

Effects of a long term water level reduction on the ecology and water quality in an eastern Mediterranean lake



Water level fluctuations play a significant role in the lake nutrient dynamics, and consequently may have a strong influence on the biological communities and productivity. In this article we investigated the effects of a long term water level reduction on key chemistry parameters and major biological communities in an eastern Mediterranean lake. Our approach is based on temporal data regarding water quality, fish, zooplankton and aquatic vegetation that are representative of different water level periods. The results revealed significant correlations between water level, conductivity and chloride concentration suggesting a clear effect of the water level reduction on the water quality. Among the key findings of this study is the significant increase of zoobenthivorous fish (roach and carp) from 1973 to 1999 that correlates with the water level reduction. A decline of charophytes is also noted whereas the reed beds appear to have expanded at the shallower parts of the lake. The zooplankton composition of the lake is mostly dominated by nauplii, rotifer and small-sized crustaceans indicating a possible effect of fish predation. Overall, this article has ascertained an alarming shift of water quality and composition of biological communities that can be attributed to the combined effects of eutrophication and the extreme water level decrease.

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