

FYKE NET FISHERY AND POPULATION PARAMETERS OF SHRIMPS IN THE COLUMBUTHURAI LANDING SITE OF JAFFNA LAGOON, SRI LANKA.

E.M. Naafir*, N. Ragavan, Y. Thapeetha and K. Sivashanthini

Department of Fisheries, Faculty of Science, University of Jaffna, Sri Lanka

*emnaafir1212@gmail.com

ABSTRACT

This study evaluates the fyke net fishery and population parameters of shrimps inhabiting in the Jaffna lagoon. Catch effort and shrimp morphometric data were collected at Columbuthurai landing site from August 2018 to April 2019 by making biweekly field visits. FiSAT was used to estimate the population parameters of shrimps. The fyke net fishing is carried out throughout the year in the Jaffna lagoon by 90 % of the Columbuthurai fishers by using traditional fishing crafts. About 15 % of the gear's total harvest was immediately discarded into the sea, and the remaining were landed. Uneconomical value organisms such as seaweeds, small shellfish, small-sized starfish, and smalls crabs were major components of discard organisms. The shrimp harvest's weight accounted for 60 % of the total landed biomass, including *Penaeus semisulcatus*, *Penaeus indicus*, *Penaeus monodon*, *Penaeus latisulcatus*, *Metapenaeus dobsoni*, and *Penaeus japonicus*. Of which, *Penaeus semisulcatus*, *Penaeus latisulcatus*, and *Metapenaeus dobsoni* were dominant in the catch composition. CPUE of shrimps ranged from 1.42 ± 1.14 kg per fyke net per fishing day in August 2018 to 3.25 ± 2.14 kg per fyke net per fishing day in December 2018. Asymptotic length and condition factor of *Penaeus semisulcatus*, *Penaeus latisulcatus*, and *Metapenaeus dobsoni* were estimated as 15.36 cm, 2.20 yr^{-1} ; 20.0 cm, 0.70 yr^{-1} and 9.59 cm, 1.70 yr^{-1} respectively. The estimated natural mortality (M) and fishing mortality (F) in *Penaeus semisulcatus*, *Penaeus latisulcatus* and *Metapenaeus dobsoni* were 3.61 yr^{-1} and 2.59 yr^{-1} ; 1.58 yr^{-1} and 4.00 yr^{-1} and 3.47 yr^{-1} and 3.26 yr^{-1} respectively. The recruitment period for shrimps was predicted. *Penaeus latisulcatus* stock in the Jaffna lagoon seems to be overexploited ($E > 0.05$). This study's findings will be important to manage and sustainable utility of shrimp resources in the Jaffna lagoon.

Keywords: Shrimps, Jaffna lagoon, Fishery, Fyke net