33 U.S.C. § 1251(a). Congress also required the states or federal government to adopt water quality standards for all waters covered by the Act “taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation.” *Id.* § 1313(c).

Support for the Clean Water Act has been “bipartisan and far reaching.”<sup>32</sup> Large majorities of both parties in the Senate and House of Representatives voted for the major enactments in 1972 and 1977.<sup>33</sup> Supportive of the bill’s environmental aims, President Richard Nixon vetoed the 1972 bill for cost reasons, but the reaction to the veto was swift and decisive.<sup>34</sup> Congress overrode the veto just one day after it was issued, with overwhelming bipartisan margins in both houses of Congress.<sup>35</sup>

In setting the Act’s objective and goals, Congress could not have established a more encompassing approach to protecting the Nation’s waters, one aimed at addressing every aspect of the country’s water quality crisis.

### **III. The Current State of the Nation’s Waters Demands Stronger Protections.**

Despite Congress’s “broad, systemic view of the goal of maintaining and improving water quality,” data show that we still have significant work to do to achieve the integrity of the Nation’s waters. *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 132-33 (1985).

---

<sup>27</sup> S. Rep. No. 111-361, at 1 (2010).

<sup>28</sup> *Id.*

<sup>29</sup> U.S. Fish & Wildlife Service, *Wetlands: Status and Trends of Wetlands in the Coterminous United States, Mid-1970s to the Mid-1980s* (1991).

<sup>30</sup> S. Rep. No. 111-361, at 1 (2010).

<sup>31</sup> Pub. L. No. 92-500, § 101(a), 86 Stat. 816 (1972) (codified at 33 U.S.C. § 1251(a)).

<sup>32</sup> S. Rep. No. 111-361, at 1 (2010).

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*; see also 118 Cong. Rec. 36,879 (Senate vote of 52 to 12); *Id.* 37060-61 (House vote of 247 to 23).

More than 50 percent of the rivers and streams assessed by EPA are impaired.<sup>36</sup> Nearly 80 percent of the bays and estuaries assessed are impaired, as are 91 percent of ocean and near-coastal waters and 100 percent of the Great Lakes' open waters.<sup>37</sup> These areas do not yet meet the Act's goal of making waters fishable and swimmable.<sup>38</sup> They suffer from harmful bacteria, nutrient pollution, and sediment overload that suffocate fish and other aquatic wildlife.<sup>39</sup>

In the Southeast, the health of our rivers and streams is especially dire. Toxic contaminants being dumped into our waterways by industry, development, and agriculture are seeping into our drinking water sources, and into our homes.<sup>40</sup> As of 2014, only *two miles* out of nearly 40,000 assessed miles of North Carolina's rivers and streams were in "good" condition (see Figure 1) so that they can be used for recreation, drinking water, and habitat.<sup>41</sup>

Similarly, more than 65 percent of the rivers and streams studied in Virginia were impaired,<sup>42</sup> and in Georgia, more than 59 percent of the rivers and streams studied were impaired.<sup>43</sup> Unsurprisingly, given the problems facing streams and rivers, more than 70 percent of the Nation's lakes, reservoirs, and ponds studied by the EPA are impaired.<sup>44</sup> Widely contaminated by mercury and other metals, excess nutrients, and polychlorinated biphenyls (PCBs), they are neither suitable for habitat nor safe for fishing, swimming, and boating.<sup>45</sup> Indeed, *100 percent* of North Carolina's lakes, reservoirs, and ponds assessed are impaired (Figure 2)<sup>46</sup>; in Virginia, over 80 percent.<sup>47</sup>

The Nation's wetlands are in no better shape, largely due to development, silviculture, and agriculture.<sup>48</sup> Between 2004 and 2009, the country lost 630,000 acres of forested wetlands, primarily in the Southeast.<sup>49</sup> Previously teeming with mammals, birds, fish, and invertebrates, over half of the remaining wetlands are now unsuitable for habitat, threatened by severe oxygen

---

<sup>36</sup> See EPA, National Summary of State Information: Water Quality Assessment and TMDL Information, [http://ofmpub.epa.gov/waters10/attains\\_nation\\_cy.control](http://ofmpub.epa.gov/waters10/attains_nation_cy.control) (last visited Nov. 14, 2020); EPA, National Water Quality Inventory: 4 Report to Congress (Aug. 2017).

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> Editorial: *We Need More State Help with Water Quality*, FAYETTEVILLE OBSERVER (Apr. 7, 2019).

<sup>41</sup> EPA, NATIONAL SUMMARY OF STATE INFORMATION - NORTH CAROLINA RIVERS AND STREAMS 2014, [https://ofmpub.epa.gov/waters10/attains\\_state.control?p\\_state=NC](https://ofmpub.epa.gov/waters10/attains_state.control?p_state=NC) (last visited Nov. 14, 2020).

<sup>42</sup> EPA, NATIONAL SUMMARY OF STATE INFORMATION - VIRGINIA RIVERS AND STREAMS 2008, [https://ofmpub.epa.gov/waters10/attains\\_state.control?p\\_state=VA](https://ofmpub.epa.gov/waters10/attains_state.control?p_state=VA) (last visited Nov. 14, 2020).

<sup>43</sup> EPA, NATIONAL SUMMARY OF STATE INFORMATION - GEORGIA RIVERS AND STREAMS 2014, [https://ofmpub.epa.gov/waters10/attains\\_state.control?p\\_state=GA](https://ofmpub.epa.gov/waters10/attains_state.control?p_state=GA) (last visited Nov. 14, 2020).

<sup>44</sup> EPA, NATIONAL SUMMARY OF STATE INFORMATION - WATER QUALITY ATTAINMENT IN ASSESSED LAKES, RESERVOIRS, AND PONDS, [https://ofmpub.epa.gov/waters10/attains\\_nation\\_cy.control#LAKE/RESERVOIR/POND](https://ofmpub.epa.gov/waters10/attains_nation_cy.control#LAKE/RESERVOIR/POND) (last visited Nov. 14, 2020).

<sup>45</sup> *Id.*

<sup>46</sup> EPA, NATIONAL SUMMARY OF STATE INFORMATION - NORTH CAROLINA LAKES, RESERVOIRS, AND PONDS 2014, [https://ofmpub.epa.gov/waters10/attains\\_state.control?p\\_state=NC](https://ofmpub.epa.gov/waters10/attains_state.control?p_state=NC) (last visited Nov. 14, 2020).

<sup>47</sup> EPA, NATIONAL SUMMARY OF STATE INFORMATION - VIRGINIA LAKES, RESERVOIRS, AND PONDS 2008, [https://ofmpub.epa.gov/waters10/attains\\_state.control?p\\_state=VA](https://ofmpub.epa.gov/waters10/attains_state.control?p_state=VA) (last visited Nov. 14, 2020).

<sup>48</sup> See U.S. Fish and Wildlife Service, Status and Trends of Wetlands in the Conterminous United States 2004-2009 31 (2013).

<sup>49</sup> U.S. Dep't of Interior, News Release: Five-Year Survey Shows Wetlands Losses are Slowing, Marking Conservation Gains and Need for Continued Investment in Habitat (Oct. 6, 2011), <https://www.fws.gov/mountain-prairie/pressrel/11-doi-10-06-2011.html> (last visited Nov. 14, 2020).

depletion and heavy metal pollution.<sup>50</sup> Freshwater mussels in particular are dying off en masse across the Southeast, as well as across the country, due to wetland habitat degradation.<sup>51</sup> Nearly two dozen species of freshwater mussels are recently thought to have gone extinct in the Southeast alone.<sup>52</sup>

As a Nation, we are far from achieving the Clean Water Act's objective. Now is not the time for the agency to abdicate its responsibility to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Should the agency proceed with its current proposals, it does so despite the known risks to our economy, our infrastructure, and the health and well-being of our communities.

#### **IV. The Corps' Draft Decision Documents Do Not Satisfy National Environmental Policy Act.**

The Corps proposes to meet its obligations under the National Environmental Policy Act by replicating identical analyses for each of the nationwide permits. Despite the wide variation in activities covered by the nationwide permits, sections 1.1 through 4.0 of each decision document are essentially identical. This creates several problems that plague each of the analyses. First, the Corps fails to evaluate a no-action alternative in any of the permit decision documents. Second, the agency's improper baseline for evaluating environmental effects is universally applied. Third, the Corps does not prepare an alternatives analysis for any of the permits. The agency's public interest review is not an adequate substitute for that analysis. Fourth, the agency fails to take the required hard look at any type of impacts from the permits. Finally, the Corps improperly relies on future actions that lack any certainty to minimize harm. Each of these issues is amplified by the Corps' proposal to allow federal agencies to bypass the pre-construction notice process, a proposal that should be rejected. In addition to this multitude of shared inadequacies, many of the permits suffer specific deficiencies as described below.

##### **A. The Corps' approach to all nationwide permits violates NEPA.**

The Clean Water Act sets the goal of eliminating all discharges. The Corps, however, has made the goal to issue as many permits as quickly as possible. That is apparent in the agency's NEPA analysis, which is nearly identical for fundamentally different activities with widely divergent effects. The Corps' eagerness to issue permits has overridden its NEPA obligations. Each of the permits must be withdrawn and the agency must comply with NEPA.

##### ***1. NEPA requires an evaluation of alternatives, including a no-action alternative.***

NEPA requires federal agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E). This requirement to analyze alternatives has been long recognized as the "heart" of NEPA. *See, e.g.*, 40 C.F.R. §

---

<sup>50</sup> EPA, NATIONAL SUMMARY OF STATE INFORMATION - WATER QUALITY ATTAINMENT IN ASSESSED WETLANDS, [https://ofmpub.epa.gov/waters10/attains\\_nation\\_cy.control#WETLAND](https://ofmpub.epa.gov/waters10/attains_nation_cy.control#WETLAND) (last visited Nov. 14, 2020).

<sup>51</sup> *See, e.g.*, Wendell R. Haag, *Reassessing enigmatic mussel declines in the United States*, FRESHWATER MOLLUSK BIOLOGY & CONSERVATION (Dec. 19, 2019).

<sup>52</sup> Marion Renault, *Freshwater mussels are dying—Which is the likeliest culprit?*, WIRED (Nov. 14, 2020), <https://www.wired.com/story/freshwater-mussels-are-dying-which-is-the-likeliest-culprit/>.

1502.14 (2019). In general, an agency’s alternatives analysis must “identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of those actions upon the quality of the human environment.” 40 C.F.R. § 1500.2(e) (2019); *see* 40 C.F.R. § 1502.14 (2020). Failure to consider a “viable but unexamined alternative” will render NEPA analysis inadequate. *Dubois v U.S. Dept. of Agric.*, 102 F.3d 1273, 1289 (1st Cir. 1996), cert. denied sub nom. *Loon Mt. Rec. Corp. v. Dubois*, 521 U.S. 1119 (U.S. 1997) (quoting *Res. Ltd. v. Robertson*, 35 F.3d 1300, 1307 (9th Cir. 1994)). As part of the alternatives analysis, agencies must consider and disclose the “no action” alternative which is intended to provide a baseline for comparing environmental effects. *See* 40 C.F.R. § 1502.14(c) (2020); *Ctr. for Biological Diversity v. U.S. Dep’t of Interior*, 623 F.3d 633, 642 (9th Cir. 2010) (“The no action alternative is meant to provide a baseline against which the action alternative[ ] . . . is evaluated”) (citation and quotation omitted)). “A material misapprehension of the baseline conditions existing in advance of an agency action can lay the groundwork for an arbitrary and capricious decision.” *Friends of Back Bay v. U.S. Army Corps of Engineers*, 681 F.3d 581, 588 (4th Cir. 2012).

2. *The draft decision documents do not analyze a no action alternative.*

The Corps’ NEPA violation starts at the analyses’ inception. For each of the proposed nationwide permits, the Corps presents “no action” as not having nationwide permits.<sup>53</sup> But even if the Corps takes no action now, the current nationwide permits do not expire until 2022. There is no urgency here.

The Corps’ failure to recognize that the no action alternative includes the continuation of existing nationwide permits is a “material misapprehension” that “lay[s] the groundwork for an arbitrary and capricious decision.” *Friends of Back Bay*, 681 F.3d at 588. As presented by the Corps, the no action alternative incorporates multiple unsupported assumptions. First, the Corps assumes that the “no action alternative would . . . reduce the Corps [sic] ability to pursue the current level of review for other activities that have greater adverse environmental effects . . . [and] reduce the Corps [sic] ability to conduct compliance actions.”<sup>54</sup> This is, of course, false. Without these new nationwide permits, the Corps would apply the existing nationwide permits and there would be no additional administrative burden.

Similarly, there is no truth to the Corps’ assertion that the “adverse environmental consequences of the no action alternative are likely to be more substantial than the adverse environmental consequences of the proposed action (i.e., the reissuance of this NWP)” because the “no action alternative would eliminate the incentives for project proponents to reduce their proposed impacts to jurisdictional waters and wetlands to qualify for NWP authorization.”<sup>55</sup> Even assuming this were true, taking action here is not necessary because the existing nationwide permits will remain valid until 2022.<sup>56</sup>

---

<sup>53</sup> *See, e.g.*, Draft Dec. Doc NWP 12 at 6. We cite this decision document as an example. Because the Corps’ decision documents are nearly identical for sections 2 through 4, the comments in this section apply equally to each document.

<sup>54</sup> Draft Dec. Doc. NWP 12 at 6.

<sup>55</sup> *Id.* at 47.

<sup>56</sup> The Corps’ assertion is not, however, true. For example, the NWP 12 draft decision document does not present any evidence that constructing oil and gas pipelines—which are often hundreds of miles long with thousands of waterbody crossings—using general permits is more environmentally protective than using individual permits.



Defining the no action alternative is not difficult, but its importance cannot be overstated. What happens if the Corps takes no action here? There is only one answer—the existing nationwide permits will continue in effect until March 18, 2022. Accepting that reality fundamentally changes the Corps’ analysis, rendering much of it fictional. The Corps must withdraw these proposed nationwide permits for failure to appropriately define the no action alternative.

3. *The draft decision documents set an improper environmental baseline.*

The Corps’ mistakes continue with its misuse of an artificially inflated environmental baseline. The Corps cites no authority, and indeed none exists, for the premise that the analysis of whether the permits have a significant effect on the human environment, and therefore necessitate environmental impact statements, should be measured against the baseline of all impacts by human kind in recorded history. This is, to put it mildly, an unwarranted assumption. *Friends of Back Bay*, 681 F.3d at 588 (4th Cir. 2012) (“An unjustified leap of logic or unwarranted assumption, however, can erode any pillar underpinning an agency action, whether constructed from the what-is or the what-may-be. Once the roof caves in, it offers but a smattering of solace to explain that only the latter were inspected and deemed sound.”).

The purpose of establishing an environmental baseline is to assess “what [harm] might result from the agency’s proposed actions in the present and future human and natural contexts.” *Pac. Coast Fed’n of Fishermen’s Ass’ns v. U.S. Bureau of Reclamation*, 426 F.3d 1082, 1093 (9th Cir. 2005) (analyzing baselines in the ESA context). By accounting for both the present effects of past actions and the impacts of other current actions, an agency can determine what effects *its* actions will have. *Great Basin Res. Watch v. Bureau of Land Mgmt.*, 844 F.3d 1095, 1101 (9th Cir. 2016) (“Without establishing the baseline conditions which exist . . . before [a project] begins, there is simply no way to determine *what effect* the [project] will have on the environment.” (citation omitted) (emphasis added)). Here, the Corps upends this process by weighing each nationwide permit’s impacts *against* the environmental baseline, rather than using that baseline to determine *what effects* the nationwide permit will have. *See Coal. to Protect Puget Sound Habitat v. U.S. Army Corps of Engineers*, 417 F. Supp. 3d 1354, 1364 (W.D. Wash. 2019), *appeal filed*, No. 20-35546 (9th Cir.) (faulting the Corps for analyzing the effects of a NWP “as a percentage of the decades or centuries of degrading activities that came before”).

The Corps sets the stage for this arbitrary and capricious comparison by noting—repeatedly—that “humans have altered aquatic and terrestrial environments in numerous, substantial ways for *thousands of years*.”<sup>57</sup> The Corps then pivots to other current actions,

---

Critically, individual permits require applicants to choose the least environmentally damaging practicable alternative. 40 C.F.R. § 230.10(a); *see* 40 C.F.R. § 230.7(b)(1) (“[C]onsideration of alternatives in § 230.10(a) are not directly applicable to General permits.”). As a result, pipeline developers using an individual permit may be required to avoid some waters entirely, not just reduce impacts below an applicable acreage limitation as required by NWP 12.

<sup>57</sup> *Id.* at 12 at 34 (emphasis added); *see also id.* at 23 (“For thousands of years, humans have caused substantial impacts on ecosystems and the ecological functions and services they provide.”); *id.* at 42 (“For thousands of years, human communities have altered landscapes and ecosystems to serve their needs, such as food, safety, and commerce, and made trade-offs by increasing certain ecosystem functions and services while reducing other ecosystem functions and services.”); *id.* at 44 (“The current environmental setting is the result of human activities altering ecosystems over thousands of years.”). As a result of this historical impairment, the Corps finds “most” of the nation’s aquatic resources are already “degraded to some degree.” *Id.* at 28.

noting—repeatedly, if not emphatically—that “the activities authorized by this NWP are *just one category among many categories* of activities that affect ocean waters, estuarine waters, lakes, wetlands, streams, and other aquatic resources.”<sup>58</sup>

The Corps adds these past and present activities together to arrive at a baseline or “environmental setting.”<sup>59</sup> But instead of using this baseline to determine *what* impacts each nationwide permit will have, the Corps places the entire “degraded” baseline on one end of a scale, and the supposed impacts of the approved activity on the other, and predictably finds the latter is dwarfed by the former. Specifically, the Corps finds that:

Because the activities authorized by this NWP constitute *only a small proportion* of the categories of [past and present] human activities that directly and indirectly affect ocean waters, estuarine waters, lakes, wetlands, streams, and other aquatic resources, the activities authorized by this NWP over the next 5 years are *likely to result in only a minor incremental change* to the current environmental setting for ocean waters, estuarine waters, lakes, wetlands, streams, and other aquatic resources.<sup>60</sup>

In effect, the Corps finds the “minor incremental change[s]” caused by NWP-authorized activities are a drop in the bucket when weighed against thousands of years of human activity. On that score, no activity will ever cross the significance threshold under NEPA which requires preparation of an environmental impact statement or “minimal” threshold under the Clean Water Act which forecloses use of a nationwide permit.

The Corps knows better. It used this same charade to downplay impacts when reissuing NWPs in 2017 and just last year was reprimanded by the U.S. District Court for the Western District of Washington. To quote the court, “[n]oting that a particular environmental resource is degraded is not an excuse or justification for further degradation.” *Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1364. The Corps is required to analyze the individual and cumulative impacts of nationwide permits *given* the current environmental setting, not calculate these impacts “*as a percentage* of the decades or centuries of degrading activities that came before.” *Id.* (emphasis added). Put differently, the point of a baseline is not to determine “the *proportional* share of responsibility the federal agency bears for the [harm to the aquatic resource], but what [harm] might result *from* the agency’s proposed actions in the present and future human and natural contexts.” *Pac. Coast*, 426 F.3d at 1093 (emphasis added) (analyzing baselines in the ESA context). It is both obvious and profoundly unhelpful to observe that detrimental impacts caused by NWP-authorized activities are “minimal” when compared with “thousands of years” of aquatic-ecosystem degradation and every other contemporary source of aquatic pollution. The longstanding degradation of the nation’s waters is the very reason why the CWA was enacted in the first place—it may not serve as an excuse to evade its requirements.

---

<sup>58</sup> *Id.* at 42 (emphasis added); *see also id.* at 18 (“Most causes and sources of [aquatic ecosystem] impairment are not due to activities regulated under Section 404 of the Clean Water Act.”); *id.* at 19 (“Most causes and sources of impairment are not due to activities regulated under Section 404.”); *id.* at 24 (“Activities regulated and authorized by the Corps under Section 404 of the Clean Water Act . . . comprise a small subset of those [ecosystem-impairing] activities.”); *id.* at 28 (“Many . . . causes of impairment are point and non-point sources of pollutants that are not regulated under Section 404.”).

<sup>59</sup> *Id.* at 35 (“The present effects of past actions and the effects of actions occurring at the present time form the current environmental setting.”).

<sup>60</sup> *Id.* at 45.

The Corps' willful misapprehension of baseline conditions taints the entire rulemaking. "Being unable to divorce the Corps's demonstrably incorrect assumption of [baseline conditions] from its ultimate conclusion that no EIS need be prepared," a reviewing court will be "constrained to invalidate the resultant FONSI as arbitrary and capricious." *Friends of Back Bay*, 681 F.3d at 589 (4th Cir. 2012). Several courts have already done just that. The Corps must withdraw these proposed permits and conduct a proper analysis of baseline conditions.

4. *The Corps has failed to evaluate alternatives to the nationwide permits.*

The Corps' purported alternatives analysis does not identify or evaluate alternatives. In Section 2.0 of the draft decision documents, each states that "[t]his evaluation includes an analysis of alternatives based on the requirements of NEPA."<sup>61</sup> The Corps recognizes that NEPA "requires a more expansive review than the Clean Water Act Section 404(b)(1) Guidelines."<sup>62</sup> Despite this recognition, the agency makes no effort to satisfy NEPA's requirements.

Writing in anticipation of comments, the Corps reveals that its consideration of comments is a mirage—stating that it "has considered suggested changes to the terms and conditions of this NWP, as well as modifying or adding NWP general conditions" in response to comments.<sup>63</sup> That is the extent of the Corps' description of National Modification Alternatives. In short, the Corps *will* consider—and dismiss—alternatives once commenters propose them.

Similarly, the Corps' claimed consideration of Regional Modification Alternatives is wholly inadequate. The Corps does not actually propose or evaluate an alternative, but simply states that division engineers have the ability to deny or modify nationwide permits through the use of regional conditions.<sup>64</sup> That is not an alternatives analysis.

Last, the Corps argues that general condition 23 and the pre-construction notice process allow the district engineer to require on-site alternatives to a specific project.<sup>65</sup> Describing a future process that could be invoked if the preferred alternative is selected is not an alternatives analysis. Nor does post-decision alternatives analysis satisfy NEPA. *See, e.g., Lands Council v. Powell*, 395 F.3d 1019, 1026 (9th Cir. 2005) ("NEPA was passed by Congress to protect the environment by requiring that federal agencies carefully weigh environmental considerations and consider potential alternatives to the proposed action *before* the government launches any major federal action.") (emphasis added).

As a result, the agency's "Alternatives" section fails to evaluate either a no action alternative or any actual alternative to the nationwide permits. The Corps has not evaluated "the environmental impacts of the proposed action and alternatives." 40 C.F.R. § 1501.5. That failure combined with the agency's decision to use identical alternatives analyses for all of the permits means that none of the draft decision documents comply with NEPA.

That failure is more inexcusable because of the clear alternatives listed in the statute. Section 404(e) provides for general permits on the national, regional, and state level. 33 U.S.C.

---

<sup>61</sup> *Id.* at 6.

<sup>62</sup> *Id.*

<sup>63</sup> *Id.* at 7.

<sup>64</sup> *Id.* at 8.

<sup>65</sup> *Id.* at 8-9.

§ 1344(e). The Corps repeatedly acknowledges that it cannot evaluate nationwide impacts of the nationwide permits and that the regional conditions are essential to the program.<sup>66</sup> It states that “[a]n important aspect for the NWP is the use of regional conditions to address differences in aquatic resource functions, services, and values across the nation.”<sup>67</sup> In addition, “division engineers issue supplemental decision documents that evaluate potential impacts of the NWP at a regional level, and include regional cumulative effects assessments.”<sup>68</sup> Compensatory mitigation determinations are at the discretion of the district engineer despite being necessary “to ensure that the net adverse environmental effects are no more than minimal.”<sup>69</sup> As for wetlands, the draft decision documents concede that “it is necessary to account for individual and regional variations when evaluating wetlands and the functions and services they provide.”<sup>70</sup> Indeed, the draft decision documents state that “supplemental documentation provided by division engineers will address how regional conditions affect the individual and cumulative effects of the NWP.”<sup>71</sup>

The Corps acknowledges the existence of regional or programmatic general permits, but does not conduct any analysis of the alternatives.<sup>72</sup> Instead, the agency contradicts its heavy reliance on division engineers’ role in the nationwide permit process. Despite repeatedly relying on engaged division engineers to implement the nationwide permits, the Corps flippantly dismisses regional general permits as “an impractical and inefficient method for activities with no more than minimal individual and cumulative adverse environmental effects.”<sup>73</sup> In short, division engineers are essential to evaluating the regional environmental impacts of nationwide permits, but requiring the same analysis for regional general permits is “impractical and inefficient.” This nonsense violates NEPA.

For NWP 12 specifically, the agency should consider an alternative that allows use of NWP 12 for maintenance or repair of oil and gas pipelines but not new construction. The draft decision document does not explain how frequently the NWP is used for new construction versus other pipeline activity. But given that the Corps expects NWP 12 to be used approximately 8,110 times annually for the next five years, it seems likely that the permit is being used most commonly for repair and maintenance activities.<sup>74</sup> Because the most severe environmental impacts are generally caused by new pipeline construction, and these projects would benefit the most from the detailed review associated with individual permitting. Disallowing use of NWP 12 for new construction would allow the Corps to better protect water quality while maintaining a lesser administrative workload for pipeline maintenance and repair.

##### *5. The draft decision documents fail to evaluate impacts.*

---

<sup>66</sup> *Id.* at 28 (“These data deficiencies make it more difficult to characterize the affected environment to assess, at larger scales such as national or regional scales, the degree to which activities authorized by this NWP might potentially cause adverse effects to those resources during the 5-year period the NWP is anticipated to be in effect.”); 36 (“The lack of needed data is particularly relevant for a national action such as the issuance of an NWP.”)

<sup>67</sup> *Id.* at 8

<sup>68</sup> *Id.*

<sup>69</sup> *Id.* at 9.

<sup>70</sup> *Id.* at 21.

<sup>71</sup> *Id.* at 34.

<sup>72</sup> *Id.* at 7.

<sup>73</sup> *Id.* at 7.

<sup>74</sup> *See id.* at, 65.

“Section 101 of NEPA declares a broad national commitment to protecting and promoting environmental quality.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989). That commitment is “realized through a set of ‘action-forcing’ procedures that require that agencies take a ‘hard look’ at environmental consequences, and that provide for broad dissemination of relevant environmental information.” *Id.* at 350 (citations omitted).

This “hard look” must include “some quantified or detailed information” supporting the conclusions of environmental analysis. *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 993 (9th Cir. 2004) (citations omitted). An “agency has satisfied the ‘hard look’ requirement if it has examine[d] the relevant data and articulate[d] a satisfactory explanation for its action including a rational connection between the facts found and the choice made.” *Black Warrior Riverkeeper, Inc. v. U.S. Army Corps of Engineers*, 833 F.3d 1274, 1285 (11th Cir. 2016) (citation omitted). The “hard look” requirement is violated if “the agency failed entirely to consider an important aspect of the problem.” *Sierra Club v. U.S. Army Corps of Engineers*, 295 F.3d 1209, 1216 (11th Cir. 2002).

CEQ recently revised its definition of “effects” for NEPA purposes to remove specific references to direct, indirect, and cumulative effects. Effects are now defined generally as “changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives.” 40 C.F.R. § 1508.1(g). Nevertheless, because the draft decision documents continue to distinguish between direct, indirect, and cumulative effects, we retain those distinctions here too. The Corps’ analysis fails under either definition.

The Corps’ solution to its hard-look problem is to defer portions of effects analysis to district engineers. Specifically, the Corps plans to conduct “more robust analysis at the site-specific scale,” when it has the information necessary to take a hard look, “through the review of pre-construction notification and voluntary requests for NWP verifications.”<sup>75</sup> Then “the district engineer will consider the direct and indirect effects caused by the NWP activity” in a specific location as well as “the cumulative adverse environmental effects caused by activities authorized by [the] NWP.”<sup>76</sup> This approach does not comply with NEPA for at least three reasons.

First, the Corps cannot find that the nationwide permits will not cause significant impacts, as the draft decision documents contemplate, if it is deferring the impacts analysis that underpins that finding. In other words, the Corps may not issue a FONSI that is entirely based on future analysis and assumptions about what district engineers may or may not find or require later in time. If the decision documents do not include sufficient information to enable the Corps to find that the nationwide permits will not have significant environmental effects when they are finalized the Corps may: 1) complete an EIS, or 2) postpone taking action until it can complete a lawful NEPA analysis. Finding that there will be no significant impacts *now* based wholly on *future* consideration of those impacts turns NEPA on its head and violates the statute.

Second, the Corps is effectively attempting to tier its NEPA analysis to a non-NEPA document. “Tiering refers to the coverage of general matters in broader environmental impact statements or environmental assessments (such as national program or policy statements) with

---

<sup>75</sup>*Id.* at 44.

<sup>76</sup>*Id.* at 46.

subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.” 40 C.F.R. § 1508.1(ff) (2020). By their own admission, the draft decision documents provide “a general assessment of the foreseeable effects of the individual activities authorized by this NWP” and “supplemental documentation provided by division engineers will address . . . the individual and cumulative effects of the NWP.”<sup>77</sup> This is tiering.

Unfortunately for the agency, “tiering to a document that has not itself been subject to NEPA review is not permitted, for it circumvents the purpose of NEPA.” *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1073 (9th Cir. 2002). The Corps cannot, therefore, tier its NEPA analysis to non-NEPA documents produced by district engineers.

Third, the Corps cannot evaluate the cumulative effect of its nationwide permit program through project-specific “review of pre-construction notification and voluntary requests for NWP verifications,”<sup>78</sup> because that review does not encompass the full suite of activities authorized by the permits. “Cumulative effects can result from additive interactions or synergistic interactions (i.e., *the combined effect is greater than the sum of the effects of individual activities*).”<sup>79</sup> The additive and synergistic interactions of the full nationwide permits are missed through project-by-project review, not to mention failure to account for other nationwide permit projects outside of the district engineer’s purview. “A determination as to whether the impacts of a general permit will be cumulatively significant cannot be foregone based on the assurance that they will be reviewed on an individual permit basis later.” *Wyoming Outdoor Council Powder River Basin Res. Council v. U.S. Army Corps of Engineers*, 351 F. Supp. 2d 1232, 1243 (D. Wyo. 2005).

6. *The Corps has not taken a hard look at direct and indirect effects.*

The Corps is upfront about the difficulties of assessing the direct and indirect effects of permitting thousands of projects before they have been proposed. First the Corps explains that it has “little national-level information on the current ecological state of the Nation’s wetlands, streams, and other aquatic resources, or the general degree to which they perform various ecological functions . . . These data deficiencies make it more difficult to . . . assess . . . the degree to which activities authorized by this NWP might potentially cause adverse effects to” the human environment.”<sup>80</sup> Second, the Corps admits that “the direct and indirect effects may vary depending on the specific activity and the environmental characteristics of the site in which the activity takes place,” which, because the Corps does not know where or when any of the NWPs will be used, makes it “difficult to predict all of the direct and indirect impacts that may be associated with each activity authorized by an NWP.”<sup>81</sup>

In sum, the Corps does not know the “current ecological state of the Nation’s” waters or the site-specific “direct and indirect impacts” of any of the nationwide permits and has done no investigation of prior impacts to inform its decisionmaking. The Corps’ conclusion is that

---

<sup>77</sup> *Id.* at 34.

<sup>78</sup> *Id.* at 44 (emphasis added).

<sup>79</sup> *Id.* at 35.

<sup>80</sup> *Id.* at 28.

<sup>81</sup> *Id.* at 37.

impacts will occur at unknown places at unknown times in the future with unknown degrees of impact. That is not a hard look.

The Corps attempts to justify this shortcoming by explaining that there “are considerable challenges in characterizing the potential environmental consequences of the issuance of this NWP at a national scale.”<sup>82</sup> But the Corps is attempting to reissue a *nationwide* permit; therefore, it must take a hard look at the *nationwide* effects of each of the permits. In short, if the Corps cannot complete the nationwide analysis in compliance with NEPA, it cannot issue a nationwide permit.

At most, the Corps recites a litany of ways the nationwide permits “may affect” the human environment.<sup>83</sup> That disclosure is enough to trigger the need for an EIS but insufficient to meet the hard-look standard.

#### 7. *The Corps has not taken a hard look at cumulative effects.*

The Corps’ assessment and disclosure of cumulative effects is similarly lacking for NEPA purposes. At the most basic level, the Corps cannot assess cumulative effects without first considering and disclosing the direct and indirect effects of the nationwide permits. The agency’s cumulative impacts analysis fails for that reason alone.

More to the point, besides disclosing the predicted number of times that nationwide permits will be used over the next five years there is no *analysis* of the cumulative effect of that use—even for those NWPs that the Corps has recently had rejected in court, such as NWP 12. The bulk of the cumulative effects discussion is devoted to revealing the conclusions of various studies related to compensatory mitigation,<sup>84</sup> or discussing the general value of cumulative effects analysis in principle,<sup>85</sup> without *completing* that analysis. But just as “[v]erbose descriptions of the affected environment are themselves no measure of the adequacy of [environmental analysis],” verbose discussion of studies related to cumulative effects, or the importance of cumulative effects analysis, are not a substitute for actually disclosing those effects. *See* 40 C.F.R. § 1502.15 (2020).

Comparing the draft decision documents for the proposed NWPs reveals just how flimsy—and canned—the Corps’ assessment of direct, indirect, and cumulative effects is. For example, we compared the text of NWP 3 with NWP 12. NWP 3 authorizes the “repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill.” NWP 12 authorizes “the construction, maintenance, repair, and removal of oil and natural gas pipelines and associated facilities.” The cumulative effects section of the EAs for NWP 3 and NWP 12 are *virtually identical* except for substituting the number of times each NWP is predicted to be used annually.<sup>86</sup> The Corps cannot seriously assert that the cumulative effect of building new pipelines hundreds of miles in length is the same as conducting maintenance on existing fills. The cumulative effects analysis text is boilerplate, not the meaningful analysis required by NEPA.

---

<sup>82</sup> *Id.* at 43.

<sup>83</sup> *See, e.g., infra* Section V(F)(1)(a).

<sup>84</sup> *See id.* at 67–72.

<sup>85</sup> *See id.* at 41–46

<sup>86</sup> *Compare* Draft Dec. Doc. NWP 3 at 58-66 *with* Draft Dec. Doc. NWP 12 at 65-72.

8. *The Corps cannot assume voluntary action will reduce significant effects.*
  - a. The Corps cannot rely on potential mitigation to offset effects.

The Corps' suggestion that "compensatory mitigation required by district engineers" will ensure insignificant impacts is flawed, for at least four reasons.<sup>87</sup> First, compensatory mitigation is insufficient as a mechanism to reduce impacts for NEPA purposes. Though what qualifies as compensatory mitigation can vary,<sup>88</sup> in many instances, it simply entails purchasing "[c]redits from approved mitigation banks or in-lieu fee programs."<sup>89</sup> Therefore, it may not include *any* activity in the specific location where environmental effects attributable to NWP are occurring.<sup>90</sup> While such mitigation measures may satisfy some of permittees' obligations under the CWA, *see* 33 C.F.R. § 330.1(e)(3), money payouts do not necessarily make the effects of NWP activities less significant for NEPA purposes. Rephrased, contributing to an environmental improvement in one location does not reduce the significance of environmental impacts of authorized activity at another location. And even if it did, simply pointing to the potential for compensatory mitigation—without at least some specifics to suggest it will reduce impacts below the significance threshold—does not satisfy NEPA. A promise to mitigate some effects in some capacity at some point in the future does not alleviate the need for an EIS or provide a hard look.

Second, the draft decision documents for some permits demonstrate that mitigation is rarely implemented. The draft decision document for NWP 12, for example, discloses that only "8 percent of the NWP 12 verification will require compensatory mitigation to offset the authorized impacts to waters of the United States." Therefore, 92% of the NWP 12 program escapes compensatory mitigation requirements entirely.<sup>91</sup> Even if those projects do not individually rise to the level necessitating compensatory mitigation under the CWA, they risk unmitigated cumulatively significant impacts under NEPA.

Third, the draft decision documents are upfront that even when compensatory mitigation is applied, it has limited benefits and is sometimes unsuccessful.<sup>92</sup> At bottom, "it is difficult to assess whether compensatory mitigation projects have fully or partially offset the lost functions provided by the aquatic resources that are impacted by permitted activities."<sup>93</sup> If the Corps does not know whether mitigation will be successful, it cannot assert that mitigation reduces impacts below NEPA's significance threshold.

Finally, the discussion of mitigation is far too general to reduce the effects of the nationwide permits to insignificance. Undoubtedly this is partially attributable to the fact that the Corps is attempting to satisfy its NEPA obligations *now* for unknown activities that will be proposed in various places at some time in the *future*. But these unknowns do not limit the

---

<sup>87</sup> Draft Dec. Doc. NWP 12 at 72.

<sup>88</sup> Compensatory mitigation for CWA purposes is "the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purpose of offsetting unavoidable adverse impacts." *Id.* at 66.

<sup>89</sup> *Id.* at 45.

<sup>90</sup> *Id.* at 45.

<sup>91</sup> *Id.* 12 at 65.

<sup>92</sup> *See id.* at 65–72.

<sup>93</sup> *Id.* at 67.



Corps' obligation to prepare an EIS when the effects of a program may be significant. Ultimately, the Corps must "provide some explanation of how or why compensatory mitigation will reduce the cumulative adverse impacts on aquatic resources to insignificance. Bare assertions of mitigation are insufficient." *Ohio Valley Envtl. Coal. v. Hurst*, 604 F. Supp. 2d 860, 888–89 (S.D.W. Va. 2009).

- b. Regional conditions released with these draft permits do not include conditions that render the harm from the proposed permits insignificant.

Another strategy employed by the Corps to present effects as insignificant is to point to the possibility that "[a]dditional conditions can be placed on proposed activities on a regional or case-by-case basis to ensure that the activities have no more than minimal individual and cumulative adverse environmental effects."<sup>94</sup> This also fails to meet the mark for multiple reasons. To start, this same condition was included verbatim in the 2017 version of NWP 12, for example, but as explained elsewhere, it failed to keep impacts to a minimum.<sup>95</sup> In addition, the Corps has provided no evidence that this works in practice. Even if additional conditions "can be placed" on permits to minimize impacts, the Corps has presented no information showing that this *actually* happens.

In any event, the regional conditions and "case-by-case" analysis the Corps relies on have not been developed yet so they cannot be used to support a FONSI. *See Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1366 (rejecting the Corps' finding that impacts of nationwide permit would be minimal when the "minimal impact determinations were entirely conclusory and the regional conditions that it assumed would minimize impacts were not in place at the time [the NWP] was adopted"). Analyses which are "are based in large part on the hope that district engineers will mitigate any adverse environmental effects by revoking [the NWP], imposing regional or project-based conditions, and/or requiring an applicant to seek an individual permit" are insufficient to reduce impacts below the significance threshold. *See id.* at 1367.

What's more, the draft regional conditions published with these permits show that some districts will not impose additional requirements. For example, neither the Nashville nor the Mobile Districts have proposed any additional regional conditions.<sup>96</sup>

#### 9. *Environmental Impact Statements are required.*

Agencies must prepare an Environmental Impact Statement ("EIS") for "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). "Affecting means will *or may* have an effect on." 40 C.F.R. § 1508.1(b) (2020) (emphasis added). "Major Federal actions may include . . . programs . . . regulated, or approved by Federal agencies." 40 C.F.R. § 1508.1(q)(2) (2020). Major Federal actions tend to fall within one of several categories, including "[a]doption of official policy, such as rules, . . . [a]doption of programs, such as a group of concerted actions to implement a specific policy or plan[, or]

---

<sup>94</sup> *Id.* at 46.

<sup>95</sup> *See* 2017 *id.* 12 at 43–44.

<sup>96</sup> *See* U.S. Army Corps of Engineers, Nashville and Memphis Districts, Public Notice No. 20-54 (Sept. 17, 2020), U.S. Army Corps of Engineers, Mobile District, Special Public Notice: Nationwide Permit Reissuance Request for Comments (September 15, 2020).

systematic and connected agency decisions allocating agency resources to implement a specific statutory program.” *Id.* § 1508.1(q)(3)(i, iii).

If the need for an EIS is unclear, an agency may first prepare an Environmental Assessment (“EA”). An EA results in a determination that either: (1) an EIS is necessary or (2) an EIS is unnecessary because there will be no significant effects and the project may proceed with a Finding of No Significant Impact (“FONSI”). 40 C.F.R. § 1501.5(c) (2020). A FONSI must document “why an action . . . will *not* have a significant effect on the human environment.” 40 C.F.R. § 1508.1(1) (2020) (emphasis added). If the evidence before the agency is inadequate to conclude that a major federal action will *not* have a significant effect on the environment, the agency must prepare an EIS. *See id.* A decision not to prepare an EIS is unreasonable “[i]f substantial questions are raised regarding whether the proposed action may have a significant effect upon the human environment.” *Save the Yaak Comm. v. Block*, 840 F.2d 714, 717 (9th Cir. 1988) (internal citations omitted).

If, after completion of the EA, an open question remains as to whether the activity may have a significant effect on the human environment, the agency must prepare an EIS. Preparation of an EIS is necessary not only when the agency finds that the activity will have significant effects but also if the agency’s EA is insufficient to conclusively establish that the activity will not have significant effects. The latter is the situation here. The record before the Corps falls short of demonstrating that the nationwide permits generally—and NWP 3, 12, 13, 19, 21, 29, 39, 41, 42, 43, 44, 50, 51, and 52 specifically—will not have significant effects on the environment. In fact, the record is replete with examples of how these nationwide permits may affect the environment.<sup>97</sup> Some of those effects are significant on their own; the combination of those effects easily surpasses the “may significantly affect” bar. Because the record does not support a FONSI, the Corps must prepare an EIS for at least nationwide permits 3, 12, 13, 19, 21, 29, 39, 41, 42, 43, 44, 50, 51, and 52.

#### *10. The Corps’ approach suppresses public participation.*

NEPA has twin aims: “First, it places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process.” *Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983) (internal quotation marks omitted). In furtherance of that latter aim, NEPA “requires not merely public notice, but [also] public participation in the evaluation of the environmental consequences of a major federal action,” *California v. Block*, 690 F.2d 753, 771 (9th Cir. 1982), and courts “have consistently held that public involvement lies at the center of NEPA’s procedural requirements,” *Ohio Valley Envtl. Coal. v. U.S. Army Corps of Eng’rs*, 674 F. Supp. 2d 783, 809 (S.D.W.V. 2009); *see also id.* (collecting cases).

