

Soil & Water Conservation Society of Metro Halifax (SWCSMH)

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Ref.: NWCC_RobbieHarrison2014 (6 pages)
To: **Chair & Members, North West Community Council, HRM**
From: S. M. Mandaville Post-Grad Dip., Professional Lake Manage.
Chairman and Scientific Director
Date: February 05, 2014
Subject: Update on archives from 1994: Commitments made by the Hon. Robbie Harrison, Minister, Nova Scotia Env., have not been kept to date

Written informally and please ask any relevant questions. A handful of lakes of concern are indeed w/in the area of governance of the NWCC.

Background: The prime reason for this submission (also forwarded to several other stakeholders) is because I keep receiving unsolicited complaints from a new generation of residents at several lakes, and not just the lakes referred to in the correspondence of Hon. Harrison. There is something to learn from the recent past since 1994 is not that long ago.

In September of 1993, I led a team of 'lake stakeholders' to meet with the Hon. Robbie Harrison. I was asked to invite a small representative group of people when I offered to invite around a hundred (100) stakeholders, no exaggeration. Most people that I invited were not formal members of my scientific group but owned properties right beside the lakes; hence they had considerable monies invested since the homes were very expensive. This way, the stakeholders were not weighted in any direction.

None of the lakes mentioned have recovered based on scientific guidelines, incidentally.

On page-2, you will note the written commitments that the honourable minister made but there has been no pragmatic follow-up by the professional staff of his department although I reminded them during several subsequent years.

On pages-3 to 5, you can read a subsequent letter that I wrote the Minister since the professional staff of his department was not advising him appropriately, most probably since none of them appears to be an authentic limnologist (i.e., Lake Specialist). As further evidence, in page-6, I insert a letter that I received from a subsequent Premier, the Rt. Hon. John Hamm MD, acknowledging that there were no limnologists on the department's payroll, and the situation has not changed the last time I checked.

The insertions are somewhat faded due to old scans but you should all be able to understand them.

...../2



**Department of
the Environment**

Office of the Minister

PO Box 2107
Halifax, Nova Scotia
B3J 3B7

Our file no:

February 21, 1994

Mr. Shalom M. Mandaville, Coordinator
Soil & Water Conservation Society of Metro Halifax
P.O. Box 911
Dartmouth, N.S. B2Y 3Z6

Dear Mr. Mandaville,

Thank you for your kind letter of 11 February inquiring into the follow-up to our meeting last September and to the range of concerns presented at that time.

In earlier correspondence, I indicated that we would compile test results you generously provided with other data and information extant in the department, and that this body of work would be the subject first of briefings for me, and subsequently of response to each of the individuals who attended the meeting.

The former task has been accomplished. As time permitted during the autumn and early winter, I was provided with a series of in-depth water management briefings.

I have subsequently instructed my Executive Assistant to work with senior department staff to ensure that a response is offered to each of the individuals who attended the meeting in September. Consistent with your advice, this response will address the specific concerns they identified on the lakes adjacent to which they reside. You will be provided with copies of those responses, as soon as they are available.

Once again, please accept my thanks for your concern and your continued interest.

Yours truly,

A handwritten signature in black ink, appearing to read "R. Harrison".

Robert S. Harrison
Minister



Soil & Water Conservation Society of Metro Halifax

Member North American Lake Management Society

Member Nova Scotian Institute of Science

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InterOffice Communication/Request-38R1

(total 3 p.)

To: Hon. Robbie Harrison Esq.
Minister, N.S. Dept. of Environment (NSDOE)

From: S. M. Mandaville, Co-Ordinator

Date: 10 May 1994, revised 13 May 1994

Subject: **LAKE RESTORATION/MANAGEMENT:** Certain specific and general comments on lakes we discussed numerous times. Discussions to various degrees would be necessary in some of the following cases prior to actual restoration

(1) During our last conversation with your Assistant, Mr. Paul Shields, I might have given a wrong impression inadvertently. We are not necessarily asking for oligotrophic lakes in all cases. It is not possible and/or practical subsequent to relative anthropogenic stresses. In several lakes, many beneficial uses can easily be achieved notwithstanding the trophic status unless ofcourse they are severely eutrophic. It is not possible to generalize and apply the same rule for all lakes. That will be quite irresponsible for anyone to make unsubstantiated claims.

