

Assessing the Ecological Impact of the Bottom-set Crab Net Fishery for *Portunus pelagicus* on Non-Target Species at Thuraiyoor, Sri Lanka

V. Subaha, I.U. Wickramaratne and H.M.T.N.B. Herath

Department of Animal Science, Uva Wellassa University, Badulla, Sri Lanka

The bottom-set crab net *Portunus pelagicus* fishery has been recently developed and is now one of the top livelihoods of Thuraiyoor fishermen, which is located in Jaffna District inside the Palk Bay. The crab net fishery seems to be ecosystem friendly when compared with trawling. However, a better understanding of the ecological impact is lacking in the Sri Lankan context. This study aimed to quantify the total bycatch, determine the catch composition of non-target species and examine the likely impact of the fishery on non-target species. Data were collected using a fishery dependent survey. From the total catch observed from the 152 net-sets, 45% of the catch was targeted catch and 55% was bycatch. The resulted proportion of bycatch as valuable bycatch (*i.e.* retained) and discarded bycatch were 40% and 15% respectively. Based on fishery dependent surveys, a total number of 84 non-target species were observed in the bycatch. The bycatch included 32 species of fish, 23 species of crustaceans, 18 species of mollusks, 9 species of echinoderms and 2 species of cnidaria. Among the total bycatch, spider conch (*Lambis lambis*) comprised 30% of the total catch by weight and identified as a main species. The remaining 25% included all other non-targeted species and the majority were mollusks and crustaceans. The automated Marine Stewardship Council (MSC) vulnerability score and MSC overall score for spider conch were as 2.35 and 89 respectively, which is equivalent to an Unconditional Pass of the MSC Fishery Standard for Sustainable Fisheries. Consequently, this study at Thuraiyoor supports earlier studies in the Palk Bay, which indicate that the ecological impact on the non-target species by bottom-set crab net *P. pelagicus* fisheries in the Palk Bay is a low conservation concern at present.

Keywords: Bycatch, *Portunus pelagicus*, Bottom-set crab net, Palk bay, Sri Lanka