Rethinking National Wildlife Federation v. Gorsuch: The Case for NPDES Regulation of Dam Discharge

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The reservoir created by damming a river and the dam itself contribute to a host of adverse environmental effects. These environmental harms would not occur in the same quantity or quality but for the existence of the dam-reservoir construct. In many cases, these environmental harms manifest in the form of pollutants that may be discharged by dam operations to the downstream waters. National Pollutant Discharge Elimination System permits should therefore be required for dam discharge. The U.S. Environmental Protection Agency, however, has refused to regulate dam discharge under the National Pollutant Discharge Elimination System, relying on a 1982 D.C. Circuit opinion, National Wildlife Federation v. Gorsuch. More recent court opinions, scientific studies, and the Environmental Protection Agency’s own water quality regulations have undermined Gorsuch. The time has come, therefore, to follow the statutory requirements of the National Pollutant Discharge Elimination System by regulating dam discharge accordingly.

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INTRODUCTION

In 2006, state and federal officials posted health warnings along 190 miles of the Klamath River.\(^1\) The culprit, a toxin produced by the algae *Microcystis aeruginosa*, had been released from dam reservoirs in the Klamath River and had contaminated the river downstream. This category of toxin has been implicated in gastroenteritis, allergic reactions, liver diseases, and tumor promotion.\(^2\) The stagnant waters of the Klamath reservoirs, which trapped

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upstream nutrient pollution, promoted the growth of *Microcystis*. Neither the U.S. Environmental Protection Agency (EPA) nor California, however, took action to regulate this toxic discharge under the National Pollutant Discharge Elimination System (NPDES) permitting system.

Section 402 of the Clean Water Act (CWA) creates the NPDES permitting system to impose technology requirements and effluent limitations on point source dischargers as part of the CWA’s goal of zero discharge of pollutants into navigable waters. Unless the EPA issues a NPDES permit for a point source polluter, “the discharge of any pollutant by any person is unlawful.” Such discharge is in turn defined as “any addition of any pollutant to navigable waters from any point source.” The CWA requires NPDES permits only for point sources, such as pipes, which the Act regulates more strictly than nonpoint sources, such as agricultural runoff. Placing dam discharges under NPDES would allow federal or state regulatory agencies to impose strict requirements on dam operations to ensure that the water discharged meets water quality standards.

Dams can logically be separated into three components: the reservoir behind the dam, the dam itself, and the discharge downstream from the dam. Each component and the interactions between the components cause environmental effects.

It is an understatement, however, to say that hydroelectric dams have environmental impacts. They have the potential to completely transform the ecology and hydrology of a river or stream. Dams have played a major role in the destruction of commercial and recreational fisheries in both the Western and Eastern United States. Tribal communities are also gravely affected by forced resettlement and the ecological impacts on their lands. Effects caused by hydroelectric dams include changes in water temperature, turbidity, dissolved oxygen and algal growth, siltation, loss of assimilative capacity and saltwater

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3. See, e.g., id. at 160–61 (describing how warm temperature, light, buoyancy, and nutrient ratios are associated with *Microcystis* blooms).

4. Cf. Press Release, Klamath Riverkeeper, supra note 1 (describing a lawsuit that forced EPA to list the Klamath River reservoirs as impaired by microcystin under section 303(d) of the CWA).


6. See 33 U.S.C. § 1251(a)(1) (“It is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985 . . ..”).


8. Id. §§ 1342(a)(1); 1362(12). The need for a point source discharge limits the applicability of NPDES to pollution downstream from the dam-reservoir complex; NPDES would not address water pollution in the reservoir itself. NPDES could also regulate discharges into the reservoir by either the dam operations or other point sources.

intrusion. Large storage reservoirs cause particularly severe problems with temperature and turbidity.\textsuperscript{10}

This Article will focus on the environmental impacts from one aspect of dam use—discharge—and the relevant regulation of that discharge.

Multiple dams are often constructed on a single river system or catchment. For example, the entire Columbia catchment contains 194 large dams, with nineteen large dams on the main Columbia river alone, leaving only seventy kilometers (43.5 miles) of free-flowing river.\textsuperscript{11} Discharge from one dam often becomes the input to the next dam-reservoir complex downstream. The resulting number of reservoirs means that “[h]umans have appropriated approximately 50% of accessible global freshwater runoff, and conservative estimates indicate that this appropriation could reach 70% by 2025.”\textsuperscript{12} This appropriation of freshwater runoff has had enormous environmental consequences.\textsuperscript{13}

Part I of this Article describes a set of harmful phenomena added or exacerbated by the dam-reservoir complex. The role of the dam reservoir as basically an industrial water holding tank for hydroelectric generation has been relatively ignored in dam regulation. Because NPDES permitting is limited to discharge of pollutants, Part I focuses on how the physical characteristics of the dam-reservoir complex result in environmentally harmful phenomena that manifest in the dam discharge. These harmful environmental effects can be attributed to the presence of the unnatural dam-reservoir complex in what would otherwise be a natural riverine ecosystem.

Part II describes and critiques two milestones in dam-reservoir regulation under the CWA. First, in the \textit{Gorsuch} litigation, the D.C. Circuit ultimately deferred to the EPA’s opinion that dam discharge did not meet the statutory definition of “discharge of a pollutant” and therefore such discharge was exempt from NPDES permit requirements. Then, in 2008, the EPA promulgated its Water Transfers Rule, in which the EPA essentially codified its arguments from the \textit{Gorsuch} litigation. As Part II.D explains, courts should take a considered look at the actual reasoning behind the Water Transfers Rule, and not blindly defer to the EPA. The EPA relies too heavily on \textit{Gorsuch II}, an

\begin{itemize}
  \item \textsuperscript{10} Daniel Pollak, S.D. Warren and the Erosion of Federal Preeminence in Hydropower Regulation, 34 \textit{ECOLOGY L.Q.} 763, 768 (2007) (footnote references omitted).
  \item \textsuperscript{12} Rosenberg, McCully & Pringle, supra note 11, at 748. Because of their sheer number, small dams make up a significant volume of total reservoir storage throughout the world. \textit{Id.} at 748–49.
  \item \textsuperscript{13} \textit{Id.} at 749.
\end{itemize}
opinion undermined by subsequent case law, scientific studies, and the EPA’s own total maximum daily load (TMDL) regulations14 under the CWA.

Part III makes the case for NPDES regulation of dam discharge. Dam operators should be required to obtain NPDES permits to discharge water that contains pollutants, such as toxins from algal blooms, that are directly attributable to the dam-reservoir complex. Dam discharge meets the statutory standard that triggers the NPDES permit requirement because dams are (1) point sources that (2) add pollutants (3) to navigable waters.15 Parts III.A, III.B, and III.C examine these three elements, respectively, in detail.

I. THE CAUSAL RELATIONSHIP BETWEEN THE DAM-RESERVOIR COMPLEX AND HARMFUL ENVIRONMENTAL EFFECTS

Harmful environmental effects attributable to the dam-reservoir complex16 can be conceptually split into three groups: effects related to reservoir flooding and dam construction, effects related to the unique physical characteristics and use of the dam-reservoir complex, and effects related to dam removal. This Article focuses on environmental impacts of the second group, whereby the dam itself and the reservoir block the natural river flow and fundamentally change the formerly riverine environment.

The unique physical characteristics of dam reservoirs lead to the creation of new harmful effects and the exacerbation of existing adverse environmental phenomena in the riverine system.17 One example of a new harm is the growth in the reservoir of algal blooms that did not naturally occur in the former riverine system.18 One example of exacerbation is the reservoir’s impairment

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14. A TMDL sets a cap on the maximum amount of a pollutant that a watershed can assimilate and then regulates sources of that pollutant with the goal of keeping the pollutant level below the cap. See infra notes 290–291 and accompanying text.
16. See, e.g., Rosenberg, McCully & Pringle, supra note 11, at 749 (listing as harmful environmental effects “habitat fragmentation within dammed rivers; downstream habitat changes . . . ; deterioration of irrigated terrestrial environments and associated surface waters; and dewatering of rivers”; and listing other significant impacts of dams as including “genetic isolation through habitat fragmentation, changes in processes such as nutrient cycling and primary productivity, impacts on biodiversity, methylmercury contamination of food webs, and greenhouse gas emissions from reservoirs” (citations omitted)); Jane G. Steadman, Comment, Protecting Water Quality and Salmon in the Columbia Basin: The Case for State Certification of Federal Dams, 38 ENVTL. L. 1331, 1341–42 (2008) (“Hydroelectric dams’ . . . existence and operation alter temperature regimes of entire river systems, allow dissolved gas supersaturation, cause instream flows and river elevations to fluctuate, eliminate spawning and rearing habitat for endemic and anadromous fish, facilitate increased predation of fish, and directly kill fish through their operations.”); Angela T. Bednarek, Undamming Rivers: A Review of the Ecological Impacts of Dam Removal, 27 ENVT. MGMT. 803, 803 (2001) (“Dams impact ecosystems in a number of ways: altering the natural cycle of flow, transforming the biological and physical characteristics of river channels and floodplains, and fragmenting the continuity of rivers.”).
17. Harmful environmental phenomena added or exacerbated by the dam reservoir are the focus of Part I.B, infra. These harmful environmental effects are generally called “pollution” or “pollutants.” For purposes of this paper, both these terms have legal definitions that are the focus of Part III.B.1, infra.
of the dilutive capability of the former river, resulting in higher concentrations of nutrients and chemicals than would occur naturally.\textsuperscript{19} Determining whether a reservoir is creating or exacerbating environmental harms is a fact-specific inquiry that need not overshadow the larger regulatory concern. The central question is, \textit{but for} the existence of the dam-reservoir complex, would the environmental harm exist and, if so, to what extent does the dam-reservoir complex contribute to that harm?

Studies of dam removals provide further evidence of the causal link between the dam-reservoir complex and harmful environmental effects.\textsuperscript{20} Documented public benefits of selective dam removal include: cost-effective water quality improvements; cost-effective and permanent removal of a public safety hazard; cost-effective restoration of fish and wildlife habitat for endangered species or sport fisheries (or both); recreational improvements; aesthetic enhancement, such as restoration of waterfalls or riffles; and opportunities for community economic revitalization and associated quality-of-life enhancements.\textsuperscript{21} These improvements are the inverse of dam impacts; any study that examines the benefits of dam removal implicitly identifies the harms from dam systems.\textsuperscript{22}

\textsection{A. Unique Physical Characteristics of the Dam Reservoir}

Dam reservoirs are a unique hybrid of lakes and rivers, having characteristics of both.\textsuperscript{23} Damming of a river results in a “half-lake” reservoir that is deepest closest to the dam, as opposed to natural lakes, which are typically deepest at their center.\textsuperscript{24} Compared to natural lakes, reservoirs have

\begin{itemize}
\item \textsuperscript{19} See infra Parts I.B.4, I.B.6.
\item \textsuperscript{21} Sara E. Johnson & Brian E. Graber, Enlisting the Social Sciences in Decisions About Dam Removal, 52 Bioscience 731, 732 (2002); see also Bednarek, supra note 16, at 804 (discussing long-term ecological impacts of dam removal).
\item \textsuperscript{22} See, e.g., K.M. Kibler et al., Learning from Dam Removal Monitoring: Challenges to Selecting Experimental Design and Establishing Significance of Outcomes, 27 River Res. Applications 967, 974 (2010) (“Dam removal has tremendous potential for restoring the connectivity of natural flows, hydraulic characteristics and isolated or impaired fisheries of fragmented river ecosystems.”).
\item \textsuperscript{24} Baxter, supra note 23, at 258.
\end{itemize}
unnaturally long shorelines, high fluctuations in water level, and altered rates of water discharge. As a result, the dammed river produces negative environmental consequences that are not prevalent in natural lakes.

Dams disrupt river flow and block river passage, resulting in flow regimes that are often quite different from those of either the former, unobstructed river or a natural lake. In addition, two important physical processes prevalent in dam reservoirs—sedimentation and thermal stratification of the water column—can lead to a variety of water quality problems. While neither physical process is unique to dam reservoirs, both tend to be more prevalent and more extreme than the same processes in natural rivers or lakes.

1. Flow Control

Creation of a dam-reservoir system in a river changes the flow regime of that river. In turn, changes in flow patterns disrupt habitats downstream. Dam-reservoir systems are particularly disruptive to aquatic fauna, as they alter the natural seasonal flow patterns, raise the water table, slow river velocity, block fish migration, change downstream sedimentation rates, and fragment populations. The combination of compromised river passage and decreased flow can have a devastating effect on salmon, to take one prominent example.

Dam removal or modifications to dam operations can create a more natural flow regime, which in turn tends to increase biodiversity. All dams

25. Friedl & Wüest, supra note 23, at 56.
26. Id.
27. Christer Nilsson and Kajsa Berggren, Alterations of Riparian Ecosystems Caused by River Regulation, 50 BIOSCIENCE 783, 786 (2000) (“[A] single reservoir can affect the flow in almost the entire river.”).
28. See, e.g., MARGARET BOWMAN ET AL., AM. RIVERS & TROUT UNLIMITED, EXPLORING DAM REMOVAL: A DECISION-MAKING GUIDE 19 (2002) (“Because a dam fundamentally changes a river’s flow, it also can change many aspects of water quality, including temperature, nutrient transport, oxygen content, and turbidity. Some dams release water from the top of the impoundment where it has been unnaturally warmed, while other dams release water from the bottom of the impoundment where it has been unnaturally cooled. When water is released from the bottom of the impoundment, it can also be oxygen deprived and kill fish and wildlife downstream. These temperature and oxygen variations can eliminate native fish and wildlife.”).
31. Bednarek, supra note 16, at 806 (citing Dead Lakes Dam in Florida). Lack of water fluctuation in the Dead Lakes Dam allowed invasive aquatic vegetation to effectively choke the reservoir. AM. RIVERS ET AL., supra note 20, at 21–22. After dam removal, the former reservoir has shown evidence of recovery. Id. at 23–24.
have a spillway to release excess water downstream. A large dam will likely have multiple outlets. Hydroelectric dams have a system of pipes, or penstocks, to direct water to the turbines for electricity generation. To meet electricity production or flood control needs, dam operators control the timing and amount of discharge from the reservoir to downstream waters. Low levels of released water result in a corresponding decrease in water depth and velocity downstream. Increasing flow would not only benefit downstream habitat, but could also increase dissolved oxygen levels by promoting turbulent mixing of downstream waters.

2. Thermal Stratification

Thermal stratification is when the reservoir contains a cold bottom layer and a much warmer top layer of water that do not mix. This phenomenon often occurs in lakes and reservoirs during the summer months. Thermal stratification is related to other environmental effects, such as hypoxia and metal re-uptake. The unnatural temperature ranges in reservoirs, when compared to a natural stream or river, can also affect habitat in the reservoir and downstream.

During most of the year wind generates currents that mix the water in a reservoir. But, particularly during summer months, large temperature differences between the water at the bottom of the reservoir and the air increase the buoyancy of the warm surface water. Deeper reservoirs and reservoirs with slower currents have an increased incidence of thermal stratification. The buoyancy of the surface water plus the typical decrease in average wind speed during summer months prevents mixing, causing the reservoir to split into two layers—a colder hypolimnion layer at the bottom and a warmer

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33. Id.
34. Id.; see also John Wilson Attey & Drew Randall Liebert, Clean Water, Dirty Dams: Oxygen Depletion and the Clean Water Act, 11 ECOLOGY L.Q. 703, 718 (1984) (“Practically, there is no doubt that the structure of dams facilitates the application of source point controls.”).
36. Id.
37. See generally Brian Moss, ECOLOGY OF FRESH WATERS: MAN AND MEDIUM, PAST TO FUTURE § 6.2.3 (3d ed. 1998).
38. Id.
41. See infra Part I.B.5.
43. Id.; see also N. Leroy Poff & David D. Hart, How Dams Vary and Why It Matters for the Emerging Science of Dam Removal, 52 BIOSCIENCE 659, 660 (2002) (“Deep waters [in reservoirs] can have very different temperatures than those on the surface, often maintaining temperatures near 4ºC.”).
epilimnion layer at the top. Releasing water from the colder hypolimnion layer can result in abnormally cold water discharged downstream; releasing water from the much warmer epilimnion layer can have the opposite effect. A variety of mitigation technologies, such as venting and aeration, have been used to improve dissolved oxygen levels in dam reservoirs and dam discharge.

