

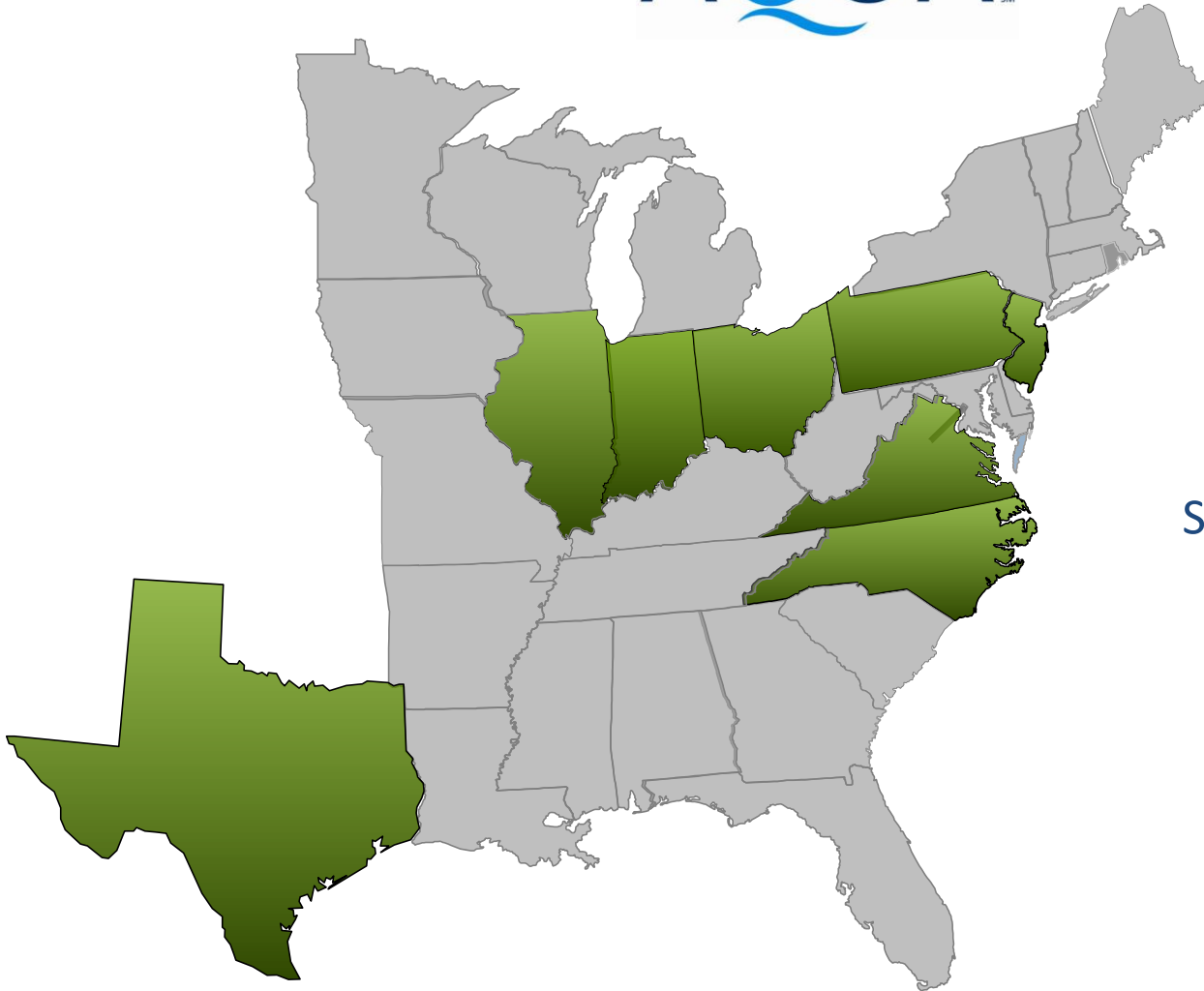


Critical Water Issues

Nitrate Reduction Initiative – Danville, Illinois

AQUASM

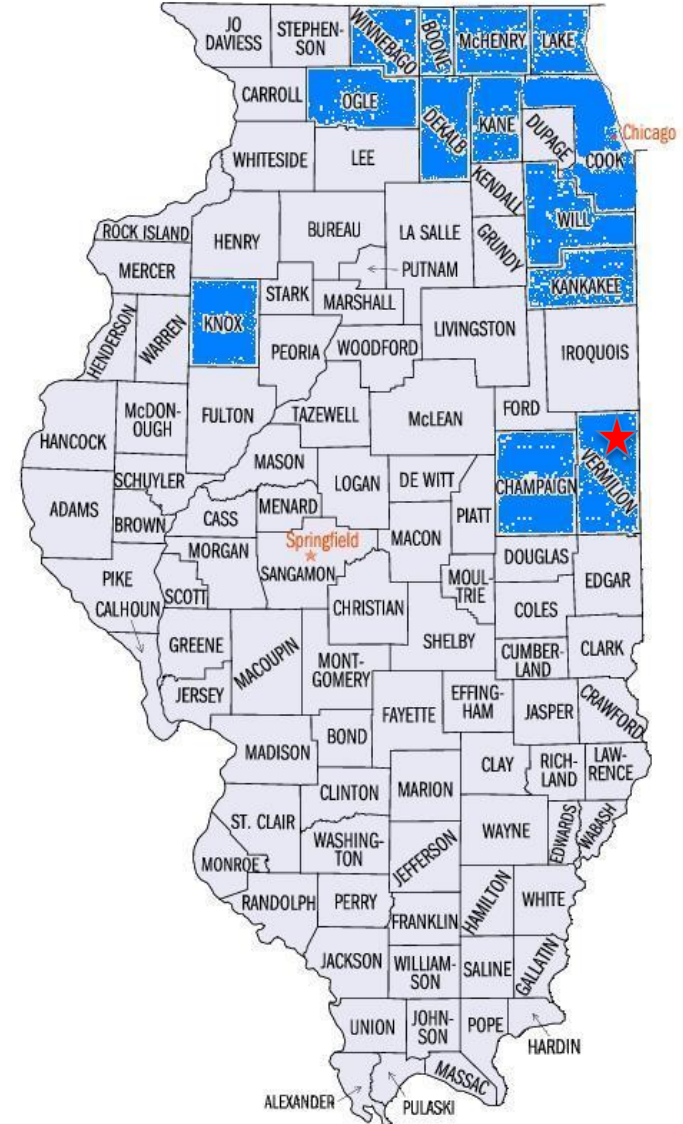
September 29, 2016



Serving approximately
3 million residents
throughout 8 states

Aqua Illinois

- Operating in Illinois for 130 years
- An investor owned utility since inception.
- Today Aqua provides water and wastewater services to approximately 225,000 Illinois residents in 13 counties.
- Aqua employs approximately 100 people in Illinois
- Danville Regional Water Source and Treatment Plant
 - Danville
 - Tilton
 - Westville
 - Catlin



