

STATUS OF THE FISHERY OF BATHALAGODA RESERVOIR, SRI LANKA

W.D.G.S.C. Wellala and U.S. Amarasinghe

***Department of Zoology, University of Kelaniya, Kelaniya,
Sri Lanka***

Bathalagoda reservoir (244.8 ha) is a shallow irrigation reservoir in the northwestern province of Sri Lanka. The fishery of this reservoir was investigated from October 2002 to August 2003. In this reservoir, three major types of fisheries, which can be categorized, on the basis of mesh size and gear type co-exist. These three types of fisheries are (i) large mesh gillnet (7.6-10.2 cm) and cast net (7.6 cm) fishery; (ii) small mesh gillnet (3.8 cm) and cast net (3.8 cm) fishery; and (iii) fine mesh (2 cm) cast net fishery. In the large mesh gillnet and cast net fishery, about 90% of the catch (by weight) was formed by *Oreochromis niloticus*. In small mesh gillnet and cast net fishery, *Puntius dorsalis* (52.5%), *P. chola* (24.9%) and *P. filamentosus* (15.5%) were the dominant species. Fine mesh cast net catches were dominated by *Amblypharyngodon melettinus* (72.7%). *O. niloticus* accounted for 75.9% of the overall fish production of reservoir. Small cyprinid species formed 15.7% of the catch.

Length-based stock assessment of dominant species was performed by means of FiSAT software. Comparatively low asymptotic total length (32.2 cm) and high growth constant (1.0 yr^{-1}) indicate that *O. niloticus* stock in this reservoir exhibits a *r*-selected life strategy. The populations of small cyprinid species in the reservoir are also characterized by high turnover rates indicating their high resilience for heavy fishing pressure.

The yield-per-recruit analyses indicate that the exploitation rate of *O. niloticus* should be substantially reduced while maintaining size at first capture at the present level. For small cyprinids on the other hand, size at first capture can be further reduced while increasing exploitation rates. As these species are differentially exploited by three types of fisheries, it is possible to achieve optimal fishing strategies for *O. niloticus* and small cyprinids simultaneously.