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# Planktic autotrophs and environmental conditions in the newly-formed hydroelectric Thesaurus reservoir, Greece

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With 6 figures and 1 table

**Abstract:** Phytoplankton species composition, dynamics and horizontal distribution have been investigated in relation to key environmental factors in the recently-formed, sulfide-rich Thesaurus reservoir during the period December 1997–January 1999. The periodicity and distribution as well as the ecological role of sulfur bacteria have also been examined. Through our study, the seasonal pattern of nutrients is indicative of a return to a stabilized trophic state after trophic upsurge. However, the concomitant exponential increase in phytoplankton biomass may have caused this nutrient seasonality. Phytoplankton biomass values ranged from 56 to 7322 mg/m$^3$ Longitudinal differentiation was observed within the reservoir in regard to seasonal development of phytoplankton originating from the differences in the water column stability. At the shallow, less disturbed part of the reservoir, the organization of phytoplankton community was directed towards increased structural complexity of late-successional stages. At the region of the dam, compositional changes of phytoplankton were primarily generated by strong external disturbances that kept the succession in a rather primitive stage. An 'upwelling' of sulfur bacteria from the deep sulfide rich water resulted in their temporary dominance in autotrophic plankton and an additional food supply to higher trophic levels in the oxic part of the reservoir.

**Key words:** Phytoplankton species composition, sulfur bacteria, water column stability, succession, Thesaurus reservoir, Greece.

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