Tulane Institute on Water Resources Law & Policy

Mississippi River Nutrient Management Run-Down: An Introduction to Louisiana's Policy and Legal Options for Nutrient Reduction

A White Paper by the Tulane Institute on Water Resources Law and Policy[1]

July 19, 2021

Introduction

Nutrient pollution, specifically excess phosphorous and nitrogen, in the Mississippi River can create a river that is unfit for many uses.[2] Furthermore, nutrient pollution contributes to the dead zone, which is an area of hypoxia in the Gulf of Mexico caused by harmful algal blooms.[3] Both the Mississippi River and the Gulf of Mexico serve essential functions that are impeded by nutrient pollution.[4] The Mississippi River is also crucial to projects included in the Louisiana State Coastal Master Plan that should be able to rely on a "clean" river, such as the diversion projects to build back coastal wetlands.[5] Without proper nutrient management and reduction in the River, those projects may not have their intended results and could instead have greater

[1] This paper is an overview of a longer article to be published in an academic journal later this year. Principle Author: Portia Mastin, Senior Research Fellow. Special acknowledgements are also due to: Mark Davis, Director; Christopher Dalbom, Assistant Director; Thuy Le, Senior Research Fellow; James Nieset, Consulting Advisor; and student research assistants: Haley Gentry, Catherine Meyer, Jade Pemberton, Camila Pititto Laforga, Caira Heneghan, Luis Juarez, Louisa Eckhardt, and Rachel Goldberg for all of their editing and research contributions to this paper. The Institute also gratefully thanks the Walton Family Foundation, whose support helped make this paper possible.

[2] *See* EPA, "Nitrogen and Phosphorous Pollution in the Mississippi River Basin: Findings of the Wadeable Streams Assessment," (2015). Available at: https://www.epa.gov/sites/production/files/2015-03/documents/epa-marb-fact-sheet-112911_508.pdf.

[3] *See id*.

[4] EPA, "Where Nutrient Pollution Occurs," (2019). Available at: https://www.epa.gov/nutrientpollution/where-nutrient-pollution-occurs.

[5] *See* CPRA, "Mississippi River Mid-Basin Sediment Diversion Program." Available at: https://coastal.la.gov/our-work/key-initiatives/diversion-program/.

harmful impacts.[6] Public concern about even the potential of those impacts can result in the delay, modification or even cancellation of the projects themselves. Many efforts have been made to decrease nutrient pollution in the Mississippi River and reduce the size of the dead zone, specifically through the Mississippi River/Gulf of Mexico Hypoxia Task Force ("HTF"), but none have had any meaningful success, primarily because they have been focused on voluntary efforts and guidelines rather than purposeful enforceable limits on nitrogen and phosphorous.[7] Some groups have also proposed different management of the Mississippi River, changing how flood control spillways in Louisiana are operated, as a potential solution;[8] however, this is not so much a solution as simply a transference of the problem from one area to another, perhaps at the added cost of reducing the effectiveness and longevity of vital flood protection programs while doing little to nothing about the underlying pollution problem.

To address and implement meaningful nutrient reduction efforts in the Mississippi River Basin, Louisiana should first determine - or begin to determine - how clean the river needs to be in order to be fit for its many uses. It should then attempt to work through existing framework, such as the HTF, to explain those needs and frame them into the context of broader nutrient pollution reduction efforts underway in the broader Mississippi Basin. If those efforts are unsuccessful, the state should be prepared to assert and pursue its legal rights to a cleaner river

[6] For example, one of those Coastal Masterplan Projects is the Mid-Barataria Sediment Diversion, which will divert freshwater, sediment, and nutrients from the Mississippi River into the Barataria Bay. The Draft Environmental Impact Statement for the Project discusses nutrient impacts some, stating that the addition of nutrients could be beneficial for the project, but that it could also have adverse impacts if there are excess nutrients causing harmful algal blooms. *See* Army Corps of Engineers, "Draft Environmental Impact Statement for the Proposed Mid-Barataria Sediment Diversion Project, Plaquemines Parish, Louisiana." p. 4-165-166, 4-175-176, 4-226-227, 4-322, 340-342, (2021).

