

LAKE VOLTA

SPOTLIGHT

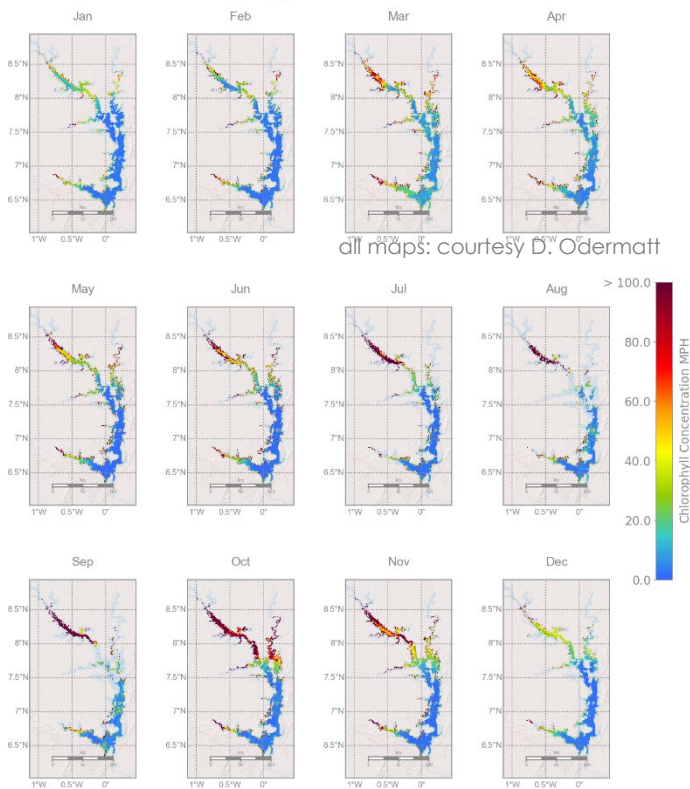
“Precipitation intensities, as well as annual rainfall amounts in West Africa show a strong inter-annual, inter-decadal and even intra-seasonal variability. Therefore, the vulnerability to climate change and variability will increase in West African and the Volta Basin, as long as population growth continues at high levels.” [G. JUNG, 2006]

WATER QUALITY PRODUCTS

Chlorophyll-a Concentration | MPH

Lake Volta

Chlorophyll Concentration (2006)

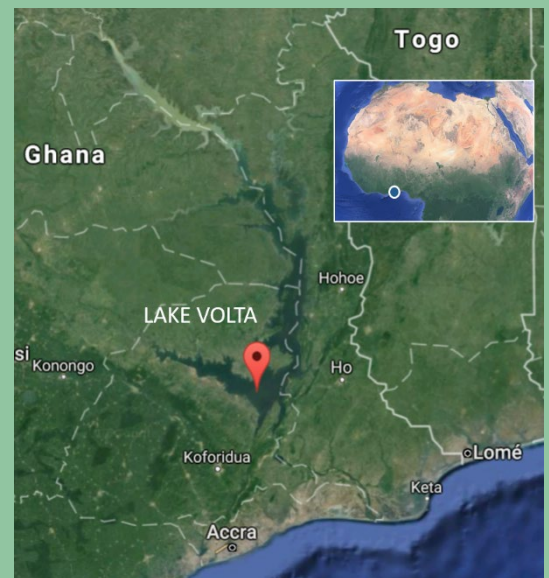


GlobeWetland Africa, Lake Water Products
Processing: Diversity-2 processing, BC
Input data: MERIS FR2 © ESA
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Description: The monthly averages of the chlorophyll concentration of Lake Volta is shown for 2006. The chlorophyll concentration is different in the different parts of the lake. While the main part is characterized by low concentrations, the higher concentrations are found in the flooded former river arms. Similar structures are shown below for the suspended sediment concentration.

FAST FACTS

- Major natural resource for Ghana
- Serves as a climate modulator in the West African region ► absorbing heat during warm seasons
- The Volta Basin covers about 45% of the nation's total land surface
- Major inflows are the Black Volta and the White Volta as well as the Oti River in the north
- The Volta Basin is a major West African river basin that drains an area of 414,000 km² into the Gulf of Guinea
- It is situated in the sub-humid to semi-arid West African Savanna Zone ► shows distinct North-South gradients
- Lake Volta is with 8,482 km² the largest man-made lake in the world by surface area (8,500 km²) and fourth largest by water volume
- Due to the increasing population pressure a growth in irrigated areas can be observe



