Climatic Importance of Natural Lakes as a Cool Island

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Today, due to the rapidly urbanizing world and increasing of the population, natural resources are rapidly disappear. Hence, the climates are changed depending on these two driving force and their subfactors. Regulation of the microclimatic structure of a region by using land use planning is one of the important strategies, which is used to fight against climate change. Matter of climate as a subject of human life and comfort of life requires a wider perspective due to its complicated structure.

Urbanized areas and their peripheries are heating and the main essential thing on combatting this issue is that urban and rural planning should consider the potential cool islands in the region and increase the effects of such areas by conscious planning. The cooling effects of the forests and wetlands on cities, reduce the heat island effects and help to provide thermal comfort.

In this study, 2 natural lakes located within the boundaries of Sivas province was selected as study area. Analyses were made using GIS (geographic information systems) and remote sensing techniques. The temperature values are obtained from the Landsat TM-8 images of 2018 summer season which belong to May 15, June 16, July 18, September 4 . In this study, the relation between the calculated surface temperatures and their distances to the wetlands are investigated in terms of statistically. Analyses were performed separately for each zone and each land use. The results were tested in 95% confidence interval. The study results were emphasized that the the necessity and the importance of natural lakes on climate sensitive land-use planning.

Keywords: Micro-climate ,Cool island, GIS, Remote sensing, Wetland, Land use planning