[7] *See* NOAA, "NOAA forecasts average-sized 'dead zone' for the Gulf of Mexico," (2021). Available at: https://www.noaa.gov/news-release/noaa-forecasts-average-sized-dead-zone-for-gulf-of-mexico.

[8] *See* Complaint at 8, *Watson, Jr. v. U.S. Army Corps Of Eng'rs, et. al*, (S.D. Miss. Dec. 30, 2019), Case No. 1:19-cv-989-LG-RHW; in which complainants argue that the Army Corps of Engineers have absolute discretion to operate the Morganza Spillway in conjunction with the Bonnet Carré Spillway to lessen impacts to the Mississippi Sound.

such as those afforded under the Clean Water Act or equitable relief via an original jurisdiction action in the Supreme Court of the United States based the doctrine of riparianism. Communities along the Mississippi River and Gulf coastal communities rely on a clean river, and without better nutrient management in the Basin, the states farthest downriver bear most of the consequences and will continue to do so increasingly into the future.

Legal and Policy Recommendations

1. Determine that Louisiana Needs a Cleaner River

The first step that Louisiana must take is to abandon its historical position that nutrient management is not a problem, or is one that can be solved solely through voluntary measures or coastal diversion projects. That has not worked, and a "clean" river is necessary to those diversions and all other coastal restoration projects in the Coastal Masterplan. Louisiana has advanced on this point, as Governor John Bel Edwards listed Mississippi River nutrient reduction and management as one of his second-term priorities in February 2020.[9] Despite that announcement, however, little has been done by the state to address nutrient pollution. Louisiana needs to articulate how clean a river it needs so that there is some context for targeting pollution reduction and for understanding how that fits with plans for the future of the State's coast. Louisiana has its own nutrient management strategy, which has similar problems as many other states' in the HTF – it does not include numeric criteria or enforceable provisions.[10] Louisiana also has a water quality trading program that includes nutrients, but the final rule for that

[9] Office of the Governor, "Gov. Edwards Announces Second Term Coastal Priorities," (2020). Accessed at: https://gov.louisiana.gov/index.cfm/newsroom/detail/2380.
[10] *See generally* "Louisiana Nutrient Reduction and Management Strategy: Protection, Improvement and Restoration of Water Quality in Louisiana Water Bodies," (Dec. 2019).

program was published recently, in 2019, and therefore there is little information on how it has been used and whether it has had any successes throughout the state in nutrient reduction.[11] Further, nutrient trading does not itself solve the problem, it simply moves it around in different areas of the same watersheds. Louisiana must take a stronger approach to nutrient management within the state if its concerns are going to be taken seriously by other state members of the HTF.

2. Working Through the Hypoxia Task Force and Similar Efforts

Next, Louisiana should make clear to upriver Mississippi River Basin states through the HTF that Louisiana needs a river that is fit to use and that the work those states have been doing to limit nutrient pollution is not sufficient. This is imperative for a safe drinking water supply, to support aquatic life and recreation, and to enable the Louisiana's coastal restoration projects. Each state in the HTF currently has a nutrient management strategy, but these need to be significantly strengthened to meet the Louisiana's need for a river that is fit for those uses and to reduce the size of the dead zone.[12] The upriver HTF states, especially those with major agricultural operations, need to enhance their nutrient management strategies to have achievable, tangible, enforceable goals - not just recommendations, voluntary efforts, and narrative criteria guidance - in order to better manage nutrient pollution upriver. Louisiana should also set an example and bolster credibility by strengthening its own nutrient management strategy in the same manner. This will be especially important if the state needs to assert its rights through the judicial process, as evidenced by the Supreme Court's recent decision in *Florida v. Georgia*, in which the Court held that Florida could not show that Georgia's Apalachicola-Chattahoochee-

[11] *See* Louisiana Department of Environmental Quality, "Water Quality Trading," (2021). Accessed at: https://www.deq.louisiana.gov/page/water-quality-trading.
[12] *See generally* EPA, "Hypoxia Task Force Nutrient Reduction Strategies," (2020). Accessed at: https://www.epa.gov/ms-htf/hypoxia-task-force-nutrient-reduction-strategies.

