

**American Bar Association
Section of Environment, Energy, and Resources**

Mudslinging on the Missouri and Mississippi Rivers

**Sandra Zellmer
University of Nebraska College of Law
Lincoln, NE**

**29th Annual Water Law Conference
San Diego, CA
February 23 - 25, 2011**

I. Introduction

Sediments—known to most of us as mud—are just as important to the ecological health of many rivers as the quality and quantity of the water itself. On big rivers like the Missouri and Mississippi Rivers, sediments are essential to the formation of sandbars, islands, oxbows, and floodplains, which provide habitat for native fish, bird, and invertebrate species. Also, sediment carried by the Missouri River downstream through the Mississippi River plays a role in creating and maintaining the wetlands of the Mississippi Delta.

But sediment is also a pollutant under the Clean Water Act. Sediments can smother and destroy spawning and foraging areas. And they can carry excess nutrients from agricultural and urban runoff, causing algal blooms, hypoxia, and other adverse conditions.

Conflicts over the dual nature of sediment came to a head in the Missouri River basin in 2008, when the state of Missouri refused to issue a Clean Water Act 401 Certification for Corps of Engineers' habitat restoration projects. The state ordered the Corps to stop discharging sediments into the Missouri River, stating that such discharges would violate the state's water quality standards. Caught between a rock—the state of Missouri—and a hard place—a biological opinion compelling habitat restoration to prevent jeopardy to endangered species—the Corps turned to the National Academy of Sciences for advice.

The Academy—the “most prestigious national entity for scientific research,” often called “the Supreme Court of Science”¹—employed its research branch, the National Research Council, to address the issues. The Council convened a special Committee on Missouri River Recovery and Associated Sediment Management Issues in 2008. This committee was comprised of thirteen ecologists, hydrologists, geographers, biologists, geologists, geomorphologists, and engineers, with an economist and a lawyer (me) thrown in for good measure. After conducting meetings in various places throughout the basin five times over the course of the next two years, the committee finalized its report, *Missouri River Planning: Recognizing and Incorporating Sediment*

¹ Reed D. Benson, “*The Supreme Court Of Science*” *Speaks On Water Rights: The National Academy Of Sciences Columbia River Report And Its Water Policy Implications*, 35 *Envtl. L.* 85, 88, 99 (2005).

Management, on Sept. 28, 2010.² The report analyzes the role of sediment in the Missouri River, both before and after the six mainstem dams were constructed on the system. It evaluates the efficacy of current habitat restoration strategies and explores sediment management alternatives. In the end, the report concluded that sediments are an essential component of the Missouri River ecosystem, but that a better understanding of sediment transport processes and deposition is critical for achieving management objectives, specifically, the protection of endangered species and the development of water quality standards for sediments and nutrients. The Committee also found that more effective federal and state coordination is essential for setting appropriate water quality standards for an interstate river system historically rich in sediment.

This paper analyzes the perceived conflict between the Clean Water Act's demand for clean water, which in some cases means *clear* water, and the "no jeopardy" requirement of the Endangered Species Act (ESA), and determines that the two statutes are really not in conflict at all. Under the Clean Water Act, water quality managers are tasked with creating standards protective of a river's designated uses. Species habitat is one use that must be protected under the Act, just as it must be protected under the ESA. Water quality standards should protect that use by recognizing that big rivers like the Missouri historically carried far greater quantities of sediments than are present today, and that the species that evolved in a sediment-rich environment need sediment delivery to continue at the proper time, place, and manner. Biological opinions issued under the ESA should therefore guide both state and federal water quality managers in setting and approving water quality standards.

II. *The Missouri River Saga*³

The Missouri is the longest river in North America and the second largest tributary (by volume) of the granddaddy of all American rivers—the Mississippi. The Missouri River travels approximately 2,600 miles from its source in Montana to its mouth near St. Louis.⁴ It drains over 500,000 square miles of land in nine states and portions of Canada.⁵ Historically, this meandering, braided river was subject to periodic and often extreme flooding that kept the connections between the main channel, its tributaries, and its broad floodplain alive. The river also experienced dramatic shifts in turbidity and sediment loading throughout the seasons. The river played a major role in transporting sediment from the interior uplands of the United States and southern Canada to the Mississippi River and the Gulf of Mexico. Before 1900, the system transported 400 million metric tons per year to the Gulf.⁶

Studies of remnant floodplains help us visualize conditions as they were two hundred years ago:

² National Research Council, *Missouri River Planning: Recognizing and Incorporating Sediment Management* (2010), available at http://www.nap.edu/catalog.php?record_id=13019#toc [hereinafter NRC 2010 Report].

³ Portions of this section are drawn from Sandra Zellmer, *A New Corps of Discovery for Missouri River Management*, 83 NEB. L.REV. 305 (2004).

⁴ U.S. Army Corps of Engineers, *Missouri River Master Water Control Manual Review and Update, Final Environmental Impact Statement, Summary* at 6 (Mar. 2004), available at <https://www.nwd.usace.army.mil/pa/report>.

⁵ Norman W. Thorson, *Damned If You Do, Damned If You Don't-Reflections On John Ferrell's Big Dam Era*, 2 Great Plains Nat. Res. J. 13, 16 (1997).

⁶ NRC 2010 Report, *supra* note 2, at 9; National Research Council - Water Science and Technology Board, *The Missouri River Ecosystem: Exploring the Prospects for Recovery* 50-51, available at <http://books.nap.edu/catalog/10277.html> [hereinafter NRC 2002 Report].

