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Marine and estuarine pollution

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ABSTRACT

The problems arising from attempting to control pollution on an international scale were outlined by Shinn. Perkins completed his treatise on the biology of estuaries and coastal waters with a four-chapter discussion of pollution, the parameters of waste disposal, the biological effects of waste disposal, and management. The author concluded that it was not the vast amount of data accumulated over a short time span or small area, but rather it was the very long run of the simple measurements carried out over over a wide area that will produce the greatest advances. A semipopular account of population of the sea with emphasis on conditions in France was written by Bellan and Peres.

The problems of oil spills in the marine environment were summarized as to the source and types of spills, short- and long-term effects, prevention, and needs for further research. The authors concluded that practically must be the prime consideration in advancing oil spill technology. The effects of oil on marine organisms were critically reviewed. Five basic responses were identified: toxicity, sub-lethal effects, coating by oil, uptake by organisms, and change in habitat. Larval stages were sensitive to concentrations of soluble aromatic hydrocarbons down to 0.1 mg/l, whereas the lethal limits for adults were 1.0 to 100mg/l.

Bascom concluded that the ocean was the logical place for man to discharge his wastes provided standards are set on water quality provided standards are set on water quality with adequate safety factors. Serious problems arise when synthetic compounds are discharged into the ocean because organisms lack the necessary mechanisms for defense.

Different techniques were employed for monitoring the marine environment. Infrared spectroscopy was found to be a rapid, simple method for racing the source of oil spills; it can also serve to separate different sources in multiple origin spills.