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Using the Public Natural Resource Management Laws to Improve Water Pollution Anti-Degradation Policies


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**USING THE PUBLIC NATURAL RESOURCE MANAGEMENT LAWS TO IMPROVE WATER
POLLUTION ANTI-DEGRADATION POLICIES**
Sandra Zellmer[↓] and Robert L. Glicksman^{*}

Abstract

The Clean Water Act’s principal goal is to “restore and maintain” the integrity of the nation’s surface water bodies. The Act’s adoption was spurred largely by the perception that unchecked pollution had caused the degradation of those waters, making them unsuitable for uses such as fishing and swimming. At the time Congress passed the statute, however, some lakes, rivers, and streams had water quality that was better than what was needed to support these uses. An important question was whether the statute would limit discharges with the potential to impair these high quality waters. EPA’s anti-degradation policy sought to ensure that it does. This paper assesses the implementation of the anti-degradation policy for protecting water quality as good as or better than that required by state water quality standards. It traces the history of the policy, and analyzes the rationales for precluding degradation of high quality environmental resources reflected in both the Clean Water Act and the Clean Air Act. It assesses how successful the Clean Water Act’s anti-degradation mechanisms have been in practice, identifying several flaws in the design and implementation of the program. To address these deficiencies, the article compares the Clean Water Act’s anti-degradation policy to nonimpairment and nondegradation mandates under the nation’s public natural resource management statutes. Based on this comparative analysis, and the past four decades of experience with the Clean Water Act, the paper recommends several reforms to strengthen the Act’s anti-degradation policy’s capacity to promote its goals.

I. INTRODUCTION.....2

II. THE HISTORY, STRUCTURE, AND GOALS OF THE CLEAN WATER ACT’S ANTI-DEGRADATION PROGRAM....4

A. The History of Federal Anti-degradation Programs in Water Pollution Control 4

B. The Structure of the Anti-degradation Program 5

C. The Goals of Anti-degradation Programs 8

1. Providing a Margin of Safety 8

2. Protecting High-Value Natural Resources..... 9

3. Preventing the Development of Pollution Havens10

4. Preventing Interstate Pollution.....11

5. Balancing Environmental Protection Goals and Economic Growth Opportunities.....12

III. HISTORICAL EXPERIENCE WITH THE CLEAN WATER ACT’S ANTI-DEGRADATION PROGRAM..... 13

A. State Designation Variations 13

B. State Implementation Variations 17

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1.	Programmatic Attacks.....	17
2.	As Applied Challenges to Tier I and II Waters Issues.....	20
3.	As Applied Challenges to Tier III Waters Issues.....	21
C. Anti-degradation Policy Deficiencies		23
1.	Designation Inconsistencies.....	23
2.	What is “Degradation” and When is it Allowed?.....	24
3.	What Pollution Sources are Regulated?.....	24
4.	Lack of Follow Up.....	25
IV.	A COMPARISON OF ANTI-DEGRADATION PROGRAMS AND PUBLIC LAND MANAGEMENT PROTECTION REGIMES.....	26
A.	A Hierarchy of Protective Standards	27
1.	The National Wilderness System.....	27
2.	The National Parks.....	30
3.	Wild and Scenic Rivers.....	33
4.	National Wildlife Refuges.....	35
5.	Multiple Use Lands.....	39
a.	BLM Management of the Public Lands.....	39
b.	Management of the National Forests.....	43
B.	The Lessons of Federal Lands for Protecting Water Resources Against Degradation	45
V.	CONCLUSION.....	48

I. INTRODUCTION

The visual images that helped spur the enactment during the 1970s of the nation’s foundation environmental laws, including the Clean Water Act (CWA), were largely of contaminated resources, such as burning rivers and oil-soaked seagulls.¹ Similarly, evocative prose such as Rachel Carson’s description of the “strange blight”² afflicting America in the 1960s as a result of the use of chemical pesticides played a critical role in alerting policymakers and the public alike to the need for new legal protections for public health and the environment. Over the years, similar depictions of the environmental devastation resulting from unconstrained economic activity have continued to play an important role in creating the momentum for the adoption of new or strengthened environmental laws.³

¹ See RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 59 (2004) (describing “visually unsettling events” such as the smoldering Cuyahoga River and “seagulls suffocated in oil as a result of the Santa Barbara oil spill”).

² RACHEL CARSON, *SILENT SPRING* (Houghton Mifflin 1994 ed.) (quoted in ROBERT L. GLICKSMAN ET AL., *ENVIRONMENTAL PROTECTION: LAW AND POLICY* 18 (6th ed. 2011)).

³ See, e.g., Martha L. Judy & Katherine N. Probst, *Superfund at 30*, 11 VT. J. ENVTL. L. 191, 192-93 (2009) (describing “sites regularly featured on the television news and in news magazines in the late 1970s and early 1980s [that] set the stage for passage of Superfund,” including the “‘Valley of the Drums,’” [which] imprinted on the screen and in the minds of the American public colorful images of erupting, smoking, seeping, and corroding drums”); Tina M. Smith, *Wildlife Protection and Offshore Drilling: Can There Be a Balance Between the Two?*, 6 FLA. A & M U. L. REV. 349, 366 (2011) (quoting NOAA Ocean Service Education, Prince William’s Oily Mess: A Tale of Recovery, http://oceanservice.noaa.gov/education/stories/oilymess/oily01_infamous.html) (“The images Americans saw on television and the descriptions they heard over the radio [after the *Exxon Valdez* oil spill] ‘were of heavily oiled shorelines, dead and dying wildlife and thousands of workers mobilized to clean beaches.’”).

Environmental law, however, has always been about more than just repairing the damage wrought by past environmental disasters or mismanagement. Senator Edmund Muskie, the principal sponsor of the CWA, for example, was moved to action not only by the environmental despoliation he witnessed, but also by “[t]he beauties of nature . . . in almost pristine form” at which he marveled while growing up.⁴ The nation’s environmental laws were adopted as much to preserve superior environmental quality as to restore damaged or degraded resources.⁵

The Clean Water Act reflects this dual conception of the function of environmental law. Its principal goals are to “restore *and maintain* the chemical, physical, and biological integrity” of the nation’s surface water bodies.⁶ The Act’s adoption was spurred largely by the realization that unchecked pollution had caused the degradation of those waters, making them unsuitable for uses such as fishing and swimming. At the time Congress passed the statute, however, some lakes, rivers, and streams had water quality that was better than what was needed to support these uses. An important question was whether the statute would limit discharges with the potential to impair these high quality waters. EPA’s anti-degradation policy provided an affirmative answer. Yet, the CWA’s maintenance goal has taken a decidedly back seat to its restoration goal, as both the paucity of statutory text on anti-degradation issues and the emphasis of federal and state implementation on improving the quality of impaired waters attest.

This article focuses on the CWA’s relatively neglected maintenance aspects. It assesses the degree to which federal and state implementation of the anti-degradation policy for protecting water quality as good or better than that required by state water quality standards has fostered the statutory maintenance goal. Part II traces the history of the policy, and analyzes the rationales for precluding degradation of high quality environmental resources reflected in both the CWA and the Clean Air Act. Part III assesses whether the CWA’s anti-degradation mechanisms have succeeded, and identifies several flaws in the program’s design and implementation. Part IV compares the CWA’s anti-degradation policy to nonimpairment and nondegradation mandates under the nation’s public natural resource management statutes. Based on this comparative analysis, and the past four decades of experience with the CWA, Part V recommends four reforms to strengthen the Act’s anti-degradation policy. First, we recommend a federal regulation requiring states to designate outstanding national resource waters (ONRWs) in their water quality standard inventories, including waters within parks and wildlife refuges and other waters of “exceptional ecological significance.” In addition, we support requiring states to take concrete steps (including reducing aggregate discharges) to restore the quality of degraded high quality or exceptional waters so that they can support a full suite of beneficial uses and ecosystem services. Second, the federal Environmental Protection Agency (EPA) should define degradation by regulation to include the impairment of water quality that either results in loss or

⁴ Robert F. Blomquist, “*To Stir up Public Interest*”: Edmund S. Muskie and the U.S. Senate Special Subcommittee’s Water Pollution Investigations and Legislative Activities, 1963-66 – A Case Study in Early Congressional Environmental Policy Development, 22 COLUM. J. ENVTL. L. 1, 5 (1997) (quoting EDMUND S. MUSKIE, JOURNEYS 79-80 (1972)).

⁵ See, e.g., the Wilderness Act of 1964, 16 U.S.C. § 1131(a) (2006) (enunciating Congress’s goal of administering wilderness areas “in such manner as will leave them unimpaired for the future use and preservation as wilderness, so as to provide for the protection of these areas [and] the preservation of their wilderness character”).

⁶ 33 U.S.C. § 1251(a) (2006) (emphasis added).

threatened loss of an existing or potentially viable use – especially fishing, swimming, and higher uses – or adversely affects the ecological resilience of the affected water body. Third, we support requiring states to extend their anti-degradation programs to cover nonpoint source pollutants. Finally, to ensure proper implementation of the anti-degradation policy, EPA should adopt mandatory state planning and assessment responsibilities, particularly as applied to ONRWs. These reforms would help fulfill the objectives of the anti-degradation program, move the nation closer to the goal of ensuring the integrity of our surface waters, and help the CWA function as more than just an impaired waters restoration mechanism.

II. THE HISTORY, STRUCTURE, AND GOALS OF THE CLEAN WATER ACT’S ANTI-DEGRADATION PROGRAM

Federal efforts to prevent degradation of water quality predate the adoption of the Clean Water Act. Congress endorsed these efforts when it amended the Act in 1977, although the cryptic manner in which it did so left the scope and content of the resulting anti-degradation program unclear. This part reviews the history of federal efforts to prevent degradation of water resources and the structure of the current regulatory program. It also describes the goals of both water and air pollution anti-degradation provisions.

A. The History of Federal Anti-degradation Programs in Water Pollution Control

Before EPA’s creation in 1970, the Department of the Interior adopted guidelines to implement the 1965 Water Quality Act,⁷ which required all states to adopt water quality standards consisting of use designations (such as drinking or fishing) and water quality characteristics needed to permit those uses to occur.⁸ The guidelines provided that “[i]n no case will standards providing for less than existing water quality be acceptable,” and required that standards provide for “[t]he maintenance and protection of quality and use or uses of water now of a higher quality or of a quality suitable for present and potential uses.”⁹ Enforcement of the guidelines was cursory.¹⁰

In 1968, Interior Secretary Stewart Udall endorsed the policy of preventing degradation of existing clean water resources,¹¹ but retreated from the absolute protection of existing water quality reflected in the 1966 guidelines.¹² The Secretary’s policy required maintenance of waters

⁷ Pub. L. No. 89-234, 79 Stat. 903 (1965).

⁸ GLICKSMAN, *supra* note __, at 553.

⁹ N. William Hines, *A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clean Air and Clean Water*, 62 IOWA L. REV. 643, 658 (1977) (quoting U.S. DEP’T OF INTERIOR FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, GUIDELINES FOR ESTABLISHING WATER QUALITY STANDARDS FOR INTERSTATE WATERS 5, 7 (1966)).

¹⁰ See Mary A. Stitts, Note, *The Ever-Changing Balance of Power in Interstate Water Pollution: Do Affected States Have Anything to Say After Arkansas v. Oklahoma?*, 50 WASH. & LEE L. REV. 1341, 1356 (1993).

¹¹ Lauren Kalisek, *The Principle of Antidegradation and Its Place in Texas Water Quality Permitting*, 41 TEX. ENVTL. L.J. 1, 4 (2010). See also Jeffrey M. Gaba, *Federal Supervision of State Water Quality Standards Under the Clean Water Act*, 36 VAND. L. REV. 1167, 1189-90 (1983) [hereinafter Gaba, *Federal Supervision*]; Michael C. Blumm & William Warnock, *Roads Not Taken: EPA vs. Clean Water*, 33 ENVTL. L. 79, 104 (2003).

¹² Hines, *supra* note __, at 659.

whose quality was better than established standards unless a state could justify degradation based on necessary economic or social development. Degradation would not be allowed, however, to interfere with or injure designated uses then being made or which could be made of those waters.¹³

Despite the weakening of the 1966 guidelines, state governors and the U.S. Chamber of Commerce complained that an anti-degradation policy would unreasonably restrict economic development, and state enforcement of the guidelines continued to lag.¹⁴ By the time Congress adopted the Federal Water Pollution Control Act Amendments of 1972 (now known as the Clean Water Act), the water quality standards of all fifty states nominally included versions of an anti-degradation policy statement, but in most states, protection against degradation was little more than an unimplemented objective.¹⁵

The 1972 law said nothing about anti-degradation policy. EPA, which had taken over control of federal water quality programs, took the position that such a policy was “consistent with the spirit, intent, and goals of the Act,” especially the goal of “restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation’s waters.”¹⁶ EPA refined the policy in 1975, creating the requirements that, with few changes, remain in place today.¹⁷ In 1987, Congress cryptically addressed anti-degradation of water quality for the first time, providing that for waters whose quality exceeds levels necessary to protect the designated use, any effluent limitation based on a total maximum daily load (TMDL)¹⁸ may be revised only if the revision “is subject to and consistent with the anti-degradation policy established under this section.”¹⁹ The statute, which still governs anti-degradation policy, simply incorporates by reference EPA’s prior administrative policy.²⁰

B. The Structure of the Anti-degradation Program

¹³ Kalisek, *supra* note __, at 5-6. See 40 Fed. Reg. 55340 (Nov. 28, 1975).

¹⁴ Michael Snyder, Note, *Nondegradation of Water Quality: The Need for Effective Action*, 50 NOTRE DAME L. REV. 890, 893, 897 (1975).

¹⁵ Hines, *supra* note __, at 659-60.

¹⁶ 33 U.S.C. § 1251(a) (2006) (emphasis added). See EPA, Questions and Answers on Antidegradation 1 (Aug. 1985) [hereinafter Qs & As], available at http://water.epa.gov/scitech/swguidance/standards/upload/2006_12_01_standards_antidegqa.pdf.

¹⁷ 40 C.F.R. § 131.12. EPA amended the policy in 1983. It created a limited exception for temporary or short-term changes in water quality in Outstanding National Resource Waters (ONRW), which previously had been protected from all degradation. John Harleston, *What Is Antidegradation Policy: Does Anyone Know?*, 5 S.C. ENVTL. L.J. 33, 47 (1996). EPA made this change because it “was concerned that waters which properly could have been designated as ONRW were not so designated because of the flat no degradation provision, and therefore were not being given special protection.” 48 Fed. Reg. 51402 (Nov. 8, 1983). See also Robert L. Glicksman, *Pollution on the Federal Lands II: Water Pollution*, 12 UCLA J. ENVTL. L. & POL’Y 61, 83 (1993); John L. Horwich, *Water Quality Nondegradation in Montana: Is Any Deterioration Too Much?*, 14 PUB. LAND L. REV. 145, 158-60 (1993).

¹⁸ A total maximum daily load is the maximum aggregate pollution loading that the receiving water is capable of assimilating without violating applicable water quality standards by creating excessive pollutant concentrations or interfering with designated uses. GLICKSMAN ET AL., *supra* note at __, at 627.

¹⁹ 33 U.S.C. § 1313(d)(4)(B) (2006).

²⁰ Jeffrey Gaba, *New Sources, New Growth and the Clean Water Act*, 55 ALA. L. REV. 651, 672 (2004) [hereinafter Gaba, *New Growth*].

An anti-degradation policy is a required component of the water quality standards that states must adopt and enforce.²¹ EPA regulations currently provide that each state must adopt an anti-degradation policy that includes three elements.²² First, existing instream uses and the level of water quality necessary to protect those uses must be maintained and protected—state standards must be “sufficient to maintain existing beneficial uses of navigable waters, preventing their further degradation.”²³ Second, the state must maintain water quality that exceeds levels necessary to support propagation of fish and wildlife, and water recreation, unless allowing lower water quality is necessary to accommodate important economic or social development.²⁴ Even then, water quality standards must fully protect existing uses. In addition, the state must assure achievement of the highest statutory and regulatory requirements for all point sources and all cost-effective and reasonable best management practices for nonpoint sources. Third, the state must maintain quality in high quality waters that constitute an “outstanding National resource,” including waters of national and state parks and wildlife refuges and waters of “exceptional recreational or ecological significance.”²⁵ In short, the policy requires different levels of protection for three types, or tiers, of waters.²⁶ Under Tier 1, existing uses must be maintained in all waters. Under Tier 2, for high-quality waters that exceed fishable/swimmable quality, degradation will be allowed only if it is necessary to accommodate important social or economic development in the region. Degradation of water quality is completely prohibited for Tier 3, Outstanding National Resource Waters (ONRWs),²⁷ although “temporary and short-term

²¹ PUD No. 1 of Jefferson County v. Wash. Dep’t of Ecology, 511 U.S. 700, 718-19 (1994).

²² 40 C.F.R. § 131.12(a). According to one court, the requirement to adopt an anti-degradation policy does not apply to CWA permitting programs administered by federal agencies. *City of Olmsted Falls v. EPA*, 435 F.3d 632, 637 (6th Cir. 2005) (finding anti-degradation policy inapplicable to federal issuance of dredge and fill permits). The CWA provides, however, that all federal agencies must comply with state water quality standards, including a state’s anti-degradation policy. 33 U.S.C. § 1323(a) (2006); *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1153 (9th Cir. 1998).

²³ *PUD No. 1 of Jefferson County*, 511 U.S. at 705. *See also* Qs & As, *supra* note __, at 3 (stating that “no activity is allowable . . . which could partially or completely eliminate any existing use”).

²⁴ 40 C.F.R. § 131.12(a)(2). Aside from an unrealistic no discharge goal, the Clean Water Act’s primary goal is to achieve, wherever attainable, “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water” 33 U.S.C. § 1251(a)(2) (2006).

²⁵ 40 C.F.R. § 131.12(a)(3).

²⁶ EPA has endorsed the adoption by some states of an additional tier, Tier 2.5, that protects waters to a greater degree than Tier 2 but not as much as Tier 3. Tier 2.5 waters require “a very high level of water quality protection without precluding unforeseen future economic and social development considerations.” *Nat’l Wildlife Fed’n v. Browner*, 127 F.3d 1126, 1127 (D.C. Cir. 1997) (describing Tier 2.5 protection for Lake Michigan) (quoting Environmental Protection Agency, *Water Quality Standards Handbook* § 4.2, at 4-2 (2d ed. 1994)). *See also* *Ohio Valley Env’tl. Coal. v. Horinko*, 279 F. Supp. 2d 732, 773-74 (S.D. W. Va. 2003) (approving in part and disapproving in part West Virginia’s provisions for Tier 2.5). “Because Tier 2.5 is not required by EPA regulations, the only restriction on [a state’s] Tier 2.5 standards is that they not fall below the minimum standards set for Tier 2.” *Id.* at 773.

²⁷ *Kalisek*, *supra* note __, at 9. *See also* *Columbus & Franklin Cty. Metro. Park Dist. v. Shank*, 600 N.E.2d 1042, 1055-56 (Ohio 1992) (refusing to equate degradation of existing water quality with an interference with an existing use for purposes of application of Ohio’s anti-degradation rules to high quality waters, and rejecting state agency’s application of a technological approach that limited pollutants to a level consistent with water quality criteria for exceptional waters because “the analysis proceeds from a false premise that the applicable water quality standard is determined by the use designation rather than the antidegradation policy”).

changes” in water quality to accommodate important economic uses are allowed.²⁸ Thus, the policy is designed to protect both existing uses and existing water quality, but in different circumstances. The Tier 1 provisions are directed at protection of existing uses, while the Tier 2 component aims to protect the quality of high quality waters.²⁹ Tier 3 also focuses on protection of water quality.

The anti-degradation policy may affect states administering the CWA or discharging sources in several circumstances. States must review and, if appropriate, revise their water quality standards at least once every three years. Any such revisions must comply with the anti-degradation policy. If a state fails to adopt an adequate anti-degradation policy, EPA must adopt one for the state.³⁰ If a state issues a discharge permit for a point source that violates the anti-degradation policy, EPA may veto the permit.³¹ EPA also may disapprove TMDLs that violate the policy.³²

In addition, the Act requires those seeking a federal license or permit for an activity that may result in a discharge (such as operation of a hydropower plant or the filling of wetlands) to provide a certification that the discharge will comply with state water quality standards. Without such a certification, the federal agency may not issue the license or permit.³³ Activities covered by this requirement include discharges requiring a CWA permit in a state in which EPA, rather than a state, administers the permit program.³⁴ If a state’s certification for an EPA-issued

²⁸ Water Quality Standards Regulation, 48 Fed. Reg. 51,400, 51,403 (Nov. 8, 1983); OFFICE OF WATER, U.S. ENVTL. PROT. AGENCY, EPA 823-B-94-005, WATER QUALITY STANDARDS HANDBOOK: SECOND EDITION 4-10 (2d ed. 1994), <http://water.epa.gov/scitech/swguidance/standards/handbook/index.cfm>.

²⁹ Gaba, *Federal Supervision*, *supra* note __, at 1192.

³⁰ 33 U.S.C. § 1313(c)(4) (2006). *Raymond Proffitt Found v. EPA*, 930 F. Supp. 2d 1088, 1098 (E.D. Pa. 1996), held that EPA has a nondiscretionary duty to issue a federal anti-degradation program for a state with a deficient program. *Cf. Miccosukee Tribe of Indians of Florida v. EPA*, 105 F.3d 599 (5th Cir. 1997) (holding that district court improperly dismissed CWA citizen suit alleging that EPA violated nondiscretionary duty to determine whether state changes to water quality standards violated CWA requirements, including the anti-degradation policy). *But cf. Nat’l Wildlife Fed’n v. Browner*, 127 F.3d 1126 (D.C. Cir. 1997) (holding that EPA did not have nondiscretionary duty to review and evaluate existing state water quality standards retained after a state’s triennial review).

³¹ 33 U.S.C. § 1342(d) (2006).

³² Qs & As, *supra* note __, at 2.