(2) In some lakes, even under oligotrophic conditions, as a result of small hypolimniums, anoxic hypolimniums will be present as a result of autotrophy and/or paralimnetic allotrophy. Nutrient reductions in the watershed will do little unless ofcourse they are reduced to a negligible amount (almost zero) and there is no case history in literature which accomplished such a feat and is neither practical nor feasible. The only practical solution in such cases is to install an aerator for hypolimnetic aeration or for whole lake mixing whichever may be preferable depending upon the desirable lake uses. The aerator for hypolimnetic aeration need to be operational for only a month or two during the peak summer productivity (usually August and September). There are over 100 case histories of such systems in Canada and the U.S. though none we know of in the Maritimes to date. It is such a system we propose for Mr. Walter Pilon's Sheldrake lake, St. Margaret's area (a low to mid-meso lake) where the hypolimnium went anoxic during the summer of 1992. In shallow lakes which do not stratify and which do not have oxygen depletion, no aeration is needed.

LAKE RESTORATION/MANAGEMENT: Certain specific and general comments on lakes we discussed numerous times. Discussions to various degrees would be necessary in some of the following cases prior to actual restoration

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(3) In the case of Mr. Steve Rigden's Settle lake, (meso to eutro transition) within Dartmouth City and in Cole Harbour we propose an up and coming technique of **trophic level manipulation**. Such a trophic level manipulation is being vigorously promoted in state-of-the-art lake restoration manuals not only due to their low cost but also because it is generally quite independent of external inputs and the increased large body sized zooplankton would reach a new equilibrium feeding on the phytoplankton thus resulting not only in diminished algal turbidity but also in the species indicative of spoilt lakes. The technique involves removal of planktivorous (small) fish through either rotenone treatment or through introduction of an aggressive piscivore. An alternative method never tried before to our knowledge but may be quite feasible in small lakes like Settle is to simply remove the fish through small mesh size gill nets. This would hopefully result in increased larger bodied zooplankton which are efficient feeders of phytoplankton. The hypolimnium of Settle lake was also anoxic during the summer of 1992 but since Settle has never been used for fishing in the recent decades, hypolimnetic aeration may not be needed, but the actual decision cannot be made until the success of trophic level manipulation is established. It is quite conceivable that hypolimnetic aeration will also be required if internal loading is proven to be of significance.

(4) Russell lake (now meso with eutro tendencies but which had **toxic algal blooms** during the '70s per NSDOE's own press releases) in Dartmouth is presently an enigma and there are many pros and cons for various methodologies. Russell drains into Morris (partly in Dartmouth, Cole Harbour and Eastern Passage), which is of immense significance to various stakeholder groups and you already met a couple of the representatives. Because of the long history with eutrophication of this lake (and there is considerable NSDOE's own historical data) coupled with the fact that a majority of the local watershed is still not developed, suctioning of bottom sediments may be required in addition to other inlake methodologies. But further pre-restoration lake studies are needed to establish with reasonable confidence the success of any lake restoration scenario.

(5) To reduce significantly the seasonal abundance of macrophytes (weeds) in the bodies of Fish (meso lake in Oakfield) and Bissett (meso with eutro tendencies in Cole Harbour) lakes (on both of these, NSDOE has written complaints from residents dating back to 1990), the only sustainable solution would be to dredge or suction the bottom sediments out. Temporary measures may include regular harvesting of macrophytes. The macrophytes along the littoral zones (shores) can be left untouched as they may be utilizing the external nutrient inputs thus resulting in diminished availability for microscopic phytoplankton (especially nuisance types).

