D – 06

The influence of salinity on the abundance and distribution of Ranidae species was studied at four sites in the Muthurajawela marsh in 1998. Straight-line drift fences with pit fall traps and visual encounter surveys were employed as standard sampling techniques. Population variables such as the number of Ravidae species and their abundance were recorded at each sampling effort. The relative abundance of species was estimated for each site. Salinity levels of the nearest water bodies were measured throughout the study.

The salinity tolerance limits of the three-selected Ranidae; *Rana hexadactyla*, *R. auratiaca* and *R. gracilis*; was investigated by studying their behavioral responses, by using a behavioral response technique, against a sequence of salinity (5 ppt to 32 ppt) under laboratory conditions.

The results of the field work and laboratory experiments were integrated in the study. A total of five ranidae species; *Rana grracilis, R. corrugate, R. aurantiaca, R. hexadactyla* and *R. cyanophlyctis*; was recorded during the survey. The first three species were not recorded in this marsh earlier. *R. corrugate* and *R. gracilis* are endemic species.

The total abundance of ranidae species was able to withstand salinity levels upto 16ppt. Higher salinity and frequent salinity fluctuations restricted the abundance and distribution of these species. The relative abundance of *R. gracilis*, *R. hexadactyla* and *R. cyanophlyctis* was higher at sites up to 22 ppt of salinity. The distribution beyond 18ppt. The abundance of *R. corrugate* and *R. auratiaca* of lower salinity. An integrated view of this study revealed higher fluctuations in this marsh area are not suitable for the abundance and distribution of ranidae species.