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Chemical stress on Canada's water the focus of Katz Lecture

Non-ecologists, here is your word for the day: biome.

It means a very large ecosystem, and the boreal biome comprises about 60 per cent of Canada's land area. It includes more than two million lakes and accounts for about 85 per cent of Canada's freshwater and some 25 per cent of global wetlands. Despite the magnitude of this resource, an increasing number of environmental stressors – not least chemicals – have put it at risk.

The southern part of the biome, including both fresh waters and terrestrial ecosystems, has been affected by acid deposition for at least a half century. Contamination by mercury is widespread, and elevated levels of trace organic contaminants of many types are now measurable over much of the area.



For the 2011 Morris Katz Lecture, Trent University Professor **Peter Dillon (left)** will discuss biogeochemistry and how the movement of chemicals through the boreal environment can be used to assess the effects of these chemical stressors. Dillon will speak on Wednesday, June 29, at 2:30pm, in the Senate Chamber, N940 Ross Building. The lecture is free and open to the public.

Dillon specializes in the biogeochemistry of lakes and their catchments. He was the scientific leader of environmental research and long-term investigations carried out at the Dorset Research Centre in central Ontario for the past 25 years and still maintains a close association with the centre.

He is currently the director of Trent University's Water Quality Centre. A member of the Royal Society, he recently won the Miroslaw Romanowski Medal for environmental science.

Much of his current research focuses on the cycling of elements, including sulphur, carbon, nitrogen, calcium and phosphorus, in catchments and in lakes, on the processes that control their fluxes and on the transformations of chemical species that occur during the movement of these elements through ecosystems.

In his lecture on Wednesday, Dillon will look at how contamination by other metals, once isolated to regions near mining and smelting activities, is more widespread. In the past few decades, climate change has come to the forefront, and it is clear that the boreal will be one of the more heavily affected parts of Canada.

"Although climate change can directly effect the biological communities of the boreal, most effects will be mediated through alterations in environmental chemistry," says Dillon in his lecture abstract. "In addition, climate change can and is altering the response of lakes and their catchments to other stressors, for example, is reducing the rate of recovery of ecosystems from declining acid deposition rates.

"For an quantitative understanding of how the boreal biome responds to changes in the magnitude of stressors, it is critical to have measurements that go beyond simple description of ecosystem properties such as concentrations of various chemicals in different compartments."

For more information on the Morris Katz Lectureship, contact Carol Weldon, Centre for Atmospheric Chemistry administration assistant, at ext. 55410, by fax at 416-736-5411 or by e-mail to cac@yorku.ca, or visit the [Centre for Atmospheric Chemistry](#) website.

Major contributions in support of this year's lecture have been made by York's Centre for Atmospheric Chemistry and Ontario's Ministry of the Environment.

About Morris Katz

Morris Katz, 1901-1987, was an outstanding scientist. He spent 35 years in public service, where he pioneered air pollutant sampling and measurement methodology and was among the first to demonstrate the presence of ozone damage to vegetation in Ontario. He taught chemistry at York until his death. He authored or co-authored more than 150 books and articles and was the recipient of numerous awards for his work.

The Morris Katz Lectureship was made possible by the establishment of an endowment fund created through contributions from his family, friends and colleagues, private companies, universities and government. Major contributions in support of this year's lecture have been made by York's Centre for Atmospheric Chemistry and the Ontario Ministry of the Environment.

About York's Centre for Atmospheric Chemistry

The Centre for Atmospheric Chemistry was established in 1985 in response to a growing public concern about the atmospheric environment. It offers programs that provide students with the necessary theoretical background and practical laboratory experience to enable them to make meaningful contributions to important environmental concerns upon their graduation. York also offers MSc and PhD degrees in atmospheric chemistry.

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