LAKE RESTORATION/MANAGEMENT: Certain specific and general comments on lakes we discussed numerous times. Discussions to various degrees would be necessary in some of the following cases prior to actual restoration

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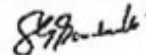
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(6) In the case of a bay of Five Island lake, St. Margaret's Bay area (where Mr. Ken Jakeman resides) and a bay of Porter's lake, Eastern Shore (where Mr. Ken Brown resides), the only sustainable solution to the macrophyte problem would be dredging no matter what the causes are. These are shallow areas and are conducive to such growths even under natural conditions. Quite some time back, Dr. Underwood (while at NSDOE) found the TP concentration in the sediments of natural Halifax County lakes to be in the range of 1.2 mg/l which is 120 times the oligo/meso transition value of 0.010 mg/l in the lake waters. The cultural impacts would place the value higher. Hence even if the watershed contribution is reduced to zero (an impossible task), the bottom sediments alone would support macrophytic growth for a long time.

(7) At the present time, we cannot even speculate on a possible solution for the problems with Martin's pond, Williams lake, City of Halifax where Mr. Don Crawley resides.

YOU COULD RECOGNIZE WHY WE NEED AN AUTHENTIC PUBLIC SERVICE "LAKES AUTHORITY" STAFFED WITH NOT ONLY THEORETICAL LIMNOLOGISTS BUT ALSO WITH LAKE RESTORATION EXPERTS WHO HAVE SOME AUTHENTICATED EXPERIENCE UNDER THEIR BELTS. THERE IS NO SECTION AT 'NSDOE' WHICH IS CAPABLE OF ADDRESSING THESE CONCERNS IN AN INTELLIGENT AND AN EFFECTIVE MANNER RATHER THAN ROUTINELY BLAMING NATURE, PEOPLE, FERTILIZERS OR WHATEVER (i.e., CONTINUOUSLY LOOKING FOR THE PROVERBIAL 'SCAPEGOAT').

yours very sincerely



Co-Ordinator
S.M. Mandaville

Copy: Dianne Coish, Manager, Central Region, NSDOE
Rt. Hon. Dr. John Savage M.D., Premier, Nova Scotia
Hon. Shiela Copps, Minister, Environment Canada
Brad Hodgins, Co-Ordinator, SEDA, NSDOE

P.S.: Watershed stewardship practices (e.g. elimination/reduction of fertilizers, composting of leaves and grass clippings, cleaning after pets, etc.) are also important and we are initiating some relatively extensive publicity on these aspects through our video Tv series as well as what we hope to be a continuous public appeal scenario through organizing lake management workshops commencing with the Environment Week 1994. But this alone will not restore already adversely impacted lakes (to desirable degrees) for various reasons among which are the relative magnitude in comparison with other phosphorus sources and extensive literature is already at your office as well as at the NSDOE library.



THE PREMIER
HALIFAX, NOVA SCOTIA
NSJ 2T3

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Shalom M. Mandaville
Chairman & Exec. Director
Soil & Water Conservation Society of Metro Halifax
310-4 Lakefront Road, Dartmouth, NS
B2Y 3C4

Dear Mr. Mandaville:

Thank you for your electronic correspondence of August 3, 1999 and July 30, 1999, on the subject of Nova Scotia Department of the Environment's (NSDOE) capacity to properly manage the province's numerous lakes.

As far as the professional composition of NSDOE staff is concerned, this reflects the range of environmental management issues and problems that the department addresses. This includes everything from acid rain and particulate monitoring, to contaminated sites and agricultural practices. Lake water quality is an ongoing concern for the department, not just as it is affected by urban development, but in every way.

With respect to your request that a limnologist be added to the Environment staff, the department will undergo a full program re-assessment as part of the required legislative review. Following that review, there will be better direction on staffing priorities, and the need for a limnologist will be evaluated at this time.

Your personal interest in lake water quality management is indeed evidenced in your website, which I understand to be comprehensive. I very much appreciate the continuing interest of voluntary groups such as your own, and their contribution to our environment. In this regard, I would ask that you maintain contact with NSDOE through Mr. Darrell Taylor (424-2570). I would support collaborative efforts to improve our approaches to environmental management that incorporates the experience of organization's like yours. I have requested that Mr. Taylor follow up with you to discuss this further.

Sincerely,

A handwritten signature in cursive script that reads "John Hamm".

John F. Hamm



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