D-54: Composition and distribution of plankton and diurnal migratory patterns of zooplankton in Victoria reservoir

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Victoria is the deepest of upland hydropower reservoirs of Sri Lanka. Studies on population dynamics of phytoplankton and zooplankton in the reservoir was important due to their interactions with the fish population which support the freshwater fishery of the reservoir.

Investigations were carried out for 3 years since 1987 and 4 diurnal investigations were carried out by sampling at 6 h intervals at a fixed location.

Plankton samples were collected from bottom to the surface at 10 m intervals by using a closing type plankton net (mesh size 20 m) and preserved in 5% formalin.

Forty species of zooplankton and 35 species of phytoplankton, except benthic Bacillariophyceae were encountered. High densities of phytoplankton were observed in the surface layers between 0 - 10 m depths and they were distributed in all layers even in deep bottom layers.

The chlorophyreae was the most dominant phytoplankton group of the reservoir (84,345/l), wheras the zooplankton densities were very low (450/l). *Staurastrum* sp. contributed upto 80% of the total population and *Cosmarium* sp upto 15%. *Closterium* sp., *Peridinium* sp., *Eudorina* sp., *Pediastrum* sp. *Melosira* sp. and *Scytonema* sp. were found in very low numbers and *Microcystis* sp. and *Botriococcus* sp. were distributed on the surface.

The dominant zooplankton group was the rotifers including species such as *Brachionus* sp., *Filinia* sp., *Trichocerca* sp., *Gastropus* sp., and *Keratella tropica*. In addition, cladocerans (*Ceriodaphnia* sp., *Bosmina* sp., *Chydorus* sp., *Alona* sp. and *Diaphanosoma* sp.) cyclopods, calanoids and nauplii stages of copepods were found. However there was fluctuation of different zooplankton and phytoplankton with season.

There was a clear vertical diurnal migratory pattern in zooplankton in combination with the predation pressure. During day time most of the

zooplankton were concentrated in deep layers, after sunset, migration towards the surface was observed.