

Soil & Water Conservation Society of Metro Halifax ('SWCSMH')

(a volunteer scientific stakeholder-group)

310-4 Lakefront Road, Dartmouth, NS, Canada B2Y 3C4

Email: limnos@chebucto.ns.ca

Tel: (902) 463-7777

Homepage: <http://www.chebucto.ns.ca/Science/SWCS/SWCS.html>

Ref.: WAB01-07 (total= 2 pages + 47-page attachment)
To: Chairman Dr. Wayne Stobo and Members,
Halifax/Halifax County Watershed Advisory Board (WAB), HRM
From: S. M. Mandaville (Professional Lake Manage.), Chairman & Exec. Director
Date: April 03, 2001
Subject: **MANAGING URBAN STORMWATER USING CONSTRUCTED
WETLANDS, Cooperative Research Centre (CRC) for Catchment Hydrology
and Department of Civil Engineering, Monash University, Australia**

Because of the considerable interest shown on this subject by several regular attendees among my WAB colleagues, I am herewith pleased to enclose a state-of-the-art industry report from Australia. This Industry Report is one of a series prepared by the Cooperative Research Centre (CRC) for Catchment Hydrology to help provide agencies and consultants in the Australian land and water industry with improved ways of managing catchments. CRC is a part of Monash University and Monash is one of the leading universities in the world in this domain. Indeed this year, the triennial conference of the International Association of Theoretical and Applied Limnology (SIL) was held at the Monash University. These conferences are held in various countries every three years and attract many of the leading researchers in limnology and aquatic sciences.

In HRM and its previous constituent municipalities, urban stormwater has been dumped regularly into our lakes and rivers without treatment resulting probably in cumulative addition of pollutants (both chemicals as well as bacteriological pollution) to our naturally sensitive lakes, e.g., First Lake, Sackville; Paper Mill Lake, Bedford; Settle Lake, Dartmouth; Bissett Lake, Cole Harbour; Morris Lake, Dartmouth; Second Lake, Sackville; Cranberry Lake, Dartmouth; and many others.

A natural wetland WILL NOT treat post-development pollutants reliably, primarily because they are either already working at their peak efficiency and/or because they will fill quite rapidly through sheet erosion (over time). Further, small natural wetlands may dry up after houses are built around them as a result of the gradual lowering of the water table (e.g., through basement sump pumps).

We point out the following aspects in the attached handbook which have special significance:

- a) Figure 1, page viii: this shows a gross pollutant trap for pre-treatment (e.g., a CDS unit) followed by a specially constructed wetland.
- b) Figure 3, page 7: Interaction of wetland design elements.
- c) Figure 4, page 9: Illustration of a typical constructed wetland system layout.
- d) Table 3, page 20: Role and selection of plants in wetland zones.
- e) Maintenance, page 22.
- f) Predicting Wetland Performance, page 23.
- g) Summary, page 26.
- h) Frequently Asked Questions, page 31.

Reference:

Wong, T.H.F., Breen, P.F., Somes, N.L.G., and Lloyd, S.D. 1999. Managing Urban Stormwater Using Constructed Wetlands. Industry Report, 98/7. Second Ed. Cooperative Research Centre (CRC) for Catchment Hydrology and Department of Civil Engineering, Monash University, Australia.

Special acknowledgment: I profusely thank Mr. Walt Stein P.E., Manager, Project Development, CDS (USA), California, for having provided the handbook *gratis* although the CDS device, by its trade name, has not been mentioned anywhere in the handbook.