

# TEMPORAL CHANGES IN THE MACROBENTHOS ON THE WEST COAST OF PHUKET ISLAND, WITH EMPHASIS ON THE EFFECTS OF OFFSHORE TIN MINING\*

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## ABSTRACT

Based on bimonthly samples the changes in abundance and biomass of benthic invertebrates have been monitored during a three-year period on the west coast of Phuket Island, Andaman Sea. This study provides the first long-term study of marine benthos in Thailand. The results obtained at 10 to 30 m. depths showed an overall density of 540 individuals  $m^{-2}$  and a biomass of 14  $gm^{-2}$ . Locally, however, density could reach 4,000 ind.  $m^{-2}$ . The species-area relationship was studied. It is shown that animals predominantly were distributed according to a Poisson series, but aggregated distribution was observed in a few families of polychaetes. The density of species, biomass and relative occurrence of fauna groups is discussed at individual sampling stations. This study showed that significant fluctuations occurred in the abundance of benthos concordant with fluctuations in the silt-clay concentrations of the sediments. These changes are interpreted in a successional scheme characterized initially by small, abundant and opportunistic species. The colonization of sea beds took place as a relatively small increase of pioneer species dominated by polychaetes. Benthos recolonized areas mined by offshore dredges but more than one monsoon period is needed for complete recolonization. Finally, the finding of a rich fauna in an area influenced by severe sediment disturbance is discussed in relation to current theories in terms of causes and maintenance of high species density in tropical waters.

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