Consideration of phytoplankton composition and water quality of Anamur (Dragon) Creek, Turkey

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ABSTRACT

In this study, water pollution of Anamur Creek, one of the water resources of Mersin (Turkey), was determined. For this purpose, phytoplankton composition and some physicochemical parameters in the surface water of Anamur Creek were investigated. Samples were collected at five sampling sites in the course of the stream in April and June 2010. Fifteen taxa were identified belonging to Bacillariophyta (11), Cryptophyta (1), Euglenozoa (1) and Miozoa (2) divisions. In terms of chlorophyll-a concentrations (4.04–26.23 mg/m^3) the stream shows eutrophic characteristics. Anamur Creek is used for agriculture, fish farms and river sports. Nowadays, water has been started to be supplied from the Anamur Creek to the Geçitköy Dam, located in Turkish Republic of Northern Cyprus, with the project which began in 2011 and completed in 2015. For this reason, designation of the usage areas and amounts of this creek's water again has an important role on its trophic status. It is required that Anamur Creek should be taken under protection for improving its water quality by relevant authorities. Artificial neural network analysis succeeds to envisage the significance importance of input data sets used to investigate and monitor the water quality in the designated study area. April data set showed that pH followed by temperature was exercised to descend the neural network classification parameters. Dissolved oxygen and chlorophyll-a concentration came in second in the significance order, while conductivity ranked the last. June data set showed that temperature was ranked the most important variable followed by the pH. Correspondingly to April data set, dissolved oxygen and chlorophyll-a concentration came in second in the significance order but with opposite importance due to temperature variation. Therefore, detailed studies on phytoplankton including physicochemical parameters have to be carried out for controlling the water quality in Anamur Creek.

Keywords: Water pollution; Phytoplankton; Physicochemical parameters; Statistical analyses; Anamur Creek