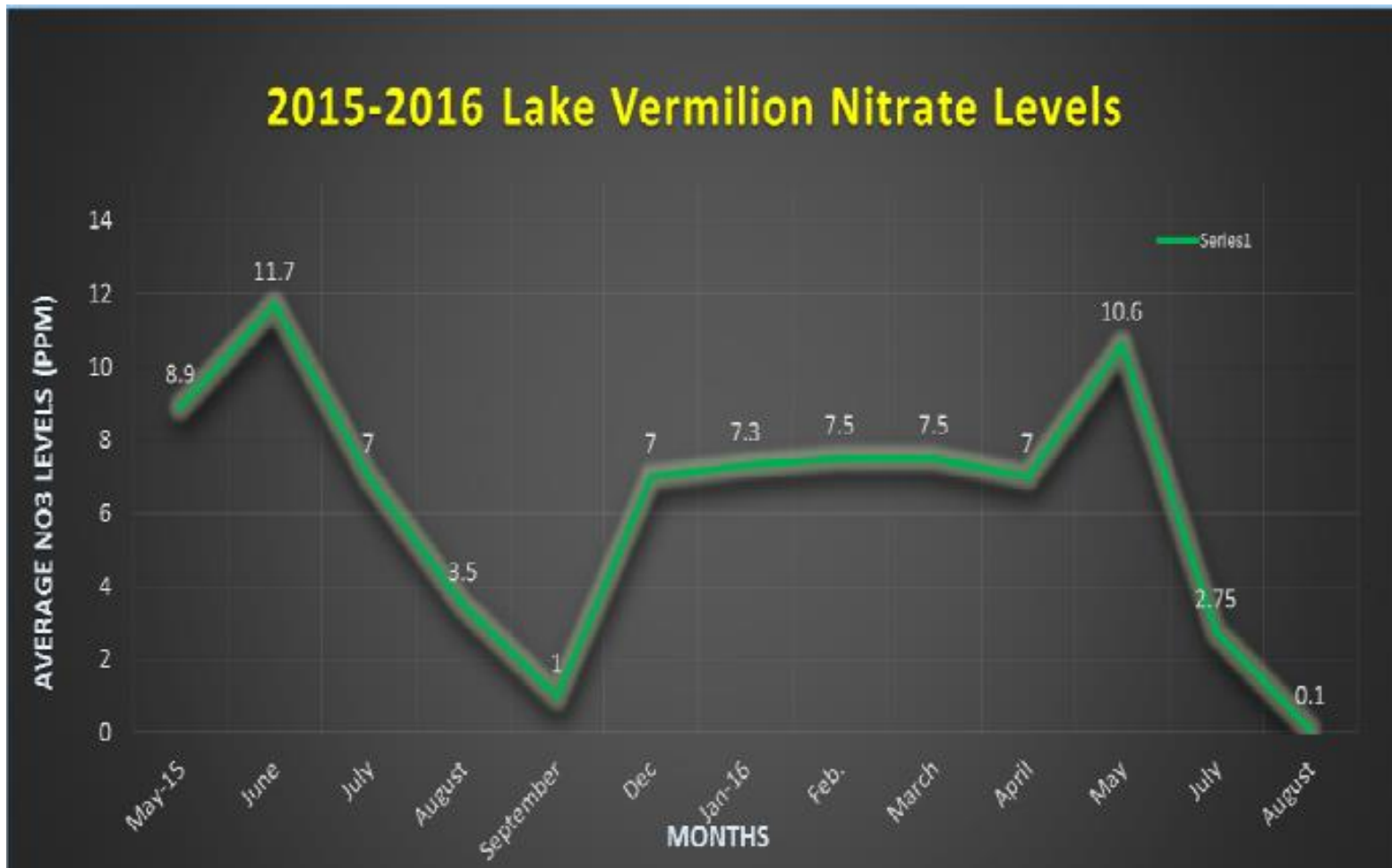
Lake Vermilion – Danville Illinois



Nitrates

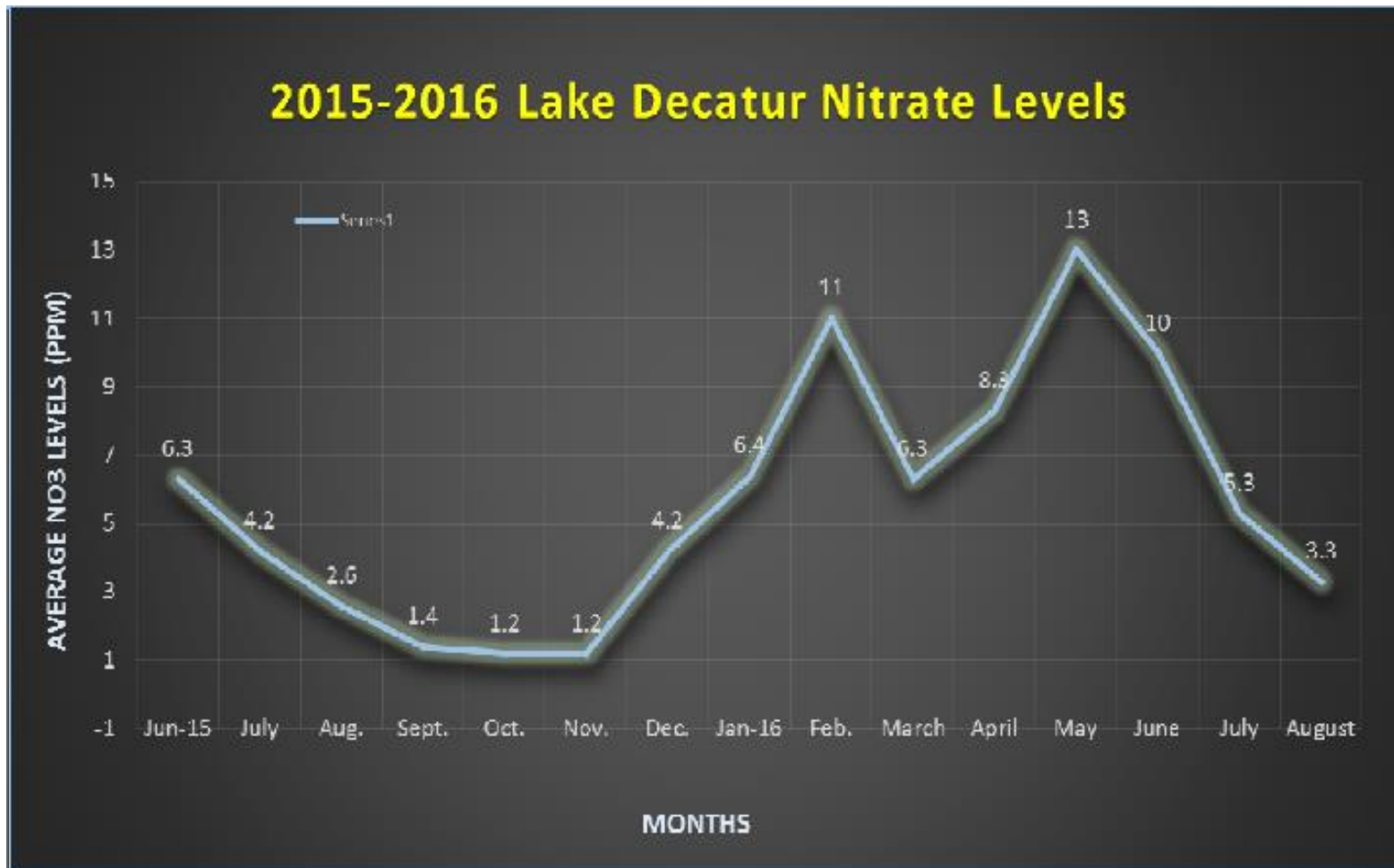
- Nitrogen = Nitrites = Nitrates
- Health Risk: Can cause Blue Baby Syndrome in infants under 6 months
- Guidelines were established in 1962 for the amount allowed in drinking water.
- EPA Standard is 10 MG/L
- In 1986 the EPA confirmed this standard with the Safe Drinking Water Act.
- Danville has struggled to meet regulation of 10 ppm since EPA started regulating nitrates

