



## Ecological succession of microphytobenthos associated with riverine mangrove forest in the Cochin backwaters, southwest coast of India.

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### Abstract:

Microphytobenthos (MPB) is “Secret Garden” of shallow-water unvegetated marine habitats (Miller et al. 1996), in the intertidal mangrove wetlands. Year-round variation in the taxonomic structure of microphytobenthos in a riverine mangrove forest was investigated in the Cochin backwaters, southwest coast of India. About 119 species of microphytobenthos comprising diatoms (113 species), cyanobacteria (4 species), dinoflagellate (1 species) and euglenophytes (1 species), in which Pennate diatoms dominated 92%. Major subclasses of diatoms identified were Bacillariophycidae, Fragilariophycidae, Thalassiosirophycidae, Melosirophycidae and Coscinodiscophycidae. Top ten species identified were *Skeletonema* sp. (259 cells cm<sup>-3</sup>), *Diploneis suborbicularis* (237 cells cm<sup>-3</sup>), *Amphora cymbaphora* (156 cells cm<sup>-3</sup>), *Amphora crassa* (130 cells cm<sup>-3</sup>), *Pinnularia cruciformis* (124 cells cm<sup>-3</sup>), *Navicula pseudocomoides* (124 cells cm<sup>-3</sup>), *Navicula perrhombus* (121 cells cm<sup>-3</sup>), *Navicula erifuga* (118 cells cm<sup>-3</sup>), *Gyrosigma balticum* (115 cells cm<sup>-3</sup>) and *Achnanthes brevipes* (113 cells cm<sup>-3</sup>). Average levels of fluvial nutrients estimated in the porewater were NO<sub>3</sub>-N (28±19.7 µmol L<sup>-1</sup>), PO<sub>4</sub>-P (3.77±4.6 µmol L<sup>-1</sup>) and SiO<sub>4</sub>-Si (33.12 ±27.2 µmol L<sup>-1</sup>). Numerical abundance and biomass of MPB were maximum during June (Monsoon season). MPB diversity was maximum during Post-monsoon - February (H' - 3.67) and lowest during Pre-monsoon - April (H' - 2.44). In contrast, a decrease of salinity, nitrate and phosphate along with the acute effect of seasonal variation was also responsible for the dense cyanobacterial mats.



### Biography:

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### Recent Publications:

1. Swarms of Ctenophore *Pleurobrachia pileus* (O. F. Muller, 1776) in the waters of Sundarbans: Amencance to the fisheries? *Indian Journal of Geo-Marine Sciences*. 49(06): 1089-1092.
2. First recorded bloom of *Akashiwo sanguinea* (Dinophyceae) from the Cochin backwaters, a tropical estuarine system along the South Eastern Arabian Sea. *Oceanological and Hydrobiological Studies* (In Press- Manuscript ID OandHS- D-20-00009R1).

14th International Conference on Aquaculture & Marine Biology | July 20-21, 2020 | Barcelona, Spain

Citation: Niya Benny; Ecological succession of microphytobenthos associated with riverine mangrove forest in the Cochin backwaters, southwest coast of India; *Aquaculture & Marine Biology* 2020; July 20-21, 2020; Barcelona, Spain.pg No:3