

Hydrology of lakes: case of Fetzara lake

Wilaya of Annaba

This study is in line with the integrated water resources management, it was conducted in the catchment basin of Fetzara lake; designated as RAMSAR conservation area since 2003 and located 18 km from the administrative centre of the Wilaya of Annaba, where issues related to the exploitation of water resources are critical and the availability of relevant data is low. The main objective is to create a monograph dealing with the hydrology of this lake, which belongs to an ungauged catchment basin, assessment of sediment and liquid yield and frequency analysis of flood flows and hydrographs were made subject to approaches that rely almost exclusively, in this hypothetical case, on rainfall information, which has imposed a critical view and a control of this information.

An annual model of water balance of Fetzara lake was developed for two periods 1986/1996 and 2001/2006. The part called "input" was evaluated and comes down to the rainfall on the lake and the runoff from the catchment basin to stretch of water, and the part called "output" which is represented by evaporation. The results allowed establishing that the existence of Fetzara lake depends, thus, on a subtle compromise between water cumulative flows and evaporation. The determination of the water balance over the study duration allows, thus, putting the semi-arid character of this region forward through the existence of a significant pluviometric deficit coupled with aggravating climate data (high insolation, high temperature, etc.). The results presented in this work are useful for the purposes of planning, protection and management of water resources in this region of Algeria.

Keywords: Integrated management; Fetzara lake; hydrology; flows; flood hydrographs; water balance; semi-arid.