Temporal study of Solduz wetland microalgae in southern part of Lack Urmia

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Abstract

Phytoplankton is one of the main components of wetlands, which plays a vital role in providing nutrients, oxygen for other organisms, stabilizing nitrogen and carbon dioxide. In the meantime, the current status of Lake Urmia highlights the need to conserve and protect wetlands related to these ecosystems and their living and non-living components. Therefore, this study was conducted to assist in the restoration of Lake Urmia by monitoring the hydrobiological status of Solduz wetland. Field surveys and sampling of Solduz Wetland were carried out from 6 stations in summer and winter of 2016. Sampling was performed using a vertical rotor with a diameter of 10 cm. The effects of physicochemical factors and temporal variations on the diversity, abundance and biological characteristics of phytoplankton in the ecosystem were investigated. In total, 49 phytoplankton species were identified from the Solduz wetland: 17 species belonging to green algae, 16 species belonging to diatoms and 9 species belonging to cyanobacteria and some others species. The results of this study showed the presence/absence of the mentioned algae may be caused by changes in the physicochemical especially temperature, nitrate, phosphate, pH and electrical conductivity which occur naturally in different seasons. So that the population density index and biodiversity indices such as species richness, species diversity and dominance was observed in the warm season more than the cold season. The results of this study can assist executive managers in Urmia Lake monitoring plans for better management and utilization of related wetlands of Lake Urmia.

Keyword: Blue green algae, Solduz wetland, density index, biodiversity, Lake Urmia.