“a mosaic of aquatic, riparian, and terrestrial communities, including oxbow lakes, ponds, marshes, sand dunes, shorelines, in-channel islands, sand bars, [and] forests.”⁷ The river’s native species evolved under these conditions, which were reliant on flooding, high turbidity, and large volumes of sediment. But modern dams and bank stabilization projects have significantly reduced volumes of sediment transported through the system by half. Sediment starvation has lowered the river bed through degradation and has changed landforms and habitat features important to native species.

Today, three Missouri River species—the least tern, the piping plover, and the pallid sturgeon—are listed as threatened or endangered under the ESA. The listing decision for the sturgeon explained that the demise of this species had been caused by “damming, channelization, altered and/or degraded water quality, and altered flow regimes.”⁸

The Flood Control Act of 1944 authorized the construction of five huge mainstem dams on the Missouri River.⁹ The system is regulated through the Corps of Engineers Master Water Control Manual (Master Manual) along with Annual Operating Plans each year.¹⁰ The Master Manual was initially issued in 1960 and subsequently revised four times, with the most recent revision issued in March 2004.¹¹

The longest-lasting version of the Master Manual, in effect from 1979 through 2004, directed sequential consideration of various interests as follows:

- 1) flood control;
- 2) irrigation and upstream beneficial uses;
- 3) downstream water supply;
- 4) navigation and power; and
- 5) recreation and wildlife.¹²

The 2004 version omits the priorities provision, and instead strives to maintain maximum discretion and flexibility for the Corps.¹³

When the Corps began to craft the revisions that eventually resulted in the 2004 Master Manual, it quickly became obvious that few were happy with river management, and that the ecological resources of the river were in serious decline. As required by the ESA, the Corps and the U.S. Fish and Wildlife Service (FWS) began to consult on river operations shortly after the Corps began the revision process. ESA Section 7 requires that agencies consult with the FWS to insure

⁷ NRC 2002 Report, *supra* note 6, at 66.

⁸ 55 Fed. Reg. 36646.

⁹ Flood Control Act of 1944, Pub. L. No. 78-534 ch. 665, 58 Stat. 887, codified in various provisions of Titles 16, 33 and 43 of the U.S. Code.

¹⁰ 33 C.F.R. § 222.5.

¹¹ Missouri River Mainstem Reservoir System Master Water Control Manual (Mar. 19, 2004), available at <http://www.nwd-mr.usace.army.mil/rcc/reports/MManual/Master%20Manual.pdf> (visited June 24, 2004).

¹² *South Dakota v. Ubbelohde*, 330 F.3d 1014, 1027 (8th Cir. 2003), citing 1979 Master Manual § 9-3; *ETSI Pipeline Project v. Missouri*, 484 U.S. 495, 512 (1988).

¹³ In re: Operation of the Missouri River System Litigation, No. 03-MD-1555, slip op. at 9, citing 2004 Master Manual, *supra* note 11.

that their actions will not jeopardize the continued existence of the species or adversely modify their critical habitat.¹⁴ A Final Amended BO for the 2004 Master Manual was issued in 2003.¹⁵ The BO, described in detail in Part III below, concluded that restoration of a more natural river hydrograph—high spring flows and low summer flows—would be necessary to avoid jeopardy to the three species, but found that some of the species’ needs could be met through habitat creation.¹⁶

The ink had no sooner dried on the page when opponents lodged a battery of claims against the new Manual and the BO. This came as no surprise, as navigational interests, states and consumers concerned about water quantity, and endangered species and ecological interests have been on a collision course in the basin for decades. The Corps of Engineers stands at the vortex of the controversy, with the states, as well as environmental and commercial associations, demanding contradictory and even mutually exclusive solutions. The conflicting demands of navigation and flood control, on one hand, and recreation and ecological protection, on the other, seem irreconcilable. Added to these long-standing tensions is a new source of contention: a quest for clear water versus the need to restore habitat by delivering sediments to the river.

The National Research Council has waded into the fray on two separate occasions. Its first report, issued in 2002 before the Master Manual revision was finalized, is entitled *The Missouri River Ecosystem: Exploring the Prospects for Recovery*.¹⁷ This report focused on the adverse effects of current operations on listed and other native species, and reached a “strong consensus” that restoration of a more natural river hydrograph was imperative.¹⁸ It concluded by recommending comprehensive legislative action to compel river restoration, adaptive management of the river, and collaboration among agencies and stakeholders.¹⁹

In 2008, the National Research Council was called upon again to address sedimentation and water quality concerns. It convened the Committee on Missouri River Recovery and Associated Sediment Management Issues to address a specific set of questions including: past and present sediment processes; how the Corps’ habitat construction projects and other sediment management alternatives support species recovery; how construction projects and other management alternatives affect water quality; and how construction projects and other alternatives affect land building processes and water quality in the Gulf of Mexico. Two of the Committee’s key findings are addressed in this paper:

For many Missouri River processes, sediment concentrations and transport are as important as the quantity and flow of the water. Sediment provides foundational material for islands and sandbars, which provide animal and plant habitats. In addition, the large volumes of sediment transported by the pre-regulation Missouri River were important to the evolution and adaptation of native species such as the pallid sturgeon. Sediment delivered by the Missouri River was historically significant in sustaining wetlands in the Louisiana delta.

¹⁴ 16 U.S.C. § 1536. Jeopardy means to lessen the species’ likelihood of survival and recovery. 50 C.F.R. § 402.02.

¹⁵ U.S. Fish and Wildlife Service Biological Opinion on the Operation of the Missouri River Mainstem Reservoir System (2003), available at <http://www.nwd-mr.usace.army.mil/mmanual/opinion.html> (visited Dec. 10, 2010).

¹⁶ *Id.* at 1-3, 230-235, 264.