³³ 33 U.S.C. § 1341(a) (2006). *See Islander E. Pipeline Co. v. McCarthy*, 525 F.3d 141 (2d Cir. 2008) (upholding denial of state certification for natural gas pipeline on ground that backfill discharge would violate state’s anti-degradation policy); *FPL Energy Maine Hydro LLC v. Dep’t of Env’tl. Prot.*, 926 A.2d 1197 (Me. 2007) (dam and reservoir facilities not exempt from anti-degradation policy); *Pub. Util. Dist. No. 1 v. Dep’t of Ecology*, 146 Wash. 2d 778, 51 P.3d 744 (2002) (holding that § 101(g) of the CWA did not preclude state environmental agency from imposing minimum streamflow requirements in water quality certification on holder of state water rights). *But cf. Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 964 (9th Cir. 1996) (“The anti-degradation policy only refers to water quality standards and does not refer to water withdrawal.”). Federal agencies may have the power to impose conditions on licenses that are more protective of water quality than a state certification is. *See, e.g., Snoqualmie Indian Tribe v. Federal Energy Regulatory Comm’n*, 545 F.3d 1207 (9th Cir. 2008).

³⁴ *Arkansas v. Oklahoma*, 503 U.S. 91 (1992). Most states have received EPA approval to administer at least portions of the Clean Water Act’s National Pollutant Discharge Elimination System permit program. EPA, State Program Status, <http://cfpub.epa.gov/npdes/statstats.cfm>.

discharge permit fails to comply with the anti-degradation policy, EPA may add more stringent effluent limitations to ensure compliance with the policy.³⁵

C. The Goals of Anti-degradation Programs

The reasons to mandate the improvement of inferior quality natural resources are relatively obvious, and include ensuring that exposure to or use of those resources does not adversely affect public health, destroy critical wildlife or fish populations, or otherwise disrupt ecosystem functions. By contrast, no single goal explains legal mandates to prevent degradation of superior quality resources. Instead, anti-degradation programs rest on a variety of rationales, including the desire to provide a margin of safety to offset the risk that regulations will not provide the desired level of protection, protect special value natural resources, prevent the movement of industry to areas with superior environmental quality, prevent interstate pollution, and preserve opportunities for future economic growth. The federal CWA and Clean Air Act (CAA), which contain the best known anti-degradation programs among the pollution control laws, illustrate each of these justifications for preventing degradation of high quality resources.³⁶

1. Providing a Margin of Safety

The CAA and the CWA both require the adoption of ambient quality standards to provide a minimally acceptable level of environmental quality. The CAA requires that EPA adopt primary standards that are requisite to protect the public health with an adequate margin of safety and secondary standards that protect the public welfare from known or anticipated adverse effects associated with air pollution.³⁷ The CWA requires states to adopt water quality standards that assure that pollutant concentrations will protect designated uses.³⁸ Both sets of standards establish maximum permissible concentrations of pollutants in the air or water.

Environmental regulation often proceeds in the face of scientific uncertainty. As a result, regulators may determine that a particular concentration level is sufficient to achieve the desired level of protection, only to discover later that adverse effects occur at lower pollution concentrations than once believed. Anti-degradation rules can protect against such

³⁵ Qs & As, *supra* note __, at 2.

³⁶ Other federal pollution control laws seek to prevent degradation of existing environmental quality less directly, by incorporating the anti-degradation regimes established under other laws instead of creating independent requirements. *See, e.g.*, 40 C.F.R. § 265.193(g)(2)(iii)(D) (Resource Conservation and Recovery Act regulations requiring EPA, in issuing variances from hazardous waste management requirements, to consider the potential adverse effects of a release on surface water quality, taking into account water quality standards, including the anti-degradation policy, established for surface waters in the area of the affected facility).

Similarly, the Comprehensive Environmental Response, Compensation, and Liability Act provides that if any requirement under a federal law such as the CWA is “legally applicable to” a hazardous substance release or is “relevant and appropriate under the circumstances of the release,” then the remedial action selected by EPA must comply with that requirement. At a minimum, the action must attain relevant and appropriate water quality criteria found in CWA water quality standards. 42 U.S.C. § 9621(d)(2)(A). For a case holding that a state groundwater anti-degradation law was “legally applicable or relevant and appropriate” to a cleanup, but upholding EPA’s implicit waiver of that law, see *U.S. v. Akzo Coatings of Am., Inc.*, 949 F.3d 1409, 1445-49 (6th Cir. 1991).

³⁷ 42 U.S.C. § 7409(b) (2006).

³⁸ 33 U.S.C. § 1313(c) (2006).

misjudgments about the scope of environmental risk. One of the purposes of the CAA's Prevention of Significant Deterioration (PSD) program is to protect public health "from any actual or potential adverse effect which in [EPA's] judgment may reasonably be anticipated to occur from air pollution . . . notwithstanding attainment and maintenance of all national ambient air quality standards."³⁹

Legislators in 1977 were skeptical of regulators' ability to identify harmless concentrations of air pollution, and suspected that the only way to eliminate health risks would be to set ambient standards at zero. Not willing to go that far, legislative supporters of the PSD program sought to minimize risk by keeping pollutant concentrations lower than required by air quality standards in areas that already had clean air.⁴⁰ In this way, the program would provide a "margin of safety" in case pollution actually caused harm at concentrations lower than any threshold levels identified by EPA or if EPA refused for economic reasons to tighten the standards despite new evidence that existing standards were not sufficiently protective.⁴¹ Accordingly, anti-degradation requirements create a safety net in the event existing ambient quality standards are inadequate.⁴²

2. Protecting High-Value Natural Resources

A second function of anti-degradation constraints is to protect highly valued natural resources that may be at risk from exposure to pollutant concentrations that are established to protect public health. Both the CAA and CWA programs seek to promote that goal.

One of the purposes of the CAA's PSD program is to preserve, protect, and enhance air quality in national parks, wilderness areas, and other areas of "special" natural, recreational, scenic, or historic value.⁴³ Because adverse effects on natural resources may occur at concentrations lower than those that trigger health risks, the CAA's welfare-based secondary standards may be more stringent than the health-based primary standards.⁴⁴ Even then, secondary standards may not be adequate to protect particularly vulnerable resources, or EPA may have underestimated how clean the air needs to be to protect those resources.

During congressional debate, supporters of the PSD program emphasized the benefits of protecting parks from air pollution, claiming that preservation of clean air would prevent damage

³⁹ 42 U.S.C. § 7470(1) (2006).

⁴⁰ David P. Currie, *Nondegradation and Visibility Under the Clean Air Act*, 68 CALIF. L. REV. 48, 77 (1980).

⁴¹ See Craig N. Oren, *Prevention of Significant Deterioration: Control-Compelling Versus Site-Shifting*, 74 IOWA L. REV. 1, 64 (1988) [hereinafter Oren, *Control-Compelling*]. PSD's supporters also viewed the program as necessary because the national standards did not cover certain damaging pollutants such as sulfates that cause acid rain and failed to account for the synergistic effects of multiple pollutants. *Id.* at 60, 82.

⁴² Richard B. Stewart, *The Development of Administrative and Quasi-Constitutional Law in Judicial Review of Environmental Decisionmaking: Lessons from The Clean Air Act*, 62 IOWA L. REV. 713, 742 n.144 (1977) [hereinafter Stewart, *Quasi-Constitutional Law*].

⁴³ 42 U.S.C. § 7470(2) (2006). See generally Craig N. Oren, *The Protection of Parklands from Increased Air Pollution: A Look at Current Policy*, 13 HARV. ENVTL. L. REV. 313 (1989) [hereinafter Oren, *Parklands*].

⁴⁴ DAVID WOOLEY & ELIZABETH MORSS, CLEAN AIR ACT HANDBOOK, Appendix C (2011). In practice, EPA rarely establishes separate secondary standards. See GLICKSMAN ET AL., *supra* note ___, at 406.

that would occur even at pollution concentrations allowed by the national ambient air quality standards.⁴⁵ Degradation of air quality in national parks would interfere with scenic vistas in places like the Grand Canyon and damage unique natural resources, frustrating the opportunities for preservation, recreation, and spiritual renewal that justified creation of the national parks and other protected areas.⁴⁶ The CWA's anti-degradation policy serves the same function through its prohibition on water quality degradation in ONRWs.⁴⁷ Enhanced protections are particularly critical if resource damage is expected to be irreversible or would interfere with the broader functioning of critical ecosystem services.⁴⁸

3. Preventing the Development of Pollution Havens

Without a nondegradation policy, areas with relatively clean air or water quality would have a greater capacity to assimilate pollution without violating applicable ambient standards than would more polluted areas. Under both the CAA and the CWA, pollution control requirements tend to be most stringent in highly polluted areas that are in violation of ambient quality standards. The CAA imposes rigorous controls on pollution sources in nonattainment areas,⁴⁹ and the stringency of the controls tends to increase in relation to the degree of noncompliance.⁵⁰ Under the CWA, states whose waters are more polluted than state water quality standards allow must establish TMDLs that represent aggregate limitations on discharges into those impaired waters.⁵¹ Absent nondegradation programs, new industrial sources with choices about where to locate (putting other factors aside) would tend to choose areas with less stringent pollution controls to reduce costs of operation.⁵² The result would be not only degradation of existing good environmental quality, but also an exodus of business from industrialized areas to more remote, cleaner areas.

Anti-degradation provisions can prevent "pollution havens" by removing incentives that would drive industry to clean areas if they were allowed to deteriorate to minimal levels required by ambient standards. These provisions address a classic prisoner's dilemma because states with high air or water quality would bear most of the costs of maintaining it, while recouping only a small portion of the benefits.⁵³ "Each state, fearing undercutting by a state competing for economic development, would be reluctant to adopt a potentially disabling policy absent some assurance about what other states intended to do. All states would thus be paralyzed to act."⁵⁴

⁴⁵ Oren, *Parklands*, *supra* note __, at 329.

⁴⁶ *Id.* at 315, 346-47.

⁴⁷ *See supra* notes __ - __ and accompanying text.

⁴⁸ *See, e.g.*, ROBERT W. ADLER, JESSICA C. LANDMAN & DIANE M. CAMERON, *THE CLEAN WATER ACT: 20 YEARS LATER* 200 (1993) (noting that headwater tributaries of larger watersheds can "provide clean base flow and critical spawning and rearing habitat to support downstream flows").

⁴⁹ *See, e.g.*, 42 U.S.C. § 7502(c) (2006) (listing requirements for SIPs that cover nonattainment areas).

⁵⁰ *See, e.g., id.* § 7511a (requirements for ozone nonattainment areas).

⁵¹ 33 U.S.C. § 1313(d) (2006).

⁵² *See Snyder, supra* note __, at 891-92 (recommending maintenance of "the essential complementary relation between abatement and nondegradation").

⁵³ Stewart, *Quasi-Constitutional Law*, *supra* note __, at 747.

⁵⁴ Hines, *supra* note 21, at 654. *See also* Stewart, *supra* note __, at 747 (noting the usefulness of anti-degradation requirements in addressing the "commons' dilemma" by forcing states "to adopt policies which they would voluntarily select in the absence of transaction costs precluding common agreement").

The CAA's PSD program was designed to neutralize the attractiveness to industry of areas with superior air quality.⁵⁵ The CWA's anti-degradation policy serves a similar function.⁵⁶

4. Preventing Interstate Pollution

The CAA's PSD program also sought to prevent activities in one state from harming other states by preventing areas from becoming "'dumping grounds' for the pollution caused by industrial sources in other regions."⁵⁷ The argument was apparently persuasive. One of the goals of the program is "to assure that emissions from any sources in any State will not interfere with any portion of the applicable implementation program to prevent significant deterioration of air quality for any other State."⁵⁸

A dispute between Arkansas and Oklahoma illustrates the potential for the CWA's anti-degradation policy to constrain interstate water pollution. The city of Fayetteville, Arkansas applied for a permit from EPA that would allow its new municipal wastewater treatment plant to discharge treated wastewater into a tributary of the Illinois River about forty miles upstream from the Arkansas-Oklahoma border. Oklahoma protested, arguing to EPA that the discharge would impair a portion of the River it had designated as a Tier 3 scenic river.⁵⁹ EPA issued the permit anyway, finding that the discharge would not result in an actual, detectable violation of Oklahoma's water quality standards.⁶⁰ Responding to Oklahoma's challenge to the permit, the Supreme Court deferred to EPA's determination that both the CWA and EPA's own regulations⁶¹ authorize EPA to ensure that a discharge not violate downstream water quality standards.⁶² However, the Court affirmed EPA's finding that the treatment plant's discharge would not cause an actual, detectable violation of the Oklahoma standards.⁶³ Indeed, the Court concluded that it was not arbitrary for EPA to base issuance of the permit partly on the benefits to the River resulting from the increased flow of relatively clean water from the new plant.⁶⁴ The Court's decision endorsed EPA's view that the CWA bars interstate pollution that causes

⁵⁵ See Oren, *Control-Compelling*, *supra* note __, at 105, 111 (attributing the passage of the PSD program in 1977 to an effort by industrialized states to limit economic growth in the Sunbelt). Distributional considerations may cut against the adoption of an anti-degradation policy, too. According to Richard Stewart, a nondegradation policy "would inhibit economic development in areas with considerable poverty and unemployment, while the benefits would accrue in large measure to the wealthy who can afford to visit scenic areas of exceptionally high environmental quality or who are more likely to derive psychic satisfaction from their preservation." Stewart, *Quasi-Constitutional Law*, *supra* note __, at 750.

⁵⁶ Cf. Bonnie A. Malloy, *Testing Cooperative Federalism: Water Quality Standards Under the Clean Water Act*, 6 ENVTL. & ENERGY L. & POL'Y J. 63, 85 (2011) (noting that "lower standards would be more likely to attract industry").

⁵⁷ Oren, *Control-Compelling*, *supra* note __, at 85.

⁵⁸ 42 U.S.C. § 7470(4) (2006).

⁵⁹ *Arkansas v. Oklahoma*, 503 U.S. 91, 95 (1992).

⁶⁰ *Id.* at 97.

⁶¹ 40 C.F.R. § 122.4. That section continues to preclude EPA from issuing a discharge permit "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States."

⁶² *Arkansas*, 503 U.S. at 105-07. The Court found it unnecessary to decide whether the CWA *requires* EPA to protect water quality in a downstream state from an upstream discharge in another state.

⁶³ *Id.* at 111-12.

⁶⁴ *Id.* at 114.

water quality standard violations, including violations of the anti-degradation policy, although in practice the standard of proof linking an upstream discharge with a downstream water quality violation may be difficult to meet.⁶⁵

5. Balancing Environmental Protection Goals and Economic Growth Opportunities

Anti-degradation programs seek to balance protection of existing clean air and water quality and continued economic growth. A goal of the CAA's PSD program is to "insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources."⁶⁶ Under the CWA's policy, degradation of Tier 2 waters is allowed if necessary to accommodate important social and economic development. Under this approach, "nondegradation policy does not make existing resource quality an absolute minimum."⁶⁷ The result is "a flexible, site-specific consideration of the economic justifications and social need for water quality degradation in light of available alternatives and the significance of the predicted degradation."⁶⁸

Anti-degradation policies can be a vehicle for promoting efficient resource allocation. Degradation is allowed if the value of the economic development that causes it exceeds the resulting marginal decline in the value of the degraded resource. Anti-degradation advocates have even couched these programs as job creators, which create opportunities for new sources by requiring tighter source controls and low ambient concentrations in clean areas.⁶⁹ An anti-degradation program also may serve as a temporary device to postpone exploitation of good environmental quality until the potential for economic growth justifies the resulting degradation. By one account, some PSD supporters apparently held this view.⁷⁰ This argument for postponing exploitation "draws from the conservationist, rather than the preservationist, roots of the environmental movement"⁷¹ in that the former supported management of natural resource use to maximize economic return over time.⁷²

⁶⁵ For criticism of the standard of proof (*i.e.*, that an upstream source is causing an actual, detectable violation of another state's water quality standards) endorsed by the Court, see Robert L. Glicksman, *Watching the River Flow: The Prospects for Improved Interstate Water Pollution Control*, 43 J. URB. & CONTEMP. L. 119 (1993).

⁶⁶ 42 U.S.C. § 7470(3) (2006).

⁶⁷ Hines, *supra* note __, at 645.

⁶⁸ Mark C. Van Putten, *The Dilution of the Clean Water Act*, 19 U. MICH. J.L. REF. 863, 899 (1986). EPA's failure to define important economic and social development has given states broad discretion to endorse degradation of Tier 2 waters, as long as existing uses are not prevented or state water quality standards otherwise violated. See ADLER ET AL., *supra* note __, at 202; *infra* notes __-__ and accompanying text.

⁶⁹ Oren, *Control Compelling*, *supra* note __, at 97.

⁷⁰ *Id.* at 101. "Representative Waxman, for instance, urged that the program ought to be adopted as a means to control the growth of clean air areas so that there would be room for future industrial growth; this statement perhaps implies a desire to use PSD to keep some clean air for later appropriation." *Id.*

⁷¹ *Id.* ("[A] conservationist argument for maintaining clean air better than the air quality standards could hold that some restrictions on development now are necessary to assure that future exploitation opportunities are not sacrificed.")

⁷² See Hines, *supra* note __, at 646 (noting that "the idea of nondegradation seems to be closely related to large principles of conservation"). These conservation principles are similarly expressed in the sustained yield provisions of the Federal Lands Policy and Management Act (FLPMA) and the National Forest Management Act (NFMA) described in [Part IV.A.5](#), *infra*.

III. HISTORICAL EXPERIENCE WITH THE CLEAN WATER ACT'S ANTI-DEGRADATION PROGRAM

The success of anti-degradation programs in preventing deterioration of high quality water bodies varies widely from state to state. Although the anti-degradation policy is intended to protect high quality waters, it is by no means a precise set of instructions to the states.⁷³ EPA interprets its role in the enforcement of anti-degradation policies as a passive one.⁷⁴ It may disapprove and promulgate all or part of an implementation process for anti-degradation if, in the judgment of the Administrator, the state's process (or certain provisions thereof) circumvents the intent and purpose of the federal anti-degradation policy.⁷⁵ However, EPA rarely does so.⁷⁶ EPA's proclivity for leaving the policy vague, and for affording broad discretion to the states, has precluded the development of a consistent national anti-degradation policy.⁷⁷ As a result, critics describe the policy as "at best, obscure," and lacking in substantive content.⁷⁸

The states' designation criteria and processes vary tremendously. Moreover, when water bodies do get designated, the states' implementation of permitting authorities does not always ensure against degradation of those water bodies. This part reviews the nation's experiences with the designation of high quality waters and with the subsequent implementation of protective measures for, and permitting decisions in, those waters. It concludes with an assessment of the antidegradation policy's deficiencies.

A. State Designation Variations

The designation process for Tier 1 through 3 waters "varies enormously" from state to state.⁷⁹ EPA's anti-degradation policy does not provide adequate guidance on how to distinguish between Tier 1 and Tier 2 waters.⁸⁰ Likewise, EPA's definition of Tier 3 (Outstanding National

⁷³ Harleston, *supra* note __, at 52-53 ("In its almost thirty years of existence, few details of implementing antidegradation have been expressed.").

⁷⁴ National Resources Defense Council, *Effective Environmental Compliance and Governance: Perspectives from the Natural Resources Defense Council* (2010), http://docs.nrdc.org/international/files/int_10051901a.pdf.

⁷⁵ EPA, *Water Quality Handbook- Chapter 4. Antidegradation* (Aug. 15, 1994), available at <http://water.epa.gov/scitech/swguidance/standards/handbook/chapter04.cfm#section8> (visited Feb. 4, 2012).

⁷⁶ See National Resources Defense Council, *Effective Environmental Compliance and Governance: Perspectives from the Natural Resources Defense Council* (2010), http://docs.nrdc.org/international/files/int_10051901a.pdf (noting that EPA could serve an important catalyst in defining minimum standards, but that it must work more closely with the states to ensure compliance with the laws).

⁷⁷ *Id.* at 77.

⁷⁸ Jeffrey M. Gaba, *Generally Illegal: NPDES General Permits Under the Clean Water Act*, 31 HARV. ENVTL. L. REV. 409, 454 (2007) [hereinafter Gaba, *General Permits*]. See also Robert W. Adler, *Integrated Approaches to Water Pollution: Lessons from the Clean Air Act*, 23 HARV. ENVTL. L. REV. 203, 292 (1999) ("the current [CWA anti-degradation] program . . . is so vague as to defy clear explanation").

⁷⁹ River Network: *Implementing the Clean Water Act in the Intermountain West: An Overview*; Chapter 2: *Water Quality Standards: Antidegradation* (2010), available at <http://www.rivernet.org/sites/default/files/chapter2.pdf>.

⁸⁰ 40 C.F.R. 131.12(a); Gaba, *General Permits*, *supra* note __, at 454. See Gaba, *New Growth*, *supra* note __, at 675 ("Unfortunately, the difference between Tier 1 and Tier 2 waters may, in many cases, be more metaphysical than biological."); Kalisek, *supra* note __, at 10-11 (stating that the states have struggled with how to identify Tier 2 high-quality waters).

Resource Waters) is unclear.⁸¹ Some state regulations provide no information whatsoever on how a waterbody might be nominated or how a designation decision might be made, leaving protection of the highest quality waters at risk.⁸² “Designation policies in many states are so vague as to be hard for a concerned citizen or watershed group to use ... or even to understand how they could use them.”⁸³ As a result, courts tend to defer to the agencies’ designation decisions unless there is no evidence whatsoever to support them.⁸⁴

Criteria and processes for distinguishing between Tier 1 and Tier 2 waters are especially opaque. In *Kentucky Waterways Alliance v. Johnson*, the Sixth Circuit addressed a series of challenges to Kentucky’s anti-degradation policy.⁸⁵ The court deferred to EPA’s view that its own regulations permitted either a pollutant-by-pollutant or water body-by-water body approach to determining which waters merit Tier 2 protection.⁸⁶ It also allowed automatic exclusion of impaired waters from Tier 2,⁸⁷ and found that a state’s program complies with the anti-degradation policy as long as all waters whose quality exceeds fishable/swimmable water quality are afforded Tier 2 protection.⁸⁸ According to the court, neither the CWA nor EPA regulations require that a minimum percentage of a state’s waters be afforded Tier 2 protection.

