

## Reconstructing hydrological variability in the Horn of Africa during the past millennium using a molecular approach

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The occurrence and frequency of drought in the Greater Horn of Africa (GHA) has profound consequences for the millions of people who inhabit the region, many of whom are already vulnerable to famine due to insufficient ability to store food and water and the presence of civil strife. To better understand the natural variability of hydrology in the GHA and the ways in which global climate change might affect the persistence of drought in this region, we intend to reconstruct hydrological variability in the GHA for the past millennium via use of terrestrial biomarkers deposited in high-sedimentation rate ocean sediment cores from the Gulf of Aden. Our approach is to measure the hydrogen isotopic composition of higher plant leaf wax compounds, which act as a proxy for the isotopic composition of precipitation. The isotopes of precipitation in turn reflect regional hydrological processes, such as rainfall amount, changes in deep convection and moisture transport. Our record will provide a new perspective on climatic processes in an understudied region.