A Case for Banning Cosmetic Fertilizer in Lakeshore Communities

Dora Berry, BSc ENCS, LAT
of
Nature's Elements
For the Pigeon Lake Watershed Association

Open the Case

- Why Ban Cosmetic Fertilizer?
- Existing Policies
- Policy Implementation Results
- Healthy Options & Alternatives
- Outreach & Education

Watershed Management Plan - Goal

- Manage watershed and source nutrients to improve the health of the lake
  - to promote the watershed's natural environment and water quality by
  - recommending action-oriented watershed policies and beneficial practices that support the long-term health, protection and restoration of the watershed.

Cosmetic Fertilizers and Soil Nutrients

- Restriction of fertilizer use
- Targeted approach
- BMP's for residents
- Choices for municipalities
- Support and Education (PLWA)

BMP Effectiveness

- BMP Challenges
  - Relies on broad base of participation
  - Relies on changing attitudes and behaviors
- Legislation and Education
  - Studies show education achieves only 30% compliance.
  - Education must be repeated every spring. Staff at hardware, big box, grocery stores and nurseries are constantly changing.
  - After 2 years, Minnesota's law reduced phosphorus fertilizer use by 82% and 97% of consumers support the law.

Why Ban Cosmetic Fertilizer Scientific Evidence

Reduced River Phosphorus Following Implementation of a Lawn Fertilizer Ordinance, J. T. Lehman

- "Growing numbers of municipalities and state governments have adopted or are considering the adoption of restrictions on the residential use of P-containing fertilizers. The actions are based on awareness that 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)."

Why Ban Cosmetic Fertilizer?
U.S. Geological Survey - Wisconsin

Effects of Lawn Fertilizer on Nutrient Concentration in Runoff from Lakeshore Lawns, Lauderdale Lakes, Wisconsin

Median dissolved phosphorus concentrations in runoff:

- Regular fertilizer 770 mg/m3
- Unfertilized 380 mg/m3
- Non-phosphorus fertilizer 330 mg/m3

…. Extra 440 mg/m3 of phosphorus is washed away when using regular lawn fertilizer.

An indication that non-Phosphorus fertilizer use may be an effective, low-cost practice for reducing phosphorus in runoff.

Other conclusions:

- High percentage of storms result in surface runoff from many lawns.

Existing Policies - North America Review

Many Policies, Bylaws, and Acts throughout

- What is banned/restricted
  - Cosmetic Fertilizer Bans (Complete)
  - Lawn Fertilizer Bans
  - Phosphorus in Fertilizer Bans
- Restrictions
  - Application Times (Seasonal)
  - Phosphorus and/or Nitrogen Amount
  - Applications to Impervious Surfaces, or Saturated Soils
  - Buffer zones
- Exceptions
  - Organic fertilizers
  - Newly seeded lawns
  - Soil tests indicating nutrient deficiencies
- Enforcement
  - None to Significant Fines

Existing Policies – Municipal Bylaw

- Summer Villages on Pigeon Lake Bylaws
  - "All fertilizer use ban" with no exceptions or enforcement
  - "All fertilizer containing Phosphorus prohibited" with fines
- City of Greater Sudbury, ON, - Municipal Bylaw
  - "Restricts the use of manufactured lawn fertilizers containing phosphorus, and any fertilizer on frozen ground, when it's raining or predicted to rain within 48 hours, within 15 metres of any water body, & on impervious surfaces, is banned."
  - Exceptions:
    - When starting a lawn from seed or sod during its first growing season.
    - When a test performed by an accredited soil testing service indicates insufficient phosphorus level to support a lawn.
    - Agricultural applications, Sod farms & golf courses.
    - Flower, vegetable, tree & shrub fertilizers.
    - Lawn fertilizers with phosphorus are still available for sale.
  - Enforcement: Fines as per the Provincial Offences Act

