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Endorheic Lake Storage Changes in Water-Stressed Regions: Anthropogenic and Climate Impacts

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Endorheic lakes are at the core of terrestrial hydrological processes and ecosystem functioning in closed drainage basins. The storage capacity of these vital water bodies has been influenced by the climate variability and human activities (Hassani et al., 2020). We aim to investigate the role of these factors on the storage capacity of endorheic lakes in water-stressed regions worldwide. We integrate satellite remote sensing and historical data to quantify the extent of endorheic lakes and explore the relationship between the changes in their storage capacity and atmospheric parameters such as air temperature, precipitation, and wind. To examine the role of anthropogenic activities, we assess changes in the land cover and the extent of man-made water storage infrastructures (dams and water reservoirs) in the respective water basins and their correlations with storage variations of endorheic lakes situated in the water-stressed regions. Our preliminary findings highlight the complex interplay between socio-economic and environmental factors influencing the fate of endorheic lakes. This study contributes to our understanding of the broader implications of global environmental changes and offers valuable insights for policymakers, researchers, and stakeholders engaged in the sustainable management of endorheic lake ecosystems.

Reference

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