

Summer 2011, No. 6

NUMERIC NUTRIENT CRITERIA IN YOUR WATERSHED – HOW WILL YOU COPE?

The U.S. Environmental Protection Agency (EPA), which is responsible for protecting the designated uses of water resources and enforcing the Clean Water Act in the U.S., has stated that N and P pollution is a “widespread, significant, and growing problem”. The U.S. EPA expected states and tribes to adopt or revise ecoregional nutrient criteria for lakes and reservoirs, rivers and streams, and wetlands – that were published in 2000 and 2001 – into water quality standards by 2004.

As of December 2008 (the latest public EPA posting:

<http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/status.cfm>), half of the 50 states had not adopted numeric nutrient criteria into standards. In August 2009, a call to action was issued to EPA Administrator Lisa Jackson by the State-EPA Nutrient Innovations Task Group, stating the urgent need for a “common framework of responsibility and accountability for all point and nonpoint sources.” This urgent call added to the burdens of the states because they are ultimately responsible for completing and implementing N and P loss reduction plans to protect water resources. Some states have made good headway in defining and implementing nutrient criteria for their own water resource priorities and needs. However, in Florida, which was considered to be among one of the most proactive states in developing nutrient criteria, a consent decree to settle a 2008 lawsuit forced the U.S. EPA to step in and federally establish water quality standards for lakes and flowing waters, using causal (total N and total P) or response variables (chlorophyll *a* and clarity).

On top of federal and state budget deficit challenges, financial and professional resources are being strained as public servants and private contractors strive to scientifically develop numeric nutrient criteria and standards. Financial and professional resources are expected to be stressed even more as standards are enforced; especially for nonpoint source or diffuse nutrient pollution, which includes agriculture. The total annual regulatory compliance costs of such numeric nutrient criteria and standards regulation have been estimated to range from hundreds of millions of dollars to multi-billions per state, based on the current case in Florida. Unsurprisingly, some state and local water quality authorities and many agricultural stakeholders question the practicality and economic feasibility of trying to regulate nonpoint source (diffuse) N and P pollution. It has been commonly argued that it would be virtually impossible to monitor individual farm and field nutrient management and application activities, while others contend that random audits could be effective enforcement “sticks”.

Most experienced agronomists, conservationists, ecologists, and land managers recognize that it takes time to accomplish significant cropping system management and conservation changes in the landscape or watershed ... and it may take even longer for those changes to impact the quality of adjacent and downstream water resources. Because the large majority ... if not all ... of us in agriculture want to protect and preserve the integrity of our water resources, there have been increased discussions and proposals for the adoption of practice-based standards, as opposed to strict water quality or *performance standards*. These discussions are raising thoughtful questions, such as:

- Could increased agricultural stakeholder involvement in open discussions with state water quality authorities, and other interested parties, foster opportunities to address state-level policies that would intensify nutrient management and water quality education?
- Could state-level strategies and public policies endorse and expand implementation of science-based nutrient best management practices (BMPs), which adhere to the principles and objectives of **4R Nutrient Stewardship**? (Visit <http://www.ipni.net/4r> and www.nutrientstewardship.com)
- Could pilot efforts be undertaken in selected watersheds, to evaluate the impacts of intensified ‘4R’ BMP implementation, using rigorous water quality monitoring, to evaluate achievement of scientifically-defensible, realistically-attainable, designated use goals?

If (or when) strict water quality numeric nutrient criteria and standards are required within your state, or within your watershed, how would you cope? Could you continue to farm and economically prosper with potentially mandated reductions in nutrient use? Is it time to get more involved in supporting and implementing **4R Nutrient Stewardship**?

–CSS–

For more information, contact Dr. Clifford S. Snyder, Nitrogen Program Director, IPNI, P.O. Drawer 2440, Conway, AR 72033-2440. Phone (501) 336-8110. Fax (501) 329-2318. E-mail: csnyder@ipni.net.

Abbreviations: N = nitrogen; P = phosphorus

Note: *Plant Nutrition TODAY* articles are available online at the IPNI website: www.ipni.net/pnt