

## **Application of sediment quality guidelines in the assessment of mangrove surface sediment in Mengkabong lagoon, Sabah, Malaysia**

### **Abstract**

There have been numerous sediment quality guidelines developed to monitor the sediments. Sediment quality guidelines are very useful to screen sediment contamination by comparing sediment contaminant concentration with the corresponding quality guideline, provide useful tools for screening sediment chemical data to identify pollutants of concern and prioritise problem sites and relatively good predictors of contaminations. However, these guidelines are chemical specific and do not include biological parameters. Aquatic ecosystems, including sediments, must be assessed in multiple components (biological data, toxicity, physicochemistry) by using integrated approaches in order to establish a complete and comprehensive set of sediment quality guidelines. Numerous sediment quality guidelines (Washington Department of Ecology Sediment Quality Guideline, Australian and New Zealand Environment and Conservation Council, Swedish Environmental Sediment Quality, Screening Quick Reference Table, Portuguese Legislation on the Classification of Dredged Materials in Coastal Zones and Interim Sediment Quality Guideline for Hong Kong) have been applied to the Mengkabong lagoon mangrove sediment and discussed. The most appropriate guideline that meets the prioritization criteria consistent with international initiatives and regulations is interim sediment quality values for Hong Kong. The guideline verifies that all the metals are below the Interim Sediment Quality Value-low. However, site-specific, biological testing and ecological analysis of existing benthic community structure related to sediment contamination are needed for final decision making in the case of Mengkabong lagoon.