Consistent with NEPA’s emphasis on public participation, CEQ regulations mandate that agencies preparing environmental assessments “shall involve the public . . . to the extent practicable.” 40 C.F.R. § 1501.5(e). In practical terms, this requirements means that “[a]n agency, when preparing an EA, must provide the public with sufficient environmental information, considered in the totality of circumstances, to permit members of the public to

---

<sup>97</sup> *See, e.g. infra* Section V(F)(1)(a).

weigh in with their views and thus inform the agency decision-making process.” *Bering Strait Citizens for Responsible Res. Dev. v. U.S. Army Corps of Engineers*, 524 F.3d 938, 953 (9th Cir. 2008).

The draft decision documents are far from sufficient in this respect. Even if the Corps could lawfully forego an EIS in favor of an EA/FONSI—and it cannot—the draft decision documents fall short of NEPA’s public participation requirements for much the same reason that they fail to take a hard look at the impacts of the NWP generally: they defer any meaningful consideration of effects to future analyses that may never come. By deferring a large component of the requisite impacts analysis to the regional and verification stages, the Corps has not provided in the draft decision documents “sufficient environmental information . . . to permit members of the public to weigh in with their views and thus inform the agency decision-making process.” *Bering Strait*, 524 F.3d at 953. Instead, the draft decision documents offer conclusory statements about why the Corps cannot say more. For example:

- “Due to the large geographic scale of the affected environment (i.e., the entire United States), as well as the many past and present human activities that have shaped the affected environment, it is only practical to describe the affected environment in general terms. In addition, it is not possible to describe the environmental conditions for specific sites where the NWPs may be used to authorize eligible activities.”<sup>98</sup>
- “Given the geographic scope in which this NWP can be used to authorize activities that require DA authorization and the wide variability in aquatic resource structure, functions, and dynamics from site to site and from region to region, there are also considerable challenges in characterizing the potential environmental consequences of the issuance of this NWP at a national scale. Therefore, this evaluation of environmental consequences is a general evaluation and the NWPs provide mechanisms for more robust analyses at the site-specific scale (i.e., through the review of pre-construction notifications and voluntary requests for NWP verifications) and regional scale (i.e., the division engineer’s ability to modify, suspend, or revoke NWP authorizations on a regional basis).”<sup>99</sup>

This tiering to non-NEPA documents is not only unlawful because it fails to take a hard look at the impacts the nationwide permits,<sup>100</sup> but it also leaves the public in the dark until it is too late.

The Corps cannot dismiss this concern by pointing to the regulatory efficiencies that NWPs are supposed to confer. Congress authorized the Corps to issue general § 404 permits for certain categories of activities, but not to the exclusion of the Corps’ obligations under NEPA. *See* 33 U.S.C. § 1344(e). To the extent that the Corps cannot provide the public with adequate information at this stage because the range of potential impacts is large, that is a problem of the Corps’ own making and one that the Corps is obligated to fix. “To be sure, accounting in advance for the broad range of possible impacts resulting from the wide variety [of activities] authorized under NWP[s] . . . is a daunting task. But compliance with NEPA is not excused

---

<sup>98</sup> Draft Dec. Doc. NWP 12 at 9.

<sup>99</sup> *Id.* at 43–44.

<sup>100</sup> *See supra* Sections IV(A)(5)-(7).

simply because compliance is difficult.” *Sierra Club, Inc. v. Bostick*, 787 F.3d 1043, 1066 (10th Cir. 2015) (McHugh, J., concurring).

*11. This approach disenfranchises vulnerable populations.*

Not only does the Corps’ approach contravene NEPA’s public-participation requirements, it also produces a result that disenfranchises interested parties. Parties mounting NEPA challenges in court sometimes face the prospect of forfeiture under the rule that “[p]ersons challenging an agency’s compliance with NEPA must structure their participation so that it . . . alerts the agency to the [parties’] position and contentions, in order to allow the agency to give the issue meaningful consideration.” *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 764 (2004) (alterations in original) (internal quotation marks omitted).

But the Corps’ approach threatens a catch-22. Because the draft decision documents defer major aspects of the impacts analysis to subsequent non-NEPA review,<sup>101</sup> interested parties may not be apprised of the information necessary to develop and advance their positions and contentions in the first place. *Cf. Pub. Citizen*, 541 U.S. at 764. To make matters worse, there will almost certainly be parties that become interested in nationwide permits and the Corps’ NEPA process when, for example, a pipeline using NWP 12 is proposed for their area, and by then it may be too late for them to engage with the agency through NEPA at all.

The requirement that parties exhaust administrative remedies prior to challenging final agency decisions bakes in the assumption that those parties will have sufficient notice of agency actions that may affect them. The Corps approach to approving, for example, large oil and gas pipelines under NWP 12, before those projects have even been proposed throws that approach out the door in violation of NEPA and the APA.

**B. Many of the individual nationwide permits are significantly flawed.**

*1. Nationwide permit NWP 3 has significant individual and cumulative effects.*

Nationwide Permit 3 covers maintenance to existing and serviceable structures.<sup>102</sup> The Corps proposes to expand the coverage of the permit to structures that were constructed prior to 1972.<sup>103</sup> Nationwide Permit 3 has included coverage for pre-authorization structures in the past, but this provision was removed in 1991.<sup>104</sup> If this change is reinserted now, prospective permittees intending to engage in maintaining these older structures will not have to obtain individual permits.<sup>105</sup>

Nationwide Permit 3 also allows for the placement of rip rap around existing structures to prevent the structures from eroding away. This too includes structures that were built prior to

---

<sup>101</sup> See *supra* Section IV(A)(5),

<sup>102</sup> 85 Fed. Reg. § 57,321.

<sup>103</sup> *Id.*

<sup>104</sup> *Id.*

<sup>105</sup> *Id.*

1972.<sup>106</sup> Similarly, prospective permittees can use the permit to remove sediment that has built up around an existing structure.<sup>107</sup>

Structures that have been repeatedly rebuilt to preserve their function, such as a beach house that has suffered increasingly violent storms, should not be authorized and reauthorized under a nationwide permit. Decisions concerning these structures should be decided through the individual permit process because these impacts are often more than minimal.

The proposed Nationwide Permit 3 does limit maintenance fills to the size and shape of the structure being maintained, but the amount of rip rap that can be added to protect the structure is, for all intents and purposes, unlimited.<sup>108</sup> A prospective permittee could use Nationwide Permit 3, for instance, to construct a tall rip rap ring around a vulnerable beach house, such as the one pictured below. As the proposed permit provides, the permittee could transport as much rip rap to the site as they feel that they need to “protect the structure.”<sup>109</sup> In this case, that would be a large amount of stone and that could cause adverse effects to the environment that would go far beyond the “very small or slight” impacts that Congress had envisioned when it drafted Section 404(e).



Beach House on Dauphin Island, Alabama

Similarly, the impacts of the sediment removal provision in the proposed Nationwide Permit 3 could have more than minimal impacts on wildlife downstream. Suspended sediments can elicit a short- and long-term response from aquatic biota depending on the quantity, quality,

---

<sup>106</sup> *Id.* at 57,369.

<sup>107</sup> *Id.*

<sup>108</sup> 85 Fed. Reg. at 57,322.

<sup>109</sup> *Id.*

and duration of suspended sediment exposure.<sup>110</sup> In 1998, about 40 % of assessed river miles in this country had sediment stress-related issues.<sup>111</sup> Suspended and bedded sediment loading imbalance in aquatic systems can be considered one of the greatest causes of impaired water quality.<sup>112</sup> Even though there are numerous criteria for measuring turbidity,<sup>113</sup> Nationwide Permit 3 does not contain *any* such measure.<sup>114</sup>

2. *Nationwide permit 12 demonstrates the errors in the Corps' analysis.*

- a. The Corps must consider and disclose the overall effects associated with its permitting decision.

It is well established that, at least for individual § 404 permits, “the Corps is required to consider the direct, indirect, and cumulative effects reasonably foreseeable as a result of its permitting decision . . . includ[ing] the environmental effects caused by the operation of the installations authorized by the Corps' permitting decision.” *Sierra Club, Inc. v. Bostick*, 787 F.3d 1043, 1064 (10th Cir. 2015) (McHugh, J. concurring) (listing cases). But the Corps has recently disavowed this responsibility for NWP 12 arguing that there is no “reasonably close causal relationship between” NWP 12 and pipeline activities in non-jurisdictional areas which would necessitate disclosure of those impacts in NWP 12 NEPA documents. *See* Defs. Opp. to Mot. for Part. Summ. J. at 24, *N. Plains Res. Council v. U.S. Army Corps*, Case No. 4:19-cv-44-BMM (D. Mont. 2020) (Dkt. 88) (*citing Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 767 (2004)). As explained below, this is false for several reasons. As a result, the Corps must consider and disclose the effects of pipeline construction outside of jurisdictional waters when issuing NWP 12, particularly those upland activities that affect water quality.

Contrary to the Corps' assertion, there is a reasonably close causal relationship between NWP 12 and other pipeline activities. The crux of the Corps' argument that NWP 12 is environmentally beneficial is that “project proponents [] design their projects so that those activities meet the terms and conditions of an NWP.”<sup>115</sup> This is not limited to the design of jurisdictional water crossings only but encompasses the entirety of NWP 12 projects. In other words to design a pipeline to meet the terms and conditions of NWP12, pipeline developers must consider the route of the pipeline through jurisdictional *and* upland areas. Thus, not only is the Corps aware that its permitting authority shapes overall project design *but that is the Corps' intention*. This forecloses any argument that there is no reasonably close causal relationship between NWP 12 and pipeline project design across non-jurisdictional areas.

This connection can be easily explored with a hypothetical. A developer may be considering two routes for its pipeline. One route would traverse a stable, moderate slope but require a waterbody crossing involving the loss of 0.51-acre of jurisdictional waters that would disqualify the project from use of NWP 12. The second route would traverse a steep slope with

---

<sup>110</sup> Michael E. Kjelland, A review of the potential effects of suspended sediment on fishes: potential dredging-related physiological, behavioral, and transgenerational implications, 35 ENVIRON SYST. DECIS. 334, 335 (2015), <http://www.env.gov.bc.ca/wat/wq/BCguidelines/turbidity/turbidity.html> (last visited Nov. 8, 2020).

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> 85 Fed. Reg. at 57,369.

<sup>115</sup> Draft Dec. Doc. NWP 12 at 7.

highly erosive soils and require a waterbody crossing involving the loss of only 0.49-acre of jurisdictional waters in compliance with NWP 12. This second option may involve more severe environmental impacts including to water quality. According to the Corps, it expects NWP 12 to push the developer towards selecting the second route so it can take advantage of the relaxed requirements under NWP 12 rather than pursue an individual permit. In that scenario, the Corps' permit would be a cause of the more severe environmental impacts associated with the second route even if the activities causing those impacts did not occur in jurisdictional waters. This reasonably close causal relationship necessitates disclosure of these effects under NEPA.

There is also a reasonably close causal relationship between use of NWP 12 and other pipeline activities because use of a nationwide permit allows the project applicant to escape direct application of the "least environmentally damaging potential alternative" ("LEDPA") requirement. *Compare* 40 C.F.R. § 230.10(a) (outlining LEDPA requirement) *with id.* § 230.7(b)(1) ("consideration of alternatives in § 230.10(a) are not directly applicable to General permits"). If project applicants had to identify the LEDPA for each crossing, pipeline routes and/or waterbody crossing methods would almost certainly change. Thus the Corps' decision to authorize pipeline construction using a nationwide permit directly affects the route and construction techniques for the overall pipeline which would be different under an individual permit. This is a sufficient exercise of control over the route to meet NEPA's low bar for assessing impacts. Because the Corps' permit shapes the pipeline's route, the Corps must consider under NEPA the effects on the environment of that route – including in upland areas and particularly for upland actions that affect water quality – without restricting that analysis to only the actions specifically authorized by the Corps' permit.

*Save Our Sonoran, Inc. v. Flowers* is instructive here. *Save our Sonoran* involved issuance of an individual § 404 permit for a residential development in the Arizona desert. *Save Our Sonoran*, 408 F.3d 1113, 1118 (9th Cir. 2005). Construction called for impacts to jurisdictional water in sixty-six locations, ultimately filling 7.5 acres of wetlands. *Id.* The Corps limited its NEPA analysis to the impacts in those sixty-six locations instead of the overall development. *Id.* The Ninth Circuit threw out this approach, finding that the Corps "improperly constrained its NEPA analysis to the [jurisdictional areas], rather than considering the development's effect on the environment as a whole." *Id.* at 1121. "Although the Corps' permitting authority is limited to those aspects of a development that directly affect jurisdictional waters, it has responsibility under NEPA to analyze all of the environmental consequences of a project." *Id.* at 1122.

Notably, the court found that "[b]ecause the jurisdictional waters run throughout the property like capillaries through tissue, any development the Corps permits would have an effect on the whole property." *Id.* Therefore, the "NEPA analysis should have included the entire property." *Id.* Jurisdictional waters also run like capillaries through NWP 12 projects, particularly in the central and southern Appalachian Mountains. The 300-mile Mountain Valley Pipeline in West Virginia and Virginia requires 1,108 waterbody crossings.<sup>116</sup> That is a crossing approximately every 1,429 feet for 300 miles. It is hard to imagine a more capillary-like scenario.

---

<sup>116</sup> See Mountain Valley Pipeline Final Environmental Impact Statement ("MVP FEIS") at ES-6 *available at* <https://cms.ferc.gov/final-environmental-impact-statement-mountain-valley-project-and-equitrans-expansion-project>.

Notably, these capillaries have no value apart from the overall pipeline project. The Corps has explained that for projects authorized under NWP 12 each separate waterbody crossing has no independent utility outside of the overall NWP 12 project.<sup>117</sup> Thus for Clean Water Act purposes, the Corps evaluates the utility of authorized discharges based on the overall project, but under NEPA the Corps attempts to limit its analysis specifically to actions in jurisdictional waters, disregarding the rest of the project. This is arbitrary and capricious; the Corps cannot have it both ways.

The Corps' own regulations require consideration of impacts in non-jurisdictional areas. The Corps "NEPA Implementation Procedures for the Regulatory Program" are found at 33 C.F.R. Part 325, Appendix B. Those procedures apply to the "regulatory program," which includes NWP 12, and make no distinction between individual and nationwide permits. The regulations require the Corps to assess the effects of "those portions of the entire [§ 404] project over which the [Corps] has sufficient control" to warrant review. 33 C.F.R. Part 325, App. B, § 7.b. The regulations then provide a non-exhaustive list of factors to consider when assessing whether the Corps has sufficient control over a project to warrant review. Two are particularly relevant here.

First, the Corps is to consider "[w]hether or not the regulated activity comprises 'merely a link' in a corridor type project (e.g., a transportation or utility transmission project)." *Id.* § 7.b.(2)(i). The Corps cannot credibly argue that its permit is "merely a link" in oil and gas pipeline projects. As noted below,<sup>118</sup> these pipelines often require *thousands* of waterbody crossings. Without the Corps' permit, the pipelines would serve no purpose because they would remain empty segments of pipe installed in non-jurisdictional areas that do not connect and cannot transport oil or gas. Those crossing are not merely a link; they are foundational portions of the projects.

Second, the Corps considers "[w]hether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity." *Id.* § 7.b.(2)(ii). With NWP 12, the *regulated* activity affects the location and configuration of the *upland* facilities because the Corps intends "project proponents to design their projects so that those activities meet the terms and conditions of an NWP."<sup>119</sup> Consequently, use of NWP 12 exerts control over upland activities because pipelines developers must design their projects to meet certain criteria, which then affects the route of the pipeline in upland areas. If anything, having the Corps' permit affect the location of upland facilities presents an even stronger case for requiring considering of impacts in upland areas than if the "upland facility . . . affect[ed] the location and configuration of the regulated activity."

In litigation the Corps has distanced itself from these requirements by arguing that 33 C.F.R. Part 325, Appendix B does not apply to nationwide permits. In a challenge to the current version of NWP 12 the Corps argues that "33 C.F.R. part 325 Appendix B is not applicable" because "Part 325 applies to the Corps' review of individual permits" while the "Corps' issuance

---

<sup>117</sup> See Issuance and Reissuance of Nationwide Permits, 82 Fed. Reg. 1,860, 1976 (Jan. 6, 2017) (discussing independent utility requirement).

<sup>118</sup> See *infra* Section V(F)(1)(a).

<sup>119</sup> Draft Dec. Doc. NWP 12 at 7.



of general permits like NWP 12 is governed by 33 C.F.R. part 330.”<sup>120</sup> This is contradicted on the face of the draft decision documents which purports to apply “current Corps regulations” citing “33 CFR 325.2(b)(5).”<sup>121</sup> The position also cannot be squared with other Corps’ regulations. “General permit” as used in the Corps’ regulations “refers to both those regional permits issued by district or division engineers on a regional basis *and to nationwide permits.*” 33 C.F.R. § 320.1(c) (emphasis added). “The procedures for processing individual permits and general permits *are contained in 33 CFR part 325.*” 33 C.F.R. § 320.1(d) (emphasis added).

Case law questioning the application of Appendix B to nationwide permits seems to be based on the Corps’ argument that Appendix B does not apply “to the *verification* of the applicability of already issued general permits.”<sup>122</sup> The Tenth Circuit agreed finding that “Appendix B does not apply to the verification process.” *Sierra Club, Inc. v. Bostick*, 787 F.3d 1043, 1054 (10th Cir. 2015). The court continued by somewhat confusingly explaining that in “adopting Appendix B, the Corps indicated that Appendix B would not apply to nationwide permits (or verifications of permit coverage) when it issued the appendix.” *Id.* The meaning of the quoted parenthetical is unclear. In *Bostick*, the Corps does not appear to have argued that Appendix B did not apply to the promulgation or reauthorization of nationwide permits, but only that it did not apply to the later verification stage. This makes sense as Appendix B provides “NEPA Implementation Procedures for the Regulatory Program” and the Corps purports to meet all of its NEPA obligations for nationwide permits at the authorization stage, not the verification stage. Thus, the parenthetical can be read consistent with the Corps regulations as confirming that Appendix B does not apply to nationwide permit verifications but offering no opinion on the application of Appendix B to the promulgation of nationwide permits. The difference between the promulgation and verification stages for nationwide permits was apparently lost in translation when the D.C. Circuit pointed to *Bostick* to find that Appendix B does not apply to nationwide permits. *See Sierra Club v. U.S. Army Corps of Engineers*, 803 F.3d 31, 52 (D.C. Cir. 2015). To the extent that *Sierra Club* stands for the proposition that Appendix B has no application to nationwide permits at all, it is wrongly decided.

In conclusion, even if the Corps lacks authority to prevent upland impacts in their entirety, it does not lack the authority to influence what form those impacts take. The difference the Corps’ permit makes on the shape of those impacts is a meaningful difference which must be evaluated and disclosed under NEPA. The Corps’ permit is a legally relevant cause of upland impacts because the Corps issues NWP 12 expecting pipeline developers to shape their projects to meet the permit’s requirements which dictates the overland route of the pipeline as well as jurisdictional waterbody crossings. The Corps’ regulations require it to consider impacts in addition to those attributable to jurisdictional actions when it is exercising control over upland decisionmaking. To comply with NEPA, the Corps must consider and disclose upland impacts associated with NWP 12 projects particularly those that affect water quality.

---

<sup>120</sup> Def. Reply In. Supp. Part. Summ. J., 11, *Northern Plains Resource Council v. Army Corps of Engineers*, Case No. 4:19-cv-44-BMM (D. Mont. 2020) (Dkt. 110).

<sup>121</sup> Draft Dec. Doc. NWP 12 at 59.

<sup>122</sup> Def. Resp. Br., 39, *Sierra Club v. Bostick*, Case No. No. 14-6090 (10<sup>th</sup> Cir. 2014) (Dkt. 01019324316) (emphasis added).

- b. The Corps has failed to take a hard look at several specific effects of NWP 12.
  - i. The Corps must take a hard look at the effects of inadvertent returns of drilling fluid.

The draft decision document discloses that “[d]uring construction of oil or natural gas pipelines [under NWP 12], where horizontal directional drilling is used to install or replace a portion of the pipeline, there is a possibility of inadvertent returns of drilling fluids that could adversely affect wetlands, streams, and other aquatic resources.”<sup>123</sup> NWP 12 can also be used to “authorize[] activities that may be necessary to remediate inadvertent returns of drilling fluids, [and] to minimize the effects of those inadvertent returns on water supplies.”<sup>124</sup> But beyond disclosing the “possibility” of an “adverse effect” from inadvertent returns of drilling fluid, the draft decision document offers no *analysis* of the effect of those returns. The Corps’ obligation under NEPA is not to disclose merely that an effect is possible but to take a “hard look” at that effect. The draft decision document includes no look at all.

Concerns over the inadvertent return of drilling fluid are not hypothetical. An attempt by the Rover Pipeline to cross the Tuscarawas River via horizontal directional drilling resulted in the inadvertent discharge of approximately two million gallons of drilling fluid contaminated with diesel fuel.<sup>125</sup> The draft decision document recognizes the possibility of similar events in the future; it must assess the effect of those events on the environment.

The Corps’ position that a § 404 permit is unnecessary to authorize horizontal directional drills is irrelevant for NEPA purposes. As described in the draft decision document, inadvertent returns of drilling fluid are a foreseeable potential effect of the Corps’ approval of oil and gas pipeline via NWP 12 which necessitates consideration under NEPA of the effect of those inadvertent returns. Moreover, the Corps’ permit is likely one of the reasons horizontal directional drills are completed. If a pipeline developer cannot cross a waterbody in compliance with the ½-acre NWP 12 limit, the developer may well choose to drill beneath that waterbody to remain eligible for NWP 12. In that instance, NWP 12 would be a legally relevant cause of the developer’s decision to horizontal directionally drill which necessitates disclosure of those effects in NWP 12’s NEPA documents.

- ii. The Corps must take a hard look at the risks of spills and leaks from NWP 12 projects.

The draft decision document similarly acknowledges the risks of oil spills and pipeline leaks from NWP 12 projects. “Leaks from oil or natural gas pipelines or their substations may alter conservation values in the vicinity of the oil or natural gas pipeline” presumably including in jurisdictional waters.<sup>126</sup> “A variety of pollutants might be released into the environment during the operation and maintenance of oil or natural gas pipelines. Those pollutants may be

---

<sup>123</sup> Draft Dec. Doc. 12 at 49.

<sup>124</sup> *Id.* at 55.

<sup>125</sup> See Meghan Betcher et al., Pipeline Impacts to Water Quality: Documented impacts and recommendations for improvements (Aug. 2019) available at <https://www.tu.org/wp-content/uploads/2019/10/Pipeline-Water-Quality-Impacts-FINAL-8-21-2019.pdf>.

<sup>126</sup> Draft Dec. Doc. 12 at 49.

discharged through . . . spills and other accidents.”<sup>127</sup> But beyond this acknowledgement, there is no analysis of the effects of spills or leaks on the human environment.

Ample data is available to allow the Corps to assess the environmental consequences of leaks and spills from Corps-approved projects. The Pipeline and Hazardous Materials Safety Administration (“PHMSA”) tracks pipeline incidents. From 2010-2019, there were 70-113 incidents annually that impacted “people or the environment” associated with oil, refined petroleum, and biofuel pipelines.<sup>128</sup> Over that time period, incidents associated with those pipelines resulted in \$2,675,706,578 in damages.<sup>129</sup> From 2010-2019, there were 1,103 reportable incidents involving natural gas distribution pipelines.<sup>130</sup> Those incidents results in 106 fatalities, 510 injuries, and \$2,375,839,647 in damages.<sup>131</sup>

Several circuit courts have recognized that a “‘reasonably close causal relationship’ exists between the Corps’ issuance of [a § 404] permit . . . and the attendant increased risk of oil spills” from the permitted activity requiring the Corps to “explore this relationship further in [its NEPA document].” *Ocean Advocates v. U.S. Army Corps of Engineers*, 402 F.3d 846, 868 (9th Cir. 2005); see *Sierra Club v. Sigler*, 695 F.2d 957, 973 (5th Cir. 1983) (noting that “[n]o party can seriously question the importance of the analysis of [] an oil spill to this permit decision” in a NEPA challenge to a § 404 permit for a port and oil distribution system). *Ocean Advocates* is particularly instructive. There, the Corps was responsible for issuing a § 404 permit to allow a dock extension which, in turn, would increase tanker traffic in the area which would increase the likelihood of oil spills. The court held that the Corps’ failure to consider and forthrightly disclose this effect violated NEPA. *Ocean Advocates*, 402 F.3d at 868. If anything, the dock-tanker-spill causal connection is more tenuous than the straightforward pipeline-spill connection before the Corps now as part of its NWP 12 NEPA analysis. The Corps must disclose the potential for oil spills and natural gas leaks and the concomitant environmental effects.

The fact that the cases cited above involve individual § 404 permits rather than nationwide permits is irrelevant. Nationwide permitting is not a NEPA escape hatch.

Neither does it matter that other agencies have relevant obligations, and other laws apply, to oil spills and pipeline leaks. The question for NEPA purposes is not whether the Corps is the sole entity with authority to avoid a potential impact. The question is whether the Corps’ permitting decision has a relationship to that impact. The Corps’ decision to authorize the construction of oil and gas pipelines by permitting them under § 404 is related to the potential for spills or leaks from those pipelines and the resulting effects on the environment, particularly on jurisdictional waters. The Corps recognized this obligation in its response to comments on its 2017 nationwide permits, noting that its “decision document for NWP 12 treats oil and gas

---

<sup>127</sup> *Id.* at 56.

<sup>128</sup> See PHMSA Pipeline “Accidents Affecting People or the Environment” Database available at <https://www.phmsa.dot.gov/data-and-statistics/pipeline/national-pipeline-performance-measures>.

<sup>129</sup> See PHMSA “All Reported Incident 20 Year Trend” Database available at <https://www.phmsa.dot.gov/data-and-statistics/pipeline/pipeline-incident-20-year-trends>.

<sup>130</sup> *See id.*

<sup>131</sup> *See id.*

pipeline leaks as reasonably foreseeable future actions” under NEPA.<sup>132</sup> That triggers the requirement to take a hard look.

More to the point, the Corps *has* the ability to deny or condition its permit based on various concerns including effects from pipeline leaks and spills. The Corps is required to consider the public interest in § 404 permitting decisions.<sup>133</sup> In that process, the “benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments.” 33 C.F.R. § 320.4(a). This includes consideration of environmental concerns, “safety,” “and, in general, the needs and welfare of the people.” *Id.* Fully accounting for all of the effects associated with NWP 12 – including spills and leaks – could lead the Corps to find that NWP 12 is not in the public interest and that construction of oil and gas pipelines should go through the more rigorous individual permitting process. But the Corps cannot answer that question without taking a hard look at the effects of spills and leaks.

### iii. The Corps must take a hard look at impacts to forested wetlands

According to the draft decision document, “construction of oil or natural gas pipeline rights-of-way through forested wetlands [under NWP 12] may result in the conversion of forested wetlands to scrub-shrub or emergent wetland.”<sup>134</sup> This conversion is meaningful because herbaceous wetlands “may have different habitat functions than the forested wetland” and the “conversion of wetlands to other types of wetlands may result in the loss of certain wetland functions, or the reduction in the level of wetland functions being performed by the converted wetland.”<sup>135</sup> Stated differently, “[n]ot all wetlands perform the same function, nor do they provide functions to the same degree . . . Therefore, it is necessary to account for . . . variation when evaluating wetlands and the functions and services they provide.”<sup>136</sup> But this “accounting” is exactly what the draft decision document foregoes.

The Corps is plainly aware that converting forested wetlands risks significant impacts. In 1996, the Corps added a PCN requirement to NWP 12 for any “[m]echanized land-clearing in a forested wetland.” That was necessary to ensure “review [of] utility line activities that involve mechanized land-clearing of forested wetlands to determine whether those activities will result in no more than minimal adverse environmental effects.”<sup>137</sup> Notably, the PCN was not based on land clearing in wetlands generally but *forested* wetlands specifically. That was necessary because, as the draft decision document makes abundantly clear, all wetlands do not provide the same functions or habitat and forested wetlands serve specific functions that other wetlands do not.

The Corps justifies its refusal to analyze the conversion of forested wetlands to other wetland types by pointing out that “the affected area should remain a wetland.”<sup>138</sup> But that misses the point. All wetlands do not “perform the same function, nor do they provide functions

---

<sup>132</sup> See Army Corps, Review of 12 Nationwide Permits Pursuant to Executive Order No. 13783, *available at* <https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/10241>.

<sup>133</sup> See Draft Dec. Doc. NWP 12 at 48-59 (documenting the Corps’ public interest review for NWP 12).

<sup>134</sup> *Id.* at 51.

<sup>135</sup> *Id.* at 52, 51.

<sup>136</sup> *Id.* at 21.

<sup>137</sup> 85 Fed. Reg. 57,325.

<sup>138</sup> *Id.*

to the same degree.”<sup>139</sup> Particularly in light of the fact that the Corps is proposing to remove the 1996 PCN requiring disclosure of impacts to forested wetlands, which will remove any incentive to avoid impacts to forested wetlands specifically, the Corps must take a hard look at the effect of NWP 12 on forested wetlands to meet its NEPA obligations.

iv. The Corps must take a hard look at impacts to groundwater

As confirmed in the draft decision document, “activities authorized by [NWP 12] may adversely affect . . . groundwater supplies.”<sup>140</sup> More specifically, “[a]ctivities authorized by this NWP can [ ] affect the quality of water supplies by adding pollutants to . . . groundwater.” *Id.* Beyond that disclosure, the draft decision document includes no analysis of the effect of NWP 12 activities on groundwater. That falls well short of the hard look standard.

v. The Corps must take a hard look at climate change impacts

The Corps is aware of the effect of its permitting decision on energy consumption and climate change: “activities authorized by this NWP may induce higher rates of energy consumption in the area by making natural gas and petroleum products more readily available.”<sup>141</sup> “Additional power plants or oil refineries may be needed to meet increases in energy demand.” *Id.* Regardless of whether the Corps has ultimate control over energy consumption, increased energy consumption is a foreseeable indirect effect of the Corps’ decision. It is equally foreseeable “that burning natural gas will release into the atmosphere the sorts of carbon compounds that contribute to climate change.” *Sierra Club v. Fed. Energy Regulatory Comm’n*, 867 F.3d 1357, 1372 (D.C. Cir. 2017). This effect must be considered and disclosed under NEPA.

As explained by the D.C. Circuit Court of Appeals an “agency is a ‘legally relevant cause’ of the direct and indirect environmental effects of pipelines it approves” if it “could deny a pipeline [approval] on the ground that the pipeline would be too harmful to the environment.” *Id.* at 1373. As explained above, the Corps is charged with considering the public interest in its review of nationwide permits. *See* 33 C.F.R. § 320.4. This includes consideration of “reasonably foreseeable detriments” of a permitting decision, “energy needs,” and “the needs and welfare of the people.” *Id.* § 320.4(a). The Corps’ public interest responsibilities provide it authority to not recertify NWP 12 based on the fact that it will lead to increased energy consumption and, concomitantly, intensified climate change effects. That requires the Corps to consider and disclose the climate change effect before any decision is made to recertify NWP 12. This is particularly true where the Corps approval is the only necessary federal approval to construct oil and gas pipelines.

vi. The Corps has not taken a hard look at impacts to endangered, threatened, and other species

The Corps does not contest that use of NWP 12 will affect endangered, threatened and other species. It asserts only that it does not need to undergo Section 7 consultation for the NWP 12 program because *individual* projects that “may affect listed species or critical habitat [are

---

<sup>139</sup> Draft Dec. Doc. NWP 12 at 21.

<sup>140</sup> *Id.* at 55.

<sup>141</sup> *Id.* at 56.

not] authorized by NWP [12] unless ESA Section 7 consultation . . . has been completed.”<sup>142</sup> As explained elsewhere, this approach cannot be squared with the ESA. But whether a federal project affects endangered and threatened species is not relevant only to the ESA, it also implicates NEPA. For decades, CEQ regulations required agencies to consider the “degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973” when determining whether an EIS was necessary. 40 C.F.R. § 1508.27(b)(9) (2019). There is *zero* disclosure of the effect of NWP 12 on protected species in the draft decision document – it is all deferred to individual projects. The Corps indicates that it will not subject those same projects to NEPA review. As a result, there is no hard look—or any look at all—at the effects of NWP 12 on protected species.

Even if the Corps’ defer-to-the-project approach satisfied the ESA, it would fall short of NEPA’s requirements because “the ESA’s Section 7 consultation process differs from the cumulative impacts analysis required by NEPA in a number of important ways.” *Fund For Animals v. Hall*, 448 F. Supp. 2d 127, 136 (D.D.C. 2006). “First, the ESA Section 7 consultation process does not define cumulative impacts in the same way that NEPA does.” *Id.* “Second, the ESA’s Section 7 consultation process fails to provide for public comment in the same way that NEPA does.” *Id.*; see also *Portland Audubon Soc. v. Lujan*, 795 F. Supp. 1489, 1509 (D. Or. 1992), *modified*, No. CIV. 87-1160-FR, 1992 WL 176353 (D. Or. July 16, 1992), and *aff’d sub nom. Portland Audubon Soc. v. Babbitt*, 998 F.2d 705 (9th Cir. 1993) (pointing to NEPA’s public participation requirements and noting that the “purpose of the Endangered Species Act and the purpose of NEPA are not the same”).

Ultimately, the Corps does not take a hard look at impacts to threatened and endangered species when reissuing NWP 12 or when it verifies individual projects under NWP 12 because, according to the Corps, those verifications are not subject to NEPA. Thus, there is no NEPA document considering the effect of NWP 12 on threatened and endangered species. The Corps takes this same general approach to assessing impacts to species generally, providing no substantive analysis in the draft decision document and depending solely on “district engineers to review activities and add permit conditions, such as mitigation measures, to ensure that adverse effects to fish and other aquatic organisms in the food web are no more than minimal” outside of the NEPA process.<sup>143</sup> NEPA requires more.

### 3. *Nationwide permit 13 is unlawful.*

Nationwide Permit 13 covers bank stabilization activities including bulkheads, seawalls, and revetments, as well as less destructive forms of erosion control along the coast, rivers, and lakes.<sup>144</sup> Although these structures have a limit of 500-linear feet, district engineers can waive this criterion if they determine that a structure will not have an impact on the environment that is more than minimal.<sup>145</sup> With the exception of bulkheads that can be no longer than 1,000 feet in length, there is no upper limit on the length of the other structures, including revetments. And,

---

<sup>142</sup> *Id.* at 59.

<sup>143</sup> *Id.* 74.

<sup>144</sup> 85 Fed. Reg. at 57,371.

<sup>145</sup> *Id.*

the structures can be built through special aquatic areas as long as the district engineer determines that the harm would be minimal.<sup>146</sup>

While the Corps has changed other NWP's over the years to tighten their limits, the Corps has done the reverse with NWP 13, consistently expanding its use over time, and thus, its adverse effects on the environment. This has occurred at the same time that the scientific community has revealed the adverse effects of these structures.

- a. Only appropriate measures should be taken to guard against shoreline erosion.
  - i. Recent scientific research demonstrates that shoreline armament is having deleterious effects on shoreline ecosystems.

A comprehensive body of scientific research shows that armoring a shoreline greatly reduces the function and resilience of highly productive and valuable ecosystems.<sup>147</sup> Shoreline armoring, specifically the use of bulkheads, can steepen and shorten shallow intertidal habitat over time, resulting in the loss of foraging habitat for shore birds and commercially and recreationally valuable fishes and crustaceans.<sup>148,149</sup>

Bulkheads also provide less physically complex habitat as compared with natural shorelines; thus they support fewer species.<sup>150</sup> A recently completed meta-analysis of the peer-

---

<sup>146</sup> *Id.*

<sup>147</sup> Carolyn Currin et al., *Shorelines Change in the New River Estuary, North Carolina: Rates and Consequences*, 31 J. OF COASTAL RES. 1069-77 (2015); J. E. Dugan et al., *8.02 Estuarine and Coastal Structures: Environmental Effects, a Focus on Shore and Nearshore Structures*, 8 TREATISE ON ESTUARINE & COASTAL SCI. 17-41 (Eric Wolanski and Donald McLusky eds. 2011); James G. Titus, *Rising Seas, Coastal Erosion, and the Takings Clause: How to Save Wetlands and Beaches Without Hurting Property Owners*, 57 MD. L. REV. 1279-1398 (1998); Thomas K. Ruppert, *Eroding Long-Term Prospects for Florida's Beaches: Florida's Coastal Management Policy*, SEA TURTLE GRANT PROGRAM, 1-157 (2008); U.S. ARMY CORPS OF ENGINEERS & YELLOWSTONE RIVER CONSERVATION DISTRICT COUNCIL, *YELLOWSTONE RIVER CUMULATIVE EFFECTS ANALYSIS*, 1-433 (2015).

<sup>148</sup> Megan N. Dethier et al., *Multiscale Impacts of Armoring on Salish Sea Shorelines: Evidence for Cumulative and Threshold Effects*, 175 ESTUARINE, COASTAL, & SHELF SCI., 106-17 (2016); J.E. Dugan et al., *Ecological Effects of Coastal Armoring on Sandy Beaches*, 29 MARINE ECOLOGY, 160-70 (2008).

<sup>149</sup> Karl F. Nordstrom, *Living with Shore Protection Structures: A Review*, 150 ESTUARINE COASTAL & SHELF SCI., 11-23 (2014).

<sup>150</sup> Rachel K. Gittman, *Living Shorelines Can Enhance the Nursery Role of Threatened Estuarine Habitats*, 26 ECOLOGICAL APPLICATIONS, 249-63 (2016); Steven B. Scyphers, *Natural Shorelines Promote the Stability of Fish Communities in an Urbanized Coastal System*, PLOS ONE 10:e0118580, 1-12 (Maura G. Chapman ed. 2015); Sarah M. Heerhartz et al., *Shoreline Armoring in an Estuary Constrains Wrack-Associated Invertebrate Communities*, 39 ESTUARIES & COASTS, 171-88 (2016); Sarah M. Heerhartz et al., *Effects of Shoreline Armoring on Beach Wrack Subsidies to the Nearshore Ecotone in an Estuarine Fjord*, 37 ESTUARIES & COASTS, 1256-68 (2013); Amanda S. Lawless et al., *Effects of shoreline stabilization and environmental variables on benthic infaunal communities in the Lynnhaven River System of Chesapeake Bay*, 457 J. OF EXPERIMENTAL MARINE BIOLOGY & ECOLOGY, 41-50 (2014); Jeffrey C. Jorgensen et al., *Combined Effects of Climate Change and Bank Stabilization on Shallow Water Habitats of Chinook Salmon*, 27 CONSERVATION BIOLOGY, 1201-11 (2013); R. D. Seitz et al., *Influence of Shallow-Water Habitats and Shoreline Development on Abundance, Biomass, and Diversity of Benthic Prey and Predators in Chesapeake Bay*, 326 MARINE ECOLOGY PROGRESS SERIES, 11-27 (2006); Susan L. Sargeant et al., *Shoreline Armoring Research Program: Phase II-Conception Model Development for Bank Stabilization in Freshwater Systems*, PREPARED FOR WA. ST. DEP'T OF TRANSP., 1-53 (2004); Maura G. Chapman, *Paucity of Mobile Species on Constructed Seawalls: Effects of Urbanization on Biodiversity*, 264 MARINE ECOLOGY PROGRESS SERIES, 21-29 (2003).

reviewed literature found that the bulkheads in the study supported 23 percent lower biodiversity and 45 percent fewer organisms than the natural shorelines examined.<sup>151</sup> Due to lack of structural complexity, bulkheads are less attractive to coastal fish communities.<sup>152</sup> In contrast to bulkheads, natural habitats that include such features as saltmarsh, oyster reefs, and submerged aquatic vegetation have the structural complexity that serves to provide superior habitat and nursery grounds for aquatic species.<sup>153</sup>

Because bulkheads are constructed landward of tidal wetlands, these structures also increase seaward scour during storm events and will prevent upslope migration of tidal wetlands as sea levels rise, leading to their eventual loss (termed “coastal squeeze”).<sup>154</sup> Salt marsh is the most rapidly declining type of wetland in the country.<sup>155</sup> Bulkheads can increase rates of salt marsh loss by up to 300 percent,<sup>156</sup> suggesting that as coastal development continues to increase, management policies and actions that influence the types of engineered shore structures used will greatly impact the habitat value and functioning (e.g., biodiversity,<sup>157</sup> nutrient uptake,<sup>158</sup> carbon sequestration,<sup>159</sup> and storm resilience<sup>160</sup>) of nearshore ecosystems.

---

<sup>151</sup> Rachel K. Gittman et al., *Ecological Consequences of Shoreline Hardening: A Meta-Analysis*, BIOSCIENCE, 1-51 (2016).

<sup>152</sup> David L. Strayer et al., Biodiversity in Hudson River Shore Zones: Influence of Shoreline Type and Physical Structure, 74 AQUATIC SCIENCES, 597-610 (2012).

<sup>153</sup> Steven B. Scyphers, *Natural Shorelines Promote the Stability of Fish Communities in an Urbanized Coastal System*, PLOS ONE 10:e0118580, 1-12 (Maura G. Chapman ed. 2015).

<sup>154</sup> Catherine M. Bozek & David M. Burdick, *Impacts of Seawalls on Saltmarsh Plant Communities in the Great Bay Estuary, New Hampshire U.S.A.*, 13 WETLANDS ECOLOGY & MGMT., 553-68 (2005); Nigel Pontee, *Defining Coastal Squeeze: A Discussion*, 84 OCEAN & COASTAL MGMT., 204-07 (2013); James G. Titus, *Rising Seas, Coastal Erosion, and the Takings Clause: How to Save Wetlands and Beaches Without Hurting Property Owners*, 57 MD. L. REV., 1279-1398 (1998).

<sup>155</sup> Samantha A. Burdick, *Effects of Bulkheads on Salt Marsh Loss: A Multi-Decadal Assessment Using Remote Sensing*, 1 (Apr. 27, 2018)(unpublished Master’s thesis) citing T.E. Dahl, *Status and trends of wetlands in the conterminous United States 2004-2009*, 108 (2011).

<sup>156</sup> *Id.* at 20.

<sup>157</sup> Antonios D. Mazaris et al., *Evaluating the Impacts of Coastal Squeeze on Sea Turtle Nesting*, 52 OCEAN & COASTAL MGMT., 139-45 (2009); Christopher J. Patrick et al., *Effects of Shoreline Alteration and Other Stressors on Submerged Aquatic Vegetation in Subestuaries of Chesapeake Bay and the Mid-Atlantic Coastal Bay*, 37 ESTUARIES & COASTS, 1516-31 (2014); David L. Strayer et al., *Biodiversity in Hudson River Shore Zones: Influence of Shoreline Type and Physical Structure*, 74 AQUATIC SCIENCES, 597-610 (2012).

