

Morphometric analysis of harpodon nehereus, harpiosquilla raphidea, and scylla serrata in the coastal waters of Tarakan, North Kalimantan, Indonesia

ABSTRACT

The Bombay duck (*Harpodon nehereus*), harpiosquillid mantis shrimp (*Harpiosquilla raphidea*), and giant mud crab (*Scylla serrata*) are among the commercially important fishery resources in Tarakan Island, North Kalimantan, Indonesia. This requires sustainable fisheries management to be in place since these resources have now become the main targets of fishing industry. However, sustainable fisheries management of these species is difficult because less is known about the species particularly its condition, fatness, and well-being. Hence, the current study was conducted to analyze the morphometric characteristics in order to deduce fishing pressure of the fish species in Tarakan waters. Data collection was achieved through field between September 2017 and April 2018. Morphometric characteristics (length, weight, width, and thickness) were collected throughout the sampling period. The length-weight relationship and condition factor were then estimated using the morphometric measurements. The data were then statistically analyzed either or combination of t-test, Chi-square, and the Mann-Whitney tests. The study revealed that all the three fish species (*H. nehereus*, *Ha. raphidea*, and *S. serrata*) populations in Tarakan waters were dominated by male individuals (M:F ratio; 1:0.81; 1:0.63; and 1:0.66, respectively). The length-weight analysis showed all fish were found to be smaller in size and exhibited negative allometric growth patterns. The analysis of condition factor also showed that the fish were dominated by flat and very flat body shapes. The current study suggests that the fish species may encounter some kinds of ecological disturbances that selectively removed female fish and larger individuals from the populations. However, more studies are needed to accurately identify those factors so that plans to effectively address the root cause could be incorporated in the sustainable fishery management tools of the fish resources.