3. Sedimentation

The dam-reservoir complex accumulates sediment from upstream, causing water quality problems not found in a natural river or natural lake system. Interruption of the natural sediment flow in the riverine system and release of sediment in dam discharge can cause problems for downstream habitat. In addition, sediment accumulation in the reservoir behind the dam not only impedes the physical operation of the dam but also accumulates nutrients, toxic chemicals, and metals in the reservoir. The dam impoundment physically traps sediment. In addition, reservoirs trap sediment because as upstream water enters the reservoir, its velocity slows, allowing coarser sediment to settle out to the bottom. Higher velocity streams can transport more sediment because the higher velocity keeps heavier particles in suspension. Shallow reservoirs make especially effective sediment traps because broad, shallow channels promote sediment deposition. Sediment accumulation contributes to many of the adverse environmental effects discussed below. Without expensive mitigation, such as sediment flushing or

49. See Karlie Shea Clemons, Comment, Hydroelectric Dams: Transboundary Environmental Effects and International Law, 36 FLA. ST. U. L. REV. 487, 496 (2009) (“In extreme cases, sediment buildup can put additional pressure on the dam itself, which can actually weaken the dam.”).
51. Gorsuch I, 530 F. Supp. at 1300; Friedl & Wüest, supra note 23, at 56 (“One of the main aspects of reservoirs is the slowdown of the flow velocity compared to the original river and the related settling of particles. If the particle’s sinking velocity is larger than the advective upwelling, caused by the river inflow, the particle will settle out, while the water flows through the reservoir.”).
52. Gorsuch I, 530 F. Supp. at 1300.
53. Emily H. Stanley & Martin W. Doyle, A Geomorphic Perspective on Nutrient Retention Following Dam Removal, 52 BIOSCIENCE 693, 695 (2002); see also Gorsuch I, 530 F. Supp. at 1300 (“[Sediment trapping efficiency of the reservoir] is dependent on the size, shape and depth of a reservoir as well as the characteristics of the sediment particles.”); Rayne & Friesen, supra note 29, at 2 (“The sediment trap efficiency of the reservoir can be approximately correlated to the amount of annual inflow storage capacity relative to the upstream river.”).
dredging, dams face a limited lifespan due to this sediment buildup behind the
dam.54

B. Adverse Environmental Effects Added or Exacerbated by the Unique
Physical Characteristics of the Dam Reservoir

Several major environmental effects result from the introduction of
reservoirs into the ecosystem. Some effects are added or created by the dam-
reservoir complex and would not be found in the pre-dammed river. The dam-
reservoir complex exacerbates other effects, whether in quantity of the
pollutants or quality of the environmental problem. All of these adverse effects
would not exist at the same level of severity but for the dam-reservoir
complex.55

For example, in reviewing PacifiCorp’s relicensing application for its
Klamath River dams, the Federal Energy Regulatory Commission (FERC)
described how PacifiCorp’s reservoirs exacerbated water quality problems:
“Water quality issues associated with the Klamath Hydroelectric Project are
part of a systemic problem whereby high levels of nutrients that originate from
upstream sources enter project waters, and processes associated with project
reservoirs, primarily Copco and Iron Gate, exacerbate the problems during the
warmer months of the year.”56 The Microcystis toxic algal bloom in the
Klamath reservoirs was the ultimate result of this exacerbation of nutrient
pollution.57 All of these effects are attributable to some combination of flow
control, thermal stratification, and sedimentation behind the dam. In turn, dam
operations often convey these harmful environmental effects from the reservoir
to the downstream waters.

1. Supersaturation

Discharged water from the dam may contain high concentrations of
dissolved gases, a harmful phenomenon known as supersaturation. When a fish
ingests supersaturated water, the excess gas can come out of solution in the
form of bubbles.58 Similar to “the bends” in divers, these gas bubbles lodge in
the fish’s body and cause injury or death.59 As little as 18 percent

54. See, e.g., Matt Weiser, Sedimentation Is a Building Problem in the West’s Reservoirs, HIGH
55. See generally Bednarek, supra note 16; David Rosenberg et al., Global-Scale Environmental
http://www.columbia.edu/itc/sipa/envp/louchouarn/courses/Clim-Wat/Wat/EnvEffectsReservoirs
(Rosen00).pdf.
56. FED. ENERGY REGULATORY COMM’N, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR
57. See supra notes 1–2 and accompanying text.
59. Id.
supersaturation of the water may be sufficient to cause injury, depending on the
age and species of the fish.60

Dams can result in supersaturated water in two ways.61 First, turbines
used in power generation can, with sufficient pressure, force air into solution
with water.62 Second, discharge of water over a spillway into a deep basin can
force entrained (trapped) air bubbles into solution.63 During dam relicensing,
FERC or the states often impose conditions and monitoring requirements on
licensees to reduce the chance of supersaturation in dam water releases.64
Changing flow control for the dam discharge can sometimes limit
supersaturation; physical changes to the dam can also limit supersaturation.65

2. Entrainment of Aquatic Species

Construction of a dam-reservoir complex and the resulting
industrialization of the river flow sometimes lead to the entrainment of aquatic
species in the dam itself. Fish and other aquatic organisms in the reservoir can
be forced through the series of pipes, grates, and turbines in the dam.66 The
result is the discharge of dead, chopped-up fish and other organisms.67

3. Decreased Dissolved Oxygen (Hypoxia)

Sedimentation and thermal stratification contribute to hypoxia—dissolved
oxygen levels that are too low to support complex aquatic life.68 Hypoxia in a

60. Id. at 273. Studies of supersaturation on the Columbia River and elsewhere indicate that
subjecting fish to total gases greater than 115 percent (15 percent supersaturation) will cause death by
anoxia (lack of oxygen). Friedl & Wüest, supra note 23, at 59.
61. Dam removal also risks temporary supersaturation by sharply increasing the velocity and
63. Id.
64. See, e.g., FED. ENERGY REGULATORY COMM’N, FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR HYDROPOWER RELICENSEING: ROCKY REACH HYDROELECTRIC PROJECT NO. 2145-060, at 56
(2006); Avista Corporation’s Reply Comments to Comments, Recommendations, Terms, Conditions,
and Prescriptions for the Post Falls Hydroelectric Project No. 12606 and the Spokane River
Hydroelectric Project No. 2545, at 134 (Sept. 1, 2006), available at
ftp://ftp.avistacorp.com/hydrodocs/2006-0272.pdf (noting that Avista has proposed a gas control and
mitigation program for supersaturation).
65. See, e.g., WASH. STATE DEP’T OF ECOLOGY, PUB. NO. 04-10-022, WATER QUALITY
CERTIFICATIONS FOR EXISTING HYDROPOWER DAMS: GUIDANCE MANUAL 30–31 (listing monitoring
and enforcement considerations for supersaturation and referencing U.S. Army Corps of Engineers’
studies on reducing supersaturation through operational and structural changes).
67. A similar entrainment scenario was the basis for a lawsuit by National Wildlife Federation, in
which the Sixth Circuit ruled that NPDES regulation did not apply because the fish were never removed
from the water (and thus never became an “addition of a pollutant”). See infra notes 317–320 and
accompanying text.
68. See infra note 69. Correspondingly, anoxic water has near-zero dissolved oxygen levels.
dam reservoir is a function of both the level of thermal stratification in the reservoir and the amount of oxygen used by organic material carried by sediment in the water, typically through decomposition.\textsuperscript{69}

Low dissolved oxygen levels are uncommon in natural riverine systems, mainly due to the increased air-water exchange linked to flow velocity, particularly in shallower rivers.\textsuperscript{70} And while large natural lakes do have hypoxic events, “[a] natural lake will discharge well-oxygenated water from the surface” into the downstream river, while dam discharges often come from the bottom layer of the reservoir.\textsuperscript{71} A study of the Yongdam Reservoir in South Korea found that the hypolimnion (bottom layer) contained the highest levels of dissolved organic matter (DOM).\textsuperscript{72} The typical natural lake, in contrast, has a maximum concentration of DOM in the epilimnion layer (top layer, above the thermocline),\textsuperscript{73} where more oxygen is available due to the air-water exchange at the surface. Because decomposition of organic matter uses oxygen, a reservoir with high levels of DOM in the bottom layer may see more frequent hypoxic events in summer, as the higher water temperature promotes bacterial decomposition.\textsuperscript{74} When discharged, this hypoxic water can result in large fish kills through suffocation.\textsuperscript{75} Changes in dam operation and technology can increase the amount of dissolved oxygen in the reservoir and the dam discharge.\textsuperscript{76}

4. \textit{Chemical Accumulation and Dissolved Metals}

Reservoirs also tend to accumulate chemicals and metals through a combination of hypoxia and sediment retention behind the dam. Accumulation of sediment carries with it the risk of chemical accumulation because many


\textsuperscript{70} See J. DAVID ALLAN & MARIA M. CASTILLO, STREAM ECOLOGY: STRUCTURE AND FUNCTION OF RUNNING WATERS 58 (2d ed. 2007) (discussing diffusion in turbulent streams).

\textsuperscript{71} Gorsuch I, 530 F. Supp. at 1298.


\textsuperscript{73} See id. at 64 (“In fact, the high content of the protein-like DOM composition in the bottom water conflicts with the vertical distribution of protein amino acids generally described in natural lakes, which depicts a maximum concentration in the epilimnion.” (citations omitted)).

\textsuperscript{74} Cf. DAVID J. MOORE ET AL., WASH. STATE DEPT. OF ECOLOGY, PUB. NO. 07-10-073, SPOKANE RIVER AND LAKE SPOKANE DISSOLVED OXYGEN TOTAL MAXIMUM DAILY LOAD: WATER QUALITY IMPROVEMENT REPORT VII, 41 (2010) (describing how organic load and sediment oxygen demand combine with summer stratification to consume dissolved oxygen).

\textsuperscript{75} Gorsuch I, 530 F. Supp. at 1299. Without sufficient dissolved oxygen, fish can in fact “suffocate” in the water.

\textsuperscript{76} See, e.g., id. at 1310.
chemicals “attach” to sediment as it moves through the watershed. The Senate Report on the CWA, for example, noted that “[s]ediment, often associated with agricultural activities, is by volume our major pollutant, not only from the degrading effect of the sediment, but because it also transports other pollutants.” As sediment falls out of suspension in the reservoir, so do the contaminants carried by the sediment. Accumulation of contaminants such as polychlorinated biphenyls (PCBs) can reach dangerously high levels in many reservoirs. Some reservoirs have a high “trapping efficiency” for sediment and metals, resulting in increased concentration of metals such as iron and manganese in the bottom sediment and, eventually, in the discharge.

In addition to chemical accumulation, hypoxic conditions in reservoirs can cause heavy metals in the bottom sediment to diffuse back into the water body. Typically, oxidized iron and manganese function as a barrier between bottom sediments and the water. Hypoxic conditions prevalent in reservoirs make that barrier ineffective and allow particulate metals in the bottom sediment to diffuse into the water column, threatening aquatic organisms and potentially violating water quality standards. In a sense, the reservoir may “add” the metals back into the water column by creating the hypoxic condition necessary for diffusion to occur.

77. See generally ZEHN-GANG JI, HYDRODYNAMICS AND WATER QUALITY: MODELING RIVERS, LAKES, AND ESTUARIES ch. 3.1 (2008).


79. See generally JI, supra note 77, at ch. 3.2.

80. See, e.g., Fish Consumption, OREGON HEALTH AUTHORITY, http://public.health.oregon.gov/HealthyEnvironments%5CRecreation%5CPages%5Cfishconsumption.aspx (last visited Oct. 4, 2011) (warning of high PCB levels in several Oregon reservoirs). Some environmental scientists and policymakers point out that the “trapping” of contaminants by reservoir sediments benefits the environment by taking these contaminants out of circulation in the ecosystem. See, e.g., BOWMAN ET AL., supra note 28, at 18 (“[I]mpoundment sediment can also trap certain toxins and other undesired chemicals (such as PCBs), limiting their dispersal downstream.”). This is true only if the risk of recirculation is low. Some contaminants, however, may diffuse back into the water body or be taken up by bottom-dwellers. And dam reservoirs do not last forever; eventually something must be done with the highly contaminated sediment if the dam is to be removed or restored.

81. Gorsuch I, 530 F. Supp. 1291, 1299 (D.D.C. 1982); see also Rayne & Friesen, supra note 29, at 3, 5 (noting that breaching the dam and periodic drawdowns of the reservoir can expose and discharge contaminated sediment). Changes in the physical processes in a reservoir can, over time, shift the reservoir from a heavy metal trap to a heavy metal source, whereby the reservoir releases high concentrations of formerly trapped metals. See infra notes 82–84 and accompanying text.

82. Gorsuch I, 530 F. Supp. at 1299.

83. Id.; PAUL F. WOODS & MICHAEL A. BECKWITH, U.S. GEOLOGICAL SURVEY, WATER-SUPPLY PAPER NO. 2485, NUTRIENT AND TRACE-ELEMENT ENRICHMENT OF COEUR D’ALENE LAKE, IDAHO 4 (1997). There is some evidence that, in summer months, the hypolimnion in Lake Coeur d’Alene contains elevated dissolved zinc levels compared to the epilimnion, which would be consistent with this phenomenon. NAT’L RESEARCH COUNCIL, SUPERFUND AND MINING MEGASITES: LESSONS FROM THE COEUR D’ALENE RIVER BASIN 144 (2005).
Reservoirs may also influence the conversion of inorganic mercury to organic methylmercury. Studies have linked increased methylmercury production to changing water levels in reservoirs associated with flood control or hydropower production. This water-level fluctuation influences the level of mercury concentration in fish because fish absorb methylmercury by eating smaller organisms.

Finally, dam-reservoir systems disrupt the dilutive effect of the river. Not surprisingly, flow and pollutant concentration have a strong inverse correlation: higher volume and faster flow dilute pollutants. The dam-reservoir complex decreases the flow speed in the reservoir and decreases the volume of water moving downstream. The result is an increased concentration of pollutants in the sediment and water column of the reservoir as compared to the river prior to the addition of the reservoir. Because many water quality parameters are measured in terms of concentration, the dam-reservoir system contributes to water quality violations when it disrupts the river’s dilutive effect. Such accumulation would not occur to the same degree in the natural riverine system, where the much higher flow velocity disperses contaminants.

5. Temperature

Significant thermal stratification in reservoirs may result in negative impacts on temperature downstream. In larger dam-reservoir systems, the release of cold water from the bottom or warm water from the top of the reservoir “can change the downstream temperature 20 to 30ºF.” Unnaturally cold or warm water is considered a pollutant under the CWA because of its effect on the downstream ecosystem. “The biological effects of the change in

84. See Friedl & Wüest, supra note 23, at 58. The initial reservoir flooding can also increase methylmercury production. Id.
85. David C. Evers et al., Biological Mercury Hotspots in the Northeastern United States and Southeastern Canada, 57 BIOSCIENCE 29, 36 (2007); Driscoll et al., Mercury Contamination in Forest and Freshwater Ecosystems in the Northeastern United States, 57 BIOSCIENCE 17, 22 (2007).
86. Evers et al., supra note 85, at 36.
87. See, e.g., E.W. Irianto et al., Seasonal Relationship Between Flow and Pollutant Concentration in Upper Part of Citarum River, in SOUTHEAST ASIAN WATER ENVIRONMENT 1: SELECTED PAPERS FROM THE FIRST INTERNATIONAL SYMPOSIUM ON SOUTHEAST ASIAN WATER ENVIRONMENT (BIODIVERSITY AND WATER ENVIRONMENT), BANGKOK, THAILAND, OCTOBER 2003, at 36 (Shinichiro Ohgaki et al. eds., 2006) (“[T]here is a strong relationship between flow and pollutant concentration.”).
88. Rosenberg, McCully & Pringle, supra note 11, at 749 (“The conspicuous impacts of large-scale hydrological alteration include . . . dewatering of rivers, leading to impaired water quality because point and nonpoint pollution cannot be adequately diluted.” (citations omitted)).
89. Cf. Rayne & Friesen, supra note 29, at 5 (“The changes that dams exert on hydrologic and thermal patterns behind and downstream of the structures have significant effects not only on physical and biological properties of the aquatic system, but particularly on the type and rate of biogeochemical transformations for organic and inorganic contaminants.”).
90. Gorsuch I, 530 F. Supp. 1291, 1300 (D.D.C. 1982); see also Pollak, supra note 10, at 769 (discussing how dam discharge can affect downstream temperatures).
the temperature regime may be quite severe. In the South Saskatchewan River below Lake Diefenbaker, the benthos [community of organisms that live on or in the riverbed] has been found to be impoverished as much as 110 km downstream.”

