

Expansion of the Gillnet Fishery for Blue Swimmer Crab (*Portunus pelagicus*) in the Coastal Waters off Jaffna: The Post-war Context, Where will we End up?

S. Sivanthan and M.D.S.T. De Croos[†]

Department of Aquaculture and Fisheries, Wayamba University of Sri Lanka, Sri Lanka
[†]dileepa_dc@yahoo.com

Abstract: After the war, the export oriented, live blue swimmer crab fishery in northern Sri Lanka has emerged as an increasingly important fisheries sector because of its economic value. Based on passive gill nets set from small boats in shallow waters, local fishing communities have adapted fishing methods to harvest this valuable resource. However, the open access to the waters off Jaffna has triggered a dramatic expansion of fishing activities and the use of some destructive fishing methods. The fishery catch and effort statistics from 2007 to 2011 were obtained from Department of Fisheries and grouped into two categories: before and after (the war ended in 2009-July). These statistics show that in the postwar period, there has been an increase in fishing effort and the proportion of blue swimmer crabs in the total fishery production has increased considerably. However, a large proportion of the catch is often rejected by exporters due to high mortality of damaged crabs. Consequently, monofilament gillnets have been banned and although illegal monofilament nets are still common in the live-crab fishery, Wool type gillnets are now increasingly being used as an alternative. This study examines the differences in the crab catches between the monofilament and Wool type gillnets. Catch statistics and population parameters were compared for each type of fishing gear from samples collected between January to April 2012 off the Karampan coast in Jaffna. The data that was compiled included: Catch per Unit Effort (CPUE) (under four weight categories and bycatch); length-frequency distributions; proportion of damaged crab in catches; the proportion of undersize (<50g) individuals; and the length at 50% maturity (L_{50}). Higher catch rates of larger (>250g) *Portunus pelagicus* were reported in Monofilament gillnets than Wool type gillnets. But considerable proportions of captured crabs were damaged due to both types of gillnet operations and the level of damaged crabs from both gillnets were similar ($P>0.05$). Gear selectivity of *Portunus pelagicus* is shown by the significantly higher proportions of small crabs (<50g) in the Monofilament gillnets. Both types of gillnet caught a high proportion of immature individuals (< L_{50}). There are concerns about the state of the resource following the increase in fishing effort with gill nets and the expansion of the blue swimmer crab fishery. The wastage of damaged crabs in monofilament nets and the high proportion of small immature crabs in the catch could be avoided by use of Wool type nets and larger mesh sizes. Alternative types of gear type for catching crabs could be considered for fisheries management in the future. The introduction of crab traps with escape gaps for undersized juveniles may help to conserve the resource while decreasing the proportion of damaged and undersized juveniles in the catch.

Keywords: *Portunus pelagicus*, Monofilament Gillnet and Wool type Gillnets, CPUE, Level of damages, Length at 50% Maturity (L_{50})