

**Presentation
to the
House of Commons Standing Committee on Environment and Sustainable
Development on CEPA and Vulnerable Ecosystems and Vulnerable
Populations
by the
Conservation Council of New Brunswick**

With respect to vulnerable ecosystems and vulnerable populations, the Conservation Council of New Brunswick believes there are two blind spots in CEPA: 1) the lack of regulations on nutrients discharges to coastal waters and 2) the lack of nationally binding standards on contaminants in soil, sediments and water for populations living within the footprint of industrial activity.

Coastal Ecosystems and the Need for Regulations on Nutrient Releases

Since 1990, world experts in marine pollution have declared nutrients, specifically nitrogen compounds, the most damaging class of pollutants to the marine environment.¹ There is no scientific dispute about the harmful effects of excessive nutrients loading to coastal waters. Their unchecked release from municipal sewage plants, pulp and paper mills, fish plants, marine aquaculture operations and intensive livestock operations can triggers a series of ecological responses that ultimately result in oxygen-starved dead zones that cause massive fish kills and the transformation of complex and diverse coastal habitat into barren seascapes dominated by a few species.

In 2001, a report on the state of the world's oceans by the United Nations Environment Program (UNEP) identified 50 dead zones caused by excessive nutrient loading. In 2004, the number of dead zones rose to 150 . Just three weeks ago, UNEP reported that the number had risen to 200.

Our marine waters are not immune to the effects of nutrient loading.

In PEI, episodes of oxygen starvation and subsequent fish kills due to nutrient loading from agricultural run-off are reported annually at 18 to 20 freshwater and estuarine sites around the province.²

In New Brunswick, a study by researchers from Dalhousie University and the Conservation Council in 2002 found that of 10 estuaries examined in northern and eastern New Brunswick, seven exhibited moderate to severe symptoms of excessive nutrient loading.³ Many coastal areas in the Quoddy Region

¹ GESAMP (Joint Group of Experts on the Scientific Aspects of Marine Pollution). 1990. *The State of the Marine Environment*. Blackwell Scientific Publications, Oxford (UK).

² Workshop on the Ecological Implications of Nutrient Enrichment of Freshwater and Coastal Ecosystems. 2005. Report from a workshop held in Summerside, PEI, on March 29-31, 2005. Sponsored by PEI Trout River Association, DFO and EC. 31 pages.

³ Lotze, H.K. I. Milewski, B. Worm and Z. Koller. 2003. Nutrient Pollution: A eutrophication survey of eelgrass beds in estuaries and coastal bays in northern and eastern New Brunswick. Conservation Council of New Brunswick. 59 pages

of the Bay of Fundy show symptoms of nutrient loading, especially in the vicinity of point sources such as aquaculture operations.⁴

Currently, CEPA is silent on the problem of nutrient releases to the marine environment. Based on our analysis, CEPA is the appropriate vehicle to regulate nutrients.⁵ Amendments can be made to the Nutrient section of Part 7 (Controlling pollution and managing waste, Division 1, Sections 116-199) to accommodate nitrogen compounds such as ammonia, nitrites and nitrates. Ammonia is on CEPA's Priority Substance List and its release from various point sources represents a significant portion of the nutrient loading to coastal ecosystems. The amendment to Part 7 would extend the current powers of the Governor-in-Council to include nutrients (other than phosphates) such as nitrogen compounds from point (sewage outflows, marine aquaculture operations, pulp and paper mills, fish plants) and non-point sources (agricultural run-off). Limits could be placed on the concentration of nitrogen in effluents and emissions or the Minister could establish "total maximum daily load" requirements for a waterbody (as is done in the U.S.) with allocations by source to be determined provincially.

The Government of Canada must move quickly to control nutrient releases to coastal waters where 75% of all commercial species live during some portion of their life cycle. The release last week of an international study published in the journal *Science* that predicted the total collapse of the world's food fishery by 2048 if nothing was done about overfishing, habitat destruction and pollution, specifically nutrient loading, should be all the evidence the federal government needs to begin controlling nutrient releases.

Protecting vulnerable populations within the footprint of industry

In our view, vulnerable populations are those people living in the shadow or the footprint of industrial operations such as metal smelters, petrochemical refineries, coal-fired power plants, waste incinerators and so on. People living closest to pollution sources are known to be at a higher risk of exposure than those living some distance away. Many of these pollutants, such as metals, persist and accumulate in soils then bioaccumulate and/or biomagnify within plants and animals that are subsequently consumed by local residents.

