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Remote Estimation of Chlorophyll-a Concentration in Inland, Estuarine, and Coastal Waters

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18.1 Introduction

Inland, estuarine, and coastal waters comprise only a small fraction of the Earth's aquatic component, but are extensively exploited by human activities. The water quality in these ecosystems is, therefore, of high ecological and economic importance, and in this respect, quantitative evaluation of phytoplankton biomass is a crucial endeavor. Despite the high variability of its composition, size, and forms (Reynolds 2006), phytoplankton may be relatively easily monitored by the estimation of the concentration of chlorophyll-a (chl-a), a pigment universally found in all phytoplankton species and routinely used as a substitute for biomass in all types of aquatic environments.