Existing Policies – Municipal Bylaw

Chautauqua County, New York, USA

- "No lawn fertilizer:
  - Containing Phosphorus or other compound containing Phosphorus (i.e Phosphate).
  - Between December 1st & April 1st.
  - Fertilizer applied to any impervious surface.
  - Applied to any turf or lawn area on any real property within 20 feet of any surface water."
- Exceptions:
  - Newly established turf or lawn areas during their first growing season.
  - Turf or lawn areas that soil tests confirm need for additional phosphorus application. Lawn fertilizer application shall not contain an amount of phosphorus exceeding amount & rate of application recommended in the soil test evaluation.
  - Agricultural uses, vegetable & flower gardens, green houses & nurseries, or application to trees or shrubs.
  - Turf or lawn areas on any real property within 20 feet of any surface water separated by a continuous natural vegetative buffer, at least 10 feet wide.
- Enforcement
  - 1st Violation Penalty $50 max.; Succeeding violation penalties $150 max.
  - No penalty shall be imposed unless alleged violator receives notice of charges & is given opportunity to be heard.

Existing Policies - State Acts

"State Laws Banning Phosphorus Fertilizer Use" Kristen L. Miller, Legislative Analyst II, Feb 2012

- Illinois, 2010
- Florida, 2012
- Maine, 2008
- Maryland, 2011
- Michigan, 2012
- Minnesota, 2004
- New Jersey, 2011
- New York,2012
- Vermont, 2013
- Virginia,2013
- Washington, 2013
- Wisconsin, 2010

- Exceptions
  - Agriculture, Sod Farms, Golf Courses
  - New turf, or repair
  - Phosphorus deficiencies
  - Vegetable & Flower Gardening
- Restrictions
  - Application to Paved/Impervious Surfaces
  - Setbacks from water (Buffer)
  - Application to Frozen and Saturated Soils
  - Phosphorus Fertilizer Sales

Statistical Results - Minnesota Act

Effectiveness of the Minnesota Phosphorus Lawn Fertilizer Law, Minnesota Dept. of Agriculture, 2007

- Phosphorus-free lawn fertilizer is readily available
- Law has reduced phosphorus lawn fertilizer use
- Law has not increased consumer cost
- No enforcement of the law has been reported
- Consumers supportive of the law
- Fertilizer manufacturers and retailers have adapted to the law
- Changes in water quality have not been documented at this time
- Law was focus for extensive public and professional education
- Two research studies underway – more needed
- Other states poised to follow Minnesota's lead

- The report found that in three years, the Minnesota Phosphorus Lawn Fertilizer Law has substantially reduced phosphorus lawn fertilizer use and provided a focus point for extensive yard care and water quality education.
- The report recommended investigating the following opportunities:
  - Further research into law's impacts
  - Further outreach education

Statistical Results
Michigan Ordinance

Reduced River Phosphorus Following Implementation of a Lawn Fertilizer Ordinance, J. T. Lehman, 2008

- "It would be tempting to conclude that the phosphorus reductions were caused by implementation of the ordinance, and that may indeed be the case. However, the ordinance was enacted in the context of public education efforts
- that encourage citizens to be more mindful of yard waste discharges into storm drains, to exert more diligence regarding buffer strips of vegetation along stream banks, and to exhibit more environmental awareness in general. These multi-faceted efforts make it difficult to isolate a single cause for the changes,
- but the changes appear to be real and of the predicted magnitude and direction. Continued measurements are certainly in order in this watershed as well as others, but the initial results suggest that with good baseline data even relatively modest (25%) changes in nutrient load can be detected against background variation on time scales fast enough to help inform policy decisions."

Options and Alternatives (BMP) Sea Grant - Ohio

How can I help prevent HABs and toxin release?

- Excess nutrients like phosphorus and nitrogen from watershed sources are major contributing factors to HABs. You can limit the addition of nutrients by:
  - Using lawn and plant fertilizers sparingly. Do not over-fertilize or over-water after applying fertilizer. If possible, use a phosphorus-free fertilizer.
  - Regularly checking and maintaining your septic system, as damaged or improperly working systems can cause nutrient loading to nearby waters.
  - Preventing surface runoff from agricultural and livestock areas.
  - Not allowing large concentrations of Canada geese to set up residence. Their waste can cause excessive nutrients to enter waters.
  - Maintaining native plants along the shoreline and in as much of the watershed as possible. These plants are excellent filters of nutrients and are essentially maintenance-free.
- Do not treat established HABs with algaecides (like copper sulfate) because toxins can be released from the dying cells.

