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CARBON, NITROGEN AND SULFUR CYCLING IN SEDIMENTS OF THE AO NAM BOR MANGROVE FOREST, PHUKET, THAILAND: A REVIEW

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ABSTRACT

The present paper is an attempt to review available data on sediment biogeochemistry of the Ao Nam Bor mangrove forest on the east coast of Phuket Island, Thailand. Aspects of sedimentary carbon, sulfur and nitrogen cycling are evaluated and compared in 3 intertidal zones: 1) the low-intertidal, non-vegetated mudflat outside the forest; 2) the mid-intertidal forest zone with dense growth of *Rhizophora apiculata*; and 3) the high-intertidal sparsely vegetated zone with high abundance of crab burrows. By compiling data on organic carbon and nitrogen input to (*e.g.* litterfall, benthic primary production) and output from (*e.g.* crab ingestion, microbial mineralization, plant assimilation) the sediment, preliminary budgets for the 3 intertidal zones at Ao Nam Bor can be established. However, the presented budgets have serious limitations caused by a general lack of data. In those cases where no data are available from Phuket, results are either extrapolated from other mangrove forests, estimated based on assumptions or simply ignored. Furthermore, as most data on benthic carbon and nitrogen cycling used in the budgets are obtained only during the dry season, the carbon budgets most certainly do not represent annual averages, but should rather be considered dry season averages.