

A Decision Making Framework for Sediment Assessment. Danielle Milani, Lee Grapentine, and Trefor Reynoldson, National Water Research Institute, Environment Canada

A rule-based, weight-of-evidence approach for assessing contaminated sediment on a site-by-site basis in the Laurentian Great Lakes is described. Information from four lines of evidence - surficial sediment chemistry, laboratory toxicity, invertebrate community structure and invertebrate tissue bioaccumulation - is integrated within each line to produce a pass ('-') or fail ('+') conclusion, then combined across lines resulting in one of 16 outcome scenarios. For each scenario, the current status of the site, interpretation, and management recommendations are given. Management recommendation(s) can range from no action to risk management required. Within each line of evidence, the strength of each response can also be ranked providing managers with more information to aid decision options. Other issues that influence scientific management recommendations such as site stability and subsurface contamination are discussed. The decision framework is intended to be transparent and comprehensive, incorporating exposure, effect, weight of evidence, and risk.