<sup>158</sup> Theresa O’Meara et al., *Effects of Shoreline Hardening on Nitrogen Processing in Estuarine Marshes of the US Mid-Atlantic Coast*, 23 WETLANDS ECOLOGY & MGMT., 385-94 (2015); Karl F. Nordstrom et al., *Effects of Bulkheads on Estuarine Shores: An Example from Fire Island National Seashore, USA*, 56 J. OF COASTAL RES., 188-92 (2009); J. L. Davis et al., *Artificial Armored Shorelines: Site for Open-Coast Species in a Southern California Bay*, 140 MARINE BIOLOGY, 1249-62 (2002).

<sup>159</sup> J. L. Davis et al., *Living Shorelines: Coastal Resilience with a Blue Carbon Benefit*, 10 PLOS ONE e0142595, 1-18 (2015).

<sup>160</sup> Katie K. Arkema et al., *Embedding Ecosystem Services in Coastal Planning Leads to Better Outcomes for People and Nature*, 112 PROC. OF THE NAT’L ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, 7390-95 (2015); Katie K. Arkema et al., *Coastal Habitats Shield People and Property from Sea-Level Rise and Storms*, 3 NATURE CLIMATE CHANGE, 913-18 (2013); Rachel K. Gittman et al., *Marshes with and without Sills Protect Estuarine Shorelines from Erosion Better than Bulkheads During a Category 1 Hurricane*, 102 OCEAN & COASTAL MGMT., 94-102 (2014); Robert Costanza et al., *The Value of Coastal Wetlands for Hurricane Protection*, 37 AMBIO, 241-48 (2008); Robert A. Dalrymple, *Shoring Up Coastal Engineering*, 71 CIVIL ENGINEERING, 52-53 (2001).



By creating a definitive barrier between water and land, bulkheads truncate ecosystems and reduce productivity.<sup>161</sup> The bulkhead causes a loss of connectivity between landward and seaward habitats, disrupting inputs and exchange of material nutrients and prey resources.<sup>162</sup> This lack of connectivity ultimately disrupts the food web, inducing negative impacts for both aquatic and terrestrial invertebrates and fauna.<sup>163</sup>

Reductions in biodiversity have extensive cumulative impacts on shoreline ecosystems. Due to the intricacy of estuarine ecosystems, bulkhead construction can set off chain reactions that significantly reduce ecosystem services at the site of the bulkhead and in adjacent systems.<sup>164</sup> By degrading habitats of various species, shoreline armoring compromises the food web and ultimately creates less functional ecosystems.<sup>165</sup> Additionally, recent studies indicate that seawalls and bulkheads create habitats conducive to the spread of invasive species.<sup>166</sup>

Many of the ecosystems adversely affected by shoreline armoring are home to endangered and threatened species, including turtles, birds, plants, and invertebrates. Intertidal flats and ponds provide crucial refuge for species such as the endangered Piping Plover.<sup>167</sup> Piping Plovers commonly select nesting sites adjacent to these microhabitats as the higher

---

<sup>161</sup> Karl F. Nordstrom, *Living with Shore Protection Structures: A Review*, 150 *Estuarine Coastal & Shelf Sci.*, 11-23 (2014).

<sup>162</sup> Sarah M. Heerhartz et al., *Effects of Shoreline Armoring on Beach Wrack Subsidies to the Nearshore Ecotone in an Estuarine Fjord*, 37 *Estuaries & Coasts*, 1256-68 (2013).

<sup>163</sup> *Id.*

<sup>164</sup> Moisés A. Aguilera et al., *Spatial Variability in Community Composition on a Granite Breakwater Versus Natural Rocky Shores: Lack of Microhabitats Suppresses Intertidal Biodiversity*, 81 *MARINE POLLUTION BULL.*, 257-68 (2014); C. Heatherington & M. J. Bishop, *Spatial Variation in the Structure of Mangrove Forests with Respect to Seawalls*, 63 *MARINE FRESHWATER RES.*, 926-33 (2012); Richard G. Balouskus & Timothy E. Targett, *Egg Deposition by Atlantic Silverside, Menidia menidia: Substrate Utilization and Comparison of Natural and Altered Shoreline Type*, 35 *ESTUARIES & COASTS*, 1100-09 (2012); Gustavo M. Martins et al., *Influence of a Breakwater on Nearby Rocky Intertidal Community Structure*, 67 *MARINE ENVTL. RES.*, 237-45 (2009); Christopher R. Mattheus et al., *Impact of Land-Use Change and Hard Structures on the Evolution of Fringing Marsh Shorelines*, 88 *ESTUARINE, COASTAL & SHELF SCI.*, 365-76 (2010); Daniel Martin et al., *Ecological Impact of Coastal Defense Structures on Sediment and Mobile Fauna: Evaluating and Forecasting Consequences of Unavoidable Modifications of Native Habitats*, 52 *COASTAL ENGINEERING*, 1027-51 (2005).

<sup>165</sup> Cornelia Harris et al., *The Ecology of Freshwater Wrack Along Natural and Engineered Hudson River Shorelines*, 722 *HYDROBIOLOGIA*, 233-45 (2014); Tsung-Han Lee & Mei-Hui Li, *Intertidal Assemblages on Artificial Structures and Natural Rocky Habitats on Taiwan's North Coast*, 61 *RAFFLES BULL. OF ZOOLOGY*, 331-42 (2013); Sarah A. Morley et al., *Ecological Effects of Shoreline Armoring on Intertidal Habitats of a Puget Sound Urban Estuary*, 35 *ESTUARIES & COASTS*, 774-84 (2012); Melisa C. Wong et al., *Evaluating Estuarine Habitats Using Secondary Production as a Proxy for Food Web Support*, 440 *MARINE ECOLOGY PROGRESS SERIES*, 11-25 (2011); W. Christopher Long et al., *Effects of Anthropogenic Shoreline Hardening and Invasion by *Phrasmites Australis* on Habitat Quality for Juvenile Blue Crabs*, 409 *J. OF EXPERIMENTAL MARINE BIOLOGY & ECOLOGY*, 215-22 (2011); C. K.-C. Wen et al., *Effects of Habitat Modification on Coastal Fish Assemblages*, 77 *J. OF FISH BIOLOGY*, 1674-87 (2010); J. Moreira et al., *Seawalls Do Not Sustain Viable Populations of Limpets*, 322 *MARINE ECOLOGY PROGRESS SERIES*, 179-88 (2006).

<sup>166</sup> Nathan R. Gerdali et al., *Artificial Substrates Enhance Non-Native Macroalga and N<sub>2</sub> Production*, 16 *BIOLOGICAL INVASIONS*, 1819-31 (2013); Guillermo Diaz-Agras et al., *Distribution and Population Structure of *Patella Vulgata* Linnaeus, 1758 (Gastropoda: Patellidae) on Intertidal Seawalls and Rocky Shores in the Ria de Ferrol*, 26 *INTERNATIONAL J. OF MARINE SCIENCES*, 79-91 (2010); Tim M. Glasby et al., *Nonindigenous biota on artificial structures: could habitat creation facilitate biological invasions?* 151 *MARINE BIOLOGY*, 887-95 (2007).

<sup>167</sup> James D. Fraser et al., *Pre-nesting use of intertidal habitats by piping plovers on South Monomoy Island, Massachusetts*, 69 *J. OF WILDLIFE MGMT.*, 1731-36 (2005).

seasonal prey abundance and protection from waves foster an ideal location for raising chicks.<sup>168</sup> Man-made erosion structures such as seawalls and bulkheads, however, disrupt the natural ecosystem processes, degrading and inhibiting formation of such habitats.<sup>169</sup> One study described the microhabitats as “essential to successful Piping Plover reproduction” and urged the conservation of natural habitat formation processes.<sup>170</sup> Recent research suggests that “restricting the building or fortifying of seawalls” is the best way to allow Piping Plover habitats to recover in coming decades.<sup>171</sup>

The endangered Roseate Tern faces similar threats associated with shoreline armoring. A FWS study determined “Roseate Terns are highly sensitive to disturbances and will desert a whole colony if they feel threatened,” causing the human disruption of coastal armoring to pose serious threats to species survival.<sup>172</sup>

Other ecosystem disruptions caused by coastal armoring create indirect threats to endangered populations. For example, shoreline stabilization can sufficiently alter or completely eliminate the intertidal sand beach habitat for horseshoe crab spawning.<sup>173</sup> While species like the Atlantic Horseshoe Crab are only near-threatened, they are critical to the survival of shorebirds such as the Roseate Tern and Red Knot.<sup>174</sup> Another study found that shoreline stabilization efforts diminish Seabeach Amaranth plants, which also rely on dynamic shoreline environments.<sup>175</sup>

In addition to disturbing shorebirds, coastal armoring disrupts sea turtle nesting and hatchling survival.<sup>176</sup> A study of Florida’s beaches found that fewer turtles emerged onto beaches in front of seawalls, determining that the armoring of shorelines poses a significant threat to sea

---

<sup>168</sup> *Id.*

<sup>169</sup> Anne Hecht & Scott M. Melvin, *Population trends of Atlantic Coast piping plovers, 1986-2006*, 31 WATERBIRDS, 64-72 (2009); Susan E. Cameron et al., *Compilation and Assessment of Piping Plover Wintering and Migratory Staging Area Data in North Carolina*, SYMP. ON WINTERING ECOLOGY & CONSERVATION OF PIPING PLOVERS, 1-5 (2005).

<sup>170</sup> David Rabon & Anne Hecht, *Beach Stabilization and Piping Plovers: Overview of Conservation Issues and Implications for ESA Section 7 Consultation*, PROC. OF THE SYMP. ON THE WINTERING ECOLOGY & CONSERVATION OF PIPING PLOVERS, 1 (2005).

<sup>171</sup> Susan A. Sims et al., Room to move? Threatened shorebird habitat in the path of sea level rise—dynamic beaches, multiple users, and mixed ownership: a case study from Rhode Island, USA, 17 J. OF COASTAL CONSERVATION, 339-50 (2013).

<sup>172</sup> U.S. FISH AND WILDLIFE SERVICE, ROSEATE TERN: NORTH AMERICAN SUBSPECIES (*STERNA DOUGALLI DOUGALLI*), 1-2 (2011).

<sup>173</sup> Lawrence J. Niles et al., *Status of the Red Knot (Calidris canutus rufa) in the Western Hemisphere*, STUDIES IN AVIAN BIOLOGY NO. 36 in THE CONDOR, 1-185 (2008).

<sup>174</sup> Nancy L. Jackson et al., Influence of configuration of bulkheads on use of estuarine beaches by horseshoe crabs and foraging shorebirds, 74 ENVTL. EARTH SCIENCES, 5749-58 (2015).

<sup>175</sup> Johnny Randall, *Bringing Back A Fugitive*, ENDANGERED SPECIES BULLETIN 27.3, 16-18 (2003).

<sup>176</sup> Daniel W. Wood & Karen A. Bjorndal, Relation of temperature, moisture, salinity, and slope to nest site selection in loggerhead sea turtles, 2000 COPEIA, 119-28 (2000).

turtle populations.<sup>177</sup> Additionally, armoring structures increase clutch mortality and contribute to nesting habitat loss.<sup>178</sup>

The continued construction of bulkheads also creates a spiraling need for increased anthropogenic intervention. Studies indicate that coastal armoring structures increase erosion on either side of barriers due to disruption of sediment transport and/or wave refraction.<sup>179</sup> Deflected wave energy from bulkheads creates a scouring effect, causing the loss of intertidal bottoms, loss of fringing marsh, and increased turbidity.<sup>180</sup> Scouring worsens erosion and ultimately destroys marsh by undercutting the roots of marsh plants.<sup>181</sup> Furthermore, bulkheads block marsh retreat as the sea level rises, destroying a natural form of erosion prevention.<sup>182</sup>

The erosion surrounding bulkheads not only impacts shoreline ecosystems, but it also jeopardizes the bulkheads themselves. Failure rates of coastal armoring from scour, undermining, outflanking, overtopping, and battering by storm waves are relatively high. Even large, well-engineered structures can experience overtopping by waves and catastrophic failure with risks not only to infrastructure but also to human safety.<sup>183</sup>

Bulkhead vulnerability creates an ongoing and costly need to monitor, repair, and maintain such structures.<sup>184</sup> Additionally, as coastal erosion worsens due to bulkhead presence, more shorelines require stabilization, creating a dangerous cycle of increased shoreline armoring.

ii. Failure to consider sea level rise in the Corps' analysis of NWP 13 ignores individual and cumulative impacts authorized by this proposed permit.

Sea level rise and other climate change impacts have not been adequately considered in the analysis of NWP 13. As a result, the Corps is excluding a significant array of individual and

---

<sup>177</sup> Andrea E. Mosier & Blair E. Witherington, *Documented effects of coastal armoring structures on sea turtle nesting behavior*, PROC. OF THE TWENTIETH ANN. SYMP. ON SEA TURTLE BIOLOGY & CONSERVATION, 304-06 (2002).

<sup>178</sup> Carol E. Rizkalla & Anne Savage, *Impacts of Seawalls on Loggerhead Sea Turtle (Caretta caretta) Nesting and hatching Success*, 27 J. OF COASTAL RES., 166-73 (2010); B. Witherington et al., *Sea turtle responses to barriers on their resting beach*, 401 J. OF EXPERIMENTAL MARINE BIOLOGY, 1-6 (2011).

<sup>179</sup> Megan N. Dethier et al., *Multiscale Impacts of Armoring on Salish Sea Shorelines: Evidence for Cumulative and Threshold Effects*, 175 ESTUARINE, COASTAL, & SHELF SCI., 106-17 (2016); Christopher R. Mattheus et al., *Impact of Land-Use Change and Hard Structures on the Evolution of Fringing Marsh Shorelines*, 88 ESTUARINE, COASTAL & SHELF SCI., 365-76 (2010); U.S. ARMY CORPS OF ENGINEERS & YELLOWSTONE RIVER CONSERVATION DISTRICT COUNCIL, *YELLOWSTONE RIVER CUMULATIVE EFFECTS ANALYSIS*, 1-433 (2015).; Scott L. Douglass & Bradley H. Pickel, *Tide Doesn't Go Out Anymore- The Effect of Bulkheads on Urban Bay Shorelines*, 67 SHORE & BEACH, 19-25 (1999).

<sup>180</sup> C. A. Currin, *Developing Alternative Shoreline Armoring Strategies: The Living Shoreline Approach in North Carolina*, PUGET SOUND SHORELINES AND THE IMPACTS OF ARMORING -PROC. OF A ST. OF THE SCI. WORKSHOP, 91-102 (2010).

<sup>181</sup> *Id.*

<sup>182</sup> Catherine M. Bozek & David M. Burdick, *Impacts of Seawalls on Saltmarsh Plant Communities in the Great Bay Estuary, New Hampshire U.S.A.*, 13 Wetlands Ecology & Mgmt., 553-68 (2005).

<sup>183</sup> Rachel K. Gittman et al., *Marshes with and without Sills Protect Estuarine Shorelines from Erosion Better than Bulkheads During a Category 1 Hurricane*, 102 OCEAN & COASTAL MGMT., 94-102 (2014).

<sup>184</sup> Steven B. Scyphers et al., *Participatory Conservation of Coastal Habitats: The Importance of Understanding Homeowner Decision Making to Mitigate Cascading Shoreline Degradation*, 8 CONSERVATION LETTERS, 1-8 (2015).

cumulative effects from their analysis. Without further analysis on sea level rise and climate change, the Corps cannot legally reauthorize NWP 13.

Data from NOAA show that sea level has risen over a foot in the past century along the southeastern coastline and is continuing to rise.<sup>185</sup> Parts of Tidewater Virginia have experienced over two feet of sea level rise in a century.<sup>186</sup> The speed of the rising water has been accelerating since the 1990s— more than a third of the 8-inch rise in global sea levels took place in just the past 25 years.<sup>187</sup>

More frequent tidal flooding is one way coastal communities are already feeling the effects of rising seas. As sea level increases, the tideline rises closer to the threshold at which water moves into the streets and cities begin to flood more often. For example, Charleston, SC averaged 2 or 3 days of tidal flooding per year in the 1950s and 1960s. More recently, tidal flooding has been setting record highs with 38 days of minor tidal flooding in 2015, followed by 50 days with tidal flooding in 2016.<sup>188</sup> In 2019, Charleston experienced 89 tidal flooding events on 76 separate days.<sup>189</sup> This amounts to water impeding movements through the area one out of every five days.

Recognizing the need for sea level rise to be incorporated into planning decisions, the Corps published three relative sea level rise scenario curves—Low, Intermediate, and High—for major tide gauges along the United States coast in 2013 (“USACE 2013 curves”).<sup>190</sup> Based on those curves, the Corps issued Engineer Regulation 1100-2-8162 (“SLR Guidance”) which directs the Corps to use the USACE 2013 curves to evaluate the “direct and indirect physical effects of projected future sea level change across the project life cycle in managing, planning, engineering, designing, constructing, operating, and maintaining [Corps] projects....”<sup>191</sup> The SLR Guidance allows for the Corps to incorporate other sea level rise curves into their analysis, in addition to the USACE 2013 curves, in order to properly evaluate how projects and project

---

<sup>185</sup> National Oceanic and Atmospheric Administration (NOAA), Global and regional sea level rise scenarios for the United States. U.S. Department of Commerce, (2017), [https://tidesandcurrents.noaa.gov/publications/techrpt83\\_Global\\_and\\_Regional\\_SLR\\_Scenarios\\_for\\_the\\_US\\_final.pdf](https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf), (last visited Nov. 11, 2020).

<sup>186</sup> See NOAA, Sea Level Trends, <https://tidesandcurrents.noaa.gov/sltrends/sltrends.html>, (last visited Nov. 11, 2020).

<sup>187</sup> R.S. Nerem et al., Climate change driven accelerated sea level rise detected in the altimeter era, PNAS, (2018), <http://www.pnas.org/content/early/2018/02/06/1717312115>, (last visited Nov. 11, 2020).

<sup>188</sup> William V. Sweet and John J. Marra, State of U.S. “Nuisance” Tidal Flooding, National Oceanic and Atmospheric Administration’s Center for Operational Oceanographic Products and Services and National Centers for Environmental Information, (2016), <https://www.ncdc.noaa.gov/monitoring-content/sotc/national/2016/may/sweet-marra-nuisance-flooding-2015.pdf>, (last visited Nov. 11, 2020).

<sup>189</sup> See Post & Courier, Charleston and the South Carolina Coast Flooded Record Times, (Jan. 3, 2020), [https://www.postandcourier.com/news/charleston-and-the-south-carolina-coast-flooded-record-times-in/article\\_7c18ee5e-2e3b-11ea-8784-23ddb8d4e0c.html](https://www.postandcourier.com/news/charleston-and-the-south-carolina-coast-flooded-record-times-in/article_7c18ee5e-2e3b-11ea-8784-23ddb8d4e0c.html), (last visited Nov. 11, 2020).

<sup>190</sup> The USACE 2013 curves were novel at their release because they were some of the first to assess localized sea level rise along the entire U.S. coast, however these curves are based on projections originally created by the National Research Council in 1987 and have been superseded by more recent research.

<sup>191</sup> U.S. Army Corps of Engineers, “Incorporating Sea Level Change in Civil Works Programs,” Appendix B at 14 (June 2019), [https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/ER\\_1100-2-8162.pdf?ver=2019-07-02-124841-933](https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/ER_1100-2-8162.pdf?ver=2019-07-02-124841-933), (last visited Nov. 11, 2020).

costs may be affected by sea level rise.<sup>192</sup> These tools show that the Corps is no stranger to sea level rise analysis.

The most advanced sea level rise scenarios and projections available for the United States projects an average 2.1 feet of relative sea level rise by 2050 along the southeastern coastline.<sup>193</sup> This scenario is consistent with observations of sea level rise along the Southeast coast, and it models a future with emission levels similar to today.<sup>194</sup> New findings on ice sheet instability unfortunately make this and other moderate and high climate scenarios more realistic. Observations from NASA and the European Space Agency in 2018 revealed that Antarctic ice melt is tracking close to the IPCC's worst case climate scenario.<sup>195</sup> Research shows that both Greenland<sup>196</sup> and Antarctica's<sup>197</sup> ice sheets are melting faster and in greater volume than expected and that the ocean is also warming more rapidly than predicted.<sup>198</sup> Also, 2019 marked the globe's second warmest year on record.<sup>199</sup> For these reasons, the 2.1 feet figure for the southeastern coast is not only reasonable, but it is the most appropriate estimate for long-term planning decisions.

There is a consensus among researchers that climate change will continue to make storms and the floods that follow more intense, as warmer air can hold more moisture and add more fuel to storm systems.<sup>200</sup> Extreme rainfall has already become more frequent and more damaging throughout the Southeast.<sup>201</sup> This trend will continue due to climate change even with future

---

<sup>192</sup> U.S. Army Corps of Engineers SLR Guidance (June 2019), Appendix B at 15.

<sup>193</sup> NOAA and U.S. Global Change Research Program Interagency Task Force in 2017 ("NOAA 2017 curves") part of the 2018 4th National Climate Assessment.

<sup>194</sup> In a comparison of the observed local sea level rise trends and local projections in several US locations, NOAA found that "in most circumstances, *the range of interannual relative sea level change/variability since 2000 has been bounded (to date) by the trajectory of the Intermediate-High scenario.*" NOAA 2017 at 35.

<sup>195</sup> Ice Sheet Mass Balance Inter-Comparison Exercise (IMBIE) team 2018, Mass balance of the Antarctic Ice Sheet from 1992 to 2017, 558 NATURE, 219-22 (2017), <https://www.nature.com/articles/s41586-018-0179-y>, (last visited Nov. 11, 2020).

<sup>196</sup> J. Box, et al., Global sea level contribution from Arctic land ice: 1971-2017, 13 ENVIRONMENTAL RESEARCH LETTERS (2018), <https://iopscience.iop.org/article/10.1088/1748-9326/aaf2ed>, (last visited Nov. 11, 2020); see also J. Schwartz, Greenland's Melting Ice Nears a 'Tipping Point,' Scientists Say, The New York Times, Jan. 21, 2019, <https://www.nytimes.com/2019/01/21/climate/greenland-ice.html?action=click&module=Well&pgtype=Homepage&section=Climate%20and%20Environment>, (last visited Nov. 11, 2020).

<sup>197</sup> E. Rignot et al., Four decades of Antarctic Ice Sheet mass balance from 1979-2017, 116(4) PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES (PNAS) 1095-1103 (2019), <https://www.pnas.org/content/116/4/1095>, (last visited Nov. 11, 2020).

<sup>198</sup> L. Cheng, et al., How fast are the oceans warming, 363 SCIENCE 128-29 (2019) <http://science.sciencemag.org/content/363/6423/128>, (last visited Nov. 11, 2020).

<sup>199</sup> NOAA, 2019 was 2nd hottest year on record for Earth say NOAA, NASA, (Jan. 15, 2020), <https://www.noaa.gov/news/2019-was-2nd-hottest-year-on-record-for-earth-say-noaa-nasa>, (last visited Nov. 11, 2020).

<sup>200</sup> NOAA, Global Fluid Dynamics Laboratory, Global Warming and Hurricanes (2020), <https://www.gfdl.noaa.gov/global-warming-and-hurricanes/>; U.S. Global Change Research Program, Precipitation Change in the United States, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I, 207-230 (2017).

<sup>201</sup> U.S. Global Change Research Program, Precipitation Change in the United States, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I (2017).

emissions reductions.<sup>202</sup> In keeping with this trend, hurricanes have dropped more rain in recent years compared to the historic average, even accounting for changes in storm frequency over time.<sup>203</sup> The Atlantic basin has already seen an increase in the number of Category 4 and 5 hurricanes since the 1980s.<sup>204</sup> With Hurricane Matthew in 2016 and Florence in 2018, the Carolina coastal plain was dealt two so-called 1,000-year storms in only two years.<sup>205</sup>

Storm surge, the most damaging and deadly hurricane impact, has continually worsened in the Southeast since the 1920s according to tide gauge measurements.<sup>206</sup> Higher seas create a higher launching point for storm surge, which makes historically less probable storm surges and flooding more likely.<sup>207</sup> In 2017, when the eye of Hurricane Irma was over 200 miles away, Charleston was hit with a 4.7 foot storm surge on top of high tide.<sup>208</sup>

Sea level rise and climate change pose a significant threat to coastal marsh and other coastal ecosystems, especially when considered in conjunction with shoreline armoring. Marshes in particular supply innumerable benefits to surrounding ecosystems and communities in the form of wildlife habitat, flood protection, fisheries nurseries, water purification, erosion mitigation, food supply, carbon storage, and recreational functions.<sup>209</sup>

Over 75 percent of the region's fishery species shelter in tidal wetlands at some point in their lifecycle.<sup>210</sup> Properties located behind a marsh save around 16 percent in flood losses each year compared to properties where marshes have been lost.<sup>211</sup> Moreover, nearly two thirds of the East Coast's tidal wetlands—one of the most biologically productive ecosystems in the world—lie within North Carolina, South Carolina, and Georgia.<sup>212</sup>

---

<sup>202</sup> U.S. Global Change Research Program, Southeast Impacts, Risks, and Adaptation in the United States, FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME II (2018).

<sup>203</sup> K.E. Kunkel, et al., Recent increases in U.S. heavy precipitation associated with tropical cyclones, *GEOPHYSICAL RESEARCH LETTERS*, 37 (2010).

<sup>204</sup> P.J. Webser, et al., Changes in tropical cyclone number duration and intensity in a warming environment, *Science*, 1844-1846 (2005).

<sup>205</sup> See Washington Post, First Hurricane Matthew then Florence: A town in constant recovery, (Oct. 24, 2018), <https://www.washingtonpost.com/graphics/2018/national/amp-stories/hurricane-matthew-then-florence-lumberton-nc-in-constant-recovery/>, (last visited Nov. 11, 2020).

<sup>206</sup> According to gauge observational data (not modeling). A. Grinstead et al., Homogenous Record of Atlantic Hurricane Surge Threat Since 1923. *PNAS*, 109(48), 19601-19605, (2012), <https://www.pnas.org/content/109/48/19601>, (last visited Nov. 11, 2020).

<sup>207</sup> North Carolina's Sea Level Is Rising, And It's Costing Over \$2 Billion, <https://sealevelrise.org/states/north-carolina/>, (last visited Nov. 11, 2020).

<sup>208</sup> NOAA, National Weather Service, Tropical Storm Irma - September 10-11, 2017, <http://www.weather.gov/chs/TropicalStormIrma-Sep2017>, (last visited Nov. 11, 2020).

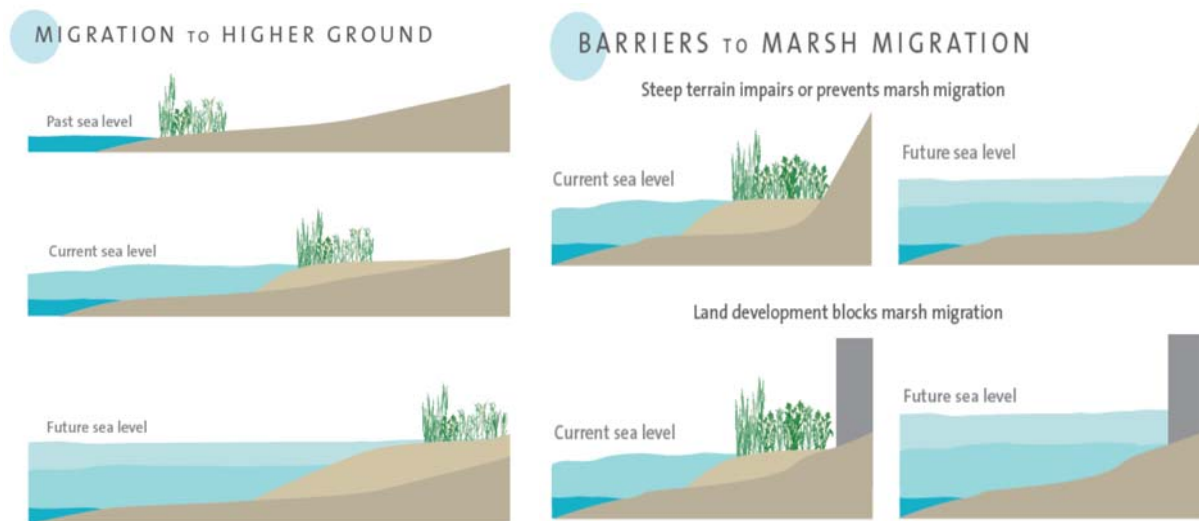
<sup>209</sup> South Carolina Department of Natural Resources, Guide to the salt marshes and tidal creeks of the Southeastern United States (2016), <http://www.saltmarshguide.org/wp-content/uploads/2016/11/SaltMarshTidalCreekGuide.pdf>, (last visited Nov. 11, 2020).

<sup>210</sup> *Id.*

<sup>211</sup> S. Narayan et al., The value of coastal wetlands for flood damage reduction in the Northeastern USA, *7 SCIENTIFIC REPORTS*, at 1 (2017), <https://www.nature.com/articles/s41598-017-09269-z>, (last visited Nov. 11, 2020).

<sup>212</sup> SC Department of Natural Resources, 2016.

The future of the marshes and the ecosystem services they provide are at risk as sea levels continue to rise. In the absence of man-made barriers, these marsh systems are able to migrate to higher ground with the tideline.<sup>213</sup> Evidence of marsh migration can already be observed up and down the coast along natural shorelines as marsh grass replaces trees.<sup>214</sup> Armoring along the shoreline cuts off the marsh's evacuation route and can result in the loss of the marshland and its benefits.<sup>215</sup>



**Visual representations show natural marsh migration over time and the barriers that prevent migration, resulting in loss of the habitat (Make Way for Marshes)**

A recent study of the coast of South Carolina found that the state's shoreline is covered in a combined 88 miles of structures such as bulkheads, piers, and seawalls.<sup>216</sup> Changes in wave action along the coast, connected to intensifying storms fueled by climate change, have already led to dramatic shifts in longshore sediment transport.<sup>217</sup> While accelerating sea level rise will continue to increase erosion rates along the coast,<sup>218</sup> the construction of more hardened structures on the shoreline harms the health of the natural system and hinders adaptation in the face of

<sup>213</sup> Northeast Regional Ocean Council, Make way for marshes (2015), <https://www.northeastoceancouncil.org/committees/coastal-hazards-resilience/resilient-shorelines/make-way-for-marshes/>, (last visited Nov. 11, 2020).

<sup>214</sup> North Carolina Sea Grant, Unraveling mysteries of ghost forests (2017), <https://ncseagrant.ncsu.edu/coastwatch/previous-issues/2017-2/holiday-2017/unraveling-mysteries-of-ghost-forests/>, (last visited Nov. 11, 2020).

<sup>215</sup> Northeast Regional Ocean Council, Make way for marshes, <https://www.northeastoceancouncil.org/mmi/cottees/coastal-hazards-resilience/resilient-shorelines/make-way-for-marshes/>, (last visited Nov. 11, 2020).

<sup>216</sup> C. Jackson, Mapping coastal erosion hazards along sheltered coastlines in South Carolina 1849 to 2015, [http://www.scdhec.gov/HomeAndEnvironment/Docs/Jackson\\_SCShorelineReport122017.pdf](http://www.scdhec.gov/HomeAndEnvironment/Docs/Jackson_SCShorelineReport122017.pdf), (last visited Nov. 11, 2020).

<sup>217</sup> Johnson, J.M., L.J. Moore, K. Ells, A.B. Murray, P.N. Adams, R.A. MacKenzie III, & J.M. Jaeger. 2014. Recent Shifts in Coastline Change and Shoreline Stabilization Linked to Storm Climate Change. *Earth Surface Processes and Landforms* 40(5): 569-585.

<sup>218</sup> Leatherman, S.P., Zhang, K., Douglas, B.C. 2000. Sea level rise shown to drive coastal erosion. *EOS* 81(6), 55-57 and Ranasinghe, R., et al. 2013. Climate change impact assessment for inlet-interrupted coastlines. *Nature Climate Change* 3, 83-87.

rising seas.<sup>219</sup> Even isolated areas of shoreline stabilization have the potential to worsen the erosional effects of sea level rise, as these structures can concentrate erosional forces in adjacent areas.<sup>220</sup> As storms increase in intensity, the scouring effect in front of bulkheads will increase.<sup>221</sup>

Sea level rise is currently and will continue to threaten many aspects of the coastal environment. Regardless of whether the exact future rate of sea level rise or the full effects of climate change are known with complete certainty, the Corps must consider its effects in decision making. As the D.C. District Court explained in *Chlorine Chemistry Council v. E.P.A.*, “All scientific conclusions are subject to some doubt; future, hypothetical findings always have the potential to resolve the doubt.”<sup>222</sup> Nonetheless, administrative agencies are directed to make the best decisions that they can based on the “best available evidence *at the time* of the rulemaking.”<sup>223</sup> Given the extensive body of research showing that sea level rise is occurring, the Corps must consider how the reauthorization of NWP 13 is affected by sea level rise, especially because the shorelines affected by NWP 13 will simultaneously be affected by sea level rise. Additionally, the Corps must consider the growing body of climate change research, particularly observations of more intense storms and storm impacts along the shoreline.

- b. The Corps fails to take a “hard look” at the environmental impacts of proposed NWP 13 and does not support a finding of no significant impact under NEPA.
  - i. A. The Corps fails to take a “hard look” at the direct and indirect effects of proposed NWP 13.

Before turning their focus to the impacts associated with shore stabilization, the Corps includes a large array of information in the draft decision document concerning the nature, extent, and condition of the Nation’s waters.<sup>224</sup> They are correct that the country contains a tremendous number and variety of waterbodies, but as we discussed in the Section III, many of these waters have been compromised.

The decision document does not adequately identify and analyze the specific environmental effects caused by the types of bank stabilization projects authorized by proposed NWP 13. For example, the Impact Analysis section (Section 4.2) of the decision document fails to identify any impacts of proposed NWP 13 activities and contains absolutely no analysis.<sup>225</sup> Rather, the Impact Analysis section simply acknowledges that preconstruction notices are required under certain circumstances and that division and district engineers are authorized to

---

<sup>219</sup> Miselis, J. L. & Lorenzo-Trueba, J. 2017. Natural and human-induced variability in barrier-island response to sea level rise. *Geophysical Research Letters*, 44, 11,922-11,931.

<sup>220</sup> Slott, J.M., et al. 2009. Large-scale responses of complex-shaped coastlines to local shoreline stabilization and climate change.

<sup>221</sup> Catherine M. Bozek & David M. Burdick, Impacts of Seawalls on Saltmarsh Plant Communities in the Great Bay Estuary, New Hampshire U.S.A., 13 *Wetlands Ecology & Mgmt.*, 553-68 (2005); Nigel Pontee, Defining Coastal Squeeze: A Discussion, 84 *Ocean & Coastal Mgmt.*, 204-07 (2013); James G. Titus, Rising Seas, Coastal Erosion, and the Takings Clause: How to Save Wetlands and Beaches Without Hurting Property Owners, 57 *Md. L. Rev.*, 1279-1398 (1998).

<sup>222</sup> *Chlorine Chemistry Council v. E.P.A.*, 206 F.3d 1286, 1291 (D.C. Cir. 2000).

<sup>223</sup> *Id.*

<sup>224</sup> Draft Dec. Doc. NWP 13 at 22-32.

<sup>225</sup> *Id.* at 36-46.



further condition or prohibit the use of NWP 13 to minimize impacts.<sup>226</sup> Relying on PCNs and division and district engineers to ensure minimal impacts is not a permissible substitute for a true NEPA impact analysis.

Although the sections of the decision document concerning the Clean Water Act Public Interest Factors and 404(b)(1) Guidelines (Sections 5.1, 7.2.3) describe some of the direct and indirect impacts of bank stabilization projects, the discussion there falls far short of the requirements of NEPA. These sections acknowledge that bank stabilization projects may impact certain factors, such as economics, aesthetics, wetlands, water circulation, and aquatic organisms. For many of the factors, the draft decision document concludes that the proposed permit's General Conditions and/or compensatory mitigation will minimize impacts.<sup>227</sup> But the document fails to identify particularly important impacts and ignores recent scientific research demonstrating the significant adverse direct and indirect impacts of bank stabilization projects.

The bulk of scientific research cited in the draft decision document concerns the affected environment or ecosystem restoration; only a small handful of articles actually discuss the impacts of bank stabilization projects.<sup>228</sup> And an even smaller subset of that scientific literature was published in the last five years. As previously discussed in this comment letter, recent scientific research demonstrates that bank stabilization projects have significant adverse direct and indirect effects on the environment.

Also missing from the draft decision document is an analysis of whether a bulkhead could cause more than a minimal effect if all of the direct and indirect impacts of that one bank stabilization projects were combined. What the draft decision document does instead is assert, with very little analysis, that each individual impact of a bulkhead is minimal.<sup>229</sup> The lack of a comprehensive direct and indirect impacts analysis is insufficient to support a finding of no significant impact under NEPA. Furthermore, if one considers all of the direct and indirect effects that a single, 500-foot bulkhead may have on the environment, the only possible conclusion is that these projects have a significant effect, which requires the preparation of an EIS.

The Corps' omission of any meaningful analysis of the effects of bulkheads is all the more glaring in light of the permit's history. NWP 13 has been in place for years, meaning that the Corps has authorized tens of thousands of permits. The Corps' failure to evaluate the effect of the permit on the environment is, therefore, inexplicable.

The only analysis provided demonstrates the harm caused by this permit. In the next five years, the Corps expects NWP 13 to allow impacts to 1,150 acres of wetlands, but only produce 50 acres of compensatory mitigation—resulting in a net loss of more than 1,100 acres of wetlands.<sup>230</sup> These are not insignificant effects.

---

<sup>226</sup> *Id.*

<sup>227</sup> *See, e.g. id.* at 47, 48, 49, 50.

<sup>228</sup> *Id.* at 50.

<sup>229</sup> *Id.* at 36.

<sup>230</sup> *Id.* at 64.

ii. B. The Corps must prepare an EIS.

NEPA requires federal agencies to prepare an Environmental Impact Statement (EIS) on any “major Federal action significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(C). An agency’s refusal to prepare an EIS is arbitrary and capricious if the proposed federal action “*might* have a significant environmental impact.” *State v. FAA*, 957 F.2d 1125, 1131 (4th Cir. 1992) (emphasis added). Agencies must consider factors such as national policy, economic issues, and technical considerations.<sup>231</sup> Any “one of these factors may be sufficient to require preparation of an EIS in appropriate circumstances.” *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 402 F.3d 846, 864 (9th Cir. 2005); *see also North Carolina v. Fed. Aviation Admin.*, 957 F.2d 1125, 1131 (4th Cir. 1992) (holding that agencies’ refusal to prepare EIS “is arbitrary and capricious if its action *might* have a significant environmental impact”).

As discussed previously, the draft decision document fails to take a “hard look” at the direct and indirect environmental impacts of proposed NWP 13 projects and cannot make a convincing case for a finding of no significant impact. Consequently, any decision by the Corps to forgo an EIS based on the draft decision document will be arbitrary and capricious. *Taxpayers of Mich. Against Casinos v. Norton*, 433 F.3d 852, 861 (D.C. Cir. 2006); *see also* 5 U.S.C. § 706(2)(A).

An EIS is also required because bank stabilization activities may have serious adverse impacts on endangered or threatened species. *See* 40 C.F.R. § 1508.27(b)(9) (requiring agency to consider degree to which action may adversely affect ESA listed species). Numerous studies, as well as numerous comments on prior versions of this nationwide permit, demonstrate that bank stabilization activities destroy species’ nesting and feeding grounds and generally have detrimental impacts on threatened and endangered species. For example, the Fish and Wildlife Service informed the Corps during the 2012 nationwide permitting process that bank stabilization projects “ultimately result[] in environmental damage” and “greatly impact[] nesting opportunities and hatching success” of threatened and endangered sea turtles.<sup>232</sup>

Because bank stabilization activities under proposed NWP 13 may have significant impacts on the quality of the human environment, the Corps must prepare an EIS that fully considers and discloses the environmental consequences of the permit in order to comply with NEPA.

4. *All permits in which the 300-linear feet limit is eliminated “may significantly affect” the environment.*

The Corps’ proposal to remove the 300-linear feet limit on losses of stream bed from the existing NWPs, and rely solely on the half-acre restriction, clearly will have tremendous adverse impacts on small streams. According to the Corps’ own showing, the half-acre limit for a 1st order stream would allow the fill of 3,470 linear feet of stream—more than 10 times the amount of stream bed loss currently possible.<sup>233</sup> For 2nd and 3rd order streams, the Corps acknowledges

---

<sup>231</sup> 85 Fed. Reg. at 43,369.

<sup>232</sup> Letter from National Wildlife Federation to U.S. Army Corps of Engineers at 79 (Apr. 18, 2011) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>233</sup> *See* 85 Fed. Reg. at 57,321.

that the half-acre limit would allow the fill or excavation of 2,540 linear feet and 800 linear feet of stream bed, respectively—again, a vast increase over that which could be allowed under the existing NWPs.<sup>234</sup>

While thus implicitly recognizing the magnitude of the impacts, the Corps nowhere explains how the several-fold increase in impacts from the proposal to eliminate the linear foot restriction could be considered “minimal.” Nor can it; instead the Corps merely declares, *ipse dixit*, that the change will have no more than minimal impacts. In fact, as discussed below, the Corps’ proposed elimination of the linear foot restriction will have dire consequences for small streams, which in turn will ripple throughout the entire tributary network. The Corps’ proposed elimination of the linear foot limit is plainly unlawful.

- a. The Corps’ analysis ignores the fact that both the 300-linear feet limit and the half-acre limit apply.

Before discussing the removal of the 300-linear feet limit in detail, we note that the Corps appears not to understand the existing permits. The Corps’ analysis of the 300-linear feet limit is by comparison to the half-acre limit as an either/or discussion.<sup>235</sup> The existing permits with the 300-linear feet limit also have the half-acre limit. The question for the Corps is not whether the 300-linear feet limit or half-acre limit is more effective. It’s whether the combination of the two provides better protection than the half-acre limit alone. The Corps never asks or answers that question, demonstrating the arbitrary and capriciousness of this rulemaking. As a result, none of the concerns raised by the Corps are valid. Impacts to larger rivers are not better accounted for under this proposal; the half-acre limit previously precluded impacts to 300 linear feet of large rivers where that would exceed a half-acre of stream bed impacts.

- b. The 300-linear feet limit, though not sufficiently protective, is far more protective than the proposed half-acre limit.