¹⁷ NRC 2002 Report, *supra* note 6, at 110.

¹⁸ *Id.* at viii, 1-3.

¹⁹ *Id.* at 7-8.

Reconciling water quality objectives with species recovery goals is an important factor in sediment management decisions for the Missouri River. Under the Clean Water Act, water quality managers are expected to create standards that are protective of the river's uses, and native species habitat is one use that could be protected. Nutrient and sediment criteria to protect that use should recognize that the river historically carried sediments and nutrients.²⁰

III. A Conflict of Laws?

A. The ESA

The ESA strives “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.”²¹ It imposes a conservation mission on all federal agencies, which are directed to “to conserve endangered species and threatened species and . . . utilize their authorities in furtherance of the purposes of this chapter.”²² In addition, ESA Section 7 imposes a specific duty on federal agencies to insure that “any action authorized, funded, or carried out” by that agency is not likely to jeopardize listed species or result in the destruction or adverse modification of the species’ critical habitat.”²³

The first major case to test the parameters of the ESA involved a Tennessee Valley Authority Dam on the Little Tennessee River. A snail darter that resided in the river had been listed as an endangered species, and the impoundment of water behind the TVA’s Tellico Dam would completely destroy its habitat. The U.S. Supreme Court affirmed an injunction against the completion of the dam, stating that Congress gave listed species “priority over the primary missions of Federal agencies” in order to “halt and reverse the trend toward species extinction—whatever the cost.”²⁴

The Missouri River Biological Opinion (BO) requires the Corps to modify its operations and to improve habitat for the species. Specifically, the 2003 BO identifies four categories of long-term activities as reasonable and prudent alternatives (RPAs) that will enable the Corps to avoid jeopardy: flow enhancement, including a spring rise and summer drawdown to restore spawning cues and develop sandbars and shallow, slow water habitat features; habitat restoration; unbalanced system regulation (holding one reservoir low while other reservoirs are maintained at average or rising levels); and monitoring and adaptive management to better understand baseline conditions, analyze management actions, and identify necessary modifications to improve the results.²⁵ According to the FWS, the RPAs “include the necessary conservation actions . . . designed to return the Missouri to a more natural river system. It is the combination of all parts of

²⁰ Academies’ Findings, *Missouri River Planning: Recognizing and Incorporating Sediment Management* ¶¶ 5, 7 (2010), available at <http://dels.nationalacademies.org/Report/Missouri-River-Planning-Recognizing-Incorporating/13019>.

²¹ 16 U.S.C. § 1531(b).

²² 16 U.S.C. § 1531(c)(1). *See* 16 U.S.C. 1536(a)(1) (“Federal agencies shall . . . utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species”).

²³ 16 U.S.C. 1536(a)(2).

²⁴ *TVA v. Hill*, 437 U.S. 153, 173-174 (1977).

²⁵ Questions and Answers Regarding the Biological Opinion on Missouri River Operations, <http://www.fws.gov/mountain-prairie/missouririver/mediapacket/q&a11282000.htm> (visited Dec. 9, 2010).

the alternative, working in concert, that will eliminate jeopardy to the species.”²⁶

Although the FWS informed the Corps that it (the Corps) “has latitude to determine how best to achieve” biological targets for the three listed species,²⁷ one of the RPAs—habitat creation and restoration—constrains the Corps’ discretion with specific, quantifiable requirements:

A portion of the historic habitat *must be* restored, enhanced, and conserved in riverine sections that will benefit the listed birds and fish. Habitat restoration *goals* are 20-30 acres of shallow water (<5 feet deep, <2.5 ft/sec. velocity) per mile.²⁸

When push comes to shove, the Corps, as the action agency, must determine whether and how it will proceed with its proposed action in light of the RPAs. The FWS regulations do not compel the agency to adopt the RPAs,²⁹ and the agency may take other steps “reasonably calculated to avoid harming listed species.”³⁰ Yet the Corps should proceed with caution if it deviates from the RPAs specified in the Missouri River BO. An agency’s failure to comply with RPAs exposes it to the risk of ESA penalties and injunction.³¹ Although the Corps is “technically not bound” by the opinion, courts give a great deal of deference to the FWS’s expertise in crafting appropriate measures to avoid jeopardy—“an agency that attempts to proceed with an action in the face of a critical FWS biological opinion will almost certainly be found to have acted arbitrarily and capriciously and contrary to law.”³² When the Corps has failed to implement RPAs, the Corps has found itself in deep water. It has in fact been enjoined from proceeding with flood control projects on other rivers for failing to insure against jeopardy.³³

²⁶ *Id.*

²⁷ News release from Assistant Secretary Craig Manson, Dec. 17, 2003, <http://www.fws.gov/mountain-prairie/PRESSREL/03-87.htm>.

²⁸ Questions and Answers Regarding the Biological Opinion, *supra* note 25.

²⁹ 50 C.F.R. § 402.15(a).

³⁰ *Cabinet Mountains Wilderness v. Peterson*, 685 F.2d 678 (D.C. Cir. 1982). *See* *Sierra Club v. Froehle*, 534 F.2d 1289 (8th Cir. 1976), *citing* *National Wildlife Fed’n v. Coleman*, 529 F.2d 359 (5th Cir. 1976). *See also* *City of Tacoma v. FERC*, 460 F.3d 53 (D.C. Cir. 2006) (“the action agency must not blindly adopt the conclusions of the consultant agency. . . the ultimate responsibility for compliance . . . falls on the action agency.”); *Florida Key Deer v. Paulison*, 522 F.3d 1133 (11th Cir. 2008) (although an agency need not conduct independent analysis of the RPAs, if the RPAs are arbitrary, the agency’s decision to adopt them is likewise arbitrary); *Aluminum Co. v. Bonneville Power Admin.*, 175 F.3d 1156 (9th Cir. 1999), *cert. denied*, 528 U.S. 1138 (2000) (the agency retains significant discretion in determining how to comply with the ESA in light of the biological opinion).