Furthermore, the large volume of water in reservoirs reduces daily temperature variation and prolongs the summer warm water period compared to the natural river.

Dam removal can return a natural range of temperatures to the river by eliminating the stratified reservoir. One example is the Sallings Dam in Michigan, removed in 1991. A study of the immediate effects of the removal predicted that temperatures would decrease by up to 3 degrees Celsius (ºC) in the former reservoir area. In another example, a 1998 law review article argued for removal of four dams on the Snake River because regular violation of state water quality standards for temperature in and below the dam reservoirs threatened salmon survival. More than ten years later, the debate over whether to remove the lower Snake River dams continues.

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92. Baxter, supra note 23, at 272; see also id. (noting that below a Colorado reservoir, diversity was less than in comparable unregulated streams); Poff & Hart, supra note 43, at 660 (“[D]ownstream from reservoirs that release this deep water, the thermal regime is characteristically ‘summer cool, winter warm.’ Because temperature directly affects the growth and developmental rates of aquatic organisms, such altered thermal regimes greatly modify the densities and kinds of species present.”).

93. See Steadman, supra note 16, at 1333 n.5 (“[Dams] can increase maximum [water] temperatures by holding waters in reservoirs to warm, especially in shallow areas near shore. Reservoirs, due to their increased volume of water, are more resistant to temperature change which results in reduced diurnal temperature variation and prolonged periods of warm water. . . . Reservoirs also inundate alluvial river segments, thereby diminishing the groundwater exchange between the river and the riverbed . . . that cools the river and provides cold water refugia during the summer.” (quoting ENVTL. PROT. AGENCY, EPA DOC. NO. 910-B-03-002, EPA REGION 10 GUIDANCE FOR PACIFIC NORTHWEST STATE AND TRIBAL TEMPERATURE WATER QUALITY STANDARDS 7 (2003)), available at http://yosemite.epa.gov/R10/water.nsf/6cb1a1df2e49e4968825688200712cb7/b3f932c58e2f9b488256d1607d3bca/$FILE/TempGuidanceEPAFinal.pdf)).


95. Id. at 805 tbl.1.

96. Id. at 807.

97. Blumm et al., supra note 30, at 1005, 1042–43. Quoting from a report of the Army Corps of Engineers, the authors argued that restoring natural river flow is “the biological option of choice if salmon and ecosystem restoration is the primary goal.” Id. at 1011.


Nutrients and DOM accumulate in the dam reservoir, contributing to hypoxia and toxic algal blooms. In turn, discharge from the dam-reservoir complex can contain high levels of nutrients, DOM, and toxic algae. Essential nutrients for algae and plant growth—namely nitrogen and phosphorus—are carried along with sediment and accumulate in the reservoir. This nutrient abundance contributes to excess algae growth and associated increase in decomposition of the algae—a phenomenon known as eutrophication.

Increased primary production associated with eutrophication, in turn, can use all available oxygen, leading to hypoxic and anoxic conditions.

While younger reservoirs may represent nutrient “sinks,” a study of the Iron Gate I reservoir on the Danube River found evidence of significant nutrient release from older sediments in the reservoir, making the reservoir, on balance, a nutrient source. “Damming rivers... enhances in situ primary production. The construction of reservoirs also alters the organic carbon cycle, and the oxygen and nutrient balance.”

Evidence of such far-reaching effects on nutrient balance and the carbon cycle was seen with the Lake Christopher Dam, which flooded a mountain meadow that fed into a tributary of Lake Tahoe. “Without the natural filtering of the mountain meadow, urban runoff and nutrients from lawns flowed directly into the channel, contributing to Lake Tahoe’s water quality concerns.”

The increased primary production and nutrient overload commonly found in reservoirs is a breeding ground for toxic algal blooms. The Klamath River

99. See Friedl & Wüest, supra note 23, at 56 (noting that primary production in a reservoir increases as flow slows and turbidity decreases because sediment falls out of suspension); see also Clemons, supra note 49, at 497 (“Groundwater pollution may also result from sediment deprivation. Specifically, farmers downstream who rely on the water as a source of fertilizer are then forced to use substitute types of fertilizer, which may ultimately pollute both the river and the related groundwater.” (footnote references omitted)).

100. See, e.g., Pollak, supra note 10, at 769 (“Hydroelectric dams also often discharge water with artificially reduced levels of dissolved oxygen.”); Clemons, supra note 49, at 496 (“Because sediments and nutrients are trapped behind the dam, the lack of water flow is then likely to cause growth and spread of algae and other aquatic weeds. Further, due to lack of movement, water in the reservoir becomes stagnant, resulting in loss of oxygen. Ultimately, this cycle can reduce the number of organisms living in the reservoir.” (footnote references omitted)).

101. Primary production refers to the production of chemical energy in organic compounds, primarily through photosynthesis.


103. Id. (italics in original).

104. AM. RIVERS ET AL., supra note 20, at 42.

105. See, e.g., id. at 43 (“Rather than flowing downstream and contributing to algal blooms in Lake Tahoe, nutrients from runoff are now utilized by wetland plants.”).

106. See, e.g., id. at 10, 21, 41, 56, 112 (describing algae growth associated with Jackson Street Dam, Dead Lakes Dam, Lake Christopher Dam, Williamsburg Station Dam, and Willow Falls and Mounds impoundments).
7. Exotic and Invasive Species

The shift from a flowing river to an impounded half-lake, along with water quality problems detailed above, make dam-based reservoirs a potential stepping-stone for the spread of exotic and invasive species. A dam discharge may result in the release downstream of exotic and invasive species that develop in the reservoir. The Fourth Circuit held in Hughes River Watershed Conservancy v. Glickman, for example, that the Army Corps failed to appropriately consider expert opinion that construction of the proposed dam would result in invasive zebra mussel infestation of both the reservoir and the downstream river.

A 2008 study sampled 1080 water bodies and found that the invasion likelihood for reservoirs is significantly higher than for lakes. “Impoundments are . . . more disturbed than natural lakes, often exhibiting marked fluctuations in water levels, temperature, fish stocking, and nutrient content—conditions that should increase invasibility.” Therefore, restoration of a natural flow regime through changes in dam operation or dam removal may increase biodiversity and decrease invasibility.
8. **Lack of Downstream Sedimentation and Nutrients**

Taking a typically sediment-heavy river and transforming it into a pseudo-lake results in decreased downstream sediment that is atypical for either the pre-flooded river or a natural lake.\(^{115}\) Similar to how cold can be considered the absence of heat,\(^{116}\) the discharge from such a reservoir lacks an important element—sediment—due to the physical interference of the dam-reservoir complex. When the reservoir traps sediment,\(^{117}\) the downstream river loses the ability to replenish its natural sediment supply.\(^{118}\) Studies of the Jirau hydroelectric dam project on the Madeira River in Brazil, for example, warn of the harmful effects of sediment retention in the reservoir:

> Studies have shown that when the dams begin operation, the upstream Jirau reservoir would fill up with sediments, extending the flooded area into rainforests in neighboring Bolivia. The retention of these sediments behind the walls of the dams would also rob downstream floodplains of the precious nutrients that fertilize agricultural lands and help sustain the Madeira’s incredible biodiversity . . . .\(^{119}\)

Upstream damming disrupts not only nutrient and sediment levels in the downstream river, but also can disrupt nutrient delivery, especially crucial silicates, to offshore marine areas.\(^{120}\) The Elwha Dam and the Glines Canyon Dam, located on the Elwha River in Washington State, prevent the river from transporting fine sediment to coastal areas.\(^{121}\) The result is eroded beaches and shoreline, along with displacement of native organisms by nonnative species of kelp and barnacles along the Juan de Fuca Strait.\(^{122}\) In addition, loss of sediment bars at the mouth of the river contributes to the loss of estuaries—

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\(^{115}\) Gorsuch I, 530 F. Supp. 1291, 1301 (D.D.C. 1982) (“Both the interruption of the flow of sediments and their release in large quantities by dams can degrade water quality.”); Bowman et al., supra note 28, at 18 (“Sediment accumulation in the impoundment can negatively impact fish and wildlife by reducing its depth, inundating valuable habitat, increasing water temperatures and depleting the water of dissolved oxygen. It can also deprive the river and coastal habitats below the dam of needed sediment.”).

\(^{116}\) See Gorsuch I, 530 F. Supp. at 1306.

\(^{117}\) Sediment buildup behind a dam eventually requires dredging, pumping, or sluicing; any of these processes, which itself can result in unnaturally high sediment levels downstream. Gorsuch I, 530 F. Supp. at 1301. Release of sediments in this manner can violate downstream water quality standards and requires a NPDES permit. See, e.g., id. (referencing a 1976 NPDES permit for sluicing from the Guernsey Reservoir in Wyoming).

\(^{118}\) Clemens, supra note 49, at 500; Bednarek, supra note 16, at 807 (describing how sediment retention by the reservoir limits sediment and nutrient availability for organisms downstream).

\(^{119}\) Clemens, supra note 49, at 529 (quoting Glen Switkes, The Americas Program, Brazilian Government Moves to Dam Principal Amazon Tributary 2 (2007)).


\(^{122}\) Bednarek, supra note 16, at 808.
nursery habitat for fish and shrimp—because the bars formerly prevented ocean-water infiltration into the brackish estuary. Releasing higher flows to match the natural regime has been used to rebuild beaches and sandbars downstream of Glen Canyon Dam, which is located on the Colorado River upstream of the Grand Canyon.

* * *

All of the harmful environmental effects of the dam-reservoir system described above can be mitigated—and in some cases avoided—through design considerations in the planning, construction, and operation of the dam-reservoir system. The choice of dam outputs can impact whether the discharge water is low in dissolved oxygen (drawn from the bottom of the reservoir). Water temperature pollution can be similarly mitigated by choices concerning when and where discharge occurs. Dam operations—and not just upstream sediment inputs—influence sedimentation and DOM levels in dam reservoirs. In all cases, effectiveness and feasibility of mitigation should be compared to the restorative potential of dam removal.

Although dam reservoirs are not the single cause of most of these environmental effects, reservoirs exacerbate upstream pollution by promoting accumulation rather than dispersal. Reservoirs fundamentally change the assimilative qualities of the natural riverine system. But for the existence of the dam-reservoir complex, none of the environmental problems described above...
would lead to a similar level of water quality impairment. Because dam-
reservoir systems can be causally linked to a wide variety of water quality
problems and environmental harms, such systems should be properly regulated
under the CWA. And because many of these environmental harms manifest in
the discharge from dams, dam operators should be liable under NPDES for this
harmful discharge.

II. Gorsuch, EPA’s 2008 Water Transfers Rule, and the
Question of Deference

In the early 1980s, National Wildlife Federation and the State of Missouri
sought to force EPA Administrator Anne Gorsuch to regulate discharge from
dams under NPDES. After a thorough review of the water quality impacts of
dam discharges, the D.C. District Court held in National Wildlife Federation v.
Gorsuch (Gorsuch I) that the discharges in question met the CWA standard for
“discharge of a pollutant” and should therefore be subject to NPDES permitting
requirements.130

On appeal, the D.C. Circuit reversed, holding that the district court had not
given appropriate deference to the EPA’s interpretation of the statutory
requirements at issue.131 The D.C. Circuit did not, however, address the district
court’s substantive analysis.132 Most discharges from hydroelectric dams have
thus escaped scrutiny under the NPDES program.133 In more recent cases, both
the Second and Seventh Circuits have refused to defer to similar arguments.134
In Greenfield Mills, for example, the Seventh Circuit explicitly limited Gorsuch
II to its facts and rejected the line of reasoning advanced by the EPA in the
Gorsuch litigation.135 Parts II.A and II.B describe the Gorsuch opinions in
more detail.

130. See infra Part II.A. An earlier opinion by the South Carolina District Court came to a similar
132. Id. at 161 n.1; Attey & Liebert, supra note 34, at 719.
133. See Steadman, supra note 16, at 1344 n.84 (“While courts generally agree that dams are point
sources . . . the fact that they do not require NPDES permits means that they are subject to only those
requirements to which nonpoint sources must adhere.”). But see Gorsuch II, 693 F.2d at 165 n.22 (“EPA
has required NPDES permits for the discharge of grease, oil, or trash through the outlet works of a
dam.”).
134. Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York (Catskill Mountains
II), 451 F.3d 77, 82, 86 (2d Cir. 2006); Greenfield Mills, Inc. v. Mackin, 361 F.3d 934, 946–48 (7th Cir.
2004); Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York (Catskill Mountains I),
273 F.3d 481, 489–91 (2d Cir. 2001). Note that, in Greenfield Mills, the EPA argued for a broader
interpretation of “addition” that contradicted the EPA’s previous argument in Gorsuch I and II.
Greenfield Mills, 362 F.3d at 948.
135. Greenfield Mills, 361 F.3d at 948.
More recently, the EPA codified the D.C. Circuit’s Gorsuch II ruling in its 2008 Water Transfers Rule. As described in Part II.C, that Rule exempts certain water transfers from NPDES permitting requirements and specifically references the Gorsuch II decision. Part II.D outlines the major flaws of the Water Transfers Rule and explains why the Rule should not receive Chevron deference.

A. National Wildlife Federation v. Gorsuch: The D.C. District Court Relies on Science

National Wildlife Federation initiated a citizen suit against the EPA in the early 1980s, seeking a writ of mandamus or injunction that would require the EPA to promulgate regulations subjecting dam discharge to NPDES requirements. The State of Missouri intervened as a plaintiff after the release of supersaturated water from the Harry S. Truman Dam caused large fish kills on the Osage River in Missouri in 1978 and 1979.

Summarizing scientific testimony, the district court’s opinion described, in detail, certain water quality changes effected by dams. District Judge Green concluded that the EPA had a nondiscretionary duty to regulate dams that may discharge pollutants under NPDES because: (1) dams are point sources; (2) the water quality conditions in question are “pollutants” under NPDES; and (3) a dam-reservoir project may add and discharge these pollutants.

Three of the water quality conditions—dissolved metals, sediment, and heat—were undisputed pollutants under NPDES. The EPA argued, however, that the other three conditions—low dissolved oxygen, cold, and supersaturation—did not meet the definition of pollutant under the CWA because these changes are not explicitly listed in the definition. The court held that all six conditions were in fact pollutants for the purpose of...
NPDES. As to the three conditions in dispute, the court briefly commented on why each fell within the statutory definition of pollutant. Because heat is a listed pollutant, “[t]here appears to be no logical reason to exclude cold from NPDES coverage.” Low dissolved oxygen “is the very condition that BOD [biological oxygen demand] effluent limitations [in NPDES permits] are designed to prevent.” And because other mostly harmless elements, such as nitrogen and phosphorus, are already considered pollutants due to their effects on BOD in water, “entrainment and solution of naturally occurring atmospheric gases . . . resulting in supersaturation lethal to aquatic life should logically be considered a pollutant.”

The EPA also argued that none of the pollution at issue could be considered an “addition” of a pollutant. According to the EPA, the pollutants are changes in water quality occurring within the navigable waters of the reservoir. Because the EPA viewed the reservoir as part of the navigable water and therefore distinct from the dam facility, the point source did not add pollutants.

The district court disagreed, viewing the reservoir as part of the dam facility. Crucially, Judge Green determined that the water quality changes were “pollutants created by the dam/reservoir facility” discharged into downstream navigable waters. The court implicated the reservoir system in each pollutant’s creation. The dam-reservoir complex causes the sediments to be trapped, and then possibly discharged downstream . . . in far greater than natural quantities. . . . [W]hen a reservoir modifies the natural processes of the transport of sediments, and then discharges the accumulated sediments through the dam, it should be subject to NPDES regulation.

The reservoir, by creating low oxygen conditions, allows metals to diffuse into the water. Flooding during creation of the reservoir can also add additional metals to navigable waters. Heat and cold are a result of stratification in the reservoir, and such stratification “does not exist in a free-flowing stream.”

