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Missing Protection: Polluting the Mississippi River Basin's Small Streams and Wetlands

To read the full issue paper on the need to restore protections for the nation's waterways, visit www.nrdc.org/policy

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Our nation's rivers, streams, and small bodies of water have long been protected by the Clean Water Act, but a series of misguided court decisions have put many of them in danger. Recent interpretations of the law have given rise to dispute about whether various kinds of waters historically protected from pollution can now be polluted or destroyed without a permitting process to limit the environmental impact of the discharging activity. This loophole is particularly dangerous in relation to the problem of nutrient pollution in the Mississippi River Basin. Pollution from the Mississippi contributes to the annual formation of "dead zone" in the Gulf of Mexico, an area where the bottom layer of water is extremely oxygen-depleted and that has reached state-sized proportions. Fortunately, with immediate action to restore protections to America's waterways we can also help address the growing trouble in the gulf.

Nutrient Pollution Is A Major Cause of Dead Zone in the Gulf

The formation of the dead zone is caused by the die-off of massive algae blooms in the gulf. These blooms arise in large part because of nitrogen and phosphorus pollution delivered by the Mississippi River from a broad watershed. Nutrients enter ecosystems from a variety of sources, including fertilizer runoff from farms, golf courses, and lawns; manure disposal; discharge from sewage treatment plants and industrial facilities; nitrogen deposition from the atmosphere; and erosion of nutrient-rich soil.¹

Nation's Smaller Waterways Provide Important Water Filtering

Small water bodies such as wetlands and headwater streams play an important role both as conduits and as sinks for nutrient pollution. Evidence shows that while much of the nutrients that reach the gulf come from runoff entering headwater streams, these streams and wetlands can also intercept and remove nutrients from the water before they get to major river systems and the gulf.

In the area under and next to a streambed, known as the hyporheic zone, water interacts with saturated sediments and the microbial organisms

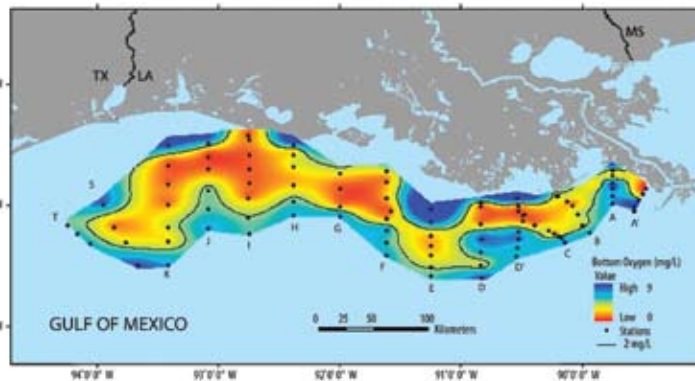
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Zone of hypoxia in the gulf of Mexico in July 2007

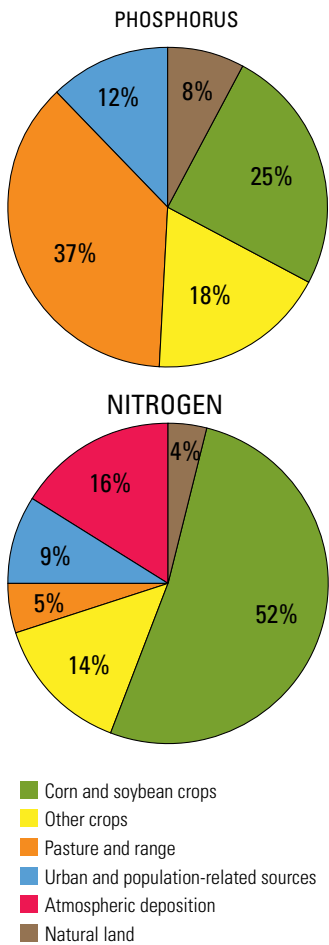


Data source: N. Rabalais, LUMCON. Map by A. Sapp

Reaching 20,720 square kilometers in 2008, the hypoxic zone was the second-largest ever recorded.² Although far from good news, this finding was a bit of a relief given estimates that the amount of nitrogen entering the gulf reached its highest level in nearly 40 years, bringing with it the potential for the largest dead zone ever.³ Researchers suggested that Hurricane Dolly churned up the water in the Gulf enough to avoid breaking the record.⁴

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Sources of Nutrients Delivered to the Gulf of Mexico



Source: United States Geological Survey

that live there. In headwater streams, increased contact occurs because of the slower movement of water and because such streams are often shallow.⁵ Microorganisms living in the hyporheic zone consume inorganic nitrogen and phosphorous and convert them into forms that are less likely to result in downstream algal growth. Actions to protect and restore the health of smaller waters throughout the basin can thus help to filter water in the Mississippi and reduce pollution contributing to the dead zone.

