Evaluation of Kenya's coastal gillnet fishery for management recommendations

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Abstract

The catch assessment of gillnets was carried out in two counties at 8 landing sites spanning 140 km of Kenya's coast from June 2014 to May 2015. The catch was identified to species level. Relative abundance, size structure, trophic level and CPUE were determined based on six gillnet mesh size categories determined from available mesh sizes and differences in catch composition of the gillnets. Species dominated the mesh categories as follows: *Hyporhamphus affinis (Tropical halfbeak)*: 0.5-1.5 inches; *Siganus sutor* (whitespot rabbitfish): 2.0-2.5, 3.0-3.5 inches, *Euthynnus affinis* (Mackerel tuna/kawakawa): 4.0-5.0, 6.0-7.0 inches; and *Himantura uarnak* (honeycomb stingray): 8.0-12.0 inches. The catch from meshes > 4 inches included several sharks and rays, which were either vulnerable or endangered. Selectivity of longer fork length and higher trophic level fish was higher in gillnets of > 4 inches, which also had lower juvenile retention. Management of the coastal gillnet fishery will require a trade-off between the level of juvenile retention and the capture of vulnerable or endangered species. We recommend that gillnets of mesh sizes 5.0-6.0 inches be used in offshore fishing grounds because of their low juvenile retention and capture of higher trophic level species, notably Kanadi Kingfish, and very few sharks and rays. Gillnets of mesh sizes 0.5-1.5 should be allowed from September to December for small seasonal pelagic species such as *Herklotsichthys punctatus* (Spotback herring). The trade-offs between avoiding capture of juveniles and endangered or vulnerable species versus fisher needs, for example to fish in lagoons for rabbitfish, will be discussed.