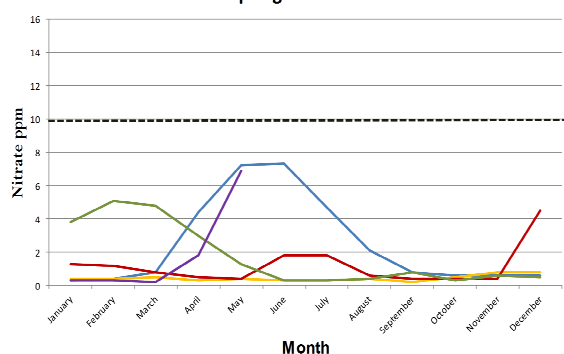


Our Mission: To promote and implement the 4Rs of nutrient stewardship (right source, right place, right time, right rate) to minimize environmental impact, optimize harvest yield and maximize nutrient utilization.

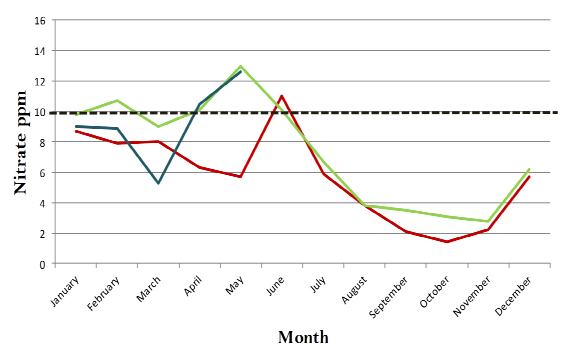
IN THIS EDITION:

- **A Wet, Cold Spring: What's Going on With Nitrogen and Water Supplies?**
- **Special Emphasis in Lake Vermilion Watershed to Reduce Nitrogen Losses**
- **Lake Springfield Watershed Gets its Very Own Nitrogen Rate Recommendation**
- **NREC Research Focused on Getting a Good Corn Crop Following Cereal Rye Cover Crop**

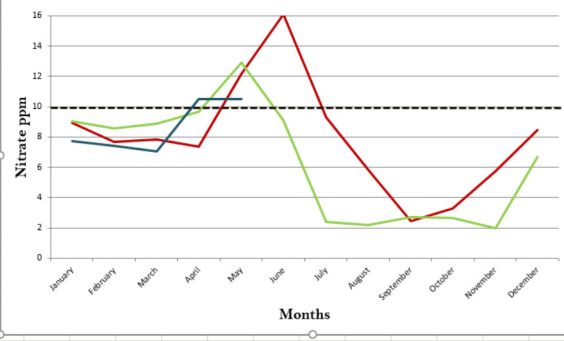
Lake Springfield Nitrate Levels



Lake Decatur Nitrate Levels



Lake Vermilion Nitrate Levels



the soil tests show nitrogen remaining in the soil profile and that the soil will also produce nitrogen. IFCA urged our ag retail members to use the information in the UI bulletin and visit with farmers on a case by case basis, watching the crop as the weather turns warmer, and to carefully manage nitrogen until the conditions improve and crop utilization of nutrients kicks into gear.

Spring 2017: Cold, Wet and Worrisome

One emphasis of the Keep it 4R Crop program is to manage nitrogen as a system so that you can adjust to weather and crop development challenges and also manage nitrogen to help protect water supplies. That is exactly what is happening this spring.

In April, fertilizer applications went as planned and corn was mostly planted on time, making us all feel good for a while. But when a cold, wet pattern emerged in late April it wreaked havoc on crop development and nitrogen utilization. And it showed not only in the fields with yellow or drowned corn, but also in the water supplies.

These graphs show a comparison of the peak monthly nitrate levels in the lakes for the past several years. Poor nitrogen utilization combined with heavy rains in May resulted in some nitrogen loss. This was particularly evident in Lake Springfield where nitrate levels in the lake approached 7 ppm in mid May. CWLP cannot remove nitrate so this is especially troubling. The nitrate levels in Lake Springfield are approaching the levels we saw in spring 2013, when a very poor crop in 2012 left residual N in the soil after harvest, and that N was flushed out of the system in the early spring of 2013.

Lakes Decatur and Vermilion activated their nitrate removal in mid May but were able to turn them off the last week of May as nitrate levels in the lake declined; unfortunately the levels in Lake Springfield continued to go up. Lake Bloomington reached 11 ppm and has been blending with water from Lake Evergreen, which is around 5 ppm, to get below the 10 ppm drinking water standard.