“The layer of oxygen deficient water is created by the reservoir in the first place, and allowed to travel downstream only because of the peculiar structure

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146. Id. at 1310–11.
147. Id. at 1310.
148. Id.
149. Id. at 1310–11.
150. Id. at 1303. As for supersaturation, the EPA argued that it occurred in the stilling basin below the dam, and therefore was not added by the dam itself. Id.
151. Id.
152. Id. at 1311.
153. Id. at 1307.
154. Id. at 1299, 1308.
155. Id. at 1308; see also supra note 84.
156. Gorsuch I, 530 F. Supp. 1291, 1308 (D.D.C. 1982); see also id. at 1310.
and operation of the dam . . . .” 157 Finally, “[t]here is no question but that the operation of the dam creates [supersaturation] and adds it to navigable water.” 158 The plaintiffs persuaded the district court that technological changes to the structure and operation of the dam and reservoir would limit each pollutant in question. 159

Judge Green stressed that two conditions must be met before NPDES regulation would apply to a dam: the pollutant must be discharged by the dam 160 and the pollutant must be “created by the dam/reservoir facility” 161 in some respect. The idea that a reservoir is itself part of the navigable water—thus not a point source—is a fallacy; the dam-reservoir complex is much like a power generation plant—which is regulated under NPDES—that “stores and utilizes navigable waters to achieve its purposes . . . and then returns the water to the stream below.” 162 The EPA’s interpretation is “more tortured” because the EPA “gives words like ‘addition’ an overly literal and technical meaning, and strains to characterize a man-made and operated dam/reservoir facility as merely part of a river discharging pollutants into itself through natural processes.” 163


In November 1982, the D.C. Circuit reversed the district court’s opinion in Gorsuch I, holding that the district court failed to give proper deference to the EPA’s interpretation of the CWA. 164 The D.C. Circuit did not take issue with the district court’s substantive holdings or scientific observations 165 except to the extent that the circuit court found the EPA’s opposing interpretation to be “reasonable.” 166 Its decision, the D.C. Circuit confessed, was quite narrow: “We hold merely that EPA’s interpretation is reasonable, not inconsistent with congressional intent, and entitled to great deference.” 167

157. Id. at 1310.

158. Id. at 1311.

159. See, e.g., id. at 1310 (“Low DO [dissolved oxygen] discharges can be controlled by technological changes applied to the structure and operation of the dam/reservoir facility, such as the use of multiple outlet works and injection of oxygen into the discharge water.”).

160. Id. at 1311. Judge Green noted that pollutants remaining in the reservoir “are subject only to nonpoint source controls.” Id. Pollutants from upstream sources could still be regulated upstream, at the point of discharge. Id.

161. Id.

162. Id. at 1306–07 & n.65 (citing Appalachian Power Co. v. Train, 545 F.2d 1351 (4th Cir. 1976); S.C. Wildlife Fed’n v. Alexander, 457 F. Supp. 118 (D.S.C. 1978)).

163. Id. at 1307.

164. Gorsuch II, 693 F.2d 156, 183 (D.C. Cir. 1982).

165. See, e.g., id. at 161 n.1 (“The government does not dispute the district court’s statement of the nature of the water quality problems caused by dams.”).

166. See, e.g., id. at 175 (“EPA’s interpretation must be accepted unless manifestly unreasonable, and we do not find it so.”).

167. Id. at 183.
The D.C. Circuit deferred to the EPA’s conclusion that low dissolved oxygen, cold, and supersaturation did not meet the definition of pollutant under the CWA. The court found the definition of “pollutant” to be ambiguous: “Low dissolved oxygen, cold, and supersaturation do not plainly fall within the statutory list of pollutants in § 502(6).” According to the EPA, the CWA regulates point sources of pollutants through NPDES, but regulates nonpoint sources of pollution through other methods in the Act. The D.C. Circuit noted that, with the exception of heat, the definition of pollutant lists substances added to water, while these other adverse effects are water conditions regulated only as nonpoint pollution. Furthermore, the D.C. Circuit did not wish to add “new terms” to the definition of pollutant. The court inferred that the definition’s use of the word “means,” rather than “includes,” prevents the consideration of additional terms.

According to the D.C. Circuit, the meaning of “addition” of a pollutant is also ambiguous. The EPA essentially equated “addition” with “origination,” arguing that “the point or nonpoint character of pollution is established when the pollutant first enters navigable water.” National Wildlife Federation countered that “addition” means “creation,” and that requirement is met because but for the dam reservoir, the pollutants would not exist. The D.C. Circuit felt that the statutory language justified either interpretation, and therefore deferred to the EPA. In summary, according to the D.C. Circuit, “the text and history of the Act” demonstrates that the EPA’s statutory interpretation is reasonable and does not impede the underlying congressional purposes of the CWA.

168. Id. at 171, 174; see also Gorsuch I, 530 F. Supp. at 1308 (noting the EPA’s opposition to treating these alterations as pollutants).
169. Gorsuch II, 693 F.2d at 171; see also id. at 173 (“[W]e find . . . strong signals in the legislative history that [Congress] entrusted EPA with at least some discretion over which ‘pollutants’ and sources of pollutants were to be regulated under the NPDES program.”).
170. Id. at 165–66. The EPA cites the “areawide waste treatment management plans” in section 208 as an example of nonpoint source regulation of pollution. Id. at 166.
171. One might argue that heat is in fact added to (or subtracted from) water and the relevant water condition is temperature.
172. Gorsuch II, 693 F.2d at 171. The D.C. Circuit’s distinction between substances added to water and water conditions is not as clear as the court suggested. The EPA could easily regulate the addition of gas to the discharged water, thereby effectively regulating the “condition” of supersaturation. See, e.g., id. at 164 (discussing prevention of supersaturation in dam discharge). Similarly, the EPA could regulate the addition of nutrients and BOD as EPA does for wastewater treatment plants and thereby regulate the “condition” of low dissolved oxygen. See, e.g., id. at 182 (noting that limits on BOD are common for NPDES permits).
173. Id. at 171–72.
174. Id. at 172.
175. Id. at 175.
176. Id. at 174; Gorsuch I, 530 F. Supp. 1291, 1306 (D.D.C. 1982).
177. Gorsuch II, 693 F.2d at 175, 177.
178. Id. at 177.
The EPA, however, could not explain why its position in the Gorsuch litigation was consistent with the purpose of the CWA.\(^{179}\) The D.C. Circuit dismissed this failure as “only suggestive,” rather than determinative, “of whether EPA must issue NPDES permits for dams.”\(^{180}\) The D.C. Circuit decided to interpret the statutory purpose by deferring to the agency’s policy choices.\(^{181}\) The opinion went so far as to consider that, “as a policy matter (and recognizing our limited role in reviewing agency policy decisions) we are not convinced that EPA’s decision . . . was so misguided as to frustrate congressional policy.”\(^{182}\) The court deferred to the EPA’s interpretation of the statute’s purpose, even though no party had argued that the purpose was ambiguous. Moreover, the D.C. Circuit remained unconvinced that NPDES permitting for dams was impractical or that the requirements would be technologically infeasible.\(^{183}\)

**C. The EPA’s 2008 Water Transfers Rule**

In the Gorsuch litigation, the EPA asserted that “[a] reservoir or stilling basin is part of the navigable water of a river, and a river cannot be said to be a point source polluting itself.”\(^{184}\) In 2008, the EPA codified this assertion with its Water Transfers Rule, exempting “discharges from a water transfer” from NPDES permitting requirements.\(^{185}\) This Rule covers water transfers between two water bodies\(^{186}\) and, arguably, discharges from a dam.\(^{187}\)

The main thrust of the EPA’s Water Transfers Rule is to exempt from NPDES the transfer of water between two water bodies.\(^{188}\) For example, western states often move water from the Colorado River to agricultural or urban areas hundreds of miles away.\(^{189}\) To qualify for the exemption, the transferred water cannot be subject to “intervening industrial, municipal, or commercial use.”\(^{190}\) In addition, the exemption “does not apply to pollutants

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\(^{179}\) Blumm & Warnock, supra note 130, at 87; see also Gorsuch II, 693 F.2d at 170 (“The agency advanced no policy arguments [for its position].”); Gorsuch I, 530 F. Supp. at 1307 (noting that EPA’s interpretation has “no policy justification”).

\(^{180}\) Gorsuch II, 693 F.2d at 178.

\(^{181}\) Id. at 181–82.

\(^{182}\) Id. at 182.

\(^{183}\) Id.

\(^{184}\) Gorsuch I, 530 F. Supp. at 1303 (D.D.C. 1982); see also Gorsuch II, 693 F.2d at 165 (“[D]am-caused pollution, in contrast, merely passes through the dam from one body of navigable water (the reservoir) into another (the downstream river).”).

\(^{185}\) 40 C.F.R. § 122.3(i) (2011).


\(^{187}\) Cf. id. at 33,699–700 (describing how water on both sides of a dam is not a water transfer under the EPA’s definition).

\(^{188}\) See id. at 33,701 (“[T]aken as a whole, the statutory language and structure of the Clean Water Act indicate that Congress generally did not intend to subject water transfers to the NPDES program.”).


\(^{190}\) 40 C.F.R. § 122.3(i).
introduced by the water transfer activity itself.” Oil from dam turbines and excess food discharged from a concentrated aquatic farm would, in the EPA’s view, require a NPDES permit because the point source itself introduces the contaminants.

Within that NDPES exemption for water transfers, the EPA apparently considers dam discharge as either a type of water transfer or a parallel activity. In the EPA’s view, dams merely move water from the upstream navigable river to the downstream navigable river.

Many utilities and water districts commented that it was unclear whether naturally occurring changes to the water would require a permit. For example, as water moves through dams or sits in reservoirs along the transfer, chemical and physical factors such as water temperature, pH, BOD, and dissolved oxygen may change. The Agency views these changes the same way it views changes to water quality caused by water moving through dams (National Wildlife Fed’n v. Gorsuch, 693 F.2d 156 (D.C. Cir. 1982)); they do not constitute an “addition” of pollutant subject to the permitting requirements of section 402 of the Act.

Thus, the EPA considers water quality changes caused by dams and dams reservoirs to be “naturally occurring changes” that do not require a NPDES permit. In other words, the EPA does not consider the hydroelectric facility to be an “intervening use” under the Rule.

By codifying its Water Transfers Rule, the EPA increased the likelihood that courts would give Chevron deference to the EPA’s view of NPDES regulation in two parallel sets of scenarios: dam discharge and water transfers. Chevron U.S.A. v. NRDC, which the Supreme Court decided two years after the D.C. Circuit’s Gorsuch II ruling, has come to stand for the principle that courts should defer to agency interpretations of ambiguous statutory language if the agency construction is a permissible one. The D.C. Circuit’s choice to defer to the EPA in Gorsuch II, however, is inconsistent with modern deference to agencies as established in Chevron. In the Gorsuch litigation, the EPA did not express its statutory interpretation through rulemaking, as required for Chevron deference, but rather on a set of informal reports and litigation positions.

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191. Id.
192. National Pollution Discharge Elimination System (NPDES) Water Transfers Rule, 73 Fed. Reg. at 33,705 & n.10. The parallels between a containing pen and a reservoir seem lost on the EPA.
193. Id. at 33,705.
194. Id.; see supra note 193 and accompanying text.
197. Id. at 842–43.
198. The D.C. Circuit mentioned three EPA reports that consider dam-caused water pollution to be nonpoint source pollution. Gorsuch II, 693 F.2d 156, 167 n.33 (D.C. Cir. 1982) (citing EPA, EPA Doc. No. 4 03/9-73-017, THE CONTROL OF POLLUTION FROM HYDROGRAPHIC MODIFICATIONS (1973); EPA,
“emphasize that such agency statements do not deserve broad deference of the sort accorded by the Gorsuch II and Consumers Power courts.” Instead, the EPA’s interpretation is merely “entitled to respect,” rather than Chevron deference, following the holding in Christensen.

Neither the Second Circuit in Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York nor the Seventh Circuit in Greenfield Mills v. Macklin found the EPA’s interpretation of “addition” persuasive. Both circuits also noted that the EPA’s interpretation did not require the broad deference given to it in Gorsuch II. Because the EPA’s interpretation in the Gorsuch litigation did not carry the force of law of a rulemaking, the D.C. Circuit gave the EPA too much deference.

Given the eroding support for the Gorsuch II opinion, the EPA had an interest in strengthening judicial deference to its reasoning for exempting dam discharge. It is likely, however, that the Water Transfers Rule was motivated primarily by the EPA’s desire to exempt water transfers from NPDES...
requirements. In particular, three decisions concerning water transfers—Catskill Mountains, Greenfield Mills, and Friends of the Everglades—drove the EPA to codify its position that water transfers should be exempt from NPDES permitting requirements.

In Catskill Mountains, decided in 2000, the Second Circuit held that NPDES should regulate a diversion of the Schoharie River in New York. In 2004, the Seventh Circuit held in Greenfield Mills that a bypass channel that redirects river water away from and then back to the same river is an “addition” of a pollutant. And in 2006, as the EPA published its Proposed Water Transfers Rule, a Florida district court held in Friends of the Everglades that the water district must obtain NPDES permits to pump water through the Everglades into Lake Okeechobee.

These cases were all decided before the EPA finalized its Rule. The EPA has since used Chevron as a shield with the expectation that judicial deference will lead courts to uphold the Water Transfers Rule even though Catskill Mountains, Greenfield Mills, and Friends of the Everglades undermined the statutory interpretation behind the Rule. The Rule represents inter- and intra-circuit non acquiescence, or a refusal to follow decisions of lower federal courts. The EPA’s efforts paid off in 2009, when the Eleventh Circuit reversed the Florida district court in Friends of the Everglades and instead


207. See also Dubois v. U.S. Dep’t of Agric., 102 F.3d 1273, 1299 (1st Cir. 1996) (holding that the transfer of water between a river and pond through snowmaking pipes would require a NPDES permit); Del-AWARE Unlimited v. Pa. Dep’t of Ress., 508 A.2d 348, 381-82 (Pa. Commw. 1986) (requiring a NPDES permit for a piped water diversion).

208. See, e.g., Lawrence R. Liebesman & Steve Kelton, Clean Water Act NPDES Water Transfer Issue: The Implications for the Water Supply and Water User Communities, 39 Envtl. L. Rep. (Envtl. Law Inst.) 10,181, 10,183 (2009) (“The recent focus on this issue [water transfers] was largely precipitated by litigation over the operations of the South Florida Water Management District’s management of water transfers related to the Everglades.”); id. at 10,183. In Greenfield Mills, the EPA argued for, and the court adopted, a broader definition of “addition” that brought the bypass channel under section 404 of the CWA. Greenfield Mills, 361 F.3d at 948–49. At the same time, the Seventh Circuit endorsed the view that the EPA’s interpretation of “addition” in Gorsuch II did not warrant deference because the EPA’s position had not been formally adopted in rulemaking. Id. at 948.

209. Catskill Mountains I, 273 F.3d at 494.


found the EPA’s statutory interpretation to be permissible and thus entitled to Chevron deference.214

D. Must Courts Now Defer to the EPA’s Water Transfers Rule under Chevron?

Now that the EPA’s Water Transfers Rule is finalized, a court must defer to the EPA’s interpretation of the CWA’s NPDES trigger if the court finds (1) that the statutory language is ambiguous and (2) the EPA’s interpretation of that ambiguity is reasonable.215 To qualify for Chevron deference, the EPA’s interpretation must be within the scope of the ambiguity.216 A court will not defer to an interpretation that exceeds the meaning that the statute can bear.217 Thus, both the court and the EPA are bound to interpret any ambiguity in light of the purpose of the CWA.218

The EPA’s Water Transfers Rule, however, fails to account for the purpose of the CWA. Categorically eliminating certain dischargers from regulation under the Act will not accomplish the goal of eliminating pollution in U.S. waters. In Gorsuch II, the D.C. Circuit failed to seriously inquire into the statutory purpose of the CWA. Instead, the court deferred to the EPA’s interpretation of the Act’s purpose, even though no party alleged that the Act’s purpose was ambiguous in the least.219 The court’s finding that the EPA’s interpretation “cannot be said to plainly frustrate congressional purposes”220 hardly evinces a full-bodied conviction that the agency’s decision was consistent with the Act’s purpose.