While CEPA does set emission standards on a range of pollutants, it does not address the on-going accumulation of these pollutants in the environment. That aspect of environmental protection is thought to be covered by other agencies. Health Canada and the Canadian Food Inspection Agencies have developed some guidelines (not regulations) for safe levels of some contaminants in some food products. The Canadian Council of Ministers of the Environment (CCME) has established non-enforceable,

⁴ Lotze, H.K. and I. Milewski. 2004. Two centuries of multiple human impacts and successive changes in a North Atlantic Food Web. *Ecological Applications*, 14(5) 1428-1447.

⁵ See attached document titled, *Controlling Nutrients as a Marine Pollutant under CEPA*, by Janice Harvey, Marine Conservation Program Director, Conservation Council of New Brunswick and submitted to the Standing Committee on Environment and Sustainable Development as part of the committee's review of the Canadian Environmental Protection Act in May 2006.

voluntary guidelines for pollutants in soil, sediments and water. These are applied at the discretion of the provinces.

Enforceable limits on pollutants in soil, sediments and water are needed to protect people living in close proximity to industrial activity. They are more vulnerable than people living further away. The example of Belledune, New Brunswick, illustrates this point.

In 2003, after almost 40 years of living in the shadow of a lead smelter, residents had their properties tested for metals for the first time. They found out that their yards and gardens had lead, cadmium, arsenic, zinc, and thallium levels above the agricultural and residential soil quality guidelines set by the CCME.⁶ In 2005, after the province released the results of a health study of the Belledune area, residents learned that they had the highest disease, cancer and mortality rates in the province.⁷ They also found out that some of the berries, garden produce and seafood they had been eating contained high lead and cadmium levels.⁸

Instead of ordering a community-wide clean up of contaminated properties, the province ordered what amounted to a risk assessment on a risk assessment. Despite the fact that the CCME guidelines have been established on a health-risk basis, the province asked consultants to do a risk assessment on the current levels of some metals in soil, garden produce and seafood. The study concluded that soils and garden produce were not a significant pathway of exposure, although the seafood was. At the same time, in a separate study, children living in two neighbourhoods closest to the smelter were found to have blood lead levels almost 2.5 times higher than children living further away.⁹ Soil lead levels in the two neighbourhoods closest to the smelter were 2-4 times higher than those further away.

As for the high metal levels in some of the garden produce, the province said that Health Canada does not have “maximum residue guidelines for lead in food products”.¹⁰ Some berries and produce tested in the Belledune area had lead levels up to 4 times higher than Health Canada’s maximum residue

⁶ Milewski, I. 2006. *Dying for development: The legacy of lead in Belledune*. Conservation Council of New Brunswick. Fredericton. 95 pages. The French title of this report is *Mourir au nom du développement: L'histoire du plomb à Belledune*. Both reports can be downloaded from our website at www.conservationcouncil.ca.

⁷ Environmental & Occupational Health+Plus, Goss Gilroy Inc and SENES Consultants. February 2005. *Belledune Area Health Study: Summary Report*. Prepared for the New Brunswick Department of Health and Wellness. 98 pages plus 5 Appendices.

⁸ Jacques Whitford . 2006. *Final Report: The Belledune Area Environmental Sampling Report*. Prepared for the New Brunswick Department of Health and Wellness. 75 pages plus 8 Appendices.

⁹ Environmental & Occupational Health+Plus, Goss Gilroy Inc and SENES Consultants. February 2005. *Belledune Area Health Study. Appendix E - Pilot Lead Survey Results*. 22 pages; and New Brunswick Department of Health. September 8, 2006. *Blood lead levels in Children and Pregnant Women in the Greater Belledune Area*. 6 pages.

¹⁰ Letter from the Hon. Michael Murphy, New Brunswick Minister of Health to I. Milewski, Science Advisor, Conservation Council of New Brunswick dated October 18, 2006.

guideline for whole canned tomatoes (0.5 mg/kg or parts per million), but, the province said this value was not suitable to use for comparison purposes.¹¹

As the example of Belledune demonstrates, the emission and discharge limits placed on pollutants from industrial sources under CEPA are not sufficient to prevent pollutants from accumulating in the environment and having an impact of vulnerable populations. People living close to pollution sources need more protection than simple end-of-stack and end-of-pipe emission limits and voluntary CCME soil quality guidelines. The Government of Canada needs to step in and set nationally binding standards under CEPA for contaminants that accumulate and persist in soils, sediments and water as a result of industrial activity.

Submitted by
Inka Milewski
Science Advisor, Conservation Council of New Brunswick
November 06, 2006

¹¹ See footnote 7, Jacques Whitford . 2006. *Final Report: The Belledune Area Environmental Sampling Report*. Appendix D.