Flint ("ACF") River Basin water use was the cause of Florida's oyster fishery collapse, in part because of Florida's own role in its oyster fishery mismanagement.[13] If Louisiana chooses to file a similar equitable apportionment riparianism lawsuit against upriver Mississippi River Basin states[14], it would also need to be able to show that it is not a primary cause of the nutrient pollution afflicting the Mississippi River and that it has tried to achieve those ends through other legal pathways.

There are two initiatives similar to the HTF efforts that are still in development stages that Louisiana should also support. One is the Mississippi River Restoration and Resilience Initiative ("MRRRI"), which will be modeled on the Great Lakes Restoration Initiative ("GLRI") used to fund nutrient management efforts throughout that region and specifically in Lake Erie.[15] The MRRRI's initial goals are focused on water quality, community resilience related to flood and storm management, and wildlife habitat restoration and protection.[16] Nutrient management would likely fall into the water quality efforts by the MRRRI. This initiative was introduced in Congress by Minnesota Representative Betty McCollum in June 2021, beginning the legislative process to implement it.[17] Another initiative is the Upper Mississippi River Basin Association ("UMRBA")'s proposal for a federal-state partnership dedicated to nutrient reduction in the region.[18] Louisiana should support those efforts - any opportunity for the state to demonstrate its

[13] *FL v. GA*, 141 S.Ct. 1175. (2021)
[14] This strategy is discussed in Section 4 of this article.
[15] "Mississippi River Restoration and Resilience Initiative: Ensuring Vibrant Communities, Thriving Wildlife, and a Robust Economy," (Nov. 2020). Accessed at: https://www.confedmo.org/wp-content/uploads/2020/12/MRRRI-one-pager_9-10-20.pdf.
[16] *Id*.
[17] Julie Hill-Gabriel, "New Legislation Will Protect Water Quality, Build Resilience, and Restore Bird Habitat Along the Mississippi River," Audubon Society News, (June 2021). Accessed at: https://www.audubon.org/news/new-legislation-will-protect-water-quality-build-resilience-and-restore-bird.
[18] Upper Mississippi River Basin Association, "Upper Mississippi River States Seek a Federal-State Partnership To Achieve Clean Water Goals," (2020).

needs regarding nutrient reduction and Mississippi River water quality to the HTF and upriver states is crucial for the state moving forward with meaningful successes.

3. Legal Remedies Through the Clean Water Act

To convince the upriver states that contribute most to nutrient pollution in the Mississippi River to improve their nutrient management strategies, Louisiana needs to have a firm grip on its not only its water needs, but also its legal rights and options. Congress passed the Clean Water Act ("CWA") in 1972 in an effort to reduce water pollution throughout the United States. [19] However, the CWA does little to address nutrient pollution specifically and left the agriculture industry largely untouched.[20] Despite those shortcomings, the CWA provides a framework for distinguishing between point source pollution, which is a single identifiable source of pollution discharge, and nonpoint source ("NPS") pollution, which is more difficult to identify because there can be many sources of indirect pollution, such as urban and agricultural runoff.[21] Both point source and NPS pollution are important when dealing with nutrient reduction, but because agricultural and urban runoff constitutes the majority of nutrient pollution, NPS should be the focus for reduction efforts.[22] There are two relevant sections within the CWA that can be used in nutrient pollution reduction efforts: Section 303, which includes provisions related to states' impaired waterbodies list and the associated amount of allowable pollution discharges into those waterbodies, called the total maximum daily load ("TMDL"); and Section 319, which