In contrast, in West Virginia, a district court invalidated EPA’s approval of the state’s anti-degradation program for deficiencies in both designation and implementation.⁸⁹ With regard to designation, the court rejected the state’s classification of segments of the Kanawha and Monongahela Rivers as Tier 1 waters. The absence of evidence about the water quality of those rivers failed to support denying them the more stringent protection of Tier 2.⁹⁰ The court also invalidated EPA’s approval of a provision that failed to require Tier 2 protection in all cases where the water segment supported minimum fishable/swimmable uses and had assimilative capacity remaining for some parameters.⁹¹

With respect to the most protective category—Tier 3 ONRWs—some states have no regulations regarding processes or criteria for making designation decisions.⁹² Perhaps not

⁸¹ 40 C.F.R. 131.12(a)(3). See John A. Chilson, *Keeping Clean Waters Clean: Making the Clean Water Act’s Antidegradation Policy Work*, 32 U. MICH. J. L. REFORM 545, 553-55 (1999).

⁸² River Network, *supra* note __, at 51. [Is this the correct citation?] See, e.g., *Am. Littoral Soc’y v. EPA*, 199 F. Supp. 2d 217 (D.N.J. 2002) (rejecting challenge to state’s failure to designate any waters to be protected by anti-degradation policy because the plaintiffs failed to identify any waters requiring protection).

⁸³ River Network, *supra* note __, at 50, available at <http://www.rivernetwork.org/sites/default/files/chapter3.pdf>.

⁸⁴ See, e.g., *Petition of Town of Sherburne*, 154 Vt. 596, 581 A.2d 274 (1990) (upholding downgrading of waters to accommodate proposed sewage disposal facility).

⁸⁵ *Kentucky Waterways Alliance v. Johnson*, 540 F.3d 466 (6th Cir. 2008).

⁸⁶ *Id.* at 475-77.

⁸⁷ *Id.* at 477-81.

⁸⁸ *Id.* at 481.

⁸⁹ *Ohio Valley Env’tl. Coal. v. Horinko*, 279 F. Supp. 2d 732 (S.D. W. Va. 2003).

⁹⁰ *Id.* at 737. The court ruled that EPA regulations permit classification of waters as Tier 1 or Tier 2 based on a water body-by-water body approach, without having to make classifications for each pollutant. *Id.* at 747-48. But the record contained no evidence to justify classifying the rivers as Tier 1, other than their appearance on the list of impaired waters. *Id.* at 750.

⁹¹ *Id.* at 765-66.

⁹² River Network, *supra* note __ at 51.

surprisingly, then, some states have no ONRWs within their boundaries.⁹³ EPA regulations include as examples of ONRWs “waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance.”⁹⁴ But these waters are not covered unless a state takes affirmative steps to designate them. Absent explicit state designations, courts have refused to recognize ONRWs at the behest of citizens’ groups.⁹⁵

A few states do in fact use the ONRW designation to protect wilderness waters and critical habitat, in addition to parks, refuges, and other unique water bodies.⁹⁶ Montana automatically designates all “surface waters located wholly within the boundaries of designated national parks or wilderness areas.”⁹⁷ Florida’s ONRW program includes parks, refuges, wilderness areas, memorials, and waters of special recreational or ecological significance.⁹⁸ Colorado includes water bodies that constitute “a significant attribute” of wilderness areas.⁹⁹ In Washington, however, to be eligible as ONRWs, water bodies within wilderness areas must be “relatively pristine” or possess exceptional water quality.¹⁰⁰

New Mexico’s experience might serve as an example of how efforts to designate and protect ONRWs can work fairly well. In 2010, the New Mexico Water Quality Control Commission adopted an across-the-board rule designating all perennial surface waters in Forest Service wilderness areas as ONRWs.¹⁰¹ Prior to the rule, there were only two ONRWs in New Mexico—the Rio Santa Barbara in the Pecos Wilderness and the waters of the Valle Vidal in the Carson National Forest.¹⁰² The new designation covers 700 miles of 195 perennial rivers and

⁹³ Judith M. Brawer, *Antidegradation Policy and Outstanding National Resource Waters in the Northern Rocky Mountain States*, 20 PUB. LAND & RESOURCES L. REV. 13, 21 (1999). See 63 Fed. Reg. 36742, 36786 (characterizing the designation of ONRWs as limited, although some states have designated a high percentage of their waters as ONRWs).

⁹⁴ 40 C.F.R. § 131.12(a)(3); see Michael C. Blumm & Thea Schwartz, *Mono Lake and the Evolving Public Trust in Western Water*, 37 ARIZ. L. REV. 701, 716–20 (1995) (describing the implications of ONRW designation on diversions of water from tributaries to Mono Lake for use in Los Angeles).

⁹⁵ See, e.g., *Save the Lake v. Schregardus*, 141 Ohio App. 3d 530, 752 N.E.2d 295 (2001) (refusing to treat waters within a state park as automatically entitled to ONRW status).

⁹⁶ See C. Mark Hersh, *The Clean Water Act’s Antidegradation Policy and Its Role in Watershed Protection in Washington State*, 15 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 217, 222–29 (2009); Brawer, *supra* note __, at 20–27 (discussing designation of ONRWs in Montana, Idaho, and Wyoming).

⁹⁷ MONT. ADMIN. R. 17.30.617(1) (2006).

⁹⁸ FLA. ADMIN. CODE ANN. 62-302.700(2).

⁹⁹ 5 COLO. CODE REGS. § 1002-31:31.8(2)(a)(ii)(A) (2007); see *id.* § 1002-31:31.28(C)(3) (explaining that ONRW designations apply in wilderness areas despite the fact the wilderness areas already have other types of protections in place; to conclude otherwise “would prevent application of the outstanding waters designation to waters that may be among those most deserving of protection”).

¹⁰⁰ WASH. ADMIN. CODE § 173-201A-330(1)(a).

¹⁰¹ 20.6.4.8.A(3) NMAC (2009); 20.6.4.8.A(3)-(4) NMAC (2011). See *Petition Protects Headwater Streams in Wilderness Areas of New Mexico* (Dec. 1, 2010), available at <http://www.nmenv.state.nm.us/OOTS/documents/PR-ONRWPassesFinal-12-1-10.pdf>; N.M. CODE R. § 20.6.4.9.B, D (LexisNexis 2011) (providing criteria for ONRW designation). Two other states in the intermountain west—Utah and Wyoming—have designated all waters within large geographic areas such as National Forests or Wilderness Areas as ONRWs. River Network, *supra* note __, at 50.

¹⁰² Jan. 19, 2012 email from Erik Schlenker-Goodrich, Western Environmental Law Center, Taos, NM.

streams, 29 lakes, and 1405 wetlands in 12 wilderness areas.¹⁰³ According to the New Mexico Environment Department, “[t]hese waters represent the State’s most valuable headwater streams. Protection of these headwaters will help maintain a clean water supply for uses in Wilderness and for downstream uses by municipalities, agriculture, and recreational interests, and will help maintain healthy ecosystems, preserve habitat, and protect vulnerable and endangered species.”¹⁰⁴ To protect ONRWs, the new rule prohibits new or increased point source discharges that would adversely impact water quality and requires best management practices (BMPs) for nonpoint sources.¹⁰⁵ It provides that, “[e]xcept for pre-existing land-use activities (that comply with BMPs), water quality cannot be degraded in ONRWs.”¹⁰⁶

Ironically, some of the newly designated ONRWs are on the section 303(d) “impaired waters” list.¹⁰⁷ The ONRW designation may stimulate restoration efforts on these waters. According to a representative of the Coalition for the Valle Vidal, the Valle Vidal is a good example of how ONRWs receive a fair amount of attention for restoration work.¹⁰⁸ A long history of grazing, mining, and logging left the some of the Valle Vidal tributaries in a “highly degraded state.”¹⁰⁹ Ongoing restoration efforts include relatively inexpensive, yet effective, low-tech restoration projects like fencing, erosion control structures made of rock and vegetation, and road drainage devices that direct runoff into vegetative buffer zones.¹¹⁰

Environmental groups applauded the state’s efforts to protect ONRWs.¹¹¹ But the New Mexico Cattle Growers Association petitioned to set aside the new rule,¹¹² and urged the Commission to designate smaller watersheds on a case-by-case basis rather than in one blanket

¹⁰³ Order and Statement of Reasons, ¶ 7–8, *In re* Petition to Nominate Surface Waters in Forest Service Wilderness Areas as Outstanding National Resource Waters, WQCC 10-01(R) (Water Quality Control Comm’n Dec. 2010), available at <ftp://ftp.nmenv.state.nm.us/www/HearingOfficer/ONRW/WQCCOrder+SOR20.6.4NMAC.pdf>.

¹⁰⁴ Press Release, Office of the Sec’y, *supra* note .

¹⁰⁵ NMDEQ, Antidegradation Policy Implementation Procedure 17 (2010), <ftp://ftp.nmenv.state.nm.us/www/swqb/PPP/2010/PPP-AppendixA.pdf>.

¹⁰⁶ NMDEQ, Guidance for Nonpoint Source Discharges in Outstanding National Resource Waters G-1 (2009), <ftp://ftp.nmenv.state.nm.us/www/swqb/WPS/NPSPlan/2009NPSPlan-AppendixG11-30-10.pdf>.

¹⁰⁷ Email from Schlenker-Goodrich, *supra* note.

¹⁰⁸ *Id.*

¹⁰⁹ Comanche Creek, Valle Vidal Unit, Carson National Forest (2005), <http://www.comanchecreek.org/>.

¹¹⁰ Comanche Creek, Restoration Practices (2005), http://comanchecreek.org/Restoration_Practices/index.html. Restoration goals are “to meet current water quality standards; restore hydrologic function to the creek and its tributaries; and maximize habitat for the Rio Grande cutthroat trout.” *Id.*

¹¹¹ Susan Montoya Bryan, *NM Regulators Approve Outstanding Waters*, ASSOCIATED PRESS, Dec. 1, 2010, available at <ftp://ftp.nmenv.state.nm.us/www/swqb/News/API2-01-2010Article.pdf>. For background, see Amigos Bravos, Overview of ONRW Protections and History in New Mexico (2012), <http://amigosbravos.org/onrw.php>.

¹¹² *New Mexico Cattle Growers’ Ass’n v. Water Quality Control Comm’n*, Ct. App. No. 31,191. See Staci Matlock, *New Rule Under Fire from N.M. Cattle Growers Association*, SANTA FE NEW MEXICAN, Jan. 10, 2011, <http://www.santafenewmexican.com/localnews/outstanding-waters-New-rule-under-fire-from-cattle-growers> (last visited Nov. 23, 2011).

rule.¹¹³ Despite the pressure, the Commission is going forward with the implementation of the new ONRW rule.¹¹⁴

B. State Implementation Variations

EPA regulations require that state water quality standards “identify the methods for implementing” the anti-degradation policy.¹¹⁵ In some instances, litigants have leveled facial attacks on entire state programs or significant components of those programs, while in others they have identified more discrete actions, such as the issuance of permits, alleged to be in violation of the anti-degradation policy. The judicial treatment of these challenges has been inconsistent, but one theme emerges: a state anti-degradation program that is little more than an empty shell is vulnerable to attack.

1. Programmatic Attacks

In *Kentucky Waterways Alliance*, the Sixth Circuit took issue with Kentucky’s decision to exempt five categories of discharges from the requirement that new or expanded discharges into high quality waters pass Tier 2 review.¹¹⁶ The plaintiffs charged that the exemptions “eviscerate[d] Kentucky’s Tier [2] review process, allowing significant degradations in water quality without demonstrated necessity.”¹¹⁷ The court reasoned that because EPA’s anti-degradation regulations protect assimilative capacity, EPA’s task was to focus on how much assimilative capacity would be lost under the exemptions, and in particular whether that loss would be significant or merely de minimis.¹¹⁸ Instead of assessing the exemptions’ cumulative effects, EPA measured Kentucky’s compliance by assessing whether each individual exemption resulted in “significant” or “insignificant” degradation of assimilative capacity. The court therefore lacked an adequate factual record for determining whether the exemptions together permitted significant degradation, and it remanded to EPA for further analysis.¹¹⁹

¹¹³ See Brief of NMCGA, In the Matter of Petition to Nominate Surface Waters in Forest Service Wilderness as Outstanding National Resource Waters, Appeal from Water Quality Control Commission, WQCC Case No. 10-01(R), Ct. App. No. 31,191 (Aug. 22, 2011).

¹¹⁴ See Surface Water Quality Bureau, N.M. Env’t Dep’t, *Water Quality Standards: Outstanding National Resource Waters*, <http://www.nmenv.state.nm.us/swqb/ONRW/> (last visited Mar. 13, 2012). The case is still pending. Email from Schlenker-Goodrich, *supra* note .

¹¹⁵ 40 C.F.R. § 131.12(a).

¹¹⁶ *Kentucky Waterways Alliance v. Johnson*, 540 F.3d 466 (6th Cir. 2008). The five categories included any expanded discharge under a renewed or modified state permit, so long as the expansion did not increase pollutant loading by 20% or more. *Id.* at 491. See *supra* notes ___-___ (describing court’s deference to EPA’s approval of Kentucky’s exclusion of certain waters from Tier 2 designation).

¹¹⁷ *Id.* at 492.

¹¹⁸ *Id.* “[A]ssimilative capacity is a measurement of the amount by which . . . quality exceeds levels necessary to support fish, wildlife, and recreation.” *Id.* at 484. According to EPA, “the central purpose of the federal Tier II antidegradation regulations is to protect a water body’s assimilative capacity, which is ‘the difference between the applicable water quality criterion for a pollutant parameter and the ambient water quality for that parameter when it is better than the criterion.’” *Id.* (citing Memorandum from Ephraim S. King, Director of EPA Office of Science and Technology, to Water Management Division Directors (Aug. 10, 2005); Water Quality Standards Regulation, 63 Fed. Reg. at 36,783).

¹¹⁹ *Id.* at 492-93. Cf. *Ohio Valley Envtl. Coal.* 279 F. Supp. 2d at 770-73 (invalidating EPA’s approval of a provision deeming degradation to be significant if the proposed activity, together with all other activities allowed after the baseline water quality is established, resulted in a reduction of a water segment’s available assimilative

Similarly, the West Virginia district court chastised EPA for ignoring the plain meaning of the state regulations in approving provisions allowing new or expanded discharges from wastewater treatment plants to evade Tier 2 review if the discharge resulted in a net decrease in the overall pollutant loading.¹²⁰ According to the court, EPA's approval in effect rewrote the provision to apply only when there is a net decrease in the pollutant loading for each pollutant parameter.¹²¹

EPA's lack of vigilance in overseeing state compliance with the anti-degradation policy was also reflected in its approval of an egregiously deficient implementation plan in Oregon.¹²² The plan contained only one sentence providing that the state's entire body of water quality standards was "intended to implement the Antidegradation Policy."¹²³ The court held that EPA erred in approving a policy that failed to identify "even a semblance of an implementation plan," in clear violation of its own regulation.¹²⁴ Subsequently, when EPA approved Oregon's revised implementation plan, its decision was remanded once again because the plan failed to specify a method to identify and protect existing uses.¹²⁵ The court rejected EPA's argument that the CWA does not specify a minimum method for implementing anti-degradation policies but simply requires that states "identify methods for their implementation."¹²⁶ It concluded that EPA must review the state's entire implementation plan to ensure that it describes all of the required elements and does not circumvent the purpose of the anti-degradation policy.¹²⁷ On the other hand, the court deferred to EPA's determination that a provision that applied to "recognized beneficial uses" protected all "existing uses" from becoming "unacceptably threatened or impaired."¹²⁸ It also upheld EPA's interpretation of Oregon's use of the term "unacceptably" as allowing only de minimis threats or impairments to existing uses, but noted that "Oregon's

capacity of 20% or more for parameters of concern because EPA failed to explain why a 20% reduction in assimilative capacity should be considered insignificant); *Rivers Unlimited, Inc. v. Schregardus*, 86 Ohio Misc. 2d 78, 685 N.E.2d 603 (Ohio Com. Pl. 1997) (holding that state law allowing agency to approve lowering of stream's water quality by as much as 80% of its assimilative capacity without anti-degradation review to be inconsistent with the CWA).

¹²⁰ *Ohio Valley Env'tl. Coal.*, 279 F. Supp. 2d at 737-38, 752-57. See *supra* notes ____-____ (describing court's invalidation of Tier 1 designations).

¹²¹ *Ohio Valley Env'tl. Coal.*, 279 F. Supp. 2d at 737-38, 752-57. The court upheld EPA's approval of other aspects of the program. It held that EPA properly approved the state's partial exemption of existing permitted uses from Tier 2 review, a provision allowing for a de minimis 10% reduction in the available assimilative capacity of Tier 2 waters before Tier 2 review is required, and provisions allowing water quality trades without triggering anti-degradation review. *Id.* at 751-52, 767-70, 774-76. f upheld

¹²² *Nw. Env'tl. Advocates v. EPA*, 268 F. Supp. 2d 1255 (D. Or. 2003).

¹²³ *Id.* at 1264-65 (quoting OAR 340-041-0026(1)(a)).

¹²⁴ *Id.* (citing 40 C.F.R. § 131.12(a)). See also *CORAlations v. EPA*, 477 F. Supp. 2d 413 (D.P.R. 2007) (overturning EPA's approval of water quality standards that lacked any methods or procedures to apply Puerto Rico's anti-degradation policy to wetlands).

¹²⁵ *Northwest Env'tl. Advocates*, No. 3:05-cv-01876-AC, 2012 WL 653757 (D. Or. Feb. 28, 2012)

¹²⁶ *Id.* at *19.

¹²⁷ *Id.* at *19. EPA argued that, although states are required to identify methods for implementing their antidegradation policy, those methods need not be contained in the state's regulation.

¹²⁸ *Id.* at *18 (citing PUD No. 1 of Jefferson Cnty. v. Wash. Dep't of Ecology, 511 U.S. 700, 705 (1994)). EPA interpreted this provision as disallowing "both unacceptable threats to uses and actual use impairment." *Id.*

program must, at a minimum, not allow activities that could partially or completely eliminate any existing uses.”¹²⁹

Some of the most significant programmatic challenges have involved nonpoint source pollution. Judicial reactions to these challenges have been mixed. When Montana’s legislature exempted nonpoint sources and other so-called “non-significant” activities from anti-degradation review,¹³⁰ EPA directed the state to revise its program to protect the water quality of ONRWs from “even non-significant, permanent changes in water quality.”¹³¹ In *American Wildlands v. Browner*, EPA approved Montana’s subsequent proposal, which extended the anti-degradation program to all point sources but continued to exempt nonpoint sources (and mixing zones) from its requirements.¹³² In particular, Montana’s new provision exempted nonpoint sources from the anti-degradation requirements for Tier 2 waters “when reasonable land, soil, and water conservation practices are applied and existing and anticipated beneficial uses will be fully protected.”¹³³ The Tenth Circuit deferred to EPA’s approval on the grounds that the CWA does not authorize EPA to regulate nonpoint source discharges.¹³⁴

Conversely, in *Northwest Environmental Advocates v. EPA*, the court was unmoved by EPA’s assertion that it lacked authority to “review and potentially disapprove Oregon’s nonpoint source provisions as a part of its water quality standards review.”¹³⁵ The court rejected *American Wildlands*, explaining that “many temperature impaired waters in Oregon are impaired in whole or in part by nonpoint sources of pollution, [thus] the challenged provisions could present a considerable obstacle to the attainment of water quality standards when, by law, the sources of pollution are deemed to be in compliance with water quality standards.”¹³⁶ The court noted that one function of water quality standards is to achieve federally-approved water quality goals through both state controls and “federal strategies other than point-source technology-based limitations,” and that “[t]his purpose pertains to waters impaired by both point and nonpoint sources of pollution.”¹³⁷

¹²⁹ *Id.*

¹³⁰ MONT. CODE ANN. §§ 75-1-201(1)(c), 2-3-103 (1997).

¹³¹ *Browner*, *supra* note , at 23-24, citing Region VIII EPA letter to Governor Marc Racicot, pp 3-5 (Dec. 1998)).

¹³² *American Wildlands v. Browner*, 94 F. Supp. 2d 1150 (D. Colo. 2000), *aff’d*, 260 F.3d 1192 (10th Cir. 2001).

¹³³ *American Wildlands v. Browner*, 260 F.3d 1192, 1197-98 (10th Cir. 2001) (citing MONT. CODE ANN. § 75-5-317(2)(b)). This exemption did not apply to ONRWs.

¹³⁴ *Id.* at 1198. *See also* *Defenders of Wildlife v. EPA*, 415 F.3d 1121, 1124 (10th Cir. 2005) (“the CWA does not require states to take regulatory action to limit the amount of non-point water pollution introduced into waterways”). *But cf.* *Montana Envtl. Info. Ctr. v. Dep’t of Envtl. Quality*, 988 P.2d 1236 (Mont. 1999) (finding that a state statute exempting a gold mine’s discharges of arsenic-laced water into rivers that provided habitat for endangered species from the anti-degradation review process violated the state’s constitutional provision guaranteeing its citizens a right to a clean and healthy environment).

¹³⁵ No. 3:05-cv-01876-AC, 2012 WL 653757, at *9-10 (D. Or. Feb. 28, 2012). Plaintiffs challenged several regulations that essentially exempted various nonpoint sources of heat pollution from complying with water quality standards from antidegradation review “so long as they do not increase in frequency, intensity, duration, or geographical extent.” *Id.* at *6.

¹³⁶ *Id.* at *7.

¹³⁷ *Id.* at * 10 (citing *Pronsolino v. Natri*, 291 F.3d 1123, 1130 (9th Cir. 2002)). *Pronsolino* paved the way for this decision by finding that EPA’s TMDL regulations “focused on the attainment of water quality standards *regardless of the source of the pollution.*” *Id.* at *9 (emphasis added). Disputes have arisen over the applicability of state anti-degradation programs to other activities or over the kinds of waters covered. *See, e.g.,* *W. Va. Coal Ass’n v. Reilly*, 728 F. Supp. 2d 1276 (S.D. W. Va. 1989), *aff’d*, 932 F.3d 964 (Table), 33 *Env’t Rep. Cas.* (BNA) 1353 (4th Cir.

