

Ecosystems can be viewed as arbitrary subdivisions of the biosphere in which living organisms and their environments interact, adaptively. For example, an ecosystem can be an aquarium, a tropical rain forest, a lake, ocean, city, or family farm.

.....The difference between the concepts of environment and ecosystem is comparable to that between *house* and *home*. A house is external and detached. In contrast, a home is something that we are in, and see ourselves in even when we are not there.

..... `Johnny Biosphere' (Dr. J.R. Vallentyne Ph.D.,
Former Co-Chairman, Great Lakes Science Advisory Board)

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Ref.: WAB0003 (total= 7 pages)
To: Chairman Dr. Wayne Stobo and Members,
Halifax/Halifax County Watershed Advisory Board (WAB), HRM
From: S. M. Mandaville (Professional Lake Manage.), Chairman and Volunteer
Exec. Director
Date: March 01, 2000
Subject: The Model Forest Program: a multi-partnered Maritime Provinces venture-
a significant "water quality" perspective and TOTAL relevance to urban and
suburban development!

This is being provided since I observed some of our colleagues on the Board have alluded to forestry practices (and the similar aspects when the area is developed as residential subdivisions) consistently and persistently, atleast when I was present, and this was going as far back as the period of September-November of 1995 when some of us were invited by Ms. Susan Corser MCIP and Mr. Bill Butler MCIP to develop a stakeholder pioneered "terms of reference" for this Board's predecessor, the Halifax County Watershed Advisory Board.

I herewith give full credit and salutations to our colleague on the Board, professional forester, Mr. David Dwyer of Musquodoboit Harbour, since he has been referring to proper forest management related issues persistently going as far back as Sept. or so of 1995. And indeed, residential areas were all some sort of forests at one time or the other!!

Also, I have the pleasure in notifying all of you that Mr. Walter Regan has been more right than wrong in some select focused statements he had made during December of 1999 and January of 2000. His concern w.r.t. the total inadequacy of a 50-ft buffer is quite relevant although he did not quote any research literature.



Very Important: I herewith take the liberty in quoting recent literature

which is spearheaded by some scientists of Environment Canada in Nova Scotia and New Brunswick, and their associates. I have also taken the liberty in attaching herewith photocopies of four (4) select pages of one of the several recent reports donated to us by Environment Canada.

- ◆ As you can see in the `Abstract`, they got good results when the true buffers for the streams analyzed were 30 or 60 meters. With a 30-metre intact buffer, there was no stream response when around 17% of the watershed was harvested. For larger harvests, they recommended a 60-metre intact buffer. Ofcourse, they also cautioned to avoid direct discharges of pollutants to streams via drainage ditches.
 - ◆ A representative of the Portland Residents' Association told me during late 1999 that they did indeed succeed in having a one-hundred (100) feet minimum buffer along Morris Lake in an upcoming significant residential project, and that there would be NO lots with direct lake frontage. Time will show if such a buffer will be preserved along all the presently undeveloped lands with frontage on Morris Lake. I hope the verbal info I received was factual.
 - ◆ For those lot owners who already own any existing approved but undeveloped lots, a so-called grandfather's clause could always apply. The 100-ft will apply only to new lot creations in subdivisions as opposed to some minor resubdivision of existing lots.
 - ◆ Incidentally, the Sackville Rivers Advisory Board of which I was the Chairman during a short period (1987-89 approx.), an informal advisory committee to the old Halifax County also recommended a minimum undisturbed 100-ft buffer which the Planning Staff tried to do their best in obtaining from land owners over the 1980s, and indeed succeeded in several cases. The 100-ft recce' actually came from my predecessors, hence I do not take any credit.
 - ◆ I found out to my disappointment though that the committee had no official backing of the County Council, and had NO support staff, though some Councillors did attend several of the meetings. Further, during the latter years, staff never made any presentations either, all they did was send us applications.
 - ◆ I did hold several quasi-scientific workshops/presentations in order to raise public interest since until then NO ONE LOCALLY CARED inclusive of local politicians (on decadal time scales)! There are still significant "water quality problems" there and the system has seen literally no improvements (Note: Several species of fish can and do survive in quite polluted waters on a world-wide scale)!

◆ **I personally still prefer the more scientific way, the equation developed for the USDA which needs slope, soil-K and the RCN (Runoff Curve Numbers). For more info, kindly see pages 46 to 48 of our submission# WAB0002 dated February 27, 2000 which has been submitted to Ms. Lynne Le Boutillier for inclusion to the March 2000 Board meeting.**

- ◆ Notwithstanding, we realize it may confuse some in regulatory agencies or perhaps some `proponents', but any `scientifically' or `technically' inclined

person should be capable of calculating them extremely easily. After all, the regression relationship, i.e., the equation was developed by the engineers and soil scientists at the USDA, and published in a leading journal.

- ◆ As far as soil-K factors are concerned, they were already ‘interpreted’ and values set for most soils in HRM as long back as 1978 by our Nova Scotia researchers, and was a part of the 3/4-million\$ (in 1970s dollars) multi-volume studies of the Shubie Headwaters under the Fed-Prov agreement back in the 1970s.

Note: Unfortunately, for myself, I have only been aware of the model forest program, the NFA (Nova Forest Alliance) headquartered in Stewiacke since only November of 1999 when a senior biologist of managerial rank at Environment Canada Atlantic office in Dartmouth notified me of same. I was also amazed to hear this year that the model forest program has been ongoing in New Brunswick for five (5) or more years.

RELEVANCE TO THE BOARD’S PRIMARY TERMS OF REFERENCE (i.e., “water quality” of inland waters):

I feel that the Model Forest Program, which is in ‘partnership’ between various forest industries, several Maritime universities and Environment Canada is quite relevant to our Board’s Terms of Reference. Environment Canada scientists are the prime scientific leaders in this venture.

And what gives it even more relevance is the involvement of Dr. Joe Kerekes, Scientist Emeritus @ Environment Canada. As I had mentioned to all of you in December of 1999 when I made a brief presentation on ‘Sandy Lake, Hammonds Plains (Sackville River watershed)’, Dr. Kerekes is a leading Chemical Limnologist in the world and along with another Environment Canada Scientist Emeritus from Ontario, Dr. Richard Vollenweider, provided the leadership to the bi-decadal or so precedent-setting eutrophication studies by the OECD (Organisation for Economic Co-Operation & Development). OECD, as all of you know, is comprised of the so-called ‘First World nations’, i.e., the wealthiest countries of the world. And I also found the UNEP (United Nations Environment Program) which assists the so-called ‘Second & Third World’ nations has incorporated most or all of the recommendations of the OECD research with minor modifications in order to address tropical and subtropical lakes. The latter have somewhat different limnology than the north temperate lakes on which the OECD research was predominantly based on.

Examples of pristine as well as anthropogenically impacted lakes in Canada, especially those that have extensive multi-year data bases (with analyses by leading Government labs) were indeed used as “test cases” (Janus & Vollenweider), and the OECD models indeed were quite applicable. After all, as I stated, the OECD research was indeed headed by Dr. Vollenweider, a Canadian, and Dr. Kerekes, another Canadian (a Nova Scotian) provided very close assistance to Dr. Vollenweider.