The Trend – Actual Source Readings



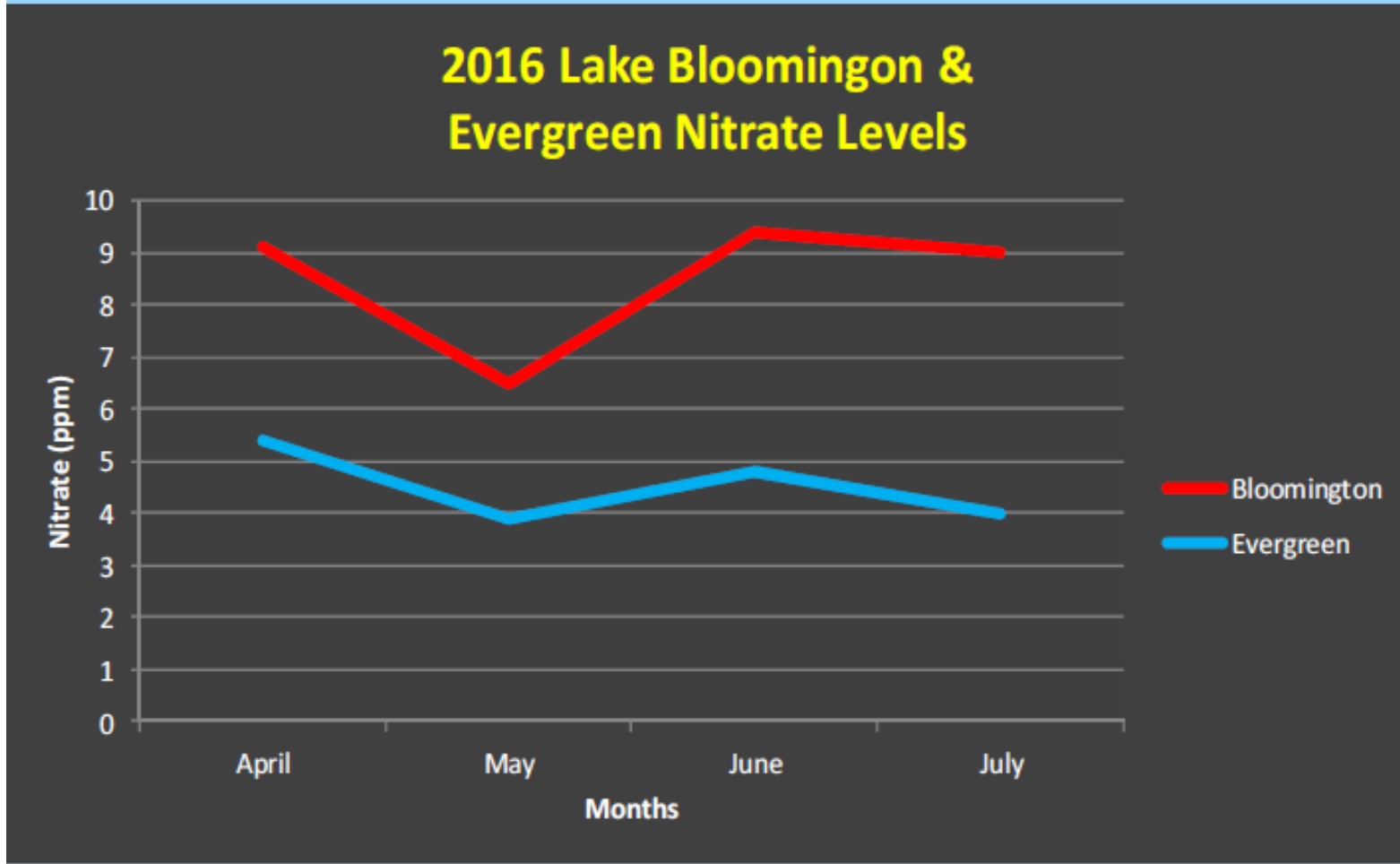
Source: Illinois Chemical & Fertilizer Association Summer 2016 Newsletter

The Trend – Actual Source Readings



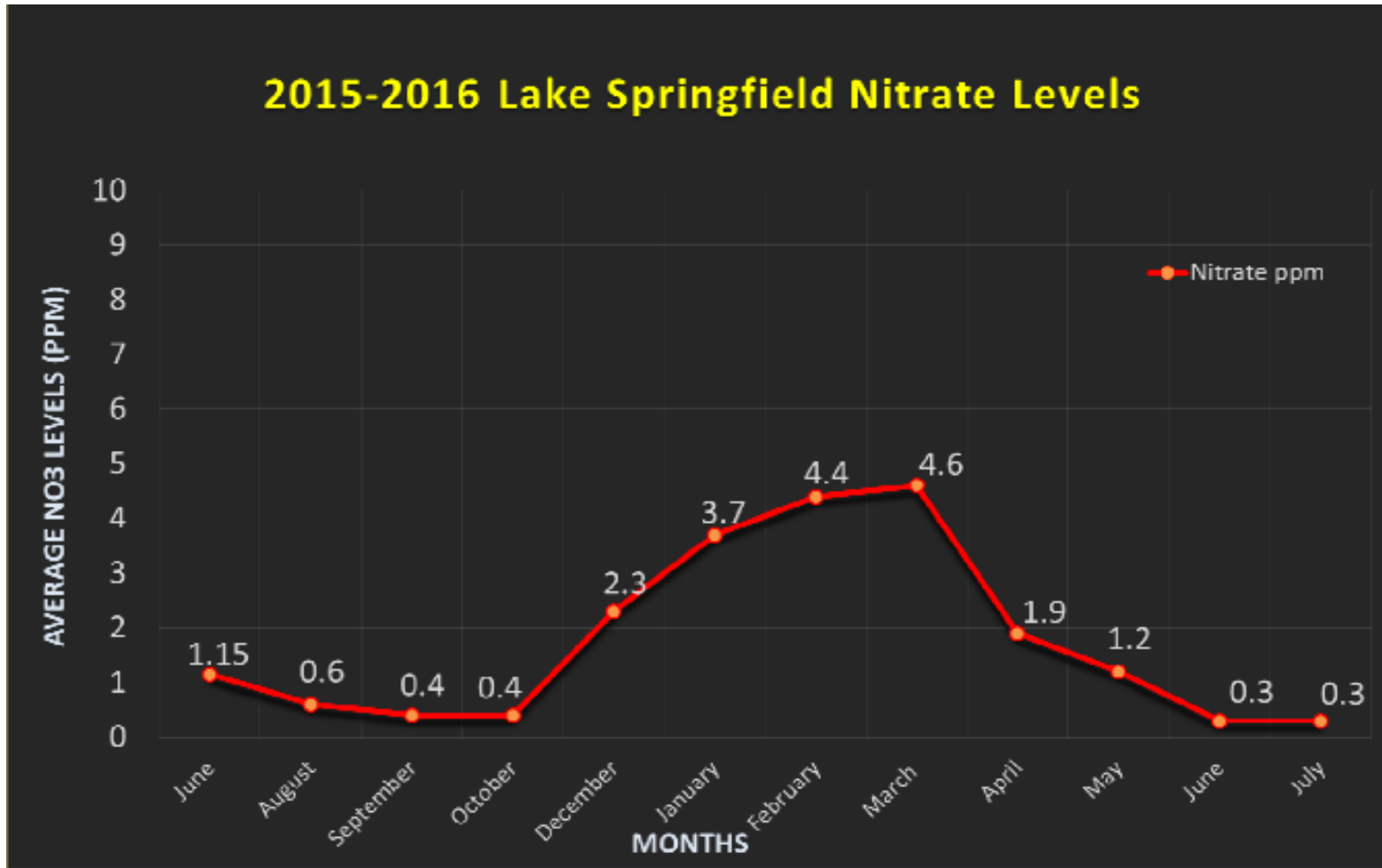
Source: Illinois Chemical & Fertilizer Association Summer 2016 Newsletter

