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Diversity of benthic fauna at upper reaches of the Puttalam Lagoon

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Benthic animals play an important role in the food web as primary consumers and biological indicators for different environmental conditions. Similarly, these animals can be used in the determination of pollution levels and abundance of fish shoals. The objectives of this study were to identify the benthic fauna in the upper reaches of the lagoon and study their distribution in order to obtain an idea of the environmental condition of the lagoon. Benthic samples were obtained from 28 line transects (sampling sites) around the upper part of the lagoon. Sampling was carried out in 3 replicate at 5 locations along each line transect at 10 m intervals. Samples were collected using a hand operated corer, and were sieved *in situ* through 4 mm, 2 mm, 1 mm and 0.5 mm (500 µm) mesh, fixed with Rose Bengal in 5% formaldehyde solution. Benthic fauna in each sample were identified to the nearest taxonomic category using standard guides. The diversity of benthic fauna in each sampling site was determined using Simpson's Diversity Index. The species richness (Family basis) was determined through Menhinick's index. Altogether 17 gastropod families, 03 bivalve families and 22 polychaete families were identified. Sampling site 7 was represented by 31 members of amphinomidae and 11 members of Pisionidae polychaete families. Sampling site 21 was represented by 23 members of polychaetes belonging to the Oweniidae family. The highest numbers of polychaete as well as gastropod families were recorded in sampling site 7. Highest number of polychaete worms was recorded in sampling site 7 as 58 and the second highest number of polychaete worms was in sampling site 21, as 27. Simpson's Index of Diversity of gastropods in all sampling sites except 1 and 17 are in the range of 0.30 – 0.99. Polychaete diversity was nil in sampling sites 8, 9, 15, 17, 20, 24 but in other sampling sites ranged from 0.43 – 0.98. The highest polychaete diversity was recorded as (0.9877) in sampling site 28. This lagoon is considerably rich in polychaete worms and mollusk but it is not a polluted water body.

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