The D.C. District Court firmly rejected the idea that the EPA had interpreted the CWA in a manner consistent with the Act’s purpose:

EPA’s interpretation of the statute runs counter to expressed congressional intent, and is inconsistent with its own implementation of the Act in other contexts. EPA has given absolutely no reasonable basis, consistent with the purpose and policies of the Act, why dams should not be regulated as point

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216. See MCI Telecomms. Corp. v. Am. Tel. & Tel. Co., 512 U.S. 218, 228–29 (1994) (finding that the FCC’s change to the act is outside the scope of any ambiguity in the statutory term “modify”).
217. Id. at 229.
220. Id. at 179.
sources. Its entire argument rests upon a dissection of the language of the Act, particularly the definition section, in an overly technical manner which has been rejected in the context of this broadly remedial legislation.\textsuperscript{221}

Under \textit{Chevron}, the Water Transfers Rule similarly fails to be a reasonable interpretation of any statutory ambiguity because it runs counter to the purpose of the CWA and is inconsistent with how the EPA regulates pollutant discharge in other contexts.\textsuperscript{222}

The Rule itself, as applied to dam discharge, contains the seeds of its own demise. The Rule still requires NPDES permits for transferred water that is subjected to “intervening industrial, municipal, or commercial use.”\textsuperscript{223} Dams store water in industrial, manmade reservoirs and pass the water over industrial turbines to create electricity for municipal or commercial use. The Rule also requires NPDES permits for transferred water when pollutants are “introduced by the water transfer activity itself to the water being transferred.”\textsuperscript{224} Part I detailed the physical mechanisms by which the dam-reservoir complex introduces into the transferred water a host of pollutants that would not occur in the same quantity or quality but for the dam-reservoir complex. This common characteristic of dam-reservoir complexes inspired many comments on the proposed Rule.\textsuperscript{225} The EPA responded that pollutants introduced or exacerbated by reservoirs were “naturally occurring” and did not constitute an “addition” of a pollutant.\textsuperscript{226} The idea that the adverse water quality impacts caused by manmade dams and reservoirs are “natural” is both preposterous and unsustainable given our scientific understanding of the environmental effects of dams and dam reservoirs. Therefore, under a plain reading of the exemptions to the Rule, NPDES should regulate dam discharge.

In addition, the EPA holds inconsistent positions on whether discharge from a dam-reservoir complex would fall under the Water Transfers Rule. In its response to comments to the Rule, the EPA described polluted water discharged from dam reservoirs as a “naturally occurring change[]” that would not require a NPDES permit.\textsuperscript{227} But the EPA specifically states that the conveyance of water from Reservoir A to River A “does not constitute a water transfer under the EPA’s definition because the water on both sides of the dam is part of the same water of the [United States].”\textsuperscript{228} In a footnote, the EPA

\begin{footnotes}
\item[222] See infra notes 290–292 and accompanying text.
\item[223] 40 C.F.R. § 122.3(i) (2011).
\item[224] Id.
\item[225] See National Pollution Discharge Elimination System (NPDES) Water Transfers Rule, 73 Fed. Reg. 33,697, 33,705 (June 13, 2008) (to be codified at 40 C.F.R. pt. 122) (“Many utilities and water districts commented that it was unclear whether naturally occurring changes to the water would require a permit. For example, as water moves through dams or sits in reservoirs along the transfer, chemical and physical factors such as water temperature, pH, BOD, and dissolved oxygen may change.”).
\item[226] Id.
\item[227] Id.
\item[228] Id. at 33,699.
\end{footnotes}
elaborates that this conveyance would nevertheless be excluded from NPDES permitting under *Gorsuch II* and *Consumers Power*.\(^{229}\) This may be a concession, albeit obscured, that only *Gorsuch II*, and not the Water Transfers Rule, exempts dam discharge from NPDES regulation.

Assuming, however, that the Water Transfers Rule does exempt dam discharge, the Rule still should not receive deference as the EPA failed to identify actual ambiguity in the CWA’s NPDES trigger and to present a reasonable interpretation of that ambiguity.\(^{230}\) For *Chevron* deference to apply, the EPA must identify ambiguity in any of the three basic elements of the trigger: (a) any addition of any pollutant (b) to navigable waters (c) from any point source.\(^{231}\) If ambiguity exists, then the EPA’s interpretation within the scope of that ambiguity must be reasonable in order to receive *Chevron* deference.\(^{232}\)

The EPA’s interpretation of any supposed ambiguity contains at least three major flaws that correspond to the three elements of the statutory trigger. First, the EPA irrationally equates dam-reservoir complexes, or at least reservoirs, with simple pumping stations, pipes, or canals.\(^{233}\) Under the EPA’s Water Transfers Rule, simple pumping stations, pipes, or canals can discharge water without a NPDES permit because the transfer does not introduce “new” pollutants into the system but merely facilitates water transfers.\(^{234}\) But, dam reservoirs, unlike pumping stations, pipes, or canals, do not function solely to facilitate the transfer of water. Instead, a reservoir functions to store water for extended periods. While, arguably, a run-of-the-river hydroelectric turbine would merely transfer water because it lacks a proper storage reservoir, a typical dam-reservoir complex does much more. The reservoir fundamentally changes the quality of the water passing through the dam by, for example, changing dissolved oxygen levels and accumulating chemicals and metals.\(^{235}\)

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\(^{229}\) Id. at 33,699 n.3.

\(^{230}\) See *Chevron U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 842–43 (1984) (“[T]he court, as well as the agency, must give effect to the unambiguously expressed intent of Congress. . . . [I]f the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency’s answer is based on a permissible construction of the statute.”).

\(^{231}\) Some may argue that “addition” alone is a separate element. See, e.g., *Catskill Mountains I*, 273 F.3d 481, 491–94 (2d Cir. 2001) (recognizing the litigants’ competing arguments over the meaning of “addition”); *Gorsuch II*, 693 F.2d 156, 165 (D.C. Cir. 1982) (splitting the statutory trigger into five elements); see also infra note 244 (describing the elements used in *Gorsuch II*). It is the position of this Article that “addition” cannot meaningfully stand on its own and must be interpreted in light of the rest of the phrase. Therefore, Parts III.A, III.B, and III.C consider the phrases “addition from a point source,” “addition of a pollutant,” and “addition to navigable waters,” respectively.

\(^{232}\) *Chevron*, 467 U.S. at 842–44.

\(^{233}\) See supra note 193 and accompanying text.

\(^{234}\) See supra notes 190–191 and accompanying text.

Second, the EPA ignores the science on the environmental impacts of reservoirs by concluding that water pollutants are never added to a water body by a reservoir. Certainly, upstream pollutants, such as pesticides, nutrients, and metals, already exist in the water body. But, low dissolved oxygen is not prevalent in the natural river; it is “added” (or, rather, dissolved oxygen is taken away) by the reservoir due to the reservoir’s accumulation of sediment, nutrients, and organic matter. Furthermore, metals in the natural river are in particulate form; it is only after the reservoir causes hypoxia that those metals diffuse into and contaminate the water body. The reservoir causes an “addition of a pollutant” when it transforms a compound into a toxic metal and adds it to the water column. Reservoirs similarly transform methylmercury and add it to the water column. All of these phenomena have been recognized as pollutants by courts and the EPA. The agency’s interpretation of the NPDES trigger in the Water Transfers Rule far exceeds the scope of any ambiguity in the statutory definition of pollutant.

Third, the EPA asserts, without legal basis, that waters of the United States can be withdrawn from the national sovereignty. The EPA justifies its Final Rule with a legally dubious hypothetical: “For example, if the water is withdrawn to be used as cooling water, drinking water, irrigation, or any other use such that it is no longer a water of the [United States] before being returned to a water of the [United States], the water has been subjected to an intervening use.” The Supreme Court’s statement in S.D. Warren contradicts this assertion: “[N]or can we agree that one can denationalize national waters by exerting private control over them.” By conflating the question of what “addition” means in the abstract with the more relevant, concrete question of what it means to add a pollutant to navigable waters, the EPA invokes ambiguity where none exists. Moreover, the idea of “intervening use” does not appear in the plain language of the statute nor is it implied by the word “addition.” Instead, the NPDES trigger merely requires that a pollutant be added to a navigable water. Because dams do in fact add pollutants to the navigable downstream river, these dams should be regulated under NPDES.

In the end, any challenge to the EPA’s Water Transfers Rule will likely require in-depth analysis of why dam discharge should be regulated under NPDES. Part III, therefore, examines each of the three statutory elements for the NPDES trigger in detail.

236. See supra Parts I.B.3, I.B.6.
238. See supra notes 84–86 and accompanying text.
239. See infra Part III.B.1.
241. Id.
243. Sara Colangelo, for example, evaluates the Proposed Water Transfers Rule and previews legal challenges to the Rule. Colangelo, supra note 206, at 129–40.
III. DISCHARGE FROM A DAM RESERVOIR SHOULD BE SUBJECT TO NPDES PERMITTING

As this Part will explain, more recent caselaw, scientific studies, and the EPA’s own regulations have attacked the D.C. Circuit’s Gorsuch II opinion from several angles. The EPA’s reliance on the dated Gorsuch II opinion for the Water Transfers Rule cannot, standing alone, constitute a reasonable interpretation of the NPDES statutory requirement. By adopting and codifying the Gorsuch II decision, the EPA’s Rule inherits the more recent criticisms of that opinion.

Ultimately, larger questions remain: are the Gorsuch II opinion and the EPA’s Water Transfers Rule wrong? Is it reasonable for the EPA to exclude dam discharge from “discharge of a pollutant,” thereby avoiding NPDES requirements? These are questions of statutory interpretation, broken down into three distinct inquiries:244 is the discharge (1) an addition from a point source, (2) an addition of a pollutant, and (3) an addition to a navigable water body?

Part III.A examines the easiest question: are dams point sources? As mentioned above, the EPA conceded that point in the Gorsuch litigation.245 A 2010 Ninth Circuit opinion, Northwest Environmental Defense Center, supports that concession by holding that the EPA lacks discretion to limit the definition of a point source.246 No ambiguity in the statutory language exists for the EPA to exempt the dam-reservoir complex from the definition of a point source.

Part III.B explains that dam discharges affecting water quality are pollutants. No ambiguity exists in the definition of “pollutant” that would allow the EPA to exclude substances in dam discharge from the definition of pollutant. Because reservoirs and dam impoundments add new pollutants to and exacerbate existing pollutants in the water body,247 dam discharge can convey pollutants from the impaired reservoir to downstream waters. The Supreme Court in Miccosukee Tribe and the Ninth Circuit in Northwest Environmental Defense Center unambiguously recognize that point sources convey pollutants.248 These opinions reject as irrelevant a regulatory focus on the

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244. The D.C. Circuit in Gorsuch II used a similar breakdown, using five statutory elements: “(1) a pollutant must be (2) added (3) to navigable waters (4) from (5) a point source.” Gorsuch II, 693 F.2d 156, 165 (D.C. Cir. 1982). Several law journal articles have criticized the Gorsuch II opinion, sometimes using a similar breakdown of the statutory requirements for “discharge of a pollutant” to that used in this Part. See, e.g., Attey & Liebert, supra note 34, at 709–19; Alison M. Dornsife, Comment, From a Nonpollutant into a Pollutant: Revising EPA’s Interpretation of the Phrase “Discharge of a Pollutant” in the Context of NPDES Permits, 35 EnvTL. L. 175, 183–97 (2005); Blumm & Warnock, supra note 130, at 83–93; John H. Paul, Note, The Second Circuit Clears the Murk of Gorsuch and Consumers Power from the Esopus Creek, 20 PACE ENVTL. L. REV. 841, 850–54 (2003).

245. Gorsuch I, 530 F. Supp. 1291, 1297 (D.D.C. 1982); see also Gorsuch II, 693 F.2d at 165 (“The parties agree that a dam can, in some circumstances, be a ‘point source.’”).

246. See Nw. Envtl. Def. Ctr. v. Brown, 617 F.3d 1176, 1183 (9th Cir. 2010) (“Congress did not provide the EPA Administrator with discretion to define the statutory terms [defining point sources under the Clean Water Act].”).

247. See supra Part I.B.

248. See infra notes 339–343, 349 and accompanying text.
origination of the pollutant because NPDES defines “point source” simply as a conveyor of pollutants and is silent on the pollutants’ origins. The EPA’s arguments that conveyance of a pollutant is insufficient to meet the statutory requirements are therefore unreasonable because they do not comport with the plain meaning of the CWA.

Part III.C examines whether dam discharges are additions to a navigable water body. The EPA’s strongest argument is with this third inquiry. The agency’s position—that no addition to a navigable body occurs with dam discharge—combines aspects of its argument concerning the origination of a pollutant, discussed in Part III.B, with the assertion that conveyance of pollutants between two navigable water bodies is insufficient to meet the NPDES trigger. A line of cases, including the Supreme Court’s decision in Miccosukee Tribe,249 considered without definitively deciding the question of whether moving (polluted) water between two parts of the same water body could be an “addition” of pollutants.250 An analytical oversight perpetuated by some of these cases is again the mistaken idea that the CWA places any importance on where a pollutant originates. Instead, the statutory language explicitly considers only whether the pollutant in question is added to a navigable water.251 The Ninth Circuit undertook this consideration in Northwest Environmental Defense Center, and correctly found that discharging stormwater runoff through logging road ditches into a stream required a NPDES permit.252 Furthermore, the science of reservoir water quality indicates that reservoirs, as the D.C. District Court observed in Gorsuch II, can dramatically change water quality, thus constituting the “addition” that the Supreme Court appears to require. The EPA unreasonably conflates two separate issues—the definition of pollutant and the requirement of discharge to navigable waters—in order to create ambiguity where none exists.

All of the statutory analysis discussed below relies on the simple premise, detailed in Part I, that a causal relationship exists between the dam-reservoir complex and pollutants discharged by that complex. The district court in Gorsuch aptly described water quality changes—sediment, temperature, dissolved metals, low dissolved oxygen, nutrient enrichment, and supersaturation253—brought about by the introduction of the dam-reservoir complex to the riverine system.254 In other words, the original river did not suffer from these water quality issues, but the river-plus-dam does.

250. See id. at 109–10.
252. See infra note 349 and accompanying text.
253. Discharge of entrained dead fish, discharge of exotic and invasive species, and discharge of water lacking in sediment are additional water quality changes brought about by the dam-reservoir complex. See supra Parts I.B.2, I.B.7 & I.B.8.
A. “Any addition . . . from any point source”

A finding of a “discharge of a pollutant” under the CWA requires an “addition . . . from any point source.” A point source is “any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged.” The definition lists a set of examples, including “any pipe, ditch, channel, tunnel, [and] conduit . . . .” A point source is a conveyance, and pollutants are discharged from the point source.

The EPA properly conceded in Gorsuch that dams can be point sources. All dams, as described in Part I, have outlets to release excess water over the spillway and, for hydroelectric dams, a system of pipes to move water over the turbines. As the Gorsuch I court noted, “[c]learly at least some, if not all, of these discharge outlets from dams . . . meet the CWA’s definition of point source.” Importantly, Congress intended for a broad definition of point source under the CWA, which further supports the inclusion of dams in the definition of point source. On appeal, the D.C. Circuit in Gorsuch II did not take issue with characterizing dams as point sources, and noted that the EPA has required permits for grease, oil, or trash discharged by a dam.

The EPA may nevertheless try to exempt dams from the definition of “point source.” In its Silvicultural Rule, for example, the EPA attempted to exempt certain ditches and culverts used in logging. The EPA asserted that, although the ditches and culverts were “technically” point sources, they were nevertheless exempt because the discharge in question originated with nonpoint sources. The EPA has evidently attempted the same sleight of hand in its Water Transfers Rule by arguing that conveying water—no matter how polluted it is—does not itself introduce pollutants into the water.


256. Id. § 1362(14).

257. Id.

258. The question of whether point sources must be generators or merely conveyers of pollutants is left to Part III.B.2, infra. For the purposes of this section, it is assumed that the point source may be a mere conveyer of pollutants, following the reasoning of Northwest Environmental Defense Center v. Brown, 617 F.3d 1176 (9th Cir. 2010).


260. Id.

261. Id. (quoting United States v. Earth Scis., Inc., 599 F.2d 368, 373 (10th Cir. 1979)); see also Nw. Envtl. Def. Ctr., 617 F.3d at 1183 (quoting legislative history as to the breadth of the point source definition); Attey & Liebert, supra note 34, at 718 (“Congress intended the permit program [NPDES] to be used whenever possible . . . .”).

