



## **Linking lake variability, climate, and human activity in Basotu, Tanzania.**

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Lake Basotu (4.3697°S, 35.0728°E) is a crater lake in north-central Tanzania. This lake is an important source of freshwater for local people as no perennial rivers are present. Due to intensive agricultural methods and climatic factors, lake level has fluctuated greatly over time. A history of environmental variability of the past 1800 years was established using the diatom record, magnetic parameters, and carbon content from a three meter long sediment core. Fluctuations in modern lake extent (1973 – 2015) were calculated using archived Landsat images and compared to meteorological records and documents of activity around the lake to determine the greatest impacts and their consequences on this essential water resource. Variations in the paleo-record indicate that fluctuations in lake level are not abnormal, however human influence has likely increased the sensitivity of Lake Basotu to climatic fluctuations.