FISHERY INDEPENDENT ASSESSMENT OF THE SIZE ON MATURITY OF THE PALK BAY BLUE SWIMMING CRAB *(Portunus pelagicus)* FISHERY IN JAFFNA DISTRICT

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ABSTRACT

Blue swimming crab (*Portunus pelagicus*) fishery industry in Sri Lanka has become a valuable source of foreign exchange recently, developed following the end of civil conflict in 2009. Size on maturity is a key life history parameter in fishery management of exploited populations. The aim of this study was to investigate the effect of sampling on size on maturity of *Portunus pelagicus* by using a standardized sampling approach in the Palk Bay fishery and its impact on calculating spawning potential using a length-based approach. This study has collected and assessed the maturity for standard sample of female crabs for a series of length classes ranged from 40 mm to 159 mm, using both stake-net fishery and bottom-set crab net fishery, to assess the size on maturity for *Portunus pelagicus* in Jaffna District in the Palk Bay fishery. *Portunus pelagicus* were sampled from bottom-set crab nets in Mandaitheevu, Thuraiyoor and Chattipulam. *Portunus pelagicus* caught in stake-nets were sampled from Kurunagar and Pannai. 1,253 total female crabs were sampled between September and November 2017. Carapace width and weight of *Portunus pelagicus* was recorded. Each collected data was recorded in Microsoft excel data sheet, Excel solver was used to estimate the size on maturity. The results of size on maturity data collected from crab net fishery dependent data were then compared. The level of maturity and immaturity for bottom-set crab net was 83% and 17% and for stake-net was 10% and 90% respectively. The final results of the study for L_{50} as 110.41 mm and for L_{95} as 130.87 mm. The results of the LBSPR using the fishery dependent data are much higher (45%) than the results obtained using independent data (30%). According to the results and dependent data analysis there is an effect by different sampling approach in size on maturity of *Portunus pelagicus* in Palk Bay Fishery.