Food habits and dietary overlap between an indigenous species, *Puntius dorsalis* (Cyprinidae) and three exotic species, *Labeo rohita* (Cyprinidae), *Catla catla* (Cyprinidae) and *Oreochromis niloticus* (Cichlidae) co-occurring in Udawalawe reservoir, Sri Lanka during high water level

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ABSTRACT

Food habits and dietary overlap between indigenous species, *Puntius dorsalis* (15-18 cm) and three exotic species, *Labeo rohita* (21-27 cm) *Catla catla* (21-27 cm) and *Oreochromis niloticus* (12-15 cm) were examined in Udawalawe reservoir during the season of high water level when terrestrial vegetation was submerged. During the high water level, *C. catla* and *L. rohita* are caught in significant numbers in this reservoirs perhaps due to the reason that they migrate to the inshore areas where submerged vegetation is abundant.

Results of the analyses of gut contents show that *C. catla* and O. *niloticus* are mainly detritivores with a wide spectrum of other food items. *L. rohita* predominantly feeds on macrophytes and detritus while *P. dorsalis* feeds mainly on insects and detritus. As such, it appears that these species share somewhat similar food items in the reservoir ecosystem.

Diel feeding patterns of the four species were determined by MAXIMS software package, by analyzing the changes of gut content weight of the four species during a 24-hour cycle. Two maxima of food intake were found for *L. rohita, O. niloticus* and *P. dorsalis,* one in the morning and the other in the afternoon while one maximum was observed for *C. catla* which lasted from dawn till night.

A high dietary overlap as determined by Schoener's index (0.68) was found between *C. catla* and *O. niloticus.* The dietary overlap of *C. catla / L. rohita* and *L. rohita / O. niloticus* were moderate (0.33 - 0.66). A low overlap was found between *C. catla / O. dorsalis, L. rohita / P. dorsalis* and *O. niloticus / P. dorsalis.*

Although some of these species have similar feeding habits, as evident from diel feeding patterns, the peak feeding periods during the day do not overlap considerably. This relaxes competition for food between the species, which are co-occurring in the reservoir ecosystem. As such it is unlikely that any adverse impact on the indigenous fish species has taken place due to introduction of the exotic into the reservoir.

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