

A Guidance Manual to Support the Assessment of Contaminated Sediments in Freshwater Ecosystems. Chris Ingersoll, USGS, Columbia, MO and Don MacDonald, MESL, Nanaimo, British Columbia

This presentation will provide an overview of a guidance manual recently completed for the USEPA Great Lakes National Program Office (GLNPO) in Chicago, IL. This manual was developed to provide a framework for conducting an integrated assessment of ecological effects resulting from contaminated sediments. In response to the concerns that have been raised regarding contaminated sediments, GLNPO launched the Assessment and Remediation of Contaminated Sediments (ARCS) Program in 1987 to support the assessment and management of contaminated sediments in the Great Lakes basin. The information that has been generated under the ARCS program provides important guidance for designing and implementing investigations at sites with contaminated sediments. While such guidance has advanced the field of sediment quality assessments, the users of various individual guidance documents have expressed a need to consolidate this information into an integrated ecosystem-based framework for assessing and managing sediment quality in freshwater environments (i.e., as specified under the Great Lakes Water Quality Agreement). A guidance manual has recently been developed as a three volume series which is intended to support the design and implementation of assessments of sediment quality conditions by: (1) presenting an ecosystem-based framework for assessing and managing contaminated sediments; (2) describing and evaluating the various tools that are available for assessing sediment quality conditions; and, (3) providing the recommended procedures for collecting sediment quality data. Guidance is provided on approaches that can be used to integrate data from sediment and porewater chemistry (including sediment quality guidelines), sediment toxicity tests, benthic invertebrate community assessments, fish health, and bioaccumulation. The information compiled on each of the tools includes: descriptions of its applications, advantages, and limitations; discussions on the availability of standard methods, the evaluation of data quality, methodological uncertainty, and the interpretation of associated data; and, recommendations to guide its use. Furthermore, guidance is provided on the interpretation of data on multiple indicators of sediment quality conditions. Together, the information provided in the three volume series is intended to further support the design, implementation, and interpretation of focused sediment quality assessments. programs.