Credit: Google Maps

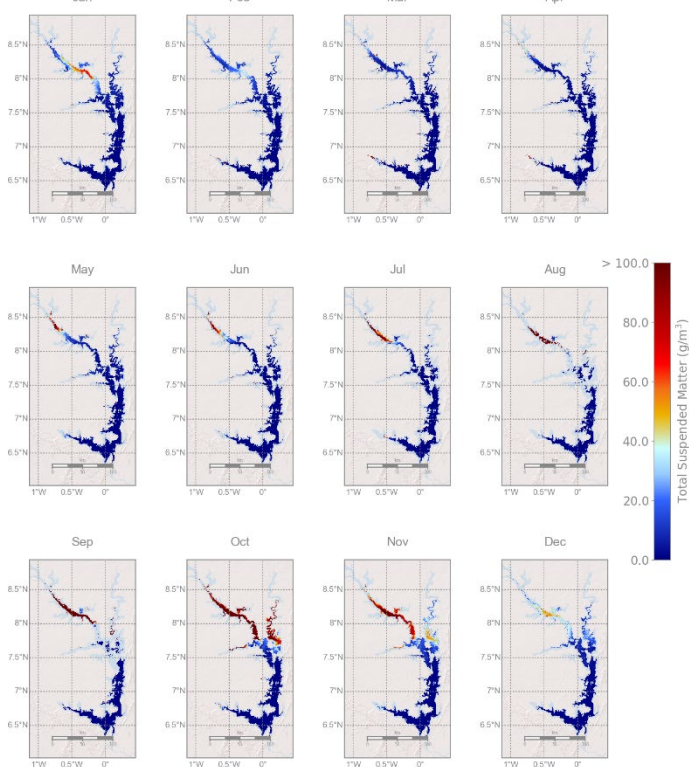


Credit: E. Convey-Smith

Total Suspended Matter | TSM

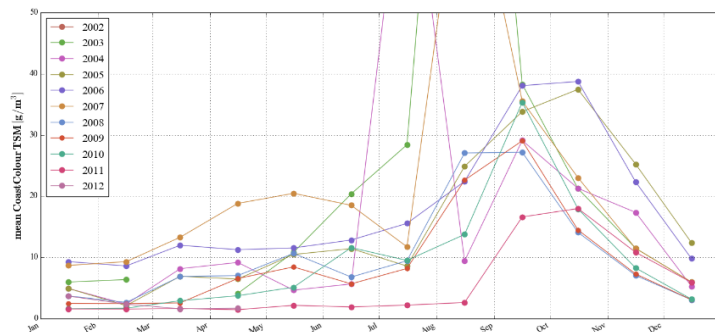
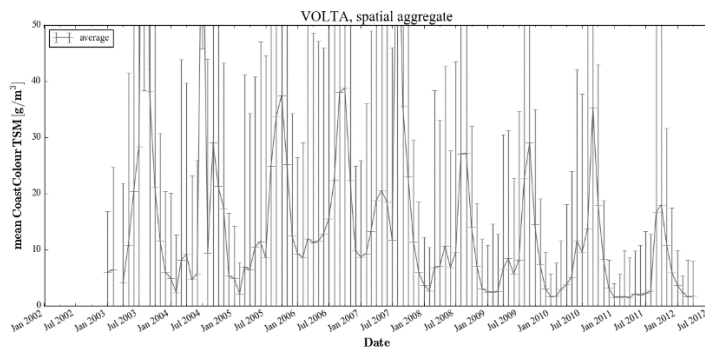
Lake Volta

Total Suspended Matter (g/m^3) (2006)

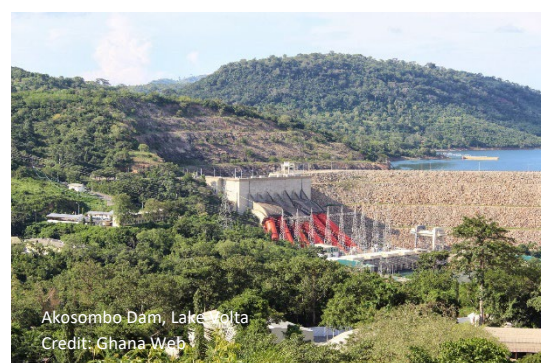
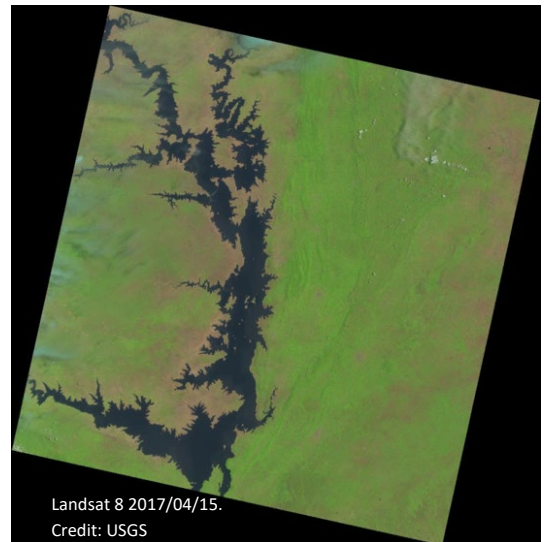


Globalwetland Africa, Lake Water Products
Processing: Diversity 2 processing, BQ
Input data: MERIS FRS © ESA
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Time Series of Total Suspended Matter | TSM



Description: The time series of Lake Volta show the strong seasonal and interannually changes in the suspended sediment concentration. A period of higher concentrations is seen between 2005 and 2008 and a reduction since then.



AKOSOMBO DAM

- Located at the very downstream part of the Volta Basin
- Holds back the water of the White Volta, Black Volta, and the Oti for the generation of hydro-power
- Its construction was completed in 1965 and formed lake Volta
- Akosombo Dam is of strategic importance to the economy of Ghana
- It generated 80% of the power produced in the country
- Expansion of irrigated agriculture and other consumptive use in the vast upstream areas competes directly with the hydro-power generation in the south
- For the next decades, a dramatic increase in irrigation water demand is projected for the northern regions of the basin
- Need for action: a well-developed transboundary water management

All water quality satellite-derived products shown here have been derived from MERIS sensor onboard of ENVISAT. The product development and processing have been performed within the ESA projects Diversity-2 and Globwetland-Africa.

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