2. As Applied Challenges to Tier I and II Waters Issues

Other judicial challenges have focused on more discrete aspects of state anti-degradation provisions applicable to one or more of the three tiers of waters. In some of these “as applied” cases, judicial interpretation has watered down anti-degradation requirements, such as in a pair of North Dakota cases involving approval of permits allowing phosphorous discharges into high quality waters because of the purported economic and social importance of the discharging activities.¹³⁸

In other cases, the anti-degradation policy has constrained the issuance of discharge permits.¹³⁹ Most commonly, courts have rejected permits for discharges into Tier 2 waters because of the absence of any finding of necessary economic or social development.¹⁴⁰ Permitting decisions that blatantly ignore the need to justify degradation of Tier 2 waters, then, are likely to be more vulnerable than decisions purporting to rest on a finding of necessity.

One court’s rejection of an environmental group’s attack on a state anti-degradation program regulation highlights the difficulty of reversing findings that economic necessity for degradation exists.¹⁴¹ The court upheld a regulation allowing a permit applicant to meet its obligation to provide “alternatives” to discharges into Tier 2 waters simply by showing that the project’s costs did not exceed a threshold for annualized costs. The court characterized the rule as “a compromise between environmental and broader economic concerns [that] the judiciary

1991) (upholding EPA’s authority to object to state’s issuance of permit to coal mining operation that would involve use of streams for waste assimilation and treatment, in violation of the anti-degradation policy).

¹³⁸ See *People to Save the Sheyenne River, Inc. v. N.D. Dep’t of Health*, 697 N.W.2d 319, 330-31 (N.D. 2005) (upholding outlet permit for discharge into category 1 lake because the addition of phosphorus would not alter the beneficial use of waters, the agency adequately considered other, less degrading alternatives, and the agency determined that the outlet was part of a project designed to accommodate social and economic factors in the affected regions); *People to Save Sheyenne River, Inc. v. N.D. Dep’t of Health*, 744 N.W.2d 748 (N.D. 2008) (upholding modification of permit for lake outlet because it would not cause concentration of any parameter of concern to increase by more than 15%). See also *Community Ass’n for Restoration of Env’t v. State, Dep’t of Ecology*, 149 Wash. App. 830, 205 P.3d 950 (2009) (upholding general permit for confined animal feeding operations that required soil but not groundwater monitoring).

¹³⁹ See, e.g., *Hughey v. Gwinnett County*, 609 S.E.2d 324 (Ga. 2004) (invalidating issuance of a permit to a wastewater treatment plant because, even though the administrative law judge appropriately found the requisite necessity, the permit failed to meet the state anti-degradation policy’s requirement that the county use the best practicable treatment technology).

¹⁴⁰ See, e.g., *Ill. EPA v. Ill. Pollution Control Bd.*, 386 Ill. App. 375, 896 N.E. 2d 479 (2008) (finding that the permitting agency’s record lacked data showing that the increased discharge was unavoidable or necessary, did not discuss other feasible alternatives that might have negated the necessity of the increased discharge, and did not contain information regarding the possibility of other methods to eliminate or reduce phosphorus and/or nitrogen before discharging wastewater into stream); *In re Ciba-Geigy Corp.*, 120 N.J. 164, 576 A.2d 784 (N.J. 1990) (upholding challenge to permit due to absence of any finding of necessity); *Fowl River Prot. Ass’n v. Bd. of Water and Sewer Comm’rs of the City of Mobile*, 572 So.2d 446 (Ala. 1990) (invalidating permit for discharge of sewage due to lack of necessity finding). See also *Columbus & Franklin Cty. Metro. Park Dist. v. Shank*, 600 N.E.2d 1042, 1057-59 (Ohio 1992) (concluding that a state agency acted arbitrarily in deciding that degradation of water quality in a creek was “necessary to accommodate important economic or social development”).

¹⁴¹ *Ala. Dep’t of Env’tl. Mgmt. v. Legal Env’tl. Assistance Found.*, 922 So.2d 101 (Ala. Civ. App. 2005).

should be loath to disturb.”¹⁴² The court reasoned that the state permitting agency needed the discretion to decide whether, at some level, the needs of the state’s people would be better served by placing upper limits on the costs of industrial plants than by “requiring massive and inefficient expenditures in order to achieve marginal improvements in water quality.”¹⁴³

In another case reflecting the anti-degradation policy’s potential to constrain discharges, a Montana agency declined to apply the state’s anti-degradation policy to discharges from a mine adit based on a regulation exempting “nonsignificant” discharges into Tier 2 waters.¹⁴⁴ Had the policy applied, the discharges would have been subject to significantly more stringent controls and the process for reviewing the mine’s permit application would have entailed more public scrutiny.¹⁴⁵ The Montana Supreme Court held that the agency’s unsupported statement that a perpetual discharge from the adit would always be sufficiently treated did not justify its determination that the discharge would be “nonsignificant.”¹⁴⁶

The same court upheld the state agency’s identification of two parameters for the purpose of making “nonsignificance” determinations, triggering the application of anti-degradation review to the discharge of coalbed methane produced waters.¹⁴⁷ A federal district court, however, subsequently remanded EPA’s approval of the state rules adopting numerical standards for the two parameters because EPA failed to consider industry’s concerns about the lack of scientific support for the standards.¹⁴⁸ In critiquing EPA’s explanation that the two parameters “may” be harmful, the court spuriously concluded, without any supporting rationale or citations, that “[a]pproving a state standard on the basis that a parameter may be harmful is certainly not what the Clean Water Act envisioned.”¹⁴⁹ The court failed to recognize that the CWA reflects Congress’s intent to protect water quality against threats of uncertain magnitude, requiring, for example, that total maximum daily loads include “a margin of safety which takes into account ‘any lack of knowledge concerning the relationship between effluent limitations and water quality.’”¹⁵⁰

These cases indicate that, once a properly adopted state anti-degradation program is in place, states have considerable discretion to accommodate discharges into Tier 1 and 2 waters to promote economic and social goals, provided they comply with regulatory procedures and supply some evidentiary support for their substantive determinations.

3. As Applied Challenges to Tier III Waters Issues

¹⁴² *Id.* at 114.

¹⁴³ *Id.*

¹⁴⁴ *Clark Fork Coal. v. Montana Dep’t of Env’tl. Qual.*, 197 P.3d 482 (Mont. 2008).

¹⁴⁵ *Id.* at 489.

¹⁴⁶ *Id.* at 493. *See also* *Northern Cheyenne Tribe v. Mont. Dep’t of Env’tl. Quality*, 234 P.3d 51 (Mont. 2010) (invalidating permits to coalbed methane production operation that authorized discharge into high quality waters of millions of pounds of sodium each year, even though high salinity levels already had impaired the river).

¹⁴⁷ *Pennaco Energy, Inc. v. Mont. Bd. of Env’tl. Review*, 199 P.3d 191 (Mont. 2008).

¹⁴⁸ *Pennaco Energy, Inc. v. EPA*, 692 F. Supp. 2d 1297, 1313 (D. Mont. 2009).

¹⁴⁹ *Id.* at 1314.

¹⁵⁰ 33 U.S.C.A. § 1313(d)(1)(C) (2006).

Courts have been somewhat less deferential in reviewing permitting decisions that impact Tier 3 waters (ONRWs), at least when it comes to new or expanded uses with clear impacts on water quality. In *League to Save Lake Tahoe v. Tahoe Regional Planning Agency*, the court held that the Agency arbitrarily allowed additional mooring buoys, piers, and other forms of development in its shoreline ordinances.¹⁵¹ The ordinances would have allowed increased motor boating, which in turn would cause increased pollutant discharges and runoff into the Lake, which California had classified as an ONRW.¹⁵² Although the Agency proposed mitigation measures, including “no wake” zones, speed limits, and user fees, the court found that its determination that there would be no significant water quality impacts was arbitrary.¹⁵³

Along the same lines, a Minnesota court set aside a permit allowing a city to triple the capacity of a wastewater treatment plant and discharge nearly two million gallons of waste each day into an ONRW river.¹⁵⁴ The state’s anti-degradation rules prohibited any new or expanded discharges into an ONRW unless there was no prudent and feasible alternative, and then only “to the extent necessary to preserve the existing high quality” of the receiving water.¹⁵⁵ The court held that the state permitting agency failed to provide substantial evidence that the alternative of downsizing the treatment plant and using decentralized treatment was not feasible or prudent.¹⁵⁶ The court also held that the permitting agency erroneously restricted the discharge only to prevent degradation below ordinary water quality standards rather than to protect the existing high quality of the water.¹⁵⁷ Finally, by failing to define the baseline existing quality of the water, the agency could not evaluate whether the proposed discharge would preserve existing high quality.¹⁵⁸

In a subsequent case, however, the Minnesota court rejected a challenge to a permit alleged to be in violation of Minnesota’s anti-degradation rules.¹⁵⁹ An environmental group claimed that the state agency failed to consider the impact of the introduction of new invasive species through ballast water discharges into Lake Superior.¹⁶⁰ The court deferred to the agency’s technical expertise that discharges need only be restricted “to the extent necessary to preserve the existing high [water] quality.”¹⁶¹ Although analysis of the impact of new invasive

¹⁵¹ 739 F. Supp. 2d 1260 (2010), *aff’d in part, vacated in part on other grounds, and remanded*, 2012 WL 639264 (9th Cir. Feb 29, 2012).

¹⁵² *Id.* at 1292-93.

¹⁵³ *Id.* at 1286.

¹⁵⁴ *Minn. Ctr. for Env’tl. Advocacy v. C’mmr of Minnesota Pollution Control Agency*, 696 N.W.2d 95 (Minn. Ct. App. 2005).

¹⁵⁵ *Id.* at 101.

¹⁵⁶ *Id.* at 105. *Cf.* *Minn. Ctr. for Env’tl. Advocacy v. Minn. Pollution Control Agency*, 660 N.W.2d 427 (Minn. Ct. App. 2003) (invalidating general permit for stormwater discharges as violation of anti-degradation rules because the state agency failed to consider whether discharges were expanded).

¹⁵⁷ 696 N.W.2d at 107.

¹⁵⁸ *Id.* at 108.

¹⁵⁹ *In the Matter of a Request for Issuance of the SDS General Permit MNG300000 for Ballast Water Discharges from Vessels Transiting Minnesota State Waters of Lake Superior*, 769 N.W.2d 312 (Minn. Ct. App. 2009).

¹⁶⁰ The surrounding states and tribes have designated Lake Superior as Outstanding International Resource Waters or Outstanding Resource Waters. *See* WIS. N.R. 102.10 (2008); MICH. RULE 98(7) (1999); MINN. ADMIN. 7050.0180, 7052.0300(3) (2000); SOKAOGON CHIPPEWA WATER QUALITY STANDARDS 151.30(2) (2005), available at http://water.epa.gov/scitech/swguidance/standards/adeq/tribes_cwindex.cfm.

¹⁶¹ *Id.* at 321.

species on the lake's quality might have been prudent, the agency's failure to address the risks associated with species that had already or might in the future arrive as a result of ballast water discharges was not arbitrary where the Lake had been "receiving ballast-water pollutants without restriction for as long as commercial vessels have operated on Lake Superior."¹⁶²

Courts also have taken a deferential stance when environmental plaintiffs have attempted to use permitting decisions to expand the scope of a state's anti-degradation policy. In *Port of Seattle v. PCHB*, the court affirmed the agency's certification that an airport runway project would satisfy the state's anti-degradation policy despite potential impacts to stream flows in class AA waters, the equivalent of ONRWs.¹⁶³ It seemed to take comfort in the fact that, under the state's policy, the developer must offset the impacts of the project, even though it need not restore the AA waters to pristine condition.¹⁶⁴

C. Anti-degradation Policy Deficiencies

The cases described above demonstrate that the CWA's anti-degradation policy is neither fulfilling its potential for identifying and protecting high quality waters nor meeting the five goals delineated above in Part II. These deficiencies fall into three categories: (1) failure to ensure that high quality waters are properly designated; (2) failure to define "degradation" and to identify appropriate triggers for ensuring against it in the face of "important" economic considerations; and (3) failure to regulate all significant sources of degradation. A fourth category—failure to detect inadequate anti-degradation plans and follow through with appropriate enforcement—becomes apparent from a consideration of on-the-ground implementation issues arising outside of the litigation context. This part explores each of these deficiencies, while reforms are proposed in Part V below.

1. Designation Inconsistencies

The EPA's anti-degradation policy does not provide adequate guidance on how to distinguish Tier 1 from Tier 2 waters.¹⁶⁵ EPA allows states to take either a pollutant-by-pollutant or water body-by-water body approach, with few substantive parameters. Likewise, EPA's definition of Tier 3 is illustrative rather than prescriptive, and its approach to state-by-state designation is wholly discretionary.¹⁶⁶ Accordingly, some state regulations provide no procedural or substantive specifications whatsoever for designation decisions, leaving many high quality waters unprotected beyond the lowest common denominator—Tier 1.

¹⁶² *Id.* at 322. For similar outcomes, see, e.g., *In re Louisiana Dep't of Env'tl, Quality Permitting Decision: Timber Branch II Sewage Treatment Plan*, 2011 WL 1225985 (La. App. 1 Cir. 2011) (affirming agency's decision that discharges of treated sewage would not degrade water quality in ONRW tributary); *In re Freshwater Wetlands Prot. Act Rules*, 180 N.J. 415 (2004) (affirming New Jersey's authorization of cranberry growing operations in the ONRWs of the Pinelands National Reserves).

¹⁶³ 151 Wash. 2d 568, 90 P.3d 659, 681 (Wash. 2004).

¹⁶⁴ *Id.*

¹⁶⁵ See *supra* notes ___ - ___ and accompanying text.

¹⁶⁶ See *supra* notes ___ - ___ and accompanying text.

2. What is “Degradation” and When is it Allowed?

In addition to the designation vagaries described above, one key question is how to define “degradation.” EPA’s regulations utterly fail to recognize the relevance of that question.¹⁶⁷ EPA apparently allows states to limit Tier 2 protections to activities that result in “significant” degradation of water quality, invoking the agency’s inherent authority to avoid regulating de minimis environmental threats.¹⁶⁸ State definitions of the point at which impairment triggers anti-degradation review are inconsistent.¹⁶⁹ Moreover, as the Sixth Circuit’s decision in *Kentucky Waterways Alliance* indicates,¹⁷⁰ the anti-degradation policy fails to protect against cumulative effects of multiple discharges that impair existing water quality.¹⁷¹

A related flaw is the failure to describe when Tier 2 high-quality waters may be degraded if “necessary” to accommodate “important economic or social development.”¹⁷² How necessary and important must the development in question be? According to EPA, the phrase seeks to convey “a general concept regarding what level of social and economic development could be used to justify a change in high quality waters. Any more exact meaning will evolve thorough case-by-case application” by the state.¹⁷³ The burden of demonstrating economic necessity is supposed to “be very high.”¹⁷⁴ However, state regulations differ markedly in how they apply this requirement.¹⁷⁵ Absent constraints, this exception threatens to swallow the anti-degradation rule.¹⁷⁶

3. What Pollution Sources are Regulated?

In addition to the inconsistencies in defining “degradation” and “important” development, troublesome gaps have developed through the exclusion of certain pollution sources. In the intermountain west, for example, “the region’s anti-degradation policies are riddled with exemptions. The most common exemption is for existing sources—all eight states

¹⁶⁷ Harleston, *supra* note __, at 57.

¹⁶⁸ Gaba, *New Growth*, *supra* note __, at 677. See *Ohio Valley Envtl. Coal. v. Horinko*, 279 F. Supp. 2d 732, 767-68 (S.D. W. Va. 2003). See also Kent Modesitt, *Antidegradation: A Lost Cause or the Next Cause?*, 2 U. DENV. WATER L. REV. 189, 217 (1999) (noting that EPA regional office supported the use of a significance determination).

¹⁶⁹ See Modesitt, *supra* note __, at 217 (noting that state approaches vary); River Network, *supra* note __, at 44 (finding that five of the eight intermountain states “apply some sort of numeric, percent-based measure of ‘insignificant’ degradation (often called de minimis degradation) that is allowable without review”).

¹⁷⁰ See *supra* notes ___-___ and accompanying text.

¹⁷¹ See Adler, *supra* note __, at 285.

¹⁷² See *supra* notes ___-___ and accompanying text.

¹⁷³ Qs & As, *supra* note __, at 8.

¹⁷⁴ Kalisek, *supra* note __, at 12 (quoting EPA, *Water Quality Standards Handbook*, at § 4.5 (2d ed. 1993)).

¹⁷⁵ River Network, *supra* note __, at 39-41; ADLER ET AL., *supra* note __, at 202; Katherine Zogas, Comment, *The Clean Water Act’s Antidegradation Policy: Has It Been “Dumped”?*, 42 J. MARSHALL L. REV. 209, 229-30 (2008); Gaba, *New Growth*, *supra* note __, at 686.

¹⁷⁶ Stitts, *supra* note __, at 1359. *But cf.* *Ala. Dep’t of Envtl. Mgmt. v. Legal Envtl. Assistance Found.*, 922 So.2d 101, 114-15 (Ala. Civ. App. 2005) (rejecting claim that portion of state program requiring showing of necessity for important economic and social development for new or expanded discharges to Tier 2 waters was void for vagueness). *Cf.* *Pacific Topsoils, Inc. v. Wash. State Dep’t of Ecology*, 157 Wash. App. 629, 238 P.3d 1201 (2010) (rejecting contention that state anti-degradation program was unconstitutionally vague as applied to placement of fill material into wetlands without a permit).

‘grandfather’ existing sources, if they are not expanding their discharge.”¹⁷⁷ Only a few states in the region—Arizona, Wyoming, and New Mexico—appear to meet EPA’s requirement that new and expanded discharges in tributaries of ONRWs be limited to those that will not degrade water quality.¹⁷⁸

Exceptions for nonpoint sources—existing or new—are equally widespread. Although a few states, like New Mexico,¹⁷⁹ Washington,¹⁸⁰ and Florida,¹⁸¹ apply anti-degradation provisions to all sources of pollution in ONRWs, including nonpoint sources, many if not most states appear to have no restrictions on nonpoint source discharges whatsoever.¹⁸² As noted above, Montana’s exemption for nonpoint sources has been upheld,¹⁸³ leaving high-quality waters in rural areas unprotected from the most significant sources of water pollution.¹⁸⁴

4. Lack of Follow Up

Beyond the lessons learned from several decades of anti-degradation litigation, it appears that some of the problems associated with implementation of the policy stem from the EPA’s failure to follow up after a state program has been adopted. As evidenced by the GAO’s assessment of the Great Lakes Initiative (GLI), the lack of follow through turns in part on EPA’s failure to issue a consistent permitting strategy for the states.¹⁸⁵ The GLI amendment to the CWA required that the eight Great Lakes states—Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin—include provisions consistent with EPA’s GLI guidance in their regulations and permit programs.¹⁸⁶ But according to the GAO, the states’ permitting structures are not consistent with each other or with any overarching comprehensive strategy. Moreover, EPA’s attempts to assess the effectiveness of the states’ anti-degradation

¹⁷⁷ River Network, *supra* note , at 44.

¹⁷⁸ *Id.* at 52-53.

¹⁷⁹ See *supra* notes ___-___ and accompanying text.

¹⁸⁰ WASH. ADMIN. CODE § 173-201A-300(2)(e)(i), (iii); Hersh, *supra* note , at 232.

¹⁸¹ In Florida, “no degradation” of ONRWs and “Outstanding Florida Waters” is allowed, “notwithstanding any other Department rules that allow water quality lowering.” See, e.g., FLA. ADMIN. CODE ANN. 62-302.700(2)(a) (2006). See Christie C. Morgan, *Challenges and Opportunities in Protecting Outstanding National Resource Waters*, 5-SPG Nat. Resources & Env’t 30, 33 (1991) (citing FLA. ADMIN. CODE ANN. § 17-4.242 (3)(b)). Interestingly, the Florida legislature specifically prohibited horticultural peat mining—a key economic driver in the state—in Outstanding Florida Waters. WEST’S F.S.A. § 373.414(2)(d).

¹⁸² See, e.g., River Network, *supra* note , at 54 Tbl. 22 (listing Arizona, Colorado, Montana, and Nevada as lacking explicit nonpoint source controls); *id.* at 53 (“The manner in which the states have addressed nonpoint source pollution control varies dramatically in the [intermountain] region.”).

¹⁸³ See *supra* notes ___-___ and accompanying text. See also Douglas R. Williams, *When Voluntary, Incentive-Based Controls Fail: Structuring a Regulatory Response to Agricultural Nonpoint Source Water Pollution*, 9 WASH. U. J.L. & POL’Y 21, 40 (2002) (“For [some] states, increases in nonpoint source pollution that impair existing uses would not be considered to violate state water quality standards or the antidegradation policy, so long as designated uses are fully supported.”).

¹⁸⁴ Blumm & Warnock, *supra* note ___, at 108-09.

¹⁸⁵ U.S. GAO, Great Lakes Initiative, EPA Needs to Better Ensure the Complete and Consistent Implementation of Water Quality Standards, GAO-05-829, at XX (2005), available at <http://www.gao.gov/assets/250/247244.pdf>. The 1990 amendments to the CWA require the EPA to publish guidance for the Great Lakes states on minimum standards, implementation procedures, and anti-degradation policies for protecting water quality.

