



michiganlakeinfo

www.michiganlakeinfo.com



Michigan's Phosphorus Fertilizer Law

by Tony Groves, Pam Tying, and Paul Hausler
Progressive AE

April / 2014

Phosphorus is the nutrient that most often stimulates excessive growth of aquatic plants, leading to a variety of problems known collectively as eutrophication. Elevated phosphorus levels are causing premature aging of many Michigan lakes.

In an attempt to address this problem, Michigan passed legislation several years ago that limited the phosphorus content of laundry detergents and more recently extended the ban to dishwater detergents. However, phosphorus in fertilizers remained a problem. Phosphorus is a key ingredient in many commercial lawn fertilizers and is commonly applied at rates well in excess of what is needed to maintain a healthy lawn. Excess phosphorus can run off into lakes and streams where a single pound of phosphorus can generate hundreds of pounds of aquatic vegetation.

With the passage of a new state law (PA 299 of 2010), Michigan has joined a number of other Great Lakes states in banning phosphorus in lawn fertilizers. The new law, which took effect on January 1, 2012, prohibits the application of lawn fertilizers containing phosphorus unless a new lawn is being established (and phosphorus is needed to promote root growth) or if a soil test indicates a soil phosphorus deficiency. The new law also regulates the application of lawn fertilizer near surface waters and prohibits lawn fertilizer applications on frozen ground or ground saturated with water.

Under the new law, fertilizer containing phosphorus can be applied on golf courses operated by staff members that have been certified by the Department of Agriculture as having completed training on best management practices for the proper use of phosphorus fertilizers. Agricultural fertilizer applications are exempt from regulation under the new law. Communities with existing phosphorus fertilizer regulations in effect prior to the enactment of the state mandate will be allowed to maintain their local regulations if they so choose. The state may impose civil or administrative fines on violators of the new law.

Act No. 299
Public Acts of 2010
Approved by the Governor
December 16, 2010
Filed with the Secretary of State
December 16, 2010
EFFECTIVE DATE: December 16, 2010

STATE OF MICHIGAN
95TH LEGISLATURE
REGULAR SESSION OF 2010
Introduced by Reps. Terry Brown, Scripps, Warren, Miller, Polidori, Sheltrow,
Gonzales, Espinoza, Smith, Donigan, Roberts, Kennedy and Meadows

ENROLLED HOUSE BILL

AN ACT to amend 1994 PA 451, entitled "An act to protect the environment, codify, revise, consolidate, and classify laws relating to the environment and the discharge of certain substances into the environment; to regulate the use of resources of the state; to prescribe the powers and duties of certain state agencies; to provide for the assessment and collection of certain state fees; to amend sections 8501 as amended by 2008 PA 13, section 8517 as amended by 2006 PA 503, and by adding sections 8512b, 8512f, and 8512g.

The People of the State of Michigan

Sec. 8501. As used in this part:

progressive | ae

The Minnesota Experience

Minnesota was the first state to enact a phosphorus fertilizer law. Between 2002 and 2005, Minnesota phased in a state-wide phosphorus fertilizer ban similar to Michigan's new law. In enacting the law, the Minnesota legislature required that research be conducted to evaluate the effectiveness of the fertilizer restrictions. The research culminated in a report entitled Effectiveness of the Minnesota Phosphorus Lawn Fertilizer Law. Report findings indicate the following:

- Phosphorus-free lawn fertilizers are readily available, thus there is no difficulty for homeowners to find a lake-safe alternative.
- The law has substantially reduced phosphorus lawn fertilizer use.
- Consumers are supportive of the law.
- The law has not increased consumer costs.

Water Quality Benefits

It is anticipated Michigan's fertilizer law will result in significant water quality benefits. While it will likely take many years to document water quality improvements in Michigan's lakes and streams, a recent study conducted on the Huron River found that total phosphorus levels in the river dropped about 28% following a phosphorus fertilizer ban enacted by the City of Ann Arbor. In this report, it was noted that the phosphorus fertilizer ban was accompanied by a number of additional initiatives (such as programs to promote shoreline vegetative buffers) and it was not possible to single out the phosphorus fertilizer ban as the sole reason for the measured decline in river phosphorus levels. However, these initial results are encouraging.

One of the challenges in evaluating the impact of the new phosphorus law on water quality will be to design sampling protocols and programs that can differentiate between natural variability and actual trends in water quality. While additional studies over several years will be required to document the impact of Michigan's phosphorus fertilizer law, the law is certainly a positive step toward protecting water quality.

About the Authors:

Tony Groves, Pam Tyning, and Paul Hausler have over 80 years of combined experience working as lake management consultants with Progressive AE in Grand Rapids, Michigan. Tony, Pam, and Paul created MichiganLakeInfo.com, a website for those interested in Michigan's inland lakes. On the site you can find this article and information on topics such as lake water quality, lake and watershed management, aquatic biology, emerging issues, invasive species and more.

Reduced river phosphorus following implementation of a lawn fertilizer ordinance

John T. Lehman*, Douglas W. Bell and Kahli E. McDonald
 Department of Ecology and Evolutionary Biology, Natural Science Building,
 University of Michigan, Ann Arbor, MI 48109-1048, USA

Abstract

J. T. Lehman, D. W. Bell, and K. E. McDonald. 2009. Reduced river phosphorus following implementation of a lawn fertilizer ordinance. *Lake Reserv. Manage.* 25:307-312.

Statistical comparisons of 2008 surface water quality data with a historical data set at weekly resolution revealed statistically significant reductions in total phosphorus (TP) and a trend of reduced phosphorus following implementation of a municipal ordinance limiting the application of lawn fertilizers. No reductions were seen at an upstream control river site not affected by the ordinance including nitrate, silica and colored dissolved organic matter did not change significantly. The sampling effort needed to detect changes of specified magnitude. Expected changes in mean value were predicted to require weekly samples during the summer for only 1 significant reduction measured after 1 year averaged 28%, or about 5 kg P/day. The only one component of broader efforts to reduce nonpoint source loading of P, however, in the measured changes remains uncertain.

Key words: eutrophication, sampling requirements, temporal variation, water quality, phosphorus, lawn fertilizers, municipal ordinance, Lake Huron, Ann Arbor, Michigan.

Growing numbers of municipalities and state governments have adopted or are considering the adoption of restrictions on residential use of phosphorus-containing fertilizers. The actions are based on awareness that phosphorus (P) is often not a growth-limiting nutrient in many terrestrial soils, and that excessive application of the element leads to runoff and eutrophication of surface waters (e.g., Carpenter *et al.* 1998).