Environmental recovery in Sydney Harbour, Nova Scotia: Evidence of natural and anthropogenic sediment capping

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Abstract

Contaminants were assessed in Sydney Harbour during baseline and three years of remediation of a former coking and steel facility. Concentrations of PAHs; PCBs; and lead measured in surface sediments indicate overall spatial distribution patterns of historical contaminants remains unchanged, although at much lower concentrations than previously reported due to natural sediment recovery. Recovery rates were in broad agreement with predicted concentrations; or in some cases lower, despite remediation at the Sydney Tar Ponds (STP) site. Contaminants showed little temporal variability, except for detection of significant increases in PAH concentrations during onset of remediation compared to baseline which represented a short term interruption in the overall long term natural recovery of sediments in Sydney Harbour. Recovery (via “capping”) was enhanced following recent harbour dredging activities where less contaminated outer harbour sediments were discharged into a confined disposal facility (CDF) required for a new container in the inner harbour.