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## Food niche segregation among co-occurring endemic fish species in Sri Lanka

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### Abstract

The food and feeding habits of six endemic freshwater fish species namely, *Belontia signata*, *Rasbora vaterifloris*, *Puntius cuningii*, *Puntius nigrofasciatus*, *Puntius titteya* and *Garra ceylonensis* inhabiting the streams of the Kalu and Kelani river basins in Sri Lanka were studied from October 1998 to September 2000 with the objective of quantifying the food niche overlap and evaluating the degree of competition for food resources among them. All fish species studied except *R. vaterifloris* were found to be omnivorous, feeding on different varieties of food items. *R. vaterifloris* was found to be strictly carnivorous. *P. titteya* and *B. signata* were highly selective for diatoms, aquatic insects and rotifers while *P. cuningii*, although highly selective for diatoms, was non-selective for aquatic insects and filamentous algae. *P. nigrofasciatus* was selective for diatoms, aquatic macrophytes and non-selective for green algae. *R. vaterifloris* and *G. ceylonensis* were selective for aquatic insects and crustaceans and non-selective for diatoms, rotifers and detritus.

*P. nigrofasciatus* showed a moderate dietary overlap with *P. cuningii* and a low dietary overlap with other co-occurring species. *R. vaterifloris* showed moderate dietary overlap with *G. ceylonensis* and a low dietary overlap with other co-occurring species. A moderate dietary overlap was observed among *B. signata*, *P. cuningii*, *P. titteya* and *G. ceylonensis*. The results indicated that there is very little or no interspecific competition among these species due to low or moderate dietary overlap and different degree of selectivity for different food items, which has enabled them to co-exist.

### Introduction

Morphologically similar co-occurring fish species are reported to be often sharing the same resources resulting in intensive interspecific competition (Costa and Fernando 1967; Bishop 1973; Gatz 1979; Winemiller 1991). The mechanism of resource partitioning minimizes or avoids the possible intensive competition among sympatric species (Lévêque 1997).