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## Remotely-Sensed Assessment of Water Stress in the Lake Urmia Basin

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In the last two decades, Lake Urmia, located in northwestern Iran, has attracted global attention due to its drastic shrinkage. Among the possible causes of this environmental catastrophe, excessive water consumption for agricultural purposes has been demonstrated as one of the main culprits of the current lake state. In the present study, monthly Actual Evapotranspiration (AET) is assessed for the six main plains of the Lake Urmia Basin from 2000 to 2016 using the METRIC algorithm. The estimated AET is compared with the ET products of, MODIS, Terra, and also with the reference evapotranspiration (i.e., alfalfa) in the basin. The results show that the METRIC algorithm yields a more accurate estimation of AET in the plains compared to the afore mentioned products (which generally underestimate) during spring and summer. Also, AET has shown an increasing trend across the basin as opposed to precipitation, witnessing an overexploitation of water from surface or groundwater resources. Moreover, an agriculture deficit coefficient is introduced and compared with the conventional drought index, PDSI, for each of the studied plains. The stress on water sources available for agriculture also indicates an increasing trend over the last two decades, witnessing one key reason for the Lake Urmia long-standing shrinkage.

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