SENEGAL RIVER

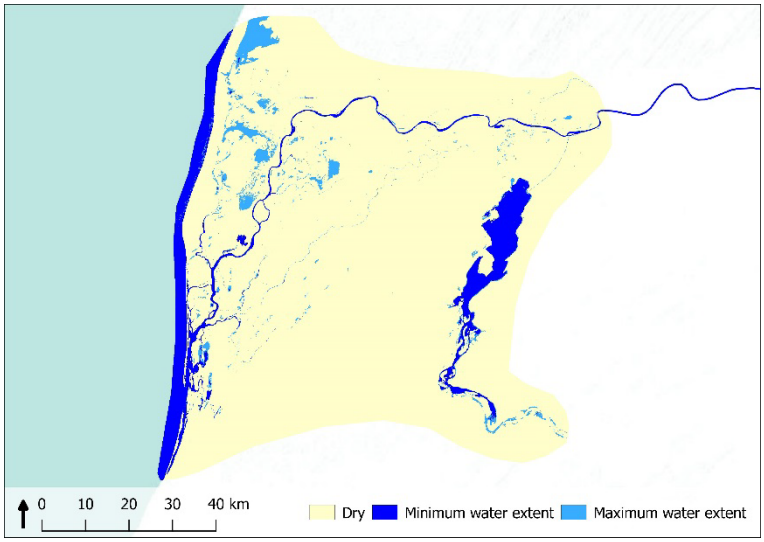
SPOTLIGHT

"The lower Senegal delta is characterised by high biological productivity and by rich agricultural and fishing sector. […] The delta plain provides 8% of the arable land of Senegal."

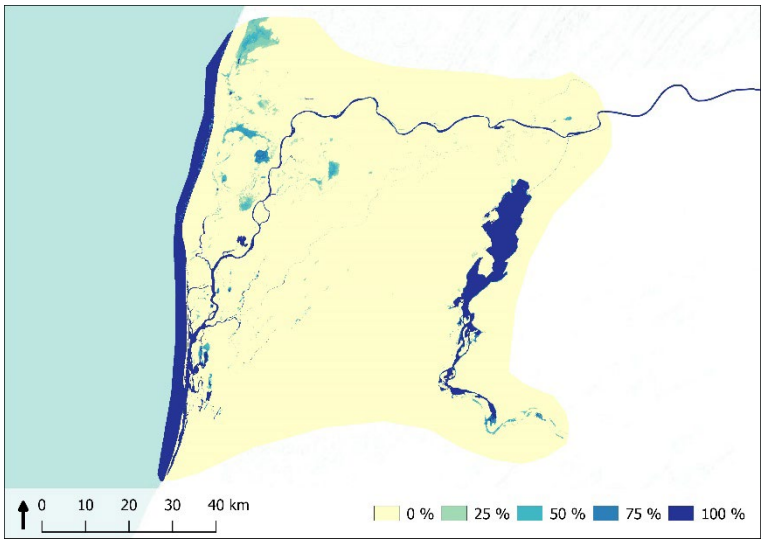
| Sadio et al., 2017 [3] |

INUNDATION REGIME

Inundation Regime – Water Extent



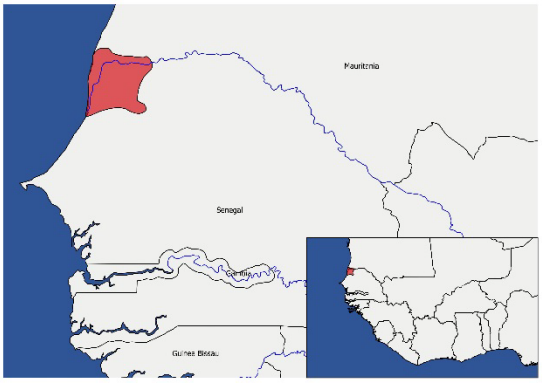
Inundation Regime – Water frequencies



Description: Shortly before reaching the Atlantic, the Senegal river turns towards south. The lake in the eastern part is Lac de Guiers. Wetlands which are consistently covered by water are located near the estuary of the Senegal River.