The Trend – Actual Source Readings



Source: Illinois Chemical & Fertilizer Association Summer 2016 Newsletter

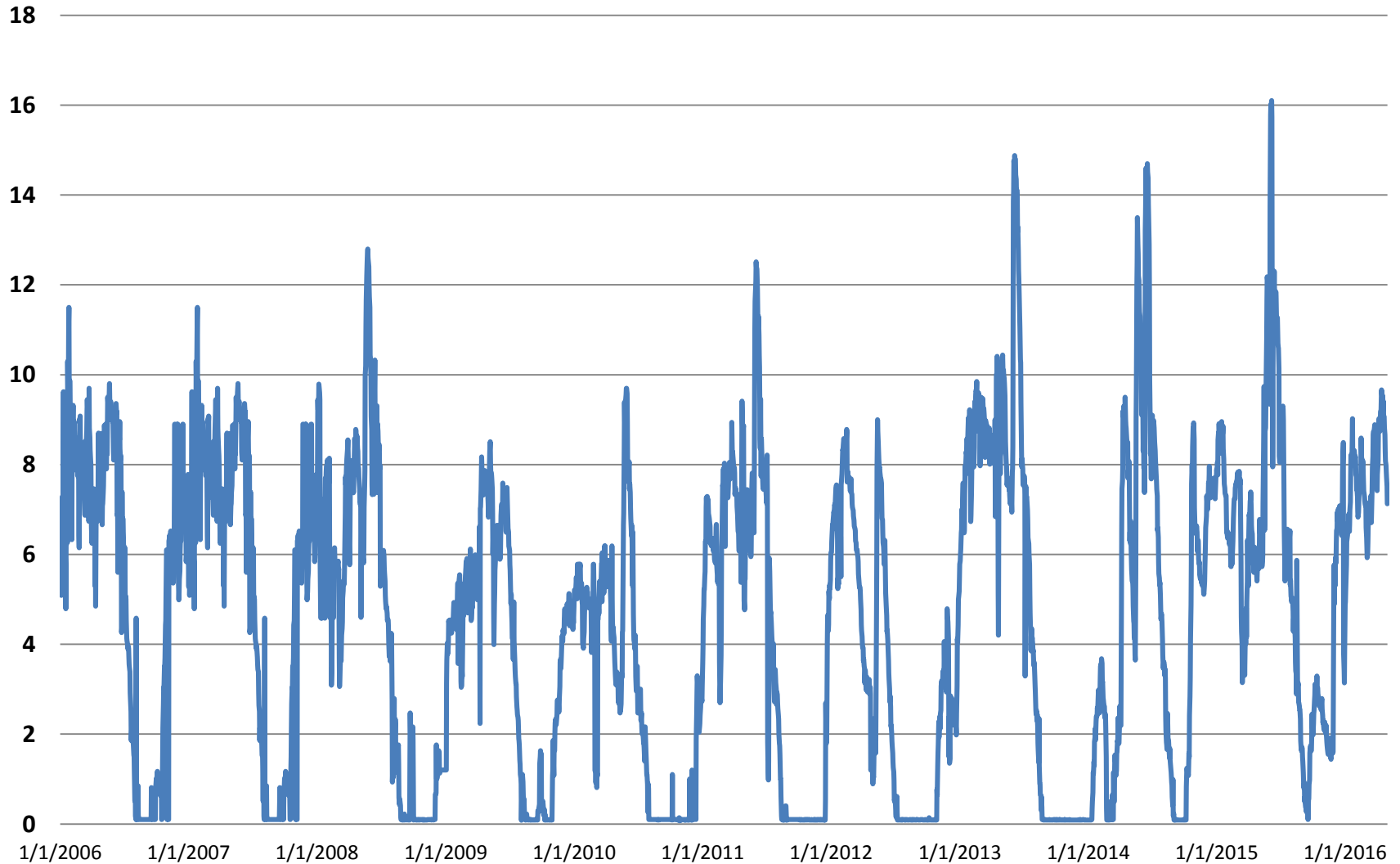
