

Seasonal Changes of Chlorophyll-A Values of the Freshwater Sources Feeding in Gokova Bay (Mugla-Turkey)

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Aim of the study: The purpose of the current study is to investigate the water quality in Gokova Bay, which is threatened particularly in summer months by visitors to the region, to determine the factors affecting the water quality and to investigate the freshwater sources feeding the Bay. In the contest, the chlorophyll-a concentration represents the main link in the food chain.

Methods: This study was conducted between November 2014 and October 2015. A total of 3 stations (1 located in Kadın Creek, 1 located in Akcapınar Creek and 1 located in Camlı Creek) were selected for the research and monthly a sample of water was analyzed to calculate the concentration of chlorophyll-a.

Results: The results showed values of chlorophyll-a ranged from a minimum BDL to a maximum of 9,82 mgL⁻¹ for Kadın Creek, of minimum BDL and maximum 5,85 mgL⁻¹ in Akcapınar Creek and a minimum BDL to a maximum of 6,29 mgL⁻¹ Camlı Creek. According to Karydis 2009 eutrophication scale for Kadın creek's stations values bad, Akcapınar creek's stations values between Good-Bad Çamlı Creek's values bad. For these creeks the higher concentration of chlorophyll-a were found in the summer season that coincide with the increase of human activities and boat tourism and an raise of production of phytoplankton that can be explained with the high addition of nutrient in the water due to human activities. When the results of the analysis are considered, it becomes clear that during the high seasons, because of the increasing tourism activities, increasing population and pesticides and herbicides used for agricultural purposes, the quality of the freshwater sources deteriorates in some stations and environmental pollutions are observed. So different the co-operation of public institutions and civil society organizations must necessary to undertake future measures of conservation and preservation of this area.

Keywords: Gokova Bay, Freshwater Sources, Chlorophyll-a, Environmental Impacts, Tourism activities.