Session II-A

CURRENT APPROACHES TO SEDIMENT QUALITY ASSESSMENT

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The assessment of sediment quality is largely based on comparisons with sediment quality guidelines (SQGs). The most commonly accepted SQGs are those derived from a large North American database that compares effects on benthic organisms with contaminant concentrations. Because sediments contain co-occurring contaminants, toxicity is not always the result of the contaminant of interest, although attributed to it. As a result, SQGs for some contaminants will be unduly conservative. It is best therefore that SQGs are used as screening tools that if exceeded require further investigation of other chemical and physical factors, together with the use of other lines of evidence such as toxicity testing, bioaccumulation and effects on benthic communities.

The new Australian and New Zealand SQGs recommend a hierarchical assessment framework, although there is scope for further improving this based on more recent studies. Recent research has also revealed a number of potential areas of uncertainty associated with sediment sampling, storage, analysis, and toxicity testing. These can affect the outcomes of sediment quality assessments, and indeed of the derived SQGs.

A range of new sediment toxicity tests have been developed, and experiments undertaken to better understand contaminant uptake routes by these test species. A broader range of species is still required to enable the derivation of more reliable SQGs for single contaminants.