³¹ *Bennett v. Spear*, 520 U.S. 154, 169-170 (1997) (“jeopardy” opinions have a “powerful coercive effect,” and an action agency disregards them “at its own peril”). *See* *Tribal Village of Akutan v. Hodel*, 869 F.2d 1185 (9th Cir. 1988), *cert. denied*, 493 U.S. 873 (1989); *NRDC v. Rodgers*, 381 F. Supp. 2d 1212 (E.D. Cal. 2005); *Pacific Rivers Council v. Thomas*, 936 F. Supp. 738 (D. Idaho 1996); *Center for Marine Conservation v. Brown*, 917 F. Supp. 1128 (S.D. Tex. 1996).

³² *Lone Rock Timber Co. v. U.S. Dep’t of Interior*, 842 F. Supp. 433 (D. Or. 1994).

³³ *See, e.g., Sierra Club v. Marsh*, 816 F.2d 1376 (9th Cir. 1987) (enjoining a flood control project in San Diego County for failure to modify the project as necessary to avoid jeopardy to two endangered bird species); *Sw. Ctr. for Biological Diversity v. Klasse*, CIV S-97-1969 GEB JF, 1999 WL 34689321 (E.D. Cal. Apr. 1, 1999) (enjoining the Corps from filling a multi-purpose reservoir and requiring reinitiation of consultation where the Corps failed to execute the mitigation measures required by the biological opinion) (citing Southwest Center for Biological

B. *The Clean Water Act*

The Clean Water Act expresses an overarching goal “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”³⁴ The Act also includes an interim goal of achieving “water quality which provides for the protection and propagation of fish, shellfish, and wildlife.”³⁵

To achieve these goals, the Act regulates discharges of pollutants, including spoil, dirt, and nutrients like phosphorous and nitrogen, and it also requires states to develop water quality standards. Water quality standards include designated uses of water bodies, numeric or narrative criteria as necessary to protect those uses, and the prevention of degradation of the current condition of waters within the state.³⁶ States submit their water quality standards to the U.S. Environmental Protection Agency (EPA) for review and approval. Standards that fail to reflect the biological needs of listed species may violate both the Clean Water Act and the ESA.

The EPA encourages and in some cases requires states to develop numeric criteria as a component of water quality standards. As of 2008, only one of the states in the Missouri River basin (Montana) had adopted numeric nutrient criteria. The other states, including Missouri, had narrative nutrient criteria. Kansas law, for example, states that “[s]uspended solids added to surface waters by artificial sources shall not interfere with the behavior, reproduction, physical habitat or other factors related to the survival and propagation of aquatic or semiaquatic life or terrestrial wildlife.”³⁷

Water bodies that fail to meet approved water quality standards must be identified as “impaired” and total maximum daily loads and pollutant management plans must be adopted.³⁸ Portions of both the Missouri and Mississippi Rivers have been listed under CWA 303(d) as impaired water bodies. The state of Missouri, for example, added the two rivers to its 1998 list of impaired waters by “habitat loss” due to “channelization.”³⁹

Sedimentation is the sixth most common cause of impairment in U.S. water bodies (after pathogens, metals other than mercury, mercury, nutrients, and organic enrichment).⁴⁰ In the Missouri River basin, there are several hundred creeks and streams that have been identified as impaired by sediments, especially in Montana, South Dakota, and Kansas. Sources of sediment impairment in the basin include “croplands, livestock feeding operations, grazing in riparian lands, wastewater treatment plants, and stream bank modification.”⁴¹ Overall, agriculture is the largest source of nitrogen and phosphorus in water delivered to the Gulf of Mexico.

Diversity v. U.S. Bureau of Reclamation, 6 F.Supp.2d 1119, 1131 (D.Ariz.1997), *aff'd*, 143 F.3d 515 (9th Cir.1998)).

³⁴ 33 U.S.C. § 1251(a).

³⁵ 33 U.S.C. § 1251(a)(2).

³⁶ 33 U.S.C. § 1313(a)-(c).

³⁷ See NRC 2010 Report, *supra* note 2, at 100 (citing Kansas Admin. Regs. § 28-16-28e).

³⁸ 33 U.S.C. § 1313(d).

³⁹ See Missouri Soybean Ass'n v. Missouri Clean Water Com'n, 102 S.W.3d 10 (Mo. 2003) (rejecting challenges to the state’s listing of impaired waters); Missouri Soybean Association v. EPA, 289 F.3d 509 (8th Cir.2002) (rejecting challenges to the EPA’s approval of the state’s list).

⁴⁰ *Id.* at 102.

⁴¹ *Id.*

Treating sediment as a pollutant that adversely affects water quality throughout the Missouri and Mississippi River basins, however, would be a mistake. Pre-anthropogenic concentrations of sediment in reaches of the mainstem of these rivers and in some tributary streams were far greater than those present today. Curiously, although the Missouri River is malnourished when it comes to sediments, phosphorus levels are above historic background levels. The NRC Report found that, “however, knowledge of total phosphorus content or knowledge about other chemical constituents at restoration projects is limited.”⁴²

The physical lack of sediment in the river and the informational void regarding phosphorous led the NRC Report to conclude that “release of large grain-size sediments to the mainstem—often being material that has been trapped by the [Corps] river control structures . . . over the years—may be essential to attaining designated uses that support native species.”⁴³ Accordingly, water quality standards should reflect these dynamics.

