

Show thumbnails in outline

Abstract

Keywords

- 1. Introduction
- 2. Study area

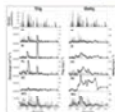


3. Methods

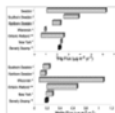
- 3.1. Hydrological data collection
- 3.2. Ancillary water chemistry
- 3.3. Mercury sample collection and analyses

4. Results

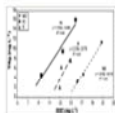
- 4.1. Discharge and precipitation



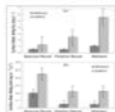
- 4.2. Total mercury  
Table 1



- 4.3. Total mercury and organic carbon



- 4.4. Methylmercury  
Table 2



- 4.5. Methylmercury and ancillary water chemistry  
Table 3

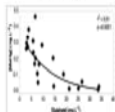
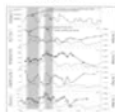


Table 4



5. Discussion

- 5.1. Total mercury
- 5.2. Methylmercury

6. Conclusions

Acknowledgments

References



Science of The Total Environment

Volume 325, Issues 1–3, 5 June 2004, Pages 239–254



Mercury dynamics of a temperate forested wetland

M.E Galloway<sup>1</sup>, B.A Branfireun<sup>1</sup>

Department of Geography, University of Toronto at Mississauga, 3359 Mississauga Rd., N., Mississauga, Ontario, Canada L5L 1C6

<http://dx.doi.org/10.1016/j.scitotenv.2003.11.010>, [How to Cite or Link Using DOI](#)  
[Permissions & Reprints](#)

[View full text](#)

**Purchase \$41.95**

Rent the full-text article on DeepDyve

- ▶ For just **\$3.99**
- ▶ 24 hour access
- ▶ Read-only
- ▶ Non-printable

Abstract

Wetlands have been identified as important sites of mercury methylation in catchments, but the range of wetland types and their geographic distribution for which methylmercury fluxes are reported in the literature are limited. Linkages among wetland hydrology, total mercury and methylmercury concentrations and fluxes, and other water quality parameters were assessed in a temperate forested swamp in Southern Ontario, Canada. Two hydrogeomorphically distinct stream reaches within the wetland exhibited differences in wetland-stream hydrologic connectivity, which strongly influenced mercury dynamics. Total mercury flux from both reaches to the downstream was highest during flow conditions in which the wetland and stream were hydrologically connected. The wetland as a whole was a net sink for total mercury and a net source for methylmercury to the downstream system. Both total mercury and methylmercury concentrations were related to dissolved and particulate organic carbon in stream waters, but these relationships were dependent upon the sampling location and flow conditions. Throughout the wetland, methylmercury concentrations exhibited temporal relationships with sulfate concentrations. Further, despite short surface water residence times, periods of wetland and stream disconnect and high pH (approx. 8) in surface water, methylmercury fluxes from this wetland to the downstream were similar to those from more stagnant and acidic wetlands.

Keywords

Mercury; Methylmercury; Organic carbon; Sulfate; Wetland; Hydrology

Figures and tables from this article:



Fig. 1. Location of study site in Canada and the province of Ontario (top). Map of Beverly Swamp, near Hamilton, Ontario, Canada (bottom).

[Figure options](#)

Bibliographic information

Citing and related articles

Your search for "Mercury dyna forest wetland " would return 5 ScienceDirect. Here are the top

**Influence of water chem**  
2013, Chemosphere  
[▶ Show more information](#)

**Holocene peatland carb**  
2013, Quaternary Science Rev  
[▶ Show more information](#)

**Whole-lake nitrate addit**  
2013, Environmental Research  
[▶ Show more information](#)

[View more articles »](#)

Applications and tools

Workspace