BABO1

POPULATION GENETIC STRUCTURE OF THE INDIAN SCAD, *Decapterus russelli* ACROSS INDIAN OCEAN AND INDO-MALAY ARCHIPELAGO

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The Indian scad, *Decapterus russelli* is an important pelagic Carangidae widely distributed throughout the Indian Ocean and Indo-West Pacific. Although widespread in the Indian Ocean, information on genetic structure of this species is lacking compared to its Indo-Malay Archipelago (IMA) counterparts. The present study was conducted to investigate the genetic population structure of *D. russelli* using mitochondrial (*Cyt b*) and nuclear (*DrAldoB1*) markers along Indian waters. The results indicated the occurrence of a single panmictic stock throughout the Indian Ocean region. Phylogenetic analysis revealed that there is no geographical clustering of lineages. However, significant genetic differentiation has been observed between the Indian Ocean and IMA populations. Pairwise FST comparisons, AMOVA and SAMOVA revealed the existence of two distinct genetic stocks of *D. russelli* in the Indian Ocean and the IMA. The observed genetic variation between populations was high. A plausible explanation for the observed genetic differentiation between the Indo-Malay Archipelago and the Indian Ocean regions suggests the influence of historical isolation, sea surface currents, and biotic and abiotic characteristics of the ocean. Also, there was a significant association between genetic distance and geographic distance in a manner consistent with isolation by distance. This led to the development of a phylogeographic break of this species between these regions. The results of these findings suggest that Indian Ocean *D. russelli* should be managed as a single stock throughout its range. In addition, the Indian Ocean stocks and the Indo-Malaysia stocks can be managed separately.

Keywords: Carangidae, Indian scad, population structure, molecular markers, Indian Ocean, Indo-Malay Archipelago