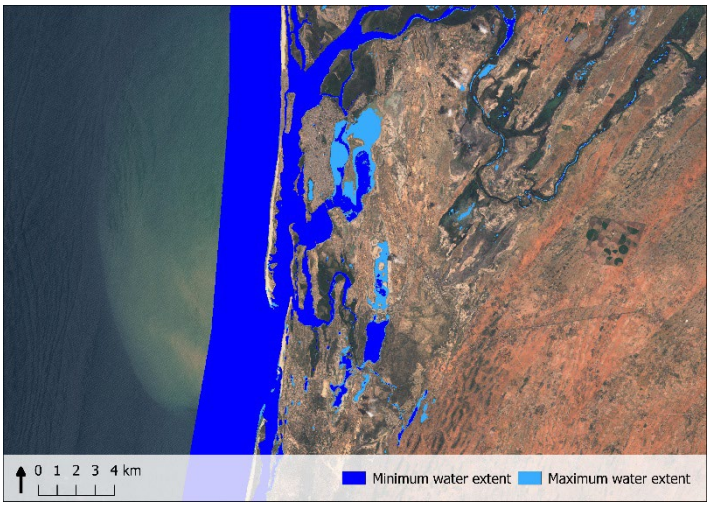
FAST FACTS

- The Senegal River is a 1086 kilometres long river in West Africa. It begins at the confluence of the Bafing and Bakoyé River, which both originate in Guinea, flows through Mali and later forms the border between Senegal and Mauritania. At Saint-Louis the river drains into the Atlantic.
- The river is important for irrigated agriculture along its shores.
- Several wetlands are located near the estuary, one of them forming the Guembeul Nature Reserve. Inhabiting many endangered species, like African spurred tortoise and the Dama gazelle, it is an important site for reintroduction programs.
- The Ferlo is a left tributary of the Senegal River, and flows through the Lac de Guiers. West of this lake, the Ndiael fauna reserve is an important site for migratory birds from the temperate and arctic zones of Europe.
- On the river mouth, a lagoon is separated from the Atlantic Ocean by the Langue de Barbarie, a long sandy peninsula. In 2003, a breach was cut in the peninsula to increase the discharge in case of flood events. Due to erosion, the previously narrow breach widened quickly and this had extensive effects on the lagoon, causing loss of land, villages and tourist resorts [1].



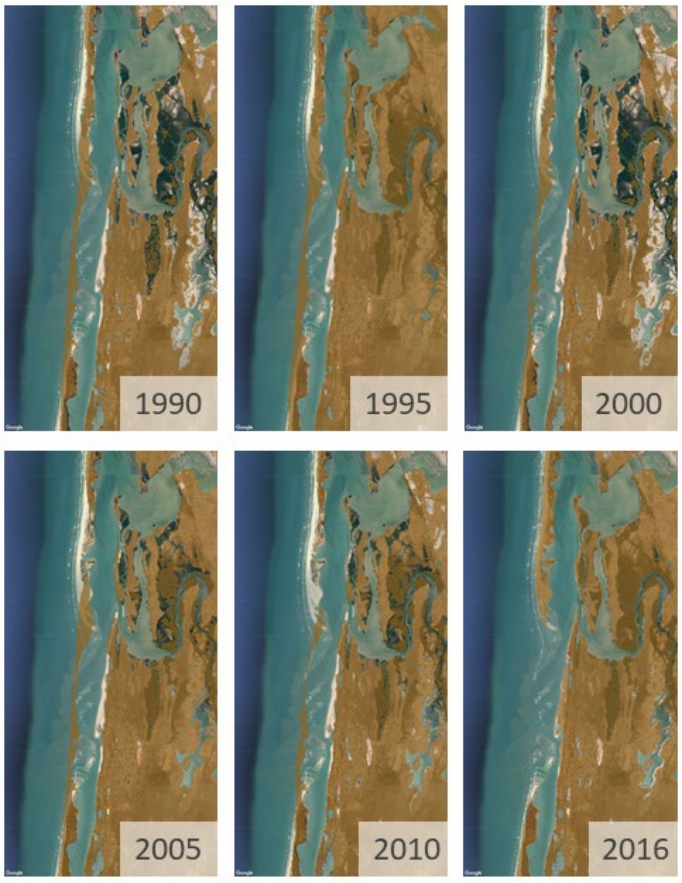
Location of the Senegal River inside the country of Senegal.

