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Tropical climate variability and its impacts on marine coastal ecosystems and biodiversity of plankton, southeast coast of India**Nallamuthu Godhantaraman**
University of Madras, India

Global warming and the subsequent events of climate variability may have greater repercussions for marine ecosystems than for terrestrial ecosystems, because of temperature influences, water column stability, nutrient enrichment, biodiversity of plankton communities and its reproductive cycles. To understand the impacts of tropical climate variability on the marine coastal ecosystems, a study has been undertaken to investigate the biodiversity and abundance of plankton in the most important tropical estuarine systems, a unique coastal marine environment in south India. The cumulative long term survey showed (period from 1988 to 2015) remarkable variations in environmental parameters, chlorophyll concentrations and diversity of species in abundance of plankton communities. Besides, it showed seasonal variations being highest in summer (April-June) and lowest in monsoon (October-December). There were wide temperature fluctuations (range- 22.8-33.9 °C), salinity gradients (3.1-34.8) and chlorophyll concentrations (1.6-19.4 µg l⁻¹). The overall mean abundance of phytoplankton 3.9 fold and zooplankton 3.2 fold were higher in summer than in monsoon. The low diversity and abundance of plankton during monsoon might be due unfavorable climatological conditions, disappearance of many species, scarcity of food and high turbidity condition of the water column. The cumulative data on plankton diversity and abundance showed interesting observations on species distribution and abundance pattern. Climate variability exerts major influence on the ecosystem and biodiversity of plankton.

godhantaraman@yahoo.com