¹⁸⁶ Pub. L. 101-596, § 1, 104 Stat. 3000 (1990).

policies have been hindered by inadequate data.¹⁸⁷ Even for priority pollutants, like dioxin and other bioaccumulative chemicals, sufficiently sensitive measurements have not been developed.¹⁸⁸

The GAO concluded that the GLI has limited potential to protect water quality for two primary reasons: it focuses primarily on point sources, and it condones flexible implementation procedures, like variances, that relieve dischargers from stringent water quality standards.¹⁸⁹ Indeed, “the GLI allows the repeated use of some of these flexibilities and does not set a time frame for facilities to meet the GLI water quality criteria.”¹⁹⁰ Moreover, the inability to reliably measure pollutant concentrations hinders the implementation of anti-degradation policies.¹⁹¹ The GAO’s report advised EPA to issue permitting strategies that provide for a more consistent approach among the states and to gather and track information that can be used to assess the progress of implementing the anti-degradation policy and its impact on reducing pollutant discharges and improving water quality.¹⁹²

If the well-funded, well-coordinated Great Lakes Initiative has made so little progress, it should be no surprise that anti-degradation policies in other regions are lagging behind as well.¹⁹³ As the River Network concluded in its report on the intermountain west, “[t]he power of anti-degradation is vastly underdeveloped.”¹⁹⁴

IV. A COMPARISON OF ANTI-DEGRADATION PROGRAMS AND PUBLIC LAND MANAGEMENT PROTECTION REGIMES

¹⁸⁷ See U.S. GAO, Great Lakes Initiative, *supra* note , at Introduction (“Attempts by EPA to assess GLI’s impact have been limited because of inadequate data or information that has not been gathered for determining progress on dischargers’ efforts to reduce pollutants.”).

¹⁸⁸ “Of the nine BCCs for which criteria have been established, only two—mercury and lindane—have EPA-approved methods that will measure below those criteria levels.” U.S. GAO, Statement of David Maurer, EPA and States Have Made Progress, But Much Remains to be Done if Water Quality Goals Are to be Achieved, GAO-08-312T, at 2 (2008), <http://www.gao.gov/assets/120/118778.pdf>.

¹⁸⁹ U.S. GAO, Great Lakes Initiative, *supra* note , at 3.

¹⁹⁰ U.S. GAO, Statement of David Maurer, *supra* note , at 3.

¹⁹¹ U.S. GAO, Great Lakes Initiative, *supra* note , at 12, 20. “For example, because chlordane has a water quality criterion of 0.25 nanograms per liter but can only be measured down to a level of 14 nanograms per liter, it cannot always be determined if the pollutant is exceeding the criterion.” U.S. GAO, Statement of David Maurer, *supra* note , at 3.

¹⁹² U.S. GAO, Great Lakes Initiative, *supra* note , at 35-36. A follow-up audit in 2008 concluded that accurate analytical methods and measurements are still lacking, and that the use of variances, mixing zones, and other “permit flexibilities” continues to hinder progress toward meeting the criteria. U.S. GAO, Statement of David Maurer, *supra* note , at 4, 7. For a summary of EPA’s response to the GAO’s critique, see *id.* at 9.

¹⁹³ Congress appropriated \$475 million for Great Lakes restoration in the 2010 Omnibus Appropriations Act, Pub. Law. No. 111-88. For details, see CRS, EPA Appropriations for FY 2011, 25-26, <http://www.nationalaglawcenter.org/assets/crs/R41149.pdf>. For analysis of the status of the nation’s waters more generally, see The H. John Heinz III Center for Science, Economics and the Environment, The State of the Nation’s Ecosystems 2008: Highlights, http://www.heinzcenter.org/Ecosystems_files/The%20State%20of%20the%20Nation%27s%20Ecosystems%202008.pdf (visited Feb. 3, 2012) (reporting on the continued degradation of U.S. water bodies and sediments by chemical contaminants and nutrients, especially from nonpoint sources).

¹⁹⁴ River Network, *supra* note , at 39.

Most federal public land management statutes include some sort of anti-degradation provision, ranging from outright prohibitions against impairment of the land and its natural resources to more lenient provisions aimed at protecting certain priority resources from destruction by incompatible uses. This part considers an array of preservation-oriented statutes governing wilderness areas, National Parks, Wildlife Refuges, and Wild and Scenic Rivers, as well as two key conservation-oriented statutes that provide for sustained yields on lands managed by the National Forest Service and BLM. These statutes may apply directly to waters covered by the existing CWA anti-degradation policy, especially Tier 3 ONRWs, many of which run through wilderness areas, parks, refuges, or other protected areas. Even when the land management statutes do not themselves apply to waters covered by the anti-degradation policy, they may serve as models for mechanisms to strengthen the protections of the aquatic environments that are or should be covered by the CWA's anti-degradation policy.

A. A Hierarchy of Protective Standards

1. The National Wilderness System

The Wilderness Act of 1964 is the nation's preeminent preservation statute.¹⁹⁵ Today, federally designated wilderness areas are found within National Forests, National Parks, Wildlife Refuges, and lands managed by the Bureau of Land Management. There are nearly 700 wilderness areas in forty-four states, covering 109 million acres of land.¹⁹⁶

The fundamental purpose of the Wilderness Act is to secure the present and future benefits of untrammeled wild lands for the public.¹⁹⁷ To accomplish this goal, the Act specifies that wilderness areas shall be managed "in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for . . . the preservation of their wilderness character. . . ."¹⁹⁸ It also directs the managing agencies to protect and manage wilderness areas "so as to preserve natural conditions."¹⁹⁹

In 1977, not long after the advent of the CWA's anti-degradation policy, Dean William Hines called anti-degradation "the pollution control analogue to wilderness protection in public lands management."²⁰⁰ In implementation, however, the Wilderness Act has proven far more protective than the CWA's anti-degradation policy.

¹⁹⁵ Sandra Zellmer, *Wilderness, Water, and Climate Change*, 41 ENVTL. L. XX, at *12 (forthcoming 2012); William Rodgers, *The Seven Statutory Wonders of U.S. Environmental Law: Origins and Morphology*, 27 LOYOLA L.A. L. REV. 1009-12 (2004).

¹⁹⁶ Russ W. Gorte, *Wilderness: Overview and Statistics*, Cong. Research Serv. Report No. RL31477 (2008). Excluding Alaska, wilderness areas comprise only two percent of the United States. *Id.*

¹⁹⁷ Michael McCloskey, *The Wilderness Act of 1964: Its Background and Meaning*, 45 OR. L. REV. 288, 309 (1966).

¹⁹⁸ 16 U.S.C. § 1131(a) (2006). For descriptions of "wilderness character," see Jerry F. Franklin & Gregory H. Aplet, *Wilderness Ecosystems*, in WILDERNESS MANAGEMENT: STEWARDSHIP AND PROTECTION OF RESOURCES AND VALUES 269-70 (John C. Hendee & Chad P. Dawson eds., 2002) [hereinafter WILDERNESS MANAGEMENT]; David N. Cole, *Ecological Impacts of Wilderness Recreation and Their Management*, in WILDERNESS MANAGEMENT, *supra*.

¹⁹⁹ 16 U.S.C. § 1131(c) (2006).

²⁰⁰ Hines, *supra* note , at 645. Hines added: "Because air and water are to an extent renewable resources, their degradation may not involve all of the problems of irreversibility that are raised in the destruction of other natural

To accomplish its preservation-oriented purposes, the Wilderness Act prohibits activities that would impair or otherwise detract from the wildness of wilderness areas.²⁰¹ Permanent roads as well as commercial activities are strictly forbidden.²⁰² With some exceptions, the Act also precludes motor vehicles, motorized equipment, mechanical transport, aircraft landings, structures, and installations.²⁰³

The first exception is found in section 4(c), which provides:

[E]xcept as necessary to meet minimum requirements for the administration of the area for the purpose of this [Act] (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.²⁰⁴

Courts have construed this exception relatively narrowly.²⁰⁵ In a case involving the Kofa Wilderness in Arizona, the Ninth Circuit enjoined the construction and maintenance of tanks to augment water supplies for bighorn sheep. The court found that, although sheep conservation was undoubtedly a legitimate management objective, the tanks were installations that unlawfully trammelled the wilderness. Although such installations might be useful to sheep threatened by drought and high temperatures, the FWS had failed to establish that they were a necessary minimum requirement for wilderness administration.²⁰⁶ The Eleventh Circuit reached a similar conclusion in *Wilderness Watch v. Mainella*, where it enjoined the Park Service's practice of transporting tourists in a passenger van across the Cumberland Island Wilderness in order to provide access to historical structures.²⁰⁷ It rejected the Park Service's argument that such services were "necessary" just because they made access more convenient and had "no net

environments. Therefore, it might be expected that the policy would be applied most stringently when the threatened air and water resources either themselves are subject to irreversible damage or are inextricably related to other natural systems subject to such harm." *Id.* at 652-53.

²⁰¹ 16 U.S.C. § 1131(b) (2006). See *Californians for Alternatives to Toxics v. U.S. Fish and Wildlife Serv.*, 814 F. Supp. 2d 992, 1014-17 (E.D. Cal. 2011) (agencies that manage wilderness are "responsible for preserving . . . wilderness character"; "the Act is intended to enshrine the long-term preservation of wilderness areas as the ultimate goal") (citing *Wilderness Watch, Inc. v. U.S. Fish and Wildlife Serv.*, 629 F.3d 1024, 1033 (9th Cir. 2010)). The principal author of the Wilderness Act, Howard Zahniser, viewed the term "wild" as synonymous with "untrammelled": "not subject to human controls and manipulations that hamper the free play of natural forces." Zellmer, *supra* note , at *10.

²⁰² 16 U.S.C. § 1133(c) (2006). See *Wilderness Soc'y v. U.S. Fish & Wildlife Serv.*, 353 F.3d 1051 (9th Cir. 2003), *as amended on reh'g en banc in part*, 360 F.3d 1374 (9th Cir. 2004) (enjoining commercial salmon enhancement project); *Barnes v. Babbitt*, 329 F. Supp. 2d 1141 (D. Ariz. 2004) (invalidating a plan that allowed repairs and maintenance of access routes as unlawful road construction).

²⁰³ 16 U.S.C. § 1133(c) (2006).

²⁰⁴ *Id.* (emphasis added).

²⁰⁵ See Peter A. Appel, *Wilderness and the Courts*, 29 STAN. ENVTL. L.J. 62 (2010) [hereinafter Appel, *Wilderness and the Courts*]; Peter A. Appel, *Wilderness, the Courts, and the Effect of Politics on Judicial Decisionmaking*, 35 HARV. ENVTL. L. REV. 275 (2011) (finding that courts are more likely to uphold wilderness-protective decisions than they are wilderness-impacting decisions).

²⁰⁶ *Wilderness Watch, Inc. v. U.S. Fish and Wildlife Serv.*, 629 F.3d 1024, 1033-34 (9th Cir. 2010) (citing 16 U.S.C. § 1133(c)).

²⁰⁷ 375 F.3d 1085 (11th Cir. 2004).

increase” in impacts to the land.²⁰⁸ Likewise, in *Californians for Alternatives to Toxics v. U.S. Fish and Wildlife Service*, a federal district court rejected the Forest Service’s argument that the application of rotenone was a necessary step toward the recovery of the Paiute Cutthroat Trout.²⁰⁹ It held that the agency neglected the well-being of other endemic species and unlawfully concluded that rotenone applications were necessary to preserve wilderness character.²¹⁰

The second exception for otherwise non-conforming activities in wilderness areas, section 4(d), authorizes “such measures . . . as may be necessary in the control of fire, insects, and diseases.”²¹¹ The only published opinions directly on point involve the Forest Service’s efforts to control the southern pine beetle. In the first of two related cases, the court remanded a proposal for extensive chemical spraying and logging as “wholly antithetical to the wilderness policy established by Congress,” and “hardly consonant with preservation and protection of these areas in their natural state.”²¹² The court explained that “[o]nly a *clear necessity* for upsetting the equilibrium of the ecology could justify this highly injurious, semi-experimental venture of limited effectiveness.”²¹³ In the second case, the court upheld a pared down version of the proposal that used “spot control” logging to combat infestations.²¹⁴ It approved measures that “fall short of full effectiveness” so long as they are “reasonably designed” to limit infestation.²¹⁵ It was careful to note, however, that the agency had significantly scaled back its plan and had adopted several preservation-oriented safeguards.²¹⁶

The Wilderness Act has been a significant factor in preventing the degradation of federally designated wilderness areas.²¹⁷ Of course, there is room for criticism. Some commentators argue that, “managers have extensively manipulated wilderness to achieve desired ends.”²¹⁸ But of all the federal land management statutes, the Wilderness Act provides sufficiently detailed standards to hold officials accountable and to enable concerned citizens to obtain relief through judicial review. As Professor Peter Appel found, based on an empirical analysis of wilderness litigation in the federal courts:

²⁰⁸ *Id.*

²⁰⁹ 814 F. Supp. 2d 992 (E.D. Cal. 2011). Rotenone is a powerful poison that kills everything with gills.

²¹⁰ *Id.* However, where the agency makes extensive factual findings that otherwise incompatible activities, such as motorized access, are necessary to preserve wilderness character, for example, by aiding “the restoration of a specific aspect of the wilderness character . . . that had earlier been destroyed by man,” its decision may be upheld. *Wolf Recovery Found. v. U.S. Forest Serv.*, 692 F. Supp. 2d 1264, 1268 (D. Idaho 2010).

²¹¹ 16 U.S.C. § 1133(d)(1) (2006).

²¹² *Sierra Club v. Lyng*, 662 F. Supp. 40, 42 (D.D.C. 1987).

²¹³ *Id.* at 43 (emphasis added).

²¹⁴ *Sierra Club v. Lyng*, 663 F. Supp. 556 (D.D.C. 1987).

²¹⁵ *Id.* at 560.

²¹⁶ *Id.* at 557-59. The Forest Service assured the court that the activities would not “unnecessarily sacrifice” wilderness values and were not aimed at promoting commercial timber harvest. *Id.* at 560. The court had found that the primary purpose of the agency’s previous plans for a large-scale eradication program were commercial in nature. *Sierra Club v. Lyng*, 662 F. Supp. 40 (D.D.C. 1987).

²¹⁷ See Appel, *Wilderness and the Courts*, *supra* note ____, at 129.

²¹⁸ Gordon Steinhoff, *Interpreting The Wilderness Act of 1964*, 17 MO. ENV. L. P. R. 492, 501 (2010). See also Gordon Steinhoff, *The Wilderness Act, Prohibited Uses, and Exceptions: How Much Manipulation of Wilderness is Too Much?*, 51 NAT. RESOURCES J. 287, 294 (2011).

When agencies defend decisions that arguably threaten wilderness protection against challenges by environmental organizations, the agencies win only about 44% of the time. When agencies defend decisions against challenges that they are protecting wilderness too stringently, they prevail in approximately 88% of their cases. This two-fold difference in success rates depending on the type of challenge indicates a significant difference in how courts approach wilderness decisions.²¹⁹

Appel described this phenomenon “as a one-way judicial ratchet in favor of wilderness protection.”²²⁰ His study demonstrates that the courts are more willing to give heightened protection to wilderness areas than to other areas covered by federal law.

Although the Wilderness Act is not a complete analogue to the CWA, given its distinctive preservation-oriented edict for lands that are owned solely by the federal government, it can provide a few important lessons for improving the anti-degradation program. The statutory prohibition against impairment, coupled with the directive to preserve wilderness character and natural conditions, gives agencies, courts, and citizens substantial powers to prevent degradation. In addition, courts’ willingness to require “a *clear* necessity,” not just convenience, to invoke exceptions to the Act’s preservation provisions could serve as a useful guidepost for implementation of the necessity determination for degradation of Tier II waters.²²¹

2. The National Parks

One of the earliest expressions of an anti-degradation requirement in federal law is found in the National Park Service Organic Act of 1916. The Act requires the Park Service to manage the national parks “to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner . . . as will leave them unimpaired for the enjoyment of future generations.”²²²

Over the years, the system has been wildly popular with the American public, and it has grown to include 397 national parks located in forty-nine states and several U.S. territories.²²³ But the dual mandate of the Organic Act—to conserve park resources from impairment and also to provide for the enjoyment of them—poses a significant challenge for the Park Service, and it has not always prevented degradation of park resources. Professor Robert Keiter explains:

[T]he system has evolved over the years in a haphazard fashion, driven more by hard-headed political calculations and attractive scenic features than by a sweeping commitment to preserving diverse ecosystems or key biological specimens. In fact, even with their protective status, the existing national parks are not secure from outside

²¹⁹ Appel, *Wilderness in the Courts*, *supra* note , at 66-67.

²²⁰ *Id.*

²²¹ See *supra* notes ___-___ (describing *Wilderness Watch v. Mainella*, 375 F.3d 1085 (11th Cir. 2004); *Sierra Club v. Lyng*, 662 F. Supp. 40, 42 (D.D.C. 1987)).

²²² 16 U.S.C. § 1 (2006) (emphasis added).

²²³ National Park Service: About Us, <http://www.nps.gov/aboutus/index.htm> (updated Nov. 2, 2011).

development pressures, which have disrupted wildlife travel corridors, fouled park waters, polluted regional air sheds, and altered surrounding landscapes.²²⁴

In 1978, Congress passed an amendment to the Organic Act, which specifies that “[t]he authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.”²²⁵

The Park Service construes the “no derogation” standard of the 1978 amendment as synonymous with the non-impairment standard of the 1916 Organic Act.²²⁶ The courts have concurred with this interpretation.²²⁷ Thus, in making decisions, the Park Service must “examine the duration, severity, and magnitude of the impact; the resources and values affected; and direct, indirect, and cumulative effects of the action.”²²⁸ If impairment would result, “the action may not be approved.”²²⁹

The non-impairment requirement goes hand in hand with the Act’s broader conservation mandate.²³⁰ The Park Service states that the conservation mandate “applies all the time, with respect to all park resources and values, even when there is no risk that any park resources or values may be impaired.”²³¹ The conservation mandate is further construed as requiring protection of “[t]he parks’ scenery ... wildlife, and the processes and conditions that

²²⁴ Robert Keiter, *The National Park System: Visions For Tomorrow*, 50 NAT. RESOURCES J. 71, 72-73 (2010).

²²⁵ Pub. L. No. 95-250, § 101(b), 92 Stat. 166 (codified at 16 U.S.C. § 1a-1) (emphasis added). This amendment unified the various natural, historic, and recreational areas of the system so that they would “derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States. . .” *Id.*

²²⁶ NPS Management Policies § 1.4.2 (2006); 66 Fed. Reg. 56848, 56850 (Nov. 13, 2001).

²²⁷ See, e.g., *Sierra Club N. Star Chapter v. LaHood*, 693 F. Supp. 2d 958, 965 (D. Minn. 2010); *Southern Utah Wilderness Alliance v. National Park Serv.*, 387 F. Supp. 2d 1178, 1192 (D. Utah 2005); *U.S. v. Garfield County*, 122 F. Supp. 2d 1201, 1244, 1249 (D. Utah 2000). See also *Sierra Club v. Mainella*, 459 F. Supp. 2d 76, 102 (D.D.C. 2006) (holding that decisions granting applications for exemptions from directional drilling regulations were arbitrary and capricious because the Park Service failed to explain its conclusions that impacts from nearby surface drilling activities, such as air pollution, noise, light, water pollution, fire, or spills, would not impair park resources and values), *appeal dismissed*, 2007 WL 1125716 (D.C. Cir. Mar 30, 2007).

²²⁸ 66 Fed. Reg. 56848, 56850.

²²⁹ NPS Management Policies § 1.4.7 (2006). See *Terbush v. U.S.*, 516 F.3d 1125, 1132 (9th Cir. 2008) (“Whether an individual action is or is not an ‘impairment’ is a management determination. In reaching it, the manager should consider such factors as the spatial and temporal extent of the impacts, the resources being impacted and their ability to adjust those impacts, the relation of the impacted resources to other park resources, and the cumulative as well as the individual effects.”) (quoting NPS Management Policies). In *Terbush*, the court rejected a tort claim brought by the family of a deceased mountain climber under the Federal Tort Claims Act, 28 U.S.C. § 2680(a) (2006), which shields federal agencies from liability for discretionary activities. It concluded that the Park Service had considerable discretion, grounded in the Act’s broad mandate to balance conservation with access and safety.

²³⁰ 16 U.S.C. § 1 (2006).

²³¹ NPS Policies § 1.4.3 (emphasis added). However, this provision goes on to say “the laws do give the Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values.” *Id.*

sustain them ... including the ecological, biological, and physical processes that created the park ... natural visibility ... water and air resources ...and native plants and animals.”²³²

Where uncertainties arise, the conservation concept acts as a precautionary principle of sorts. The Park Service recognizes that the “threshold at which impairment occurs is not always readily apparent,”²³³ so it has committed itself “to applying a standard that offers greater assurance that impairment will not occur . . . by avoiding impacts that it determines to be unacceptable.”²³⁴ It defines “unacceptable impacts” as those that would individually or cumulatively:

- be inconsistent with a park’s purposes or values, or
- impede the attainment of a park’s desired future conditions for natural and cultural resources as identified through the park’s planning process, or
- create an unsafe or unhealthful environment for visitors or employees, or
- diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or
- unreasonably interfere with . . . the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park. . . .²³⁵

The courts have generally agreed that “when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant.”²³⁶ They tend to uphold the Park Service’s decisions to restrict access and usage in order to ensure against impairment of resources and thereby promote conservation.²³⁷ In one case, a court even found an affirmative duty to assert federal reserved water rights for a unit of the National Park System—a canyon—that required instream flows to maintain its ecological integrity and natural soundscape.²³⁸

²³² *Id.* § 1.4.6.

²³³ *Id.* § 1.4.7.1 .

²³⁴ *Id.*

²³⁵ *Id.*

²³⁶ See *Fund for Animals v. Norton*, 294 F. Supp. 2d 92, 103 (D.D.C. 2003) (holding that NPS's adoption of final rule allowing 950 snowmobiles to enter Yellowstone and Teton National Parks each day was arbitrary and capricious), *motion for relief from judgment granted*, 323 F. Supp. 2d 7 (D.D.C. 2004), *motion to amend denied*, 326 F. Supp. 2d 124 (D.D.C. 2004), *appeal dismissed*, 2005 WL 375622 (D.C. Cir. Feb 16, 2005).

²³⁷ See *Bicycle Trails Council of Marin v. Babbitt*, 82 F.3d 1445, 1454 (9th Cir. 1996); *Michigan United Conservation Clubs v. Lujan*, 949 F.2d 202 (6th Cir. 1991); *Organized Fishermen of Florida v. Watt*, 590 F. Supp. 805 (S.D. Fla. 1984), *aff'd*, 775 F.2d 1544 (11th Cir. 1985). See also Keiter, *supra* note ____, at 87 (“When confronted with challenges to these recreational limitations, federal courts have consistently endorsed the Park Service's ‘resource protection-first’ interpretation of its legal responsibilities.”).