The development of narrative or numeric criteria take such factors into account in setting limits on sediment and phosphorus discharges to the mainstem river and as a basis for regulating such discharges. However these criteria are set, regulatory consistency will require that all sources seek to avoid making discharges, or if such discharges cannot be avoided, offset increased loads with reductions in other places or from other actions. Also, if there is a need for such offsets when sediment discharges to the river are made for native species restoration, they can be established only if there is adequate monitoring of the sediment characteristics and the phosphorus in the sediments released. . . . The release of sediments from restoration projects, both the total quantity and chemistry, needs to be better understood through monitoring of construction activities in support of restoration along the Missouri River.⁴⁴

This is not to say that concerns about downstream effects of nutrient pollution, especially Gulf hypoxia, are misplaced. In fact, the effects of upland activities on the Gulf should be studied and carefully considered in setting phosphorus criteria. A recent EPA Inspector General report recommended that the numeric criteria development process be accelerated in states within the Mississippi-Missouri River basins that contribute to hypoxia in the Gulf.⁴⁵ Meanwhile, EPA Region 7 is developing guidance that will assist the basin states in adopting numeric nutrient criteria for the mainstem Missouri River.⁴⁶

Despite these efforts, it is clear that preventing nutrient contamination in the Missouri River cannot by itself solve the hypoxia problem in the Gulf. The NRC Report found that “the upper bound estimates of the increase in phosphorus from the Corps restoration projects are not likely to affect the size of the hypoxic area in the Gulf of Mexico.”⁴⁷ No doubt, additional preventative measures and restoration initiatives will be necessary to protect and restore the Gulf.⁴⁸

⁴² *Id.* at 105.

⁴³ *Id.* at 103.

⁴⁴ *Id.* at 105.

⁴⁵ U.S. EPA Report No. 09-P-0223 (2009).

⁴⁶ See NRC 2010 Report, *supra* note 2, at 100.

⁴⁷ Academies’ Findings, *supra* note 20, ¶ 6. See NRC 2010 Report, *supra* note 2, at 105-106.

⁴⁸ For a sampling of scholarship related to Gulf restoration, see Christine Klein and Sandra Zellmer, *Mississippi River Stories: Lessons from a Century of Unnatural Disasters*, 60 S.M.U. L.REV. 101 (2007); Oliver A. Houck, *Retaking The Exam: How Environmental Law Failed New Orleans And The Gulf Coast South And How It Might Yet Succeed*, 81 Tul. L. Rev. 1059 (2007).

Once water quality standards are set, section 401 of the Clean Water Act authorizes states to issue Water Quality Certifications to insure that discharges from certain federal projects will not violate those standards.⁴⁹ This effectively gives state agencies a limited veto over federal projects. States have utilized this power to impose a variety of requirements on federally licensed hydroelectric dam projects. In *S.D. Warren v. Maine*,⁵⁰ the Maine Board of Environmental Protection required the company to maintain minimum stream flows and allow passage for fish and eels. The Supreme Court agreed that, because the Warren's dams raised the potential for a discharge, section 401 was triggered and compliance with state certification was required.⁵¹

In 2007 the Missouri Clean Water Commission refused to issue a 401 certification for the Corps' habitat restoration projects along the Missouri River and ordered the Corps to stop discharging sediments, stating that any such discharges would violate the state's water quality standards. The Corps halted its restoration activities in the state of Missouri. The NRC Report described the conundrum facing the Corps:

The Corps interprets the Biological Opinion as requiring it to increase turbidity in the river and hence it is encouraged if not mandated, pursuant to the Endangered Species Act, to discharge sediments for habitat mitigation projects into the river. Generally speaking, the [Missouri Clean Water] commission accepts that the Biological Opinion calls for habitat construction, but that it does not require discharge of sediments into the mainstem Missouri River.⁵²

Better coordination between states like Missouri and the EPA in the development of nutrient criteria was a key recommendation of the NRC Report. The Report specifically noted that "[t]he actions of the Missouri Clean Water Commission [with regard to the Corps' restoration efforts] highlight the need for closer integration of the nutrient criteria development process and water quality management decision making."⁵³ However, the Report expressed concern that the lack of time and resources might impede the process.

The federal agencies, working cooperatively with all the states, can reconcile the setting sediment and nutrient criteria with the Endangered Species Act and congressionally mandated programs to avoid jeopardy to three endangered species and restore the Missouri River Ecosystem. However, recent EPA supported water quality criteria development efforts for the mainstem Missouri were conducted with limited time and funding and not able to fully consider the needs of native species.⁵⁴

These issues have yet to be ironed out. In March 2010, the state of Missouri initiated a process to draft nitrogen and phosphorous criteria for rivers and streams.⁵⁵ Rulemaking was to be finished

⁴⁹ 33 U.S.C. § 1341(a).

⁵⁰ 547 U.S. 370 (2006).

⁵¹ *Id.* See *PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. 700 (1994) (upholding Washington's authority to impose minimum stream flow rates on a hydroelectric dam under CWA § 401).

⁵² NRC 2010 Report, *supra* note 2, at 56.

⁵³ *Id.* at 104.

