

**TITLE:** LITTORAL-ZONE MACROPHYTE COMMUNITY STRUCTURE - DISTRIBUTION AND ASSOCIATION OF SPECIES ALONG PHYSICAL GRADIENTS IN LAKE-GEORGE, NEW-YORK, USA

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**Source:** AQUATIC BOTANY, Oct. 1987 Volume: 29 Issue: 2 Pages: 177-194

**Abstract:** The distributional patterns of 38 species of submersed macrophytes were studied at 50 sites in the littoral periphery of Lake George, New York. Density measurements (plants per square meter) for each species at depths of 1, 2, 3, 5, 7 and 9 m were determined at transects at each site and converted to midsummer shoot biomass estimates (grams dry mass per square meter). These data were then analyzed in terms of 13 different physical, chemical and biological variables to evaluate probable major factors controlling distribution within the lake. Ordination and factor analysis indicated that depth, substrate type and eutrophication status were primary correlative factors. Four major depth classes were evident from cluster analysis of presence-absence data: shallow water, deep water, and cosmopolitan, both with and without preference for deeper waters. Cluster analysis also identified the co-occurrence of several plant species. Geographical grouping of the 50 sites into the various basins of the lake demonstrated important compositional trends in species diversity and dominance within the lake itself. The competition strategies, ecological requirements and species characteristics are described.

**Full article can be found at:** [http://dx.doi.org/doi:10.1016/0304-3770\(87\)90095-7](http://dx.doi.org/doi:10.1016/0304-3770(87)90095-7)