Detail showing Saint-Louis and the Guembeul Natural Reserve

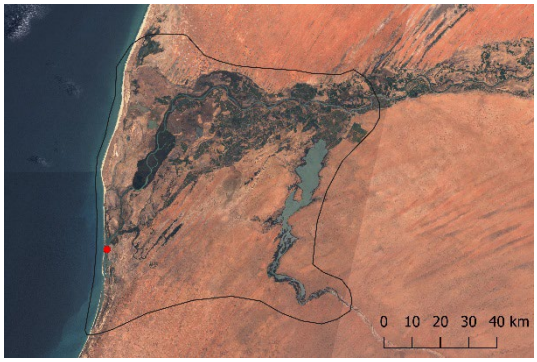


Description: The detail shows the Senegal River mouth around the city of Saint-Louis. Some lakes fed by the river change their extent significantly in the rain season. The breach in the peninsula Langue de Barbarie is clearly visible in the West.

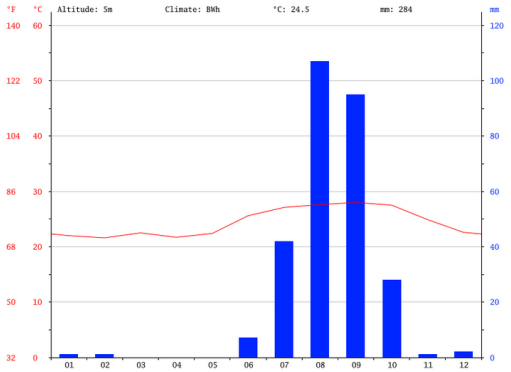
Shore line changes between 1990 and 2016



Description: The time series shows shore line changes (brown represents the land mass at the respective time step) in the delta of the Senegal River compared to the situation of today (background image). Starting in 2003, the breach in the peninsula widened quickly and reached nearly 5 km in 2018. It affects the river floods, which transformed from a rainfall-based to a tidal-based regime putting pressures on the flora and fauna of the peninsula and lagoon [1].



RGB image of the estuary of the Senegal River. The red point, indicates the position of Saint-Louis situated on the river mouth.



Climate diagram of Saint-Louis, located on the estuary of the Senegal River. It lies in the arid climate zone with very low precipitation, which is concentrated between July and September. The Senegal River receives much of its water from regions with a tropical savanna climate, where the rainy season during summer months is more accentuated [2].

References

[1] Durand, Paul; Anselme, Brice; Thomas, Yves-François (27 April 2010). "L'impact de l'ouverture de la brèche dans la langue de Barbarie à Saint-Louis du Sénégal en 2003: un changement de nature de l'aléa inondation ?". Cybergeo : European Journal of Geography (in French)

[2] https://en.climate-data.org/africa/senegal/saint-louis/saint-louis-25336/

[3] Sadio, M., Anthony, E. J., Diaw, A. T., Dussouillez, P., Fleury, J. T., Kane, A., ... & Kestenare, E. (2017). Shoreline changes on the wave-Influenced Senegal River Delta, West Africa: The roles of natural processes and human Interventions. Water, 9(5), 357.

All satellite derived products shown here have been derived from Sentinel-1 CSAR (radar) and Sentinel-2 MSI (optical) imagery complemented with Landsat 5, 7, and 8 optical imagery for the historical analyses. The product development and processing has been performed within the ESA project GlobWetland-Africa.

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