Although even the Corps acknowledges that removing the 300-linear feet limit will result in substantially more impacts to small streams, the threat is far more severe than the agency has revealed. The agency cites Downing (2012) for the premise that 1st order streams are approximately six feet wide.<sup>236</sup> More recent research has found that headwater streams—those that are most vulnerable under these permits—consistently range from 0.8 to 1.3 feet wide across a wide variety of watersheds.<sup>237</sup> As a result, each permit, from which the Corps has proposed to remove the 300-linear feet limit, could allow more than 10 miles of streams to be filled under a nationwide permit. Nationwide permits 29, 39, 42, and 43 are expected to be used 2,795 times a year,<sup>238</sup> meaning that the removal of the 300-linear feet limit could allow more than 27,000 miles of streams to be destroyed annually under just those four permits.

---

<sup>234</sup> *Id.*

<sup>235</sup> *See id.* at 57,313.

<sup>236</sup> 85 Fed. Reg. 57,298, 57,316

<sup>237</sup> Allen, G., *et al*, *Similarity of stream width distributions across headwater streams*, NATURE COMMUNICATIONS , at 2 (2018) .

<sup>238</sup> *See* Draft Dec. Doc. NWP 29 at 60, Draft Dec. Doc. NWP 39 at 60-61, Draft Dec. Doc NWP 42 at 58-59, Draft Dec. Doc. NWP 43 at 60.

The imposition of a 0.1 acre threshold for compensatory mitigation does not reduce this harm to a level of minimal adverse effects. Even that threshold could allow more than a mile of headwater streams to be filled without *any* mitigation.

Put another way, for smaller streams, eliminating the 300-linear feet limit would allow more than 180 times the impact of the existing permits. Further, more than 17 times the impact allowed under the existing permit could be done without meeting or exceeding the mitigation threshold.

- c. Small streams that would be vulnerable to rampant destruction with the removal of the 300-linear feet limit provide critical ecosystem functions.

A brief summary highlighting some of the relevant findings and conclusions of the U.S. EPA's Connectivity Report<sup>239</sup> is set forth here and below. For example, EPA describes how the cycling of nutrients is a critical function of headwater streams. EPA explains that “nutrient spiraling—“in which stream communities assimilate and chemically transform large quantities of nitrogen and other nutrients that otherwise would be transported directly downstream”—“is one example of an instream alteration that exhibits significant beneficial effects on downstream waters.”<sup>240</sup>

Richard Rheinhardt, Ph. D, also explains in the attached comments (Attachment A), based on his expertise and familiarity with the scientific literature, that “[m]ost nutrient and hydrologic inputs to streams . . . occur along the borders of riparian zones and stream banks,” making “stream length an important metric for evaluating potential water quality.”<sup>241</sup> “Estimates . . . concerning the proportion of stream length by order” are “consistent” that first and second order streams “comprise 73%-80% of a basin’s total stream length,” making both the “prevalence and total length of streams . . . inversely proportional to stream order.”<sup>242</sup> As a result, headwater streams and their riparian zones “intercept most inputs of nutrients and water to drainage basins.”<sup>243</sup> Further, Rheinhardt explains that, because “the total surface area of lower order (i.e., headwater) streams is exponentially larger than the surface area of wider (higher order) streams in a basin, smaller streams remove N [nitrogen] more efficiently and rapidly than higher order streams, due primarily to their higher ratios of streambed area to water volume.”<sup>244</sup> In sum, “the longer total stream length and higher N removal efficiency of small streams” are why “stream length is so important to water quality and why headwater streams are vastly more important to water quality functions in stream networks than are higher order streams.”<sup>245</sup>

Headwater streams perform numerous other ecological functions that are critical to the integrity and sustainability of downstream waters. These functions include, among others, transporting water; mitigating flooding; providing habitat essential for the completion of one or more life-cycle stages of aquatic and semi-aquatic organisms that move throughout the river

---

<sup>239</sup> U.S. EPA, Connectivity of Streams & Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence (Jan. 2015) (“Connectivity Report”).

<sup>240</sup> Connectivity Report at ES-2, ES-14; *see* Connectivity Report § 3.4.1.

<sup>241</sup> Rheinhardt Comments at 2 (citations and footnote omitted) (Attachment A).

<sup>242</sup> Rheinhardt Comments at 2 (citations and footnote omitted).

<sup>243</sup> Rheinhardt Comments at 2 (citations omitted).

<sup>244</sup> Rheinhardt Comments at 2 (citations omitted).

<sup>245</sup> Rheinhardt Comments at 2-3 (citations and footnote omitted).

network; providing refuge from predators; and transporting and transforming physical and chemical materials.<sup>246</sup>

It is also critical, as EPA states in the Connectivity Report, that “when considering the effect of an individual stream . . . , all contributions and functions of that stream . . . should be evaluated cumulatively.”<sup>247</sup> Otherwise, the stream’s impact will be underestimated.<sup>248</sup> An important corollary to this principle is that, in considering the impacts of a category of activities on a waterbody, the metric used to evaluate the impacts “should be based on what is most appropriate for the resource being protected.”<sup>249</sup> As Rheinhardt discusses in his comments:

“Functions of streams and streambed resources . . . are best evaluated relative to stream length because streams are linear systems that interact with their landscapes at stream edges. As a class, headwater streams in a given drainage basin are more numerous, longer, and comprise more bottom substrate, but for any given reach, streambed area is much smaller than higher order streams of the same length. That is, using area of stream bottom is especially problematic in headwater reaches because small areas of bottom subsume long lengths of stream. Therefore, using area as a common metric for headwater streams and higher order rivers will devalue headwater streams.”<sup>250</sup>

- d. The 300-linear foot limit on stream impacts is well-established and has been applied for decades.

The Corps attempts to downplay the impacts of its proposal, referring repeatedly to the district (or division) engineer’s discretion to impose more restrictive conditions.<sup>251</sup> That excuse is no answer to the fact that section 404(e) prohibits the Secretary, in the first instance, from issuing any nationwide permit that would have more than minimal adverse effects on the environment.

Further, the 300 linear foot limit on filling and excavating streams has been in place for several of the NWP’s for two decades. The Corps has offered no “reasoned explanation” for its turnabout now to contend that only the half-acre limit is necessary. *See FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 516 (2009)(agency cannot simply ignore its prior factual determinations but must provide a “reasoned explanation” for its proposed departure from “facts and circumstances that underlay or were engendered by the prior policy”). The Corps first adopted the 300 linear foot limit in its reissuance of the NWP’s in 2000, for NWP’s 39, 40, 42, and 43.<sup>252</sup> In discussing the new restriction, the Corps explained that many commenters had objected to the lack of a linear foot limit for stream bed impacts, on the grounds that “thousands of feet of

---

<sup>246</sup> *See, e.g.*, Connectivity Report at ES-2 through ES-8, ES-14, and chapter 3. *See also* Meyer et al., *Where Rivers Are Born: The Scientific Imperative for Defending Small Streams and Wetlands*, at 3 (Sept. 2003)(small streams “sustain the biological productivity of downstream rivers, lakes and estuaries”); Meyer, et al., *The Contribution of Headwater Streams to Biodiversity in River Networks*, *Journal of the American Water Resources Association*, vol. 43, No. 1, at 87 (Feb. 2007) (headwaters “are integral to the maintenance of biological diversity in the river network”).

<sup>247</sup> Connectivity Report at ES-5; *see* Connectivity Report § 1.2.3, chapter 3.

<sup>248</sup> *See id.* at ES-5.

<sup>249</sup> Rheinhardt Comments at 4.

<sup>250</sup> Rheinhardt Comments at 4.

<sup>251</sup> *See, e.g.*, 85 Fed. Reg. at 57,315.

<sup>252</sup> *See* 65 Fed. Reg. 12,818-19 (9 March 2000).

stream bed could be channelized or filled under [the] NWP” and that “linear foot limits for stream bed impact losses should be imposed.”<sup>253</sup> The Corps responded by adopting the 300 linear foot limit, concluding that the new restriction on the use of the NWP “will substantially increase the protection of the Nation’s aquatic environment.”<sup>254</sup>

In the 2007 reissuance of NWP, the Corps reaffirmed the importance of the linear foot limit, explaining: “Even though the acreage limits of the NWP 29, 39, 40, 42, and 43 also apply to losses of stream bed, the linear foot limit is a useful tool for ensuring minimal adverse effects to these linear aquatic systems.”<sup>255</sup> As the Corps recognized, streams are linear systems, and therefore a limit on the length of stream bed losses, in addition to the acreage limit, is necessary.<sup>256</sup>

In 2012, the Corps adopted the half-acre limit and the 300 linear foot limit on stream bed losses for NWP 21 (Surface Coal Mining Activities), NWP 50 (Underground Coal Mining Activities), and for new NWP 51 and 52 (Land-Based Renewable Energy Generation Facilities and Water-Based Renewable Energy Generation Pilot Projects, respectively).<sup>257</sup> The Corps again made clear that the “300 linear foot limit is appropriate to ensure that losses of stream beds result in minimal adverse effects on the aquatic environment,” and it noted that “Division engineers may add regional conditions to an NWP to reduce the linear foot limit to an amount less than 300 linear feet.”<sup>258</sup> Similarly, the Corps stated with respect to newly adopted NWP 51, that both the “1/2-acre and 300 linear foot limits are necessary to ensure that this NWP authorizes only those activities that have minimal individual and cumulative adverse effects on the aquatic environment.”<sup>259</sup>

Most recently, in the 2017 final NWP,<sup>260</sup> the Corps rejected suggestions both to increase the linear feet limit (to 500 linear feet) and to eliminate the linear foot limit altogether and rely simply on the half-acre limit. The Corps reiterated that “both the 1/2-acre and 300 LF limits are necessary to ensure that the activities authorized by this NWP cause no more than minimal individual and cumulative adverse environmental effects.”<sup>261</sup>

- e. The Corps’ claim that removing the 300-linear feet limit would provide consistency is based on a false comparison.

As stated above, the Corps’ framing of the issue as an “either/or” choice between the 300-linear feet limit and the half-acre limit is false because *both* restrictions apply. Moreover, the other purported justifications for the proposed elimination of the 300-linear feet restriction rest on similar false dichotomies. The Corps attempts to justify the proposed elimination of the 300 linear foot restriction on several grounds, none of which is valid. The Corps claims that,

---

<sup>253</sup> 65 Fed. Reg. at 12,828.

<sup>254</sup> *Id.* at 12,819.

<sup>255</sup> 72 Fed. Reg. at 11,097.

<sup>256</sup> *See* Rheinhardt Comments.

<sup>257</sup> *See* 77 Fed. Reg. 10,184 (21 Feb. 2012).

<sup>258</sup> *Id.* at 10,189-90.

<sup>259</sup> *Id.* at 10,237.

<sup>260</sup> 82 Fed. Reg. 1,860, 1,871 (Jan. 6, 2017),

<sup>261</sup> *Id.* at 1,909 (referring to NWP 21 Surface Coal Mining Activities).

by using linear feet to quantify stream impacts, the filling or excavation of 100 feet of a small headwater stream has the same value as the filling or excavation of 100 feet of a larger stream in the middle of the stream network . . . even though the actual amount of stream bed filled or excavated is substantially larger for the [larger] stream than for the headwater stream.<sup>262</sup>

In other words, the Corps asserts that, because the 300 linear foot limit “for headwater streams would usually be substantially less than ½-acre,” the linear foot restriction on losses of stream bed is more restrictive than the ½-acre limit for losses of non-tidal wetlands and other non-tidal waters.<sup>263</sup> The Corps concludes that eliminating the 300 linear foot limit would provide consistency and “more equivalency in protection for all non-tidal waters.”

To the contrary, the Corps’ proposed change will not provide “more equivalency,” but will instead greatly, and disproportionately, impact small streams. As indicated above, by the Corps’ own admission, filling or excavating a half-acre of a 1st order stream—with an average width of 6 feet—is the equivalent of destroying nearly 3,500 linear feet of stream; whereas, filling or excavating a half-acre of a 6th order stream—with an average width of 641 feet—is the equivalent of filling 35 linear feet of stream.<sup>264</sup> The disparity is obvious.

In a similar vein, the Corps’ request for comments—on whether there are regulatory, scientific, or policy justifications for “placing greater importance or value on headwater streams to support more stringent quantitative limits on losses of stream bed . . . , or whether *consistent quantitative limits* should apply to all non-tidal waters and wetlands,”<sup>265</sup> is a red herring. The issue is not whether the quantitative limits should be consistent for all waters but rather whether—whatever surrogate is used—such limits will protect and ensure that activities authorized under a NWP will have no more than minimal adverse individual or cumulative impacts. As stated above, the Corps determined two decades ago, when it first adopted the linear foot limit on filling or excavating a stream bed, that *both* the acreage and linear foot restrictions are necessary to protect a stream’s functions and values.

The Corps also claims that quantifying impacts in linear feet “does not always accurately represent the actual amount of stream bed filled or excavated because it does not take into account the width of the stream bed.”<sup>266</sup> And, the Corps asserts that a linear foot limit “is not an effective surrogate for quantifying the amount of stream functions lost because . . . ecological functions occur over the area of stream bed present within a stream reach.”<sup>267</sup> As the comments of Richard Rheinhardt demonstrate, however, in fact the functions of streams and streambed resources “are best evaluated relative to stream length because streams are linear systems that interact with their landscapes at stream edges,” and that “using area as a common metric for headwater streams and higher order rivers will devalue headwater streams.”<sup>268</sup> Rather, it seems clear that the driving force for the Corps’ proposal is its assertion that the restriction “decreases

---

<sup>262</sup> 85 Fed. Reg. at 57,317.

<sup>263</sup> *Id.* at 57,318.

<sup>264</sup> *See id.* at 57,321.

<sup>265</sup> *Id.* at 57,320 (emphasis added).

<sup>266</sup> *Id.* at 57,317.

<sup>267</sup> *Id.* at 57,317.

<sup>268</sup> Rheinhardt Comments at 4.

the utility of the NWP for losses of stream bed, ”<sup>269</sup> and that eliminating it would “further streamline the NWP authorization process”<sup>270</sup>— rationalizations that cannot justify the massive destruction of headwaters that would result from the proposed change.

## V. The Nationwide Permits as Proposed Violate the Clean Water Act.

### A. Nationwide permits can only be issued for activities with minimal impacts.

The Clean Water Act was enacted to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a). To that end, Section 404 of the CWA prohibits the discharge of any pollutant, including dredged or fill material, into jurisdictional waters without a permit from the Army Corps of Engineers. *See id.* §§ 1311; 1344(a), (d), (e). The Corps issues two types of permits: individual permits and general permits.

General permits can be issued on a “State, regional, or nationwide basis.” 33 U.S.C. § 1344(e)(1); 33 C.F.R. § 330.5. Nationwide permits are a species of general permit effective anywhere in the United States. NWP are “designed to regulate with little, if any, delay or paperwork certain activities having minimal [environmental] impacts.” 33 C.F.R. § 330.2(b). Critically, discharges authorized through NWP are generally not subject to the requirement to identify the LEDPA. *See* 40 C.F.R. § 230.7(b)(1) (“[C]onsideration of alternatives in § 230.10(a) are not directly applicable to General permit.”).

When the Corps issues a NWP, it purports to satisfy all requirements under the Clean Water Act applicable to the NWP—for any project that may employ it. *See* 33 C.F.R. § 330.5. As a result, “[i]n most cases, permittees may proceed with activities authorized by NWP” without notifying or seeking further approval from the Corps. 33 C.F.R. § 330.1(e). However, some permittees are required to notify the Corps of their intention to proceed under the NWP. *See id.* §§ 330.1(e), 330.6. But even if notification is required, no additional public comment or further NEPA or CWA analysis is required before the Corps may “verify” that the permittee complies with the terms of the NWP. *Id.* § 330.6(a).

A nationwide permit may only be issued for categories of discharges that “are [1] similar in nature, [2] will cause only minimal adverse environmental effects when performed separately, and [3] will have only minimal cumulative adverse effects on the environment.” 33 U.S.C. § 1344(e)(1). This statutory mandate is implemented through a set of regulatory requirements. To start, any nationwide permit must be based on guidelines promulgated by the 404(b)(1) Guidelines. 33 U.S.C. § 1344(b)(1), (e); *see also* 33 C.F.R. § 320.4(b)(4); 33 C.F.R. § 325.2(a)(6). These Guidelines require activities governed by a NWP to: (1) be “similar in nature and similar in their impact upon water quality and the aquatic environment;” (2) “have only minimal adverse effects when performed separately;” and (3) “have only minimal cumulative adverse effects on water quality and the aquatic environment.” 40 C.F.R. § 230.7(a). These three findings “shall” be spelled out in a written evaluation that “must be completed before any [NWP] is issued.” *Id.* § 230.7(b) (emphasis added).

To meet these requirements the Corps must provide “a precise description of the activities to be permitted under the [NWP]” and explain why those activities “are sufficiently

---

<sup>269</sup> 85 Fed. Reg. at 57,318.

<sup>270</sup> *Id.* at 57,320 (citation omitted).



similar in nature and in environmental impact to warrant regulation under a single [NWP].” *Id.* § 230.7(b)(2). In addition, the Corps’ assessment of the “potential individual and cumulative impacts” must be “based upon” consideration of the prohibitions and factors found at 40 C.F.R. § 230.10(b) and (c), and “shall” also include “documented information supporting each factual determination” made pursuant to 40 C.F.R. § 230.11; *Id.* § 230.7(b)(1).

Finally, the Corps’ regulations also require a “public interest review” to “careful[ly]” weigh the permit’s “probable impacts”—including cumulative impacts—against its reasonably expected benefits. 33 C.F.R. § 320.4(a)(1). “The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of this general balancing process.” *Id.* A permit may not be granted if “the district engineer determines that it would be contrary to the public interest.” *Id.*

**B. The Corps supports its minimal-impact findings by arbitrarily and capriciously comparing the effects of nationwide permits to the rest of human activity.**

The Corps cannot issue a NWP if it determines that the activities it governs will have more than minimal individual or cumulative environmental impacts. 33 U.S.C. § 1344(e)(1); 40 C.F.R. § 230.7(a). But here, the Corps finds that the use of NWPs may result in *numerous* detrimental environmental impacts.<sup>271</sup> Though the Corps acknowledges these impacts, it diminishes their importance by arbitrarily comparing them to the rest of human activity.<sup>272</sup> But as noted above in the NEPA analysis, finding that “a particular environmental resource is degraded is not an excuse or justification for further degradation.” *Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1364. The Corps is required to analyze the individual and cumulative impacts of its NWPs *given* the current environmental setting, not calculate these impacts “*as a percentage* of the decades or centuries of degrading activities that came before.” *Id.* (emphasis added). Put differently, the point of a baseline is not to determine “the *proportional* share of responsibility the federal agency bears for the [harm to the aquatic resource], but what [harm] might result *from* the agency’s proposed actions in the present and future human and natural contexts.” *Pac. Coast*, 426 F.3d at 1093 (emphasis added) (analyzing baselines in the ESA context).

**C. The Corps arbitrarily and capriciously relies on unsupported and unspecified mitigation measures to support its minimal-impact finding.**

The Corps may partially rely on mitigation measures and other “post-issuance” procedures “to cement its [nationwide] determination that the projects it has authorized will have only minimal environmental impacts.” *Ohio Valley Envtl. Coal. v. Bulen*, 429 F.3d 493, 501 (4th Cir. 2005). As the Fourth Circuit stated in *Bulen*, it “would have substantial doubts about the Corps’ ability to issue a nationwide permit that relied solely on post-issuance, case-by-case determinations of minimal impact, with no general pre-issuance determinations,” since in such cases, “the Corps’ ‘determinations’ would consist of little more than its own promise to obey the law.” *Id.* Moreover, that does not mean that the Corps can avoid explaining “*why* it believes mitigation imposed through the case-by-case review of NWP activities will work to mitigate the

---

<sup>271</sup> See, e.g., Draft Dec. Doc. NWP 12 at 48–58, 65–77; See, e.g., *infra* Section V(F)(1)(b).

<sup>272</sup> See *supra* Section IV(A)(3).

permit's impacts to a minimal level." *Ohio Valley Envtl. Coal. v. Hurst*, 604 F. Supp. 2d 860, 892 (S.D.W. Va. 2009).

Instead, the Corps must "include documented information supporting" its findings, including its minimal-cumulative-impact determination.<sup>273</sup> *Id.* § 230.7(b)(1); 40 C.F.R. § 230.11(g). Neglecting to reference such information, or failing to analyze or explain the "factual underpinnings" for the Corps' determination, is arbitrary and capricious. *See Kentucky Riverkeeper, Inc. v. Rowlette*, 714 F.3d 402, 413 (6th Cir. 2013) (holding that merely mentioning potential post-issuance mechanisms like mitigation "do[es] not explain how the Corps arrived at its *preissuance* minimal cumulative-impact findings"); *see also Hurst*, 604 F. Supp. 2d at 887 (holding that "the 'mere listing' of mitigation measures and processes, without any analysis, cannot support a cumulative impacts determination" in either the NEPA or CWA contexts); *Wyoming Outdoor Council Powder River Basin Res. Council v. U.S. Army Corps of Engineers*, 351 F. Supp. 2d 1232, 1252 (D. Wyo. 2005) (holding the court cannot "defer to the Corps' bald assertions that mitigation will be successful" in the NEPA and CWA contexts).

Here, the Corps asserts simply that each of the activities authorized by NWP 12 will have minimal adverse effects because, if they do not, division engineers will add conditions or require mitigation to ensure that they do. Reliance on the division engineer's authority to do so cannot satisfy the Corps' obligation to determine whether a proposed NWP will have no more than minimal adverse impacts. The agency's discussion of NWP 12 is instructive. The Corps estimates "that approximately 47,750 activities could be authorized over a five-year period until this NWP expires, resulting in impacts to approximately 3,160 acres of waters of the United States, including jurisdictional wetlands."<sup>274</sup> It then perfunctorily states that "[a]pproximately 225 acres of compensatory mitigation would be required to offset those impacts" without explaining how it arrived at this number.<sup>275</sup> The Corps then spends the next six pages discussing various mitigation measures generally.<sup>276</sup> Immediately following this generic discussion—with nary a mention of NWP 12 or oil and gas pipelines—the Corps pivots to its cumulative-effects conclusion, summarily finding that, because of "compensatory mitigation" and as-yet-unspecified "activity-specific conditions," "individual and cumulative adverse effects on the aquatic environment resulting from the activities authorized by this NWP . . . are expected to be no more than minimal."<sup>277</sup>

---

<sup>273</sup> EPA guidelines define "cumulative effects" or "impacts" as "the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material." 40 C.F.R. § 230.11(g)(1). The guidelines go on to note that though "the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems." *Id.*

<sup>274</sup> Draft Dec. Doc. 12 at 66.

<sup>275</sup> *Id.* at 66. Confusingly, in the paragraph immediately above, the Corps estimates that "415 acres of compensatory mitigation will be required each year to offset authorized impacts." *Id.* at 66. It also is not clear whether the Corps accounted for the fact that it is eliminating five PCN requirements and adding another when calculating how many times NWP 12 will require pre-construction notification or not. *Id.* at 65.

<sup>276</sup> *Id.* at 72, *see id.* 12 at 66–72. These pages seem to be a word-for-word copy of similar sections in other NWP draft decision documents. *Compare* Draft Dec. Doc. NWP 12 at 66–72, with Draft Dec. Doc. NWP C at 66–72; Draft Dec. Doc. NWP D at 65–70; Draft Dec. Doc. NWP 21 at 60–66.

<sup>277</sup> This conclusion also appears to be a word-for-word copy of similar findings in other draft decision documents. *Compare* Draft Dec. Doc. NWP 12 at 72 ("The compensatory mitigation required by district engineers in accordance with general condition 23 and through activity-specific conditions added to the NWP authorization is expected to provide aquatic resource functions and services to offset some or all of the losses of aquatic resource

Thus, the Corps fails to provide “any explanation for *why* it believes mitigation imposed through the case-by-case review of NWP [12] activities will work to mitigate the permit’s cumulative impacts to a minimal level.” *Hurst*, 604 F. Supp. 2d at 892. The Corps’ general discussion of mitigation does not change this outcome. Merely listing and describing various post-issuance mitigation strategies does not explain how the Corps “arrived at its *preissuance* minimal cumulative-impact finding[.]” *Kentucky Riverkeeper*, 714 F.3d at 412; *Hurst*, 604 F. Supp. 2d at 887. The Corps must explain how these mitigation measures would succeed “*in the context of [the] NWP.*” *Hurst*, 604 F. Supp. 2d at 890–9. Yet the Corps conducted no such analysis.

*Ohio Valley Environmental Coalition v. Hurst*, 604 F. Supp. 2d 860, confirms this approach is insufficient. There, the Corps’ minimal impacts finding “relied on a review *process*” to identify necessary and appropriate mitigation measures “at a later time and on a case-by-case basis.” *Id.* at 889. When it came to the “actual measures the district engineer should impose, however,” the Corps simply provided “a list of options with little guidance on how they should be selected or applied.” *Id.* at 892. This “generic” discussion of mitigation did not explain how these measures would apply “in the context of” NWP 21 or “how they would ensure the mitigation of cumulative impacts at the sites of [NWP 21] activities.” *Id.* at 890–94 (emphasis added). Though the Corps suggested several general conditions would adequately police its review process, the court found that “[s]uch loose instructions . . . do not evidence the guarantee of successful mitigation necessary to comply with the permit requirements.” *Id.* at 893. Ultimately, because the Corps did not “show *how*” the listed measures would mitigate expected impacts or “explain *why* such mitigation plans are appropriate for the given circumstances,” the Corps minimal-cumulative-impacts determination was arbitrary and capricious. *Id.* at 889 n.1, 901 (emphasis added). The same is true here with respect to the Corps’ proposed changes to the NWPs.

Moreover, several of the mitigation measures described by the Corps would seem to have marginal application to many of the NWPs. For example, dam removal seems irrelevant in the NWP 12 context.<sup>278</sup> As are seagrass-bed restoration practices.<sup>279</sup> But even assuming these measures are relevant, it is difficult to understand how the Corps’ preferred restoration techniques will work in the NWP 12 context.<sup>280</sup> For example, the Corps suggests that “reduc[ing] inputs of sediment,” ensuring “suitable salinity and water temperatures,” and guaranteeing the “absence of mechanical disturbances” may be effective in restoring seagrass beds.<sup>281</sup> But elsewhere the Corps finds that NWP 12 activities may “increase water turbidity,” “adversely affect salinity gradients” and water temperature, and mechanically “replace the aquatic area with dry land.”<sup>282</sup> The Corps does not explain how these facially deficient or irrelevant mitigation practices will work in the NWP 12 context.

---

functions caused by the activities authorized by this NWP.”), *with* Draft Dec. Doc. NWP 21 at 66 (“The compensatory mitigation required by district engineers in accordance with general condition 23 and through activity-specific conditions added to the NWP authorization is expected to provide aquatic resource functions and services to offset some or all of the losses of aquatic resource functions caused by the activities authorized by this NWP.”).

<sup>278</sup> See Draft Dec. Doc. 12 at 70 (discussing environmental benefits of dam removal as a mitigation strategy).

<sup>279</sup> *Id.* at 70–71.

<sup>280</sup> *Id.* at 71.

<sup>281</sup> *Id.* at 71.

<sup>282</sup> *Id.* at 72–74.

Even if these mitigation measures were appropriate, the Corps' own statements contradict its claim that compensatory mitigation will help ensure no-more-than-minimal impacts. For example, the Corps confidently predicts in the draft decision document that compensatory mitigation will "offset some or all of the losses of aquatic resource functions caused by the activities authorized by this NWP."<sup>283</sup> Yet only a few pages earlier, the Corps discloses that because "few studies" have evaluated "aquatic resources impacted by permitted activities," it is "difficult to assess whether compensatory mitigation projects have fully or partially offset the lost functions provided by the aquatic resources that are impacted by permitted activities."<sup>284</sup>

In a similar vein, the Corps optimistically notes that "restoration of wetlands and streams can increase the ecological functions and services provided by those aquatic resources" and "increase biodiversity."<sup>285</sup> But it later admits that "restoration typically cannot return a degraded wetland or stream to a prior historic condition," and that any increases in biodiversity or ecosystem services "do not approach the amounts of biodiversity and ecosystem services performed by undisturbed reference sites."<sup>286</sup> Likewise, the Corps maintains that "restoring or establishing wetland hydrology is of primary importance."<sup>287</sup> One page later, however, the Corps reports that it is "difficult to restore or establish natural wetland hydrology."<sup>288</sup> For these and other reasons, the Corps repeatedly warns that "it is important to establish realistic goals and objectives" for mitigation.<sup>289</sup> But it is hard to square these sober assessments of mitigation's shortcomings with the Corps' bald assertions that "[m]itigation required by the district engineer *will* ensure that the adverse effects on the aquatic environment are no more than minimal."<sup>290</sup>

What's more, other statements in the draft decision document imply that activities inherently associated with NWP activities—such as upland pipeline construction in the NWP 12 context—will make mitigation even more difficult, if not impractical. For instance, the Corps notes that "[i]rreversible changes to landscapes, especially those that affect hydrology within contributing drainage areas or watersheds, cause wetland degradation and impede the ecological performance of wetland restoration efforts."<sup>291</sup> Similarly, stream-restoration activities are only effective when they "address the causes of stream degradation, which are often within the watershed and outside of the stream channel."<sup>292</sup> But oil and gas pipeline construction, by its very nature, is an irreversible change to the landscape. And the forest clearing, earthmoving, and trench digging needed to construct pipelines in upland areas certainly "affect" wetland hydrology and contribute to sediment loads that further degrade streams within the watershed. Therefore, the Corps' own statements suggest restoration-based mitigation efforts—which the Corps already warns are not always effective—may be doomed to failure before they are even begun.

In sum, the Corps entirely fails to document or explain why mitigation measures will work in their specific NWP contexts. And what generic mitigation measures it does list either would not work in that context or are undercut by the Corps' own statements admitting their

---

<sup>283</sup> *Id.* at 72; *see also id.* at 44.

<sup>284</sup> *Id.* at 67.

<sup>285</sup> *Id.* at 66.

<sup>286</sup> *Id.* at 66.

<sup>287</sup> *Id.* at 67.

<sup>288</sup> *Id.* at 68.

<sup>289</sup> *Id.* at 66 (emphasis added); *see also id.* at 71.

<sup>290</sup> *See, e.g., id.* at 63 (emphasis added).

<sup>291</sup> *Id.* at 68.

<sup>292</sup> *Id.* at 69 (emphasis added).

inefficacy. Instead, the Corps “presumes, on this record, that whatever the impacts, it will be able to mitigate them successfully and further, that the procedures incorporated into the NWP [12] authorization process are sufficient to ensure that success.” *Hurst*, 604 F. Supp. 2d at 895–96. But an “analysis based on presumptions at every step cannot support any sort of conclusion.” *Id.* at 896. The same problems plague each nationwide permit. Therefore, the Corps’ minimal-impact determination for each of the permits is arbitrary, capricious, and unsupported by substantial evidence.

D. The Corps arbitrarily and capriciously exaggerates the protections offered by general permit conditions to arrive at its minimal-impact conclusion.

General permit conditions are certainly “relevant to and supportive of a finding of minimal impacts.” *Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1365; *Hurst*, 604 F. Supp. 2d 860, 899 (S.D.W. Va. 2009). But the conditions must actually do what the Corps says they will; if they “do not necessarily prohibit substantial impacts,” relying on them to make a “minimal” impact finding is arbitrary and capricious. *Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1365.

Here, the Corps cites anticipated compliance with general conditions 1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 18, 19, 20, 22, 23, and 25 as a key factor in its 404(b)(1) and public-interest analyses.<sup>293</sup> However, many of the Corps’ claims regarding these general conditions overstate—if not outright contradict—the terms of the general conditions themselves. For example:

- **General Condition 3:** The Corps promises that compliance with General Condition 3 “will ensure that the authorized activity has only minimal adverse effects on spawning areas.”<sup>294</sup> The actual language of General Condition 3, however, is much less forceful. Though it prohibits the “physical destruction” of “important spawning area[s],” it only requires that “[a]ctivities in spawning areas during spawning seasons” be avoided to the “maximum extent practicable.”<sup>295</sup> Therefore, though General Condition 3 “precludes the most destructive of activities in spawning areas,” it “leaves unregulated many activities that could significantly impact those areas.” *Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1365.
- **General Condition 4:** The Corps asserts that activities “cannot have more than minimal adverse effects on breeding areas for migratory birds, due to the requirements of general condition 4.”<sup>296</sup> But General Condition 4, like General Condition 3, only provides that “[a]ctivities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.”<sup>297</sup> Thus, many activities that could “significantly impact” breeding areas for migratory birds are left “unregulated.” *Cf. Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1365.
- **General Condition 6:** The Corps claims that “[a]dverse effects to the chemical composition of the aquatic environment will be controlled by general condition 6.”<sup>298</sup>

---

<sup>293</sup> *Id.* at 48–58, 72–77.

<sup>294</sup> *Id.* at 53 (emphasis added).

<sup>295</sup> 85 Fed. Reg. at 57,385.

<sup>296</sup> Draft Dec. Doc. NWP 12 at 53 (emphasis added).

<sup>297</sup> 85 Fed. Reg. at 57,385.

<sup>298</sup> Draft Dec. Doc. NWP 12 at 49 (emphasis added).

But General Condition 6 only provides that “[m]aterial used for construction or discharged” intentionally must be “free from toxic pollutants in toxic amounts.”<sup>299</sup> Therefore, General Condition 6 has no ability to police toxic chemicals that are, for example, released during spills, leaks, or frac-outs under NWP 12, and cannot guarantee minimal adverse effects to the “chemical composition of the aquatic environment,” writ large.

- **General Condition 10:** The Corps confidently predicts that “[c]ompliance with general condition 10 *will ensure* that authorized activities in 100-year floodplains will not cause more than minimal adverse effects on flood storage and conveyance.”<sup>300</sup> Yet the terms of General Condition 10 simply state that “[t]he activity must comply with applicable FEMA-approved state or local floodplain management requirements.”<sup>301</sup> Unless the Corps has reviewed every applicable FEMA-approved state or local floodplain management plan—and it does not suggest that it has—it is hard to see how it can say that they “will ensure” no more than minimal environmental effects.

Moreover, the Corps must also make clear that its reliance on General Condition 10 is not illusory with respect to interstate pipelines. NWP 12 would apply in part to interstate natural gas pipelines authorized under Section 7 of the Natural Gas Act, 15 U.S.C. § 717f, which is understood to preempt some (but not all) state and local laws regulating such pipelines. *See, e.g., Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 244 (D.C. Cir. 2013). Consequently, pipeline developers have sometimes argued that local floodplain ordinances are preempted under the Natural Gas Act and that pipelines are thus exempt from those requirements. *See, e.g., Compl., Atl. Coast Pipeline Co. v. Nelson Cnty. Bd. of Supervisors*, No. 3:18-cv-0115-NKM-JCH (W. D. Va.) (Dec. 6, 2018) (Dkt. 1). The Corps must make clear that any preemption under the Natural Gas Act does not excuse pipeline developers from their obligation under General Condition 10 to comply with FEMA-approved state or local floodplain management requirements. Preemption is a legal determination with no effect on the environmental impacts of activities authorized by NWP 12, so, unless the Corps makes clear that General Condition 10 applies regardless of Natural Gas Act preemption, it will be arbitrary and capricious for the Corps to conclude that General Condition 10 can limit the adverse environmental effects of NWP 12 activities.

- **General Condition 12:** The Corps notes General Condition 12 “requires the permittee to stabilize exposed soils and other fills, which *will* reduce turbidity.”<sup>302</sup> But the full language of General Condition 12 only requires that “all exposed soil and other fills . . . be permanently stabilized at the earliest practicable date.”<sup>303</sup> Thus, exposed soil and fills could cause sediment loading and turbidity plumes until it is “practicable” to deal with it. Regardless, a requirement to “reduce” turbidity is not necessarily a requirement to reduce it below the minimum-impact threshold.

---

<sup>299</sup> *Id.* at 49 (emphasis added).

<sup>300</sup> *Id.* at 54 (emphasis added).

<sup>301</sup> 85 Fed. Reg. at 57,386.

<sup>302</sup> Draft Dec. Doc. NWP 12 at 73 (emphasis added).

<sup>303</sup> 85 Fed. Reg. at 57,386.

- **General Condition 18:** According to the Corps, General Condition 18 guarantees that the reissuance of nationwide permits will have “‘no effect’ to listed species or critical habitat, because no activity that ‘may affect’ listed species or critical habitat is authorized” unless Section 7 consultation has been completed.<sup>304</sup> But this rationale has already been rejected in federal court as an unlawful delegation of the Corps’ substantive duties under the ESA. *See N. Plains Res. Council v. U.S. Army Corps of Engineers*, 454 F. Supp. 3d 985, 994 (D. Mont. 2020), *amended*, 460 F. Supp. 3d 1030 (D. Mont. 2020), *appeal filed*, No. 20-35432 (9<sup>th</sup> Cir.) (“General Condition 18 turns the ESA’s initial effect determination over to *non-federal permittees*, even though *the Corps* must make that initial determination.” (emphasis added)).
- **General Condition 22:** The Corps finds that General Condition 22 will help safeguard special aquatic sites such as “designated critical resource waters and adjacent wetlands, which may include high value wetlands”<sup>305</sup> and marine “sanctuaries and refuges.”<sup>306</sup> But general condition 22 only guards against discharges of dredged or fill material “for any activity *within, or directly affecting*, critical resource waters, including wetlands adjacent to such waters.”<sup>307</sup> Therefore, General Condition 22 provides no protection against indirect or secondary impacts stemming from upstream authorized activities.

Finally, as explained below, despite these general conditions, NWP 12 projects have caused more than minimal impacts. The Corps cannot claim that general conditions are a silver bullet when experience shows that they are not.

General conditions are an important tool for limiting the impacts of NWPs as a whole. And the Corps can cite to them in appropriate circumstances when making a minimal-impact finding. But here the Corps has failed to “articulate a rational connection between the facts it found and the choice it made” in violation of the APA and CWA.

E. The Corps arbitrarily and capriciously defers its minimal-cumulative-impact determination to the regional and district level.

As noted above, the Corps may rely on post-issuance mechanisms “in part” to “cement” its minimal-cumulative-effect determination. *See Bulen*, 429 F.3d at 501. But under the CWA and 404(b)(1) guidelines, the Corps still must produce a “*national* decision document that *actually evaluates* the [cumulative] impacts of the proposed activity in light of [the potential post-issuance] conditions.” *Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1366 (emphasis added). This evaluation “must be completed *before* any General permit is issued.” 40 C.F.R. § 230.7(b) (emphasis added). Deferring the statutorily mandated cumulative-impact analysis to the regional or district level is arbitrary and capricious. *Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1366; *Hurst*, 604 F. Supp. 2d at 895, 901 (applying the same analysis in the NEPA and CWA contexts).

Once again, *Hurst* is illustrative. There, the district court found that the Corps’ cumulative-effects determination could be boiled down to four points:

1. NWP 21 (2007) would result in impacts to approximately 320 acres of waters;

---

<sup>304</sup> *Id.* at 59.

<sup>305</sup> *Id.* at 52,

<sup>306</sup> *Id.* at 75.

<sup>307</sup> 85 Fed. Reg. at 57,388.

2. the Corps would require approximately 540 acres of compensatory mitigation to offset those impacts;
3. compensatory mitigation would “attenuate” the cumulative impacts and ensure minimal “net effects on the aquatic environment resulting from activities authorized by this NWP”; and
4. the district and division engineers’ authority to “conduct more detailed assessments for geographic areas that are determined to be potentially subject to more than cumulative adverse effects” would ensure minimal cumulative impacts.

*Hurst*, 604 F. Supp. 2d 887 (internal citation omitted). The court found the Corps’ reliance on mitigation violated both NEPA and the CWA, for reasons explained above. The court also held that the “Corps’ reliance on district and division engineers’ review of cumulative impacts on a regional or watershed basis cannot save the Corps’ analysis.” *Id.* at 895. The Corps’ decision to simply “conduct the analysis on a smaller scale than its proposed activity” at some time in the future meant its cumulative-impact determination was “conclusory” and “unjustified.” *Id.*

Here, the Corps sets the stage for a similar deferral by noting at the outset that “regional variability in aquatic resources and the ecological functions and services they provide presents additional challenges” to performing a “national” cumulative effects analysis.<sup>308</sup> Later, the Corps opines that there are “considerable challenges in characterizing the potential environmental consequences of the issuance of this NWP at a national scale” due to the “wide variability in aquatic resource structure, functions, and dynamics from site to site and from region to region.”<sup>309</sup> For these reasons, the Corps decides that its evaluation of environmental consequences will be a “general” one, while “more robust analyses” can be performed at the “site-specific” and “regional” level.<sup>310</sup>

As in *Hurst*, this “general” cumulative-effects analysis can also be boiled down to four points that apply to each of the permits. Here, NWP 12 is used as an example:

1. NWP 12 would result in impacts to approximately 3,160 acres of jurisdictional waters;<sup>311</sup>
2. The Corps would require approximately 225 acres of compensatory mitigation to offset those impacts;<sup>312</sup>
3. Compensatory mitigation would “reduce” the cumulative impacts and “ensure that the net adverse effects on the aquatic environment are no more than minimal;”<sup>313</sup>
4. The district and division engineers’ authority to “conduct more detailed assessments for geographic areas that are determined to be potentially subject

---

<sup>308</sup> Draft Dec. Doc. NWP 12 at 36.

<sup>309</sup> *Id.* at 43.

<sup>310</sup> *Id.* at 44.

<sup>311</sup> *Id.* at 66.

<sup>312</sup> *Id.* at 66.

<sup>313</sup> *Id.* at 64, 72.



to more than minimal cumulative adverse environmental effects” would ensure minimal impacts.<sup>314</sup>

These four points form functionally the same—if not identical—cumulative-impact determination rejected by the *Hurst* court. Aside from 3,160-acre figure—which, notably, was not calculated by assessing the anticipated cumulative impacts of the newly proposed NWP 12, but rather was derived from two years of past NWP 12 use—the Corps never adds the numerous adverse effects it describes together to assess impacts to the aquatic environment *as a whole*.<sup>315</sup> For example, though the Corps’ 404(b)(1) analysis categories *separately* note that discharges may destroy wildlife habitat, smother or kill animals directly, adversely affect water quality, cause turbidity, lead to oil spills, alter current patterns, modify salinity gradients, impact wildlife refuges and wilderness areas, fragment wetlands, and eliminate riparian vegetation, it never says what all of these impacts mean for organisms when aggregated together.

