

BASIC KNOWLEDGE IN MARINE SCIENCES

Edited by

Normawaty Mohammd-Noor



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Introduction

Aquatic ecosystems are under permanent pressure due to the effect of anthropogenic pollutants originating from various sources. Many of the pollutants are toxic to aquatic organisms which can cause their lethal or sub-lethal deterioration. The toxicity effect depends mainly on the type of the pollutant and on its concentration. To reveal the presence of pollutants and to measure changes due to the toxic effect, biological indicators were used to identify the real situation that occurred. The relative contamination of coastal environments can be measured using bioindicators (Phillips & Rainbow, 1994). Bioindicators accumulate contaminants in proportion to ambient bioavailability, and the accumulated concentrations are time-integrated measures of the exposure of the bioindicators to all sources of bioavailable forms of the contaminant over a previous time period (Phillips & Rainbow, 1994; Rainbow, 1995). Toxic metals released into the marine environments tend to accumulate in sediments and subsequently are taken up by filter-feeding organisms. Hence the knowledge on the metal accumulation in filter feeding aquatic organisms is of prime important their sustainable management and utilization for human consumption.

Coastal and estuarine environments are important natural resources supporting recreational activities and commercial fishing as well as providing a host of ecological services. The pollution of these regions can have serious adverse effects and thus has been closely monitored in the past several decades. The polluted waters from the industries contain toxic chemicals such as chromium salts, sulfides and other substances including heavy toxic trace metals entering the aquatic water body which eventually reaches the biota and higher trophic level via food chain (Tariq *et al.*, 2006). According to Shazili *et al.* (2006), the information on