Iowa Policy Project
A Roadmap for Opportunity

Water Quality & the Nutrient Reduction Strategy

Environmental issues — particularly water quality — are integral to a discussion of opportunity. Both the health and the economic fortunes of Iowans depend on a healthy environment and public policy that supports it. Clean and abundant water is a critical asset that helps make Iowa an attractive place for families and businesses to locate.

The Iowa Nutrient Reduction Strategy (NRS) would appear to recognize this role, setting a goal to stop pollution by reducing nitrogen and phosphorus discharges by 45 percent. The NRS performance is another matter, due to policy shortcomings.

Destination:

Making the NRS meaningful in reducing agricultural sources of pollution.

- **Document where nutrients come from**
- **Measure progress in rivers and lakes**
- **Put some teeth in the NRS.**

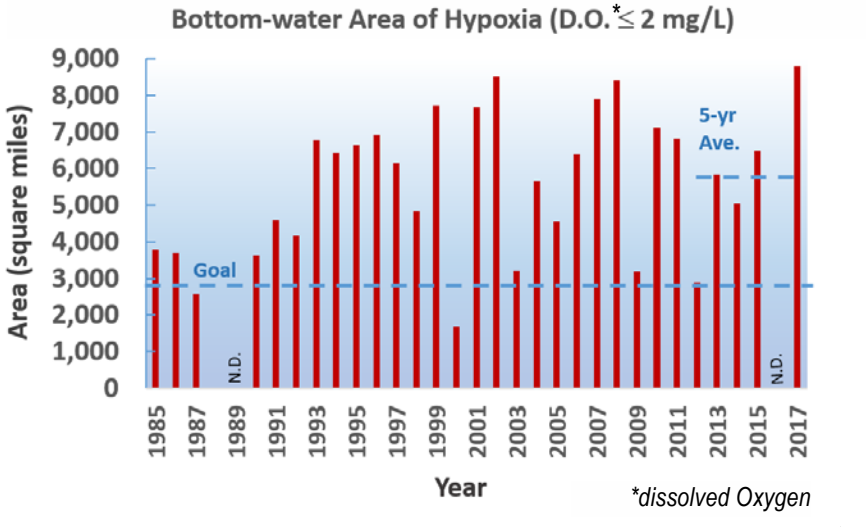
The NRS does one good thing: It settles any questions about how much of nutrient pollution comes from urban areas and how much from agriculture. Iowa State University's scientific underpinning for the NRS documents that 91 percent of Iowa's nitrate problem comes from "nonpoint" sources,[1] which are almost all from agriculture. Iowa has a total area of about 36 million acres and about 24 million[2] of them are harvested row crops, mostly corn and soybeans, the vast majority of which receive fertilizer.

How do we measure success?

The impetus for the NRS in Iowa and other states whose rivers discharge to the Mississippi River system is the large hypoxia zone or dead zone that the river system largely contributes to in the bottom waters of the Gulf of Mexico. The zone itself has not decreased in the five years since the various reduction strategies were established in upstream states.

The following graph shows the area of the hypoxia zone over more than 20 years, the goal (reducing the area to about the size of the state of Delaware), the five-year average area (about the size of Hawaii) and the 2017 area, which is the largest ever recorded (about the area of the state of Massachusetts). This data does not show success.[3]

Pollution Paradise? Five-Year Average: Gulf Dead Zone Larger than Hawaii



Nor do surveys of farmers give one a lot of hope for success with a voluntary program of reduction. ISU's 2011 Farm and Rural Life Poll found that half those surveyed had done no conservation in the previous 10 years.[4] A second poll released in 2015 asked the same question and still found that 40 percent of those responding said they had spent

nothing or less than $5,000 over 10 years.[5] With farms in Iowa averaging nearly 350 acres, the investment is only a bit more than a dollar an acre. The same poll found that about 40 percent of respondents were not even sure that their application of fertilizer had any effect on the Gulf of Mexico hypoxia zone and another 7.5 percent were sure their actions had no effect.

Policy Alternatives: Real NRS reform is needed more than ever

An April 2018 study, based on actual measurement of nitrogen in Iowa's water released to the Mississippi River system, shows Iowa's nitrate contribution is disproportionately large compared to other states in the watershed.[6] While other states are reducing their nitrate loads, Iowa is not, and Iowa's landscape and land management practices are likely to blame.

An IPP report from 2016[7] suggests ways to improve the NRS. First is obviously more money. ISU's estimate of the initial investment required to reach the NRS goal is between $1.2 billion and $4 billion, with millions of dollars in annual costs in addition. The 2018 Legislature appropriated new money but many hundreds of millions less, spread over several years, with no substantial initial investment. Moreover, these funds are taken from other existing programs such as education. All environmental and conservation groups in Iowa opposed the new law, which offers no water monitoring, has no benchmarks and has no deadlines for reaching a 45 percent reduction.

At the same time, **one part of a solution could come from a voter-approved trust fund for environmental quality and recreational enhancement**, which by constitutional amendment would receive the next three-eighths-cent sales-tax increase. The devil is in the details of how this could — and should — subsidize ag practices toward the goal of the NRS. Further, it would need offsets to lessen the impact on low-income Iowans of a higher sales tax. But it is one option to raise funds, as is placing a sales tax on sales of ag fertilizer, just as homeowners pay to fertilize lawns.

In addition to potential funding support, **Iowa should expect farms to implement at least two conservation practices** seen within the industry as best practices. ISU, the Iowa Soybean Association and other organizations list practices that can improve water quality, such as vegetative buffers along streams. Other practices are cover crops, bioreactors, grassed waterways, conservation uses for oxbows, contour farming, terraces and establishing wetlands. This recognizes that some farmers already are taking steps, and keeps a voluntary aspect in place by allowing each producer the choice of two practices. It also recognizes some farmers need a nudge forward, as half of Iowa farmers report so few conservation actions.

Voluntary-only is not enough. Iowans must demand more than happy talk and examples of some really good farmers taking action. More money and more acceptance of the need for new practices on every farm have to be part of the solution if Iowa is to reduce nitrogen loads by 45 percent.

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[1] Iowa State University. Iowa Nutrient Reduction Strategy: A science and technology-based framework to assess and reduce nutrients to Iowa waters and the Gulf of Mexico. 2013. http://www.nutrientstrategy.iastate.edu/sites/default/files/documents/NRSfull-130529.pdf
[2] U.S. Department of Agriculture. 2012 Census of Agriculture. Table 8 Land: 2012 and 2007. https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Iowa/st19_1_008_008.pdf
[3] National Centers for Coastal Ocean Science. Gulf of Mexico Ecosystem and Hypoxia Assessment https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/habhrca/ngomex/
[4] J. Gordon Arbuckle Jr., Paul Lasley and John Ferrell. Iowa Farm and Rural Life Poll 2011 Summary Report. Iowa State U. Extension and Outreach
[5] Arbuckle & Hanna Bates. Iowa Farm and Rural Life Poll, Farmer Perspective on Iowa's Nutrient Reduction Strategy. May 2015. ISU Extension and Outreach
[6] Jones CS, Nielsen JK, Schilling KE, Weber LJ (2018) Iowa stream nitrate and the Gulf of Mexico. PLoS ONE 13(4): e0195930. http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0195930
[7] Sara Conrad, David Osterberg and Michael Burkart. "Water Quality in Iowa and the Mississippi River Basin." November 2016. http://iowapolicyproject.org/2016docs/161117-water.pdf