

Council

CNL(06)40

*Acid Rain and Atlantic Salmon in Eastern Canada
(tabled by Canada)*

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- North American emissions of SO₂ increased during the industrial revolution and peaked in the early 1970s.
- 75% of emissions in eastern Canada are from US sources, 25% from Canadian sources (example: for 2003, 2,857 tonnes/yr Illinois, Michigan, Pennsylvania and Ohio vs. 169.5 tonnes/yr Ontario).
- sulfate deposition has decreased about one third since the mid-1980s.
- a combination of geochemistry, local weather patterns, thin soils and low acid neutralizing capacity resulted in severe acidification of 65 rivers in the Atlantic coast of Nova Scotia.
 - critical sulphate loads exceed the capacity of the soils to balance pH and release base cations.
 - at projected sulphate deposition rates, the time for recovery of base cations in these catchments is 60 to 80 years.
 - increased H⁺ ion concentrations coupled with the low concentrations of Ca⁺⁺ are responsible for the mortality of salmon in acidified rivers of Nova Scotia.
- salmon were extirpated from 14 rivers of Nova Scotia and populations had declined by 90% in another 20 rivers.
 - stocking of some rivers was ineffective in maintaining viable populations.

Initiatives on acid rain

- ACID RAIN MITIGATION WORKSHOP FOR ATLANTIC SALMON RIVERS
 - organized by Nova Scotia Salmon Association and Atlantic Salmon Federation May 26 and 27, 2006.
 - to examine the science around acid rain impacts on salmon and the potential for liming to mitigate these negative effects.
 - presentations from Norwegian Water Research Institute, US Fish and Wildlife Service, Environment Canada and Nova Scotia Salmon Association.
- West River Sheet Harbour (NS) selected for first acid rain mitigation project
 - Nova Scotia Acid Rain Campaign Committee (Nova Scotia Salmon Association and Atlantic Salmon Federation) selected the West River Sheet Harbour watershed as first site for implementing a broad-scale liming plan.
 - West River Sheet Harbour was selected because of its size, proximity to a source of lime, and presence of a remnant, genetically unique population of Atlantic salmon.
 - committee is developing a long-term liming strategy, setting out criteria for prioritizing all acid rain affected rivers in the province.
 - various funding sources used to initiate the project.
- A gene-banking program has been started to counter the longer-term effects of acid rain on stocks in Nova Scotia. Several key populations are being harboured and protected at DFO Biodiversity Centres. When threats to the salmon's survival have been rectified, self-sustaining populations of the fish can be restored to Nova Scotia rivers.