

Soil & Water Conservation Society of Metro Halifax (SWCSMH)

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To: Mayor Peter Kelly and The Regional Council, HRM
From: S. M. Mandaville Post-Grad Dip., Professional Lake Manage.
Chairman and Scientific Director
Date: May 16, 2005 (rev. January 09, 2020 to correct typos)
Subject: Strong plea to enact a Lawn Fertilizer Bylaw banning the use of phosphorus containing fertilizers (with a few exceptions) similar or superior to the year-2001 bylaw of the City of Minneapolis; a lot of years have been lost

Your Worship and Councillors:

Several lakes within our beloved HRM have `eutrophied' (or enriched) to different degrees ever since industrialization, i.e., since around 1840s though we suspect there may have been some minor enrichment during the time of the European settlers (1700s?), or even prior to that through the lifestyles of other *homo sapiens*(?).

Several negative impacts may have resulted which may include increased weed growth in the littoral or shallow zones of lakes (especially of shallow lakes and numerous lakes in HRM are shallow based on `mean depths'); increased algal blooms some of which could be toxic given the right environmental conditions; severe depletion in the bottom dissolved oxygen concentrations during the critical summer periods which could negatively impact the habitat of the salmonid species (e.g., speckled trout, landlocked salmon) as well as increase internal loading of not only phosphorus but other stressors from bottom sediments due to anoxia; change in the diversity/richness of resident taxa; and other ecological impacts.

REQUEST and THERE IS NO TIME TO BE LOST:--

We herewith plead that HRM enact a Lawn Fertilizer Bylaw similar or superior to the City of Minneapolis's 2001 Bylaw.

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We also plead that, unlike the Minneapolis City bylaw, golf courses not be given any exceptions since `stressors' (e.g., phosphorus), no matter where they originate, have equal or superior relevance.

We are not enclosing the Minneapolis City Bylaw here so that this submission does not exceed three (3) pages but we had given hard copies to His Worship Peter Kelly in June 2003, to Councillor Gloria McCluskey in January 2005, to Dr. Tony Blouin and to planner, Susan Corser MCIP, at various times; it is also on our website, http://lakes.chebucto.org/TPMODELS/NOTES/minneapolis_lawn-fertilizer.html (all our URLs are case sensitive).

In addition, thirteen (13) of the present Regional Councillors and the Mayor received CD+R disk gifts from us in Christmas-2004 and all those CD disks have the bylaw in addition to numerous other info. And three (3) Regional Councillors (Snow, Younger, and McCluskey) as well as the entire Harbour East Community Council received DVD+R disks from us in January of 2005 which have more detailed info inclusive of 20 half-hour Tv shows that we produced among our total number of 323 Tv shows.

Very Important:-- The Canadian Council of Ministers of the Environment (CCME) published a 6-page summary factsheet which clearly states that enrichment of 50% over `natural background values' of total phosphorus (TP) may not be desirable from various aspects of freshwater ecology. That in turn was an outcome of a 135-page extensive literature survey carried out by our Federal Environment Canada (2004).

As I discussed this on numerous occasions at Regional Council and elsewhere, the science has been known dating back to the 14-country peer consensus research of the Organisation for Economic Cooperation & Development (OECD) which was headed by world class Canadian scientist, Dr. Richard Vollenweider, with the final report in 1982.

The concept of 50% maximum over the natural background values of total phosphorus (TP) was published by the former scientists of the Ontario Ministry of Environment in the NALMS (North American Lake Management Society) Journal as long back as 1991.

Historical modelling and chemical data archives in the HRM have shown that the 50%-over-natural-background-TP-concentrations have been exceeded in several urban and suburban lakes of HRM. But the rural lakes, and even several lakes surrounded by septic systems (especially contour beds), have been remarkably resilient though and there are limnological reasons in the case of each lake.

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And last but not least, a state-of-the-art multi-nation paper recently promoted by the National Academy of Sciences of the USA, has reported, "Diverse taxa of cyanobacteria (blue-greens) produce (BMAA) β -N-methylamino-L-alanine, a neurotoxic amino acid". 102(14):5074-5078.

No matter, it may be possible to keep the cyanobacteria (i.e., blue-greens) to a minimum by decreasing the amount of phosphorus reaching a lake so that the TN (total nitrogen) to TP (total phosphorus) ratios are preferably above 33, atleast above 15 (*cf.* numerous authors). I already discussed these at several formal presentations some of which were attended by the conscientious Dr. Tony Blouin among other staff at HRM.

Time has shown that none of the stormwater systems are removing any appreciable amounts of phosphorus and neither are the STPs in HRM especially since the TP in the STPs is highly biologically available.

Hence, `source control by legislation' appears the only sustainable way. Public education, brochures, television adverts will do little. We had distributed hundreds of leaflets over the years with no pragmatic results.

Our offer:-- If the Regional Council wants me to make a 5-minute presentation using overheads for scientific proofs in support of this submission, I will be delighted to do so. I can also play video as well as audio excerpts from leading award winning scientists, but 5-minutes are insufficient for the latter. Let us all work together in `unison'.