

Measuring Progress

In 2015, the Iowa Nutrient Research and Education Council (INREC) was formed with a primary mission to measure Nutrient Reduction Strategy (NRS) progress in the state of Iowa. INREC is now in the final stages of testing the official progress measurement tool for the state of Iowa.

Utilizing an INREC developed survey, a statistically representative sample of data from ag retailer records will be collected and analyzed to measure levels of farmer implementation of nutrient reduction practices across the state. Iowa State University will assess aggregated data collected by the survey to provide scientific calculations of the tonnage of nutrient loss reductions stemming from the measured practice adoption levels. Because the survey relies on verifiable data from retailer records, the assessment of progress will capture practices implemented privately without government cost share as well as those implemented through government programs.

When the pilot project wraps up, Iowa's official measurement tool will be ready to collect progress information on an annual basis.

INREC has been actively involved in two other projects to provide the needed information

to provide a highly detailed accounting of environmental stewardship that often happens outside of government programs.

Establishing The Baseline

INREC funded the same Iowa State University science team that worked on the nutrient assessment for the Iowa NRS in 2012 to use the same methodology and provide a nutrient assessment for the baseline years of 1980-1996 (see bottom of page for a detailed explanation of the NRS baseline assessment). The completion of a baseline assessment provides an historic point of comparison for both phosphorus and nitrogen.

This assessment shows that from the baseline period of 1980-1996 to the time of the establishment of the Iowa NRS that phosphorus losses have dropped 22 percent largely attributed to the widespread adoption of decreased tillage. The assessment also shows that nitrogen use efficiency has increased significantly, as crop yields have increased while nitrogen losses have remained mostly steady.

Progress You Can See

Another important project funded by INREC has been the mapping of Best Management Practices (BMP) using satellite images and LiDAR elevation

data. The project utilizes Geographic Information Systems (GIS) software to analyze digital elevation information and aerial imagery to identify existing soil conservation practices within each watershed across the state. The project maps Terraces, Water and Sediment Control Basins (WASCOBs), Grassed Waterways, Ponds, Contour Strip Cropping and Contour Buffer Strips. These practices help control phosphorus loss by reducing soil erosion. This project will provide a statewide "basemap" of existing practices for the period from 2007-2010 (concurrent with the years of LiDAR availability), as well as an assessment of the presence of these practices in the 1980s by utilizing historic aerial imagery.

The final component of the project will utilize recent aerial imagery to assess the current status of BMPs. These three components will provide a highly detailed assessment showing how practice adoption levels have changed over time, providing Iowa with yet another metric for tracking progress of the Iowa NRS.

Taken all together, INREC has made it possible for Iowa to get the most accurate and complete picture of nutrient stewardship in agriculture.

IOWA NUTRIENT REDUCTION STRATEGY BASELINE

TIMEFRAME ASSESSMENTS

The Iowa Nutrient Reduction Strategy (Iowa NRS) is now in its fifth year. Iowa's row crop producers continue to make progress with increased use and establishment of various nutrient reduction practices.

You may be wondering, "What are we comparing our progress to?" The short answer is the years 1980-1996. We'll simply refer to it as the Baseline. This period is consistent with the baseline utilized by the Gulf of Mexico Hypoxia Task Force and was established as the official baseline for Iowa in the first bill signed by Governor Kim Reynolds in 2018.

TODAY COMPARED TO THE BASELINE

- Iowa NRS provides scientific basis for practices proven to reduce losses
- With a 22 percent reduction in phosphorus losses, Iowa agriculture has nearly met the 29 percent nonpoint source reduction goal
- Iowa agriculture has greatly increased corn production without significant increases in nitrogen transport
- Iowa farmers and their advisers continue to increase adoption of NRS practices as they balance conservation, efficiency, and productivity.

Iowa now has an assessment of nutrient load exports from 1980-1996 (Baseline period) to use as a comparison point for measuring progress against.

The Iowa NRS estimated nutrient movement to surface waters from Iowa row crop acres using the years 2006-2010. That provided a recent benchmark of what was happening during the time the Iowa NRS was being created.

By comparing estimates of nutrient load exports from the recent benchmark of 2006-2010 to the 1980-1996 baseline, we can now accurately track progress in reducing nutrient losses.