What does all this mean? With analysis from NREC funded research on soil nitrate tracking, Dr. Emerson Nafziger at the University of Illinois issued a "Bulletin" on May 18 advising crop advisers and farmers of the situation and providing advice. The bulletin is available at <http://bulletin.ipm.illinois.edu/?p=3882>. Ag retailers are also utilizing N-WATCH to keep their customers informed on levels of N remaining in the soil.

To summarize Dr. Nafziger's assessment, he reminds everyone that with a split nitrogen application system, there is always the ability to adjust with side dress season approaching, and for those who have already applied the majority of their nitrogen, he also points out that

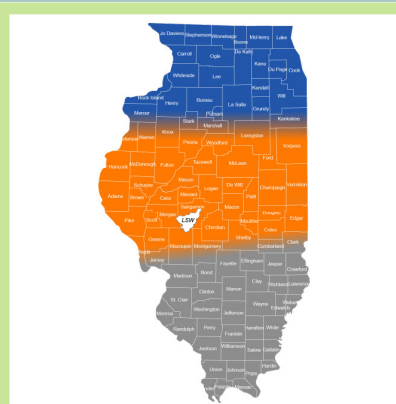
Lake Vermilion Water Quality Partnership

Lake Vermilion has seen higher nitrate levels in recent years and has a nitrate removal system that struggles to keep up when N levels get over 14 ppm in the Lake. With this in mind, a special partnership between the members of the IFCA, the Vermilion County Farm Bureau, the Vermilion County SWCD and Aqua Illinois (the water supplier) is focusing on better nitrogen stewardship and encouraging ag retailers and farmers to get involved in nitrogen rate trials, N-WATCH and nitrogen management systems to reduce nitrogen losses. Over the winter, these groups stressed the importance of involvement at meetings and in publications, and currently there are four N Rate trials in the watershed. These trials can be seen on the map to the right (all N Rate Trials can also be viewed at www.ifca.com). The goal is to develop a MRTN for the Lake Vermilion watershed similar to what was accomplished in Lake Springfield (see story below). Findings from these on-farm efforts, including observations from N-WATCH, are communicated with the ag retailers and farmers in the watershed. So far this year, Lake Vermilion's peak nitrate levels have remained lower than in previous years and we hope to continue that trend with improved awareness, education and management of N in the watershed.



MRTN Nitrogen Rate for Lake Springfield Watershed

When it comes to reducing nitrogen losses, the Nutrient Loss Reduction Strategy encourages all farmers to use the Maximum Return to Nitrogen (MRTN) rate recommendation, which is designed to provide the best recommendation for nitrogen rates based on soil types. NREC is funding on-farm nitrogen rate trials throughout the state to improve the Illinois MRTN and ensure farmers are confident in using this system.



From 2014 through 2016, a special project in the Lake Springfield watershed involving members of CBMP, CWLP and the Sangamon County SWCD resulted in enough on-farm N rate trials for the UI to develop a MRTN specific to the Lake Springfield watershed. If you access the MRTN website located at <http://cnrc.agron.iastate.edu/> and click on the "Calculator" feature you can select "Illinois" and see the new zones where MRTN rates for all regions of Illinois were updated by UI, thanks to farmers conducting on-farm rate trials using UI protocols. As you can see in the chart to the right, the MRTN for the Lake Springfield Watershed (LSW) has a slightly different MRTN than for the Central IL Region. For corn following soybeans, the nitrogen rate is slightly

lower. When adopted by the farmers, it can save them on their nitrogen costs and ensure maximum economic return on their nitrogen investment, which ultimately reduces the chances of excess applied nitrogen also reaching Lake Springfield. IFCA, CWLP and the SWCD mailed a special flyer to all farmers in the watershed in the fall of 2016 announcing the new LSW MRTN and encouraging farmers to follow the new nitrogen recommendation.

March 2017 MRTN N rate guidelines from the N rate calculator

- Based on N price = \$0.375/lb and corn price = \$3.75/bu

IL region	Soy-corn	Corn-corn
North	154 ⁽⁸¹⁾	200 ⁽⁸³⁾
Central	172 ⁽²⁴⁵⁾	200 ⁽¹⁵²⁾
LSW	166 ⁽²²⁾	202 ⁽¹⁰⁾
South	179 ⁽¹¹⁶⁾	189 ⁽⁴⁸⁾

NREC Project: Managing Cereal Rye Ahead of Corn

NREC research reveals that cover crops can reduce nutrients levels in field tiles. But the challenge is managing cover crops in a way that does not negatively impact the yield of the cash crop—especially corn. IFCA is assisting in an NREC funded project to evaluate the best time to plant and terminate cover crops and the best source and timings of nitrogen treatments to ensure a vigorous corn crop following cereal rye. The picture here shows corn being planted directly into a cover crop that had just been terminated. So far this study is very promising and the emerged corn looks very good.