Though the Corps promises that “[d]ivision and district engineers will conduct [even] more detailed assessments for geographic areas that are determined to be potentially subject to more than minimal cumulative adverse environmental effects,”<sup>316</sup> this cannot save its analysis. By their very nature, “the ‘cumulative impacts’ of a *general* permit cannot be evaluated in the context of a *single* project.” *Wyo. Outdoor Council*, 351 F.Supp.2d at 1243 (emphasis added). Similarly, determining the cumulative effects of a “cluster of activities permitted in a *region* . . . does not provide any information about the cumulative impacts of the *nationwide permit*.” *Hurst*, 604 F. Supp. 2d at 895 (some emphasis added). Therefore, the Corps’ repeated assurance that district or division engineers “will” consider the “cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal” is meaningless.<sup>317</sup> Deferring the cumulative-effects determination to the regional or project level “cannot compensate for the absence of a *nationwide* cumulative impacts determination.” *Hurst*, 604 F. Supp. 2d at 895 (emphasis added). “Faced with incredible diversity in both the environment and the activities permitted under NWP, the Corps effectively threw up its hands and turned the impact analyses over to the district engineers.” *Cf. Coal. to Protect Puget Sound Habitat*, 417 F. Supp. 3d at 1366. The Corps’ failure to assess the impacts of the proposed changes here is arbitrary and capricious and violates the CWA.

---

<sup>314</sup> *Id.* at 37.

<sup>315</sup> The Corps notes in section 7.1.3 of the draft decision document that “after consideration” of the 404(b)(1) factors and “because NWPs can authorize only those activities that result in no more than minimal individual and cumulative adverse environmental effects, the discharges authorized by this NWP will not cause or contribute to significant degradation of waters of the United States.” But this circular and conclusory statement does not at all constitute a valid cumulative-impact analysis or explanation.

<sup>316</sup> *Id.* at 37.

<sup>317</sup> *Id.* at 46.

F. Several specific nationwide permits violate the Clean Water Act.

1. *NWP 12 violates the Clean Water Act.*

- a. Real-world experience demonstrates that NWP 12 will exceed the minimum-effects threshold.

While NWP 12 has existed in some form for decades, using it to construct massive oil and gas pipelines hundreds of miles in length is a relatively recent phenomenon.<sup>318</sup> Yet even short-term data suggests that impacts from NWP 12 pipeline projects are substantial. We note several specific NWP 12 projects below. The direct, indirect, and cumulative effects of these projects *alone* exceed the minimal-effects and significant impacts thresholds under the Clean Water Act and NEPA, respectively. Therefore, NWP 12 as a whole—which authorizes thousands of additional projects every year—will have more-than-minimal impacts.

- **Mountain Valley Project:** The Mountain Valley Pipeline (“MVP”) is an approximately 300-mile, 42-inch diameter natural gas pipeline crossing the Appalachian Mountains from West Virginia into Virginia. Constructing MVP requires NWP 12 authorization for 1,108 waterbody crossings<sup>319</sup> and impacts to 520 separate wetlands.<sup>320</sup> This construction has already caused significant impacts. The West Virginia Department of Environmental Protection (“WVDEP”) has issued at least 46 notices of violation to MVP’s developer, including for violations of state water-quality standards for turbidity.<sup>321</sup> The Virginia Department of Environmental Quality (“VADEQ”) filed suit against Mountain Valley for hundreds of violations of state water-quality requirements.<sup>322</sup> Virginia’s lawsuit specifically implicates NWP 12 through the State’s § 401 certification. Despite the Corps’ repeated assurances in the draft decision document that NWP 12 impacts are kept to a minimum based on the review of district engineers, we are unaware of any action ever taken by the Corps even after MVP’s construction impacts far exceeded what was predicted.
- **WB Xpress:** The WB Xpress Pipeline involved new construction in Virginia and West Virginia of three miles of gas pipeline, replacement of 26 miles of pipeline, erection of two new compressor stations, and modifications and alterations to seven additional compressor stations.<sup>323</sup> Construction required crossing waterbodies 94 times.<sup>324</sup> WB Xpress also received several Notices of Violations from WVDEP.<sup>325</sup> One particularly damaging incident involved the failure of a pump-around dam while completing in-steam

---

<sup>318</sup> See Alexander Arkfield, *Nationwide Permit 12 and Domestic Oil Pipelines: An Nationwide Permit 12 and Domestic Oil Pipelines: An Incompatible Relationship?*, 92 WASH. L. REV. 1991, 2004-2005 (2017) available at <https://digitalcommons.law.uw.edu/cgi/viewcontent.cgi?article=5017&context=wlr>,

<sup>319</sup> MVP FEIS at ES-6.

<sup>320</sup> MVP FEIS at 4-152.

<sup>321</sup> See Attachment No. 170 (compiling notices of violation issued to MVP from WVDEP).

<sup>322</sup> See Attachment No. 169.

<sup>323</sup> See Meghan Betcher et al., *Pipeline Impacts to Water Quality: Documented impacts and recommendations for improvements* (Aug. 2019) available at <https://www.tu.org/wp-content/uploads/2019/10/Pipeline-Water-Quality-Impacts-FINAL-8-21-2019.pdf>.

<sup>324</sup> WB Xpress Project Environmental Assessment at 94 (2017) available at <https://www.ferc.gov/sites/default/files/2020-06/CP16-38-EA.pdf>.

<sup>325</sup> See *supra* Betcher et al., n. 318.

work on the North Fork of the South Branch of the Potomac River. Sediment discharged as a result of the failure was documented 19 miles downstream.<sup>326</sup>

- **Mountaineer Xpress:** The Mountaineer XPress is an approximately 170-mile gas pipeline in West Virginia. Constructing Mountaineer XPress and its attendant facilities necessitated 1,241 waterbody crossings—over seven per mile on average.<sup>327</sup> WVDEP was also forced to initiate an enforcement action against the developers of the Mountaineer XPress for numerous violations of water-quality laws.<sup>328</sup>
- **Rover Pipeline:** The Rover Pipeline is an approximately 510-mile pipeline that crosses Pennsylvania, West Virginia, Ohio, and Michigan. Rover Pipeline construction necessitated 864 waterbody crossings.<sup>329</sup> During construction, Rover accumulated 861 violations of environmental laws including many related to water quality and stream crossings.<sup>330</sup> The State of Ohio sued the developers of the Rover Pipeline for water-quality violations including adverse impacts to wetlands.<sup>331</sup> Failed attempts to cross waterbodies using horizontal directional drilling resulted in numerous discharges of contaminated drilling fluid to streams and wetlands. In April 2017, while attempting to drill beneath the Tuscarawas River in Ohio an estimated two million gallons of drilling fluid contaminated with diesel fuel spilled into a protected wetland, covering it in up to 13 inches of drilling mud.<sup>332</sup> In January 2018, another 150,000 gallons of drilling fluid were discharged while the operator was attempting to complete a separate horizontal direction drill beneath the Tuscarawas River.<sup>333</sup>
- **Atlantic Coast Pipeline:** While never completed, the approximately 600-mile Atlantic Coast Pipeline was also an NWP 12 project that would have crossed West Virginia, Virginia, and North Carolina. Construction of the pipeline called for 1,669 waterbody crossings.<sup>334</sup> Between milepost 57 and 58 the pipeline included *twenty-nine* separate waterbody crossings.<sup>335</sup> Construction of main and lateral lines called for over 100 waterbody crossings in the Nottoway River watershed.<sup>336</sup> The sheer intensity of proposed construction in specific watersheds risked significant impacts particularly when considered cumulatively with other activities. For instance, portions of the Nottoway River watershed have been proposed as critical habitat for the threatened yellow lance

---

<sup>326</sup> See WVDEP Consent Order No. 8943 (Feb. 22, 2019) *available at* <https://dep.wv.gov/pio/Documents/Columbia%20Gas%20Transmission%20LLC%20REVISED%20SIGNED%20ORDER%20NO.%208943.pdf>.

<sup>327</sup> Mountaineer Xpress Final Environmental Impact Statement at 4-52 *available at* <https://www.ferc.gov/sites/default/files/2020-05/FEISvolume-I.pdf>.

<sup>328</sup> See WVDEP Consent Order No. 8889 (Oct. 2, 2018) *available at* <https://www.documentcloud.org/documents/5277507-MXP-Draft-Consent-Order.html>.

<sup>329</sup> Rover Pipeline Final Environmental Impact Statement at ES-4 *available at* <https://www.ferc.gov/sites/default/files/2020-05/impact-statement.pdf>.

<sup>330</sup> See *supra* Betcher et al., n. 318.

<sup>331</sup> See Robert Walton, Ohio sues Rover Pipeline developer over alleged water pollution, UTILITY DIVE, *available at* <https://www.utilitydive.com/news/ohio-sues-rover-pipeline-developer-over-alleged-water-pollution/510217/>.

<sup>332</sup> See *supra* Betcher et al., n. 318.

<sup>333</sup> See *supra* Betcher et al., n. 318.

<sup>334</sup> Atlantic Coast Pipeline Final Environmental Impact Statement (“ACP FEIS”) at ES-9 *available at* [https://www.ferc.gov/sites/default/files/2020-05/volume-I\\_9.pdf](https://www.ferc.gov/sites/default/files/2020-05/volume-I_9.pdf).

<sup>335</sup> See Environmental Resources Management, Atlantic Coast Pipeline Wetland and Waterbody Survey Report 2 at 16–17 (2017).

<sup>336</sup> See ACP FEIS, App’x K.

mussel.<sup>337</sup> The proposed critical habitat designation notes specifically that “threats to this [critical habitat unit] *include oil and gas pipeline projects.*” *Id.* (emphasis added). Even without the Atlantic Coast Pipeline, other pipelines in this watershed are already having a significant effect on water quality and protected species.

- **Southgate Project:** Finally, construction has not commenced on the 75-mile MVP Southgate Pipeline in Virginia and North Carolina but its construction calls for 224 waterbody crossings.<sup>338</sup> Impacts associated with that pipeline were sufficiently worrisome for the State of North Carolina to deny § 401 water-quality certification for the project.<sup>339</sup>

The Corps is aware that these projects cumulatively affect the environment. The EIS for the Atlantic Coast Pipeline established that the MVP, WB XPress, Mountaineer XPress, and Rover Pipelines—not to mention other non-Corps projects—risk cumulative impacts to water resources in combination with the Atlantic Coast Pipeline.<sup>340</sup> The FEIS noted specifically the possibility of “*cumulative* impacts on waterbodies and fisheries from sedimentation and turbidity, habitat alteration, streambank erosion, fuel and chemical spills, water depletions, entrainment or entrapment due to water withdrawals or *construction crossing operations, and blasting.*”<sup>341</sup> Construction crossing operations and blasting are only possible with a permit from the Corps.

As these examples illustrate, NWP 12 projects are already *having* a significant effect on the environment. Yet, in spite of this abundant evidence of significant impacts, we are unaware of the Corps ever taking any action to revisit its NWP 12 verifications for these projects (unless required by court order) to ensure that project impacts traceable to the Corps’ permit are kept below the minimum-impact threshold. This casts serious doubt on the Corps’ assertion that it acts to minimize impacts after issuance and verification of NWP 12. To comply with the CWA and NEPA, the Corps must explain how it can determine that the NWP 12 program does not risk significant effects to the human environment in light of its past experiences with permitting gas and oil pipelines under the nationwide program.

- b. The Corps’ own decision document suggests that NWP 12 will have more-than-minimal environmental effects

In case there was any doubt that NWP 12 will continue to have significant environmental effects based on its checkered history, the Corps also finds that use of NWP 12 may result in *numerous* detrimental environmental impacts. Specifically, the Corps notes that activities authorized by NWP 12 may cause:

---

<sup>337</sup> See Proposed Critical Habitat Designation, 85 Fed. Reg. 6,856, 6,863 (Feb. 6, 2020).

<sup>338</sup> MVP Southgate Final Environmental Impact Statement at 4-86 *available at* <http://www.mvpsouthgate.com/wp-content/uploads/2020/02/MVP-Southgate-FEIS-02142020.pdf>. Where the Corps was a cooperating agency for NEPA purposes on a project, we provide copies of relevant NEPA documents by hyperlink. The documents are incorporated as attachments to this letter. Please let us know if you would like us to provide individual copies electronically or otherwise.

<sup>339</sup> See Letter from Daniel Smith, NC DEQ, to Kathy Salvador, MVP (Aug. 11, 2020) *available at* <https://files.nc.gov/ncdeq/pipelines/2018-1638v3-MVP-Southgate---Rockingham-Alamance---Denial.pdf>.

<sup>340</sup> ACP FEIS at 4-598-599.

<sup>341</sup> ACP FEIS at 6-610 (emphasis added).

- Permanent or temporary impacts to 3,160 acres of jurisdictional waters.<sup>342</sup>
- Alteration to the “physical, chemical, and biological characteristics of the substrate” of waters of the United States.<sup>343</sup>
- Temporary increases in turbidity.<sup>344</sup>
- Impacts to “water clarity, chemical content, dissolved gas concentrations, pH, and temperature” that may “affect the species and quantities of organisms inhabiting the aquatic area.”<sup>345</sup>
- Adverse effects to the “movement of water in the aquatic environment.”<sup>346</sup> Activities that alter the riparian zone may also affect “stream flow, flooding patterns, and surface and groundwater hydrology,” which in turn may “adversely affect populations of fish and other aquatic animals.”<sup>347</sup>
- Adverse effects to “salinity gradients.”<sup>348</sup>
- The destruction or smothering of “[s]essile or slow-moving animals in the path of discharges.”<sup>349</sup>
- The “destruction of aquatic habitat, including breeding and nesting areas, escape cover, travel corridors, and preferred food sources” for “resident and transient mammals, birds, reptiles, and amphibians” alike.<sup>350</sup>
- Permanent losses of wetland and the conversion of forested wetlands to scrub-shrub wetlands.<sup>351</sup>
- Temporary or permanent adverse impacts to mud flats—including the destruction of mud flats or the conversion of mud flats to “another habitat type”—and vegetated shallows.<sup>352</sup>
- Permanent or temporary impacts to coral reefs and riffle-and-pool complexes.<sup>353</sup>
- Adverse effects to “waters of the United States that act as habitat for populations of economically important fish and shellfish species.”<sup>354</sup>
- Adverse effects to both “surface water and groundwater supplies” via the addition of “variety of pollutants” to those waters.<sup>355</sup>
- Elimination of “bird watching, hunting, and fishing” in discharge areas.<sup>356</sup>

---

<sup>342</sup> Draft Dec. Doc. NWP 12 at 65.

<sup>343</sup> *Id.* at 72–73.

<sup>344</sup> *Id.* at 73.

<sup>345</sup> *Id.*

<sup>346</sup> *Id.* at 73.

<sup>347</sup> *Id.* at 74.

<sup>348</sup> *Id.*

<sup>349</sup> *Id.*

<sup>350</sup> *Id.* at 75.

<sup>351</sup> *Id.* at 75–76.

<sup>352</sup> *Id.* at 76.

<sup>353</sup> *Id.*

<sup>354</sup> *Id.* at 77.

<sup>355</sup> *Id.* at 55–56.

Even a cursory review of the effects of NWP 12 demonstrates that the destruction of thousands of acres of jurisdictional waters is a significant environmental impact. These impacts, together with the adverse effects on wildlife, forested wetlands, water quality, and irreplaceable aquatic habitats from this NWP, amply demonstrate that the Corps' finding of minimal impact is arbitrary and capricious and violates the CWA. The Corps failed to adequately analyze the secondary effects of NWP 12.

EPA's 404(b)(1) guidelines require the Corps to analyze a general permit's "potential individual and cumulative impacts" by—among other things—making a "documented" finding for each factual determination listed at 40 C.F.R. § 230.11, including the NWP's "secondary effects on the aquatic ecosystem." *Id.* § 230.11(h). 40 C.F.R. § 230.7(b)(1). The guidelines define "secondary effects as "effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material." *Id.* § 230.11(h)(1). To clarify, the guidelines provide several examples of secondary effects, including "fluctuating water levels in an impoundment and downstream associated with the operation of a dam, septic tank leaching and surface runoff from residential or commercial developments on fill, and leachate and runoff from a sanitary landfill located in waters of the U.S." *Id.* § 230.11(h)(2). The guidelines also warn that "[a]ctivities to be conducted on fast land created by the discharge of dredged or fill material in waters of the United States may have secondary impacts within those waters which should be considered in evaluating the impact of creating those fast lands." *Id.* Evaluations like these cannot be pushed to the project level: "[i]nformation about secondary effects on aquatic ecosystems *shall be considered prior to the time final section 404 action is taken* by permitting authorities." *Id.* (emphasis added).

Here, however, the Corps repeatedly invokes the bounds of its own jurisdiction to avoid analyzing secondary and indirect effects of NWP 12. For example:

- **Spills and Leaks:** Though the Corps acknowledges "the oil, natural gas, or petrochemical substances carried by [NWP 12–authorized] pipelines may leak into surrounding areas," it declines to fully assess<sup>357</sup> the potential impacts. For instance, while the Corps notes that "a variety" of pollutants may be "discharged through spills and other accidents," it finds it does "not have the authority to regulate operations and maintenance activities" that do not involve dredge or fill activities.<sup>358</sup> Instead, the Corps points to EPA, FERC, and DOT as examples of federal agencies that have the responsibility for addressing oil spills and natural gas leaks.<sup>359</sup> But notably, the Corps has acknowledged that spills and leaks are a secondary effect of pipeline construction. *See Kunaknana v. U.S. Army Corps of Engineers*, No. 3:13-CV-00044-SLG, 2015 WL 3397150, at \*14 (D. Alaska May 26, 2015) ("The Corps responds that oil spills from a pipeline are secondary effects under the Section 404(b)(1) Guidelines").

---

<sup>356</sup> *Id.* at 55.

<sup>357</sup> At one point, the Corps acknowledges that "[I]leaks from oil or natural gas pipelines or their substations may alter conservation values in the vicinity of the oil or natural gas pipeline," without specifying how. Draft Dec. Doc. 12 at 49. At another point, the Corps notes that "[s]pills from oil pipelines may alter aesthetics in the vicinity of the pipeline," without explaining what that means. *Id.* at 49.

<sup>358</sup> *Id.* at 50–51.

<sup>359</sup> *Id.* at 50.

- **Frac-outs:** While the Corps recognizes that frac-outs—the “inadvertent return of drilling fluids” during horizontal directional drilling—“may contribute to cumulative adverse environmental effects” to the environment, it forgoes further analysis because they are “not discharges of dredged or fill material” regulated under Section 404.<sup>360</sup>
- **Development:** The Corps acknowledges that the “installation of oil or natural gas pipelines may induce more development in the vicinity of the project” but declines to scrutinize how that development might impact the aquatic environment because “the primary responsibility for land use decisions is held by state, local, and tribal governments.”<sup>361</sup>
- **Impacts from Upland Pipeline Construction:** While acknowledging that “activities in uplands have indirect effects on aquatic ecosystems,”<sup>362</sup> including upland pipeline construction, the Corps limits its analysis to “effects that are likely to be caused by the activities authorized by this NWP under the Corps’ permitting authorities (i.e., structures or work in navigable waters regulated under Section 10 of the Rivers and Harbors Act of 1899 and/or discharges of dredged or fill material into waters of the United States regulated under Section 404 of the Clean Water Act).”<sup>363</sup>

However, EPA’s definition of “secondary effects” places no jurisdictional limit on what effects must be considered. Instead the 404(b)(1) guidelines broadly require all effects “associated with a discharge of dredged or fill materials” to be analyzed. 40 C.F.R. § 230.11(h)(1) (emphasis added). Insofar as the Corps believes that recent changes to NEPA’s CEQ regulations prevent the Corps from analyzing secondary effects regulated by other entities,<sup>364</sup> it is in error because secondary effects are foreseeable with a reasonably close causal relationship to the Corps’ permit. *See* 40 C.F.R. § 1508.1(g) (defining effects for NEPA purposes). Regardless, no similar revisions were made to EPA’s 404(b)(1) guidelines which independently require consideration of secondary effects. *See* 40 C.F.R. § 230.11.

Notably, the Corps does not hesitate to analyze the *beneficial* secondary effects of NWP 12—even those that it lacks jurisdiction to control. Specifically, the Corps notes that oil and natural pipeline construction activities “will generate jobs and revenue for local contractors as well as revenue to building supply companies that sell construction materials.”<sup>365</sup> In addition, “[o]il or natural gas pipelines provide energy to residences and schools, as well as factories, offices, stores, and other places of business, to allow those facilities to operate.”<sup>366</sup> Finally, pipelines “transport oil to processing plants where the oil can be transformed into a variety of products, such as plastics, that are used for a wide variety of purposes.”<sup>367</sup> Though the Corps also lacks the “authority to regulate” job creation, energy production, and petrochemical synthesis, it does not claim a similar jurisdictional bar prevents it from discussing these beneficial secondary effects.

---

<sup>360</sup> *Id.* at 49–50.

<sup>361</sup> *Id.* at 54 (noting the “Corps [sic] scope of review with respect to land use is limited to significant issues of overriding national importance, such as navigation and water quality”).

<sup>362</sup> *Id.* at 9.

<sup>363</sup> *Id.* at 38–39.

<sup>364</sup> *See id.* at 38 (explaining recent amendments made to NEPA regulations).

<sup>365</sup> *Id.* at 49.

<sup>366</sup> *Id.* at 49.

<sup>367</sup> *Id.* at 49.

The plain language of the 404(b)(1) guidelines commands the Corps to account for all “associated” secondary effects. The Corps cannot arbitrarily invoke a jurisdictional bar to avoid analyzing *detrimental* secondary effects, only to remove the bar when it comes time to account for *beneficial* effects. The Corps’ consequent failure to fully analyze secondary effects, including oil spills or gas leaks, frac-outs, and upland development, among others, is therefore arbitrary and capricious and violates the CWA. *Cf. Riverside Irr. Dist. v. Andrews*, 758 F.2d 508, 512–13 (10th Cir. 1985) (holding that permitting the Corps “to ignore the indirect effects that result from its actions would . . . [allow] it to wear blinders that Congress has not chosen to impose”).

c. The Corps unlawfully piecemeals linear projects.

The Corps’ NWP program is ostensibly designed to prohibit the “piecemealing” of large projects. To that end, the Corps generally prohibits NWPs from being used more than once on a “single and complete project.” *See* 33 C.F.R. § 330.6(c) (providing that “the same NWP cannot be used more than once for a single and complete project”).<sup>368</sup> Limiting the number of times a NWP may be used prevents permittees from arbitrarily breaking up bigger projects into smaller ones to evade individual permit review. *Cf. Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014) (holding an agency violates NEPA “when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration”). Whether these and other anti-piecemealing safeguards actually kick in, however, depends on the Corps’ arbitrary treatment of “linear” projects in comparison with “non-linear” projects for “single and complete” project purposes.

A “single and complete” non-linear project is defined by the Corps as “the *total* project proposed or accomplished by one owner/developer or partnership or other association of owners/developers.”<sup>369</sup> To ensure that this definition is not twisted to allow “piecemeal[ing],” non-linear projects “must” also have “independent utility” to qualify as a single and complete project.<sup>370</sup> Phases of a non-linear project have independent utility if they “would be constructed even if the other phases were not built.”<sup>371</sup> Thus, non-linear projects may *only* be segmented when their constituent phases are essentially stand-alone projects.

Linear projects, on the other hand, can be piecemealed ad infinitum. The Corps defines a “single and complete” linear project<sup>372</sup> as

That portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at *separate and distant* locations, *each crossing is considered a single and complete project* for purposes of NWP authorization.<sup>373</sup>

---

<sup>368</sup> 85 Fed. Reg. at 57,386 (General Condition 15) (also providing that the “same NWP cannot be used more than once for the same single and complete project”).

<sup>369</sup> *Id.* at 57,394 (citing 33 C.F.R. 330.2(i)) (emphasis added).

<sup>370</sup> *Id.* at 57,394.

<sup>371</sup> *Id.* at 57,393.

<sup>372</sup> In this context, “linear project” means a “project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point.” *Id.* at 57,394.

<sup>373</sup> *Id.* at 57,394 (citing 33 C.F.R. 330.2(i)) (emphasis added).



In effect, this definition allows large-scale pipeline projects to use NWP 12 an unlimited number of times, so long as the half-acre threshold is not exceeded at any one “separate and distant” crossing.

No similar “independent utility” requirement polices this apparently limitless piecemealing. Previously, the Corps has explained that the “concept of independent utility does not apply” to linear projects “because the crossings of waters of the United States between the point of origin of a linear project and its terminal point *are necessary for the linear project to fulfill its purpose.*”<sup>374</sup> Phrased slightly differently, “because *each separate and distant crossing* of waters of the United States *is necessary* to transport people, goods, or services from the point of origin to the terminal point,” each of those crossings lacks independent utility.<sup>375</sup> In effect, the Corps is saying that it does not apply an independent-utility requirement to single-and-complete linear projects because segments of a linear project *cannot have* independent utility.

This approach makes no sense. If avoiding piecemealing is the goal—and the Corps maintains it is—the Corps should (1) forbid NWPs from being used more than once on the same project.<sup>376</sup> It does—but *only for non-linear projects*. If it wants to carve out a minor exception for project portions that can stand alone—since those projects are theoretically not being “piecemealed”—it should (2) require independent utility. It does—but *only for non-linear projects*. When it comes to linear projects, it turns these principles on their head and designs a regime that (1) allows NWP 12 to be used an unlimited number of times on the same overall project; and (2) forbids a consideration of independent utility, as a linear-project segment can never have independent utility, which interferes with (1). This divergent treatment of linear projects is arbitrary, capricious, and violates the Clean Water Act.

It also has real-world consequences. The ad infinitum piecemealing of linear projects turns acreage thresholds intended to keep impacts to a minimum into a fiction. Pipeline developers are free to impact as many acres of jurisdictional waters as they wish, so long as they do not impact more than a half-acre at any one crossing. As a result, projects that collectively destroy dozens or hundreds of acres of wetlands and waters may receive less scrutiny than a project with a single waterbody crossing that fills 0.51 acres of jurisdictional waters in total. Despite the Corps’ characterization, the impairment of U.S. waters by a thousand half-acre cuts is still impairment.

The Corps has presented a few arguments in support of linear/non-linear project dichotomy.<sup>377</sup> All boil down to the same point: the impacts of linear projects are “scattered throughout a large landscape,”—*i.e.*, they are “separate and distant” —while non-linear projects’ effects are usually concentrated in or near a “single waterbody.”<sup>378</sup> “[B]ecause *all* of the authorized impacts will occur in or near that waterbody,” non-linear projects “may have a larger incremental contribution to the cumulative impacts” for those particular waterbodies.<sup>379</sup>

---

<sup>374</sup> Issuance and Reissuance of Nationwide Permits, 82 Fed. Reg. 1,860, 1976 (Jan. 6, 2017) (emphasis added).

<sup>375</sup> *Id.* at 1951 (emphasis added).

<sup>376</sup> As discussed more below, for NWP 12 this might involve multiple, separate discharges so long as those discharges collectively did not exceed the half-acre threshold.

<sup>377</sup> *See* 82 Fed. Reg. at 1,975.

<sup>378</sup> *Id.*

<sup>379</sup> *Id.* (emphasis added).

This also makes no sense. Just because “all” of the impacts for a non-linear project may be in the same watershed does not mean those impacts are “larger” than those stemming from long-distance pipeline cutting across that watershed. A residential development consisting of just one home, for example, will probably have less impact than a 36-inch oil pipeline with a fifty-foot-wide permanent right-of-way. Conversely, just because a linear project may impact a “large number [of] different waterbodies” does not mean that “the incremental contribution of a linear project crossing of a waterbody to the cumulative impacts for that particular waterbody is small.”<sup>380</sup> The Gulf Coast Pipeline, for example, required 2,227 water crossings spread across two states.<sup>381</sup> But in Texas’ Pine Island Bayou alone, the pipeline’s “separate and distant” crossings resulted in the permanent clearing of 72 acres of forested wetlands—over 3 million square feet.<sup>382</sup> *Id.*

Application of the “separate and distant” requirement has been ineffective, in part, because the Corps refuses to define the phrase. Instead, it has repeatedly punted the interpretation of this standard to its district engineers, finding that it “cannot establish thresholds at a national level because ‘separate and distant’ depends on a variety of factors and is best determined on a case-by-case basis.”<sup>383</sup> But there is no requirement that district or regional engineers come up with a local standard, or apply “separate and distant” in a consistent manner.<sup>384</sup> In practice, this undefined term is arbitrarily and inconsistently applied at best or not applied at all. A handful of examples prove the point:

- **Gulf Coast Pipeline:** this 485-mile-long pipeline “required the Corps to issue 2,227 permits for water crossings,” meaning that it crossed jurisdictional waters “almost *five* times in each mile, or about once every 1,150 feet.” *Sierra Club, Inc. v. Bostick*, 539 F. App’x 885, 898 (10th Cir. 2013) (Martinez, J., dissenting from denial of preliminary injunction) (emphasis added). Yet the Corps never made a “separate and distant” determination for any of the water crossings authorized by NWP 12.<sup>385</sup>
- **Keystone XL:** this 1,209-mile pipeline is slated to pass through one unnamed waterbody *six* times in the span of a mile in Montana; Narcelle Creek *eight* times within one mile in South Dakota; and crossed *thirteen* waterways in a single mile in Nebraska.<sup>386</sup> But the

---

<sup>380</sup> *Id.* (emphasis added).

<sup>381</sup> Sierra Club et. al, Comments on the U.S. Army Corps of Engineers’ Proposal to Reissue and Modify Nationwide Permit 12, Docket No. COE-2015-0017 at 14 (Aug. 1, 2016).

<sup>382</sup> Insofar as the Corps is suggesting that these impacts are “incremental” because the “sum of the authorized impacts” must be divided by the large number of “various waterbodies crossed by that linear project,” it is mistaken. *Id.* Assessing impacts to a single watershed is not a matter of averages or long division. And even if it was, because NWP effectively allows for *unlimited* impacts, the size of the denominator—the number of crossings—does not guarantee the “small” and “incremental” effects the Corps seems to assume it will.

<sup>383</sup> *Id.* at 1978; see also Final Rule for Nationwide Permit Program Regulations and Issue, Reissue, and Modify Nationwide Permits, 56 Fed. Reg. 59,110, 59,113–14 (Nov. 22, 1991) (“We do not agree with the practicability of defining “‘distant locations.’”). These impossible-to-resolve factors include: “topography, local hydrology, the distribution of waters and wetlands in the landscape, geology, soils,” and other appropriate “landscape factors.” 82 Fed. Reg. at 1,888.

<sup>384</sup> See 82 Fed. Reg. at 1,888 (“Corps districts *may* establish local guidelines for identifying ‘separate and distant’ crossings.” (emphasis added)).

<sup>385</sup> Sierra Club et. al, Comments on the U.S. Army Corps of Engineers’ Proposal to Reissue and Modify Nationwide Permit 12, Docket No. COE-2015-0017 at 14 (Aug. 1, 2016).

<sup>386</sup> Sierra Club et. al, Comments on the U.S. Army Corps of Engineers’ Proposal to Reissue and Modify Nationwide Permit 12, Docket No. COE-2015-0017 at 14 (Aug. 1, 2016).

Corps never made a “separate and distant” finding for any of the pipeline’s 688 crossings.<sup>387</sup>

- **Atlantic Coast Pipeline:** though this 604.4-mile pipeline was later cancelled, it received NWP 12 verification letters that would have allowed it to cross 1,669 waterbodies.<sup>388</sup> These letters made no explicit “separate and distant” finding for these crossings.<sup>389</sup> Yet in some places, the project would have had *twenty-nine* waterbody crossings per mile—an average of about one crossing every 180 feet.<sup>390</sup>
- **Mountain Valley Pipeline:** this project was recently reauthorized to cross 1,108 waterbodies across two states, including 407 perennial waterbodies that could support fisheries.<sup>391</sup> For example, the Corps permitted crossings of the Little Kanahwa River—a major waterbody over 120 feet wide that could provide habitat for the federally endangered snuffbox mussel—*five* times along a one-mile stretch.<sup>392</sup> However, verification letters for the NWP made only one summary “separate and distant” determination for the project’s 1,108 water crossings.<sup>393</sup>
- **WB XPress:** this 29.3-mile pipeline project received NWP 12 authorization to cross 94 waterbodies—an average of more than *three* crossings per mile.<sup>394</sup> Newly laid pipeline crossed unnamed tributaries to Cub Run *five* times in 3/10 of a mile—an average of one crossing every 317 feet—while replacement lines crossed Seneca Creek and its unnamed tributaries *seven* times in one mile.<sup>395</sup>

The Corps cannot rely on a meaningless, undefined, and unenforced phrase to explain its disparate treatment of non-linear and linear projects. Insofar as the Corps is suggesting that its current practice—which allows for as many as five, eight, thirteen, and even *twenty-nine* crossings per mile—comports with any reasonable construction of “separate and distant,” it is mistaken. How the Corps can say this phrase will help ensure minimal cumulative impacts—*when it does not know what it means and does not appear to care how it is applied*—is similarly hard to fathom.

The Corps could fix all of this by amending the definition of “single and complete project” to reflect what anyone with common sense would think it means: the *total* linear

---

<sup>387</sup> *Id.* at 46–47.

<sup>388</sup> *See, e.g.*, U.S. Army Corps of Engineers Norfolk District, Atlantic Coast Pipeline Nationwide Permit 12 Verification Letter (Feb. 9, 2018).

<sup>389</sup> *See id.*

<sup>390</sup> *See* Environmental Resources Management, Atlantic Coast Pipeline Wetland and Waterbody Survey Report 2 at 16–17 (2017).

<sup>391</sup> MVP FEIS at ES-6.

<sup>392</sup> *Id.* at App’x F1-25 to 26.

<sup>393</sup> *See, e.g.*, U.S. Army Corps of Engineers Huntington District, Mountain Valley Project Nationwide Permit No. 12 Verification (Dec. 22, 2017) (“Based on the provided information, it has been determined the discharge of dredged and/or fill material into waters of the U.S. at 591 *separate and distant* locations in conjunction with the utility line project meets the criteria for Nationwide Permit (NWP) #12.” (emphasis added)) *available at* <http://www.mountainvalleypipeline.info/wp-content/uploads/2019/04/Huntington-NWP-12-verification.pdf>.

<sup>394</sup> WB XPress Project Environmental Assessment at 94 (2017) *available at* <https://www.ferc.gov/sites/default/files/2020-06/CP16-38-EA.pdf>.

<sup>395</sup> *Id.* at App’x E.

project.<sup>396</sup> Or the Corps could require independent utility of all projects, with a small caveat for individual linear projects that are truly “separate and distant,” such as water crossings located in different watersheds or separated by several miles.

The current illogical regime, however, is arbitrary and capricious and violates the CWA and APA for several reasons: (i) it allows for the effectively unbounded piecemealing of linear pipeline projects; (ii) it inconsistently applies the concept of independent utility to non-linear but not linear projects without a reasoned basis; and (iii) it relies on a toothless and undefined standard as support for its inconsistent behavior.

d. The changes to the NWP 12 PCN requirements violate the Clean Water Act.

NWP 12, like all NWPs, is designed so that permittees generally “may proceed with activities authorized by NWPs without notifying the [Corps]” at all. 33 C.F.R. § 330.1(e). However, in certain situations, the prospective permittee must submit a pre-construction notice (“PCN”) to the appropriate Corps district engineer. *Id.* If a PCN is required, the prospective permittee generally may not commence the activity until either: (i) the district engineer verifies that the activity complies with the terms and conditions of the NWP; or (ii) the district engineer fails to respond within 45 days of receiving the notification. *Id.* §§ 330.1(e), 330.6(a).

As the use of NWP 12 has expanded over time, the Corps has gradually added PCN triggers. When NWP 12 was first issued in 1977 no PCN requirements existed.<sup>397</sup> In 1996, four PCN requirements were added;<sup>398</sup> in 2000, another three PCN triggers were created.<sup>399</sup> All seven PCN triggers survived, in some form, up through the most recent reissuance in 2017.

Now, however, the Corps is proposing to eliminate five of the PCN requirements. Though the Corps is not proscribed from changing or eliminating these requirements, it must provide a “reasoned explanation” for doing so. *Cf. F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). Ordinarily, this requires that the Corps: (1) display “awareness that it is changing position,” (2) show that “the new policy is permissible under the statute,” (3) provide “good reasons” for the new policy, and (4) believe the new policy is “better” than the old one. *Id.* at 515–16. Although the “reasons” for the new policy need not be “better than the reasons for the old one,” if a “new policy rests upon factual findings that contradict those which underlay [an agency’s] prior policy,” the agency “must” provide a “more detailed explanation” for “disregarding facts and circumstances that underlay or were engendered by the prior policy.” *Id.*

Here, the Corps’ elimination of five of the seven PCN requirements—especially the forested wetlands PCN—is arbitrary and capricious. The Corps’ decision to add a PCN requirement for new pipeline construction exceeding 250 miles in length, though a step in the right direction, should be broadened to capture all new pipelines. Even that, however, is not enough to make NWP 12 legal.

---

<sup>396</sup> The Corps’ application of the “single and complete project” criteria to linear projects is so far afield that it is oxymoronic. How can a single “separate and distant” crossing that is part of a linear project be a “complete project” if that individual crossing has no independent utility?

<sup>397</sup> Regulatory Programs of the Corps of Engineers, 42 Fed. Reg. 37,122, 37,146 (July 19, 1977).

<sup>398</sup> Final Notice of Issuance, Reissuance, and Modification of Nationwide Permits, 61 Fed. Reg. 65,874, 65,915 (Dec. 13, 1996)

<sup>399</sup> Final Notice of Issuance and Modification of Nationwide Permits, 65 Fed. Reg. 12,818, 12,887–88 (Mar. 9, 2000)

i. The Corps' reasons for eliminating five PCNs are contradictory and contrived.

The Corps suggests that eliminating five PCN requirements for NWP 12 will result in several benefits. First, it will “simplify the notification requirements of this NWP and reduce burdens on the regulated public.”<sup>400</sup> Second, it will allow district engineers to focus their review efforts on the remaining PCN thresholds, all of which “involve regulated activities that have a more substantive potential result in more than minimal adverse environmental effects.”<sup>401</sup> And third, it will “eliminate redundancy,” as “there have been requirements added to NWP 12 that address the adverse environmental impacts that the[se five] PCN thresholds were trying to address.”<sup>402</sup> Each of these rationales is either unjustified or directly contradicted by previous findings.

First, as to the “burdens on the regulated public,” to some extent, any elimination of regulatory requirements “simplifies” the regulatory regime and “reduces” the regulated public’s compliance costs. But this fact alone cannot justify eliminating those burdens—if that were the case, the Corps could justify eliminating large swaths of its CWA regulatory program by noting it would “simplify” regulatory requirements and “reduce burdens” on the regulated public. The CWA and APA demand more.

Second, the Corps provides no support for its claim that the three PCN requirements it proposes keeping “have a more substantive potential” to result in more-than-minimal environmental effects than those PCNs it proposes discarding. The Corps provides no analysis, and it cites no statistics or primary or secondary literature. It does not conduct any side-by-side comparison. Neither does the Corps invoke its institutional experience responding to PCN verification requests. To the extent the Corps is suggesting that these PCN triggers have never had the potential to result in significant environmental harm, it is directly contradicting its previous findings without explanation.<sup>403</sup>

Third, the Corps’ determination that its proposed changes will “eliminate redundancy” is arbitrary, capricious, and directly counter to the Corps’ previous findings. In effect, the Corps claims that three NWP 12 provisions added “[s]ince these PCN thresholds were adopted” make the five targeted PCNs obsolete.<sup>404</sup> These provisions are: (i) a requirement that temporary fills be returned to pre-construction elevations and revegetated as appropriate; (ii) another requirement mandating the backfilling of trenches; and (iii) a PCN trigger for activities that will result in the loss of more than 1/10 of an acre of jurisdictional waters.<sup>405</sup>

To start, the Corps is wrong to suggest these provisions are recent additions. The return-to-preconstruction-elevations provision has existed in some form since NWP 12 was created in 1977—long before PCNs were ever implemented.<sup>406</sup> The backfill provision was largely crafted

---

<sup>400</sup> 85 Fed. Reg. at 57,324.

<sup>401</sup> *Id.* at 57,324.

<sup>402</sup> *Id.* at 57,324.

<sup>403</sup> See Reissuance of Nationwide Permits, 72 Fed. Reg. 11,092, 11,106 (Mar. 12, 2007) (finding all five PCNs proposed for elimination address “utility line activities that have the potential to result in *more than minimal* adverse effects on the aquatic environment” (emphasis added)).

<sup>404</sup> 85 Fed. Reg. at 57,324.

<sup>405</sup> See *id.* at 57,325–27.

<sup>406</sup> See Regulatory Programs of the Corps of Engineers, 42 Fed. Reg. 37,122, 37,146 (July 19, 1977) (prohibiting the “change in pre-construction bottom contours”); see also, e.g., Final Notice of Issuance and Modification of

in 1991—also before any PCN triggers were added.<sup>407</sup> This means the Corps previously found it necessary to layer PCN triggers *on top* of these provisions in spite of the “protections” they offered.

The Corps had two reasons for doing so. First, the Corps was acutely aware that the PCN activities had “the potential to result in *more than minimal* adverse effects on the aquatic environment.”<sup>408</sup> Second, it believed that *the Corps’* “critical[] evaluat[ion]” of the PCNs was necessary “to ensure that only minimal adverse effects will occur.”<sup>409</sup>

For these reasons, the Corps spent the next two decades rejecting suggestions to eliminate any of its seven PCN triggers. For example, in 2002, the Corps found it was neither “necessary [n]or appropriate” to alter its threshold requirements.<sup>410</sup> Five years later, the Corps proposed eliminating the very same five PCN thresholds it proposes eliminating today, citing a similar redundancy rationale.<sup>411</sup> In its final rule, however, the Corps decided to “restor[e] the pre-construction notification thresholds that were in the NWP 12 issued in 2002, so that district engineers will be able to conduct case-by-case review for certain utility line activities that have the potential to result in more than minimal adverse effects on the aquatic environment.”<sup>412</sup>

In 2012, the Corps expressly found that “all of the current pre-construction notification thresholds are necessary” because of the “variety of utility line activities authorized by NWP 12” and the need for district engineers “to review those [various] activities to determine whether they will result in minimal adverse effects on the aquatic environment.”<sup>413</sup> Finally, just three years ago, the Corps decided not to make “any changes” to the PCN thresholds because “the current PCN thresholds have been effective in identifying proposed NWP 12 activities that should be reviewed by district engineers on a case-by-case basis to ensure that they result in only minimal individual and cumulative adverse environmental effects.”<sup>414</sup> In making this determination, the Corps specifically declined to simplify the PCN thresholds to a “single PCN threshold for the loss of greater than 1/10-acre of waters of the United States.”<sup>415</sup>

The Corps does not acknowledge these previous findings. It does not mention that it considered a nearly identical elimination proposal in 2007 and rejected it. It does not explain why its 2012 finding that “all” of the thresholds “are necessary” to adequately review the wide variety of activities authorized by NWP 12 no longer applies. Most glaringly, it does not explain

---

Nationwide Permits, 65 Fed. Reg. 12,818, 12,887 (Mar. 9, 2000) (authorizing the “construction, maintenance, or repair of utility lines . . . provided there is no change in preconstruction contours”).

