

**STRUCTURE OF REEF FISH COMMUNITIES OF PHUKET ISLAND,
THE ANDAMAN SEA**

Ukkrit Satapoomin and Hansa Chansang

Phuket Marine Biological Center, P.O. Box 60, Phuket 83000, Thailand

ABSTRACT

A visual fish census technique was used to estimate the abundance of reef fishes at 22 sites during 3 sampling periods (between November 1990 and April 1993) around Phuket. A total of 353 species in 53 families of fishes were recorded of which 285 species were quantified on the census transects. Excluding rare and cryptic species, abundance data for 163 species were analysed by multivariate statistical procedures to establish assemblage patterns. The results revealed two major assemblages of fishes; one is typical of reef sites of the west coast, the other is typical of reefs of the southern part of Phuket. Such spatial patterns of assemblages are apparently connected with the geomorphological features of reefs in the area and the relative degree of exposure to wind and waves under monsoon influence. In addition, fish assemblages at most sites were consistent over the 3-year period of the sampling program. Depth, which reflects the degree of reef development or gradients of reef zonation among investigated sites, was a good predictor of diversity (H') and overall species richness of fishes as well as species richness of fish from certain families (Pomacentridae and Serranidae) or trophic group (omnivore). The influences of particular substratum characteristics (*i.e.*, coral growth-form coverage) varied with fish from different families, which suggests variation in the degree of dependency on corals among various groups of fishes. The influence of past disturbances as well as reef condition on local fish assemblages are discussed.