[19] *Putting Drinking Water First to Address Nutrient Pollution*. Clean Water Action. 1. Link to PDF: https://www.cleanwateraction.org/sites/default/files/Putting%20Drinking%20Water%20First%20-%20Nutrient%20Pollution%20-%20June%202018%20-%20Clean%20Water%20Action.pdf
[20] *Id*.
[21] *See* EPA, "Basic Information about Nonpoint Source (NPS) Pollution," (2018). Accessed at: https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution
[22] *See* EPA, "Nutrient Pollution: Sources and Solutions," 2019. Available at: https://www.epa.gov/nutrientpollution/sources-and-solutions.

encompasses the CWA NPS Program and includes a provision on interstate water management conferences for states whose waters are impaired by other states' NPS pollution.[23]

CWA Section 303(d) authorizes the EPA to "assist states, territories and authorized tribes in listing impaired waters and developing Total Maximum Daily Loads (TMDLs) for these waterbodies."[24] Once the state has set water quality standards, Section 303(d) requires that it identify waters which do not meet those standards.[25] States submit these impaired water lists to the EPA every two years.[26] Once a waterbody is put on a 303(d) list, it remains there until the EPA has approved the TMDL prepared by the state for that waterbody.[27] The CWA allows the EPA to establish water quality criteria through federal regulations if the state's water quality standards are inadequate.[28] The agency makes this determination when one of these two circumstances occurs: (1) if the state water quality standard is not consistent with the CWA, or (2) if the EPA determines that a revised or new standard is necessary to meet CWA requirements.[29] The development of a TMDL for nitrogen and phosphorous under CWA Section 303 for the Mississippi River, of which portions are impaired, Gulf of Mexico, and other impaired waters in the Mississippi River Basin is another potential option to reduce nutrient pollution in the River.[30] This would set actual, enforceable limits in the form of numeric nutrient

[23] *See* 33 U.S.C. § 1313(d); 33 U.S.C.A. § 1329(g).
[24] EPA, "Clean Water Act Section 303(d): Impaired Waters and Total Maximum Daily Loads (TMDLs)," (2021). Accessed at https://www.epa.gov/tmdl
[25] 33 U.S.C. § 1313(d).
[26] EPA, "Overview of Listing Impaired Waters under CWA Section 303(d)," (2018). Accessed at: https://www.epa.gov/tmdl/overview-listing-impaired-waters-under-cwa-section-303d.
[27] *Id*.
[28] 33 U.S.C. § 1313(c)(4).
[29] *Id*.
[30] A coalition of environmental groups has previously attempted this - filing a petition in 2008 that was denied by the EPA and ended up going to court. The court granted deference to the EPA for its denial, but in its opinion stated that in the future, if current HTF efforts continued to be unsuccessful, numeric nutrient criteria may be necessary, writing "Presumably, there is a point in time at which the agency will have abused its great discretion by refusing to concede that the current approach – albeit the one of first choice under the CWA – is simply not going to work." *Gulf Restoration Network, et al. v. Jackson, et al.*, 224 F. Supp. 3d 470, 477. (E.D.L.A. 2016).

criteria throughout the Mississippi River Basin. Louisiana should petition the EPA to set a TMDL for nutrients while the Administration would be more favorable to that action.

CWA Section 319(g) on interstate water management conferences is a provision within the NPS Pollution Program section of the CWA.[31] This provision allows states whose waters do not meet applicable water quality standards due in whole or in part to NPS pollution from other states to petition the EPA Administrator to convene those states for the purpose of addressing the contributing NPS pollution.[32] States petitioning must have an implemented NPS program and applicable water quality standards, and the EPA Administrator determines whether the petitioning state's waters do not meet those applicable water quality standards due to NPS pollution from other states.[33] If the Administrator does make this determination, the EPA and relevant states will create an agreement among all of those states to address and reduce the contributing NPS pollution to improve water quality.[34] Louisiana operates a NPS Program which has applicable water quality standards, and some of its waters do not meet those standards, at least in part, due to the amount of nitrogen and phosphorous pollution that comes from upriver states.[35] Those upriver states' NPS pollution significantly contributes to nutrient pollution in the Mississippi River and the Gulf of Mexico dead zone that affects coastal waters.[36] Therefore, Louisiana should petition the EPA for a 319(g) interstate management conference with the offending upriver states. If Louisiana chooses this option, it should ensure the agreement that