The Trend – Actual Source Readings



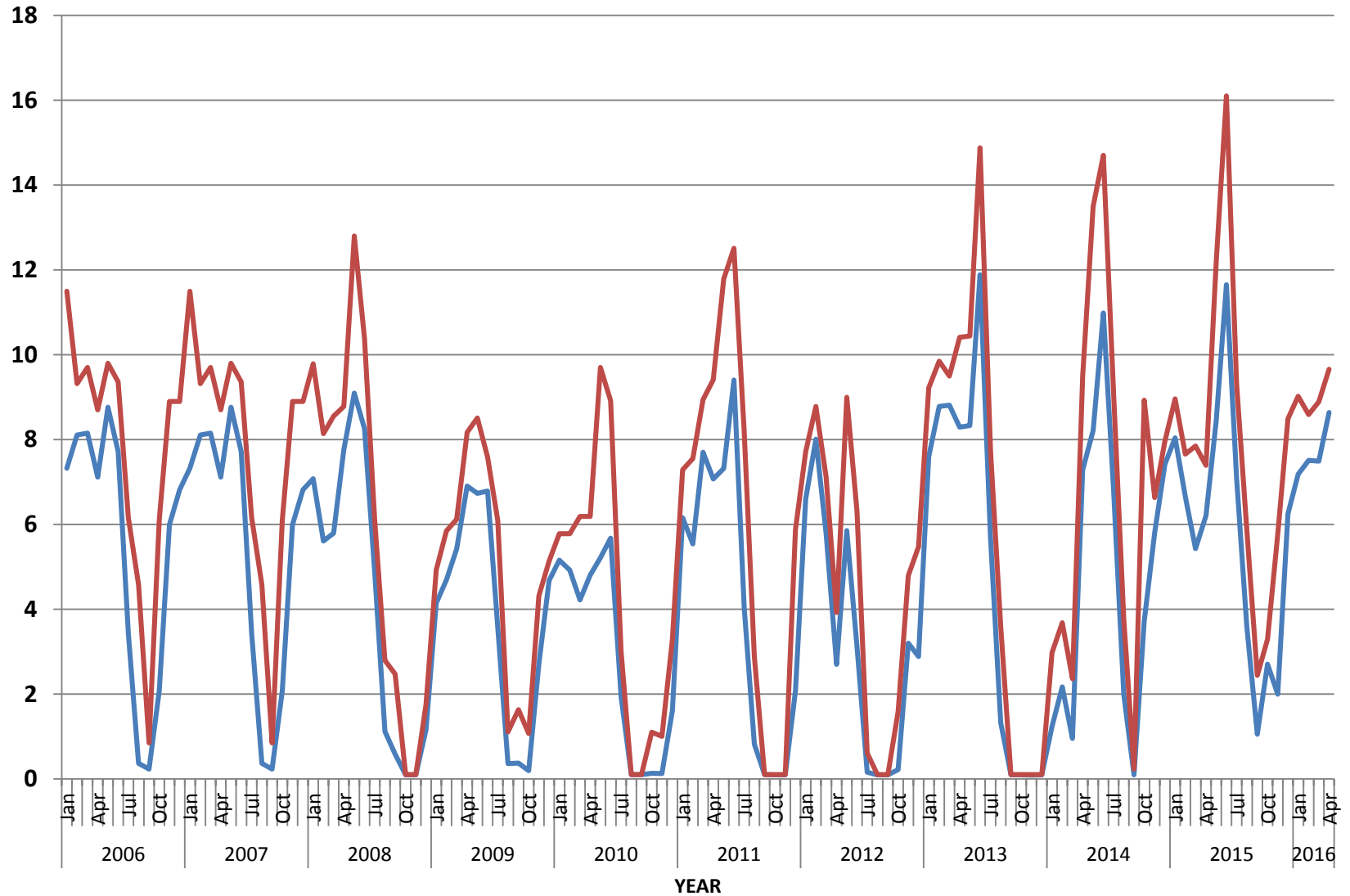
Source: Illinois Chemical & Fertilizer Association Summer 2016 Newsletter