⁵⁴ *Id.*

⁵⁵ Missouri adopted numeric nutrient criteria for lakes and reservoirs outside of the Missouri and Mississippi River alluvial plains in 2009. 10 C.S.R. 20-7.031(4)(N), at 16, available at <http://www.sos.mo.gov/adrules/csr/current/10csr/10c20-7.pdf>. The U.S. EPA has not yet

in 2012, but it has been suspended pending negotiations with the EPA, which has expressed concerns about a related effort to issue nutrient criteria for lakes.⁵⁶

V. Resolving the Perceived Conflict of Laws

A. Harmonizing the Clean Water Act and the ESA

The legislative history and objectives of the Clean Water Act show that historic watershed and habitat conditions can and should be a template for setting water quality uses and criteria. The Senate Report that accompanied the original legislation refers to the “natural...integrity” of the nation's waters, and highlights “the importance of historical records on species composition, ecological studies, and estimations of what a ‘balanced natural ecosystem’ should look like.”⁵⁷ Similarly, the 1972 House Report describes “integrity” as “a condition in which the natural structure and function of ecosystems is maintained.”⁵⁸

Given these statutory purposes, compliance with the pollution control and water quality provisions of the Clean Water Act does not displace an agency's duties under the ESA, which was adopted just one year after the Clean Water Act. Likewise, compliance with the ESA does not displace duties imposed by the Clean Water Act.

As the Supreme Court has stated on numerous occasions, “repeals by implication are not favored and will not be presumed unless the intention of the legislature to repeal is clear and manifest.”⁵⁹ Repeal cannot be inferred unless there is an “irreconcilable conflict”⁶⁰ between two statutes, a subsequent statute “‘expressly contradict[s] the original act,’” or the repeal of one statute “is absolutely necessary ... in order that [the] words [of the other] shall have any meaning at all.”⁶¹

However, if statutory provisions do in fact conflict, such that an agency cannot comply with both, something has to give way. In *National Association of Home Builders (NAHB) v. Defenders of Wildlife*,⁶² the Supreme Court considered a FWS regulation specifying that §7(a)(2)'s consultation requirements apply “to all actions in which there is discretionary Federal involvement or control,” but not to nondiscretionary actions that left no room for the action agency to take additional or alternate measures to conserve the species.⁶³ At issue in *NAHB* was the EPA's delegation of CWA permitting authority for the National Pollutant Discharge Elimination System (NPDES) to the state of Arizona. The CWA compelled the EPA to authorize the delegation once

approved the new criteria. MDNR Meeting Summary (Nov. 16, 2010), <http://www.dnr.mo.gov/env/wpp/wqstandards/meeting-20101116.pdf>.

⁵⁶ Missouri Coalition for the Environment, Nutrient Standards (2010), http://www.moenviron.org/nutrient_standards.asp.

⁵⁷ S. Rep. No. 92-414, reprinted in 1972 U.S.C.C.A.N. at 3716.

⁵⁸ H.R. Rep. No. 92-911, at 76 (1972), reprinted in Congressional Research Service, A Legislative History of the Water Pollution Control Act Amendments of 1972, at 763 (1973).

⁵⁹ Nat'l Ass'n of Home Builders, 551 U.S. 644, 662 (2007) (citing *Watt v. Alaska*, 451 U.S. 259 (1981) (internal quotation marks omitted)).

⁶⁰ *Id.* (citing *Branch v. Smith*, 538 U.S. 254, 273 (2003) (“An implied repeal will only be found where provisions in two statutes are in ‘irreconcilable conflict,’ or where the latter Act covers the whole subject of the earlier one and ‘is clearly intended as a substitute’”)).

⁶¹ *Id.* (citing *Traynor v. Turnage*, 485 U.S. 535, 548 (1988)) (other internal citations omitted).

⁶² *Id.*

⁶³ 50 C.F.R. § 402.03.

nine specified conditions were met.⁶⁴ The Court found that requiring the EPA to consult with the FWS before deciding on Arizona's delegation would have unlawfully added a tenth requirement to the statutory list of conditions.⁶⁵ According to the Court, the EPA could not "simultaneously obey" both the explicit, non-discretionary provisions of the CWA's delegation provision and the ESA's consultation requirements.⁶⁶

Cases following the *NAHB* opinion have limited its effect to those rare occasions where compliance with both Section 7 consultation requirements and the statutory provision in question would be impossible. One of those rare occasions can be seen in *Center for Biological Diversity v. HUD*.⁶⁷ There, a district court in Arizona held that guaranteeing loans for private developments that pumped groundwater from an aquifer that served the habitat needs of listed species did not require consultation because the federal lending agencies had virtually no discretion over the loan disbursement programs. The agencies did not directly fund the projects; rather, they merely guaranteed loans given to applicants by private lenders. Moreover, the funding decisions turned on the financial status and needs of the applicant, and veterans automatically received loan guarantees.⁶⁸ After the loan guarantees had been approved, there was no ongoing control over the borrower or the property, and therefore no ability to implement measures that could inure to the benefit of the species. Absent ongoing control and discretion to alter or influence the development, Section 7 consultation requirements did not apply.

NAHB and *HUD* represent narrow exceptions to the otherwise broad sweep of ESA Section 7. More generally applicable cases construing a variety of provisions have found that the agency has sufficient discretion to comply with Section 7. For instance, the Eleventh Circuit found that the Federal Emergency Management Administration (FEMA) had enough discretion in administering the National Flood Insurance Program to require it to consult on the effects of new insurance commitments and associated development on listed species.⁶⁹ FEMA was required to make flood insurance available in areas with adequate land use and control measures, as judged by comprehensive eligibility criteria. The statute required FEMA to consider studies and any other relevant information to "develop comprehensive criteria designed to encourage . . . the adoption of adequate State and local measures which, to the maximum extent feasible, will," in addition to reducing the development of flood-prone land, "otherwise improve the long-range land management and use of flood-prone areas."⁷⁰ Although FEMA was required to issue insurance to localities that satisfy the criteria, FEMA itself was charged with, and had broad discretion for, developing the criteria. In contrast to the provisions at issue in *NAHB* and *HUD*, FEMA had enough latitude to consider and conserve listed species and therefore could comply with both statutes.⁷¹

Likewise, the Ninth Circuit held that the operations of Columbia River Power System dams and

⁶⁴ 16 U.S.C. § 1342(b).