²³⁸ *High Country Citizens’ Alliance v. Norton*, 448 F. Supp. 2d 1235, 1245-46 (D. Colo. 2006) (stating that the Organic Act and the Wilderness Act imposed a legal obligation on the Service to assert reserved water rights because “the canyon was entitled to a quantity of water necessary to conserve and maintain in an unimpaired condition the scenic, aesthetic, natural, and historic objects of the monument, as well as the wildlife in the

However, the Organic Act’s dual mandate—to conserve resources from impairment while allowing public enjoyment—leaves the Park Service with discretion to balance the need for public access against the need to prevent degradation of resources. As the Ninth Circuit observed:

[T]he so-called ‘impairment review’ . . . is explicitly recognized as involving a decision by the superintendent that calls for reconciling the ‘inevitabl[e] . . . tension between conservation of resources on the one hand and public enjoyment on the other.’ This reconciliation calls for judgment on the part of the NPS. . . .²³⁹

The court explained that the discretionary language of the NPS’s Management Policy “implicates the NPS’s broader mandate to balance access with conservation.”²⁴⁰ Some commentators have argued that this dualism results in a type of immunity when Park Service decisions are challenged in court, compelling courts to uphold the agency’s decisions whether they tip in favor of recreation or conservation, even if the two conflict.²⁴¹ Nonetheless, the Park Service’s relatively stringent definitions of “impairment” and “unacceptable impacts” could serve as useful guideposts in defining “anti-degradation” in the CWA context.

3. Wild and Scenic Rivers

The Wild and Scenic Rivers Act (WSRA) of 1968 creates a nationwide system of wild, scenic, and recreational rivers.²⁴² There are over 200 rivers, encompassing thousands of miles, in the Wild and Scenic Rivers System.²⁴³

In the WSRA, Congress declared that “the established national policy of dam and other construction . . . needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.”²⁴⁴ Thus, designated rivers must be free-flowing and must also have “outstandingly remarkable” values (ORVs).²⁴⁵

monument, in order that the monument might provide a source of recreation and enjoyment for all generations of citizens of the United States”).

²³⁹ *Terbush v. U.S.*, 516 F.3d 1125, 1132 (9th Cir. 2008).

²⁴⁰ *Terbush*, 516 F.3d at 1132.

²⁴¹ See Denise Antolini, *National Park Law in the U.S.: Conservation, Conflict, and Centennial Values*, 33 WM. & MARY ENVTL. L. & POL’Y REV. 851, 894-95 (2009) (citing *Int’l Snowmobile Mfrs. Ass’n v. Norton*, 340 F. Supp. 2d 1249 (D. Wyo. 2004), which remanded a decision to restrict snowmobiling; *River Runners for Wilderness v. Martin*, No. 06-894, 2007 WL 4200677 (D. Ariz. 2007), *aff’d*, 593 F.3d 1064 (9th Cir. 2010), which upheld a plan to provide extensive access to commercial boaters on the Colorado River in the Grand Canyon; and *Davis v. Latschar*, 202 F.3d 349 (D.C. Cir. 2000), upholding a decision to conduct a controlled deer hunt in Gettysburg National Military Park).

²⁴² 16 U.S.C. §§ 1271 *et seq.* (2006). See Brian E. Gray, *No Holier Temples: Protecting the National Parks Through Wild and Scenic River Designation*, 58 U. COLO. L. REV. 551, 552-58 (1988).

²⁴³ National Wild and Scenic Rivers, <http://www.rivers.gov/>.

²⁴⁴ 16 U.S.C. § 1271 (2006) (emphasis added).

²⁴⁵ *Id.* §§ 1273(b), 1276(d).

Upon designation, rivers are classified as wild, scenic, or recreational. Wild rivers are “free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.”²⁴⁶ Scenic and recreational rivers are also generally free of impoundments, but they are more accessible by road and may have some development along their shorelines.²⁴⁷

Wild river segments, which like wilderness areas are “essentially primitive,” are highly protected.²⁴⁸ Rivers classified as recreational or scenic are governed by more lenient management standards.²⁴⁹ Regardless of classification, dams are prohibited,²⁵⁰ and designated rivers must be administered in a manner to “protect and enhance” their ORVs.²⁵¹ Moreover, no federal department or agency may undertake or assist in any “water resources project” that would have a “direct and adverse effect” on a river’s ORVs,²⁵² and deleterious projects may be enjoined.²⁵³ In a series of Oregon cases decided in the late 1990s, courts found that the BLM’s management of grazing practices violated the WSRA. In *Oregon Natural Desert Association v. Green*, the court remanded the BLM’s management plan for failure to consider whether grazing would “protect and enhance” vegetative ORVs.²⁵⁴ Grazing was subsequently enjoined when the BLM’s plan showed the negative impacts of grazing on scenic and recreational values.²⁵⁵

Although the Oregon cases indicate a willingness to engage in probing judicial review of activities with undeniably detrimental effects on ORVs, courts have been inconsistent in reviewing challenges to the Comprehensive Management Plans (CMPs) for designated river

²⁴⁶ *Id.* § 1273(b)(1). Like wilderness areas, wild rivers “represent vestiges of primitive America.” *Id.*

²⁴⁷ *Id.* § 1273(b)(2)-(b)(3). See *Sierra Club v. Pena*, 1 F. Supp. 2d 971 (D. Minn. 1998); *Sierra Club N. Star Chapter v. LaHood*, 693 F. Supp. 2d 958 (D. Minn. 2010).

²⁴⁸ 16 U.S.C. § 1273(b)(1) (2006). See *Wilderness Watch v. U.S. Forest Serv.*, 143 F. Supp. 2d 1186 (D. Mont. 2000) (hunting and fishing lodges not allowed on wild river segments that should “represent vestiges of primitive America”); *Oregon Natural Desert Ass’n v. Singleton*, 75 F. Supp. 2d 1139 (D. Or. 1999) (grazing in wild river corridor permanently enjoined). But see *Riverhawks v. Zepeda*, 228 F. Supp. 2d 1173, 1183 (D. Or. 2002) (finding that recreational activities may interfere with aspects of a wild river, but deferring to the agency’s balance of values that allowed motorboats continued access to the river).

²⁴⁹ 16 U.S.C. § 1273(b)(2)-(3) (2006). See *Friends of Yosemite Valley v. Norton*, 348 F.3d 789 (9th Cir. 2003) (remanding the management plan for the Merced River for failure to protect and enhance the river’s geological, biological, and cultural ORVs and for failing to address impacts of visitor use); *Sierra Club v. U.S.*, 23 F. Supp. 2d 1132, 1140 (N.D. Cal. 1998) (refusing to enjoin the Park Service from re-building a lodge and re-routing a road near scenic and recreational segments of the Merced River, and finding that the project would not impinge on ORVs but instead would improve accessibility and environmental conditions by moving buildings further from the river).

²⁵⁰ 16 U.S.C. § 1278(a) (2006). See *Swanson Mining Corp. v. FERC*, 790 F.2d 96, 102-05 (D.C. Cir. 1986) (WSRA prevents FERC from licensing hydroelectric projects on designated rivers even if FERC believes there would be no adverse effects to ORVs).

²⁵¹ 16 U.S.C. § 1271(a) (2006).

²⁵² *Id.* § 1278(b). Such projects include water diversions, transmission lines, bridges, piers, levees, and boat ramps. See 36 C.F.R. § 297.3; *Sierra Club v. Pena*, 1 F. Supp. 2d 971, 980-91 (D. Minn. 1998) (a bridge that would result in changes to a river’s free-flowing characteristics was a “water resources project”).

²⁵³ *Newton County Wildlife Ass’n v. Rogers*, 141 F.3d 803 (9th Cir. 1998); *Sierra Club v. Pena*, 1 F. Supp. 2d at 980-91.

²⁵⁴ 953 F. Supp. 1133 (D. Or. 1997).

²⁵⁵ *Oregon Natural Desert Ass’n v. Singleton*, 75 F. Supp. 2d 1139 (D. Or. 1999); *Oregon Natural Desert Ass’n v. Singleton*, 47 F. Supp. 2d 1182 (D. Or. 1998). But see *National Wildlife Fed’n v. Cosgriffe*, 21 F. Supp. 2d 1211 (D. Or. 1998) (plaintiff failed to show facts that linked grazing directly to the degradation of ORVs).

segments.²⁵⁶ In *Friends of Yosemite Valley v. Kempthorne*, the court found that the lack of a comprehensive CMP warranted enjoining nine redevelopment projects in a designated river corridor.²⁵⁷ Conversely, in *Center for Biological Diversity v. Lueckel*, the court dismissed a complaint for lack of standing where the plaintiffs failed to show a causal link between the authorization of detrimental logging activities and the absence of a CMP.²⁵⁸ According to the court, there was “no evidence” that CMPs “typically provide for greater restrictions” than other types of federal land management plans.²⁵⁹

Like the anti-degradation program, WSRA management restrictions seem to be underutilized tools.²⁶⁰ As litigants have found, broad-brush challenges to a management agency’s discretion to balance competing uses typically fail, but challenges that identify discrete, harmful activities that violate specific obligations to protect specific ORVs in a particular river segment may gain more traction.²⁶¹

4. National Wildlife Refuges

The National Wildlife Refuge System Improvement Act of 1997 (NWRISA) sets forth a clear conservation mission for the System and the 545 national wildlife refuges included within it:

The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.²⁶²

²⁵⁶ See 16 U.S.C. § 1274(d) (2006) (requiring CMPs within three years of designation).

²⁵⁷ 520 F.3d 1024, 1037 (9th Cir. 2008). See also *Sierra Club v. Babbitt*, 69 F. Supp. 2d 1202, 1252 (E.D. Cal. 1999) (“[W]here . . . an agency has egregiously violated a procedural planning requirement which is closely linked to the ability of the agency to adequately assess the impacts of future plans and actions on the river’s ORV’s, that procedural violation lends great weight to assertions that the substantive requirement to preserve and enhance the values for which river was included in the wild and scenic river system has been violated.”).

²⁵⁸ 417 F.3d 532 (6th Cir. 2005). See also *In re Montana Wilderness Assn.*, 807 F. Supp. 2d 990, 1000 (D. Mont. 2011) (rejecting argument that a plan’s purported failure to address motorized uses and user capacities violated the WSRA when the BLM had balanced competing values of solitude and recreation by imposing road closures and seasonal restrictions while reaffirming long-standing uses).

²⁵⁹ 471 F.3d at 540. The court found no evidence that a CRP would provide greater protection than the existing forest plan, which stated that designated river corridors “will be managed to protect and enhance the values for which the river was designated.” *Id.* at 540. Indeed, the WSRA provides that, in cases of conflict between the WSRA and other land management statutes, “the more restrictive provisions shall apply.” 16 U.S.C. § 1281(b) & (c) (2006).

²⁶⁰ See Murray Feldman, William McLaughlin, & Jennifer Hill, *Learning to Manage our Wild and Scenic River System*, 20-Fall NAT. RES. & ENV’T 10, 70 (2005). (although the WSRA “provides a unique blend of conservation, development, and use for its river segment components . . . the managing agencies . . . are finding it difficult to give priority to wild and scenic rivers in these times of reduced budgets for resource management activities”).

²⁶¹ Feldman, *supra* note , at 70.

²⁶² *Id.* § 668dd(a) (emphasis added). See Robert L. Fischman, *From Words To Action: The Impact and Legal Status of the 2006 National Wildlife Refuge System Management Policies*, 26 STAN. ENVTL. L.J. 77, 78 (2007) (describing the “ninety-six million acre network of reserves and easements dedicated to nature protection” within the System as “the nation’s most valuable asset for ecological conservation”).

Thus, conservation is the first priority for wildlife refuges.²⁶³ The Act defines conservation as “to *sustain* and, where appropriate, *restore and enhance*, healthy populations of fish, wildlife, and plants.”²⁶⁴ In addition, it directs the Fish and Wildlife Service (FWS) to administer the System to:

(A) provide for the conservation of fish, wildlife, and plants, and their habitats within the System; [and]

(B) ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans. . . .²⁶⁵

According to Professor Robert Fischman, “One of the most noteworthy aspects of the 1997 law is the relatively rich detail of the substantive management criteria, compared to previous federal organic statutes.”²⁶⁶ To achieve the conservation goals of the System, the Act allows only “compatible uses” that “will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge.”²⁶⁷ FWS regulations specify that the FWS “will not initiate or permit a new use of a national wildlife refuge or expand, renew, or extend an existing use of a national wildlife refuge, unless the Refuge Manager has determined that the use is a compatible use.”²⁶⁸ When any existing use is deemed incompatible, the FWS “will expeditiously terminate or modify the use to make it compatible.”²⁶⁹

Economic uses of refuge resources—livestock grazing, mineral development, and other uses conducted for a profit—must satisfy an additional requirement.²⁷⁰ The FWS “may only

²⁶³ 3 GEORGE CAMERON COGGINS & ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW § 24:5 (2d ed. 2007) (citing 16 U.S.C.A. § 668dd(a)(2)). See 603 Fish and Wildlife Manual (FWM) 1.4(a), available at <http://www.fws.gov/policy/manuals/> (“Refuges are first and foremost national treasures for the conservation of wildlife.” Conservation will be achieved “[t]hrough careful planning, consistent Refuge Systemwide application of regulations and policies, diligent monitoring of the impacts of uses on wildlife resources, and preventing or eliminating uses not appropriate to the Refuge System. . .”).

²⁶⁴ 16 U.S.C.A. § 668ee(4) (2006) (emphasis added).

²⁶⁵ *Id.* § 668dd(a). An executive order issued by President Clinton characterizes the conservation duty as a “trustee and stewardship” responsibility: “Fish and wildlife will not prosper without high-quality habitat, and without fish and wildlife, traditional uses of refuges cannot be sustained. The Refuge System will continue to *conserve and enhance the quality and diversity* of fish and wildlife habitat within refuges.” Exec. Order No. 12996, §§ (2)(b), (3)(e), 61 Fed. Reg. 13647 (1996) (emphasis added).

²⁶⁶ Fischman, *From Words To Action*, *supra* note , at 111. See also Robert L. Fischman, *Beyond Trust Species: The Conservation Potential Of The National Wildlife Refuge System In The Wake Of Climate Change*, 51 NAT. RESOURCES J. 1 (2011); Robert L. Fischman, *The Significance of National Wildlife Refuges in the Development of U.S. Conservation Policy*, 21 J. LAND USE & ENVTL. L. 1 (2005); Robert L. Fischman, *The National Wildlife Refuge System and the Hallmarks of Modern Organic Legislation*, 29 ECOLOGY L.Q. 457 (2002).

²⁶⁷ 16 U.S.C.A. § 668ee(1) (2006).

²⁶⁸ 50 C.F.R. § 26.41.

²⁶⁹ 50 C.F.R. § 26.41(d).

²⁷⁰ 50 C.F.R. § 29.1. The FWS’s manual for wildlife refuges defines economic use as “[a]ny activity involving the use of a refuge or its resources for a profit.” 5 FWM § 17.6(D). In a separate FWS policy, the term “refuge management economic activity” is defined as “[a] refuge management activity on a national wildlife refuge that results in generation of a commodity which is or can be sold for income or revenue or traded for goods or services.” 603 FWM § 2.6(N). See *Delaware Audubon Soc’y, Inc. v. Salazar*, 2011 WL 4368512, *12 (D. Del. 2011) (finding

authorize public or private economic use of the natural resources of any national wildlife refuge . . . where the use contributes to the achievement of the national wildlife refuge purposes or the National Wildlife Refuge System mission.”²⁷¹

Under the FWS regulations, compatibility determinations are typically made as part of the comprehensive conservation plan (CCP) for each refuge,²⁷² but “a refuge manager always may re-evaluate the compatibility of a use at any time,”²⁷³ particularly “when conditions under which the use is permitted change significantly, or if there is significant new information regarding the effects of the use. . . .”²⁷⁴ The FWS Manual emphasizes that the first goal of a CCP is “[t]o ensure that wildlife comes first in the National Wildlife Refuge System.”²⁷⁵

Although recreational impacts could undercut the conservation mission, the statute identifies wildlife-dependent recreation as a preferred (compatible) use of the Refuge System.²⁷⁶ As a result, in the past, “excessive weight [was] given to hunting and fishing.”²⁷⁷ However, according to Professor Fischman:

[T]he text [of the new FWS Policy] . . . explicitly include[s] two of the substantive management criteria (compatibility; and biological integrity, diversity, and environmental health) as evaluative criteria for deciding whether to allow wildlife-dependent recreation programs. . . . In the end, the Policy manages to make advancing the system mission of conservation, supported by the integrity-diversity-health mandate, . . . a higher priority

that a dune restoration project was not an economic use, where sand would not be sold but would be used to restore beaches and dunes).

²⁷¹ 50 C.F.R. § 29.1. See *Delaware Audubon Soc., Inc. v. Secretary*, 612 F. Supp. 2d 442 (D. Del. 2009) (enjoining decision to allow cooperative farming and farming with genetically modified crops in a refuge without first preparing a written compatibility determination); *Stevens County v. U.S. Dep’t of Interior*, 507 F. Supp. 2d 1127, 1133-35 (E.D. Wash. 2007) (FWS’s determination that livestock grazing was not a compatible use was entitled to deference; although some studies showed the grazing could have a positive impact on habitat, other studies demonstrated the negative effects of grazing on migratory bird populations and riparian habitats, and site-specific studies demonstrated that grazing materially interfered with wildlife management on the refuge). See also *Wilderness Soc’y v. Babbitt*, 5 F.3d 383 (9th Cir. 1993) (remanding FWS’s decision to renew grazing permits where the FWS failed to consider the incompatibility of grazing with refuge purposes, even in the face of report of the refuge manager that current grazing practices were harming fish and wildlife habitats).

²⁷² See 50 C.F.R. § 26.41 (“We will usually complete compatibility determinations as part of the comprehensive conservation plan or step-down management plan process for individual uses, specific use programs, or groups of related uses described in the plan”).

²⁷³ *Id.* § 25.21(f). See *id.* § 25.21(b) (“We may open a national wildlife refuge for any refuge use, or expand, renew, or extend an existing refuge use only after the Refuge Manager determines that it is a compatible use and not inconsistent with any applicable law”).

²⁷⁴ 50 C.F.R. § 25.21(f).

²⁷⁵ 602 FWM 3.3.A (2000), at <http://www.fws.gov/policy/602fw3.html>. CCPs are required by 16 U.S.C. 668dd(e)(E)(2) (2006) and 50 C.F.R. § 25.12..

²⁷⁶ See 16 U.S.C. § 668dd(3)(a)(iii) (2006) (“Wildlife-dependent recreational uses may be authorized on a refuge when they are compatible and not inconsistent with public safety. Except for consideration of consistency with State laws and regulations as provided for in subsection (m) of this section, no other determinations or findings are required . . . for wildlife-dependent recreation to occur.”). Wildlife-dependent uses include hunting, fishing, wildlife observation and photography, and environmental education and interpretation. *Id.* § 668ee(1).

²⁷⁷ Fischman, *From Words To Action*, *supra* note , at 107-108. See 16 U.S.C. § 668dd(a)(4)(D) (2006).

than promoting wildlife-dependent recreation. Anything short of that would have run afoul of the legislation.²⁷⁸

A potential deficiency in the statutory scheme is the failure to apply the compatibility requirement to the FWS's own management actions. In *Fund for Animals v. Clark*,²⁷⁹ the district court held that the FWS had no statutory duty to conduct a compatibility analysis of its feeding programs for bison and elk in the National Elk Refuge, because activities conducted by refuge managers were not refuge "uses" within the meaning of the Act.²⁸⁰ The court acknowledged that the statutory list of "uses" to be governed by the compatibility requirement (recreation, public access, easements, roads, and the like) "are not meant to be all inclusive,"²⁸¹ but those uses "encompass a common ingredient . . . they are all 'uses' meant to be performed by third parties or the public."²⁸² It bolstered this conclusion by reference to § 668dd(c), which it construed as "specifically exempt[ing] from the compatibility requirement actions taken by 'persons authorized to manage' the refuge area."²⁸³ The FWS has since adopted a regulation defining "refuse use" as use "by the public or other non-National Wildlife Refuge System entity."²⁸⁴

Fischman concludes that the stewardship responsibilities embedded in the statutory conservation mandate should guide decisionmakers to prevent impairment of Refuge resources.²⁸⁵ Courts have been willing to uphold FWS decisions to limit access to protect refuge resources,²⁸⁶ but they have been equally inclined to uphold FWS decisions to allow use.²⁸⁷ Thus, discretion can cut both ways. Yet the NWRSA's directive to "ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of

²⁷⁸ Fischman, *From Words To Action*, *supra* note , at 111-12 (citing FWM, *supra* note ___, pt. 605 § 1.13(B), § 1.8(B), (D)(3)). See FWS, Final Appropriate Refuge Uses Policy, available at <http://policy.fws.gov/ser600.html> [PAREN].

²⁷⁹ *Fund For Animals v. Clark*, 27 F. Supp. 2d 8 (D.D.C. 1998).

²⁸⁰ *Id.* at 12.

²⁸¹ *Id.*

²⁸² *Id.* at 11 (citing 16 U.S.C. § 6688dd(1)(A)-(B)). A district court in Delaware found that a FWS dune restoration project was within the agency's "sound professional judgment" and upheld the FWS's compatibility determination, without analyzing whether the FWS was statutorily required to meet the compatibility requirement. *Delaware Audubon Soc'y v. Salazar*, 2011 WL 4368512, *11-13 (D. Del. 2011).

²⁸³ *Fund for Animals v. Clark*, 27 F. Supp. 2d at 11 (citing 16 U.S.C. § 6688dd(c)). Subsection 668dd(c) sets forth the general prohibitions against any persons disturbing or possessing "any real or personal property of the United States, including natural growth, in any area of the System," or taking or possessing any wild animals within refuges, "unless such activities are performed by persons authorized to manage such area, or unless such activities are permitted . . . [as compatible uses] under subsection (d). . . ."

