STUDIES ON THE FISHERY OF FLYING FISH OFF NORTH-WESTERN COAST OF SRI LANKA. II. GILLNET SELECTIVITY

M.D.S.T. DE CROOS[1] AND U.S. AMARASINGHE[2]

[1]Department of Aquaculture and Fisheries, Wayamba University, Gonawila, Sri Lanka
[2]Department of Zoology, University of Kelaniya, Sri Lanka

In the fishery of flying fish in Kandakuliya of Kalpitiya peninsula, major species caught were *Cheilopogon nigricans, Cypselurus poecilopterus, Cheilopogon suttoni*, Gill net selectivity of these three flying fish species was determined using Baranov-Holt method. The optimal lengths (L_{opt}) and probabilities of capture in gillnets of 3.4 cm and 4.5 cm mesh sizes were determined for the three species separately. As the length frequency data for adjacent mesh sizes are not available to perform Baranov-Holt method, an attempt was made to determine the gillnet selection curve of *Cypselurus naresii* by using a morphologically similar species *Cypselurus poecilopterus*, based on body depth.

Estimated values for selection range of *Cheilopogon nigricans, Cypselurus poecilopterus, Cheilopogon suttoni* for 3.4cm were 18.8-25.9 cm, 16.6-24.6 cm, 17.2-30.1 cm, and for 4.5 cm mesh sizes were 26.3-33.1 cm, 23.3-31.3 cm, 24.9-37.8 cm respectively. Estimated L_{opt} for 3.4 cm and 4.5 cm mesh sizes respectively were 22.4 cm and 29.6 cm for *Cheilopogon nigricans*, 20.6 cm and 27.3 cm for *Cypselurus poecilopterus* and 23.7 cm and 31.4 cm for *Cheilopogon suttoni*.

As these fishes are migratory, only a certain size range of each fish species occurs in the fishing grounds. As such, through experience, fishers have identified 3.4 cm and 4.5 cm mesh gillnets as effective fishing gear for catching these species. As the catch samples of flying fish species do not represent actual size composition of populations, estimation of growth and mortality parameters using length-based stock assessment methodologies is problematic. As such, for determination of optimal fishing strategies using dynamic pool models, independent estimates of demographic parameters should be used.