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How To Define Protection Zones According To Regional Geology And Groundwater Flow Fields, A Case Study: Egirdir Lake And Surroundings, Isparta; Turkey.

Zeynep Aktuna, Remzi Karaguzel, Tolga Yalcin, Cenk Yaltirak, and Muhterem Demiroglu
Istanbul Technical University, Engineering Geology Department,Istanbul, Turkey (aktuna@itu.edu.tr)

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Zeynep Aktuna1, Remzi Karagüzel2, Tolga Yalçın3 , Cenk Yaltırak4, Muhterem Demiroglu5,

1-5, Istanbul Technical University, Faculty of Mines, Department of Geological Engineering, Istanbul, Turkey

Corresponding Autor: aktuna@itu.edu.tr

The demand for water rises day by day due to population, economic activity, agricultural irrigation and domestic use . However, accessible water resources are decreasing because of the overuse or pollution. Furthermore, the balance between demand (consumption) and supply (resource) becomes unstable. As a result water management is really fundamental and can be carried out to define protection zones. This case study presenting Egirdir Lake protection zones is really challenging in order to indicate the process conducted.

The Egirdir Lake, second largest freshwater lake located in the Lakes District is the most important resource to fulfill freshwater demand of Isparta and Egirdir. Egirdir Lake is studied within the frame of "Basin Protection Plan of the Egirdir Lake and Assigning Special Provisions Project" of Environment and Forestry Ministry (Turkey). In order to define protection zones, groundwater flow as well as surface runoff are considered. Recharge is vastly supplied by groundwater coming from karstic carbonate rocks and alluvium deposits.

The inner protection zone which is defined taking into consideration 50-day travel time; moreover, outer protection zone is defined according to 400-day travel time which were estimated by infiltrometer tests realised in alluvium. Pumping tests results are interpreted to determine hydraulic conductivity. Groundwater levels are used for the determination of hydraulic gradient.

Keywords; Eğirdir Lake, protection zones, travel time, water management.