LAKE BURULLUS

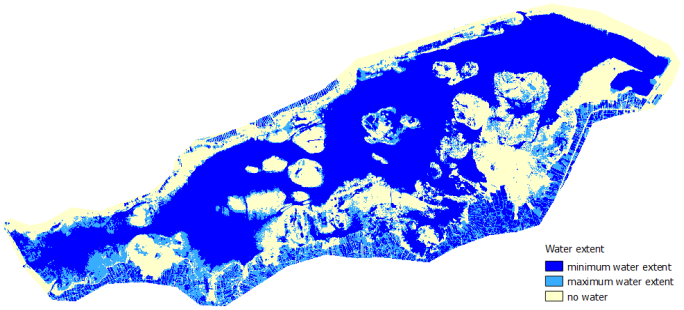
SPOTLIGHT

"Lake Burullus is [...] suffering from high levels of aquatic plant, overfishing, expansion in fish farming and agricultural drainage discharges [...]."

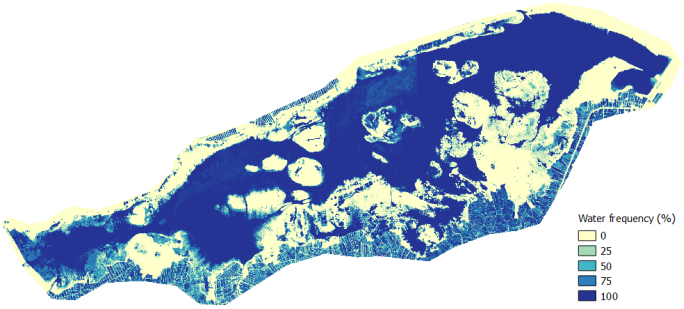
| Younis & Nafea, 2012[5] |

INUNDATION REGIME PRODUCTS

Minimum/Maximum Extent 2016/2017



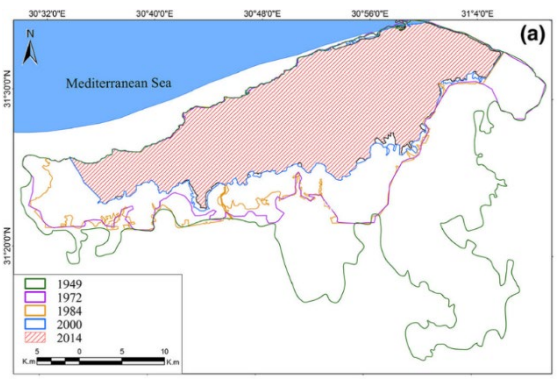
Water Frequency 2016/2017



Description: Minimum and maximum water extent based on Sentinel-1/2 satellite imagery considering all data from January 2016 until June 2017. The illustrations show that temporary water mainly occurs in aquacultures and agriculture areas. The water frequency based on monthly measurements illustrates the water level change in more detail.

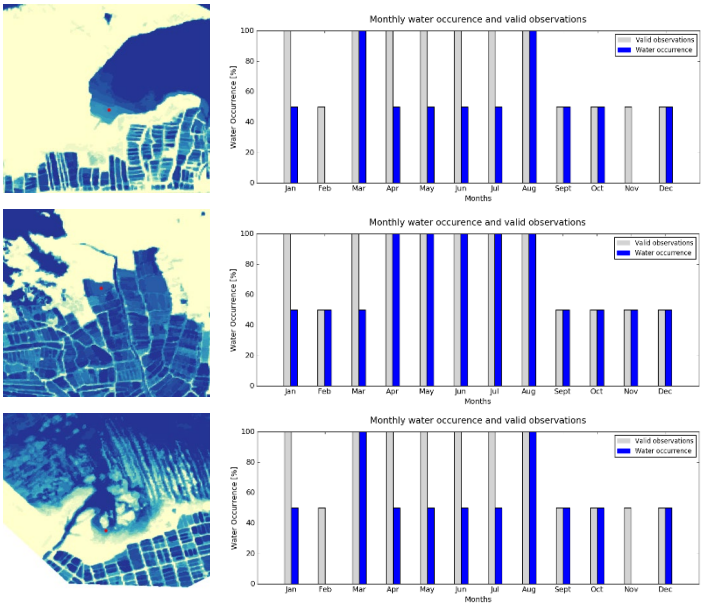
FAST FACTS

- Lake Burullus is the second largest lake on the northern Egyptian coast with a total area of 410 km²
- The lake is shallow, with a maximum depth of 175 cm in the middle and western parts.
- The lake serves as reservoir for drainage water, from agricultural areas through nine drains in addition to the fresh water from Brimbal Canal situated in the western part of the lake
- The amount of drainage water that is discharged annually into the lake is varying from one year to the other, with an average amount of about 2.5 billion m³/year
- The catchment area of the Burullus wetlands covers about 75% of the Nile Delta region
- This lake produces about 40% of fish productivity comparing the Egyptian northern lakes.
- The area of Lake Burullus has shrunken from about 1116 km² in 1949 to about 546 km² in 2014 (!), which is attributed to drying for housing, land reclamation and fish farming [1]
- The inflow to the lake is composed of agriculture drainage water (97%), rain water (2%) and groundwater (1%)



