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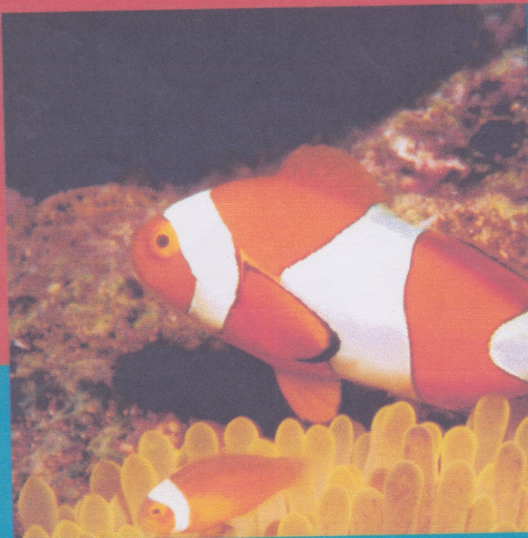


CORAL TRIANGLE
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ABSTRACTS

Identification and Conservation of Evolutionary Processes in the Coral Triangle Biodiversity Hotspot

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The reefs of the Coral Triangle are the most diverse in the World. While the patterns of origin have long attracted the attention of evolutionary biologists, answering this question has largely been considered of purely academic interest. However, given the increasing threats facing the reefs of the Coral Triangle, it is becoming increasingly clear that understanding the processes generating high biodiversity in this region is critical for preserving this diversity, including the processes that create it. This study compares the phylogeography and genetic connectivity of over 30 fish and invertebrate taxa which are codistributed across the Coral Triangle, representing multiple reef functional groups ranging from corals to pelagic fish. Results indicate a broad array of evolutionary patterns in this shared physical environment. Some taxa exhibit the classic pattern of differentiation between Pacific and Indian Ocean populations, suggesting Pleistocene vicariance. Others show fine-scale genetic differentiation, suggesting a common history of regional geographic isolation. Still others show no genetic structure at all. Although patterns fell into these three basic classes, there were few commonalities among taxa with similar patterns of genetic structure. The unique responses of multiple taxa to a shared environment suggest a multiplicity of physical and ecological processes contributing to the evolution of high biodiversity in the Coral Triangle. While the commonalities seen among some taxa suggest some support for regional seascape conservation initiatives, the idiosyncrasies among taxa demonstrate the challenges facing marine managers in designing reserve systems that will effectively protect a broad array of biodiversity.

Population Biology of *Acetes Indicus* (Decapoda: Sergestidae) from the Coastal Waters of Malacca, Peninsular Malaysia

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Sex ratio, spawning season, and population parameters of the sergestid shrimp, *A. indicus* in the coastal waters of Malacca, Peninsular Malaysia was studied between April 2007 and 2008. The growth, mortality, recruitment and exploitation rate of *A. indicus* were investigated based on monthly length frequency data using FiSAT software. The sex ratio of *A. indicus* in the coastal waters of Malacca was in favor of females for most of the sampling period. The analysis of the annual variation of gonadosomatic index (GSI) indicated possible continuous breeding activity of *A. indicus* throughout the year. High natural mortality of male *A. indicus* versus fishing mortality was observed, indicating unbalanced position of the stock. The study indicated two major recruitment events per year where two cohorts of *A. indicus* were produced. Results from the analysis of the exploitation rate (E) based on the fishing mortality estimates, and from the relative yield-per-recruit (Y/R), indicated that the *A. indicus* fishery resources are operating slightly below the optimum level of exploitation. This implies that any further unrestrained increase in fishing effort might overshoot the level of maximum sustainable yield, thus driving the stock down and leading to economic losses.