

## DIATOM COMMUNITIES FROM A EUTROPHIC RESERVOIR IN SOUTH INDIA

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Krishnagiri reservoir, which is highly utilized for agriculture and domestic purposes, located 7 km (4.3 mi) from Krishnagiri in Tamil Nadu India between Dharmapuri and Krishnagiri. The reservoir is operational from the year 1958 onwards. The hydrobiological resources of this reservoir are studied for a decade, depicting the % occurrence of phyto and zooplankton from various locations and depths. Diatoms serve as a possible bioindicator to detect the past and the present changes that occur in any aquatic ecosystem. Being the dominant primary producers, they play an important role in carbon silica and nutrient budget. In order to create a database on planktonic resources from Krishnagiri reservoir, a detailed study on the diatom population was initiated first. With this background, diatoms were collected from the reservoir sediment cores including upper core fractions (up to 5 cm from the surface layer of sediment) and bottom core fractions (from 6 cm to 15 cm). Intact and frustules/valves from the core sediment samples showed both Pennate and Centric forms. The diatom population and its valve structure present in the sediment cores reported that there were 48 species observed in the upper sediment fraction and 49 species in the bottom sediment fraction. Over all, 24 genera belong to the pennate types and two genera of centric types were found common to both bottom and upper sediment fractions. The SEM studies carried out for a few genera to confirm their taxonomical position, revealed that the genus *Cymbella tumida* (pennate) exhibited cylindrical shape cells with circular valves. Margins were clearly distinct from the central part and have radial striae of 6-10, each. Central area is unarranged. The cells are free floating in water. *Navicula protracta* (Pennate) linear to elliptical valves with broad rostrate and blunt apices. Striae in the center are slightly more spaced than the axial area and finely punctate. In *Nitzschia amphibia* (Pennate) both striae and raphe can be seen under the light microscope. Valve margins had tiny pimple like thick dots formed by raphe endings. The length is 12-50 µm and width would be 4-6 µm. Frustules of the species are bilaterally symmetrical and have a nitzschoid symmetry, valves are linear and have blunt end. *Synedra ulna* (Pennate) cells are linear and valves are narrow with a blunt end. The central area has visible ghost striae, and a roughly square area in outline which is extending to the valve margin. Commonly growing as a free floating species in the water, it also is found on rocks. It has a length of 50 - 250 µm and a width of 2 - 9 µm. *Cyclotella meneghiniana* (Centric) has cylindrical shape cells and circular valves. Margins are clearly distinct from the central part and have 6-10 radial striae each. The central area is unarranged. The cells are free floating in water. The results indicated that diatoms do not depend only on nutrient distribution but depend also on an array of physical parameters. This study is useful further to study the paleolimnological aspect of the reservoir using diatoms as the potential candidate.