

**A STUDY OF THE ECOLOGICAL IMPACT OF
TRADITIONAL STAKE-NET PRAWN FISHERIES
IN KAVUTHARIMUNAI, KILINOCHCHI
DISTRICT ON THE BLUE SWIMMING CRAB AND
OTHER NON-TARGET SPECIES, USING MARINE
STEWARDSHIP COUNCIL'S RISK BASED
FRAMEWORK**

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ABSTRACT

Stake-net fishing is one of the oldest means of fishing in the Jaffna Lagoon (Palk Bay), northern Sri Lanka. The fishery is the major source of livelihood for people in Kavutharimunai (9.3359°N 80.0711°E / 9.5663°N 80.1196°E) in Kilinochchi district and the targeted species are *Penaeus semisulcatus* and *P. indicus*. High levels of immature *Portunus pelagicus* caught in stake-nets have been suggested as a threat to overall population of *P. pelagicus* in Palk Bay. The impact of stake-net on other non-target species is often considered to be a conservation concern for the ecosystem. The study investigated the impact of stake-net fishery in Kavutharimunai on *P. pelagicus* population and other non-targeted species in the Palk Bay from September to October 2017, sample size was 100 catches, collected for 10 days. Each non-target species was identified. The number and weight of each species was recorded. Thirty-four finfish, two crustacean, one mollusc and one echinoderm species were recorded. Average catching rate was 4.2 kg / fishermen / day. The fishery accounted for targeted species and non-targeted species 58.9% and 41.1% by weight respectively and *P. pelagicus* 21.4% of the total catch. The average weight of *P. pelagicus* harvested was 2.2 kg/ fisherman/day of that 62% of the crabs caught were mature and 38% were immature. 75% of the non-target species were retained. 25% were discarded. Only one non-target species (*P. pelagicus*) was prevalent above the 2% / 5% threshold for less resilient / resilient non-targeted species. The results revealed that the impact of stake-net fishery on *P. pelagicus* (215.6 kg and 38% immature crabs) is low when compared.

The MSC Scoring Guidepost calculated for each main species was >80. The ecological status of *P. pelagicus* fishery was equivalent to an Unconditional Pass of the MSC's Fishery Assessment Methodology for sustainable fisheries. However, the results of the ecological impact assessment using the Marine Stewardship Council's Risk Based Framework suggested that stake-net fishery is not a conservation concern for other non-targeted species. Hence, new management practices or removal of the stake-net fishery in the area is not needed at the present.

Keywords: Stake net prawn fishery, Marine Stewardship council, Non-target species