

Warning of rising lake levels in East Africa by 2024



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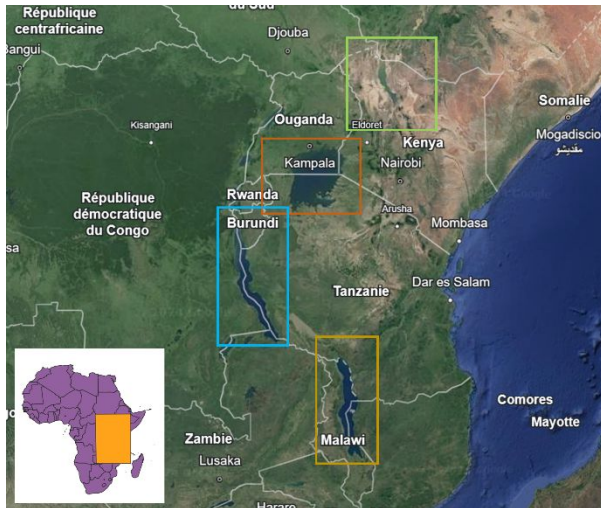


Figure 1 Location of **Malawi, Tanganyika, Turkana and Victoria lakes**

Significant changes of water level for East Africa lakes (Fig. 1) are a major environmental and socio-economic challenge in the region. In 2020, the rising level of Lake Victoria led to the flooding of the surrounding areas, the displacement of local populations, the inundation of more than 8,000 ha of land and 6,000 ha of cropland in Kisumu County (Kenya) and a regional electricity black-out in Uganda (GEOGLAM, 2020). Torrential rains and rising waters on Lake Tanganyika in 2021 affected ~ 281,180 people in the Tanganyika province of the Democratic Republic of Congo and more than 70,000 people in Burundi mainly in Gatumba and Rukaramu (Unicef, 2021).

Since 2019/2020, most of the East African Great Lakes experienced a significant increase in their water level compared with their mean level over the previous decades. The hydroweb database, which provides the altimetry measurements recorded by satellite radar sensors (Crétaux and Birkett, 2006), has estimated the increase in water level over 1 m on lakes Victoria and Tanganyika, ~ 2 m on Lake Turkana, and more than 3.5 m for Lake Kyoga over this period.

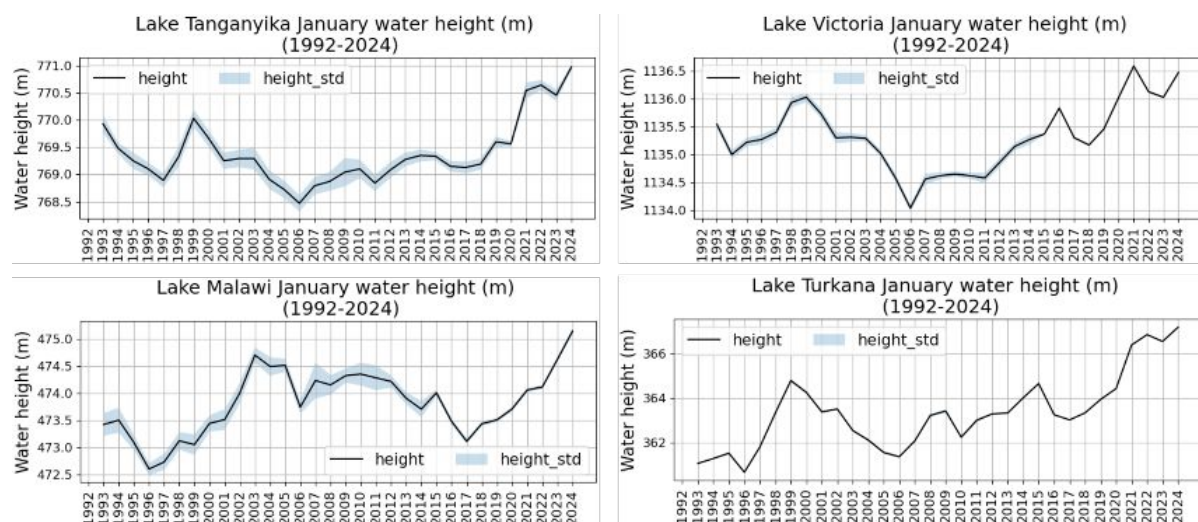


Figure 2 January water level time series (1992 to present). Water level curve in black (height) and uncertainty in blue (height_std)

The time series of altimetry measurements show that 2024 follows the trend of rising water levels observed since 2019/2020. For east Africa's four largest lakes (Fig.1), water levels in

January 2024 are the highest recorded since 1992, except for Lake Victoria (Fig.2). By 2024, their water levels could reach or even exceed previous records (1992 to present). For example, on Lake Tanganyika, where water levels generally peak in May, January 2024 water levels were 0.44 m higher than in January 2021, the record year since 1992. On Lake Malawi, where maximum water levels are expected in April, water levels in January 2024 were 0.51 m higher than in January 2023. At Lake Turkana, January 2024 water levels are 0.7 m higher than January 2021 values, with maximums expected in November.

For these lakes, it will be necessary to keep an eye on February's records in order to confirm January's trends.

Références

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