

Trophic Interrelationships Among the Exotic and Indigenous Fish Co-occurring in Some Reservoirs in Sri Lanka

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Abstract

The introduced fish species such as *Oreochromis mossambicus* and *Trichogaster pectoralis* are now well established in many inland waterbodies of Sri Lanka and contribute significantly to the fish production of a large number of reservoirs. Successful establishment of these species has been explained as a result of filling a vacant niche in these reservoirs. It has been suggested that these exotic species have adversely affected the indigenous fish fauna resulting in a decrease in their abundance. The present study on the food and feeding habits of two introduced fish species namely *O. mossambicus* and *T. pectoralis* and five indigenous species, namely *Etroplus maculatus*, *Rasbora daniconius*, *Puntius filamentosus*, *Anabas testudineus* and *Mystus vittatus* co-occurring in five inland reservoirs of Sri Lanka indicates that moderate to high overlap in the food niches exists among the exotic and indigenous species. If food is limited, inter-specific competition for food may occur among the exotic and indigenous species. Results of the present study also show that *O. mossambicus* and *T. pectoralis* do not feed on young fish and therefore do not exert a predatory pressure on indigenous ichthyofauna. Alteration and degradation of habitats, use of pesticides and exploitation for ornamental purposes may be more responsible for the decline of indigenous fish populations rather than the introduction of exotics such as *O. mossambicus* and *T. pectoralis*.

Introduction

More than twenty fish species have been introduced into the freshwaters of Sri Lanka for many purposes including the control of malaria, recreation and development of inland fisheries. Four species of larvivorous fish of the Family *Poeciliidae* that have been introduced during the period 1930 to 1960 now exist as small localized populations in some inland waterbodies (Pethiyagoda 1994). The rainbow trout *Oncorhynchus mykiss* which has been originally introduced in the 1880s for recreation purposes now exists only in few streams above 1700 m from the mean sea level (Pethiyagoda 1991). Several species of anabantoids, carps and tilapias have been introduced to the freshwater reservoirs for the development of inland fisheries. Some of them are now well established and contribute significantly to the inland fish production (De Silva and De Silva 1991, Amarasinghe 1994, Amarasinghe and De Silva 1992, Nathanael and Silva 1996). Of the