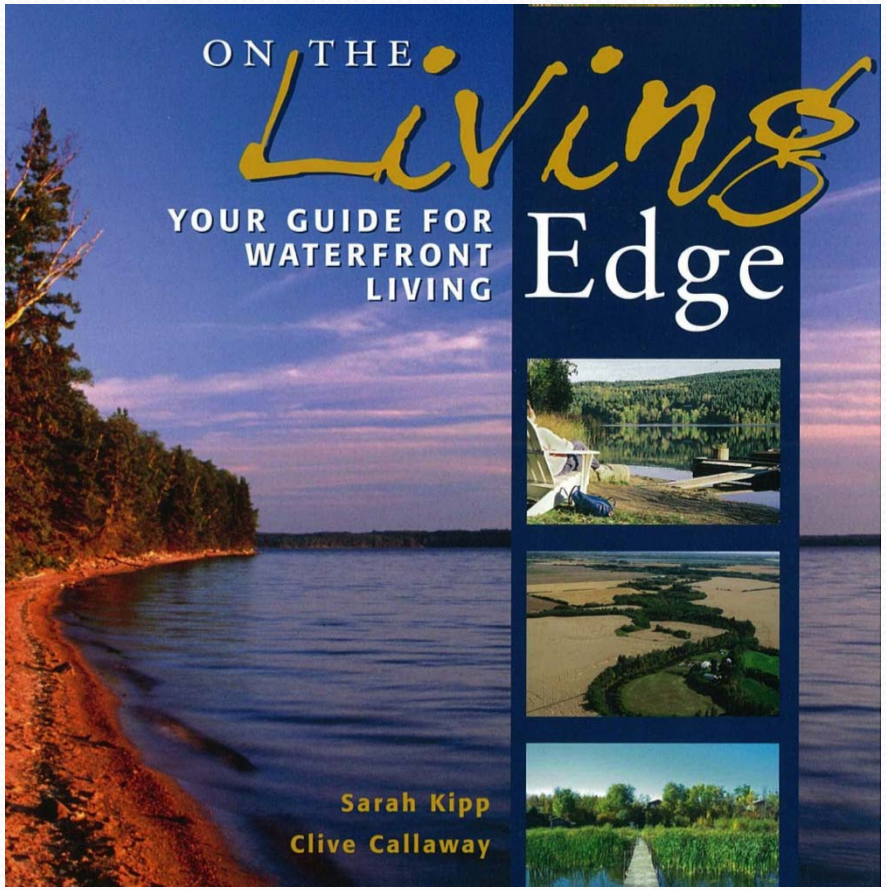
Fertilizer BMP Suggestion For Pigeon Lake Watershed

- Near Shore Developments: Lakeside Communities, plus lands within 800m of shore
  - Elimination of Cosmetic Fertilizer Use
    - BMP's for alternative practices!
  - Exclusions w/ alternativce pratices
    - Vegetable and flower gardens
    - Trees and shrubs
- Back Shore Developments: Acreages and residences.
  - Limitations and restrictions of Cosmetic Fertilizer Use
    - Types of fertilizer
    - Restrictions on timing
    - BMP's for alternative practices
    - Setback for creeks and wetlands

Healthy Options & Alternatives - Outreach & Education

"I have a family and pets and a lawn is part of my lake experience. What do I do now?"

- Living by the Edge: BMP guide and home site assessments
- Tackle notion of a lakeside lot
- Role of soil nutrients and soil food web
- Lawn Types
  - Appropriate Grass Selections
  - Perennial
- Lawn Size and location
- Lawn Care & Maintenance



Thank you