



Increasing aluminium concentrations in Southwest Nova Scotia Canada rivers from 1980 to present

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Elevated aluminum levels in rivers is known to be toxic for aquatic species, in particular *Salmo salar*; however it was only recently aluminium has been identified as a potential threat to *Salmo salar* populations in South Western Nova Scotia, Canada (SWNS) (Dennis and Clair 2012). Previously, it was thought SWNS rivers contained enough DOC to render the aluminium in rivers inactive. A key remaining question is whether aluminium levels are declining following atmospheric pollution reductions. Here we make a first assessment of long term (1980-2011) aluminium concentration trends in three watersheds located in SWNS, as measured by weekly grab samples. Our results show that total aluminium levels have significantly increased from 1980-2011 in all three sites. Estimates of ionic aluminium levels indicate that the ionic aluminum concentration frequently exceeds the threshold for the level of aquatic health determined by the European Inland Fisheries Advisory Commission (Howells et al. 1990). Data also indicates that calcium levels have yet to recover even with declining concentrations of riverine sulfate. This new knowledge that aluminium is at toxic levels and is worsening will have implications for policy on acidification mitigation in SWNS; this is an urgent issue as the local salmon population numbers currently are declining to near extirpation levels.