

The Variations of Mercury and Aquatic Organic Matter in Lake Sediment Cores From Köyceğiz Lake (TURKEY)

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Aim of the study:Mercury pollution is a local, regional, and global environmental problem that negatively affects ecosystems worldwide. The Koycegiz Lake is located in the south-west of Turkey within the boundaries of Mugla. The most sensitive regions of Turkey for environmental problems are those known as having important touristic potentials. Köyceğiz Lake is one of these regions. Coal-fired utility boilers (power plants) are the largest source of mercury emissions in the region, followed by tourism, agricultural activities and fishing. The aims of this study are to determine mercury pollution in sediment of Köyceğiz Lake and to investigate the relationship between Hg and organic matter in sediment cores from Köyceğiz Lake using some hypotheses

Material and Methods: In present study, five stations were selected in Köyceğiz Lake. Sediment core samples were taken by Uwitec Corer in February 2017. The upper 20 cm of each core was sliced into 2 cm sections using core cutter. Physicochemical parameters were examined in sediment core.

Results: The Köyceğiz Lake region is particularly sensitive to mercury pollution. Mercury concentration was determined between 0,04-18,27 µg/g. The impact of mercury emissions and deposition is exacerbated by sediments and lake characteristics in areas with abundant organic matter regions such as forests and wetlands that result in higher mercury inputs and transport to elevated concentrations in aquatic food webs. The highest percentage of organic matter was found to be 36%. Generally, the concentration of mercury was high in sections where the percentage of organic matter was high.

Keywords: mercury pollution, Köyceğiz Lake, Sediment Cores, Organic Matter.