Even the Bush administration—which has a lackluster record of protecting our waterways—recently explained that wetlands in the Mississippi River Basin “retain nitrates and phosphates that would otherwise drain from adjacent farmlands.” The administration further noted that that ensuring that nutrients pass through such features “will help reduce the size of the hypoxic zone in the Gulf of Mexico and provide habitat, flood protection, and clean drinking water.”⁶

Recent Court Decisions and Government “Guidance” Put Our Waters at Risk

For many years, the federal Clean Water Act had protected our nation’s waterways—such as small streams and wetlands—from unregulated pollution or destruction. More recently, two Supreme Court decisions, along with subsequent policy directives (often referred to as “guidance”) from the Environmental Protection Agency (EPA) the Army Corps of Engineers (Corps), have endangered historic protections under the Clean Water Act for these functionally important waters by giving rise to enormous conflict about exactly what kinds of water bodies the law can protect.

As a result of the confusion about the law’s applicability, myriad small streams, adjacent wetlands, and “isolated” waters in the Mississippi River Basin and across the nation could lose the Clean Water Act’s safeguards against water pollution. Unfortunately, many of our country’s smaller streams and wetlands are now at risk of being polluted or even buried by mining companies, developers, industrial wastewater sources and others without a Clean Water Act permit to limit the negative effects of such activity, on aquatic resources including contributing to the dead zone.

Recommendations for Protecting Waterways and Reducing the Size of the Dead Zone

The ecological significance of the small waters of the Mississippi River Basin justifies their protection. And the health of the nation’s great river and the Gulf Coast depends on such protection. The law remains strong enough—if it is enforced—to protect a great deal of these resources. To ensure that the law is enforced to the fullest degree, NRDC recommends the following:

- Congress must pass the Clean Water Restoration Act to clearly protect water bodies that had been subject to the Clean Water Act prior to the Supreme Court’s decisions.
- The EPA and the Corps must retract their guidance documents misinterpreting the Supreme Court’s decisions.
- New guidance must make clear that tributaries for traditionally navigable waters—including ones with intermittent or ephemeral flow—are protected without case-by-case analysis of their function.
- The agencies’ guidance documents must reverse the *de facto* policy of leaving nonnavigable “isolated” waters unprotected.
- The agencies should examine the available evidence of the importance of wetlands throughout the Mississippi River Basin, including their ecological contributions such as reducing the dead zone, and announce that they have a “significant nexus” to the Mississippi River and to the gulf and therefore are presumptively protected by the Clean Water Act, in keeping with the most recent Supreme Court case. Although it is not legally necessary to do so (if the agencies implement the third recommendation above), the agencies should also draw the same conclusions about the headwater and seasonal streams of the basin.
- States should use available authorities to protect the resources that the federal government fails to safeguard.

¹ See generally Hypoxia in the Northern Gulf of Mexico: An Update by the EPA Science Advisory Board, EPASAB-08-003 (Dec. 2007) at 10.

² Louisiana Universities Marine Consortium, Press Release: ‘Dead Zone’ Again Rivals Record Size (Jul. 28, 2008), available at <http://www.gulfhypoxia.net/research/shelfwidecruises/2008/PressRelease08.pdf>.

³ Press Release: ‘Dead Zone’ Present and Growing, Record Year Predicted (June 10, 2008), available at <http://epa.gov/gmpo/pdf/deadzone-pressrelease08.pdf>.

⁴ National Oceanic and Atmospheric Administration, Survey Cruise Records Second-Largest “Dead Zone” in Gulf of Mexico Since Measurements Began in 1985 (July 28, 2008), available at http://www.noaa.gov/stories/2008/20080728_deadzone.html.

⁵ Judy L. Meyer et al., Where Rivers Are Born: The Scientific Imperative for Defending Small Streams and Wetlands, at 8 (American Rivers & Sierra Club, Feb. 2007), available at <http://www.americanrivers.org/site/DocServer/WhereRiversAreBorn1.pdf?docID=182>.

⁶ White House Fact Sheet, Protecting, Improving, and Restoring Our Wetlands (Oct. 3, 2008), available at <http://www.whitehouse.gov/news/releases/2008/10/20081003-10.html>.