The Trend – Daily Actual Source Readings

NO3-INFLUENT

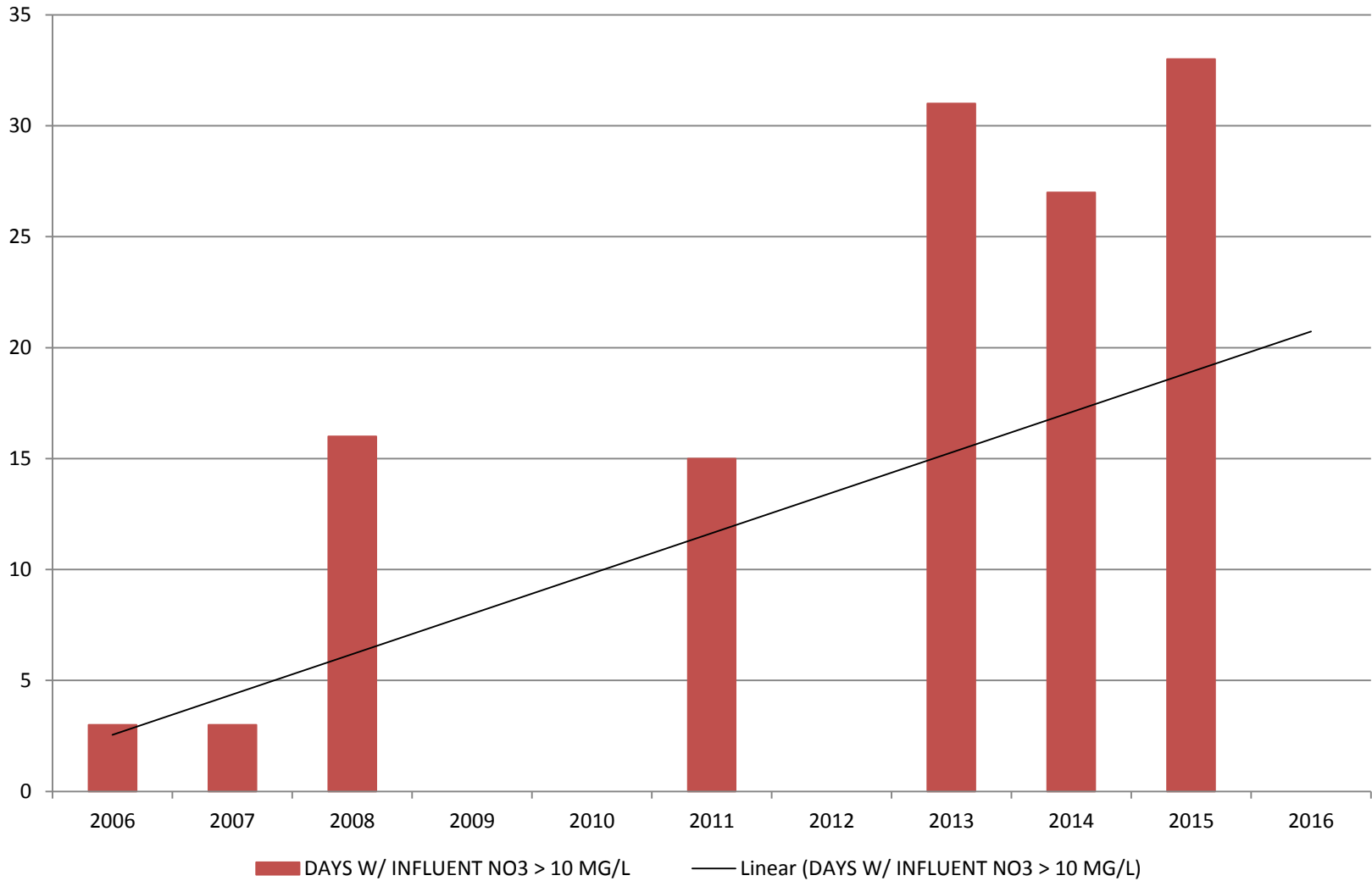


The Trend – Monthly Average and Maximum



The Trend – Days above 10MG/L

DAYS W/ INFLUENT NO3 > 10 MG/L



Danville's Nitrate Removal Plant



Drivers

- Application of nitrogen on frozen ground
- Improved Drainage
- Weather Patterns



The Solutions?

- Education
 - Collaborating with Fertilizer and Chemical Association on Nitrogen application methods (step and localized application)
 - Recommendation to farmers and fertilizer agencies to abstain from applying Nitrogenous compounds on frozen or snow covered fields



IFCA Mission: To promote and implement the 4Rs of nutrient stewardship (right source, right place, right time, right rate) to minimize environmental impact, optimize harvest yield and maximize nutrient utilization.

The Solutions?

- Data Collection and Monitoring
 - Weekly sample collection from the watershed was started in early 2015 to set a baseline on where the problem areas are on the river and what the variations are with river flows



The Solutions?

- Best Management Practices
 - Workshops and informational fliers to educate farmers and to encourage best management practices
 - Experimentation and utilization of cover crops



The Solution?

Cover Crop VS No Cover Crop Nitrate results in MG/ L (ppm)			
Week	no cover crop	Cover crop utilized	% Reduction
3/ 27/ 2016	13.9	5.99	56.91
4/ 4/ 2016	18.6	6.63	64.35
4/ 11/ 2016	14.2	5.42	61.83
4/ 18/ 2016	14.4	4.82	66.53
5/ 9/ 2016	15.1	3.92	74.04
7/ 21/ 2016	11.1	4.17	62.43
No flow from tile week of 4/ 25/ 16			

Nitrates in the News

Sides line up in Des Moines Water Works' nitrate lawsuit

Donnelle Eller, deller@dmreg.com 10:56 a.m. CDT April 2, 2015



(Photo: Michael Zamora/The Register)

Three northwest Iowa counties that Des Moines Water Works is targeting with legal action could get some help in the battle. So, too, could the Des Moines utility.

The Iowa Drainage District Association is asking about 40 counties and 20 corporations to join the counties' fight, and the Iowa Farm Bureau says it's assessing how it can best help in the battle.