⁶⁵ *NAHB*, 127 S.Ct. at 2536.

⁶⁶ *Id.* at 2533-34.

⁶⁷ *Ctr. for Biological Diversity v. HUD*, 541 F. Supp. 2d 1091, 1097-1100 (D. Ariz. 2008).

⁶⁸ *Id.* at 1099 (citing 38 U.S.C. § 3702). *Cf.* *NRDC v. Kempthorne*, 621 F.Supp. 2d 954, *on reconsideration*, 627 F.Supp. 2d 1212 (E.D. Cal. 2009) (Bureau of Reclamation was not required to consult regarding implementation of water service contracts because the original contracts predated ESA enactment and the contracts gave no discretion to modify water diversions).

⁶⁹ *Fla. Key Deer v. Paulison*, 522 F.3d 1133 (11th Cir. 2008).

⁷⁰ *Id.* at 1141 (citing 42 U.S.C. § 4012(c)).

⁷¹ *Id.* *See also* *Nat'l Wildlife Fed'n v. FEMA*, 345 F.Supp.2d 1151, 1173-74 (W.D.Wash. 2004) (finding that FEMA has discretion in its development of the eligibility criteria).

related facilities were subject to Section 7 consultations to determine effects on listed salmon and steelhead.⁷² There, the court rejected the agency's arguments that competing mandates for flood control, irrigation, and power production created immutable obligations that fell outside of agency discretion. The legislation governing dam operations imposed broad mandates in the form of directions to achieve particular goals rather than specific criteria or prescriptions. The court stated that "the goals themselves may be mandatory, [but] the agencies retain considerable discretion in choosing what specific actions to take in order to implement them."⁷³ Thus, the federal action agencies were "perfectly capable of simultaneously obeying Section 7 and those mandates."⁷⁴ The court cautioned:

ESA compliance is not optional. "[A]n agency cannot escape its obligation to comply with the ESA merely because it is bound to comply with another statute that has consistent, complementary objectives."⁷⁵

In sum, post-*NAHB* cases make it clear that discretionary steps taken by an agency are not immunized from ESA compliance just because those steps are taken in pursuit of a non-discretionary statutory goal. The non-discretionary goal of ensuring the integrity of our nation's water bodies can be satisfied through the implementation of well-tailored water quality standards that reflect the historic conditions of the river and the needs of listed species that rely on those conditions.

Missouri River cases predating the *NAHB* decision do not point to a contradictory result. In an Eighth Circuit case issued in 2005, the court rejected North Dakota's attempt to stop the Corps from releasing water from Lake Sakakawea (a reservoir on the upper Missouri) to ensure compliance with the state's water quality standards for fisheries.⁷⁶ The court found a clear conflict between North Dakota's position and the Corps' ability to maintain navigation.

On its face, § 1371(a) [of the Flood Control Act] exempts the Corps . . . from complying with the CWA when its authority to maintain navigation would be affected. It is also clear from the face of North Dakota's complaint that North Dakota is attempting to use its state water-quality standards to affect the Corps' authority to release water from Lake Sakakawea to support navigation. If we allowed North Dakota to enforce its water-quality standards . . . there is no discernible limit to the new structures and new operational plans that other states with main-stem reservoirs could demand to force the Corps to comply with their own water-quality standards. If each state is allowed to use its reservoir water-quality standards as a tool to control how the Corps must release water from the main stem reservoirs, the "authority of the Secretary of the Army . . . to maintain navigation" will obviously be affected, in violation of § 1371(a).⁷⁷

In a related opinion, however, the Eighth Circuit found that the Corps had been given sufficient

⁷² *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917 (9th Cir. 2008) (construing the provisions of the Northwest Power Act, 16 U.S.C. § 839).

⁷³ *Id.* at 929.

⁷⁴ *Id.* at 928.

⁷⁵ *Id.* at 929 (citing *Washington Toxics Coal. v. EPA*, 413 F.3d 1024, 1032 (9th Cir.2005)).

⁷⁶ *In re Operation of Missouri River System Litigation*, 418 F.3d 915 (8th Cir. 2005), *cert. denied*, 547 U.S. 1018 (2006).

⁷⁷ *Id.* at 919 (citing 33 U.S.C. 1371(a)(2)).

discretion in the Flood Control Act to consult under ESA Section 7.⁷⁸ The court noted that the Flood Control Act prioritizes flood control and navigation over other objectives in the operation of the dam and reservoir system, but found that operating strategies that would eliminate the full navigation season on the Missouri River during the worst drought years (four years out of one hundred) in order to protect the listed species did not conflict with the Flood Control Act. Thus, the Flood Control Act gave the Corps sufficient discretion to comply with the requirements of the biological opinion.

B. *Getting to Yes*

Legal arguments aside, perhaps the greatest hope of cutting the Gordian knot on the Missouri River lies in ongoing collaborative efforts among federal and state agencies and stakeholders.