<sup>407</sup> See 56 Fed. Reg. at 59,142 (permitting sidecasting for up to 180 days, requiring that “the top 6” to 12” of the trench should generally be backfilled with topsoil from the trench,” and mandating that “[a]ny exposed slopes and streambanks must be stabilized immediately upon completion of the utility line”); 65 Fed. Reg. at 12,887 (adding a requirement that a “trench cannot be constructed in such a manner as to drain waters of the United States”).

<sup>408</sup> 72 Fed. Reg. at 11,106 (emphasis added).

<sup>409</sup> Final Rule for Nationwide Permit Program Regulations and Issue, Reissue, and Modify Nationwide Permits, 61 Fed. Reg. 65,874, 65,884 (Dec. 13, 1996) (emphasis added).

<sup>410</sup> Issuance of Nationwide Permits, 67 Fed. Reg. 2020, 2033 (Jan. 15, 2002) (finding the “current PCN requirements continue to be the appropriate criteria for determining when a PCN is required”).

<sup>411</sup> Proposal to Reissue and Modify Nationwide Permits, 71 Fed. Reg. 56,258, 56,261 (Sept. 26, 2006) (noting that the “1/10 acre PCN threshold will normally capture the activities addressed by the PCN thresholds we are proposing to remove”).

<sup>412</sup> 72 Fed. Reg. at 11,106.

<sup>413</sup> Reissuance of Nationwide Permits, 77 Fed. Reg. 10,184, 10,196–97 (Feb. 21, 2012).

<sup>414</sup> 82 Fed. Reg. at 1,888.

<sup>415</sup> *Id*

why *only three years ago* it made a directly contradictory finding, in which it retained all seven PCN triggers to “ensure” projects will only have minimal adverse impacts. Instead, as noted above, the Corps misleadingly suggests that provisions added to NWP 12 “[s]ince these PCN thresholds were adopted” *only now* make those PCNs redundant. This twisting of the facts and failure to explain its departure from its previous findings is arbitrary and capricious.

What’s more, the Corps’ redundancy rationale misses the point of the PCN triggers. The Corps notes over and over that certain provisions in NWP 12 will require *permittees* to ensure their activities “will result in only temporary impacts.”<sup>416</sup> But the purpose of a PCN is “to allow *the Corps* to ensure on a case-by-case basis that the adverse effects on the aquatic environment of the project are truly minimal.”<sup>417</sup> The Corps created the PCN program because some activities “potentially” involve more-than-minimal impacts<sup>418</sup> and the Corps wanted to double-check permittees’ work to ensure adverse impacts are “truly minimal.”<sup>419</sup> Framed this way, it is nonsensical to argue PCN triggers should be eliminated because they are “redundant” with other NWP provisions—redundancy is the entire point.

It also is not clear how the Corps can lean so heavily on its district engineers to curb adverse impacts while simultaneously cutting its PCN thresholds to the bone. The Corps’ constant refrain throughout its draft decision documents is that the PCN review process will “allow[] district engineers to review proposed activities on a case-by-case basis to ensure that the individual and cumulative adverse environmental effects of those activities are no more than minimal.”<sup>420</sup> But if five PCN triggers are cut, district engineers will have far fewer opportunities to conduct such case-by-case reviews.<sup>421</sup> As a result, the Corps’ already-wafer-thin minimal-impact finding becomes even thinner.

- ii. The Corps’ reasons for eliminating the forested wetland PCN, in particular, directly contradict its earlier factual determinations.

According to the Corps, the forested-wetland PCN should be eliminated because it is redundant with other provisions in NWP 12. Specifically, the Corps asserts that NWP 12 already requires that temporary fills be restored to pre-construction elevations and revegetated as appropriate.<sup>422</sup> Because mechanized clearing of forested wetlands “usually results in temporary impacts to the wetlands,” the restoration requirements of NWP 12 make further review by the

---

<sup>416</sup> 85 Fed. Reg. at 57,325.

<sup>417</sup> 77 Fed. Reg. at 10,186 (emphasis added).

<sup>418</sup> 65 Fed. Reg. at 12,819,

<sup>419</sup> 77 Fed. Reg. at 10,186

<sup>420</sup> Draft Dec. Doc. NWP 12 at 45; *see also id.* at 44–45 (“District engineers will establish compensatory mitigation requirements on a case-by-case basis, after evaluating pre-construction notifications.”); *id.* at 52 (“[P]re-construction notification . . . will provide district engineers with opportunities to review those activities, assess potential impacts on fish and wildlife values, and ensure that the authorized activities result in no more than minimal adverse environmental effects.”); *id.* at 75 (“District engineers will review pre-construction notifications for certain activities authorized by this NWP to ensure that the adverse effects on wetlands are no more than minimal.”).

<sup>421</sup> The Corps finds that only one of the five PCNs it proposes to eliminate will be fully covered by a surviving PCN. *See* 85 Fed. Reg. at 57,326 (finding the notification requirement for permanent access roads constructed above grade in jurisdictional waters for more than 500 feet fully redundant with the 1/10-acre PCN). Thus, unless the Corps expects that its new 250-mile-pipeline PCN will somehow cover all of the rest, the Corps will almost assuredly receive fewer PCN submittals compared to years past.

<sup>422</sup> 85 Fed. Reg. at 57,325.

Corps unnecessary.<sup>423</sup> The Corps also emphasizes that “[e]ven though the trees are removed . . . the affected area should remain a wetland . . . even if [it is] a different category of wetland.”<sup>424</sup> Moreover, according to the Corps, even with a change “in plant community structure, the affected wetlands will continue to provide habitat functions, since the habitat functions of forests differ somewhat from the habitat functions of herbaceous or scrub-shrub wetlands.”<sup>425</sup> Altered wetlands will also “still perform hydrologic functions (e.g., water storage) and biogeochemical cycling functions (e.g., nitrogen cycling).”<sup>426</sup>

These rationales entirely miss the point of instituting the PCN in the first place and directly contradict two of the Corps’ previous and contemporaneous findings without a reasoned explanation. First, other parts of *the very same rulemaking* suggest that clearing forested wetlands will have permanent—not temporary—impacts. For example, proposed General Condition 23 provides that converting a “forested or scrub-shrub wetland to a herbaceous wetland” will “*permanently* adversely affect[.]” the ecological functions and services of jurisdictional waters.<sup>427</sup> Similarly, in its draft decision document, the Corps notes that:

For the construction or maintenance of oil or natural gas pipelines impacts to wetlands are often temporary, *unless the site contains forested wetlands that are [cleared and] not allowed to regenerate* because of maintenance of the pipeline right-of-way or because of permanent fills in wetlands. Those conversions may be *permanent* to maintain the oil or natural gas pipeline in good, operational order.<sup>428</sup>

The Corps has made similar findings for decades.<sup>429</sup> But here, the Corps now suggests these permanent impacts are “usually . . . temporary.” The Corps does not explain why it arrived at this contradictory conclusion, or even acknowledge that it has made conflicting findings.

Second, other parts of *the very same rulemaking* establish why it was important to institute this PCN in the first place: all wetlands do not equally provide the same functions. For instance, as noted above, proposed General Condition 23 explicitly states that conversion of a forested wetland to scrub-shrub “permanently adversely affect[s]” “certain functions and services” of jurisdictional waters. Similarly, the draft decision document notes that the “conversion of wetlands to other types of wetlands,” including conversion of forested wetlands to herbaceous wetlands, “may result in the loss of certain wetland functions, or the reduction in the level of wetland functions being performed by the converted wetland.”<sup>430</sup> And yet again, the Corps has made similar findings for decades.<sup>431</sup>

---

<sup>423</sup> *Id.*

<sup>424</sup> *Id.*

<sup>425</sup> *Id.*

<sup>426</sup> *Id.*

<sup>427</sup> 85 Fed. Reg. at 57,389 (emphasis added).

<sup>428</sup> Draft Dec. Doc. NWP 12 at 51 (emphasis added).

<sup>429</sup> See 77 Fed. Reg. at 10,196 (noting the “conversion of a forested wetland to a scrub shrub wetland . . . may result in the permanent loss of certain [wetland] functions”); 72 Fed. Reg. at 11,166 (refusing to eliminate a mitigation requirement for “permanent adverse effects to certain functions and services provided by waters of the United States, such as converting a forested wetland to a herbaceous wetland”); 65 Fed. Reg. at 12,887 (providing—within NWP 12 itself—that the conversion of forested wetlands causes “permanent[] adverse[]” effects).

<sup>430</sup> Draft Dec. Doc. NWP 12 at 51.

<sup>431</sup> See 77 Fed. Reg. at 10,196 (noting the “conversion of a forested wetland to a scrub shrub wetland . . . may result in the permanent loss of certain [wetland] functions”); 65 Fed. Reg. at 12,887 (noting, within NWP 12 that the conversion of forested wetland permanently adversely affects the “functions and values” of jurisdictional waters);



The Corps, however, neither recognizes these losses of function nor acknowledges that it previously (and contemporaneously) did so. Instead, it maintains that a mechanically cleared wetland “remain[s] a wetland” that will continue to provide habitat, hydrologic, and biogeochemical functions.<sup>432</sup> The Corps even goes so far as to say that the conversion of a “forested wetland” to an “herbaceous wetland”—resulting in the loss of forested-wetland habitat—can be accomplished “without habitat loss.”<sup>433</sup> Failing to acknowledge, much less explain, these contradictory findings is arbitrary and capricious.

iii. The Corps should either require a PCN for all “new” pipeline construction or craft a waterbody-based numerical threshold.

The Corps’ new PCN trigger is a step in the right direction, but cannot rescue NWP 12. The Corps proposes adding a notice requirement for when “the proposed oil or natural gas pipeline activity is associated with an overall project that is greater than 250 miles in length and the project purpose is to install new pipeline (vs. conduct repair or maintenance activities) along the majority of the distance of the overall project length.”<sup>434</sup> If any proposed projects met these criteria, the prospective permittee would be required to identify “the locations and proposed losses of waters of the United States for *all* crossings of waters of the United States that require [Corps] authorization, including those crossings that would not require pre-construction notification.”<sup>435</sup>

The Corps does not explain how it arrived at the 250-mile threshold, though it implies that pipelines over that length are “long-distance” projects. Instead of relying on an arbitrary mileage threshold, the Corps should adopt a PCN for all *new* pipeline construction. This would ensure that the Corps carefully evaluates the impacts of projects with the potential to make the biggest net changes to the environmental baseline, as opposed to maintenance or replacement work in areas that have already been impacted by earlier construction, and for which impacts are more likely to be minimal in comparison.

Failing that, the Corps should design a PCN threshold based on the number of waterbody crossings, instead of the overall pipeline length. Depending on the landscape in which the pipeline is located, a 250-mile pipeline might cross a few dozen minor waterbodies or thousands of substantial rivers and streams. It would be highly arbitrary to require a PCN for a 250.1-mile pipeline through the desert, for example, but decline to require notification for a 249.9-mile pipeline through a temperate rainforest. Though a threshold based on waterbody crossings would also require selecting a somewhat arbitrary threshold, it would better account for the variation across landscapes.<sup>436</sup> It also would push permittees to design pipelines that have fewer crossings

---

*see also id.* at 12,848 (noting, in the NWP 27 context, that the “conversion of forested wetlands” often “destroy[] or degrad[e] habitat that is utilized by many . . . species of wildlife”).

<sup>432</sup> 85 Fed. Reg. at 57,325.

<sup>433</sup> Draft Dec. Doc. NWP 12 at 52. Just because new organisms may be able to use the altered landscape following tree clearing does not mean that habitat has not been lost. Forested-wetland habitat has been lost; human-altered herbaceous habitat for other species has been created. The Corps seems to suggest the net result means no habitat is lost. But habitat loss is not measured on net. If this were true, no “habitat” would *ever* be lost.

<sup>434</sup> 85 Fed. Reg. at 57,327.

<sup>435</sup> *Id.* (emphasis added).

<sup>436</sup> If the threshold was 100 crossings, for example, this might allow permittees to build longer pipelines in areas with fewer waterbodies (like the high desert), while ensuring that shorter pipelines in more watered areas (like the Southern Appalachians) face additional scrutiny.

than the threshold number, so as to avoid additional paperwork and scrutiny. If the Corps is concerned about imposing a national waterbody-crossing PCN number, however, it must require regional engineers to develop thresholds tailored to their specific region rather than issuing nationwide permits that defer meaningful analysis to division or district engineers.

2. *Nationwide Permit 13 does not comply with the Clean Water Act Section 404(b)(1) Guidelines.*

Section 404(b)(1) authorizes the Corps to issue general permits that “will have only minimal adverse effects when performed separately; and . . . will have only minimal cumulative adverse effects on water quality and the aquatic environment.” 40 C.F.R. § 230.7(a)(3). The Corps fails to comply with either of these tests.

- a. Nationwide Permit 13 does not ensure that activities covered by the permit will have fewer than minimal *cumulative* adverse environmental impacts.

As explained above, the Corps’ evaluation of cumulative impacts for the nationwide permits is fatally flawed because it is based solely on statistics of past permit usage to predict future usage without taking into account any changes to the limits in the proposed nationwide permits.

- b. Nationwide Permit 13 does not ensure that activities covered by the permit will have fewer than minimal *individual* adverse environmental effects.

Under the individual adverse environmental effects test, the Corps must consider, for example, whether the NWP’s would jeopardize ESA-listed species or their habitat, *id.* § 230.10(b)(3), “cause or contribute to significant degradation of waters of the United States,” *id.* § 230.10(c), cause short-term and long-term effects,” *id.* § 230.11–.61, on such things as water flows, circulation, and bottom contours, *id.* § 230.11(b), and cause “secondary effects” on the aquatic ecosystem. *Id.* § 230.11(h).

- i. NWP 13’s criterion exceed the minimal adverse impacts limit.

The Corps considers a bulkhead that is up to 500 feet in length to have “minimal” effects on the aquatic environment. The scientific studies discussed above demonstrate that even the shortest bulkhead has more than minimal effects. In light of this body of research, there is no support for the Corps’ claim that a vertical wall almost two football fields in length could have minimal effects. A structure of that size would have more than minimal effects if it were constructed in any ecosystem. Its impacts are compounded when it is inserted into a shoreline ecosystem that is highly diverse and productive.<sup>437</sup>

---

<sup>437</sup> Carolyn Currin et al., *Shorelines Change in the New River Estuary, North Carolina: Rates and Consequences*, 31 J. of Coastal Res. 1069-77 (2015); J. E. Dugan et al., *8.02 Estuarine and Coastal Structures: Environmental Effects, a Focus on Shore and Nearshore Structures*, 8 Treatise on Estuarine & Coastal Sci. 17-41 (Eric Wolanski and Donald McLusky eds. 2011); James G. Titus, *Rising Seas, Coastal Erosion, and the Takings Clause: How to Save Wetlands and Beaches Without Hurting Property Owners*, 57 Md. L. Rev. 1279-1398 (1998); Thomas K. Ruppert, *Eroding Long-Term Prospects for Florida’s Beaches: Florida’s Coastal Management Policy*, Sea Turtle Grant Program, 1-157 (2008); U.S. Army Corps of Engineers & Yellowstone River Conservation District Council, *Yellowstone River Cumulative Effects Analysis*, 1-433 (2015).

Despite years of experience with bulkheads, the Corps provides no basis for concluding that such a large structure has only minimal effects on the aquatic environment. As the U.S. Supreme Court explained in *Motor Vehicle Mfrs. Association of the United States, Inc. v. State Farm*, an “agency must examine the relevant data and articulate a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’” See 463 U.S. 29, 43, (1983) quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962). Because the Corps cannot explain how it concluded that a 500-foot bulkhead could have minimal effects on the aquatic environment, the proposed issuance of NWP 13 is arbitrary and capricious.

Moreover, “minimal,” as explained above, is generally defined as “very small or slight.”<sup>438</sup> There is nothing very small or slight about a 500-foot long bulkhead. When it passed Section 404(e) in 1977 and authorized the Corps to develop general permits, Congress meant to reduce the Corps’ workload, not put the environment in jeopardy. General permits were only intended to “eliminate unnecessary paperwork and delays in permit processing.”<sup>439</sup> The photograph below depicts a bulkhead that is approximately 400 feet long and was authorized under NWP 13. It is unreasonable for the Corps to relinquish its oversight over such structures, much less one 100 feet longer, simply to reduce paperwork.

Also, under the 404(b)(1) Guidelines the Corps must predict the cumulative effects of the activities that would be authorized under an NWP during its five-year term. 40 C.F.R. § 230.7(3). In the case of NWP 13, this is impossible because the Corps receives no notice of bulkheads 500 feet or less in length. A recent survey of all the bulkheads along the Georgia coast established that the average length of these Georgia coastal bulkheads is approximately 150 feet.<sup>440</sup> And only 4.7 percent of the bulkheads in the survey were more than 500 feet in length.<sup>441</sup> Because the Corps, under NWP 13, requires preconstruction notifications (PCN) only for bulkheads that are more than 500 feet in length, this survey reveals that the Corps is only aware of a small percentage of the bulkheads that are installed. In light of this, it is impossible for the Corps to determine whether the cumulative impacts of these bulkheads are not more than minimal.

Nevertheless, the Corps estimates in the draft decision document that NWP 13 will be used approximately 19,000 times over the 5-year permit period, having impacts on approximately 1,150 acres of waters of the United States, including jurisdictional wetlands.<sup>442</sup> The Corps does not explain how it reached these numbers, or whether the 1,150 acres of impacts include direct, indirect, and cumulative impacts to jurisdictional waters. And particularly fatal to its 404(b)(1) Guidelines analysis is the lack of any explanation of how 19,000 projects having at least 1,150 acres of impacts is “minimal.” The Corps then goes on to state in the Final Decision Document that “approximately 50 acres of compensatory mitigation would be required to offset

---

<sup>438</sup> See Merriam Webster Dictionary (defining “minimal” as, *inter alia*, “the least possible” or “very small or slight”), <http://www.merriam-webster.com/dictionary/minimal?show=0&t=1302307512> (last visited Nov 10, 2020).

<sup>439</sup> See S. Rep. No. 95-370, at \*75 (1977).

<sup>440</sup> Email message from Clark Alexander, Interim Executive Director Skidaway Institute of Oceanography, to Bill Sapp, Senior Attorney, Southern Environmental Law Center (June 21, 2016) (re: Clark Alexander, *EPA Wetlands Grant Final Report to Jan Mackinnon, CRD, GA-DNR*) (April 15, 2016).

<sup>441</sup> *Id.*

<sup>442</sup> Draft Dec. Doc. NWP 13 at 64.

those impacts.”<sup>443</sup> It is not possible that 1,150 acres of impacts to waters of the United States could be mitigated with only 50 acres of compensatory mitigation. By allowing such impacts, the Corps violates the Section 404(e) and 404(b)(1) Guidelines minimal effect tests. 33 U.S.C. § 1344(e); 40 C.F.R. § 230.7.



400-foot-long bulkhead on the Ogeechee River near Richmond Hill, Georgia

The problems with NWP 13 do not end there. Under the Corps’ regulations, a district engineer can determine that bulkheads of unlimited length have minimal impacts and can therefore be authorized under NWP 13. Because this waiver provision has no performance standards, it has been frequently abused. For example, the Charleston District approved a sea wall under NWP 13 that was 2,700 feet long—over five times the 500-foot threshold.<sup>444</sup> Other district engineers have approved excessively long bulkheads. A survey the Corps conducted in 2010 revealed that districts regularly waive the 500-foot threshold.<sup>445</sup> One district used NWP 13 25 times with the average length of the bulkheads measuring 1,200 feet.<sup>446</sup> It is undeniable that such bulkheads have more than minimal impacts. And although the Corps claims that these impacts are cured through mitigation, the Corps’ own decision document demonstrates that mitigation does not begin to replace the wetlands lost through NWP 13.

---

<sup>443</sup> *Id.*

<sup>444</sup> See Letter from Tina B. Hadden, Chief, Regulatory Division, Charleston District, U.S. Army Corps of Engineers to Patrick Rogers, Thomas and Hutton Engineering Co. (Apr. 4, 2008) (on file with author).

<sup>445</sup> U.S. ARMY CORPS OF ENGINEERS, NWP ANALYSIS (Nov. 29, 2010) (survey of NWP practices by Corps Districts).

<sup>446</sup> *Id.*

ii. The Corps has not considered the significant degradation of the aquatic ecosystem that would be caused by NWP 13.

The 404(b)(1) Guidelines provide that “no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States.”<sup>447</sup> The Guidelines go on to state that findings of significant degradation shall be based on “appropriate factual determinations, evaluations, and tests . . . .”<sup>448</sup> A description of the several ways the Corps violates the significant degradation requirement follows.

In the draft decision document, the Corps lists some of the ways that bulkheads have significant adverse effects on the aquatic ecosystem. First, the Corps states bulkheads change sediment processes in the aquatic ecosystem.<sup>449</sup> Second, the Corps mentions in the draft decision document that bulkheads can alter the riparian zone, which in turn can “adversely affect populations of fish and other aquatic animals . . . .”<sup>450</sup> And third, the Corps explains one of the most deleterious effects of bulkheads when it states that: “Bulkheads, seawalls, and revetments can sever connectivity between nearshore estuarine and marine environments and adjacent uplands, preventing or inhibiting the ability of animals to move between these environments.”<sup>451</sup> But after conceding that these effects occur, the Corps does little more than suggest that these impacts could be reduced if an applicant installed a revetment instead of a bulkhead.<sup>452</sup>

Although the Corps gives this connectivity effect short shrift, impacts of bulkheads can be profound throughout the food chain. As explained in more detail above, by altering the near-shore environment, bulkheads induce a cascading ecosystem effect. When compared to natural shores, artificial seawalls have smaller surface areas and few microhabitats.<sup>453</sup> Multiple analyses conclude this alteration reduces the benthic density of surrounding ecosystems.<sup>454</sup> Benthic density measures organisms living in or on the bottom of sediment and acts as a biological indicator to reflect the overall condition of an aquatic environment. Lack of benthic density impacts the food web, inducing a chain reaction that can threaten species throughout the ecosystem.<sup>455</sup>

---

<sup>447</sup> *Id.* at § 230.11(c).

<sup>448</sup> *Id.*

<sup>449</sup> Draft Dec. Doc. NWP 13 at 48.

<sup>450</sup> *Id.* at 73

<sup>451</sup> *Id.* at 74.

<sup>452</sup> *Id.*

<sup>453</sup> N. W. Y. Lam et al., *Variations in Intertidal Assemblages and Zonation Patterns Between Vertical Artificial Seawalls and Natural Rocky Shores: A Case Study From Victoria Harbour, Hong Kong*, 48 *Zoological Studies*, 184-95 (2009).

<sup>454</sup> Amanda S. Lawless et al., *Effects of shoreline stabilization and environmental variables on benthic infaunal communities in the Lynnhaven River System of Chesapeake Bay*, 457 *J. of Experimental Marine Biology & Ecology*, 41-50 (2014); Sarah A. Morley et al., *Ecological Effects of Shoreline Armoring on Intertidal Habitats of a Puget Sound Urban Estuary*, 35 *Estuaries & Coasts*, 774-84 (2012); K. L. Sobocinski et al., *Effects of Shoreline Modifications on Supratidal Macroinvertebrate Fauna on Puget Sound, Washington Beaches*, 33 *ESTUARIES & COASTS*, 699-711 (2010); Christopher J. Patrick et al., *Effects of Shoreline Alteration and Other Stressors on Submerged Aquatic Vegetation in Subestuaries of Chesapeake Bay and the Mid-Atlantic Coastal Bay*, 37 *Estuaries & Coasts*, 1516-31 (2014); Karl F. Nordstrom et al., *Effects of Bulkheads on Estuarine Shores: An Example from Fire Island National Seashore, USA*, 56 *J. of Coastal Res.*, 188-92 (2009).

<sup>455</sup> *Id.*

Several peer-reviewed analyses demonstrate these cumulative impacts, concluding that artificial seawalls suppress intertidal biodiversity.<sup>456</sup> For example, in a detailed survey of 29 armored-unarmored beach pairs in Puget Sound, Washington, the scientists conducting the study found that the shoreline armoring broke the connectivity between habitats on either side of it and prevented beach wrack from reaching the landward habitats. With no wrack reaching them, the number of high-shore invertebrates decreased markedly, which in turn caused prey animals to decline as the effects of the armoring went cascading through the ecosystem.<sup>457</sup> Another study revealed that bulkheads' alterations of intertidal shoreline significantly reduced nekton abundance and distribution of common taxa in salt marsh ecosystems. The scientists concluded that the alternations "eliminated or markedly reduced intertidal habitat ... reducing biodiversity and sustainability of vital intertidal habitat types."<sup>458</sup>

Studies also indicate that bulkheads encourage the expansion of non-native and invasive species. By changing the nearshore environment, bulkheads allow less diverse and productive organisms to prosper at the expense of the ecosystem's original inhabitants.<sup>459</sup> Scientists concluded that this process can cause degradation of wildlife habitat and fundamentally alter ecosystem processes.<sup>460</sup>

The ecosystem diversity disruptions ultimately threaten fish and invertebrate populations at the top of the food chain.<sup>461</sup> A survey of Puget Sound beaches concluded that, in comparison to natural beaches, armored beaches lack biogenic habitat. The study noted "armored beaches result in reduced nutrient supply at the base of the food web, which likely has consequences on invertebrate fauna."<sup>462</sup> A recent study in Taiwan also indicated that the replacement of natural habitats by concrete barriers induced "localized loss of specific species and corresponding

---

<sup>456</sup> Moisés A. Aguilera et al., *Spatial Variability in Community Composition on a Granite Breakwater Versus Natural Rocky Shores: Lack of Microhabitats Suppresses Intertidal Biodiversity*, 81 *Marine Pollution Bull.*, 257-68 (2014); Nathan R. Galdi et al., *Artificial Substrates Enhance Non-Native Macroalga and N<sub>2</sub> Production*, 16 *Biological Invasions*, 1819-31 (2013); Cornelia Harris et al., *The Ecology of Freshwater Wrack Along Natural and Engineered Hudson River Shorelines*, 722 *Hydrobiologia*, 233-45 (2014); Tim M. Glasby et al., *Nonindigenous biota on artificial structures: could habitat creation facilitate biological invasions?* 151 *Marine Biology*, 887-95 (2007); M. C. Benfield & R. G. Downer, *Spatial and Temporal Variability in the Nearshore Distributions of Postlarval *Farfantepenaeus aztecus* along Galveston Island, Texas*, 52 *Estuarine, Coastal & Shelf Sci.*, 445-56 (2001).

<sup>457</sup> Sarah M. Heerhartz et al., *Shoreline Armoring in an Estuary Constrains Wrack-Associated Invertebrate Communities*, 39 *Estuaries & Coasts*, 171-88 (2016).

<sup>458</sup> Lisa A. Needles et al., *Managing Bay and Estuarine Ecosystems for Multiple Services*, 38 *Estuaries & Coasts*, 35-48 (2013).

<sup>459</sup> Guillermo Diaz-Agras et al., *Distribution and Population Structure of *Patella Vulgata* Linnaeus, 1758 (*Gastropoda: Patellidae*) on Intertidal Seawalls and Rocky Shores in the Ria de Ferrol*, 26 *International J. of Marine Sciences*, 79-91 (2010); Tim M. Glasby et al., *Nonindigenous biota on artificial structures: could habitat creation facilitate biological invasions?* 151 *Marine Biology*, 887-95 (2007).

<sup>460</sup> Richard G. Balouskus & Timothy E. Targett, *Egg Deposition by Atlantic Silverside, *Menidia menidia*: Substrate Utilization and Comparison of Natural and Altered Shoreline Type*, 35 *Estuaries & Coasts*, 1100-09 (2012); Nathan R. Galdi et al., *Artificial Substrates Enhance Non-Native Macroalga and N<sub>2</sub> Production*, 16 *Biological Invasions*, 1819-31 (2013).

<sup>461</sup> J.E. Dugan et al., *Ecological Effects of Coastal Armoring on Sandy Beaches*, 29 *Marine Ecology*, 160-70 (2008); Catherine M. Bozek & David M. Burdick, *Impacts of Seawalls on Saltmarsh Plant Communities in the Great Bay Estuary, New Hampshire U.S.A.*, 13 *Wetlands Ecology & Mgmt.*, 553-68 (2005).

<sup>462</sup> Sarah M. Heerhartz et al., *Effects of Shoreline Armoring on Beach Wrack Subsidies to the Nearshore Ecotone in an Estuarine Fjord*, 37 *Estuaries & Coasts*, 1256-68 (2014).

declines in biodiversity.<sup>463</sup> A 2015 review of fish assemblages in natural mangrove habitats also found that hard structures threaten fundamental properties of fish habitat: “Species forming large schools . . . may be precluded from this habitat by the small size of the refuge space between rocks compared to large, open spaces in between mangrove prop roots, making riprap an unsuitable habitat.”<sup>464</sup> Another review of the impact of bulkheads on fish found that such structures affected fish abundance and the composition of fish communities.<sup>465</sup> This body of research indicates that bulkheads, under a wide variety of circumstances, cause ecosystem disruptions that negatively impact coastal habitat and species.

Not only do bulkheads affect aquatic habitats, they degrade terrestrial ecosystems. For instance, bulkheads can starve beaches of sand:

Armoring marine shorelines can alter natural processes at multiple spatial and temporal scales; some, such as starving the beach of sediments by blocking input from upland bluffs may take decades to become visible, while others such as placement loss of armoring construction are immediate.<sup>466</sup>

This alteration of landward habitats such as beaches and wetlands yields further biodiversity concerns. Eighty percent of America’s breeding bird population relies on coastal wetlands, 50 percent of the 800 species of protected migratory birds rely on coastal wetlands, and nearly all of the 190 species of amphibians in North America depend on coastal wetlands for breeding.<sup>467</sup> A 2008 study found that coastal armoring will “increase ecological impacts to sandy beach ecosystems on a scale that is unprecedented.”<sup>468</sup> Specifically, the loss of habitat from coastal armoring was associated with two- to 36-fold impacts on beach zones, macro-invertebrates, foraging shorebirds, roosting gulls and seabirds on open coast beaches.<sup>469</sup>

Intertidal flats and beach strands provide critical refuge for endangered and threatened birds like the Piping Plover, Snowy Plover, and Least Tern.<sup>470</sup> Unfortunately, these delicate

---

<sup>463</sup> C. K.-C. Wen et al., Effects of Habitat Modification on Coastal Fish Assemblages, 77 J. OF FISH BIOLOGY, 1674-87 (2010); J. Moreira et al., Seawalls Do Not Sustain Viable Populations of Limpets, 322 MARINE ECOLOGY PROGRESS SERIES, 179-88 (2006).

<sup>464</sup> J. R. Peters et al., Comparison of Fish Assemblages in Restored and Natural Mangrove Habitats Along an Urban Shoreline, 91 Bull. of Marine Sci., 1-15 (2015); Steven B. Scyphers, et al., Natural Shorelines Promote the Stability of Fish Communities in an Urban Coastal System, 10 Plos One (2015)(available at [ncbi.nlm.nih.gov/pmc/articles/PMC4454662/](http://ncbi.nlm.nih.gov/pmc/articles/PMC4454662/)).

<sup>465</sup> Stuart H. Munsch, et al., Effects of shoreline armouring and overwater structures on coastal and estuarine fish: opportunities for habitat improvement, Journal of Applied Ecology, 1, 3 (2017).

<sup>466</sup> Megan N. Dethier et al., *Multiscale Impacts of Armoring on Salish Sea Shorelines: Evidence for Cumulative and Threshold Effects*, 175 Estuarine, Coastal, & Shelf Sci., 106-17 (2016).

<sup>467</sup> Laura Whalen et al., *Practitioner’s Guide: Shellfish-Based Living Shorelines for Salt Marsh Erosion Control and Environmental Enhancement in the Mid-Atlantic*, PARTNERSHIP FOR DEL. ESTUARY, 1-48 (2011).

<sup>468</sup> J.E. Dugan et al., Ecological Effects of Coastal Armoring on Sandy Beaches, 29 Marine Ecology, 160-70 (2008).

<sup>469</sup> *Id.*

<sup>470</sup> Fraser et al., *Prenesting use of intertidal habitats by piping plovers on South Monomoy Island, Massachusetts*, 69 J. OF WILDLIFE MGMT., 1731-36 (2005); Kelly Hornaday et al., *Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (Charadrius alexandrinus nivosus)* (2010),

<http://www.westernsnowyplover.org/pdfs/WSP%20Final%20RP%2010-1-07.pdf>; FL. FISH & WILDLIFE CONSERVATION COMMISSION, SUPPLEMENTAL INFORMATION FOR THE LEAST TERN: BIOLOGICAL STATUS REV.

habitats are extremely susceptible to degradation by bulkheads.<sup>471</sup> With many bird species using these areas as breeding grounds, the declining condition of the flats and beaches poses direct threats to species survival.<sup>472</sup> Recent research published in the Journal of Coastal Conservation concluded that “restricting the building or fortifying of seawalls” is the best way to allow these habitats to recover in coming decades.<sup>473</sup>

Unfortunately, the adverse effects that bulkheads have on shoreline ecosystems are likely to increase. As discussed above, coastal armoring structures increase erosion on either side of them.<sup>474</sup> And they cause scouring in front of them, which leads to the loss of fringing marsh and increased turbidity.<sup>475</sup>

Specifically, one analysis of armoring impacts on the shorelines of the Salish Sea reveals that bulkheads cause reductions in beach width. Furthermore, the scientists concluded that the localized impacts of increased erosion have the potential to “scale-up” and have widespread cumulative effects.<sup>476</sup> Another study of the fringe marshes in North Carolina yielded similar results, concluding that the construction of bulkheads increases erosion in other areas, necessitating construction of further erosion prevention structures. The study also noted that the constant human intervention creates “shifting hotspots of erosion,” making it even more difficult to manage coastal environments.<sup>477</sup>

### iii. The Corps has not considered the secondary effects of bulkheads.

The 404(b)(1) Guidelines require that the Corps consider the secondary effects of any discharge of dredged or fill material that it authorizes. 40 C.F.R. § 230.11(h). “[S]econdary effects” are “effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.” *Id.* at §

---

REPORT (2011), <http://myfwc.com/media/2273517/Least-Tern-Supplemental-Information.pdf> (last visited Nov. 8, 2020).

<sup>471</sup> Anne Hecht & Scott M. Melvin, Population trends of Atlantic Coast piping plovers, 1986-2006, 31 *Waterbirds*, 64-72 (2009); Susan E. Cameron et al., Compilation and Assessment of Piping Plover Wintering and Migratory Staging Area Data in North Carolina, Symp. on Wintering Ecology & Conservation of Piping Plovers, 1-5 (2005).

<sup>472</sup> James D. Fraser et al., *Prenesting use of intertidal habitats by piping plovers on South Monomoy Island, Massachusetts*, 69 *J. of Wildlife Mgmt.*, 1731-36 (2005).

<sup>473</sup> Susan A. Sims et al., Room to move? Threatened shorebird habitat in the path of sea level rise—dynamic beaches, multiple users, and mixed ownership: a case study from Rhode Island, USA, 17 *J. of Coastal Conservation*, 339-50 (2013).

<sup>474</sup> Megan N. Dethier et al., Multiscale Impacts of Armoring on Salish Sea Shorelines: Evidence for Cumulative and Threshold Effects, 175 *Estuarine, Coastal, & Shelf Sci.*, 106-17 (2016); Christopher R. Mattheus et al., Impact of Land-Use Change and Hard Structures on the Evolution of Fringing Marsh Shorelines, 88 *ESTUARINE, COASTAL & SHELF SCI.*, 365-76 (2010); U.S. ARMY CORPS OF ENGINEERS & YELLOWSTONE RIVER CONSERVATION DISTRICT COUNCIL, *YELLOWSTONE RIVER CUMULATIVE EFFECTS ANALYSIS*, 1-433 (2015); Scott L. Douglass & Bradley H. Pickel, Tide Doesn't Go Out Anymore- The Effect of Bulkheads on Urban Bay Shorelines, 67 *Shore & Beach*, 19-25 (1999).

<sup>475</sup> C. A. Currin, *Developing Alternative Shoreline Armoring Strategies: The Living Shoreline Approach in North Carolina*, Puget Sound Shorelines and The Impacts of Armoring -Proc. of a St. of the Sci. Workshop, 91-102 (2010).

<sup>476</sup> Megan N. Dethier et al., *Multiscale Impacts of Armoring on Salish Sea Shorelines: Evidence for Cumulative and Threshold Effects*, 175 *Estuarine, Coastal, & Shelf Sci.*, 106-17 (2016).

<sup>477</sup> Christopher R. Mattheus et al., *Impact of Land-Use Change and Hard Structures on the Evolution of Fringing Marsh Shorelines*, 88 *Estuarine, Coastal & Shelf Sci.*, 365-76 (2010).



230.11(h)(1). Two examples of the secondary effects that bulkheads and riprap revetments cause are the undercutting of marsh grasses<sup>478</sup> and the destruction of intertidal areas.<sup>479</sup> Both of these examples are driven by the scouring that occurs on the seaward side of bulkheads.<sup>480</sup> Yet neither has been fully analyzed by the Corps.

iv. The Corps has not determined the cumulative short-and long-term effects of NWP 13 on the hydrologic regime.

While the Corps does admit that shoreline stabilization structures can cause the narrowing of beaches, can reduce sediment transport,<sup>481</sup> and can cause scouring,<sup>482</sup> the Corps does not go far enough to examine the short- and long-term effects of these impacts on the hydrologic regime as required by the 404(b)(1) Guidelines. As discussed above, the deflected wave energy from bulkheads can cause scouring that can destroy the marsh or intertidal areas in front of them.<sup>483</sup> Similarly, coastal armoring can increase erosion on either side of the hardened area.<sup>484</sup> Yet the Corps has made no attempt to quantify the severity of these impacts. Until it does, the Corps cannot assess the cumulative effects of these impacts.

Again, the Corps shirks its duty under the 404(b)(1) Guidelines and ignores science and the wide and growing array of studies showing the short- and long-term adverse cumulative effects of bulkheads.

v. Government agencies, including Corps Districts, have highlighted the cumulative impacts of bulkheads.

During the comment period for the past NWP 13, several federal and state agencies voiced their discontent with this general permit. The Corps' Buffalo District stated that the:

---

<sup>478</sup> C. A. Currin, *Developing Alternative Shoreline Armoring Strategies: The Living Shoreline Approach in North Carolina*, Puget Sound Shorelines and The Impacts of Armoring -Proc. of a St. of the Sci. Workshop, 91-102 (2010).

<sup>479</sup> Megan N. Dethier et al., *Multiscale Impacts of Armoring on Salish Sea Shorelines: Evidence for Cumulative and Threshold Effects*, 175 *Estuarine, Coastal, & Shelf Sci.*, 106-17 (2016); J.E. Dugan et al., *Ecological Effects of Coastal Armoring on Sandy Beaches*, 29 *Marine Ecology*, 160-70 (2008).

<sup>480</sup> C. A. Currin, *Developing Alternative Shoreline Armoring Strategies: The Living Shoreline Approach in North Carolina*, Puget Sound Shorelines and The Impacts of Armoring -Proc. of a St. of the Sci. Workshop, 91-102 (2010).

<sup>481</sup> Draft Dec. Doc. 13 at 71.

<sup>482</sup> *Id.* at 53.

<sup>483</sup> C. A. Currin, *Developing Alternative Shoreline Armoring Strategies: The Living Shoreline Approach in North Carolina*, PUGET SOUND SHORELINES AND THE IMPACTS OF ARMORING -PROC. OF A ST. OF THE SCI. WORKSHOP, 91-102 (2010).

<sup>484</sup> Megan N. Dethier et al., *Multiscale Impacts of Armoring on Salish Sea Shorelines: Evidence for Cumulative and Threshold Effects*, 175 *Estuarine, Coastal, & Shelf Sci.*, 106-17 (2016); Christopher R. Mattheus et al., *Impact of Land-Use Change and Hard Structures on the Evolution of Fringing Marsh Shorelines*, 88 *Estuarine, Coastal & Shelf Sci.*, 365-76 (2010); U.S. ARMY CORPS OF ENGINEERS & YELLOWSTONE RIVER CONSERVATION DISTRICT COUNCIL, *YELLOWSTONE RIVER CUMULATIVE EFFECTS ANALYSIS*, 1-433 (2015); Scott L. Douglass & Bradley H. Pickel, *Tide Doesn't Go Out Anymore- The Effect of Bulkheads on Urban Bay Shorelines*, 67 *SHORE & BEACH*, 19-25 (1999).

Hardening of stream and river banks and lake shorelines with concrete and/or rip rap has many detrimental impacts to the aquatic environment and the system as a whole. Although it may be true that bank stabilization may decrease erosion in the immediate project area, it often serves to exacerbate erosion upstream and or downstream, thereby transferring the problem to other properties.<sup>485</sup>

The District went on to explain that bank stabilization structures increase erosion, and therefore, “[c]umulatively, this has the potential to create adverse impact to these systems and increasing the need for more bank stabilization.”<sup>486</sup>

Because of the secondary erosion that bulkheads cause, the Corps’ Los Angeles District recommended that the Corps “eliminate the use of [NWP 13] for seawalls due to neighboring impacts and other issues associated with littoral transport.”<sup>487</sup> The United States Environmental Protection Agency also expressed “strong concerns” with NWP 13 stating “it is well-documented [that] the use of hard structures can affect wave energy and direction, affect sediment and other material transport, and cause accelerated erosion and/or scouring.”<sup>488</sup> In its comments, the U.S. Department of Interior, citing to three studies, informed the Corps that “[b]ank stabilization stops natural processes that form and maintain functioning riverine habitat” and “precludes the establishment of natural streamside vegetation that is important to streambank integrity and healthy fish habitat.”<sup>489</sup>

State wildlife agencies echoed these concerns on NWP 13 projects. The Texas Parks and Wildlife Department expressed concerns that NWP 13’s vague restriction on the amount of fill “needed for erosion protection . . . potentially allows this nationwide permit to have cumulative impacts on important fish and wildlife habitat.”<sup>490</sup> Thus, it recommended that the Corps require an individual permit for bank stabilization projects within special aquatic sites—including wetlands, marsh, and mudflats.<sup>491</sup> Montana Fish, Wildlife & Parks urged more restrictive permit conditions and requested that any “hard armor” project over 100 feet be required to submit a PCN to the Corps.<sup>492</sup>

The Washington State Department of Natural Resources also expressed pointed concerns with NWP 13, stating that “500 feet of stabilization is not a small project but rather very large

---

<sup>485</sup> Letter from the Buffalo District, U.S. Army Corps of Engineers, to the U.S. Army Corps of Engineers 1 (Apr. 1, 2010) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>486</sup> *Id.*

<sup>487</sup> Letter from Los Angeles District, U.S. Army Corps of Engineers, to U.S. Army Corps of Engineers 2 (Apr. 9, 2010) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>488</sup> Letter from U.S. Environmental Protection Agency to U.S. Army Corps of Engineers 14 (Nov. 29, 2010) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>489</sup> Letter from U.S. Dept. of the Interior to U.S. Army Corps of Engineers 7 (May 11, 2011) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>490</sup> Letter from Texas Parks & Wildlife to the U.S. Army Corps of Engineers 5 (Apr. 15, 2011) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>491</sup> *Id.*

<sup>492</sup> Letter from Montana Fish, Wildlife & Parks to U.S. Army Corps of Engineers 1 (Apr. 15, 2011) (Comments on Proposal to Reissue and Modify Nationwide Permits).

especially for shoreline's (sic) which are already incredibly impacted."<sup>493</sup> Citing to four studies, WDNR states that the current information "suggests that the cumulative impacts of multiple hardened shorelines further impacts the biological and ecological functions of the freshwater systems and Puget Sound."<sup>494</sup> The New York Department of Environmental Conservation warned that NWP 13 projects have the "potential to negatively affect high quality riparian habitat."<sup>495</sup> And the Michigan Department of Environmental Quality went so far as to say that "new vertical bulkheads or seawalls" should not be authorized under NWP 13 at all.<sup>496</sup>

The Corps improperly defers critical decisions on cumulative impacts to its field offices.

