

Push is on for Iowa to clean up its water

State leaders are counting on farmers to adopt conservation practices to protect waterways, soil

By Donnelle Eller, Des Moines Register; Nov. 9, 2013

EAGLE GROVE, IA. — When Tim Smith heard about nitrates that Iowa cities were struggling to remove from drinking water — or that were killing shrimp and fish in the Gulf of Mexico — he believed they were mostly coming from urban golf courses, lawns and businesses.

“I thought I was doing the best I could,” Smith said. Then he looked at tests that showed about 90 percent of the nitrogen entering his watershed was coming from farmland.

“Once I realized where the nitrates were coming from, I was willing to do something about it,” said Smith, who now plants a winter cover crop and built a bioreactor to help keep nutrients on his farm near Eagle Grove from going into a nearby stream.

Under pressure from environmentalists to produce results, state leaders are counting on thousands more farmers like Smith to adopt conservation practices such as cover crops, bioreactors, buffer strips and wetlands that can reduce the amount of nitrogen and phosphorous that enters Iowa’s waterways.

So far the effort, outlined in the state’s Nutrient Reduction Strategy to reduce hypoxia in the Gulf, has been voluntary.

But the Iowa Environmental Council, Environmental Law & Policy Center and other groups are pushing the state to begin setting standards and goals that would make the state — and farmers — more accountable for results.

“We have the science that demonstrates there’s a problem, we’ve recognized the problem, and we need to act on that to create water quality standards that will provide protections and a framework for cleaning up the problem,” said Josh Mandelbaum, an environmental law attorney.

At the same time, Des Moines Water Works, serving the state’s largest metro area, is threatening a lawsuit after spending nearly \$1 million this year to remove nitrates from the region’s drinking water.

Smith said Iowa farmers need to determine what works best for themselves to hold nutrients before they're forced to act. "Voluntary but not optional" is how he sees Iowa's Nutrient Reduction Strategy. "Farmers are a pretty independent group. We don't want regulations hanging over our heads," he said.

Farmers looking long term

Groups like the Iowa Soybean Association say the conservation practices are a good long-term investment in farm operations. They'll help improve soil health and yields, with increased organic matter, reduce what farmers spend on nitrogen fertilizer, and help them better withstand extreme weather conditions. For example, experts say cover crops can better pull precipitation into the ground and hold it, helping corn and soybeans during drought conditions.

"We're going to generate economic value by retaining those nutrients in the state and by growing those crops more productively," said Roger Wolf, director of environmental programs at the soybean association. Last month, the group invited about 50 state lawmakers, government leaders and growers to Smith's farm and others to see up-close practices that farmers are beginning to embrace.

"If we want to grow 300-bushel corn, we're going to need 300-bushel corn soil," Wolf said. "The only way we're going to get there is to get better at managing organic matter and water."

State leaders like Chuck Gipp, director of the Iowa Department of Natural Resources, and Bill Northey, Iowa's secretary of agriculture, say getting farmers to participate voluntarily is the right path to improve Iowa's water quality and to reduce the Gulf dead zone. And, they say, interest is growing.

Gipp said he sees once-black fields now green with cereal rye, radishes and other cover crops as he drives from Des Moines to his Decorah home. "There's been a sea change in attitudes," he said.

Gipp also points to Northey co-leading the 31-state Hypoxia Task Force as an example of how seriously farmers and the industry are taking concerns about reducing nutrients in waterways. "He was elected and re-elected on that platform," Gipp said.

Northey said Iowa's efforts are beginning to grow. The state is doubling annually the number of acres that are planted over winter with cover crops, although it's still less than 1 percent of Iowa's 31 million farm acres.

Dropping seeds from above

But five years ago, Northey said he rarely saw farmers using airplanes to sow cover crops on fields in the fall, before the harvest begins. Now, it's becoming more common. He's among the farmers giving it a try.

"At the time I harvested in mid-October, that rye was beginning to come up underneath that crop. It should have time to green up before a hard freeze comes and in the spring because it got a nice start in the fall," said Northey, who farms in northern Iowa.

Northey said farmers are looking at which types of cover crops might work best for them, although cereal rye is used by most farmers to hold nitrogen in the farmland and prevent erosion. Some crops combat compaction and other soil challenges.

Experts say cover crop plants feed soil microorganisms that build organic matter and soil health. In the spring, farmers use chemicals to kill the crops or till them into their fields before they plant. "It made sense for me to try it as much as I talk about it. I wanted to get my own experience," Northey said.

Northey said he paid for the cover crop himself and didn't participate in the \$2.8 million state program to encourage greater adoption of cover crops, no-till and strip-till conservation planting. Farmers also are being encouraged to apply nitrogen in the spring, when possible, when plants need it.

The state demonstration money was tapped within days of becoming available.

Mandelbaum, the Environmental Law attorney, points to this year's cover crop program as a good example of how the state needs a more results-based approach to tackling water-quality issues generated from farmland.

He said the state could have targeted the first-come, first-served dollars in the watersheds where their use would have had the greatest impact. Or used the money to leverage more conservation practices — or even to collect more information. "We don't even have a baseline of how many farmers are voluntarily planting cover crops," he said.

Northey and Wolf say no one conservation method works the same on Iowa's diverse landscape. Soil types vary greatly, the terrain is diverse — from rolling hills to tilled farmland — and weather greatly influences the amount of nutrients entering waterways. For example, last

year's drought meant nitrogen might not have been fully used by corn plants, then flooding this spring made it harder to keep nutrients on farms.

Farmers will likely need a suite of practices to get the best results, Northey said. "There's no silver bullet. It will be more like silver buckshot," he said.

Iowa farmers need time to try conservation practices to see how they work and assess the cost and benefits, some of which may take a few years to materialize, Northey and Wolf say.

Making long-term investments in land becomes more complicated when about 60 percent of Iowa farmland is rented, leased or in a crop-share arrangement.

It may be a harder sell to farmers, who face high costs for rent, fertilizer, seed and other farming costs at the same time prices for corn and soybeans have dropped about 40 percent from record highs a year ago.

"That's always a question: Who is going to pay for all this work?" said Wolf, adding that conservation funding comes from the U.S. farm bill and state programs.

Farmer learned from neighbor

Smith, the Eagle Grove farmer, decided to participate in the Mississippi River basin initiative, a national effort to improve watersheds, after seeing his neighbor Arlo Van Diest using conservation methods such as strip-till planting.

Rather than plow a whole field, strips are tilled, leaving corn stalks and other residue, while still allowing a cleared space for the seed bed.

Van Diest said he was tired of seeing a farmer's greatest asset blow away. "In the 1960s, you couldn't see across the highway because of all the dirt that was blowing," he said. "It made me physically ill."

He started experimenting with different conservation practices to prevent erosion and improve the soil health.

Smith liked what Van Diest was doing and decided to give it a shot and enrolled in the federal conservation program.

Smith has since become a believer.

Before his bioreactor became active, testing showed nitrates leaving his farm were higher than the stream levels. With cover crops and the bioreactor, which uses good soil bacteria to reduce nitrogen from till drainage, Smith's nitrogen levels are now about half the level of the stream. That tells him he's making a difference.

Now he's looking at trying different cover crops, each of which comes with different benefits, and expanding where he uses them.

Northey said there will be a lot of experimentation. "Not everything is going to be adopted overnight," he said. "And there's not a perfect answer."