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# DISTRIBUTION OF BENTHIC MACROINVERTEBRATES ALONG SEDIMENT GRADIENTS IN A MOUNTAIN LAKE OF KUMAUN HIMALAYAS, INDIA

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## Abstract

Distribution of benthic macroinvertebrates with sediment characteristics was determined in Lake Sattal of Kumaun Himalayas, India. Sampling was undertaken monthly for two consecutive years at four sites using Ekman dredge bottom sampler. A total of 31 benthic macroinvertebrates species belonging to 10 groups viz, Diptera (5), Trichoptera (5), Gastropoda (4), Ephemeroptera (3), Hirudinea (3), Odonata (3), Coleoptera (2), Decapoda (2), Oligochaeta (2), and Platyhelminthes (2) were collected. Temporal and spatial variations of sediment grain sizes, total organic matters, dissolved oxygen (DO) at the near-bottom layer (NBL) were estimated. Our study reveals that the diversity of macroinvertebrates was higher at the stable medium-sized particles and reduces in coarser-grained sediment bed. Although organic matter regulates the abundance of both sensitive insect larvae and pollution tolerant chironomids, the two groups have different habitat preferences and functional feedings. Increased detrital inputs and periodical anoxia at near bottom layer (NBL) augmented the domination of deposit-feeders. Changes in the land-use pattern in the catchment alter the habitat structures and enhance basal resources segregation in the upland lake. Therefore, determination of habitat-specificity of benthic macroinvertebrates could develop priority efforts to protect the mountain ecosystem.

*Keywords*: habitat, Himalayan Lake, macroinvertebrates, organic matter, particle-size

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