

Reproductive behaviour and interactions of the indigenous *Etroplus suratensis* and *Etroplus maculatus*, and the exotic cichlid *Oreochromis mossambicus* in the Batticaloa lagoon, Sri Lanka.

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Abstract

Etroplus suratensis and *Etroplus maculatus* are indigenous cichlids found in Sri Lanka. *Oreochromis mossambicus* was introduced to enhance inland fisheries. This species has now established in inland and brackish water systems. The two *Etroplus* species are sympatric and show segregation of habitat. The impact of the introduced cichlid on the indigenous cichlids has not been investigated. As all three species are ground nesters it is expected that there will be some degree of competition between the three species during reproduction.

The aim of this study was to investigate the interactions of indigenous and exotic cichlids. The study included nest distribution, space use (home range) and parental behaviour of *E. maculatus*, *E. suratensis* and *Oreochromis mossambicus*. Quantitative, behavioural and ecological data were collected during a period of one year from an inlet of the Batticaloa Lagoon, Sri Lanka.

Data revealed that both indigenous fishes were breeding throughout the year with a peak in July/August, which is the dry season when water clear. *O. mossambicus* had a peak breeding season in June. The nests of *O. mossambicus* were larger in diameter and nest depth than the two *Etroplus* species. The nests of *E. maculatus* were found in shallower waters whereas the nests of *E. suratensis* and *O. mossambicus* were found in deeper waters. Total number of nests was higher near vegetation. The home range used by *O. mossambicus* was larger than that of the two indigenous species. The highest habitat overlapping area occurred between *E. suratensis* and *O. mossambicus*. Behavioural patterns were recorded for various stages: pair formation, acquisition of nesting territories, spawning, nest cares and juvenile cares. Aggressive behaviours involved with territorial defence includes charging and chasing, which were high in *O. mossambicus* compared to the two *Etroplus* species.

In conclusion, it could be said that the introduced species *O. mossambicus* can compete with indigenous species especially *E. suratensis* where there was a habitat overlap and also during breeding there was more aggressive behaviour by the introduced species. Further laboratory studies and population studies may provide concrete evidence to the impact of the introduced species, on the indigenous species.

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