²⁸⁴ See 50 C.F.R. § 25.12(a).

²⁸⁵ Fischman, *From Words To Action*, *supra* note , at 111.

²⁸⁶ See *Niobrara River Ranch, L.L.C. v. Huber*, 277 F. Supp. 2d 1020 (D. Neb. 2003), *aff'd*, 373 F.3d 881 (8th Cir. 2004) (affirming FWS's decision to limit recreational rafting and canoeing in a refuge).

²⁸⁷ See *Wilderness Soc'y v. U.S. Fish & Wildlife Serv.*, 316 F.3d 913 (9th Cir. 2003) (upholding a decision that a salmon aquaculture project within a refuge in Alaska was compatible with refuge purposes), *reh'g en banc granted, opinion vacated*, 340 F.3d 768 (9th Cir. 2003), *amended on reh'g en banc*, 360 F.3d 1374 (9th Cir. 2004) (finding that aquaculture project violated the Wilderness Act without resolving whether the project also violated the NWRSA). In *Fund for Animals v. Hall*, 448 F. Supp. 2d 127 (D.D.C. 2006), the court found that the FWS violated NEPA (but not the NWRSA) by failing to consider the cumulative impacts of recreational hunting in sixty refuges, but on remand, the FWS cured this defect by considering cumulative impacts in its revised refuge-level assessments. *Fund for Animals v. Hall*, 777 F. Supp. 2d 92 (D.D.C. 2011).

present and future generations,”²⁸⁸ coupled with its compatibility requirement, could be useful in the effort to supply a meaningful definition of degradation under the CWA.

5. Multiple Use Lands

The Bureau of Land Management (BLM) and the Forest Service both manage the lands under their jurisdiction under a multiple use, sustained yield mandate that is less preservation-oriented than the management regimes discussed above. The organic statutes for these two agencies nevertheless provide some protection against degradation of certain resources, and therefore may be relevant to achieving the goals of the anti-degradation policy.

a. BLM Management of the Public Lands

The Federal Land Policy and Management Act (FLPMA), the BLM’s organic act, requires that the BLM manage the public lands under principles of multiple use and sustained yield in accordance with land use plans (called resource management plans) developed by the agency.²⁸⁹ In addition, FLPMA requires that in managing the public lands the BLM “shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.”²⁹⁰ The statute defines neither unnecessary nor undue degradation.²⁹¹

The BLM has defined those terms, but its interpretations have shifted over the years. In 1980, the agency adopted what became known as the “prudent operator standard” in its regulations governing hardrock mining on public lands. That definition focused on what activities were necessary to mine rather than on the impact of mining on the environment.²⁹² The agency took the position that it lacked the authority to prohibit mining if the mine operator had complied with applicable requirements under statutes such as pollution control laws and acted prudently, even if operations resulted in environmental damage.²⁹³

²⁸⁸ 16 U.S.C. § 668dd(a) (2006).

²⁸⁹ 43 U.S.C. § 1732(a) (2006).

²⁹⁰ *Id.* § 1732(b).

²⁹¹ See Gregory M. Adams, *Bringing Green Power to Public Lands: The Bureau of Land Management’s Authority and Discretion to Regulate Wind-Energy Developments*, 21 J. ENVTL. L. & LITIG. 445, 470 (2007) (“[T]he vague UUD standard itself, undefined in FLPMA, hardly indicates how much degradation is ‘undue’ or ‘unnecessary.’”). Cf. Roger Flynn & Jeffrey Parsons, *The Right to Say No: Federal Authority over Hardrock Mining on Public Lands*, 16 J. ENVTL. L. & LITIG. 249, 281 (2001) (“The BLM’s duty to prevent unnecessary or undue degradation under FLPMA § 302 has not received close scrutiny or much clarification by the courts and has rarely been litigated.”).

²⁹² The 1980 definition provided in part that “[u]nnecessary or undue degradation means surface disturbance greater than what would normally result when an activity is being accomplished by a prudent operator in usual, customary, and proficient operations of similar character” 43 C.F.R. § 3809.0-5(k) (1981). The regulations specified that failure to initiate and complete reasonable mitigation measures might constitute unnecessary or undue degradation, and that failure to comply with applicable environmental protection laws would do so.

²⁹³ One source described the prudent operator standard as follows:

Stated differently, the “prudent operator” standard acknowledged that some environmental degradation was inherent in hardrock mining and that BLM would prevent only disturbance “greater than would normally result” from an operation conducted with due care. . . .

John F. Seymour, *Hardrock Mining and the Environment: Issues of Enforcement and Liability*, 31 ECOLOGY L.Q. 795, 844 (2004).

In 2000, the BLM amended its mining regulations by redefining “unnecessary and undue degradation” to halt “conditions, activities, or practices that . . . result in substantial irreparable harm to significant scientific, cultural, or environmental resource values of the public lands that cannot be effectively mitigated.”²⁹⁴ The very next year, however, the BLM changed the definition again, concluding that the terms unnecessary and undue were equivalent to one another and represented a single standard, rather than two distinct statutory standards. The agency took the position that as long as a mining activity was “necessary to mining,” FLPMA provided no authority for the BLM to restrict it.²⁹⁵ Some observers regard the 2001 definition, which remains in effect,²⁹⁶ as even weaker than the prudent operator standard.²⁹⁷

Environmental groups challenged the 2001 regulatory definition, taking issue with the agency’s view that the reference to undue degradation added nothing to the prohibition on unnecessary degradation.²⁹⁸ The district court in *Mineral Policy Center v. Norton* agreed with the plaintiffs that FLPMA requires the BLM to disapprove of an otherwise permissible mining operation which, while necessary for mining, would unduly harm or degrade the public land.²⁹⁹ Congress sought to prevent not only unnecessary degradation, but also degradation that is necessary to mining but also undue or excessive.³⁰⁰ The court nevertheless upheld the 2001 regulation as a result of the BLM’s commitment to exercise its discretionary authority to protect the public lands from unnecessary or undue degradation on a case-by-case basis in approving or rejecting individual mining plans of operations.³⁰¹ Although the court characterized the question as “extremely close,” it upheld the regulation.³⁰²

The courts have also addressed claims that the BLM violated its mandate to prevent unnecessary or undue degradation in approving particular projects or activities. They have almost uniformly rejected those challenges, deferring to the BLM’s conclusions that activities such as off-road vehicle use³⁰³ and a major gold mining project³⁰⁴ would not result in

²⁹⁴ Flynn & Parsons, *supra* note ____, at 474.

²⁹⁵ *Id.*

²⁹⁶ The current definition of “unnecessary or undue degradation” under the BLM’s hardrock mining regulations provides:

Unnecessary or undue degradation means conditions, activities, or practices that: (1) Fail to comply with one or more of the following: the performance standards in § 3809.420, the terms and conditions of an approved plan of operations, operations described in a complete notice, and other Federal and state laws related to environmental protection and protection of cultural resources; (2) Are not “reasonably incident” to prospecting, mining, or processing operations . . . ; or (3) Fail to attain a stated level of protection or reclamation required by specific laws in areas such as [Wild and Scenic Rivers or BLM-administered portions of the National Wilderness System,].

43 C.F.R. § 3809.5.

²⁹⁷ Flynn & Parsons, *supra* note ____, at 475.

²⁹⁸ *Mineral Pol’y Ctr. v. Norton*, 292 F. Supp. 2d 30, 40 (D.D.C. 2003).

²⁹⁹ *Id.* at 42.

³⁰⁰ *Id.* at 43.

³⁰¹ *Id.* at 44.

³⁰² *Id.* at 45.

³⁰³ *Sierra Club v. Clark*, 774 F.2d 1406 (9th Cir. 1985); *Sierra Club v. Clark*, 756 F.2d 686 (9th Cir. 1985). The court in *Clark* admitted that the damage caused by off-road vehicle use in one area would be “severe.” *Id.* at 691. See also *Gardner v. U.S. Bureau of Land Mgmt.*, 638 F.3d 1217 (9th Cir. 2011).

³⁰⁴ *South Fork Band Council of W. Shoshone of Nev. v. U.S. Dep’t of Interior*, 588 F.3d 718 (9th Cir. 2009).

impermissible degradation.³⁰⁵ One court rejected the claim that the BLM’s renewal of a grazing permit violated FLPMA, relying on the BLM’s representation that it would monitor the potential impacts under adaptive management to prevent degradation.³⁰⁶ Noticeably absent was any requirement that the BLM actually commit to doing anything in the event that its monitoring efforts revealed that unnecessary or undue degradation was occurring.

The culmination of efforts to water down the unnecessary or undue degradation requirement may have come in the Ninth Circuit’s 2011 decision in *Theodore Roosevelt Conservation Partnership v. Salazar*.³⁰⁷ The issue was whether the record supported the BLM’s determination that conditions on the approval of expanded natural gas development would prevent unnecessary or undue degradation.³⁰⁸ The court reasoned that it had to view the nondegradation “standard in light of [FLPMA’s] overarching mandate” that the BLM manage the public lands using multiple use, sustained yield principles.³⁰⁹ It added that:

While these obligations are distinct, they are interrelated and highly correlated. . . . Thus, by following FLPMA’s multiple-use and sustained-yield mandates, the Bureau will often, if not always, fulfill FLPMA’s requirement that it prevent environmental degradation because the former principles already require the Bureau to balance potentially degrading uses—e.g., mineral extraction, grazing, or timber harvesting—with conservation of the natural environment. If the Bureau appropriately balances those uses and follows principles of sustained yield, then generally it will have taken the steps necessary to prevent unnecessary or undue degradation.³¹⁰

The court essentially wrote the unnecessary or undue degradation standard out of the statute by concluding that management decisions that conform to multiple use, sustained yield principles will necessarily comply with the nondegradation mandate, too.³¹¹ In other contexts, the courts have refused to endorse interpretations of FLPMA that have the effect of sapping statutory language of all force.³¹²

³⁰⁵ In one case in which the court found a violation of the unnecessary or undue degradation mandate, the court remanded a land use plan amendment that abandoned a proposal to acquire private land to protect wildlife as a means of offsetting recent land sales. Because the court appeared to regard the violation as akin to a violation of the National Environmental Policy Act, it is not clear how much substantive content the court read into the unnecessary or undue degradation standard. *Soda Mountain Wilderness Council v. Norton*, 424 F. Supp. 2d 1241 (E.D. Cal. 2006).

³⁰⁶ *In re Montana Wilderness Ass’n*, 807 F. Supp. 2d 990, 996 (D. Mont. 2011).

³⁰⁷ 661 F.3d 66 (D.C. Cir. 2011).

³⁰⁸ *Id.* at 76.

³⁰⁹ *Id.*

³¹⁰ *Id.*

³¹¹ The court qualified its holding somewhat, stating that conformity to multiple use, sustained yield principles “will often, if not always” comply with the prohibition on unnecessary or undue degradation, and that such conformity “generally” will satisfy the nondegradation mandate. *Id.* It provided no hint, however, what management decisions would comply with multiple use, sustained yield principles but still violate the prohibition on unnecessary or undue degradation.

³¹² *See, e.g., Utah v. Andrus*, 486 F. Supp. 995, 1005 (D. Utah 1979) (stating that “if Congress had not intended to mandate two standards, it would merely have indicated that the Secretary was to continue to manage all lands so as to prevent unnecessary degradation. If one takes the position that this is what Congress intended, then the language of impairment must be mere surplusage. Statutory rules of construction are against such a finding.”).

FLPMA includes a second provision that limits activities with the potential to degrade public lands and resources, but it applies to a narrower range of circumstances than § 302(b)'s unnecessary or undue degradation prohibition. Section 603(c) requires the BLM to manage wilderness study areas (WSAs) on BLM lands “in a manner so as not to impair the suitability of such areas for preservation of wilderness,” subject to mining, grazing, and mineral leasing uses, provided that the agency shall “take any action required to prevent unnecessary or undue degradation of the lands and their resources or to afford environmental protection.”³¹³ WSAs are areas identified in BLM inventories as having wilderness characteristics and which the President has recommended for official wilderness designation.³¹⁴

The scope of § 603(c) is limited—it operates as a mechanism for ensuring that the BLM's management of WSAs maintains the status quo while Congress considers whether to include those areas in the national wilderness system or release them for multiple use management under FLPMA. During this interim period, the area must be managed (1) so as not to impair its suitability for preservation as wilderness, and (2) to prevent unnecessary or undue degradation or to afford environmental protection.³¹⁵

The BLM has defined impairment of suitability in its hardrock mining regulations as “actions that cause impacts, that cannot be reclaimed to the point of being substantially unnoticeable” by the time the Interior Secretary makes a wilderness recommendation, or that “have degraded wilderness values so far . . . as to significantly constrain the Secretary's recommendation with respect to the area's suitability for preservation as wilderness.”³¹⁶ BLM's management guidelines for lands undergoing wilderness review provide that “[a]ctivities that protect or enhance the land's wilderness values or provide the minimum necessary facilities for public enjoyment of wilderness values are considered nonimpairing.”³¹⁷ According to the BLM, the nonimpairment mandate focuses on the impact an activity has on an area's potential for wilderness designation.³¹⁸

The agency has also taken the position that the existing uses exempted from the nonimpairment mandate are nevertheless subject to the prohibition on unnecessary or undue

³¹³ 43 U.S.C. § 1782(c) (2006).

³¹⁴ *Id.* § 1782(b); 3 COGGINS & GLICKSMAN, *supra* note ____, at § 25:12.

³¹⁵ *See* Sierra Club v. Hodel, 848 F.2d 1068, 1078 (10th Cir. 1988).

³¹⁶ 43 C.F.R. § 3802.0-5. *See also* BLM, Frequently Asked Questions: Wilderness Study Areas, http://www.blm.gov/wo/st/en/prog/blm_special_areas/NLCS/wilderness_study_areas/Wilderness_Study_Areas.html

³¹⁷ BLM, Interim Management Policy and Guidelines for Lands Under Wilderness Review (7/5/95) ¶ 8550.06.F, http://www.blm.gov/ca/pa/wilderness/wilderness_pdfs/wsa/ManualTransmittalShe.pdf [hereinafter Interim Management Policy]. Other activities will be regarded as nonimpairing if they are temporary uses (such as certain right-of-way grants) that do not create surface disturbance or involve permanent placement of facilities, provided they can be easily and immediately be terminated upon wilderness designation. *See, e.g.*, Colorado Env'tl. Coal. v. Bureau of Land Mgmt., 932 F. Supp. 1247 (D. Colo. 1996).

³¹⁸ BLM, Wilderness Inventory Handbook: Policy, Direction, Procedures, and Guidance for Conducting Wilderness Inventory on the Public Lands (Sept. 27, 1978), http://www.blm.gov/ca/pa/wilderness/wilderness_pdfs/wsa/Wilderness_Inventory.pdf. For an example of a case finding a violation of the nonimpairment mandate in connection with issuance of a grazing permit, see *W. Watersheds Project v. Rosenkrance*, 736 F. Supp. 2d 1276 (D. Idaho 2010).

degradation.³¹⁹ . The courts have endorsed this position.³²⁰ The Interim Management Policy defines undue or unnecessary degradation in the WSA context to mean “impacts greater than those that would normally be expected from an activity” being conducted using best management practices or the best reasonably available technology.³²¹ Failure to initiate and complete reasonable mitigation measures may constitute unnecessary or undue degradation, while failure to comply with applicable environmental protection statutes will necessarily do so.³²² One court endorsed the position that “unnecessary” degradation is that which could have been avoided, while “undue” degradation is “that which is excessive, improper, immoderate or unwarranted.”³²³

FLPMA’s unnecessary and undue degradation provisions are of questionable utility as a model for strengthening the CWA’s anti-degradation policy in light of judicial decisions that weaken its force, if not completely obliterate it as a constraint on management discretion. Section 603(c)’s nonimpairment mandate is clearly more restrictive. As one federal district court noted, “[t]he word ‘impair’ would prevent many activities that would not be prevented by the language of ‘unnecessary or undue degradation.’”³²⁴ For example, carefully conducted commercial timber harvesting would not result in unnecessary or undue degradation, but might impair wilderness characteristics. Although FLPMA’s nonimpairment mandate represents a temporary protection pending congressional action on wilderness recommendations, there is nothing in the standard that is inherently inconsistent with a more permanent application in other contexts. If the mandate were incorporated into the CWA anti-degradation policy, it might be phrased to prohibit discharges that (1) degrade water quality to a degree that precludes reclamation to the point of being substantially unnoticeable, or (2) render a water body unsuitability for fishable/swimmable and higher uses. It is not clear whether the first constraint would eliminate the problems that the current policy poses in failing to define what amounts to “significant” degradation. In addition, it would fail to require restoration of impaired high quality waters.³²⁵ The second constraint appears to restate the prohibitions on impairment reflected in the existing anti-degradation policy. Thus, FLPMA is not an ideal model for strengthening the anti-degradation policy.

b. Management of the National Forests

The National Forest Management Act of 1976 (NFMA) includes management and planning provisions to guide the Forest Service in seeking an appropriate mix of uses in the

³¹⁹ 43 C.F.R. § 3802.0-6. *See also* Rocky Mountain Oil and Gas Ass’n v. Watt, 696 F.2d 734, 739 (10th Cir. 1982); Memorandum to Secretary from Solicitor, BLM Wilderness Review – Section 603, Federal Land Policy and Management Act, at 34-35 (Sept. 5, 1978).

³²⁰ The point is moot if this version of the unnecessary and undue degradation mandate, like the more generally applicable version in § 1732(b), is subsumed by the multiple use, sustained yield management standard. *Compare* Utah v. Andrus, 486 F. Supp. 2d 995, 1005 (D. Utah 1979) (holding that the BLM may regulate lands under § 603(c) subject to an existing use “so as to prevent unnecessary or undue degradation of the environment”), *with Theodore Roosevelt Conservation Partnership* (discussed at *supra* note ____ and accompanying text).

³²¹ Interim Management Policy, *supra* note ____, at ¶ 8550.06.G.

³²² *Id.*

³²³ Utah v. Andrus, 486 F. Supp. 995, 1005 n.13 (D. Utah 1979).

³²⁴ *Id.* at 1005.

³²⁵ For discussion of how the anti-degradation policy might be amended to require restoration, see *infra* notes ____ - ____ and accompanying text.

National Forest System.³²⁶ Like FLPMA, the statute embraces multiple use, sustained yield principles, and explicitly recognizes “outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness” as appropriate forest uses.³²⁷

NFMA’s provisions include few parallels to the anti-degradation policy. The statute requires forest plans to “ensure research and evaluation of effects of each management system to assure no substantial and permanent impairment of land productivity.”³²⁸ In addition, forest plans must prevent irreversible damage to soil, slope, or other watershed conditions and protect streams and other bodies of water from detrimental changes if harvests are likely to seriously and adversely affect water conditions or fish habitat.³²⁹ According to the courts, the need to balance these protections while providing for multiple uses of the forests “is just the type of policy-oriented decision Congress wisely left to the discretion of the experts—here, the Forest Service.”³³⁰ As a result, the courts have been loath to upset the multiple-use sustained-yield agenda.³³¹

NFMA also requires that forest plans “provide for diversity of plant and animal communities.”³³² This vague provision imposes weak constraints on Forest Service discretion.³³³ With a few notable exceptions,³³⁴ the courts have generally refused to require any precise level of diversity. As one court put it, “[t]he agency’s judgment in assessing issues requiring a high level of technical expertise, such as diversity, must ... be accorded the considerable respect that matters within the agency’s expertise deserve.”³³⁵ The Forest Service has amended the regulations that implement the diversity requirement more than once, with some versions containing more specific constraints on forest management than others.³³⁶ Although the

³²⁶ See 16 U.S.C. §§ 1600 *et seq.* (2006).

³²⁷ 16 U.S.C. §1604(e)(1) (2006). Mineral resources are recognized as appropriate uses in *id.* §§ 528 and § 478.

³²⁸ *Id.* § 1604(g)(3)(C) (emphasis added).

³²⁹ *Id.* § 1604(g)(3)(E)(i) and (iii).

³³⁰ *Sierra Club v. Espy*, 38 F.3d 792, 800 (5th Cir. 1994).

³³¹ *Id.*; *Lamb v. Thompson*, 265 F.3d 1038, 1048-50 (10th Cir. 2001); *Wilderness Soc’y v. Thomas*, 188 F.3d 1130, 1136 (9th Cir. 1999); *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1238 (D.C. Cir. 1996).

³³² 16 U.S.C. § 1604(g)(3)(B) (2006).

³³³ 3 COGGINS & GLICKSMAN, *supra* note , at § 34:15.

³³⁴ *E.g.*, *Seattle Audubon Soc’y v. Moseley*, 798 F. Supp. 1473 (W.D. Wash. 1992), *aff’d*, 998 F.2d 699 (9th Cir. 1993) (enjoining timber sales on grounds that the diversity duty requires planning for the entire biological community, such that a management plan that would preserve a management indicator species such as the owl, only to exterminate other species, would conflict with the duty); *Seattle Audubon Soc’y v. Moseley*, 798 F. Supp. 1484 (W.D. Wash. 1992) (similar).

³³⁵ *Sierra Club v. Robertson*, 810 F. Supp. 1021, 1028 (W.D. Ark. 1992), *aff’d in part, vacated in part on other grounds*, 28 F.3d 753 (8th Cir. 1994). See also *Sierra Club v. Espy*, 38 F.3d 792, 800 (5th Cir. 1994) (concluding that the protection of diversity “means something less than preservation of the status quo but something more than eradication of species”).