The Corps only conducts cumulative impacts analysis at the headquarters level that it considers "reasonable and practicable." 40 C.F.R. § 230.11(g)(2). It defers all other decisions regarding cumulative impacts to the field offices. As described below, this approach violates the 404(b)(1) Guidelines. In the Proposed Rule, the Corps describes the approach it uses to determine whether an activity can be permitted under a general permit such as NWP 13:

The division offices oversee district offices and are managed by division engineers. Division engineers have the authority to modify, suspend, or revoke NWP authorizations on a regional basis to take into account regional differences among aquatic resources and ensure that the NWPs authorize only those activities that result in no more than minimal individual and cumulative adverse environmental effects in a region.<sup>497</sup>

In short, under this approach, Corps headquarters is making an improper delegation of responsibility concerning final determinations about cumulative impacts to the division and districts. This approach violates the 404(b)(1) Guidelines. Deferring the cumulative impact analysis to the divisions does not comport with the 404(b)(1) Guidelines. The 404(b)(1) Guidelines are clear on this point—the Corps must "set forth in writing an evaluation of the potential . . . cumulative impacts of the category of activities to be regulated under the General permit" and "*the evaluation must be completed before any General permit is issued*, and the results must be published with the final permit." 40 C.F.R. § 230.7(b)(emphasis added). In other words, before reauthorizing NWP 13, the Corps has to demonstrate, based on information before it, that the projects to be authorized would have only minimal cumulative impacts. The 404(b)(1) Guidelines do not allow the Corps to finish its cumulative impact analysis at the project level after NWP 13 is issued. The Corps must adapt to the structure of the 404(b)(1) Guidelines, not the other way around.

---

<sup>493</sup> Letter from the Washington State Dept. of Natural Resources to U.S. Army Corps of Engineers 5, (Apr. 10, 2011) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>494</sup> *Id.*

<sup>495</sup> Letter from New York State Dept. of Environ. Conservation to U.S. Army Corps of Engineers 2 (Apr. 18, 2011) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>496</sup> Letter from Michigan Dept. of Environ. Quality to U.S. Army Corps of Engineers 2 (Apr. 18, 2011) (Comments on Proposal to Reissue and Modify Nationwide Permits).

<sup>497</sup> 85 Fed. Reg. 57,298, 57,300.

- c. If the Corps were to reauthorize NWP 13, it would violate the 404(b)(1) Guidelines because bulkheads are not the least environmentally damaging practical alternative.

Under the 404(b)(1) Guidelines, the Corps cannot permit any discharge of dredged or fill material if there is a “practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.” 40 C.F.R. § 230.11(a). “[P]racticable alternatives include, but are not limited to: (i) [a]ctivities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters [and] (ii) [d]ischarges of dredged or fill material at other locations in waters of the United States or ocean waters[.]” *Id.*

An alternative is “practicable” under the 404(b)(1) Guidelines if it is “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” *Id.* And if a discharge is proposed for a special aquatic site, it is presumed, under the 404(b)(1) Guidelines that any practicable alternative that does not involve a discharge into a special aquatic site is “presumed to have [a] less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.” *Id.* As shown below the Corps cannot comply with this legal standard.

In violation of the 404(b)(1) Guidelines, the Corps does not take practicable alternatives into account during the reauthorization process. If it were to do so, it could not reauthorize NWP 13 because bulkheads, except in limited instances, are not the least environmentally damaging practicable alternative for addressing shoreline retreat. In many cases in low wave energy environments, living shorelines are.

The authors of a recent report on the regulation of shoreline stabilization projects concluded that “[s]ince it is now clear that living shorelines are generally the least damaging management alternative, hard stabilization should not be used if living shoreline methods are practical; that is, they provide equal or better erosion control and are cost-effective, considering the real total cost over time.”<sup>498</sup>

As one study explained, living shorelines “provide clear ecological advantages over traditional armouring [sic] of the shore, such as increased primary productivity, improved water quality or enhancement of habitats for birds, amphibians and crabs.”<sup>499</sup> Another benefit of living shorelines is that they can be designed to incorporate fringe marshes along the shoreline. These fringe marshes can “provide a tremendous return in ecosystem services.”<sup>500</sup>

---

<sup>498</sup> RESTORE AMERICAS ESTUARIES, LIVING SHORELINES: FROM BARRIERS TO OPPORTUNITIES, 1-54 (2015).

<sup>499</sup> Fabio Bulleri & Maura G. Chapman, The Introduction of Coastal Infrastructure as a Driver of Change in Marine Environments, 47 J. OF APPLIED ECOLOGY, 26-35 (2010); *see also*, D. M. Bilkovic & M. M. Mitchell, *Ecological Tradeoffs of Stabilized Salt Marshes as a Shoreline Protection Strategy: Effects of Artificial Structures on Macrobenthic Assemblages*, 61 ECOLOGICAL ENGINEERING, 469-81 (2013).

<sup>500</sup> C. A. Currin, *Developing Alternative Shoreline Armoring Strategies: The Living Shoreline Approach in North Carolina*, Puget Sound Shorelines and The Impacts of Armoring -Proc. of a St. of the Sci. Workshop, 91-102 (2010).

A review of living shorelines approaches in the Chesapeake Bay yielded similar positive results. Eighty-three percent of the banks inspected were stable and 74 percent of the marshes exhibited minimal or no erosion. Overall, 32 out of 35 of the living shoreline projects analyzed were ranked “good” or “improved” from initial conditions.<sup>501</sup>

Several other studies within recent years also concluded that living shoreline approaches are an effective mechanism for deterring shoreline erosion.<sup>502</sup> Furthermore, NOAA has endorsed living shorelines, stating, “Living shorelines provide an innovative approach to reducing damage and erosion while simultaneously enhancing coastal community resilience by providing additional social, economic, and ecological benefits.”<sup>503</sup> And living shorelines are comparably priced to bulkheads.<sup>504</sup>

Finally, in a 2015 report, the National Oceanic and Atmospheric Administration (NOAA) concluded that the damaging divides created by bulkheads are not necessary in the fight against erosion. NOAA clearly states, “Shoreline stabilization does not need to create a barrier between land and water, as happens with hard shoreline stabilization structures like seawalls and bulkheads.”<sup>505</sup> In short, the secondary effects caused by bulkheads are avoidable. As the 404(b)(1) Guidelines explain, secondary effects must be considered by the Corps “prior to the time final section 404 action is taken by permitting authorities.” 40 C.F.R. § 230.11(h)(1).

Considering that in a substantial number of cases, bulkheads will not be the least environmentally damaging practical alternative, the Corps cannot reauthorize NWP 13.

3. *All NWP's that remove the 300-linear foot limit on stream losses violate the Clean Water Act.*

The Corps’ proposal to remove the 300-linear foot limit on stream bed loss from ten NWP's violates the Clean Water Act. NWP 21 serves as an example of the broad, severe environmental impacts that would result from the Corps’ proposed elimination of the linear-foot restriction.

The Corps’ regulations define the term “discharge of fill material” to include the “placement of overburden, slurry, or tailings or similar mining-related materials.” 33 C.F.R. § 323.2(f).<sup>506</sup> However, the proposed elimination of the 300-linear foot restriction will vastly

---

<sup>501</sup> Bhaskaran Subramanian et al., *Current Understanding of the Effectiveness of Nonstructural and Marsh Sill Approaches*, PROC. OF THE LIVING SHORELINES SUMMIT, 35-40 (2006).

<sup>502</sup> J. E. Manis et al., *Wave Attenuation Experiments Over Living Shorelines Over Time: A Wave Tank Study to Assess Recreational Boating Pressures*, 19 J. OF COASTAL CONSERVATION, 1-11 (2015); *Wave Attenuation Experiments Over Living Shorelines Over Time: A Wave Tank Study to Assess Recreational Boating Pressures*, 19 J. OF COASTAL CONSERVATION, 1-11 (2015); Marcia Berman et al., *The Stability of Living Shorelines- An Evaluation, Report to National Oceanic and Atmospheric Administration*, CENTER FOR COASTAL RESOURCES MGMT., VA. INST. OF MARINE SCI., 1-37 (2007); Rachel K. Gittman, *Living Shorelines Can Enhance the Nursery Role of Threatened Estuarine Habitats*, 26 ECOLOGICAL APPLICATIONS, 249-63 (2016).

<sup>503</sup> NOAA, *GUIDANCE FOR CONSIDERING THE USE OF LIVING SHORELINES* 1-35 (2015).

<sup>504</sup> Ed Hoffman, *The Real Costs of Shoreline Stabilization* (July 22, 2016)(unpublished report, on file with the comment author).

<sup>505</sup> NOAA, *GUIDANCE FOR CONSIDERING THE USE OF LIVING SHORELINES* 1-35 (2015).

<sup>506</sup> *See also* Draft Dec. Doc. NWP 21 at 38. Under NWP 21, one of the criteria for allowing discharges of dredged or fill material associated with surface coal mining operations is that the “discharge is not associated with the

increase the amount of stream bed that can be filled or excavated under NWP 21: using the Corps' own (overly conservative) estimate, the half-acre limit would allow the fill of nearly 3,500 linear feet of stream bed for first order streams, with potentially devastating environmental impacts.

The Corps acknowledges, albeit in only a very general way, some of the adverse impacts on streams and other aquatic resources from the proposed changes to NWP 21. These include, among others:

- Elimination or diminishment of ecological functions and services;
- Increases in sedimentation, pollutants, and nutrients; and alterations of pH, and temperature;
- Alteration of stream flow and surface and groundwater hydrology;
- Increases in surface water velocities resulting in downstream flooding and erosion, and the alteration or reduction of habitat for aquatic organisms;
- Changes in the chemical and physical characteristics of the water body from mining-related contaminants and sediments.
- Loss of riparian vegetation (with corresponding loss of functions and ecological services);
- Alteration and loss of habitat affecting aquatic species and organisms;
- Reductions in biodiversity.<sup>507</sup>

The Corps also acknowledges that, as a result of activities authorized by NWP 21: “Sessile or slow-moving animals in the path of discharges, equipment, and building materials may be destroyed,” and that some “aquatic animals may be smothered by the placement of fill material.”<sup>508</sup> In addition, the Corps acknowledges that other “[a]quatic animals may not return to sites of permanent fill.”<sup>509</sup>

The Corps refers to research conducted by lead scientist M.A. Palmer, et al., Mountaintop mining consequences, *Science* 327: 148-149 (2010).<sup>510</sup> This and other scientific research amply demonstrate the severe environmental impacts on streams from surface coal mining operations, including permanent losses of ecosystems and persistence of mine-related contaminants downstream. The Corps, however, in effect dodges the question of the impacts from the proposed removal of the linear-foot restriction. Instead, the Corps asserts that its “evaluation of environmental consequences is a general evaluation,” on the grounds that the environmental impacts from NWP 21 “will vary by site and by region,” and that “there are also considerable

---

construction of valley fills,” which the Corps defines as “a fill structure that is typically constructed within valleys associated with steep, mountainous terrain, associated with surface coal mining activities.” 85 Fed. Reg. at 57,373. However, the draft decision document for NWP 21 indicates that the “restrictions imposed by the terms and conditions of this NWP will result in the authorization of activities that have similar impacts on the aquatic environment, namely the replacement or modification of aquatic habitats, with fills associated with surface coal mining operations, *such as valley fills*, permanent stream diversions, impoundments, processing plants, and road crossings.” *Id.* at 59 (emphasis added).

<sup>507</sup> See *id.* at 28, 38-39, 51-52, 67-68.

<sup>508</sup> *Id.* at 68-69.

<sup>509</sup> *Id.* NWP 21 at 69.

<sup>510</sup> See *id.* at 23, 28, 63-65, 67-69. Palmer et al. specifically discussed one form of surface coal mining, namely mountaintop mining with valley fills.

challenges in characterizing the potential environmental consequences of the issuance of this NWP at a national scale.”<sup>511</sup> The Corps thus admits that it is unable to assess the environmental impacts of NWP 21. Yet it claims—relying on the district and division engineers’ ability to restrict or prohibit the use of NWP 21 on a case-specific or regional basis—that the individual and cumulative adverse effects on the aquatic environment from NWP 21 “are expected to be no more than minimal.”<sup>512</sup>

The Corps’ bootstrap argument is indefensible. As the court stated in *Coalition to Protect Puget Sound Habitat*, 417 F. Supp.3d at 1366, “the Corps [has] effectively [thrown] up its hands and turned the impact analyses over to the district [and division] engineers.” Likewise, the Corps’ assertion that the impacts will be minimal is “entirely conclusory.” *Cf. Coal. to Protect Puget Sound Habitat*, 417 F. Supp.3d at 1366 (Corps “simply reiterates the district engineer’s powers to revoke, modify, or condition the NWP”). The Corps’ proposed elimination of the 300-linear foot restriction on stream bed destruction is unlawful.

The same flaws are magnified in other permits that are more widely used. For example, NWPs 29 and 39 are expected to be used more than 2,300 times a year and would allow miles of streams to be destroyed with each use.<sup>513</sup> For the reasons discussed more fully above, the effects of these permits and others that remove the 300-linear foot limit cannot be considered minimal.

## **VI. The Corps Has Not Complied With the Endangered Species Act.**

The U.S. Supreme Court has called the Endangered Species Act the “most comprehensive legislation for the preservation of endangered species ever enacted by any nation.” *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978). According to the Court, the “plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost.” *Id.* at 184. Section 7(a)(2) is “the heart of the ESA.” *Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1019 (9th Cir. 2012)(internal citations omitted). It requires federal agencies to “insure” that the actions they fund, authorize, or undertake “[are] not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification” of those species’ designated critical habitat. 16 U.S.C. § 1536(a)(2).

In fulfilling this duty, “each agency shall use the best scientific and commercial data available.” *Id.* If a proposed action “may affect” an ESA-listed species, federal agencies are required to formally consult with the National Marine Fisheries Service (“NMFS”) or the Fish and Wildlife Service (“FWS”). 50 C.F.R. § 402.14(a); FWS is primarily responsible for terrestrial species and NMFS is responsible for marine species. 16 U.S.C. § 1532(15); 50 C.F.R. § 402.01. Thus, section 7(a)(2) imposes both a procedural and substantive duty on agencies. As the U.S. District Court for the District of Columbia explained in *Defenders of Wildlife v. Jackson*, “[s]ubstantively, [the ESA] requires that agencies ensure that their actions are not likely to jeopardize the existence of an endangered species,” and “[p]rocedurally, it requires adequate consultation between the [a]gency and the FWS” to ensure that the substantive protections are met. 791 F. Supp. 2d 96, 113 (D.D.C. 2011).

---

<sup>511</sup> *Id.* at 42.

<sup>512</sup> *Id.* at 67.

<sup>513</sup> See Draft Dec. Doc. NWP 29 at 60, Draft Dec. Doc. 39 at 60-60.

Formal consultation is required if an agency action “may affect listed species or critical habitat.” 50 C.F.R. § 402.14(a). Agency “action” is defined broadly to include “*all* activities or programs of any kind authorized . . . in whole or in part, by Federal agencies.” 50 C.F.R. § 402.02 (emphasis added). The Corps’ issuance of an NWP is clearly an “action” within the meaning of the ESA. *Nat’l Wildlife Fed. v. Brownlee*, 402 F. Supp. 2d 1, 10–11 (D.D.C. 2005). The “may affect” threshold in the ESA regulations is very low. FWS’s ESA consultation handbook defines “may affect” as “the appropriate conclusion when a proposed action may pose *any* effects on listed species or designated critical habitat.”<sup>514</sup> An agency may avoid consultation only if the “agency determines, with written concurrence of [FWS or NMFS], that the proposed action is not likely to adversely affect any listed species . . . .” 50 C.F.R. § 402.14(b)(1).

Following formal consultation, FWS (or NMFS) must provide the action agency with a biological opinion, “explaining how the proposed action will affect the species or its habitat.” *Bennett v. Spear*, 520 U.S. 154, 158 (1997). The biological opinion must determine whether the agency’s “action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species,” 50 C.F.R. § 402.14(g)(4), and must include measures to minimize and monitor impacts to species that are likely to occur. *Id.* § 402.14(i).

#### A. The Corps must consult regarding the effects of all nationwide permits.

Here, the Corps declines to consult over its nationwide permitting program—including NWP 12—based on the assertion that “no activities authorized by any NWPs ‘may affect’ listed species or critical habitat.”<sup>515</sup> This is wrong. The Corps conducts more than 10,800 section 7 consultations for NWP activities *every year*.<sup>516</sup> Those consultations would be unnecessary if NWP activities did not affect listed species and their designated habitats. In truth, the Corps’ argument is that deferred section 7 consultations for individual NWP projects satisfy the Corps’ ESA obligations. But consultation over *one* NWP project does not account for the effect on a species in combination with *other* NWP projects. Simple math confirms that many of these NWP projects affect the same species; there are nowhere near 10,000 species listed under the ESA. The Corps’ approach allows the aggregate effect of its program to slip through the cracks of siloed project-by-project consultations. The end result is the NWP program inflicts an unknown overall level of harm on protected species and their habitats—precisely the result the consultation requirements seek to avoid.

The Corps knows as much. In fact, the Corps has known about its duty to consult as far back as 2005, when the District Court for the District of Columbia held in *National Wildlife Federation v. Brownlee* that such an approach does not comply with the ESA. 402 F. Supp. 2d 1 (D.D.C. 2005). In *Brownlee*, the Corps had failed to consult with FWS on four nationwide permits. 402 F. Supp. 2d at 10. Although the Corps acknowledged that the permits “may affect” the endangered Florida panther, it argued that it could satisfy the ESA’s § 7(a)(2) requirement by consulting with FWS on individual projects authorized under the four NWPs. *Id.*

---

<sup>514</sup> U.S. Fish & Wildlife Serv. & Nat’l Marine Fisheries Serv., *Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the ESA* xvi (Mar. 1998) (emphasis in original).

<sup>515</sup> 85 Fed. Reg. at 57,357.

<sup>516</sup> See Draft Dec. Doc. 12 at 60.



The *Brownlee* court disagreed and cited ESA regulations that state “any request for formal consultation may encompass . . . a number of similar individual actions within a geographical area or a segment of a comprehensive plan [and that] [t]his does not relieve the Federal agency of the requirements for considering the effects of the action as a whole.” *Id.* (quoting 50 C.F.R. § 402.14(c)). As the *Brownlee* court explained, “overall consultation for the NWP is necessary to avoid piece-meal destruction of panther habitat through failure to make a cumulative analysis of the program as a whole.” *Id.*

In response to the *Brownlee* decision, the Corps agreed that it had a legal duty to engage in consultation for the NWP. It commenced consultation for the 2007 NWP but did not complete consultation before the NWP was issued. For the 2012 NWP, the Corps continued consultation with both FWS and NMFS. NMFS eventually issued a jeopardy opinion.<sup>517</sup> The Corps failed to conclude its consultation with the FWS.

In its jeopardy opinion, NMFS determined that the Corps had “failed to insure that activities that would be authorized by the [NWP] are not likely to jeopardize the continued existence of endangered or threatened species under the jurisdiction of NMFS.”<sup>518</sup> The Corps, according to NMFS, did not have sufficient information “to know or reliably estimate the general and particular effects of the activities that would be authorized,” to determine the effect of those activities on water quality or listed species, or to take action necessary to prevent direct or cumulative degradation of water quality and habitat.<sup>519</sup>

In 2017, the Corps ignored this jeopardy finding and the *Brownlee* decision and chose to forego consultation once more when reissuing its suite of NWP. A federal court held that the Corps’ failure to consult on NWP 12 in particular violated the ESA, citing the same concerns as the *Brownlee* court. *See N. Plains*, 454 F. Supp. 3d at 994 (D. Mont. 2020).<sup>520</sup>

In the current proposed nationwide permits, the Corps yet again states that the action of authorizing or reauthorizing the NWP does not involve any activity that would trigger consultation. For those activities that “may affect” a threatened or endangered species, consultation will be performed on the project level by the Corps districts.<sup>521</sup> In those cases where there is no PCN requirement, the Corps has left it up to the applicant to determine, under

---

<sup>517</sup> See Nat’l Marine Fisheries Serv., Endangered Species Consultation Biological Opinion on U.S. Army Corps of Engineers’ Nationwide Permit Program (Feb. 2012), <https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Nationwide-Permits/> (last visited Nov. 14, 2020).

<sup>518</sup> *Id.* at 221.

<sup>519</sup> *Id.* at 223.

<sup>520</sup> The Montana district court initially remanded NWP 12 to the Corps “for compliance with the ESA,” vacated the permit, and enjoined the Corps from authorizing any activities under it until Section 7 consultation was complete. *N. Plains Res. Council v. U.S. Army Corps of Engineers*, 454 F. Supp. 3d 985, 996 (D. Mont. 2020). The court later narrowed the scope of both the vacatur and the injunction to dredge or fill activities associated with the construction of “new oil and gas pipelines,” but left its remand order unaltered. *N. Plains Res. Council v. U.S. Army Corps of Engineers*, No. CV 19-44-GF-BMM, 2020 WL 3638125, at \*14 (D. Mont. May 11, 2020). The Supreme Court subsequently stayed the partial vacatur and injunction, “except as it applies to the Keystone XL pipeline,” but left the remand order and grant of summary judgment intact. *U.S. Army Corps of Engineers v. N. Plains Res. Council*, No. 19A1053, 2020 WL 3637662, at \*1 (U.S. July 6, 2020).

<sup>521</sup> 85 Fed. Reg. at 57,357.

General Condition 18, whether consultation is necessary.<sup>522</sup>

This approach, however, goes against the *Brownlee* decision. This case makes clear that ESA consultation over an action may not be postponed for the purpose of segmenting that action into smaller actions and consulting over the smaller actions. *See, e.g., Lane County Audubon v. Jamison*, 958 F.2d 290, 294 (9th Cir. 1992) (holding management guideline governing timber sales was an agency action, and therefore postponing ESA consultation to individual sales was prohibited); *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988) (holding that the agency violated the ESA by refusing to consult on effects of oil and gas plan and that consultation at individual lease stage is insufficient). With the reauthorization of the NWP, the Corps is attempting to improperly segment the impacts of the NWP into over 50 different types of activities and then again into all the individual impacts of the activities authorized under any particular permit. This is not allowed under the ESA.

B. The Corps' failure to consult on the reissuance of NWP 12 violates Section 7 of the ESA.

The Corps' failures with respect to consultation are epitomized by NWP 12. Not only has NWP 12 been recently rejected by a federal court, its use has caused immense impacts to jurisdictional waters as documented above.

*1. The activities authorized by NWP 12 easily exceed the ESA's low "may affect" threshold.*

As noted above, federal agencies cannot take actions—like issuing NWP 12—that “may affect” listed species or their critical habitat without consulting with the Services. 50 C.F.R. § 402.14(a). The “may affect” threshold for consultation under Section 7(a)(2) is low, and is triggered by “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character.” *Nat'l Parks Conservation Ass'n v. Jewell*, 62 F. Supp. 3d 7, 13 (D.D.C. 2014) (quoting 51 Fed. Reg. 19,926, 19,949–50 (June 3, 1986)). “An agency may avoid the consultation requirement only if it determines that its action will have ‘no effect’ on a listed species or critical habitat.” *Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1027 (9th Cir. 2012).

Here, the Corps' own draft decision document acknowledges NWP 12 authorized activities may, and in some cases, will have many adverse effects on aquatic and terrestrial organisms. To start, the Corps finds that pipeline construction authorized under NWP 12 may kill organisms directly. For instance, the Corps recognizes that any “[s]essile or slow-moving animals in the path of discharges, equipment, and building materials may be destroyed.”<sup>523</sup> Other “aquatic animals may be smothered by the placement of dredged or fill material.” *Id.* In a similar—though more euphemistic—vein, the Corps finds that detrimental impacts to water quality caused by dredge or fill activities may affect the “quantities of organisms inhabiting the aquatic area.”<sup>524</sup> The Corps also ominously but vaguely notes that pipeline construction may

---

<sup>522</sup> *Id.*

<sup>523</sup> Draft Dec. Doc. NWP 12 at 74.

<sup>524</sup> *Id.* at 73.

cause “changes in local species composition”—without specifying what befalls those species that are replaced.<sup>525</sup>

Even those organisms that avoid being crushed, smothered, reduced in quantity, or wholly replaced may still lose critical habitat. The Corps acknowledges that pipeline construction authorized by NWP 12 “will . . . affect the physical, chemical, and biological characteristics of the environment,”<sup>526</sup> and “will” result in “permanent or temporary impacts” to thousands of acres of jurisdictional waters and wetlands<sup>527</sup>—areas it recognizes “provide habitat, including foraging, nesting, spawning, rearing, and resting sites for aquatic and terrestrial species.”<sup>528</sup> These negative impacts may range from “habitat fragmentation” to the outright “modif[ication] or eliminati[on]” of areas used by fish and wildlife for “nesting, foraging, resting, and reproduction.”<sup>529</sup> Other potential impacts—for “resident and transient mammals, birds, reptiles, and amphibians” alike—include lost access to “escape cover, travel corridors, and preferred food sources.”<sup>530</sup>

The Corps also finds that impacts to species may not stop when pipeline construction does. Put delicately, oil spills or natural gas leaks “may alter conservation values in the vicinity of the oil or natural gas pipeline.”<sup>531</sup> Changes to stream morphology caused by NWP 12 dredge or fill activities may “subsequently affect fish populations.”<sup>532</sup> And any forested wetlands that were cleared in the pipeline right-of-way “may not be allowed to grow back . . . so that the oil or natural gas pipeline will not be damaged and can be easily maintained.”<sup>533</sup> This potentially “permanent” conversion of “forested wetlands to scrub-shrub or emergent wetlands” may alter the “habitat characteristics” of those wetlands, “which may decrease the quantity and quality of fish and wildlife habitat.”<sup>534</sup>

This “resounding evidence” demonstrates that “the Corps’ reissuance of NWP 12 ‘may affect’ listed species and their habitat.” *N. Plains*, 454 F. Supp. 3d at 990 (quoting *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 498 (9th Cir. 2011)). Which perhaps explains why the Corps engaged in formal consultation when it reissued NWP 12 in 2007 and 2012, and why a federal district court ordered the Corps to do so again after it neglected to consult in 2017. *See id.* at 994 (noting that the Corps’ previous programmatic consultations for NWP 12 in 2007 and 2012 “underscore[d] the need for programmatic consultation when the Corps reissue[s] NWP 12” in 2017). Given the low threshold required to trigger Section 7(a)(2) consultation— “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character”—the Corps’ own findings require it to consult on the NWP 12 reissuance.

2. *The Corps cannot postpone its duty to conduct a programmatic consultation or delegate its non-delegable statutory obligation to non-Federal permittees*

---

<sup>525</sup> *Id.* at 52.

<sup>526</sup> *Id.* at 49 (emphasis added),

<sup>527</sup> *Id.* at 65–66 (emphasis added)

<sup>528</sup> *Id.* at 51.

<sup>529</sup> *Id.* at 52–54.

<sup>530</sup> *Id.* at 75.

<sup>531</sup> *Id.* at 49.

<sup>532</sup> *Id.* at 53.

<sup>533</sup> *Id.* at 51.

<sup>534</sup> *Id.* at 51–52.

It is reasonable to wonder how, after detailing the extensive harms NWP 12 may wreak on aquatic and terrestrial organisms, the Corps can “continue[] to believe” that its programmatic action will have “no effect” on listed species or their habitat.<sup>535</sup> The answer is confounding: the Corps simply dusts off several stale justifications that have already been thrown out by at least two different federal courts.

In short, the Corps argues that NWP 12 will have “no effect” on listed species because both General Condition 18 and 33 CFR § 330.4(f) require permittees to alert the Corps if any proposed activity “*might* affect listed species or designated critical habitat.”<sup>536</sup> According to the Corps, because this threshold is even “more stringent” than the “may affect” trigger, district engineers will supposedly catch any project that could conceivably impact listed species and “ensure that ESA consultation will take place on an *activity-specific* basis wherever appropriate.” *Id.* (emphasis added).

However, two federal district courts have already rejected the Corps’ suggestion that future “activity-specific” consultation is an adequate substitute for a programmatic NWP 12 consultation. In *National Wildlife Federation v. Brownlee*, the district court found there were “several serious problems” with this “site-specific” approach, and held instead that “overall consultation for [NWP 12 and three other permits] is *necessary to avoid piece-meal destruction* of [listed species’] habitat through failure to make a cumulative analysis of the program as a whole.” 402 F. Supp. 2d at 10 (emphasis added). Similarly, in *Northern Plains Resource Council v. U.S. Army Corps of Engineers*, another district court expressly held that “[p]roject-level review does not relieve the Corps of its duty to consult on the issuance of [NWP 12] at the programmatic level.” 454 F. Supp. 3d at 992. By its very nature, project-level review alone “cannot ensure that the discharges authorized by NWP 12 [as a whole] will not jeopardize listed species or adversely modify critical habitat.” *Id.* at 993.

As these courts acknowledged, project-specific consultations do not account for the overall effects of the NWP 12 program—and therefore cannot ensure that the NWP 12 program will not jeopardize protected species—because the ESA concept of “action area” limits the scope of project-specific analysis and because cumulative effects under the ESA exclude federal actions. When the Services determine whether an individual project is likely to jeopardize a listed species or adversely modify critical habitat, it focuses on three factors: the “effects of the action,” “cumulative effects,” and the “environmental baseline.” 50 C.F.R. § 402.14(g)(4) (requiring the Services to “[a]dd the effects of the action and cumulative effects to the environmental baseline and in light of the status of the species and critical habitat” when making a jeopardy or adverse modification finding). Effects of the action are “all consequences to listed species” caused by the action. *Id.* § 402.0. Cumulative effects are those of “future State or private activities, not involving Federal activities,” that occur “*within the action area.*” *Id.* (emphasis added). And environmental baseline means the condition of listed species within “*the action area,*” considering impacts from past or present Federal, State, or private actions and anticipated impacts from Federal projects that have completed section 7 consultation. *Id.* (emphasis added). Action area means “all areas to be affected directly or indirectly by *the Federal action* and not merely the immediate area involved in the action.” 50 C.F.R. § 402.02.

---

<sup>535</sup> 85 Fed. Reg. at 57,359.

<sup>536</sup> *Id.* at 57,357 (emphasis added).

Thus for project-specific consultations, the Corps and Wildlife Services focus on the area affected by that *individual* federal action including for cumulative effects purposes. Cumulative effects also exclude simultaneously planned federal actions that have not completed section 7 consultation *including other NWP 12 projects*. This focus on the “action area” means that individual consultations miss the overall effect of NWP-approved projects—enabling the “piecemeal destruction” of species that the *Brownlee* court warned against.

The Corps’ consultation figures illustrate the depth of this problem. As noted above, the Corps estimates that it conducts more than 10,800 formal, informal, and regional programmatic ESA section 7 consultations in connection with the NWP program every year.<sup>537</sup> If all of these consultations were divided evenly amongst the various NWPs, NWP 12 would require about 1000 project- or regional-level Section 7 consultations every five years.<sup>538</sup> If even a few of these consultations concerned the same species, the “blinders-on” approach suggested by the Corps would do little to ensure those affected species are not wiped out piece by piece.

This is also how the Corps’ project-by-project consultations work in practice. For example, the Atlantic Coast Pipeline and Mountain Valley Pipeline were both NWP 12 projects, each with over 1,000 waterbody crossings, proposed for construction in Virginia and West Virginia. Project-specific section 7 consultations confirmed that both pipelines would adversely affect the endangered Roanoke logperch, a freshwater fish.<sup>539</sup> There are “approximately eight total populations of . . . logperch.”<sup>540</sup> MVP will affect three populations; ACP would have affected a fourth.<sup>541</sup> Yet despite the overall adverse effect of these NWP 12 projects on logperch, project-specific jeopardy analysis for each pipeline ignored the adverse effect of the other because each pipeline defined “action area” to exclude the other project. If these NWP 12 projects would have together jeopardized Roanoke logperch, no one would have known until it was too late. This violates the ESA.

Even if the Corps could shrug off precedent, logic, and its statutory duty to conduct programmatic consultation, it still cannot delegate its initial-effect determination to non-Federal permittees. *Cf. City of Tacoma, Washington v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006) (“[T]he ultimate responsibility for compliance with the ESA falls on the action agency.”). The ESA requires the “*Federal agency . . . [to] insure that any action authorized, funded, or carried out by such agency*” is not likely to jeopardize listed species or adversely modify their critical habitat. 16 U.S.C. § 1536(a)(2) (emphasis added). Consistent with this command, ESA implementing regulations require *the Corps* to determine, “at the earliest possible time,” whether “*its actions . . . may affect listed species or critical habitat.*” 50 C.F.R. § 402.14(a) (emphasis added). But General Condition 18 and 33 C.F.R. § 330.4(f) turn the “ESA’s initial effect determination over to non-federal permittees, even though *the Corps* must make that initial determination.” *N. Plains*, 454 F. Supp. 3d at 994 (emphasis added).

---

<sup>537</sup> Draft Dec. Doc. NWP 12 at 60.

<sup>538</sup> The Corps does not provide individual consultation figures for NWP 12. Given the number of activities it is expected to authorize (47,750 activities over five years), and the impacts it is expected to have, it would not be surprising if NWP 12 was responsible for an even larger share of these reported consultations.

<sup>539</sup> See FWS, Biological Opinion for ACP 38–39 (Sept. 11, 2018), <https://bit.ly/3g7DuBA> (ACP BiOp); FWS, Biological Opinion for MVP 23–24 (Nov. 21, 2017), <https://bit.ly/2WRUBjm> (MVP BiOp). The Corps was sent copies of these Biological Opinions when they were produced. If the Corps would like additional copies under separate cover please let us know.

<sup>540</sup> *Id.* at 10.

<sup>541</sup> Compare *id.* (listing populations) with ACP BiOp 18-19; MVP BiOp 14-16.

As a result, the Corps' no-effect determination is arbitrary and capricious and fails to "articulate a rational connection between the facts it found and the choice it made." *Id.*

3. *Recent amendments to ESA implementing regulations have no bearing on the Corps' duty to consult*

Perhaps sensing the weight of authority against it, the Corps advances one new argument in its proposal. In short, it finds that "the 2015 and 2019 amendments to 50 C.F.R. part 402" support its claim that "the issuance or reissuance of the NWP has 'no effect' on listed species or designated critical habitat."<sup>542</sup> But neither amendment has any impact on the Corps' duty to consult.

a. 2015 amendments

The 2015 amendments the Corps references addressed when it is appropriate to provide an incidental take statement ("ITS") along with a biological opinion during "programmatic section 7 consultation."<sup>543</sup> Specifically, the Wildlife Services provided that an ITS is *not* required "at the programmatic level" for "framework programmatic actions,"<sup>544</sup> even if formal section 7 consultation is. Interagency Cooperation—Endangered Species Act of 1973, as Amended; Incidental Take Statements.<sup>545</sup> In its preamble to the rule, the Services identified the Corps' NWP regime as such a framework program.<sup>546</sup> The Corps now suggests that this reference means that "the Corps' NWP program [is] an example of a framework action at a national scale that can address *ESA section 7 consultation requirements* at a later time as appropriate, as specific activities are authorized, funded, or carried out."<sup>547</sup>

The language of the 2015 amendments, however, only allowed the Wildlife Services to avoid issuing an *ITS* for framework programmatic actions. It did not allow agencies to postpone "ESA section 7 consultation requirements" writ large, as the Corps suggests. *See* 50 C.F.R. § 402.14(6) (stating that for a "framework programmatic action, an incidental take statement is not required at the programmatic level"). In fact, the Wildlife Services took pains to point out that the 2015 amendment's "altered view as to *incidental take* for framework programmatic actions . . . does not undermine the *duty to consult* under section 7(a)(2) of the ESA."<sup>548</sup>

Indeed, the notion that "[f]ramework programmatic actions *will* trigger formal consultation *if the action may affect* listed species or their designated critical habitat" is the very premise of the 2015 rule.<sup>549</sup> If no consultation were needed at the programmatic level—as the Corps seems to imply—there would be no need for *either* a biological opinion *or* an ITS, and no

---

<sup>542</sup> 85 Fed. Reg. at 57,359.

<sup>543</sup> 85 Fed. Reg. at 57,357–38.

<sup>544</sup> Framework programmatic action means:

[F]or purposes of an incidental take statement, a Federal action that approves a framework for the development of future action(s) that are authorized, funded, or carried out at a later time, and any take of a listed species would not occur unless and until those future action(s) are authorized, funded, or carried out and subject to further section 7 consultation.

50 C.F.R. § 402.02.

<sup>545</sup> 80 Fed. Reg. 26,832, 26,835–45 (May 11, 2015)

<sup>546</sup> *Id.* at 26,835.

<sup>547</sup> 85 Fed. Reg. at 57,358 (emphasis added).

<sup>548</sup> 80 Fed. Reg. at 26,833 (emphasis added).

<sup>549</sup> *Id.* (emphasis added).

need for a rule saying the latter is not required when the former is.<sup>550</sup> The Services decided to leave the programmatic consultation requirement untouched, however, because the “analysis in a biological opinion allows for a broad-scale examination of a [framework programmatic action’s] potential impacts on a listed species and its designated critical habitat—an examination that is not as readily conducted when the later, action-specific consultation occurs on a subsequent action developed under the program framework.”<sup>551</sup>

In sum, no reading of the 2015 rule and its preamble support the Corps’ argument.

b. 2019 amendments

The Corps takes one last stab at shoring up its “no effect” determination by invoking the 2019 amendments to the ESA implementing regulations. These amendments made two important changes to 50 C.F.R. part 402: (i) “introducing the term ‘consequences’ to help define what is an effect under ESA section 7,” and (ii) “emphasizing that to be considered an ‘effect of the action’ under section 7 consultation, the consequences caused by the action would not occur but for the proposed action and must be reasonably certain to occur.”<sup>552</sup> “Applying the 2019 amendments to the section 7 regulations to the NWP program,” the Corps maintains, means “consequences to listed species and designated critical habitat caused by proposed NWP activities *must be reasonably certain to occur*.”<sup>553</sup> More specifically, the Corps asserts that these amendments require each Corps district engineer, after receiving a PCN for a proposed activity, to apply “the definition of ‘effect of the action’ to the proposed NWP activity and to determine the consequences caused by the proposed action and which activities are reasonably certain to occur.”<sup>554</sup> The district engineer then “determines whether the proposed NWP activity ‘may affect’ listed species or designated critical habitat and initiates formal or informal section 7 consultation unless it determines the proposed NWP activity will have ‘no effect’ on listed species or designated critical habitat.”<sup>555</sup>

Insofar as the Corps is suggesting that the 2019 amendments alter the “may affect” trigger for either programmatic or site-specific consultation, it is mistaken. In the preamble to the 2019 rule, the Services plainly stated that these “revisions to this [“effects of the action”] definition should not create any additional uncertainty about when formal or informal consultation is required, because these revisions do not change the obligations of action agencies to consult *or the circumstances in which consultation must be initiated*.”<sup>556</sup> It is hard to see how they could. The term “effects of the action” describes the impacts of a proposed action that must be evaluated under a biological assessment or opinion. *See* 50 C.F.R. §§ 402.12; 402.14. It does not describe or apply to the “may affect” threshold. *See* 50 C.F.R. § 402.14(a).<sup>557</sup>

---

<sup>550</sup> *See id.* at 26,835 (noting the 2015 rule is “specific to framework programmatic actions that require section 7 consultation and adopt a framework for the development of future actions”).

<sup>551</sup> *Id.* at 26,836 (emphasis added).

<sup>552</sup> 85 Fed. Reg. at 57,358.

<sup>553</sup> *Id.* (emphasis added).

<sup>554</sup> *Id.*

<sup>555</sup> *Id.*

<sup>556</sup> Endangered and Threatened Wildlife and Plants; Regulations for Interagency Cooperation, 84 Fed. Reg. 44,976, 44,982 (Aug. 27, 2019) (emphasis added).

<sup>557</sup> Even if it did, the Services stated that the changes to “effects of the action” will not “alter how [they] analyze the effects of a proposed action.” 84 Fed. Reg. at 44,977. The Services “will continue to review all relevant effects of a proposed action as [they] have in past decades.” *Id.* Thus, consultations will still “capture those effects

If the Corps is only intimating that this definition changes the order of operations for *project*-level consultations, it is hard to see how this bolsters its argument that *programmatic* consultation is not needed. The Corps seems to say that, after receiving a PCN, the district engineer will first apply the “effects of the action” definition to identify which consequences are reasonably certain to occur, and only then analyze whether those reasonably certain consequences “may affect” listed species. But the issue is whether the Corps must programmatically consult on the reissuance of NWP 12, not what district engineers will do if the Corps somehow evades its duty to consult at the program level.

But even if this project-level order of operations were relevant, it is still highly problematic. As noted above, the “may affect” threshold is low—the Corps must consult if the action has “[a]ny possible effect” on listed species. *Jewell*, 62 F. Supp. 3d at 13 (quoting 51 Fed. Reg. 19,926, 19,949–50 (June 3, 1986)). But under the Corps’ roundabout approach, its district engineers need only analyze whether those effects that are “reasonably certain to occur” may in turn affect listed species. This means the Corps could decline to analyze whether low-probability but high-consequence impacts—such as an oil spill—“may affect” endangered or threatened species or their habitat. This approach would be in clear conflict with the established—and unaltered—ESA consultation trigger. *See* 50 C.F.R. § 402.14(a).<sup>558</sup>

In sum, the 2019 amendments did not alter the circumstances in which the Corps must consult. Therefore, they provide no support for the Corps’ “no effect” determination.