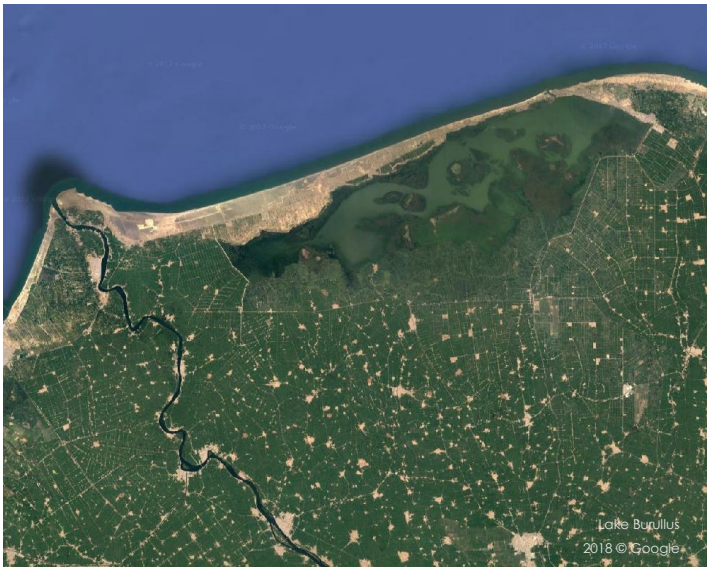
Successive degradation in surface area of Lake Burullus between 1949 and 2014, source: El-Shazly et al. (2017) [2].

Temporal profiles



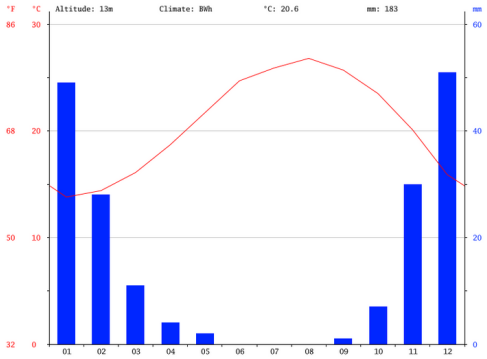
Description: Temporal profile on different locations in the Lake Burullus catchment. The diagrams show that the water occurrence is slightly lower mainly during the months April – July. During the dry season low cloud coverage allows for more observations to be made, but the number of water observations drops during the dry spell. This variation, however, is not only caused by a smaller water extent of the lake in the dry season, but also due to the variations of agricultural cultivation in the surrounding areas.

Although the precipitation data for 2016 and 2017 show a correlation with the water extent, the relation is not very strong: the lake is primarily fed from agricultural used areas in the surroundings, where many aquacultures are located. Only 2% of the annual inflow is provided by rain. During drier periods also for the agriculture less water is available and this in turn affects the water level of the lake.

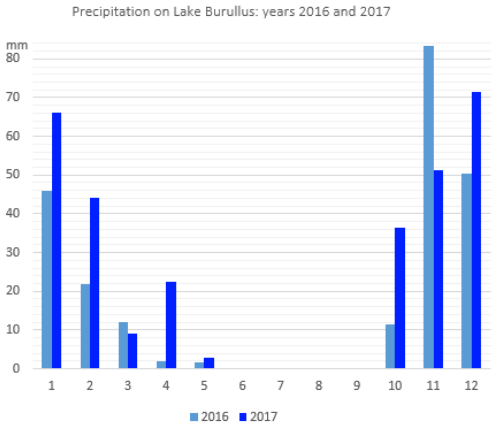


Lake Burullus, located in the Nil Delta in Egypt.

Climate data



The graph shows the average rainfall per month [3].



The precipitation data for 2016 and 2017 indicate a distinct dry period during the summer months [4].

References

[1] Fraser et al.: The World's Largest Wetlands: Ecology and Conservation, p.377

[2] El-Shazly et al. (2017): Area reduction and trace element pollution in Nile Delta wetland ecosystems. Afr. J. Ecol., 55: 391–401. doi:10.1111/aje.12264

[3] https://en.climate-data.org/location/11126/

[4] http://chg.geog.ucsb.edu/data/chirps/

[5] Younis, A. M., & Nafea, E. M. (2012). Impact of environmental conditions on the biodiversity of Mediterranean Sea lagoon, Burullus protected area, Egypt. World Applied Sciences Journal, 19(10), 1423-1430.

All satellite-based products shown here have been derived from Sentinel-1/2 sensors. The product development and processing have been performed within the ESA project GlobWetland-Africa.

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