

Historical changes in demersal fish stock abundance and distribution of Sri Lanka

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To observe the changes in demersal fish stocks after 40 years, data of the historical RV Dr. Fridtjof Nansen surveys (1978-1980) was compared with the results of the survey in 2018. For the comparisons of CPUE (kg/nm²) in 20-100 m depth, the coastal area was divided into six regions i.e. North East, Central East, South East, South, South West and North West. From the bottom trawls conducted, CPUE (kg/nm²) was calculated combining all the historic surveys and comparing the average catch rates from those surveys with the 2018 survey. The results indicated that decline in total catch rates are oblivious in all the regions, especially profound along the West coast. Relatively strong decline in the catch rates of several important demersal fish families was noted between the two survey periods, notably Lutjanidae, Carangidae, Lethrinidae and Serranidae, where species are commercially very important, commonly larger in size, long lived and higher trophic level predatory fish. In contrast, it also shows that catch rates of some families such as Acanthuridae, Leiognathidae, squids, Balistidae, Gerreidae, Mullidae, Nemipteridae, Scaridae, Synodontidae and Siganidae have increased between two periods. Those groups are normally considered as lower trophic level species in marine food webs and have lower commercial value than the first group. Furthermore, the situation seems to be more dire in the West coast than the East, and the Southeast seems to have the best survival of large long-lived demersal species. Various measures such as gillnet ban on reefs, marine protected areas, civil war, shifting in fishing effort from demersal fish to small pelagic are believed to have had some positive effect to better preserve the demersal fish stocks. For the long-term goal of sustainable harvesting, it is important not to jeopardize this situation and to further develop and implement adequate fisheries management.

Keywords: RV Dr. Fridtjof Nansen survey, CPUE, historical changes, demersal fish

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