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TEMPORAL AND SPATIAL DISTRIBUTION OF FISH LARVAE AND THEIR ENVIRONMENTAL BIOLOGY IN PHANG-NGA BAY, THAILAND

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ABSTRACT

A one year study of the seasonal and spatial distribution of fish larvae and environmental parameters (physico-chemical variables, phytoplankton biomass and production) was carried out in Phang-Nga Bay, eastern Andaman Sea, Thailand. In all, 14 stations were sampled on 10 occasions. Altogether 48 larval fish families were identified and more than 60 % of the larvae belonged to commercially important families. There was a pronounced seasonal pattern in larval fish abundance with average concentration during January-March being approximately twice the average concentration during the rest of the year. This seasonal pattern was unrelated to the (weak) seasonal variation in phytoplankton biomass and production, which, in turn, was unrelated to the seasonally very variable availability of inorganic nutrients and precipitation. Spatial trends showed larval fish abundance and family diversity to increase from the innermost to the outermost part of the bay. The concentrations of chlorophyll-a and nitrate and turbidity showed the opposite trend. The abundance of fish larvae was negatively related to turbidity. Mechanisms of regulating plankton productivity and adaptations of fish spawning periods to events in the plankton in Phang-Nga Bay are discussed.