In its 2004 Master Manual, the Corps committed itself to restoration actions to be identified, assessed, and implemented through the Missouri River Recovery and Implementation Committee (MRRIC).⁷⁹ This is a comprehensive effort led by the Corps in partnership with other federal agencies, Tribes, states, and non-governmental organizations. The goal is nothing less than “a sustainable ecosystem supporting thriving populations of native species while providing for current social and economic values.”⁸⁰ One component is a collaborative long-term study known as the Missouri River Ecosystem Restoration Plan and Environmental Impact Statement, which is intended to guide future recovery efforts throughout the basin. Congress is funding these efforts through the Water Resources Development Act of 2007.⁸¹

The NRC Report urged the Corps to seize the opportunities presented by these efforts:

[MRRIC] has the potential to play a central role in building consensus among a broad group of federal agencies and stakeholders in matters related to water and sediment management. To help realize that potential, the Secretary of the Army should periodically review the MRRIC mission statement, operational rules and accomplishments, implement modifications to the mission, rules and operations as deemed appropriate, and report its results to the Congress.⁸²

Going forward, the NRC Report cautioned that the role of MRRIC vis a vis the Corps “will need to be defined within the setting of occasional cross-purposes of river users, limits of the river’s resources to meet all user demands, and the increasing powers and responsibilities of multiple federal, state, and tribal agencies granted by environmental laws, especially the ESA.”⁸³

MRRIC involvement is compatible with the Biological Opinion, which directs the Corps to implement an adaptive management (AM) program to insure that habitat construction projects and other measures are, in fact, avoiding jeopardy to the listed species. Through AM, the Corps is to identify and track the consequences of management actions in response to new information

⁷⁸ In re Operation of Mo. River Sys. Litig., 421 F.3d 618, n.7 (8th Cir.2005). The court observed that the Flood Control Act would forbid the complete abandonment of navigation or flood control.

⁷⁹ Missouri River Recovery Program, <http://www.moriverrecovery.org/mrrp/f?p=136:1:553037495697012> (visited Dec. 11, 2010).

⁸⁰ *Id.*

⁸¹ Pub. L. 110–114 s.5018, Nov. 8, 2007, 121 Stat. 1199.

⁸² NRC 2010 Report, *supra* note 2, at 57.

⁸³ *Id.*

and changing environmental conditions. A key component of the AM process is the utilization of an interagency coordination team to guide the development and implementation of a robust monitoring program designed to better understand historic, pre-dam baseline conditions, analyze the effects of management actions, and identify modifications as necessary to improve results.⁸⁴

The NRC Report supports AM. It found, however, that “to date, the . . . projects have been implemented and monitored with only limited strategic guidance and have not been part of a systematic, long-term adaptive management program.”⁸⁵

There is need for improvement. Among other things, effective AM will require the “sustained commitment of resources for monitoring and science programs, stakeholder participation and discussions, expert input and advice, and patience in working with large ecological systems and species that do not respond quickly or predictably to management actions.”⁸⁶

With respect to the role of science more generally, science and scientists must play a role in decisionmaking, but science alone cannot identify and prioritize social values and goals; these aspects of decisionmaking turn on policy. Decisionmakers and stakeholders alike need to recognize “the different domains of science and policy.”⁸⁷ The Report cautions:

[Scientists] have important roles in informing decisions regarding ecosystem restoration and species protection . . . Scientists can help identify uncertainties and alternative outcomes that attend these actions, and can assist in estimating likely outcomes of various choices in the public decision process. Scientific issues and questions can, however, blend into other related questions such as, “What happens if management of non-native, recreational fisheries is perceived by some as conflicting with recovery of endangered pallid sturgeon”. . . Decisionmakers posed with these types of questions must consider not only possible effects on fishes and the broader biotic community, but also possible social and economic effects of a given action.⁸⁸

In other words, the role of science is to inform policy options, not to insulate decisionmakers from accountability by abdicating decisionmaking responsibilities to scientists. Decisionmakers will have to grapple with trade-offs among Missouri River users regardless of the amount and quality of scientific data available to them. For example, when the Corps adds sediment to the river to improve habitat for native species, agricultural producers may feel that they bear unfair and disproportionate obligations to limit soil erosion. Meanwhile, those who use the mainstem channel for commercial navigation may view the Corps’ activities as threatening the channel’s depth and width and undermining their purposes.

Policy efforts to resolve these types of conflicts are being addressed, at least in part, through the Omnibus Appropriations Act of 2009, which mandates a Missouri River Authorization Purposes Study to review the original purposes specified in the Flood Control Act (flood control, navigation, irrigation, hydropower, water supply, recreation, and fish and wildlife).⁸⁹ This Study,

⁸⁴ *Id.* at 50 (citing 2003 BO Exec. Summary at 3).

⁸⁵ *Id.* at 73.

⁸⁶ *Id.* at 74.

⁸⁷ *Id.* at 111.

⁸⁸ *Id.* at 110-111. For analysis of the respective roles of policy and science in AM, see Sandra Zellmer and Lance Gunderson, *Why Resilience May Not Always be a Good Thing: Lessons in Ecosystem Restoration*, 87 NEB. L. REV. 893 (2009).

⁸⁹ P.L. 111-8, Title 1, §108.

to be completed in five years, will recommend whether changes in the authorized purposes are warranted. The Omaha and Kansas City Districts of the Corps of Engineers are conducting the study with input from other federal agencies, Tribes, states, and other stakeholders. This process is an excellent opportunity to conduct a thorough evaluation of management options that reflect current values, priorities, and scientific understanding, and to resolve conflicts posed by an anachronistic law passed over 65 years ago.

Conclusion

Not all rivers, and not all sediments, are alike. Both differ in their chemical, biological, and physical characteristics. The sources of sediments differ, and sediment and nutrient history of each segment and each tributary is different. Not only should water quality criteria differ across segments and tributaries, but also rules governing sediment discharges should differ as well. In the Missouri River, where the historic reference conditions include large sediment loads, discharges consistent with those conditions may be allowed under the Clean Water Act and may be compelled under the ESA.