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EXECUTIVE SUMMARY

Water Quality in Iowa and the Mississippi River Basin

What Do We Know?

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Despite voluntary conservation efforts, nutrient pollution remains problematic in the Mississippi River Basin and the Gulf of Mexico. The large hypoxic (or "dead") zone in the Gulf of Mexico has led the nation to demand more be done to reduce nutrient (nitrogen and phosphorus) pollution. To address the environmental and health effects of nutrient pollution, the Iowa Department of Agriculture and Land Stewardship, Iowa Department of Natural Resources, and Iowa State University College of Agriculture and Life Sciences drafted a plan in 2013 to reduce nutrients in surface water from both point and nonpoint sources. This report looks at the progress to date on that Nutrient Reduction Strategy (NRS).

First, we find no improvement in the size of the hypoxic zone. Despite voluntary nutrient reduction strategies in states like Iowa, recent data from the United States Geological Survey (USGS) and the National Oceanic and Atmospheric Administration (NOAA) show no improvement in the inter-annual variation in the size of the dead zone. It is clear that Iowa must continue efforts to reduce nutrient levels in Iowa watersheds to improve water quality in not only Iowa's streams and rivers but also the overall Mississippi River Basin and Gulf of Mexico.

Second, the latest annual report for the NRS overstates progress in implementing practices to reduce nutrient pollution. The most significant opportunities to reduce contamination from nutrient runoff and groundwater discharge to Iowa waterways include implementing land use changes. For example, keeping more land seeded down to a winter cover crop, using more land in pasture, and implementing *permanent* buffers along streams or in grassed waterways. The Iowa Nutrient Reduction Strategy Annual Progress Report 2015-2016, shows improvement in one federal program, the Conservation Reserve Program (CRP). Under this program the federal government rents land from willing landowners who must then seed it down for a number of years. Iowa CRP acreage has increased over the last five years, but still leaves the state half a million acres below the 2 million CRP acreage it once had. The NRS annual report also pointed to some success in establishing new land practices. However, while ***some*** producers have increased protection of the land, others ***failed to maintain or eliminated*** similar conservation practices and structures in the very same areas of the state. Finally, the NRS encourages farmers to plant cover crops after the main row crop is harvested. The amount of land in cover crops has expanded greatly with more than a 125,000-acre increase between 2014 and 2015 to a total of 400,000 acres. However, this amount requires context, as 400,000 acres represents ***less than 2 percent*** of the 24 million acres in harvested row crops in Iowa. At a yearly rate of 125,000 acres added per year, it would take approximately 100 years to protect half the row cropland currently in production.

Beyond the land use data, relevant information includes farmers' investment in conservation. In Iowa State University's Farm and Rural Life Poll, 51 percent of *farmers reported spending nothing on conservation in the 10 years prior to the 2011 survey.* Fortunately, a 2014 Farm and Rural Life Poll shows more dollars being spent on conservation measures and suggests the new emphasis on water quality may be motivating landowners to do more to protect land and reduce water pollution. However, both polls demonstrate that asking producers to voluntarily spend funds to protect water is not enough. Even in the 2014 survey, more than 40 percent of producers spent less than $5,000 over the previous 10 years, or less than $500 per year. Since the average size of an Iowa farm is about 350 acres, this suggests that voluntary action has brought spending of little more than a dollar an acre.[1]

Third, although awareness of the NRS is increasing, this is not changing farmers' opinions about what influences water quality. For example, more farmers became aware of the NRS between 2014 and 2015 and report they are concerned about agriculture's effect on water quality. However, nearly half of the respondents are ***uncertain if their farms contribute to hypoxia*** in the Gulf or ***are sure they have not had an effect***. Similarly, respondents reported a lack of understanding of agricultural effects on water quality in a recent survey of farmers taken in a watershed around Black Hawk Lake in central Iowa. Clearly, awareness of the NRS is not enough to assure good practices adopted voluntarily, and maintained.

Fourth, progress in improving water quality needs more verification, which can only come with actual measurement. Increased water quality monitoring can document the effectiveness of the conservation practices. Stream monitoring for water chemistry recently expanded, particularly in response to the Nutrient Reduction Strategy, but the number of stream discharge measurement sites and sediment concentration measurements have been reduced. Monitoring for particulate and especially dissolved phosphorus is a major gap in Iowa's efforts. Despite new continuous monitors on rivers, monitoring on lakes and reservoirs has not increased.

Based on current information, Iowa's efforts in response to the NRS have had minimal, if any, positive impact on the hypoxic zone in the Gulf of Mexico — or for the most part on Iowa's lakes, streams, rivers and drinking water supplies. At best, the state of Iowa has managed to not increase levels of nutrients in streams. There remains a widespread lack of understanding and acceptance of the connection between producers' business practices and the nutrient concentrations in waters of Iowa and the nation. Incremental improvement in awareness is a positive first step toward solving our water quality problems, but far more work remains if we are to substantively reduce the size of the Gulf of Mexico hypoxic zone and improve the overall health of Iowa's water systems.

All Iowans want to see progress in meeting our goals to improve water quality. Iowans want cleaner water, and we deserve a responsible and thorough accounting for the billions of dollars that state and federal taxpayers have spent and plan to spend to improve water quality.

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[1] Donnelle Eller & Christopher Doering Ag census finds Iowa farms are bigger but fewer in numberDes Moines Register. February 21, 2014. http://www.desmoinesregister.com/story/money/agriculture/2014/02/21/ag-census-finds-iowa-farms-are-bigger-but-fewer-in-number/5669313/

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