## **VII. The Nationwide Permits Cannot Be Reissued.**

The Corps has and will violate numerous federal laws if it issues the nationwide permits as proposed. The agency’s analysis fails at the most basic step—defining the no action alternative—as well as more complex, but mandatory, analyses—the effects of the permits. The proper course from here is to withdraw the nationwide permits and propose new nationwide permits at a later date.

Sincerely,



Geoff Gisler



Patrick Hunter

---

(consequences) previously listed in the regulatory definition of effects of the action—direct, indirect, and the effects from interrelated and interdependent activities”—even with the new definition. *Id.*

<sup>558</sup> *See also* 84 Fed. Reg. at 44,982 (stating the 2019 amendments “do not change the obligations of action agencies to consult or the circumstances in which consultation must be initiated”).



*Deborah Murray*  
Deborah Murray

*William W. Sapp*  
William W. Sapp

## **ATTACHMENT A**

**Comments of Richard Rheinhardt, PhD, on the U.S. Army Corps of  
Engineers' proposed elimination  
of the 300 linear-foot threshold for granting nationwide permits**

**Comments on the U.S. Army Corps of Engineers' proposed elimination  
of the 300 linear-foot threshold for granting nationwide permits**

from

**Richard Rheinhardt, PhD  
Ecological Restoration & Monitoring  
Pocasset, MA 02559**

for

**Southern Environmental Law Center**

These comments address the U.S. Army Corps of Engineers' (Corps) proposal to eliminate from nationwide permits (NWP) the 300 linear-foot (LF) project limit threshold for requiring an individual permit and to rely instead on a 0.5-acre threshold based on area of streambed impacted. My comments focus on the scientific implications of the proposed changes and are based on >25 years of research experience with streams and larger rivers, some of which was focused on developing functional assessment methods for riverine ecosystems.<sup>1</sup>

The Corps requests comments on whether there is evidence supporting the proposed change in NWP thresholds from four perspectives:

- (1) Whether there is evidence for imposing more restrictive quantitative limits for losses of headwater streambed resources versus losses of streambeds in larger streams located further downstream in the stream network of a watershed
- (2) Whether there is evidence for imposing different or more restrictive limits on losses of streambed resources than for losses of non-tidal wetlands and other types of non-tidal waters
- (3) Whether potential losses of streambed resources should be quantified in linear feet rather than by the amount of streambed filled or excavated when evaluating potential impacts to stream resources resulting from an NWP activity
- (4) Whether a proposed alternative hybrid approach would be preferable to other approaches for establishing permit thresholds when evaluating proposed impacts to stream/wetland ecosystems

Stream networks and their associated riparian zones already receive too little protection given their high capacity to affect water quality in downstream receiving waters (rivers, estuaries, and coastal zones). Headwater streams, in particular, need more protection, not less, given their relative importance in providing habitat, hydrologic, and water quality benefits to downstream waters. The current linear-foot metric is appropriate for streams because they are linear systems that interact with their landscapes along linear borders. The proposed change in the regulatory threshold from a linear metric to an areal metric will drastically reduce protection of headwater streams.

Over the past 35+ years, there has been an extensive body of research published on the importance of headwater streams (i.e., first and second order streams) to water quality writ large. This research, some of which I cite below, shows the overwhelming importance of headwater streams to the chemical, physical,

---

<sup>1</sup> The development of these assessment protocols was funded by grants and contracts from the Corps (ERDC), USEPA, and the state of North Carolina.

and biological integrity of our nation's waters. The scientific grounds for these conclusions are discussed separately below.

## Specific comments

### **(1) Scientific evidence for imposing more restrictive quantitative limits for losses of headwater streambed resources versus losses of streambeds in larger streams located further downstream in the stream network of a watershed**

Much of the early scientific studies of headwater ecosystems focused on the importance of the streams and their riparian areas for processing nutrients in agricultural drainage basins, especially nitrogen (N) (Lowrance et al. 1984, Peterjohn and Howarth (2008) found that 10%–40% of nitrogen (N), mostly as nitrate ( $\text{NO}_3^-$ ), entering rivers is exported to coastal areas, where it causes eutrophication in downstream estuaries and coastal zones. Removal of nitrogen from aquatic ecosystems can occur by biotic uptake (assimilation) and denitrification (wherein  $\text{N}_2$  is outgassed to the atmosphere).<sup>2</sup> Trees and other vegetation in riparian zones and floodplains are sinks for N, but most N assimilation in streams is temporary because N in organic material is recycled (internally transformed or relocated) as it moves downstream in a process known as nutrient spiraling (Ensign and Doyle 2006). The downstream export of nutrients leads to eutrophication and restructuring of aquatic food webs in downstream reaches (Finlay 2011). This is why it is so important to minimize N input to streams and maximize denitrification in streams and in bordering wetlands.

Most nutrient and hydrologic inputs to streams (via groundwater, interflow, and overland flow) occur along the borders of riparian zones and stream banks (Freeman et al. 2007).<sup>3</sup> This makes stream length an important metric for evaluating potential water quality. Estimates in the scientific literature concerning the proportion of stream length by order are consistent. First and second order streams (*sensu* Strahler 1957) comprise 73%–80% of a basin's total stream length, third to fourth order streams constitute 12%–19%, and greater than fifth order streams comprise 5%–8% of total length (Leopold et al. 1964, Rheinhardt et al. 1999, Downing 2012).<sup>4</sup> Because prevalence and total length of streams is inversely proportional to stream order (Leopold 1964), lower order (i.e., headwater) streams and their riparian zones intercept most inputs of nutrients and water to drainage basins (Brinson 1993a, Ramesh et al. 2020). As a result, although the relative proportion of water and nutrients in stream networks that enter streams directly from headwater streams declines downstream, a relatively high proportion of inputs to higher order streams is still derived from headwaters. Specifically, 100% of water in third order streams comes from headwater streams, whereas about 55% of water in fourth and higher order streams comes directly from headwater streams (Alexander et al. 2007).

Because denitrification is mediated by soil microbes where anaerobic and aerobic conditions occur in close proximity in time and/or space,<sup>5</sup> most denitrification in drainage basins occurs at streamside zones and on stream bottoms, mostly during base flow.<sup>6</sup> About 64% of inorganic N can be removed over a 1-km reach by instream processes (Peterson et al. 2001), whereas 10% of  $\text{NO}_3^-$  can be removed in headwater streams via denitrification (Mulholland et al. 2009). Allen and Pavelsky (2015) determined that the total

---

<sup>2</sup> Denitrification is a permanent removal of N (as  $\text{N}_2$ ) to the atmosphere, where it is an inert part of Earth's atmosphere, which is 70%  $\text{N}_2$ .

<sup>3</sup> An even larger source of N in headwater catchments is atmospheric deposition.

<sup>4</sup> Variations are due mostly to climate and accuracy of topographic maps.

<sup>5</sup> Organic carbon, especially dissolved organic carbon from leaf litter and wood decay, supply the energy source for denitrifying bacteria.

<sup>6</sup> Most nutrient processing for higher order streams occurs on floodplains during flood events.

surface area of lower order (i.e., headwater) streams is exponentially larger than the surface area of wider (higher order) streams.<sup>7</sup> For this reason, smaller streams remove N more efficiently and rapidly than higher order streams, due primarily to their higher ratios of streambed area to water volume (Mulholland et al. 2008). Typically, headwater streams remove 55% of inorganic N inputs to watersheds (Peterson et al. 2001).<sup>8</sup> The longer total stream length and higher N removal efficiency of lower order streams is the main reason that stream length is so important to water quality and why headwater streams are vastly more important to water quality functions in stream networks than are higher order streams.<sup>9</sup> The loss of headwater streams over time as watersheds have been anthropogenically exploited has led to a continual degradation in water quality in the nations' waters (Lowe and Likens 2005, Freeman et al. 2007).

Headwater streams are tightly coupled with their riparian zones (Richardson and Daneby 2007), which supply inputs of organic carbon (energy) and nutrients (as discussed above). Biological integrity of creeks, rivers, and estuaries downstream depend on conditions in headwater streams because they provide spawning habitat and prey, contribute to hydrologic regime downstream (baseflow and flood storage), and determine the quality and quantity of particulate organic carbon flushed downstream, all of which affect the life cycle of river-dependent organisms (Barmuta et al. 2009, Colvin et al. 2019). In addition, a biologically diverse group of organisms inhabits headwater streams (Meyer et al. 2007) and spends part of their life cycle there or uses them as refugia. Many of these organisms are crucial for processing organic matter, which regulates the amounts and quality of organic matter exported to downstream ecosystems (Wipfli et al. 2007). Thus, because headwater streams differ markedly in functioning than higher order streams, they need different and more conservative protections (Gomi et al. 2007).

In spite of regulatory protections, headwater streams are being lost at alarming rates. Most losses (burial and piping) of headwater streams have occurred in watersheds of urban (66%-70% lost) and suburban (20% lost) landuses (Elmore and Kaushal 2008) and many streams remaining in such watersheds are overburdened with nutrients. Because the proportion of low order stream length in a landscape is much higher than is the length of higher order streams, more low order streams are evaluated for NWP. As a result, even though for any given stream length the area of streambed impacted will be much smaller for a low order stream than for a larger order stream, the cumulative impacts of NWPs provided for low order streams will result in more rapid eutrophication of downstream rivers and estuaries. Cumulative losses of headwater streams will also result in flashier and more severe flooding downstream due to cumulative reductions in water storage capacity (i.e., hydrology in low order streams will become more flashy) (O'Driscoll et al. 2010). For these reasons, quantitative thresholds for triggering individual permits to alter headwater streambeds should be made more restrictive, not less.

## **(2) Scientific evidence for imposing different or more restrictive limits on losses of streambed resources than for losses of other types of non-tidal aquatic resources**

Wetlands and other aquatic resources receive regulatory protection because they provide valuable services to society and support terrestrial food webs (Brinson 1993b). The functions and services of aquatic resources vary in type and magnitude, depending on geomorphic position in a landscape, which means that some aquatic resources naturally perform some functions better than others do (Brinson 1993a, 1993b). However, the most defensible basis for identifying particular resources or resource types for more or less regulatory protection would be to determine which ecological services are in more need of

---

<sup>7</sup> Surface area is proportional to area of stream bottom (where most denitrification occurs).

<sup>8</sup> This is true until small streams become overloaded with N, after which excess N is exported downstream.

<sup>9</sup> In contrast, higher order streams function better in providing fish habitat and in exporting particulate carbon. The point is, lower order and higher order streams function differently and so there is no scientific basis for treating them similarly.

protection in a given landscape and/or how crucial the given resource is in supplying essential services or ecosystem support to surrounding or connected ecosystems. Because streams are linear and connect ecosystems (aquatic ecosystems in their network and adjacent terrestrial ecosystems), streams are particularly valuable resources in all landscapes. The relative importance of streams and rivers is due to the direct linkages in energy, nutrient, and biota they provide between continental interiors and coastal zones (Nadeau and Rains 2007). In most landscapes, freshwater streams and their riparian zones supply important ecosystem services (e.g., water quality, water storage, and benthic habitat in the upper portions of stream networks and energy dissipation and pelagic habitat in the lower portions) (Brinson 1993a, Wipfli et al. 2007). Streams continually move material (e.g., carbon, sediments) and nutrients from uplands to oceans (Colvin et al. 2019, Ramesh et al. 2020), while organisms move in both directions (Meyer et al. 2007, Wipfli et al. 2007, Colvin et al. 2019). Given that stream networks are linear conduits that shunt water pollution downstream to coastal areas and organisms in both directions, streams should be given more regulatory protection, not less, for restoring and maintaining the chemical, physical, and biological integrity of our nation's waters.

**(3) Scientific evidence for quantifying potential losses of streambed resources in linear feet rather than by the amount of streambed filled or excavated when evaluating potential impacts to stream resources resulting from an NWP activity**

The type of metric used to establish thresholds for permitting activity in U.S. waters should be based on what is most appropriate for the resource being protected. Functions of streams and streambed resources, as discussed above, are best evaluated relative to stream length because streams are linear systems that interact with their landscapes at stream edges. As a class, headwater streams in a given drainage basin are more numerous, longer, and comprise more bottom substrate, but for any given reach length, area of streambed is much less for a headwater stream than for a higher order stream of the same length. Using area of stream bottom is especially problematic for headwater reaches because a small area of bottom will encompass a long stream length. Therefore, using area as a common threshold metric for both headwater streams and higher order rivers will devalue the relative ecological importance of headwater streams. That is, because headwater streams are so narrow, regulatory thresholds based on area will be much more difficult to trigger in low order streams than in higher order streams. For example, using Downing's (2012) metrics for width by stream order, a first order reach would have to be 691.4 feet long to trigger a tenth acre of streambed threshold and 3457 feet long to trigger a 0.5 acre streambed threshold. Both lengths are much longer than the current threshold of 300 LF.

Stream widths vary considerably by ecoregion due to climate and underlying geology (Richardson and Daneby 2007). For example, intermittent streams in the U.S. coastal plain and piedmont are closer to 1 m (3 feet) across, which would double the length threshold metric in the above example. For all regions of the U.S., replacing the length metric with the area metric would give headwater streams much less protection than currently exists. Thus, because streams are linear systems, a linear metric is a more appropriate regulatory threshold than is area, especially for lower order streams.

**(4) Scientific evidence concerning whether a proposed alternative hybrid approach would be preferable to other approaches for establishing permit thresholds when proposed impacts to stream/wetland ecosystems**

The proposed hybrid approach for defining thresholds for protection would drastically reduce protection of headwater channels (e.g., from 300 LF to 3470 for first order and to 2540 for second order streams) when impacts have been proposed for both streambed and their riparian wetlands. Given the importance

of headwater streams to the ecological functioning of stream networks and water quality, there is no scientific justification for granting headwater streams less regulatory protection.

## **Conclusions**

Headwater streams and their associated riparian zones already receive too little protection given their high capacity to affect water quality in downstream receiving waters (river networks and estuaries). At present, the NWP threshold for stream protection is 300 LF; the proposed threshold change to 0.5 acre of bottom would severely reduce protection of headwater streams and lead to more rapid degradation of the chemical, physical, and biological integrity of our nation's waters. In fact, headwater streams need more stringent protections, not less. Given the close physical and chemical connectivity between land use and headwater streams, watershed management relative to water quality should also receive more attention, particularly when considering cumulative effects of land-use changes on the functioning of headwater stream networks and the cascading effects downstream. In addition, given that streams are linear ecological systems, length of stream impact is an appropriate threshold metric for assessing potential effects on water quality,<sup>10</sup> especially for headwater streams, and so should be retained as a regulatory threshold for NWPs.<sup>11</sup>

---

<sup>10</sup> Chemical, physical, and biological integrity.

<sup>11</sup> Condition metrics could provide additional useful criteria.

## Literature Cited

- Alexander RB, Boyer EW, Smith RA, Schwarz GE, Moore RB. 2007. The role of headwater streams in downstream water quality. *Journal of the American Water Resources Association (JAWRA)* 43:41-59. DOI: 10.1111/j.1752-1688.2007.00005.x. (Attachment #137)
- Allen GH, Pavelsky TM. 2015. Patterns of river width and surface area revealed by the satellite-derived North American River Width data set. *Geophysical Research Letters* 42: 395–402. doi:10.1002/2014GL062764. (Attachment # 139)
- Barmuta LA, Watson A, Clarke A, E Clapcott JE. 2009. *The importance of headwater streams*, Waterlines report, National Water Commission, Canberra. (Attachment # 140)
- Boyer EW, Howarth RW. 2008. Nitrogen Fluxes from Rivers to the Coastal Oceans. Pp 1565-1587 In Capone et al. (eds), *Nitrogen in the Marine Environment* 2<sup>nd</sup> edition. (Attachment # 141)
- Brinson, M.M. 1993a. Changes in functioning of wetlands along environmental gradients. *Wetlands* 13:65-74. (Attachment # 142)
- Brinson MM. 1993b. A hydrogeomorphic classification for wetlands. Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. (Attachment # 143)
- Colvin SAR, Sullivan SMP, Shirey PD, Colvin RW, et al. 2019. Headwater streams and wetlands are critical for sustaining fish, fisheries, and ecosystem services. *Fisheries* 42: 73-91. (Attachment # 144)
- Downing J. 2012. Global abundance and size distribution of streams and rivers. *Inland Waters* 2: 229-236. (Attachment # 145)
- Elmore AJ, Kaushal SS. 2008. Disappearing headwaters: patterns of stream burial due to urbanization. *Frontiers in Ecology and the Environment* 6: 308-312. doi: 10.1890/070101. (Attachment # 146)
- Ensign SH, Doyle MW. 2006. Nutrient spiraling in streams and river networks. *Journal of Geophysical Research* 111: G04009 (1-13). doi:10.1029/2005JG000114. (Attachment # 147)
- Finlay JC. 2011. Stream size and human influences on ecosystem production in river networks. *Ecosphere* 2: 1-13. (Attachment # 148)
- Freeman MC, Pringle CM, Jackson CR. 2007. Hydrologic connectivity and the contribution of stream headwaters to ecological integrity at regional scales. *Journal of the American Water Resources Association (JAWRA)* 43(1):5-14. DOI: 10.1111/j.1752-1688.2007.00002.x. (Attachment # 149)
- Green DM, Kaufmann JB. 1989 Nutrient cycling at the land-water interface: the importance of the riparian Zone. Oregon Agricultural Experiment Station Technical paper 8724.
- Gomi T, Sidle RC, Richardson JS. 2002. Understanding processes and downstream linkages of headwater systems. *BioScience* 52: 905–916, [https://doi.org/10.1641/0006-568\(2002\)052\[0905:UPADLO\]2.0.CO;2](https://doi.org/10.1641/0006-568(2002)052[0905:UPADLO]2.0.CO;2). (Attachment # 150)
- Leopold, L.B., M.G. Wolman, J.P. Miller. 1964. *Fluvial Processes in Geomorphology*. W.H. Freeman and Co., San Francisco, California, USA.
- Lowe WH, Likens GE. 2005. Moving Headwater Streams to the Head of the Class. *BioScience* 55: 196-197. (Attachment # 151)



Lowrance R, Todd R, Fail J, Hendrickson O, Leonard R, Asmussen L. 1984. Riparian forests as nutrient filters in agricultural watersheds. *BioScience* 34:374-377.

Meyer JL, Strayer DL, Wallace JB, Eggert SL, Helfman GS, Leonard NE. 2007. The contribution of headwater streams to biodiversity in river networks. *Journal of the American Water Resources Association (JAWRA)* 43(1):86-103. DOI: 10.1111/j.1752-1688.2007.00008.x. (Attachment # 152)

Mulholland PJ, Helton AM, Poole GC, and 28 others. 2008. Stream denitrification across biomes and its response to anthropogenic nitrate loading. *Nature* 452: 202-205. (Attachment #153)

Mulholland PJ, Hall RO, Sobota DL, and 28 others. 2009 Nitrate removal in stream ecosystems measured by 15N addition experiments: Denitrification. *Limnology and Oceanography* 54: 666-680. (Attachment # 154)

Nadeau TL, Rains MC. 2007. Hydrological connectivity between headwater streams and downstream waters: how science can inform policy. *Journal of the American Water Resources Association (JAWRA)* 43:118-133. DOI: 10.1111/j.1752-1688.2007.00010.x. (Attachment # 155)

O'Driscoll M, Clinton S, Jefferson A, Manda A, McMillan S. 2010. Urbanization effects on watershed hydrology and in-stream processes in the southern United States. *Water* 2: 605-648; doi:10.3390/w2030605. (Attachment # 156)

Peterjohn WT, Correll DL. 1984. Nutrient dynamics in an agricultural watershed: observations on the role of a riparian forest. *Ecology* 65:1466-1475. (Attachment # 157)

Peterson BJ, Wolheim WM, Mulholland PJ, and 12 others. 2001. Control of nitrogen export from watersheds by headwater streams. *Science* 292: 86-90. <https://science.sciencemag.org/content/292/5514/86>. (Attachment #158)

Ramesh R, Anderson CJ, Kalin L. 2020. Characterizing nitrogen attenuation by headwater slope wetlands across different land uses. *Ecological Engineering* 149: 1-12. (Attachment # 159)

Rheinhardt RD, Rheinhardt MC, Brinson MM, Faser KE. 1999. Application of reference data for assessing and restoring headwater ecosystems. *Restoration Ecology* 7: 241-251. (Attachment # 161)

Richardson JS, Daneby RJ. 2007. A Synthesis of the Ecology of Headwater Streams and their Riparian Zones in Temperate Forests. *Forest Science* 53: 131-147. (Attachment # 162)

Strahler AN. 1957. Quantitative analysis of watershed geomorphology. *Transactions of the American Geophysical Union* 38: 913-920. (Attachment # 163)

Wipfli MS, Richardson JS, Naiman RJ. 2007. Ecological linkages between headwaters and downstream ecosystems: transport of organic matter, invertebrates, and wood down headwater channels. *Journal of the American Water Resources Association (JAWRA)* 43:72-85. DOI: 10.1111/j.1752-1688.2007.00007.x. (Attachment # 164)

# Richard (Rick) Rheinhardt, PhD

[rheinhardtr@gmail.com](mailto:rheinhardtr@gmail.com)

508.566.0210

---

## Education

PhD, Marine Science (Biological Oceanography), Virginia Institute of Marine Science, Gloucester Point, VA.

Dissertation: *Vegetation ecology of tidal freshwater swamps of lower Chesapeake Bay.*

MS, Biology (Ecology), College of William and Mary, Williamsburg, VA. Thesis: *Vegetation of the Balsam Mountains of southwest Virginia: a phytosociological study.*

BBA, (Management), College of William and Mary, Williamsburg, VA.

## Professional Experience

2012–present: **Wetland Ecologist** (self-employed contractor). Provide scientific expertise on technical and controversial wetland issues for a variety of clients, both public and private, at the local, national, and international level, including federal research labs, natural resource agencies and environmental consulting companies. Design and conduct ecological field studies and prepare reports or expert (written) testimony, as needed. Provide wetland assessment training to state and federal resource agencies and private-sector biologists. Conduct wetland delineations, eelgrass surveys, shellfish surveys, vegetation surveys, essential fish habitat reports, salt marsh plantings, and other studies associated with wetland restoration. Prepare proposals, coordinate projects, track expenses, and prepare invoices.

## Selected recent clients and products

- Massachusetts Division of Ecological Restoration: Produced feasibility study for West Falmouth Harbor salt marsh restoration, prepared NOAA grant proposal for partial funding of Parkers River saltmarsh restoration project (and prepared a NEPA document), organizing and leading a working group to develop protocols for prioritizing cranberry bogs for ecological restoration
- US Army Corps of Engineers (ERDC): Co-author of an HGM wetland functional assessment guidebook for riverine wetlands of the Piedmont (five-state region), including field data collection, data analysis, and writing.
- Cape Cod Conservation District: Prepared proposals for restoration funding, conducted restoration feasibility studies, and wetland restoration monitoring (e.g., Stewarts Creek restoration annual monitoring and West Falmouth Harbor restoration feasibility studies)
- Tighe and Bond Consultants: Tidal creek restoration project in Manchester-by-the Sea, MA
- Cape Cod Cooperative Extension: Teach wetland training courses for Cape Cod Conservation Agents
- Town of Sandwich: Habitat study for the Town's Open Space Committee

## Paid Expert Reviews and Panel Service

- Served on three federal expert committees developing three regional Hydrogeomorphic (HGM) guidebooks for assessing wetland functions
- Provided peer review for a USACE wetland assessment protocol proposed for headwater streams impacted by mountaintop coal extraction.
- Provided peer review of the California Rapid Assessment Method (CRAM) for wetlands.
- Served as science panel member for USEPA, identifying potential ecological indicators of wetland condition to be applied on a national scale.
- Provided peer review for several regional HGM guidebooks for USACE as sub-consultant for Battelle, Inc.

1994–2012: **Research Associate Professor (Ecologist)**, East Carolina University. Conducted a variety of multi-year, applied field research that advanced ecosystem and wetland science at both site and watershed spatial scales. Developed scientifically-based protocols for assessing wetland ecosystem condition, restoring ecological functions, and monitoring restoration. Most studies developed with, for, and used by state and federal resource agencies for use in watershed planning, alternatives analyses, planning wetland restoration, and assessing condition of compensatory mitigation projects.

### **Project Management**

- Obtained competitive grants to conduct applied wetland research projects, participating as Principal Investigator (PI) and Co-PI on > \$3 million in competitive research funding.
- Coordinated and conducted field-based research projects with scientists from a variety of disciplines, state and federal resource managers, project managers, and end-users.
- Tracked budgets for multi-year research projects and coordinated fieldwork logistics. All research projects were on time and on budget.
- Designed, analyzed, and synthesized ecological data and maintained data files, prepared major reports (18), book chapters (7), peer-reviewed scientific manuscripts (26), and posters (6).
- Provided results and recommendations of research at federal and state resource agency meetings. Presented talks and invited talks on research at national and international scientific conferences.

### **Scientific Contributions**

- As a member of various interdisciplinary teams, developed sampling protocols and quantitative data to define ecological assessment standards for a variety of geomorphic wetland types across broad geographic spatial scales, e.g., Southeast Coastal Plain.
- Co-authored the first national HGM (Hydrogeomorphic) assessment guidebook, the basis for developing regional guidebooks to assess functions of riverine wetlands.
- Served as lead PI and author in producing the Regional HGM Guidebook for Wet Pine Flats, the most extensively occurring and impacted wetland type in the Southeast.
- Served on Project Delivery Team developing the protocol for a Regional HGM Guidebook for forested wetlands of alluvial valleys in the Southeast USA coastal plain.
- Served on Project Delivery Team developing the protocol for a Regional HGM Guidebook for forested wetlands of alluvial valleys in the Southeast USA piedmont.
- Evaluated the ecological success of wetland restoration sites managed by the North Carolina Ecosystem Enhancement Program and provided technical and programmatic guidance on restoration planning and long-term monitoring of sites.

4/93-3/94: **Senior Fish and Wildlife Biologist**, U.S. Fish and Wildlife Service Ecological Services, New Jersey Field Office. Provided scientifically-based advice regarding regulatory permit activities. Reviewed and commented on CWA Section 404 and Section 10 permit requests. Prepared USFWS NEPA document for USACE coastal beach nourishment projects. Reviewed and commented on NEPA documents produced by other federal agencies.

1/92-3/93: **Marine Scientist**, Virginia Institute of Marine Science, Gloucester Point, VA. Sampled nutrient fluxes in creeks of tidal freshwater marshes during tidal cycles. Researched effects of nutrient additions to salt marshes. Volunteered for Caribbean field research projects on spiny lobster predator/prey relationships and habitat selection, queen conch predation and migration, and larval fish abundance and distribution.

### Relevant Volunteer Service

- 2014/2015: Chair of Speakers' Subcommittee for the Society of Wetland Scientists (SWS) 2015 Annual Meeting Planning Committee (Providence, RI).
- 3/2006–present: Member of Bourne Open Space Committee, Bourne, MA.
- 5/2011–present: Member of Expert Science Panel for USACE reviewing a large-scale ecosystem restoration project at the PCS Phosphate mine on the lower Pamlico River, NC
- 1985–present: Peer Reviewer for > 15 scientific journals
- 2003: Expert Consultant for the Tropical Forestry Initiative, Dominical, Costa Rica
- 1996: Diversity Mentor for the 1996 Society of Wetland Scientists annual meeting

### Peer-reviewed manuscripts (see [Rheinhardt publications](#) at [Researchgate.net](#) for digital copies)

- Rheinhardt, R.**, T. Wilder, H. Williams, C. Klimas, and C. Noble. 2013. Variation in forest canopy composition of riparian networks from headwaters to large river floodplains in the Southeast Coastal Plain, USA. *Wetlands* 33: 1117-1126.
- Brinson, M., **R. Rheinhardt**, R. Ferrell, B. Duncan, D. McNaught, J. Phelan, and D. Rader. 2012. A rapid, reference-based condition assessment for small estuarine watersheds: Protocol and case study. *Ocean and Coastal Management* 71:238-255.
- Rheinhardt, R.**, M. Brinson, G. Myer, and K. Miller. 2012. Integrating biomass and distance from channel to develop an indicator of riparian condition. *Ecological Indicators* 23:46-55.
- Rheinhardt, R.**, M. Brinson, K. Miller, and G. Myer. 2012. Carbon storage of headwater riparian zones in an agricultural landscape. *Carbon Balance and Management* 7:4.
- Brooks, R.P., M.M. Brinson, K. Havens, C. Hershner, **R.D. Rheinhardt**, D.H. Wardrop, D.F. Whigham, A.D. Jacobs, and J.M. Rubbo. 2011. Proposed hydrogeomorphic classification for wetlands of the Mid-Atlantic region, USA. *Wetlands* 31: 207-219.
- Brooks, R., M. McKenney-Easterling, M. Brinson, **R. Rheinhardt**, K. Haven, D. O'Brien, J. Bishop, J. Rubbo, B. Armstrong, J. Hite. 2009. A Stream–Wetland–Riparian (SWR) index for assessing condition of aquatic ecosystems in small watersheds along the Atlantic slope of the eastern U.S. *Environmental Monitoring and Assessment* 150:101–117.
- Rheinhardt, R.**, M. Brinson, R. Christian, K.H. Miller, G. Meyer. 2007. A referenced-based framework for evaluating the ecological condition of stream networks in small watersheds. *Wetlands* 27:534-542.
- Rheinhardt, R.**, M. McKenney-Easterling, M. Brinson, J. Rubbo, R. Brooks, D. Whigham, D. O'Brien, J. Hite, and B. Armstrong. 2007. Canopy composition and forest structure provide restoration targets for low-order riparian ecosystems. *Restoration Ecology* 17:51-59.
- Rheinhardt, R.** 2007. Hydrogeomorphic and compositional variation among red maple wetlands in southeastern Massachusetts. *Northeastern Naturalist* 14:589-604.
- Rheinhardt, R.**, M. Brinson, R. Brooks, M. McKenney-Easterling, J. Masina-Rubbo, J. Hite, and B. Armstrong. 2006. Development of a reference-based method for identifying and scoring indicators of condition for coastal plain riparian reaches. *Ecological Indicators* 7:339-361.
- Rheinhardt, R.**, and M. Rheinhardt. 2004. Feral horse seasonal habitat use on a coastal barrier spit. *Journal of Range Management* 57: 253-258.
- Rheinhardt, R.**, and K. Faser. 2001. Relationship between hydrology and zonation of freshwater swale wetlands on lower Hatteras Island, North Carolina. *Wetlands* 21:265-273.
- Rheinhardt, R.**, D. Whigham, H. Khan, and M. Brinson. 2000. Vegetation of headwater wetlands in the inner coastal plain of Virginia and Maryland. *Castanea* 65:21-35.
- Rheinhardt, M., and **R. Rheinhardt**. 2000. Canopy and woody subcanopy composition of wet hardwood flats in eastern North Carolina and southeastern Virginia. *Journal of the Torrey Botanical Society* 127:33-43.
- Rheinhardt, R.**, M. Rheinhardt, M. Brinson, and K. Faser. 1999. Application of reference data for assessing and restoring headwater ecosystems. *Restoration Ecology* 7:241-251.
- Whigham, D., L. Lee, M. Brinson, **R. Rheinhardt**, M. Rains, J. Mason, H. Kahn, M. Ruhlman, and W. Nutter. 1999. Hydrogeomorphic (HGM) assessment - a test of user consistency. *Wetlands* 19:560-569.
- Rheinhardt, R.D.**, M.C. Rheinhardt, M.M. Brinson, and K.E. Faser. 1998. Forested wetlands of low order streams in

the inner coastal plain of North Carolina, USA. *Wetlands* 18:365-378.

- Rheinhardt, R.D.**, M.M. Brinson, P.M. Farley. 1997. Applying reference wetland data to functional assessment, mitigation, and restoration. *Wetlands* 17:195-215.
- Brinson, M.M., L.C. Lee, W. Ainslie, **R.D. Rheinhardt**, G.G. Hollands, R.D. Smith, D.F. Whigham, and W.B. Nutter. 1997. Common misconceptions of the hydrogeomorphic approach to functional assessment and mitigation: scientific and technical issues. *Bulletin of the Society of Wetland Scientists* 17:16-21.
- Brinson, M.M., and **R.D. Rheinhardt**. 1996. The role of reference wetlands in functional assessment and mitigation. *Ecological Applications* 6:69-76.
- Rheinhardt, R.**, and C. Hershner. 1993. The relationship of below-ground hydrology to canopy composition in five tidal freshwater swamps. *Wetlands* 12:208-216.
- Rheinhardt, R.D.** 1992. Disparate distribution patterns between canopy and subcanopy life-forms in two temperate North American forests. *Vegetatio* 103:67-77.
- Rheinhardt, R.D.** 1992. A multivariate analysis of vegetation patterns in tidal freshwater swamps of lower Chesapeake Bay, USA. *Bulletin of the Torrey Botanical Club* 119:193-208.
- Rheinhardt, R.D.** 1990. Temporal changes of epibenthic fouling community structure on a natural oyster bed in Virginia. *Biofouling* 2:13-25.
- Rheinhardt, R.D.** 1984. Comparative study of composition and distribution patterns of subalpine forests in the Balsam Mountains of southwest Virginia and the Great Smoky Mountains. *Bulletin of the Torrey Botanical Club* 111:489-493.
- Rheinhardt, R.D.**, and S. Ware. 1984. Vegetation of the Balsam Mountains of southwest Virginia: a phytosociological study. *Bulletin of the Torrey Botanical Club* 111: 287-300.

### Book Chapters and HGM Guidebooks

- Bruce A. Pruitt, **Richard D. Rheinhardt**, and Chris V. Noble. In press. A regional guidebook for applying the hydrogeomorphic approach to assessing wetland functions of forested riverine wetlands in alluvial valleys of the Piedmont region of the United States. ERDC/EL TR-XX-X, Vicksburg, MS, USA.
- Wilder, T.C., **R.D. Rheinhardt**, C.V. Noble. 2013. A regional guidebook for applying the hydrogeomorphic approach to assessing wetland functions of forested wetlands in alluvial valleys of the Coastal Plain of the Southeastern United States. ERDC/EL TR-13-1. Vicksburg, MS, USA.
- Havens, K. J., Jacobs, A., Rogerson, A., Roggero, M., **Rheinhardt, R. D.**, Wardrop, D. 2012. A regional guidebook for applying the hydrogeomorphic approach to assessing wetland functions of wet hardwood flats on mineral soils in the Mid-Atlantic coastal plain.
- Rheinhardt, R.**, and G. Hollands. 2008. Classification of vernal pools: geomorphic setting and distribution. Pp. 11-30 in Calhoun, A.J.K. and P. G. deMaynadier (eds.), *Science and Conservation of Vernal Pools in Northeastern North America*. CRC Press, Boca Raton, FL, USA.
- Rheinhardt, R.** 2008. Tidal freshwater swamps of a lower Chesapeake Bay subestuary. Pp. 161-181 in W.H. Conner, T.W. Doyle, and K.W. Krauss (eds.), *Ecology of Tidal Freshwater Forested Wetlands of the Southeastern United States*. Springer Publishing, the Netherlands.
- Rheinhardt, R.**, M. Rheinhardt, M. Brinson. 2002. A regional guidebook for applying the hydrogeomorphic approach to the functional assessment of wet pine flats on mineral soils in the Atlantic and Gulf coastal plains. ERDC/EL TR-02-9. Vicksburg, MS, USA.
- Brinson, M.M., R.D. Smith, D.F. Whigham, L.C. Lee, **R.D. Rheinhardt**, and W.L. Nutter. 1998. Progress in development of the hydrogeomorphic approach for assessing the functioning of wetlands. Pp. 383-406 in A. J. McComb and J.A. Davis (eds.), *Wetlands for the Future*. Gleneagles Publishing, Adelaide, Australia.
- Brinson, M.M., and **R.D. Rheinhardt**. 1997. Wetland functions and relations to societal values. Pp. 29-48 in M.G. Messina and W.H. Conner (eds.), *Southern Forested Wetlands Ecology and Management*. Lewis Publishers, Boca Raton, FL, USA.
- Brinson, M.M., F.R. Hauer, L.C. Lee, W.L. Nutter, **R.D. Rheinhardt**, R.D. Smith, D. Whigham. 1996. A guidebook for application of hydrogeomorphic assessments to riverine wetlands. U.S. Army Corps of Engineers Waterways Experiment Station. Wetlands Research Program Technical Report WRP-DE-11. Vicksburg, MS, USA.

## Major Reports

- Rheinhardt, RD.** 2018. Developing a rapid screening tool for evaluating restoration potential of abandoned cranberry bogs. Final Report for Cape Cod Conservation District, West Yarmouth, MA.
- Rheinhardt, RD.** 2013. West Falmouth harbor restoration feasibility study final report 2013-03/604 prepared for Cape Cod Conservation District for Massachusetts Department of Environmental Protection Bureau of Water resources and U.S. Environmental Protection Agency, Region 1.
- Rheinhardt, R.,** L. Lukas, T. Vohoska, and C. White. 2013. Annual Report for Integrated Training Area Management (ITAM) Vegetation Monitoring. Prepared for Natural Resources Department, Massachusetts National Guard, Joint Base Cape Cod, Bourne, MA.
- Miller, S.J., M. Brinson, and **R. Rheinhardt.** 2012. Defining the spatial and temporal extent of ecosystem restoration projects and environmental benefits. Report to Army Corps of Engineers Engineer Research Development Center, Vicksburg, MS, USA.
- Brinson, M., and **R. Rheinhardt.** 2011. Scientific underpinnings of environmental benefits analysis – temporal, spatial, and reversibility components. White paper prepared for the U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS, USA.
- Rheinhardt, R.** 2012. Development of Hydrogeomorphic (HGM) Guidebook for Riverine Wetlands for the Coastal Plain of the southeastern USA. Report to Army Corps of Engineers Engineer Research Development Center, Vicksburg, MS, USA.
- Rheinhardt, R.,** T. Wentworth, and M. Brinson. 2008. Developing and testing multivariate approaches for evaluating success of restored vegetation communities. Report to the Ecosystem Enhancement Program, North Carolina Department of Environment and Natural Resources, Raleigh, NC, USA.
- O'Driscoll, M., E. Hardison, **R. Rheinhardt,** M. Brinson. 2008. Developing reference data to identify and calibrate indicators of riparian ecosystem condition in urban coastal plain landscapes in North Carolina. Report to the Ecosystem Enhancement Program, North Carolina Department of Environment and Natural Resources, Raleigh, NC, USA.
- Rheinhardt, R.** 2007. Review of potentially useful indicators for rapid assessments of non-tidal wetlands. Report to U. S. Environmental Protection Agency, National Health and Environmental Effects Research Lab, Western Ecology Division, Corvallis, OR, USA.
- Rheinhardt, R.,** and M. Brinson. 2007. Framework for developing a reference-based assessment approach for evaluating the ecological condition of coastal watersheds. Report to the Ecosystem Enhancement Program, NCDENR, Raleigh, NC, USA.
- Rheinhardt, R.,** M. Brinson, and E. Hardison. 2007. Ecological assessment of three coastal stream networks in the Lockwoods Folly Basin, North Carolina. Report to the Ecosystem Enhancement Program, NCDENR, Raleigh, NC.
- Brinson, M.M., K.H. Miller, **R. Rheinhardt,** R. Christian, G. Meyer, J. O'Neal. 2006. Developing reference data to identify and calibrate indicators of riparian ecosystem condition in rural coastal plain landscapes in North Carolina. Report to the Ecosystem Enhancement Program, NCDENR, Raleigh, NC, USA.
- Rheinhardt, R.D.,** K. Miller, R. Christian, G. Meyer, C. Bason, E. Hardison, M. Brinson. 2005. Applying ecological assessments to planning stream restorations in coastal plain North Carolina. Report to the Wetland restoration Program, NCDENR, Raleigh, NC, USA.
- Rheinhardt, R.,** and M. Brinson. 2001. An evaluation of North Carolina Department of Transportation (NCDOT) wetland mitigation sites: Selected case studies, Phase 2 Report. Report to the North Carolina Department of Transportation and North Carolina State University Institute for Transportation, Research, and Education. Raleigh, NC, USA.
- Rheinhardt, R.D.** 2000. Variations among red maple swamps in Plymouth and Bristol Counties, Massachusetts. Final Report to Massachusetts Natural Heritage and Endangered Species Program. Westborough, MA, USA.
- Rheinhardt, R.D.,** and M.M. Brinson. 1999. An evaluation of the effectiveness of existing North Carolina Department of Transportation (NCDOT) wetland mitigation sites, Phase 1 Report. Report to the North Carolina Department of Transportation and North Carolina State University Institute for Transportation, Research, and Education, Raleigh, NC, USA.
- Rheinhardt, M.C., and **R.D. Rheinhardt.** 1999. Canopy and woody subcanopy composition of non-riverine wet hardwood forests in eastern North Carolina. Report to North Carolina Natural Heritage Program, NCDENR, Raleigh, NC, USA.

- Rheinhardt, R.D.**, and M.M. Brinson. 1997. Impact of water withdrawals on the vegetation of dune and swale communities of Cape Hatteras National Seashore, North Carolina. Technical Report to National Park Service Water Resources Branch, Colorado Springs, CO, USA.
- Rheinhardt, R.D.**, and M.C. Rheinhardt. 1997. Habitat-use of feral horses on Currituck Banks, North Carolina: Foraging ecology and Management implications. Report to North Carolina Estuarine Research Reserve, Beaufort, NC, USA.
- Brinson, M.M., W. Nutter, **R.D. Rheinhardt**, and B. Pruitt. 1996. Background and recommendations for establishing reference wetlands in the Piedmont of the Carolinas and Georgia. Technical Report to the USEPA National Health and Environmental Effect Laboratory, Corvallis, OR, USA.
- Rheinhardt, R.**, and J. Perry. 1993. Effects of nutrient enrichment on natural and transplanted salt marshes in Virginia: literature synthesis with management recommendations. Final Report prepared for Commonwealth of Virginia, Department of Conservation and Recreation, Division of Soil and Water Conservation, Shoreline Programs Bureau. SEAS Policy Advisory Report CMAP-5, Richmond, VA, USA.
- Rheinhardt, R. **1992**. Tidal freshwater swamps of the lower Chesapeake Bay. Virginia Institute of Marine Science Wetlands Program Technical Report 92-4, Gloucester Point, VA, USA.