

# Chapter 5

## Recommendations

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### 5.1 Recommendations

The following recommendations are offered to assist the FDEP in identifying priorities for supporting the application of the SQAGs. General recommendations for improving the technical soundness of the SQAGs are identified in Volume 1 (MacDonald 1994).

#### 5.1.1 Applications of the Sediment Quality Assessment Guidelines

The recommended SQAGs represent powerful tools for assessing sediment quality in a number of applications in Florida. However, further guidance is required to define the role of the SQAGs in several, high priority applications. Specifically, a detailed Users Manual is required to describe how the SQAGs should be used in various state programs. In addition, guidance is needed on the derivation of site-specific sediment quality remediation objectives (i.e., target cleanup levels) at contaminated sites. Furthermore, procedures for conducting ecological risk assessments at sites with contaminated sediments should be developed. Lastly, seminars or workshops to provide assistance to SQAG users should be conducted to ensure that these management tools are used appropriately in Florida.

#### 5.1.2 Site-Specific Assessment of Sediment Quality

The recommended approach for assessing sediment quality in Florida is based on the identification of three ranges of contaminant concentrations: the minimal effects range; the possible effects range; and, the probable effects range. This approach was selected to explicitly account for uncertainties associated with evaluating the available data linking contaminant concentrations with adverse biological effects. When contaminant concentrations fall within the probable effects range at a particular site, there is a high probability that adverse biological effects will be observed. These sites should be given highest priority for further investigations.

Effects-based SQAGs should not be used alone to make contaminated sediment management decisions. Ancillary tools, such as the FDEP metals interpretive tool (Schropp and Windom 1988), should be used to determine the probable origin of sediment-associated contaminants. In addition, uncertainty regarding the potential for biological effects of sediment-associated contaminants at specific locations should be addressed by implementing appropriate biological investigations. These tools, when used together, will provide an efficient and effective basis for making contaminated sediment management decisions.

### **5.1.3 Regional Assessment of Sediment Quality**

The initial assessment of Florida coastal sediments provides a basis for identifying priority areas and contaminants for consideration in further investigations. However, the initial assessment is considered to be preliminary because it is based on data generated in FDEP coastal contaminants surveys, which have several limitations. First, insufficient data were available to conduct a reliable assessment in many areas of the state. Second, only limited data are available on levels of organic contaminants in most areas of Florida. Third, much of the available data on levels of metals and organic contaminants are several years old and may not accurately reflect present conditions. Nonetheless, this assessment emphasizes the urgent need to conduct further investigations, including biological tests, in the vicinity of Miami. Additional surveys may also be needed in the Jacksonville and West Palm Beach areas to assess sediment quality and evaluate the predictability of the SQAGs.

A list of priority contaminants in coastal sediments was developed from existing sediment quality data and information on land and water use patterns in Florida. However, insufficient information currently exists to determine the distribution of many of these contaminants in Florida sediments. Therefore, an expanded suite of analytes (to reflect contaminant inputs) should be incorporated into site-specific sediment quality monitoring programs. Such programs should be expanded to include the persistent pesticides that are used or have been used in an area, as well as the specific industrial chemicals that are present in wastewater effluents.

As mentioned elsewhere in this document, SQAGs alone are not adequate to reliably predict biological effects in contaminated sediments. At some sites, unmeasured contaminants may represent significant concerns with respect to evaluating potential biological effects. This is especially true when available sediment chemistry data do not adequately reflect the likely sources of contaminants. In these situations, additional chemical and biological testing may be required to resolve uncertainties over the potential for biological effects. In addition, further field studies are required to evaluate the applicability of the SQAGs for arsenic, which are exceeded in a number of sites that are not anthropogenically-enriched.