262. Gorsuch II, 693 F.2d 156, 165 & n.22 (D.C. Cir. 1982).


In both instances, the EPA misappropriates the term “point source” to describe two distinct concepts under the Clean Water Act. NPDES permits are required for “the discharge of any pollutant,” a phrase that is not equivalent to “point source pollution.” A point source is a discrete conveyance. “Discharge of any pollutant,” on the other hand, uses “point source” in its own definition. “Discharge of any pollutant” is the actual trigger for NPDES regulation, while being a point source is merely one necessary element of the trigger. But in the Silvicultural Rule, EPA claims that “not every ‘ditch, water bar or culvert’ is ‘means [sic] to be a point source under the Act.’” Here, the EPA uses the term “point source” when it must really mean “discharge of any pollutant.” Otherwise, as the Sixth Circuit pointed out in Consumers Power, the EPA is engaging in circular reasoning by refusing to define “point source” independently of “addition.”

According to the Ninth Circuit, the EPA’s claimed exemption of silvicultural ditches and culverts from the definition of point source “is flatly inconsistent” with the definition of point source in section 1362(14). Similarly, in rejecting the EPA’s original Silvicultural Rule, the D.C. Circuit ruled in 1977 that “[t]he wording of the statute, legislative history, and precedents are clear: the EPA Administrator does not have authority to exempt categories of point sources from the permit requirements of § 402 (§ 1342).” The same logic applies here: the EPA lacks authority to exempt dams from the definition of point source.

B. “Any addition of any pollutant . . .”

Dam discharges also meet the NPDES requirement of “any addition of any pollutant . . . from any point source.” Part III.A demonstrated that dams could be point sources. This Part examines both the definition of “pollutant” and

267. Id. § 1362(14).
268. See id. § 1362(12) (“The term ‘discharge of a pollutant’ . . . means . . . any addition . . . from any point source . . . .”).
270. See Nw. Envtl. Def. Ctr., 617 F.3d at 1187. To be fair, the EPA quotes here from Natural Resources Defense Council v. Train, 396 F. Supp. 1393, 1401 (D.D.C. 1975), and the D.C. District Court can also be accused of playing fast and loose with defined terms in the CWA. But as the Ninth Circuit points out in Northwest Environmental Defense Center, EPA is “putting words in the district court’s mouth” because Train never stood for the proposition that the EPA adopted. Nw. Envtl. Def. Ctr., 617 F.3d at 1187.
and the related issue of whether the pollutant must originate with the point source to qualify as an addition.\textsuperscript{276} In one of its arguments in the \textit{Gorsuch} litigation, the EPA interpreted “addition” to imply that pollutants must originate with the point source in order to be regulated under NPDES.\textsuperscript{277} Neither the plain language of the CWA nor caselaw supports EPA’s interpretation. A host of adverse effects potentially discharged by dams qualify as “pollutants.” And existing caselaw is reasonably clear that pollutants need only be conveyed by the point source; the CWA does not require that the pollutant originate with the point source.

1. Pollutant Defined

In \textit{Gorsuch II}, the D.C. Circuit deferred to the EPA’s conclusion that cold, supersaturation, and low dissolved oxygen do not meet the statutory definition of pollutant.\textsuperscript{278} The EPA’s conclusion, however, is unreasonable. The plain language of the definition of “pollutant”\textsuperscript{279} precludes the EPA’s conclusion, and both the EPA and \textit{Gorsuch II} failed to give weight to the definition of “conventional pollutants” in the CWA. In addition, TMDL and other water quality regulations implemented long after the \textit{Gorsuch II} decision take a much broader view of the definition of pollutant than the D.C. Circuit did in \textit{Gorsuch II}. Finally, caselaw supports an expansive definition of pollutant.

Naturally, the task of defining the term “pollutant” begins with the CWA definition:

\begin{quote}
The term “pollutant” means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.\textsuperscript{280}
\end{quote}

For the purpose of regulating pollutants in dam discharges, several of the listed items stand out. Sewage and agricultural waste are associated with excess nutrient pollution and eutrophication of water bodies. Biological materials, along with nutrient pollution, are implicated in hypoxic water conditions. Excess heat (and cold) are problems often seen in reservoirs, and these heated or cooled waters often cause environmental harm downstream. Chemicals such as pesticides and industrial waste, often high in heavy metals, can concentrate in reservoirs. Therefore, at first glance, it is not difficult to find considerable overlap between the definition of pollutant in the CWA and the water quality issues associated with dam-reservoir complexes.

\textsuperscript{276} \textit{Infra} Part III.B.2.
\textsuperscript{277} \textit{Gorsuch II}, 693 F.2d 156, 165 (D.C. Cir. 1982).
\textsuperscript{278} \textit{See supra} notes 167–169 and accompanying text.
\textsuperscript{279} 33 U.S.C. § 1362(6).
\textsuperscript{280} \textit{Id}. 
As detailed in Part I.B, the discharge from a dam has the potential to harm water quality downstream. Some of the harmful environmental effects of dam discharge are simply the conveyance of poor-quality upstream water through the dam to downstream waters. For example, agricultural runoff containing excess nutrients could pass from upstream waters to downstream waters through the dam. Other harmful environmental effects are the consequence of an exacerbation of existing poor water quality by the dam-reservoir complex. For example, the reservoir could concentrate dissolved metals from upstream sources, which then eventually pass through the dam in high concentrations to downstream waters. 281 Finally, harmful environmental effects could be added to downstream waters by the dam-reservoir complex. The creation of hypoxic conditions due to physical characteristics of the dam-reservoir complex, which result in the release of low-dissolved oxygen waters downstream, is an example of this third type of environmental harm. 282

Section 304(a)(4) of the CWA requires the EPA to publish and revise a list of “conventional pollutants, including but not limited to, pollutants classified as biological oxygen demanding, suspended solids, fecal coliform and pH.” 283 This list of pollutants is evidence that the definition of pollutant in section 1362(6) is not exclusive. 284 Furthermore, BOD, suspended solids, and pH are indicators of the presence of other pollutants, 285 or what the D.C. Circuit labeled “water conditions.” 286 The EPA uses such parameters to capture a host of listed and unlisted contributions to water quality issues. 287 In the example used by the district court in Gorsuch I, nutrient pollution may remain otherwise unlisted but contribute to BOD. 288

The EPA and the states have used this broad approach to regulate water quality through TMDL plans. Section 303(d) of the CWA requires states to develop TMDLs for impaired waters. 289 According to the EPA, a “TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.” 290 States, in coordination with

282. See supra Part I.B.3.
284. Gorsuch I, 530 F. Supp. 1291, 1309 (D.D.C. 1982); Attey & Liebert, supra note 34, at 711. The Fifth Circuit referenced the conventional pollutant list in its determination that produced water is a pollutant. Sierra Club, Lone Star Chapter v. Cedar Point Oil Co., 73 F.3d 546, 568 (5th Cir. 1996). For a definition of “produced water,” see infra note 296.
286. Gorsuch II, 693 F.2d 156, 171 (D.C. Cir. 1982).
the EPA, have developed TMDLs for sediment, pathogens, nutrients, metals, dissolved oxygen, temperature, pH, pesticides, mercury, and organics, to list some examples.291 Thus, some of the adverse water quality effects the court in Gorsuch II did not consider to be pollutants, such as dissolved oxygen and cold, are pollutants for purposes of TMDLs. All of these TMDLs serve as examples of regulation of water quality effects created or exacerbated by dam-reservoir complexes.

Other examples suggest that the EPA and states take a broader approach to the definition of “pollutant” than that articulated by the EPA in the Gorsuch litigation. The EPA’s final water quality guidance for the Great Lakes, published in 1995, lists criteria for twenty-nine pollutants, including alkalinity, BOD, color, dissolved oxygen, pH, phosphorus, salinity, temperature, and turbidity.292 Washington State’s guidance on section 401 certification identifies sixteen pollutants of concern, requiring numeric standards for total dissolved gas, temperature, turbidity, pH, dissolved oxygen, nutrients, fecal coliform, oil and grease, and toxics.293 As part of a broader dissolved oxygen TMDL for the Spokane River and Lake Spokane, Washington State imposed a dissolved oxygen requirement in Avista Corporation’s section 401 certification for its hydroelectric dams on the Spokane River.294

Caselaw interpreting the definition of pollutant295 finds the definition expansive and not limited to specifically enumerated pollutants. In 1995, for example, Cedar Point Oil argued before the Fifth Circuit that its discharge of “produced water”296 did not meet the definition of a pollutant under the CWA.297 The Fifth Circuit rejected this argument, noting that a court has authority to determine that a specific substance is a pollutant under the CWA

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293. WASH. STATE DEP’T OF ECOLOGY, supra note 65, at 27.

294. WASH. STATE DEP’T OF ECOLOGY, AMENDED ORDER NO. 6702, 401 CERTIFICATION-ORDER: SPOKANE RIVER HYDROELECTRIC PROJECT CERTIFICATION 28 (2009); DAVID J. MOORE ET AL., supra note 74, at 44.

295. Sierra Club, Lone Star Chapter v. Cedar Point Oil Co., 73 F.3d 546, 567 (5th Cir. 1996) (listing cases holding that a variety of substances meet the definition of pollutant); cf. George v. Reisdorf Bros., Inc., 696 F. Supp. 2d 333, 342 (W.D.N.Y. 2010) (“Molasses does not readily fall within the categories of identified pollutants in the statute.”).

296. “Produced water” is water that is extracted when drilling for oil and gas; it is typically contaminated with drilling chemicals. Cedar Point Oil, 73 F.3d at 550.

297. Id. at 562–63.
definition. It concluded that produced water falls within the scope of “chemical wastes” and “industrial wastes” and is thus a pollutant.

While ambiguity exists as to whether any given substance is or is not a pollutant under the statutory definition, courts have nevertheless held that the definition of pollutant unambiguously includes more than its strictly listed terms. More importantly, the EPA, states, and the courts have considered most of the harmful environmental effects described in Part I.B to be pollutants. In fact, BOD, suspended solids, fecal coliform, and pH are listed as pollutants in section 304(a)(4) of the CWA.

2. The Pollutant Need Not Originate with the Point Source

In the Gorsuch litigation, the EPA argued that dam discharge could not be considered a pollutant because the adverse phenomena in question were not “introduced” by the dams. Rather, the harmful phenomena merely passed through the dam from the reservoir to the downstream river. As a preliminary matter, nothing in the definition of pollutant mentions anything about “origination” or “addition” as a requirement of a pollutant. Therefore, any attempt to exclude a substance from the definition of pollutant on the basis of origination violates the plain language of the CWA definition.

A more nuanced argument by the EPA would be that the definition of discharge requires that the pollutant originate with the point source. Because the NPDES phrase at issue contains the word “addition,” the argument goes, NPDES requires that the pollutant originate with the point source. The NPDES requirement—“[A]ny addition of any pollutant . . . from any point source”—however, describes an unnatural, manmade intervention in the waterway. But for the unnatural point source, the pollutant would not occur in the same quantity or quality. This more nuanced interpretation is arguably consistent with the Water Transfers Rule, while still requiring NPDES regulation of dam

298. Id. at 567.
299. Id. at 568. In support of its finding that produced water meets the definition of a pollutant, the Fifth Circuit referenced EPA permits and regulations that listed produced water as a pollutant. Id. Similarly, EPA regulations and guidance treat many adverse water quality effects as pollutants. See supra notes 290–292 and accompanying text.
300. Gorsuch II, 693 F.2d 156, 165 (D.C. Cir. 1982) (referring to the EPA’s Brief and Reply Brief); see also id. at 175 (“In [the EPA’s] view, the point or nonpoint character of pollution is established when the pollutant first enters navigable water, and does not change when the polluted water later passes through the dam from one body of navigable water (the reservoir) to another (the downstream river).”). The EPA also apparently believed that the term “addition” excludes pollutants, such as dissolved oxygen, that could technically be considered a subtraction of something from the water. See Gorsuch I, 530 F. Supp. 1291, 1306–07 (D.D.C. 1982) (rejecting the EPA’s definition as “overly literal and technical”).
301. Gorsuch II, 693 F.2d at 165 (referring to the EPA’s Brief and Reply Brief).
302. See Attey & Liebert, supra note 34, at 713 (“Proponents of nonregulation argue that dam discharges are not additions because nothing tangible is actually added to the water. This argument, however, is based merely on technical definitions and ignores the actual impacts of dams on the surrounding water supply.”).
NPDES REGULATION OF DAM DISCHARGE

Discharge. The Water Transfers Rule seeks to exempt simple water transfers, which in the EPA’s view do not add pollutants to the receiving water body.

Dams, on the other hand, cause water quality impacts in the discharged water that, but for the dam, would not occur. Recent cases interpreting the phrase “addition,” as it applies to dredged spoils and bypass channels, are consistent with the definition of point source as a conveyance for which the origination of the pollutant is not relevant. Most importantly, the Supreme Court held in Miccosukee Tribe that point sources need not generate pollutants to fall within the reach of the NPDES permitting system.

The EPA’s argument is difficult to parse because it conflates several different lines of reasoning. One line of reasoning is that the pollutants in question pass from one navigable water (the upstream river and reservoir) to another navigable water (the downstream river) that are conceptually the same body of water. Accordingly, conveyance of polluted water from one part of the river to another fails the “addition” requirement. Put another way, “[a] reservoir or stilling basin is part of the navigable water of a river, and a river cannot be said to be a point source polluting itself.” This argument is deferred to Part III.C, infra, for analysis.

A second line of reasoning pursued by the EPA is that dams are not, in fact, responsible for adding or exacerbating pollutants. The district court in Gorsuch I firmly rejected this factual claim. The EPA did not challenge the factual findings of the district court on appeal, and the D.C. Circuit agreed that “dams affect environmental quality in a large number of ways, both good and bad.”

Nevertheless, the D.C. Circuit continued to rely, at least implicitly, on this incorrect factual assertion: that dams are not responsible for pollution. The court found reasonable the EPA’s argument that “the point source must introduce the pollutant into navigable water from the outside world; dam-

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303. See supra notes 263–273 and accompanying text.
304. See infra notes 339–342 and accompanying text.
306. Id. (describing the EPA’s argument).
307. See id. at 1297 (“[D]efendants have argued that some of the water quality changes described by plaintiffs are not pollutants, and that none of them are added by dams to navigable water.” (emphasis added)); id. at 1303 (summarizing the EPA’s view that “[t]he dam, as the purported point source, merely passes on water of already altered quality”).
308. See, e.g., id. at 1306 (“[D]efendants’ interpretation also results in the anomaly of taking dams, which admittedly can be point sources and admittedly can emit pollutants, out of the NPDES program.”); id. at 1298–1303 (detailing specific water quality changes caused by dams and dam reservoirs as determined by expert testimony).
309. See Gorsuch II, 693 F.2d 156, 161 n.1 (D.C. Cir. 1982) (“The government does not dispute the district court’s statement of the nature of the water quality problems caused by dams.” (referring to the EPA’s Brief)).
310. Id. at 164; see also id. at 161–64 (summarizing the district court’s findings of “dam-induced water quality changes”); Attey & Liebert, supra note 34, at 713 (describing how some courts have explicitly found that dams cause impacts to the water column that should constitute “addition”).
caused pollution, in contrast, merely passes through the dam.” 311 This nearly incoherent distinction between “dam-caused,” “introduce,” and “merely passes” relies on two false premises. One is that the term “pollutant” is narrower than the term “pollution” and, consequently, dam-caused impacts (low dissolved oxygen, cold, supersaturation) are not pollutants. 312 This premise is controverted by the analysis in Part III.B.1, supra, which argues that all three of these impacts fall within the meaning of pollutant. The second premise is that dissolved metals, dissolved nutrients, heat, and sediment are pollutants that are not added by the dam, but merely pass though the dam. 313 Parts I.B.4, I.B.5, I.B.6, and I.B.8, supra, explain that each of these pollutants is exacerbated by the dam-reservoir complex. For example, reservoir-induced hypoxia in the water body may increase concentration of dissolved nutrients and metals. 314

The D.C. Circuit’s opinion in Gorsuch II implicitly relied on a factual finding—that dams do not add these pollutants—that the district court directly and explicitly rejected. 315 The D.C. Circuit cannot simultaneously adopt and dispute the lower court’s factual findings. Furthermore, the court cannot defer to the EPA’s “reasonable” interpretation if that interpretation relied on a false factual premise.

