

## Lake Bardawil Water Quality

**Authors :** Mohamed Elkashouty, Mohamed Elkammar, Mohamed Gomma, Menal Elminiami

**Abstract :** Lake Bardawil is considered as one of the major morphological features of northern Sinai. It represents the largest fish production lake for export in Egypt. Nineteen and thirty one samples were collected from lake water during winter and summer (2005). TDS, cations, anions, Cd, Cu, Fe, Mn, Zn, Ni, Co and Pb concentrations were measured within winter and summer seasons. During summer, in the eastern sector of the lake, TDS concentration is decreased due northeastern part (38000 ppm), it is attributed to dilution from seawater through Boughaz II. The TDS concentration increased generally in the central and southern parts of the lake (44000 and 42000 ppm, respectively). It is caused by they are far from dilution from seawater, disconnected water body, shallow depth (mean 2 m), and high evaporation rate. In the western sector, the TDS content ranged from low (38000 ppm) in the northeastern part to high (50000 ppm) in the western part. Generally, the TDS concentration in the western sector is higher than those in the eastern. It is attributed to low volume of water body for the former, high evaporation rate, and therefore increase in TDS content in the lake water. During winter season, in the eastern sector, the wind velocity is high which enhance the water current to inflow into the lake through Boughaz I and II. The resultant water lake is diluted by seawater and rainfall in the winter season. The TDS concentration increased due southern part of the lake (42000 ppm) and declined in the northern part (36000 ppm). The concentration of Co, Ni, Pb, Fe, Cd, Zn, Cu, Mn and Pb within winter and summery seasons, in lake water are low, which considered as background concentrations with respect to seawater. Therefore, there are no industrial, agricultural and sanitary wastewaters dump into the lake. This confirms the statement that has been written at the entrance of Lake Bardawil at El-Telool area "Lake Bardawil, one of the purest lakes in the world". It indicate that the Lake Bardawil is excellent area for fish production for export (current state) and is the second main fish source in Egypt after the Mediterranean Sea after the illness of Lake Manzala.

**Keywords :** lake Bardawil, water quality, major ions, toxic metals

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