



C, N and P Behavior in Bhitarkanika Mangroves, East coast of India

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Abstract

In the east coast of India is relatively rich in mangroves has varied physiography and fluctuating freshwater input which modify their nutrient dynamics within this ecosystem. The Bhitarkanika mangrove ecosystem is fed by two main rivers and are undergoing anthropogenic stress due to agriculture and as prawn culture and petrol boats from a fishing harbor. Hence the biogeochemistry of this pristine ecosystem is being altered significantly. An attempt has here been made to elucidate the existing variation and role of anthropogenic variability on the nutrient variations and enrichment from mangroves. The flux estimates C, N and P have been quantified from Bhitarkanika mangrove accounting for spatial and temporal (seasonal) variation. The annual rates were estimated and compared with other mangroves in India and other parts of the world. The influence of elevated nutrient inputs through anthropogenic influence enhances their fluxes. The flux data were analyzed for net biogeochemical performance using LOICZ approach as well. The surface water samples were collected in pre-monsoon, monsoon and post monsoon season and were quantified for dissolved nutrients. The residence time of the water was found to be low with positive salinity. An attempt has also been made to distinguish the natural and anthropogenic fluxes. Overall, the mangrove ecosystem acts as a source for N and P during the pre-monsoon and post-monsoon season while in monsoon it acts as a sink for these nutrients.