In January, Des Moines utility leaders decided to sue drainage districts in Sac, Calhoun and Buena Vista counties ([/story/money/agriculture/2015/03/10/utility-consider-pursuing-water-quality-suit/24728999/](http://story/money/agriculture/2015/03/10/utility-consider-pursuing-water-quality-suit/24728999/)), claiming a system of underground tiles provides a conduit for high levels of nitrates to enter the Raccoon River, a source of drinking water for 500,000 residents in central Iowa.

On the other side, the Sierra Club in Iowa said it will seek to intervene in the case. And several farm, environmental and consumer groups, both in Iowa and the nation, are closely watching the high-profile case.

DES MOINES REGISTER

[Rural lawmaker calls for boycotting Des Moines over Water Works lawsuit](http://www.desmoinesregister.com/story/news/politics/2015/03/19/rural-iowa-boycott-des-moines/25024389/)

(<http://www.desmoinesregister.com/story/news/politics/2015/03/19/rural-iowa-boycott-des-moines/25024389/>)

"We believe Des Moines Water Works has legitimate concerns about the operations of the drainage districts named in the lawsuit," said Katy Heggen, a spokeswoman for the Iowa Environmental Council. "We share Des Moines Water Works' concern about the lack of urgency and measurable progress to reduce the nitrate pollution."

The utility says it struggles to meet federal drinking water limits on nitrate concentrations. This winter it spent \$540,000 to run nitrate removal equipment. Infants younger than 6 months are particularly at risk of becoming seriously ill from high nitrate levels.

The Des Moines utility wants the drainage districts — and, indirectly farmers — to be required to meet federal clean-water standards, similar to those governing factories, cities and other "point-source" polluters.

VIDEO: [Water quality advocates encourage Water Works suit \(/videos/news/2015/03/11/24734103/\)](http://videos/news/2015/03/11/24734103/)

IOWA POLL: [Most Iowans support water pollution lawsuit \(/story/money/agriculture/2015/02/26/iowa-poll-water-quality/24091173/\)](http://story/money/agriculture/2015/02/26/iowa-poll-water-quality/24091173/)

Now, agricultural runoff is exempted from Clean Water Act requirements, because it comes from multiple sources across a large region.

The lawsuit has the potential to change farming across the state and nation. Farm groups and leaders have criticized the lawsuit, saying a better approach would be to work with farmers to build conservation practices that can reduce the loss of nitrogen and other fertilizers.

Given the possible ramifications, John Torbert, the state drainage district association's executive director, said the group sent letters to counties with organized drainage districts, asking them to contribute \$5,000 over three years to help fight the lawsuit. It made a similar request to about 20 corporate members, asking them to donate \$2,000 over three years.

Des Moines water quality suit slated for trial in 2016

Donnelle Eller, deller@dmreg.com 11:56 a.m. CDT July 15, 2015



Buy Photo

(Photo: Michael Zamora/The Register)

The Des Moines Water Works lawsuit against three northwest Iowa counties over water quality is scheduled to be heard by a federal trial judge, beginning Aug. 8, 2016, unless a continuance is sought, a court document indicates.

U.S. District Court Judge Mark Bennett expects the bench trial in Sioux City to last up to two weeks.

The Des Moines utility is suing Buena Vista, Calhoun and Sac counties, claiming drainage districts there act as conduits for nitrates to move from farm fields into the Raccoon River, one of two sources of drinking water for 500,000 residents in the Des Moines metro area.

The utility seeks federal oversight of the drainage districts, and indirectly farmers, under the Clean Water Act. Attorneys for the counties have denied the field tiles are contributing to Des Moines' nitrate problems. They seek to have the lawsuit dismissed.

Des Moines attorney Charles Becker, an attorney for the north Iowa counties, declined to comment Wednesday.

Bill Stowe, the utility's CEO, said the utility is confident the lawsuit "will lead to greater environmental protections in Iowa."

Stowe criticized what he called farm propaganda on water quality, pointing to TV ads from the newly created Iowa Partnership for Clean Water. Instead, he said, the utility wants "substantive discussions about what will protect the quality of the Des Moines and Raccoon rivers."

Ag leaders have encouraged growers to adopt more conservation practices outlined under the voluntary Iowa Nutrient Reduction Strategy to keep nitrogen and other nutrients on farm fields, where crops need them. The state provided \$9.6 million in the last legislative session for conservation and water quality initiatives.

Chris Hensley, a Des Moines City Council member, is an Iowa Clean Water Partnership leader. She said the lawsuit is "not the right path forward."

"Legal action will create a divide between rural and urban Iowa and do nothing to reduce nitrate levels. Collaboration will increase participation in conservation efforts, such as the Nutrient Reduction Strategy, and make a positive impact on water quality.

"We encourage Des Moines Water Works to sit down and listen to all impacted stakeholders, as the consequences of a lawsuit are far-reaching," she said.

Stowe said recent high nitrate levels prompted the Des Moines utility to run its nitrate removal plant for more than 150 days, longer than ever before. It stopped using the plant late last week.

"We want to hear about meaningful, measurable, monitored, scheduled protections of water quality in Iowa," Stowe said. "We don't need to hear about 10 bioreactors in a state with 20 million acres of row crops, or \$4 million to \$5 million put into conservation practices."

Stowe said the Des Moines utility is talking to some Iowa agriculture business leaders about how the lawsuit could be settled. He declined to say who is involved in the conversations.



Questions?

AQUASM