³³⁶ From 1982 to 2005, the Forest Service’s regulations implementing NFMA’s diversity provision required sufficient habitat to support “a minimum number of reproductive individuals . . . well distributed so that those individuals can interact with others in the planning area.” 36 C.F.R. § 219.19 (1982). In 2005, the regulation was replaced with much more general provisions on ecological, social, and economic sustainability. 36 C.F.R. §§ 219.10, 219.19-21 (2011). In 2012, the agency amended its planning regulations again. The new version adopts “a complementary ecosystem and species-specific approach to maintaining the diversity of plant and animal communities and the persistence of native species in the plan area.” Final Rule, 77 Fed. Reg. 21162, 21212 (Apr. 9, 2012) (to be codified at 36 C.F.R. § 219.9(a)). Among other things, the regulations require each forest plan to

courts have been more willing to enjoin timber harvests and other projects that would diminish viable populations under the more detailed versions, by and large they have deferred to the agency's discretionary decisions in applying the regulations.³³⁷

Some WSAs within the National Forest System are subject to a requirement somewhat similar to that found in FLPMA, depending on the specific language of the statewide wilderness act. For example, Montana's Wilderness Act requires the Forest Service "to maintain" the wilderness character as it existed on the date of enactment [1977]."³³⁸ In *Russell Country Sportsmen*, the Ninth Circuit held that this mandate gave the agency the authority not only to maintain but also to enhance the wild, natural characteristics by closing off pre-existing routes to motor vehicles.³³⁹

NFMA and its implementing regulations impose some constraints on management decisions that threaten to degrade sensitive wildlife, plants, and water quality. The general nature of these constraints, and the judicial reluctance in many cases to rely on them to halt timber, grazing, and other projects detrimental to resource integrity, make them poor models for strengthening the CWA's anti-degradation policy. And the more stringent constraints on approval of activities that would adversely affect WSAs derive from state-specific wilderness legislation rather than from NFMA. Yet by focusing on ecosystem characteristics and biological communities, NFMA's diversity regulations can provide useful guidance for defining degradation and for identifying, restoring, and maintaining the integrity of important aquatic ecosystems, especially those with "exceptional ecological significance," through anti-degradation requirements.

B. The Lessons of Federal Lands for Protecting Water Resources Against Degradation

Among the federal land management statutes discussed in the previous section, the Park Service Organic Act and the NWRSA seem to provide the most appropriate guidance for strengthening the CWA's anti-degradation requirements. Although the Wild and Scenic Rivers Act can supply some lessons for the CWA, its aspirations for maintaining free-flowing rivers are

include standards or guidelines "to maintain or restore the diversity of ecosystems and habitat types throughout the plan area," including components to maintain or restore "(i) Key characteristics associated with terrestrial and aquatic ecosystem types; (ii) Rare aquatic and terrestrial plant and animal communities; and (iii) The diversity of native tree species similar to that existing in the plan area." *Id.* at 21213 (to be codified at 36 C.F.R. § 219.9(a)(2)). It remains to be seen whether the 2012 regulations meaningfully constrain agency discretion.

³³⁷ See, e.g., *Forest Guardians v. U.S. Forest Serv.*, 641 F.3d 423, 440-43 (10th Cir. 2011) (upholding the agency's approval of a timber sale even though population levels for a management indicator species were below the minimum viable population threshold and were declining, and the project called for destruction of additional habitat).

³³⁸ Montana Wilderness Study Act, Pub. L. No. 95-150, § 3(a), 91 Stat. 1243 (1977).

³³⁹ *Russell Country Sportsmen v. U.S. Forest Serv.*, 668 F.3d 1037, 1042-44 (9th Cir. 2011). Although the court reasoned that "[t]he Act simply requires the Service to preserve a study area's wilderness character against *decline*," it found that "[e]nhancement of wilderness character is fully consistent with the Study Act's mandate, although the Study Act does not require it." *Id.* (emphasis in original). *Id.* at 1042. The Idaho district court reached a similar conclusion under the Wyoming Wilderness Act in *Greater Yellowstone Coal. v. Timchak*, 2006 WL 3386731, *3-6 (D. Idaho 2006), overturning a decision to permit increased heli-skiing in a WSA because the Service failed to show that available opportunities for solitude would be maintained despite the increased use.

not as specific with respect to anything but dams as the nonimpairment provisions of those other two laws, nor are its provisions as closely related to protecting the biological, chemical, or physical integrity of the system. As a result it remains an underutilized tool and, arguably, a less optimal analogue. The Wilderness Act already protects the components of high quality waters that run through federally designated wilderness areas by prohibiting, with limited exceptions, activities that would detract from wilderness values, including commercial activities that might otherwise threaten water quality. The Act provides a less than ideal model for protecting high quality waters outside the boundaries of wilderness areas, however, because a ban on all discharges from industrial and commercial activities would impose unrealistic constraints that upset the balance between environmental protection and economic growth that Congress endorsed in 1987 by codifying EPA's existing anti-degradation policy. As for the multiple-use statutes, FLPMA and NFMA, with a few caveats, they are not particularly helpful to efforts to strengthen the anti-degradation policy for reasons described above.³⁴⁰

The Park Service Organic Act's goals and mandates could be tailored to provide appropriately enhanced protection for the nation's high quality waters. The Act aims "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner . . . as will leave them unimpaired for the enjoyment of future generations."³⁴¹ NPS Policies recognize that conservation of plants and animals presently and on into the future entails protecting not just individual species but maintaining them "as parts of the natural ecosystems of parks."³⁴² The Service also sees the conservation of "evolving genetic diversity" as part of its mission.³⁴³ The anti-degradation policy could be amended to define "degradation" as impairment of water quality in a covered water body that either results in loss or threatened loss of an existing use – especially fishing, swimming, or higher uses – or adversely affects the ecological resilience of the water body, such that its capacity to continue to provide important ecosystem services is reduced. Such a dual standard would measure degradation by two yardsticks, one that focuses on suitability for particular human uses and another that focuses on the role of the affected water body in the ecosystem of which it is a part.

Yet the Organic Act is not perfect, and impairment of species within the National Park System has occurred. Like the rest of North America, the System has experienced sharp declines in the diversity and abundance of animal and plant species.³⁴⁴ The culprits are found, for the

³⁴⁰ See *supra* notes ___-___ and ___-___ and accompanying text.

³⁴¹ 16 U.S.C. § 1 (2006).

³⁴² Management Policies, *supra* note ___, at § 4.4.1. See *id.* § 1.4.7.2 ("The Service will also strive to ensure that park resources and values are passed on to future generations in a condition that is as good as, or better than, the conditions that exist today.").

³⁴³ *Id.* §4.4.1.2. "The Service will strive to protect the full range of genetic types (genotypes) of native plant and animal populations in the parks by perpetuating natural evolutionary processes and minimizing human interference with evolving genetic diversity." *Id.* Compare NWRSA, 16 U.S.C. § 668dd (2006) (explicitly recognizing "restoration of the fish, wildlife, and plant resources and their habitats" as a mission of the National Wildlife Refuge System "where appropriate").

³⁴⁴ See National Park Service Science in the 21st Century: A National Parks Science Committee Report to the National Park System Advisory Board D-1589A at 1 (2d ed. 2009) (observing that "national parks with decreased biological diversity and diminished natural systems can in no way be considered unimpaired," and arguing that establishing a "fully constituted science program" is essential to the nonimpairment mandate). See also Debra L.

most part, outside of park boundaries on adjacent federal, state, and private lands. Such “external threats . . . could destabilize park wildlife populations and critical ecosystem services, such as clean water and flood control.”³⁴⁵ In particular, a 2009 National Parks Science Committee Report observed that “the Park Service should provide far greater protection for freshwater and marine systems” if it is to remain a “haven . . . for once-widespread species and ecosystems.”³⁴⁶ The “external threats” problem is relevant to the anti-degradation policy because a Tier 3 river that runs through a wilderness area, for example, may have segments that are not given Tier 3 protections, and thus can be degraded in ways that adversely affect the Tier 3 segment.³⁴⁷

Still, water quality within the boundaries of the National Park System seems to be at least somewhat better than outside of the System. In 1993, the Park Service established a nationwide goal that by 2008 more than 99 percent of streams and rivers managed by the Service would meet state and federal water quality standards adopted under the CWA.³⁴⁸ To achieve this goal, the Service, in partnership with the U.S. Geological Survey, has devoted attention to preparing inventories of water quality in Park units. Not surprisingly, water quality within and among park units varies significantly, making generalizations difficult. For example, water bodies within Yellowstone National Park “continue to be of high quality.”³⁴⁹ In the more populous Mid-Atlantic Region, which includes ten units in Pennsylvania and Virginia, 21 percent of the ONRWs were impaired, and none had attained all of their designated uses.³⁵⁰ System-wide, the Park Service has fallen short of its 99 percent water quality compliance goal, but it appears to be taking steps in the right direction under the Organic Act and, where applicable, the ONRW provisions of the anti-degradation policy.³⁵¹ The existence of significant noncompliance even in ONRWs, however, highlights the need for the imposition of restoration responsibilities on states whose high quality waters violate water quality standards or other aspects of the anti-degradation policy.

The NWRSIA can serve as another appropriate guidepost for improving the CWA’s anti-degradation program. In one sense, at least, it may be even more useful than the Park Service Organic Act. Economic uses of wildlife refuges may be allowed, but the stewardship responsibilities embedded in the Refuge Act’s conservation mandate require decisionmakers to

Donahue, *Trampling the Public Trust*, 37 B.C. ENVTL. AFF. L. REV. 257, 264-65 (2010) (describing how the loss of a top predator has had devastating ripple effects in Yellowstone, Yosemite, Wind Cave, Zion, and Olympic National Parks and in Jasper National Park in Canada).

³⁴⁵ Keiter, *supra* note ____, at 91.

³⁴⁶ National Parks Science Committee Report, *supra* note ____, at 3.

³⁴⁷ See, e.g., *Arkansas v. Oklahoma*, 503 U.S. 91 (1992) (approving discharge by sewage treatment facility into a portion of the Illinois River in Arkansas that is upstream from a segment within Oklahoma that had been designated as a scenic river).

³⁴⁸ Water Quality Monitoring in the Mid-Atlantic Network of the National Park Service, App. 4, p. 15 (Oct. 1, 2005) (citing Goal Ia4A).

³⁴⁹ NPS, Project Reports for Water Quality Monitoring for Parks in the NPS Greater Yellowstone Network ix (2009), NPS 960/110571 (September 2011), available at <http://www.greateryellowstonescience.org/subproducts/214/7>.

³⁵⁰ Water Quality Monitoring in the Mid-Atlantic Network, *supra* note ____, at 2.

³⁵¹ NPS, Water Quality Program, <http://www.nature.nps.gov/water/waterquality/> (last updated Feb. 2, 2012). See also NPS, Baseline Water Quality Data Inventory & Analysis Reports, <http://www.nature.nps.gov/water/horizon.cfm> (visited Feb. 3, 2012).

prevent economic uses and recreational uses from impairing Refuge resources.³⁵² The statute unequivocally directs the FWS “to *sustain* and, where appropriate, *restore and enhance*, healthy populations of fish, wildlife, and plants.”³⁵³ Like the Organic Act, the Refuge Act promotes biological diversity and integrity of the system, but it includes more substantive management criteria with “relatively rich detail.”³⁵⁴ The Refuge Management Policy adds even more detail. As Professor Fischman observed, “the Policy manages to make advancing the system mission of conservation, supported by the integrity-diversity-health mandate, among others, a higher priority than promoting wildlife-dependent recreation.”³⁵⁵ This level of detail cabins the agency’s discretion, and empowers citizens and courts to ensure implementation of the Act’s conservation/non-impairment requirement. Drawing on the NWRSA example, the CWA’s anti-degradation policy could declare the issuance of permits involving discharges of specified pollutants (or amounts of pollutants) to be incompatible (or presumptively incompatible) with maintenance of the high quality waters protected by the policy.³⁵⁶ The policy could distinguish among the tiers of water bodies by limiting this approach to new or expanded discharges into Tier 1 waters, but extending it to all discharges, including existing discharges, for Tier 3 (and perhaps Tier 2) waters. This approach resembles the prohibition in FWS regulations on approval of certain uses of the wildlife refuges absent a showing of compatibility.³⁵⁷

V. CONCLUSION

Building on forty years of experience with the CWA’s anti-degradation policy, and on the comparative strengths and weaknesses of federal land management statutes, we offer four recommendations to improve the anti-degradation policy. Each of the recommendations responds to one of the deficiencies in the anti-degradation program identified in Part III.C above.

First, we recommend a federal regulation requiring states to designate ONRWs in their WQS inventories, including waters within national parks and wildlife refuges and other waters of “exceptional ecological significance.”³⁵⁸ The current regulations fail to provide any direction regarding the designation processes, beyond referencing parks and refuges; as a result, there is inadequate protection for some of the nation’s most important aquatic resources.³⁵⁹ In 1998, EPA suggested in an advance notice of proposed rulemaking that States and tribes should be required to establish a nomination process with criteria guidelines so that interested citizens or

³⁵² See *supra* notes ___-___ and accompanying text.

³⁵³ 16 U.S.C.A. § 668ee(4) (2006) (emphasis added).

³⁵⁴ Fischman, *supra* note ___, at 111.

³⁵⁵ Fischman, *supra* note ___, at 111-12, citing Fish & Wildlife Manual, *supra* note ___, pt. 605 § 1.13(B), § 1.8(B), (D)(3). See FWS, Final Appropriate Refuge Uses Policy, available at <http://policy.fws.gov/ser600.html>.

³⁵⁶ Under the presumptive incompatibility approach, the burden would shift to permit applicants to demonstrate that discharge of the pollutants or amounts involved would not result in impermissible degradation, and therefore would be compatible with the policy.

³⁵⁷ See *supra* notes ___-___ and accompanying text.

³⁵⁸ See 63 Fed. Reg. at 36,786. EPA defines “waters of exceptional ecological significance” as those “water bodies which are important, unique, or sensitive ecologically, but whose water quality, as measured by the traditional characteristics (dissolved oxygen, pH, etc.) may not be particularly high, such as thermal springs. Waters of exceptional ecological significance also include waters whose characteristics cannot adequately be described by these parameters.” 48 Fed. Reg. 51400, 51403 (Nov. 8, 1983). See also Brawer, *supra* note ___, at 20-21 (recommending more well-defined processes for citizen petition and designation of ONRWs).

³⁵⁹ Adler, *supra* note ___, at 287.

groups could petition for designation of certain waters as ONRWs.³⁶⁰ The New Mexico experience demonstrates how public involvement can promote the process of protecting high quality waters, if citizens have a viable procedural mechanism and if sufficient criteria are delineated to guide agency responses and allow meaningful judicial review.³⁶¹ These criteria would elaborate on the meaning of “exceptional ecological significance,” perhaps using factors similar to those by which the 2012 Forest Service planning regulations measure ecosystem integrity.³⁶²

In addition, states should be required to take concrete steps (including reducing aggregate discharges) to restore the quality of Tier 3 and other high quality waters covered by the anti-degradation policy that have already been degraded. EPA would be obliged to determine during each triennial review of state water quality standards whether states have complied with this responsibility. EPA’s failure to require restoration when the policy demands it would then be judicially reviewable.³⁶³ The imposition of a restoration mandate would be consistent with the CWA’s overarching goal of “restor[ing]” as well as maintaining the integrity of the waters of the United States.³⁶⁴

Second, EPA should promulgate a regulatory definition of “degradation.” Formalizing EPA’s informal guidance directing the regions to consider “assimilative capacity” would be a step in the right direction. However, this step would not go far enough because it may result in new or increased discharges on large lakes and rivers whose assimilative capacity appears to be great but may not in fact be as great as presumed, or whose aquatic environment may not respond in a predictable fashion to pollutants. In addition, a mandate to consider assimilative capacity in isolation may still allow multiple discharges over time to severely affect the integrity of a water body without undergoing a single, comprehensive anti-degradation review.³⁶⁵ Looking to the NWRSA and the Organic Act for guideposts, the new definition should include substantive criteria and thresholds or triggers to guide the permitting process to better meet the goals of the anti-degradation policy and the CWA as a whole and to enable meaningful citizen involvement and judicial review. As suggested above, drawing on the analogy to the Park Service experience, “degradation” could be defined as impairment of water quality that either results in loss or threatened loss of an existing or potentially viable use – especially fishing, swimming, and higher uses – or adversely affects the ecological resilience of the water body,

³⁶⁰ 63 Fed. Reg. at 36,786.

³⁶¹ See *supra* notes ___-___ and accompanying text.

³⁶² See *supra* notes ___-___ and accompanying text; 77 Fed. Reg. 21264 (Apr. 9, 2012) (to be codified at 36 C.F.R. § 219.8(a)(1)) (listing as factors relevant to the protection of ecosystem integrity (i) interdependence of terrestrial and aquatic ecosystems, (ii) an area’s contributions to ecological conditions within the broader landscape influenced by the area, (iii) conditions in the broader landscape that may influence the sustainability of resources and ecosystems within the affected area. (iv) system drivers such as dominant ecological processes, disturbance regimes, and stressors, such as natural succession, wildland fire, invasive species, and climate change; (v) the ability of terrestrial and aquatic ecosystems to adapt to change, and (vi) opportunities for landscape scale restoration).

³⁶³ See 5 U.S.C. §§ 704, 706(1) (2006) (authorizing review of final agency action and of an agency’s failure to act to fulfill discrete statutory or regulatory mandates).

³⁶⁴ 33 U.S.C. § 1251(a) (2006).

³⁶⁵ See *supra* notes ___-___ and accompanying text.

such that its capacity to continue to provide important ecosystem services is reduced.³⁶⁶ In addition, based on the NWRISA example, the issuance of permits involving discharges of specified pollutants (or amounts of pollutants) could be declared incompatible (or presumptively incompatible) with maintenance of the high quality waters protected by the anti-degradation policy.³⁶⁷

Third, states should be required to extend their anti-degradation programs to nonpoint source runoff. One of the biggest holes in the anti-degradation policy is the failure to regulate nonpoint sources that degrade water quality. States have the discretion to extend their anti-degradation requirements to nonpoint sources, but it appears that states cannot be forced to do so.³⁶⁸ Even when state anti-degradation requirements nominally apply to nonpoint sources, those requirements sometimes effectively have no substantive content.³⁶⁹ As noted above, a few courts have upheld the EPA's approval of a state's water quality standards that exempted nonpoint source discharges from anti-degradation requirements.³⁷⁰ However, EPA once took the position that "[n]onpoint source activities are not exempt from the provisions of the anti-degradation policy."³⁷¹ A persuasive argument can be made that EPA should reinvigorate this position, and indeed that it has an affirmative duty to ensure that state programs for nonpoint source pollution—including anti-degradation programs—do not defeat the CWA's objectives. Some judicial interpretation of the CWA supports state efforts to control nonpoint source pollution through anti-degradation requirements. The water quality standard-setting process applies to waters polluted by both point source and nonpoint source pollution.³⁷² Further, EPA regulations already require the states to "achieve[] . . . cost-effective and reasonable best management practices for nonpoint source control."³⁷³

Fourth, to address EPA's failure to provide consistent follow through on requiring states to properly implement the anti-degradation policy, mandatory state planning and assessment responsibilities could be added. For example, states might be required to consider as part of the triennial water quality standard revision process whether the designation of additional Tier 1, 2, or 3 waters is appropriate and document the results of that assessment. In addition, the states should be required to explain any refusal to designate ONRWs in response to the petition process

³⁶⁶ See *supra* notes ___-___ and accompanying text. See also U.S. Dep't of Interior Federal Water Pollution Control Guidelines, *supra* note ___, at 5, 7 ("[i]n no case will standards providing for less than existing water quality be acceptable"; standards shall provide for "[t]he maintenance and protection of *quality and use or uses* of water now of a higher quality *or of a quality suitable for present and potential uses*") (emphasis added).

³⁶⁷ See *supra* notes ___-___ and accompanying text.

³⁶⁸ Modesitt, *supra* note ___, at 193-94 (assessing application of state anti-degradation programs to nonpoint source pollution).

³⁶⁹ See, e.g., *Newton County Wildlife Ass'n v. Rogers*, 141 F.3d 803, 810 (8th Cir. 1998) (concluding that "the Arkansas statewide policy for nonpoint sources is so broadly stated that the Forest Service was not arbitrary or capricious in concluding this policy added nothing to its compliance obligations under federal environmental laws").

³⁷⁰ See *supra* notes __-__ and accompanying text.

³⁷¹ Qs & As, *supra* note ___, at 6 (emphasis added). See *Water Quality Standards Handbook*, *supra* note ___, § 4.8.

³⁷² See 33 U.S.C. § 1313 (2006) (drawing no distinction between pollution from point sources and nonpoint sources); *Nw. Envtl. Advocates v. City of Portland*, 56 F.3d 979, 986 (9th Cir. 1995) ("[N]owhere does Congress evidence an intent to preclude the enforcement of water quality standards that have not been translated into effluent discharge limitations.").

³⁷³ 40 C.F.R. § 131.12(a)(2). See David Zaring, *Best Practices*, 81 N.Y.U. L. REV. 294, 326-27 (2006) ("best practices regulation is currently the only form of federal regulation of runoff or 'nonpoint source' pollution").

described above. EPA would have to consider the state's explanation in deciding whether to approve or disapprove state water quality standards as consistent with CWA requirements.³⁷⁴ EPA determinations would then be judicially reviewable. The CWA already requires states to engage in a continuing planning process that includes "adequate implementation . . . for revised or new water quality standards," which of course include the anti-degradation policy.³⁷⁵ State planning responsibilities are far less rigorous under the CWA than they are under the CAA, and efforts by EPA during the Clinton Administration to mandate planning obligations to achieve water quality standards similar to state implementation plan duties under the CAA ran into insurmountable political opposition.³⁷⁶ Enhancement of selected aspects of state water quality standard implementation, such as those relating to compliance with the anti-degradation policy, is worth another look.

These four reforms would promote the primary goals of the anti-degradation policy, especially providing a margin of safety, protecting high-value natural resources, preventing the development of pollution havens, and balancing environmental goals and economic growth opportunities. These reforms would also do much to move the nation's water bodies beyond the "least common denominator" of fishable/swimmable waters and toward the CWA's overarching goal of maintaining as well as restoring the chemical, physical, and biological integrity of aquatic environments.

³⁷⁴ 33 U.S.C. § 1313(c)(4) (2006).

³⁷⁵ *Id.* § 1313(e)(3)(F).

³⁷⁶ See Oliver A. Houck, *The Clean Water Act Returns (Again): Part I, TMDLs and the Chesapeake Bay*, 41 *Envtl. L. Rep. (News & Analysis)* 10208, 10213 (2011).