

Cycling of zinc in the nearshore marine environment

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Introduction

Zinc is an important trace element in the marine ecosystem. This transition metal is known to be involved in a number of enzyme systems in aquatic and terrestrial organisms (Vallee, 1959; Bryan, 1964; Coombs, 1972), making it an essential micronutrient. However, like many other trace metals, zinc can be toxic if introduced in high enough concentration into aquatic ecosystems (Eisler, 1973; Eisler and Wapner, 1975). Because of zinc's importance in the industrialized world, large quantities of the metal are released annually to marine waters lying off densely populated regions (Young et al. 1973; Mueller et al., 1976). In addition, the neutron-induced radionuclide ⁶⁵Zn is one of the more worrisome products of the nuclear age (Rice, 1963; Seymour and Nelson, 1973). Thus it is important to understand in what ways, in what forms and at what rates this metal is introduced, distributed, and removed (to permanent sinks) in the marine environment.

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