[31] *See generally* 33 U.S.C.A. § 1329(g).
[32] *Id* at § 1329(g)(1).
[33] *Id*.
[34] *Id*.
[35] Lux, Travis "Midwestern Farm Runoff Creates Headache for Louisiana Shrimpers." St. Louis Public Radio. October 17, 2019. Available at: https://news.stlpublicradio.org/health-science-environment/2019-10-17/midwestern-farm-runoff-creates-headache-for-louisiana-shrimpers.
[36] *Id*.

comes out of the interstate management conference will be a type of compact with enforceable provisions, so that it is not simply a second HTF-type of non-solution.

4. Direct Action in the Supreme Court of the United States

If the attempts to work with upriver states collaboratively through the HTF and CWA legal avenues all fail, Louisiana, perhaps teamed with Mississippi, could initiate legal action against upriver states that contribute the most to nutrient pollution downriver and the dead zone. A suit of this kind would not be a garden variety civil action, but rather a direct action brought in the Supreme Court of the United States. The states should assert their rights to a clean river through an equitable apportionment original jurisdiction lawsuit, based on the doctrine of riparianism. Under basic riparianism principles, riparian owners are entitled to water flow absent unreasonable diminution in both quantity and quality.[37] Upriver agricultural states are interfering with that right; therefore, Louisiana and Mississippi would have standing to request equitable relief. Equitable remedies are applied when monetary relief will not adequately redress the harm, and include injunctive relief and equitable apportionment.[38] Injunctive relief, which would order upriver states to altogether *halt* harming the waterbody, is not feasible. An equitable apportionment decree would be best for Louisiana and Mississippi, because it would order upriver states to *limit*, not altogether halt, their harm to the waterbody.[39] Further, even if the Supreme Court chooses not to issue an equitable apportionment decree, the Court could be instrumental in directing Mississippi River Basin states to enter into a more enforceable

[37] *See generally Strobel v. Kerr Salt Co.*, 58 N.E. 142 (N.Y. 1990); *see also Smith v. Staso Milling Co.*, 18 F.2d 736 (1st Cir. 1927), (demonstrating how integral quality is to riparian rights).
[38] Samuel Bay, *The System of Equitable Remedies*, 63 UCLA L. Rev. 530, 533 (2016).
[39] *See Colorado v. New Mexico*, 459 U.S. 176, 183 ("Equitable apportionment is the doctrine of federal common law that governs the disputes between States concerning their rights to use the water of an interstate stream.").

interstate compact to reduce nutrients in the River. The influence of the Supreme Court would make such a compact more easily achievable.

Conclusion

The first step to a cleaner Mississippi River for Louisiana is to bolster the state's credibility by strengthening its own state NMS and to express its concerns and rights to upriver states. This should be done through the HTF, as that regime is already in place and efforts there, albeit with very limited success, have been underway for over a decade. If Louisiana is unsuccessful in convincing upriver states to implement numeric standards, more realistic timeframes, and enforcement provisions into their NMSs, then Louisiana should look to legal remedies. The Clean Water Act provides two potential solutions, through the TMDL program of Section 303, and the interstate water management conference of Section 319. Louisiana should also consider the riparianism doctrine, which would entail asserting its rights to a clean Mississippi River as a riparian.

Time is of the essence for Louisiana's coast and it is vital that actions to inform and urge the state to act continue, especially during this second term of Governor John Bel Edwards. In addition to informing and pressuring the state government, advocating for greater federal funding of efforts like the HTF is also necessary to making any movement toward its goals. Public interest groups may also consider their own legal efforts, such as a TMDL petition, or actions against entities that contribute to nutrient pollution in the Mississippi River that are in violation of other water quality standards upriver.