

ZSA-30

SS 129 (2002)

**Influence of substrate and physic-chemical parameters on fish distribution in upper and middle catchment of "Gin Ganga" river drainage basin.**

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Sri Lanka is a tropical island situated at the southern tip of Indian sub continent and rich in biodiversity. Although small in size the land possesses a large number of inland freshwater bodies *viz.*, rivers, streams and irrigation reservoirs covers about 8000Km<sup>2</sup> and provide a variety of habitats for aquatic fauna such as fishes. Sri Lanka is divided into 3 ichthyological provinces in relation to the three peneplains of the island and among them 'Gin Ganga' river basin is a major river system of South-western ichthyological province of Sri Lanka. The 'Gin Ganga' river characterized with headwaters in the marginal hills, plateau and flow across the circum-island peneplains and costal plain to the sea at Galle, the capital city of Southern Sri Lanka. Sites studied were restricted to upper and middle catchments of the 'Gin Ganga' drainage basin. Investigations were carried out over 6 months at 8 sites to find out currently occurring fishes, their distribution pattern and water quality parameters, flow rate, substrate and their influence on fish distribution. Physico-chemical parameters such as dissolved oxygen, biological oxygen demand, total alkalinity, conductivity, pH, salinity, NO<sub>3</sub><sup>-</sup>, PO<sub>4</sub><sup>-3</sup> do not show significant inter-site variability, although temperature and flow rate show significant inter-site variability. The sites of upper and middle catchments of the river show high standard water quality. The checklist of the fish fauna prepared based on the data collected during this study, were consisted of 32 fish species and among them four were salt water dispersants, two were exotic species and twelve were endemic species. Among endemic fishes critically endangered *Puntius nigrofasciatus*, *Rasbora vaterifloris*, *Puntius cuningii* were recorded and have been subjected to heavy exploitation for the ornamental fish trade. According to the statistical analysis of one way-ANOVA fourteen species that are show site-specific distribution and eight species show substrate specific distribution in relation to different substrate compositions found in study sites. Distribution of *Acanthocobitis urophthalmus* shows significant relationship with temperature.