

## Iowa Nutrient Reduction Strategy

# AIMING TO IMPROVE WATER QUALITY

### Water Quality Matters to Us All!

Nutrient pollution threatens our drinking water supply, diminishes water quality in lakes and streams, increases algal blooms that can cause beach advisories, decreases housing values, and diminishes enjoyment for residents and visitors.

### What is the Iowa Nutrient Reduction Strategy?



**Science and technology-based, voluntary approach** to assess and reduce nutrients, specifically nitrogen and phosphorus, in Iowa waters.



Farmers, municipalities, agencies, conservation organizations, and everyday **lowans** are **collaborating to make changes** to help meet nutrient reduction goals.



**First in the nation!** In 2013, Iowa released its Nutrient Reduction Strategy. Iowa is leading the way in responding to the U.S. Gulf Hypoxia Action Plan calling on states along the Mississippi River to reduce nutrient loadings to the Gulf of Mexico by 45%.

### Nutrient Source Contributions to Iowa's Water

Total Nitrogen (N) Loss



**8%**

Point



**92%**

Nonpoint

Total Phosphorus (P) Loss



**20%**

Point



**80%**

Nonpoint

### Reduction Goals, Based on Current Technology and Practices



Point Source

**4%** N  
**16%** P



Nonpoint Source

**41%**

**N**

**29%**

**P**

### Point Source Pollution:

Any single identifiable source from which pollutants are discharged, such as a pipe or ditch. Wastewater treatment plants and industrial facilities are point sources.

### Nonpoint Source Pollution:

Pollution that does not have a specific point of discharge and results from rainfall or snowmelt moving over and through the ground carrying natural and human-made pollutants. Farmland is a nonpoint source.

**Hypoxia:** Reduced levels of oxygen that fail to support life. 2019 estimates suggest that the Gulf of Mexico hypoxia zone was over 7,800 square miles, or roughly the size of Massachusetts.



# How Do We Reach the Reduction Goals?

## Point Sources



### Stop it at the source:

Identify and manage nutrient output through discharge permit policies that require updated technology and processes for nutrient removal.

## Nonpoint Sources

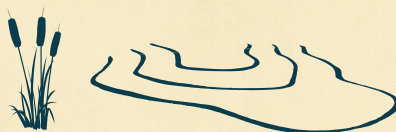
### Increasing implementation of conservation practices:

Every conservation practice will not work on every acre, but every acre can implement conservation practices that best fit the soil, cropping system and location on the landscape.



### Management practices:

application rate, timing, and method, plus the use of cover crops and reduced tillage.



### Edge-of-field practices:

wetlands, bioreactors, saturated buffers, prairie strips, buffers, terraces, sediment control, and drainage water management.





### Land use practices:

perennial energy crops, extended rotations, grazed pastures, and land retirement.

## Dollars and Sense

Meeting the Iowa Nutrient Reduction Strategy goals will take large scale implementation of conservation practices and significant private and public investment.

### Example scenario to achieve reduction goals for nonpoint sources:

Combined Nutrient Reduction Practices	N Reduction	P Reduction	Statewide Costs
<b>Nitrogen management</b> on all 21 million corn/soybean acres <b>Cover crops</b> on 12.6 million acres <b>Wetlands</b> treating 7.7 million acres <b>Bioreactors</b> treating 5.9 million acres	 <b>42%</b>	 <b>30%</b>	<b>\$36</b> per acre per year ( <b>\$756 million per year</b> )

Edge-of-field practices offer the greatest return on investment over their effective lifetimes, but have significant up-front costs. They also provide the largest, long-term water quality benefits, making continued public investment in wetlands, bioreactors and saturated buffers essential to improving water quality in Iowa and the Gulf of Mexico.

It's the only water the earth has. It's everyone's job to keep it clean.



To learn more about the Iowa Nutrient Reduction Strategy visit: <http://www.nutrientstrategy.iastate.edu/>

This publication was produced by the Conservation Learning Group and is based upon Iowa's Nutrient Reduction Strategy.