

**DAGAA, *RASTRINEOBOLA ARGENTEA* (PELLEGRIN) &
NILE PERCH, *LATES NILOTICUS* (L) IN LAKE
VICTORIA, KENYA**

Joseph Kiyuka Nyaundi

Kenya Marine & Fisheries Research Institute

P.O. Box 1881,

Kisumu - Kenya.

Telefax : 254 35 21461/23604

E-mail : joe1000joseph@netscape.net

Supervisor : Dr. Olafur K. Palsson

ABSTRACT

Length distribution, catch rates and mortality of two species, Nile perch, *Lates niloticus* and Dagaa, *Rastrineobola argentea* was studied from data collected in a trawl survey in Kenyan waters of Lake Victoria in Sept. 97 to June 99. Length distribution of *L. niloticus* seem to cover only the juvenile stock component, but that of the *R. argentea* seems to cover most of the stock. The mean CPUE (kg hr^{-1}) for Nile perch was 49.7 ± 81.911 ($N = 428$) and the abundance decreased with depth. The biomass was estimated 4132 tons. Mean lengths for the Nile perch decreased especially after 1997. Though the sample numbers seem to have increased after 1998, the mean lengths for the stock decreased significantly. The mean CPUE for Dagaa (kg hr^{-1}) was 3.0 kg hr^{-1} from the survey.

Mortality parameters of both, seen as predator - prey species, were estimated from length frequency data collected. The von Bertalanffy growth equation was used to estimate the total mortality coefficient. The total mortality for the *R. aargentea*, was calculated as $Z = 1.08 \text{ yr}^{-1}$ for results obtained from experimental surveys. The exploitation rate (E) = 0.9. Total mortality based on commercial catches for dagaa was 1.50 yr^{-1} . Total mortality for *L. niloticus* was estimated as $Z = 2.08 \text{ yr}^{-1}$. The natural mortality was estimated using Pauly's empirical formula as $M = 0.08 \text{ yr}^{-1}$. The exploitation rate, $E = 0.96 \text{ yr}^{-1}$, which showed that the stock was overexploited. Fishing mortality, $F = 2.003 \text{ yr}^{-1}$. The Z/K ratio = 10.840 yr^{-1} , performance index (ϕ) = 0.683 yr^{-1} . On the whole, using the Beverton & Holt plot, $Z = 3.26 \text{ yr}^{-1}$ for Nile perch.

The low catch numbers from the survey (leading to unusually low biomass) in relation to the landings of the two species indicate that the survey design and methods used need to be revised. The stock of Nile perch was not sampled properly which is reflected in the low catch numbers and in the length distribution where the bigger fish was not caught. The same applies to Dagaa, although the survey seems to cover the length distribution.