The EPA also pursued an argument of interpretation: that “addition” means that the point source must add a new type of pollutant that doesn’t already exist in the system, rather than increase pollutants that originate in the upstream waters. 317 In Gorsuch II, the D.C. Circuit found the EPA’s

311. Gorsuch II, 693 F.2d at 165 (emphasis added and omitted).
312. Id.
313. See id.
315. See Gorsuch I, 530 F. Supp. 1291, 1307–08 (D.D.C. 1982) (discussing why dams add sediments, dissolved metals, and heat to water in reservoirs); id. at 1307 (“This excess load of sediments, created by the dam and reservoir, and purposefully discharged through a point source, should be subject to the NPDES program.”); id. at 1308 (“Dissolved metals which did not exist before are created by the reservoir, and passed downstream through the dam.”); id. (“The warm water releases are the product of the combination of thermal stratification, which does not exist in a free-flowing stream, and is caused by its impoundment by the dam, and release from the top layer, which is a result of the structure and operation of the dam. There is no doubt but that the dam created, and added, the pollutant.”).
316. See supra notes 309–310 and accompanying text.
317. Gorsuch II, 693 F.2d at 174–75; see also Nat’l Wildlife Fed’n v. Consumers Power Co., 862 F.2d 580, 584 (6th Cir. 1988) (repeating the EPA’s argument from the Gorsuch litigation that “addition” requires the point source to “physically introduce[] a pollutant into water from the outside world”).
interpretation of “addition” reasonable. Similarly, the court in National Wildlife Federation v. Consumers Power, a 1988 Sixth Circuit case, deferred to the EPA’s philosophically suspect view that fish killed and chopped into pieces by a dam turbine were equivalent to live fish and thus could not be considered an “addition.” The Sixth Circuit worried that, if NPDES were triggered, “live fish would be just as much a pollutant as a mixture of live and dead fish;” thus, the court found that the discharge of chopped-up fish did not trigger NPDES requirements. More recent caselaw rejects this curious interpretation of “addition.”

The attack on Gorsuch II and Consumers Power comes from two directions: limited deference for the EPA’s interpretation, and the determination that redepositing dredged spoil or creating bypass channels amounts to an addition of a pollutant. These more recent cases interpret “addition” broadly, focusing on the intervention of manmade facilities in the waters of the United States.

In 2000, the Catskill Mountains Chapter of Trout Unlimited alleged that a diversion of the Schoharie Reservoir in New York should be regulated under NPDES. The diversion passed polluted water through a tunnel into Esopus Creek. The Second Circuit agreed, holding in Catskill Mountains that this artificial diversion of water into the creek amounted to an “addition.” The court, however, distinguished Gorsuch II and Consumers Power by citing to a line of cases that found an addition where polluted water was conveyed from one water body to a distinct water body. In 2006, the Second Circuit reaffirmed Catskills, noting that “[i]t is the meaning of the word ‘addition’ upon which the outcome of Catskills I turned and which has not changed.”

the phrase ‘from a point source.’ . . . Under most circumstances, a ‘pipe, ditch, channel, tunnel, [or] conduit’ is unlikely to have created the pollutants that it releases, but rather transports them from their original source to the destination water body.”).
According to the Second Circuit, its holding relied on the “plain language” of the statute.\(^{328}\) The court reiterated that this plain meaning of “addition” supported the goal of the CWA “to restore and maintain the quality of the nation’s waters” but did not elaborate on this point.\(^{329}\)

The dredged material cases, on the other hand, do not require discharge into a distinct water body. “Dredged spoil” is listed in the definition of pollutant.\(^{330}\) In 1983, the Fifth Circuit held that “[t]he word ‘addition,’ as used in the definition of the term ‘discharge,’ may reasonably be understood to include ‘redeposit’ in light of the CWA’s goals and legislative history.”\(^{331}\) In 2000 and 2001, the Fourth and Ninth Circuits, respectively, came to the same conclusion: dredging or excavating material in wetlands and dumping that material back into the wetland is, in fact, an addition of a pollutant.\(^{332}\) Admittedly, section 404 is distinct from section 402. But the same logic applies when considering whether an activity involves “addition of a pollutant.” And, both sections rely on the concept of a discharge of a pollutant.\(^{333}\) Thus, activities such as dredging or storing water in a reservoir that either add or exacerbate pollutants are, in fact, an addition of a pollutant under the CWA.

In 2004, the Seventh Circuit used the line of cases concerning repurposed water and dredged spoil to rule that a bypass channel that redirects river water away from and then back to the same river is an addition of a pollutant.\(^{334}\) The defendants in *Greenfield Mills* v. *Macklin* diverted and dammed the Fawn River to create a supply pond and then failed to obtain a NPDES permit before draining the supply pond back into the river.\(^{335}\) The Seventh Circuit limited *Gorsuch II* and *Consumers Power* to their facts and rejected the idea that “addition” requires a point source to add an outside pollutant.\(^{336}\) In an amicus brief, the EPA argued for a broader interpretation of the word “addition” than it

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\(^{328}\) *Catskill Mountains II*, 451 F.3d at 84 (admonishing that arguments to the contrary “simply overlook [the Clean Water Act’s] plain language”). Here, the Second Circuit rejected the EPA’s “holistic” argument, described in its Proposed Water Transfers Rule, based on the plain language of the Clean Water Act. *Id.* Therefore, the EPA’s claim that its Water Transfers Rule deserves *Chevron* deference is unconvincing, since, at least according to the Second Circuit, the EPA’s interpretation never makes it past step one of *Chevron*. See *Catskill Mountains II*, 451 F.3d at 84; National Pollution Discharge Elimination System (NPDES) Water Transfers Rule, 73 Fed. Reg. 33,697, 33,700 & n.4 (June 13, 2008) (codified at 40 C.F.R. pt. 122).

\(^{329}\) *Catskill Mountains II*, 451 F.3d at 84–85.


\(^{331}\) *Avoyelles Sportsmen’s League, Inc. v. Marsh*, 715 F.2d 897, 923 (5th Cir. 1983).


\(^{333}\) Compare 33 U.S.C. § 1342(a)(1) (“[T]he Administrator may . . . issue a permit for the discharge of any pollutant . . . .”), with id. § 1344(a) (“The Secretary may issue permits . . . for the discharge of dredged or fill material into the navigable waters . . . .”).

\(^{334}\) *Greenfield Mills*, Inc. v. *Macklin*, 361 F.3d 934, 949 (7th Cir. 2004).

\(^{335}\) *Id.* at 939, 945.

\(^{336}\) *Id.* at 948.
did in Gorsuch II and Consumers Power. Notably, the defendants in Greenfield Mills did not physically remove dredged spoil from the water and redeposit it; rather, they merely released the supply pond water downstream, which carried with it suspended sediment created by hydraulic dredging of the channel. Dam reservoirs, which store water and release it downstream, operate in a similar manner.

That same year, in Southern Florida Water Management District v. Miccosukee Tribe, the Supreme Court acknowledged that point sources convey pollutants but do not necessarily generate pollutants according to the plain language of the CWA. The Miccosukee Tribe challenged the use of a pump station to move water from a drainage canal uphill to an undeveloped wetland in the South Florida Everglades. The Water Management District suggested that NPDES permits are required “only when a pollutant originates from the point source.” In this case, according to the District, the pump station transferred but did not originate the pollution. The Court found this argument “untenable,” given that “examples of ‘point sources’ listed by the Act include pipes, ditches, tunnels, and conduits, objects that do not themselves generate pollutants but merely transport them.”

On the only question actually before the Court, it unanimously held that the definition of “discharge of a pollutant” in section 1362(12) “includes within its reach point sources that do not themselves generate pollutants.” The Court analogized to regulation of wastewater treatment plants under NPDES, which also discharge but do not themselves generate pollutants. Following this logic, a dam is also a conveyance and thus a point source that may add pollutants to the downstream river via its discharge.

Furthermore, prior to the Gorsuch I and II opinions, the Fourth Circuit, in Appalachian Power Co. v. Train, had construed “addition” to mean that a power plant that diverts water from a river for industrial use is responsible under NPDES only for the pollutants it adds to the waters passing through it, and not for naturally occurring or already existing pollutants in the

337. Id.
338. Id. at 944.
339. See S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95, 105 (2004) (holding that the definition of point source “makes plain that a point source need not be the original source of the pollutant; it need only convey the pollutant to ‘navigable waters’ . . . .”).
340. Id. at 104.
341. Id. at 105.
342. Id. (internal quotation marks omitted); see also Davison, supra note 69, at 79–80 (discussing the implications of Miccosukee Tribe for the definition of point source). A question raised by the government amicus, and considered by the Court, was whether NPDES permits are required when the transfer is between two navigable water bodies. Miccosukee Tribe, 541 U.S. at 105–06. The Court chose not to decide that question, but did note in dicta that NPDES permits are not required for transfers within a single body of water—a point not disputed by the parties. Id. at 112. The navigable waters problem is left to Part III.C infra.
343. Miccosukee Tribe, 541 U.S. at 105.
waterway. The type of dam-reservoir complex at issue in the Gorsuch litigation is engaged in a similar industrial activity. The complex diverts water, and in some cases the entire river, into the reservoir. The reservoir is an unnatural, manmade construct that has measurable adverse environmental effects. It is not, as some proponents argue, equivalent to a natural lake, but rather more similar to an industrial holding tank. When discharging waters from the reservoir, those adverse environmental effects must be considered “additions” because, but for the dam-reservoir complex, the effects would not exist in the same quantity or quality. This relationship between the dam-reservoir complex and the harmful environmental phenomena meets the causal rule established in Appalachian Power. This is essentially the position of National Wildlife Federation and the D.C. District Court in Gorsuch I, and it should be adopted by courts given the decreased reliance on Gorsuch II by other circuits.

Nothing in the definition of “discharge of a pollutant” depends on how the pollutant arrives at the point source. This is the ultimate conclusion of the court’s reasoning in Greenfield Mills. This is also the holding of Northwest Environmental Defense Center:

The definition in no way depends on the manner in which the pollutant arrives at the “discernible, confined and discrete conveyance.” That is, it makes no difference whether the pollutant arrives as the result of “controlled water used by a person” or through natural runoff.

The Ninth Circuit rejected the EPA’s attempt, in its revised Silvicultural Rule, to exempt from NPDES regulation runoff that flows over logging roads into ditches and culverts, only then to be discharged into forest streams. The EPA stressed that the runoff in question began as a nonpoint source, and thus argued that its Silvicultural Rule reasonably exempted this nonpoint, “natural” runoff even when it was channeled and controlled through a point source system of culverts and ditches. The Ninth Circuit rejected outright the idea that the pollutant must originate with the point source. Instead, controlled conveyance matters. This obviates the need to show a causative link between a dam-reservoir and a pollutant because, under the Northwest

345. See discussion on the differences between natural lakes and reservoirs in Part I.A, supra.
346. See Appalachian Power, 545 F.2d at 1378.
348. See supra notes 334–338 and accompanying text.
349. Nw. Envtl. Def. Ctr. v. Brown, 617 F.3d 1176, 1191 (9th Cir. 2010); accord S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95, 105 (2004) (“[A] point source need not be the original . . . pollutant; it need only convey the pollutant to ‘navigable waters’ . . . .”); S. REP. NO. 92-414, at 76 (1972), reprinted in 1972 U.S.C.C.A.N. 3742 (“[T]he Committee has added a definition of point source to distinguish between control requirements where there are specific confined conveyances, such as pipes, and control requirements which are imposed to control runoff.”).
351. Id. at 1189.
352. See supra note 349 and accompanying text.
Environmental Defense Center reasoning, all pollutants discharged by the dam—regardless of causation—require NPDES permitting.

There are, however, some potentially important differences between the regulation of logging road ditches and the regulation of dam discharge. The Ninth Circuit never explains the significance of the word “addition” in *Northwest Environmental Defense Center*. In the forestry context, the sediment runoff is a new addition to the stream below.\(^\text{353}\) In the dam-reservoir context, there is a stronger argument that because the pollutants remain in the water body at all times, there is no addition. Furthermore, in the dam-reservoir context the question of what it means to add a pollutant to a navigable water body is potentially significant.

It is likely that, in both contexts, some “but for” relationship is required between the pollutant and the point source.\(^\text{354}\) This “but for” relationship underlies the significance of the word “addition” in the statutory trigger for discharge. In the forestry context, the harm comes from the industrial activity that results in severe erosion and sediment runoff from logging roads, and *but for* this industrial activity and the associated system of ditches, the harm would not occur. In the dam-reservoir context, the discharged pollutants would not occur at the same quantity or quality *but for* the existence of the dam-reservoir complex. The Supreme Court promotes this “but for” test in *Miccosukee Tribe*.

**C. “Any addition . . . to navigable waters”**

In promulgating its 2008 Water Transfers Rule, the EPA made clear that it believes a dam-reservoir complex is part of the navigable water of the river.\(^\text{355}\) The reservoir, however, is an unnatural, manmade construct, and the dam even more so. Dam discharge has been subjected to intervening industrial or commercial use (the creation of hydroelectric power) and transferring river water through the dam-reservoir complex results in myriad pollutants that would not occur in the same quantity or quality *but for* the dam-reservoir complex. Yet the Water Transfers Rule does arguably cover dam discharge.\(^\text{356}\)

Even if the dam-reservoir complex were “part of the navigable water of a river,” it would not automatically follow that the discharge of pollutants added or exacerbated by that complex are exempt from NPDES regulation, the EPA’s

\(^{353}\) See *Nw. Envtl. Def. Ctr.* at 1180 (“Timber hauling on the logging roads is a major source of the sediment that flows through the stormwater collection systems. Logging trucks passing over the roads grind up the gravel and dirt on the surface of the road. Small rocks, sand, and dirt are then washed into the collection system and discharged directly into the streams and rivers.”).

\(^{354}\) See *Nat’l Cotton Council of Am.* v. *EPA*, 553 F.3d 927, 940 (6th Cir. 2009) (applying a *but for* test to discharge of pesticide residue by a pesticide applicator). Steven Davison has argued that the appropriate test would be either a “biological/ecosystem” characteristics test or a “but for cause-in-fact” test. Davison, *supra* note 69, at 52. The correct interpretation of “addition of a pollutant” closely relates to the interpretation of “addition to navigable waters,” discussed in Part III.C, *infra*.


\(^{356}\) See discussion *supra* Part II.D.
Rule notwithstanding. The statutory trigger—“addition . . . to navigable waters”—says nothing about where the addition originates. If a dam discharges to a navigable water, the dam discharge meets this element of the trigger.357 Whether the discharge is a transfer from another navigable water—or even the same navigable water—is simply not an issue according to the plain meaning of the statutory text. Instead, “addition” modifies the phrase “of a pollutant” in the statutory text.358 “Addition” therefore imposes a requirement of a causal relationship between the point source and the pollutant, which is met in the case of dam discharge.359

Miccosukee Tribe, however, supports the EPA’s argument that water taken from a dam reservoir and discharged downstream cannot meet the requirement of “addition” under NPDES.360 In dicta, the Court in Miccosukee Tribe mentioned two theories to support the government’s position that it could move the polluted canal water to a wetland without a NPDES permit: the unitary theory and the hydrologically indistinguishable theory.361 Both theories advance the view that taking water from one part of a water body and pumping it into another part of the same water body “cannot constitute an ‘addition’ of pollutants,” a point not disputed by the Miccosukee Tribe.362

The unitary theory views all navigable waters under the CWA as a single water body for purposes of NPDES permitting.363 This theory “would lead to the conclusion that such permits are not required when water from one navigable water body is discharged, unaltered, into another navigable water body. That would be true even if one water body were polluted and the other

358. See id. (defining “discharge of a pollutant” as “any addition of any pollutant to navigable waters from any point source . . . .”).
359. See supra Parts I.B, III.B.2.
360. See supra note 193 and accompanying text.
361. The Court first “answered the precise question on which [it] granted certiorari,” that water pumps may be point sources because a pump is a “conveyance.” S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95, 105 (2004) (emphasis omitted). The Court discussed “addition of any pollutant” in response to an amicus curiae brief filed by the government. Id. at 105–06 (internal quotation marks omitted). The Court then remanded the question to the district court to develop the factual record on the question of whether the source and discharge water bodies are hydrologically indistinguishable, leaving open the unitary theory. Id. at 109, 112.
362. Id. at 109. This point should be very much in dispute for dam reservoir discharge. Several law journal articles have advanced critiques of the unitary waters and the hydrologically indistinguishable theories. See, e.g., Davison, supra note 69; Matthew Duchesne, Discharging the Clean Water Act’s NPDES Requirements: Why the “Unitary Waters” Theory Does Not Hold Water, 23 VA. ENVTL. L.J. 461 (2005); McClure, supra note 327, at 79–82; Gregory L. Sattizahn, Does It Hold Water? Repudiating the “Singular Entity” or “Unitary Waters” Approach to the Clean Water Act, 23 UCLA J. ENVTL. L. & POL’Y 101 (2005); Heidi Hande, Comment, Is the EPA’s Unitary Waters Theory All Wet?, 6 WYO. L. REV. 401 (2006); Cozette Tran-Caffee, Note, The Water Transfers Rule: Weakening the Clean Water Act One Reasonable Interpretation at a Time, 37 ECOLOGY L.Q. 751 (2010).
363. See generally Hande, supra note 362.
pristine, and the two would not otherwise mix.”\textsuperscript{364} The government argued in \textit{Miccosukee Tribe} that, because the definition of a pollutant discharge says “any addition . . . to navigable waters,” not “any navigable waters,” Congress did not wish to require NPDES permits for water transfers between navigable waters.\textsuperscript{365} Furthermore, use of the plural “navigable waters” precludes an interpretation that moving a pollutant from one navigable water to another navigable water would be an addition for NPDES purposes.\textsuperscript{366}

The hydrologically indistinguishable theory is essentially a narrower version of the unitary theory. If the source water body and the discharge water body are “hydrologically indistinguishable”—as would arguably be the case where a dam bisects an otherwise flowing river—then there can be no addition of a pollutant if water is taken from one part of the water body and discharged, unaltered\textsuperscript{367} into another part of the water body.\textsuperscript{368} The Court, in \textit{Miccosukee Tribe}, adopted the Second Circuit’s metaphor from \textit{Trout Unlimited}: “If one takes a ladle of soup from a pot, lifts it above the pot, and pours it back into the pot, one has not ‘added’ soup or anything else to the pot.”\textsuperscript{369} A hydrologist, however, might object that the river upstream from a dam is no longer hydrologically indistinguishable from the downstream river.\textsuperscript{370} In \textit{Miccosukee Tribe}, the Court left the hydrologically indistinguishable question unresolved\textsuperscript{371} so that the district court could address, on remand, the factual question of whether the canal was in fact indistinguishable from the wetland.

