

HOOK SIZE SELECTIVITY IN THE HANDLINE FISHERIES OF SHIMONI, SOUTH COAST KENYA

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Handlines are some of the most used gears in the Kenya coastal marine fisheries. However, information on hook selectivity for handline fishery is lacking. There was need to assess hook selectivity for handline fishery for sustainable exploitation of the fishery. This study aimed at assessing hook selectivity for handline fishery at Shimoni, south coast Kenya. Specifically to identify which fish species are captured by handline fishers at Shimoni, to determine the size frequency distribution of the species captured by selected hook sizes including seasonal and spatial variation and to evaluate the impact of handline hooks on fish stocks. This study was conducted from Mpunguti, Waga, Nyuli and Wasini sites using hook sizes No. 16, 15, 10, 9 and 8. Selectivity was determined using Holt's 1963 model as explained by Pauly, 1984. A total of 966 fish of 65 species and 23 families were caught. *Lethrinus borbonicus*, *Lethrinus lentjan*, *Lethrinus rubrioperculatus*, *Lutjanus fulviflamma* and *Aprion virescence* were the dominant species. The number of fish captured increased with decrease in hook size, but the large sized hook gave the highest CPUE. The diversity of species caught was high during NEM and for hook size No. 15. The size of fish caught by hook sizes No. 9 and 10 were significantly different from that of fish caught by hook sizes No. 15 and 16 ($p < 0.05$).

There was high similarity in fish species caught by hook sizes No. 16 and 15 while fish species caught by hook size No. 8 were similar with those caught by hook size No. 9. There was an overlap in the selectivity of the different hook sizes on the dominant species making it difficult for decision making since the fishery is of multispecies. However, hook size No. 8 was recommended for handline fishery as they gave high CPUE and had narrow selection ranges. Future studies to consider hook-loose, duration of fishing and the effect of bait type and size.