On remand in a parallel case, \textit{Friends of the Everglades}, involving another set of pumping stations, the district court rejected the government’s unitary theory.\textsuperscript{372} By 2006, the EPA had developed its Proposed Water Transfers Rule

\begin{itemize}
\item \textsuperscript{364} \textit{Miccosukee Tribe}, 541 U.S. at 106 (emphasis added). Part I.B, supra, questions the underlying assumption in \textit{Miccosukee Tribe} that waters discharged from a dam-reservoir construct are “unaltered.”
\item \textsuperscript{365} \textit{Miccosukee Tribe}, 541 U.S. at 106 (emphasis added).
\item \textsuperscript{366} See \textit{Friends of the Everglades I}, No. 02-80309, 2006 WL 3635465, at *33–34 (S.D. Fla. Dec. 11, 2006), rev’d 570 F.3d 1210 (11th Cir. 2009) (contrasting, by analogy, the importation of wine into the United States to the movement of wine between states).
\item \textsuperscript{367} The questionable assumption that a dam-reservoir construct leaves such discharge “unaltered” is the focus of Part I.B, supra.
\item \textsuperscript{368} \textit{Miccosukee Tribe}, 541 U.S. at 109.
\item \textsuperscript{369} \textit{Id.} at 110 (quoting \textit{Catskill Mountains I}, 273 F.3d 481, 492 (2d Cir. 2001)).
\item \textsuperscript{370} See, e.g., \textsc{James H. Thorp}, \textsc{Martin C. Thombs}, & \textsc{Michael D. Delong}, \textsc{The Riverine Ecosystem Synthesis: Towards Conceptual Cohesiveness in River Science} ch. 7 (2008) (discussing discontinuity in ecogeomorphology of the riverine landscape due to the imposition of an anthropological dam).
\item \textsuperscript{371} But see S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 547 U.S. 370, 381 n.6 (2006) (“Before \textit{Miccosukee}, one could have argued that transferring polluted water from a canal to a connected impoundment constituted an ‘addition.’ \textit{Miccosukee} is at odds with that construction of the statute . . .”).
\item \textsuperscript{372} After the Supreme Court passed down \textit{Miccosukee Tribe} in 2006 in the S-9 pumping station case, the district court stayed the S-9 case pending trial and subsequent appeal of the S-2 pumping station case. See \textit{Mccosukee Tribe of Indians of Fla. v. S. Fla. Water Mgmt. Dist. (Mccosukee Tribe II)}, 559 F.3d 1191, 1192–93 (11th Cir. 2009) (discussing the procedural history of both cases). The district court’s stay in the S-9 case was challenged and upheld by the Eleventh Circuit (citing lack of jurisdiction to hear the appeal) in \textit{Miccosukee Tribe II}. The Eleventh Circuit then heard the substantive
to put the unitary theory into regulation. But the district court held that even if *Chevron* deference applied to the Proposed Rule, “the statute is unambiguous” because, in part, “a holding that the NPDES program does not apply to water transfers would result in a scheme where a person could pump the most polluted waters into the most pristine waters without a NPDES permit.” NPDES permits, as the district court pointed out, are Congress’s “primary tool” under the CWA to restore and maintain the integrity of the nation’s waters.

The Eleventh Circuit disagreed, holding that the statutory language was ambiguous and that EPA’s Final Water Transfers Rule interpreting “addition of any pollutant” under a unitary theory was reasonable and entitled to *Chevron* deference. The Eleventh Circuit’s approval of the unitary waters theory was, the court admitted, an about-face. The Eleventh Circuit pointed out that the unitary waters theory “has struck out in every court of appeals where it has come up to the plate.” In fact, the Eleventh Circuit itself rejected the theory in 2002 in *Miccosukee Tribe*, only to see its decision vacated on different grounds by the Supreme Court. The key change for the Eleventh Circuit, however, was *Chevron* deference to the EPA’s Final Water Transfers Rule.

Statutory language must be ambiguous and the agency construction of that ambiguity permissible for a court to uphold the agency’s interpretation by applying *Chevron* deference. The EPA’s attempt to impose a unitary waters theory is yet another effort to create ambiguity where there is none. The statutory definition of “discharge of a pollutant” is “any addition of any pollutant to navigable waters from any point source.”

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375. Id. at *43 (citing *Miccosukee Tribe*, 541 U.S. 95, 106 (2004); *Dubois v. U.S. Dep’t of Agric.*, 102 F.3d 1273, 1297 (1st Cir. 1996)).


377. *Friends of the Everglades II*, 570 F.3d at 1228, hearing en banc denied, 605 F.3d 962 (11th Cir. 2010).

378. *Friends of the Everglades II*, 570 F.3d at 1217–18 (citing *Catskill Mountains II*, 451 F.3d 77, 83 (2d Cir. 2006); *N. Plains Res. Council v. Fidelity Exploration and Dev.*, 325 F.3d 1155, 1163 (9th Cir. 2003); *Catskill Mountains I*, 273 F.3d 481, 491 (2d Cir. 2001); *Dubois*, 102 F.3d at 1296; *Dague v. City of Burlington*, 935 F.2d 1343, 1354–55 (2d Cir. 1991)). The Eleventh Circuit also called out the Supreme Court’s statement in *Miccosukee Tribe* that “several NPDES provisions might be read to suggest a view contrary to the unitary waters approach.” *Friends of the Everglades II*, 570 F.3d at 1218 (quoting *Miccosukee Tribe*, 541 U.S. at 107).

379. *Friends of Everglades II*, 570 F.3d at 1218.

380. Id.

381. See supra notes 196–197 and accompanying text.

adds an additional requirement—that the discharge does not come from a navigable water—when the statute simply clearly does not impose such a requirement.383

The Eleventh Circuit’s reasoning also fails because it leads to the improbable conclusion that the Clean Water Act allows the unlimited transfer of pollutants, a conclusion directly at odds with the Second Circuit’s decision in Catskill Mountains.384 The Eleventh Circuit considered the arguments for and against a finding of ambiguity, examining statutory construction, interpretations from other cases, and the broader statutory context. But its metaphor at the end of its Friends of the Everglades opinion is most illustrative of its reasoning:

Two buckets sit side by side, one with four marbles in it and the other with none. There is a rule prohibiting “any addition of any marbles to buckets by any person.” A person comes along, picks up two marbles from the first bucket, and drops them into the second bucket. Has the marble-mover “add[ed] any marbles to buckets”? On one hand, as the Friends of the Everglades might argue, there are now two marbles in a bucket where there were none before, so an addition of marbles has occurred. On the other hand, as the Water District might argue and as the EPA would decide, there were four marbles in buckets before, and there are still four marbles in buckets, so no addition of marbles has occurred. Whatever position we might take if we had to pick one side or the other we cannot say that either side is unreasonable.385

The marbles, of course, represent pollutants and the buckets represent the two navigable water bodies. The Eleventh Circuit apparently interprets the CWA to allow—or at least not to preclude—the unlimited transfer of pollutants between waterways.

The metaphor, however, fails to take into account the differing assimilative quality of different water bodies.386 Imagine two buckets, one large and one small, each filled with an equal volume of water and an equal number of marbles. The size of the bucket represents the assimilative quality of

383. See supra Part III.C.
384. Compare Friends of Everglades II, 570 F.3d at 1223 (“Under the Water District’s unitary waters theory, ‘to navigable waters’ means to all navigable waters as a singular whole. As a result, pollutants can be added to navigable waters only once, and pollutants that are already in navigable waters are not added to navigable waters again when moved between water bodies.”), with Catskill Mountains I, 273 F.3d 481, 491 (2d Cir. 2001) (“[T]he transfer of water containing pollutants from one body of water to another, distinct body of water is plainly an addition and thus a ‘discharge’ that demands an NPDES permit.”).
385. Friends of Everglades II, 570 F.3d at 1228.
386. See generally Ji, supra note 77, at 434 (describing how TMDLs are defined in terms of assimilative capacity of a water body); VLADIMIR NOVOTNY, WATER QUALITY: DIFFUSE POLLUTION AND WATERSHED MANAGEMENT 29 (2003) (defining assimilative capacity of a water body); ALLEN V. KNEESE & BLAIR T. BOWER, RESOURCES FOR THE FUTURE, MANAGING WATER QUALITY: ECONOMICS, TECHNOLOGY, INSTITUTIONS ch. 4 (1968) (discussing the assimilative capacity of waters in the context of managing waste loads).
the water body—that is, the level of pollution that can be put into the water body before it becomes significantly degraded (represented by the bucket overflowing). Adding marbles (pollutants) to the big bucket will change the ratio of marbles to water but will not cause the bucket to overflow. However, taking some marbles from the big bucket and placing them in the little bucket causes the water to overflow because it cannot assimilate the addition of further marbles.

Using similar reasoning, the Second Circuit, in *Catskill Mountains*, previously found that this “singular entity” theory of navigable waters “is inconsistent with the ordinary meaning of the word ‘addition.’”387 The court refused to subscribe to a theory that would allow “a transfer of water from a water body contaminated with myriad pollutants to a pristine water body.”388 Notably, *Chevron* deference would have made no difference to the Second Circuit’s analysis because the court found the plain meaning of the statutory language sufficiently clear.389 The Eleventh Circuit, in contrast, found statutory ambiguity where there was none.

The CWA recognizes that different water bodies may have different levels of pollution relative to one another. The Act addresses this phenomenon by establishing water quality standards and TMDLs based on watersheds and water bodies instead of imposing one nationwide standard.390 Furthermore, the CWA’s antidegradation requirement disallows the use of a pristine water body as a pollutant dump.391 The entire purpose of the CWA is to eliminate pollution,392 not to pollute all water bodies equally.

The hydrologically indistinguishable theory and the unitary water theory both focus on where pollution originates, a concept irrelevant to the statutory definition of pollution. Section 1362(12) defines “discharge of a pollutant” as “any addition of any pollutant to navigable waters from any point source.”393 The statutory definition focuses on whether a pollutant has been added to navigable waters. Here, a parallel should be drawn to the caselaw on dredging,394 where courts have repeatedly focused on the damage done to wetlands and other water bodies when sediment is removed from the wetland or

388. Id.
389. But see Roderick E. Walston, *Judicial Deference to Agency Interpretations: The Ups and Downs of the Chevron Doctrine*, 15 SOUTHEASTERN ENVTL. L.J. 405, 424 (2007) (arguing that the Second Circuit would have reached the opposite conclusion had the EPA finalized its Water Transfers Rule before the court issued its ruling).
391. See id. § 1313(d)(4)(B) (requiring standards to meet “the antidegradation policy established under this section”).
392. See id. § 1251(a)(1) (“[I]t is the national goal that the discharge of pollutants into the navigable waters be eliminated . . . .”).
393. Id. § 1362(12).
394. See supra notes 331–332 and accompanying text.
water body and then redeposited. Where the pollutant originated is simply not contemplated by the statutory definition because it is of no import.

Requiring that a pollutant not come from a hydrologically indistinguishable water body is the equivalent of adding an entire new phrase to the NPDES trigger that does not exist—impliedly or explicitly—in the statute: “any addition of any pollutant to navigable waters from any point source, except pollutants originating in the same, nondistinct navigable water body.”

Imagine two pots of soup. At one time, these two pots may have been a single pot of soup, but now someone has dumped mercury in the first pot. Is there truly no “addition” to the second pot if someone takes a mercury-filled ladle of soup from the first pot and adds it to the second pot?

The unitary and hydrologically indistinguishable theories are threats to the regulation of dam-reservoir constructs under NPDES. If, in fact, reservoirs do not add pollutants to the conveyed water discharged by the dam, then NPDES regulation appears precluded by the Eleventh Circuit’s reasoning in Friends of the Everglades. If the Supreme Court reverses the Eleventh Circuit or if the EPA changes its regulation, then the mere fact that a reservoir is more polluted than the downstream river may be sufficient to impose NPDES regulation on the dam-reservoir construct. Furthermore, the Water Transfers Rule could be challenged in the Second Circuit because it is at odds with Catskill Mountains, or in the Seventh Circuit because it is at odds with Greenfield Mills.

CONCLUSION

The statutory analysis above leads to the conclusion that discharge from dams should be regulated under NPDES whenever the discharge contributes pollutants to the downstream water body. Pollutants remaining in the reservoir, by contrast, would be subject to nonpoint source regulation, 395 FERC’s environmental review, and section 401 certification by the states. The fact that the pollutants may have originated upstream from the dam is irrelevant to the analysis for NPDES purposes. Alternatively, even if the regulatory agency considered causation or responsibility for the pollutant, NPDES should still regulate discharge from dam-reservoir complexes because the complexes are responsible for the addition or exacerbation of pollutants in the reservoir that are later discharged downstream.

In the case of the Klamath River, the toxic algae Microcystis aeruginosa constituted a pollutant that was discharged from the reservoir into the downstream water body. Although upstream nutrient pollution likely contributed to the growth of the algae, the stagnant waters of the Klamath reservoirs trapped that nutrient pollution and promoted the growth of

Microcystis. Thus, when the microcystin toxin was discharged from the dam, it should have been regulated as the discharge of a pollutant using NPDES.

To be regulated under NPDES, discharge from the dam-reservoir complex must add a pollutant to a navigable water from a point source. The EPA conceded that dams were point sources in the Gorsuch litigation. Dams discharge a host of harmful phenomena—such as Microcystis aeruginosa or low dissolved oxygen—that a variety of courts, the EPA, and the states have treated as pollutants under the CWA. Dams typically discharge to navigable rivers. Nothing in the statutory language supports the claims that only pollutants that originate with the point source and that only discharge from a separate navigable water can meet the statutory trigger for NPDES regulation.

If, in fact, a court holds that EPA’s Water Transfers Rule does not deserve Chevron deference, then a court may further hold that dam discharges should require a NPDES permit for the pollution added or exacerbated by water quality conditions in the dam reservoir, much like the D.C. District Court did in Gorsuch I. Alternatively, a court may determine that the EPA’s Rule does not apply to dam-reservoir discharge. In that case, the court is free to reject Gorsuch II for its excessive deference to the EPA in light of Chevron, as the Second and Seventh Circuits have already done. The plain language of the CWA, along with dam-reservoir science, past EPA water quality regulations, and caselaw in the Second, Seventh, and Ninth Circuits, all support the regulation of dam-reservoir discharge under NPDES.