

OVERBERG GEOSCIENTISTS GROUP (OGG)

Newsletter #13: 9 October, 2025

(OGG – Reg. No. 275-138 NPO)

Highlights:

- ❖ Okavango Swamps/Moremi Game Reserve Excursion (14 - 26 September) – How geology, faulting, a graben-structure & the cross-border Okavango River sustains an exceptional endorheic 'wet-land' and wildlife system
- ❖ Visit to *Karoo Fossil Centre*, Graaff Reinet – Exceptional world-class facility; a must-visit
- ❖ South Africa's exploration & mining demise continues.

OGG Presentations & Breakfast Program (to December, 2025)

Date (2025)	Speaker	Topic	Venue/Mode/Time
Thursday 2nd October		Spring Break	
Thursday 6 th November, 2025	Malcolm Lee, Stuart Dunsmore & Prof Chris James	Post-mortem of the Klein River - Stanford 2023 Flood: Interventions & early-warning system to ameliorate future impacts (<i>See accompanying Flyer</i>)	In-person + Zoom RSA 11h00 Onrus Manor
Friday 4 th December	Ronnie Hazel (Retired geologist)	Experiences of a De Beers geologist in Russia in the early 1990's	In-person + Zoom RSA 11h00 Onrus Manor

Zoom Link: <https://us02web.zoom.us/j/82172892738?pwd=M1NWUkJFYzhqdTJ2Qk0yZ3BrV2srZz09>
Meeting ID: 821 7289 2738; Passcode: **Overberg**

OGG Breakfast Meetings & Presentations – These are held at Onrus Manor from 09h30, with breakfast (R130.00pp) at 10h00, presentations (in-person & Zoom) at 11h00 on the first Thursday of the month. Participants are requested to confirm attendance at the breakfasts for catering purposes.

Geology & Related Topics in the News

South Africa's lost generation of exploration and mining – (G. Wanblad; *MiningMx*)

<https://www.miningmx.com/top-story/62683-generation-of-exploration-has-been-lost-in-sa-says-wanblad/>

The R60 billion illegal-mining industry bleeding South Africa dry – (*Daily Investor*, 9 October, 2025)

<https://share.google/ItHa9vVYeAlROUccs>

Golden Gate Dinosaur and Graaff Reinet Karoo Fossil Centres – **YouTube**

<https://youtu.be/UZOIY7z8KA?si=8ePUMNATUke2NcPr>

Museum in a box: on the road with South Africa's heritage – Prof Tim Forssmann (*Univ. Mpumalanga*)

<https://theconversation.com/museum-in-a-box-on-the-road-with-south-africas-heritage-266108>

Matriculants fascinated by geoscience and meteorite story – (*Roger Gibson: Univ. Witwatersrand*)

<https://share.google/A374hHITvK84GltUa>



Proposed 2026 Activities

Panning of OGG activities for 2026 are underway. Current plans include a follow-up on the successful **2025 Gold Presentation Series**, sessions on **Large Igneous Provinces** (LIPS) and their significance in geological record, and sessions on the neglected aspects, including job creation, of southern Africa's exceptional **Geoheritage- Endowment**. Field Trip ideas are also in the melting pot. Ideas and suggestions from OGG Members, including Laypersons, Students and Scholars are welcome.

OGG YouTube Presentations

All previous **OGG** presentations on **YouTube**:

<https://www.youtube.com/playlist?list=PL-MPMaHidsW1jR8f-KMmPX8ANZGA-OYna>

All about Gold: <https://www.youtube.com/playlist?list=PL-MPMaHidsW2tZEQv06FmiLjubVejMGhh>

All about Diamonds: https://youtube.com/playlist?list=PL-MPMaHidsW09IjwvI7VCUINBd5I_-VwH&si=ddgs1KfuDYuSF1PW

Annual Fees & Bank Details (R250.00 per person)

OGG Members who are paid-up for 2025 are thanked for their ongoing support and contributions over the past year, and previous years. The footprint, activities and educational interventions of the OGG continue to grow as a consequence of your generous ongoing support.

For those who have not yet paid their contributions for 2025, we would welcome your belated payments. As per prior Notes and information, the OGG will in due course implement changes to its membership structure, recognising our long-term regular paying members, Senior Citizens, Students and non-geologists. Bank details are shown below for those who are not yet paid-up for 2025:

STANDARD BANK ACCOUNT	OVERBERG GEOSCIENTISTS GROUP NPC
ACC NO: 10168933800	CURRENT ACCOUNT
BRANCH CODE: 051001	SWIFT ADDRESS: SBZA ZA JJ

OGG Membership & Activities

The OGG welcomes new members, for details of activities and interests please contact one of the members below. Ideas regarding excursions, educational activities & interaction with professional geologists, other professionals, students, non-geologists, scholars and youth are welcomed. Share these documents with colleagues, non-geologists, students & scholars. Mindful of the POPI Act, kindly advise us if you wish to be removed from the mailing list.

Many thanks. Best wishes,

JOHN, HENNIE, ANNABELLE & OGG TEAM

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Botswana Excursion: Khama Rhino Sanctuary, Okavango Delta, Moremi Game Reserve: 12 – 28 September 2025

The Excursion with 8 participants was planned and led by experienced Botswana based geologist Dr Andy Moore and Patty Price, supported by Paul and Liane Hays (Botswana Residents), with Robert Storm and Karin Helmstaedt (Germany) and John & Marilyn Bristow comprising the rest of the team.

Gaborone was the starting and end-point, with the route proceeding via Serowe, Khama Rhino Sanctuary, Maun, Mawana, Moremi South-Gate, Xakanaxa, North-Gate, Kwai, Mabate, Mogothlo, and the return via Sankuyo, Maun, Khama Rhino Sanctuary to Gaborone.

Okavango Delta Geological Setting and Formation: The Delta is the consequence of large, low-gradient alluvial fan situated within a key graben structure, an extension of the *East African Rift System*.

The Delta's landscape consists of vast expanses of Kalahari sands, transported by the Okavango River from its Angolan headwaters. Tectonic activity, including faulting and sediment loading, influences the delta's topography and hydrology, leading to features like local depressions and potential future river system diversions.

Faulting: The delta is influenced by major fault lines, such as the Gumare fault and extensions of the Linyanti fault, which create local depressions and control drainage.

Alluvial Fan: The delta is a massive alluvial fan, a landform created by a river system as it deposits sediment and water into a larger, slower-moving body of water on a desert plain.

Endorheic System: As one of the world's few large inland deltas without an outlet to the sea, the Okavango is an endorheic delta; its water flows into permanent, seasonal lakes and swamps, and desert sands of the Kalahari Basin that equilibrate through evaporation.

Kalahari Sands and Calcrete: The primary sediment transported by the Okavango River is Kalahari sand. These sandy deposits are frequently overlain by calcrete (Kalahari Limestone).

Island Formation: Many islands within the delta are believed to have originated as termite mounds, with trees then taking root. Vegetation also influences island growth through aerosol deposition and salt accumulation.

Tectonic Influence/Sediment Loading: The deposition of sediment on the fan is thought to cause crustal sagging and local seismicity, contributing to the area's unusual topography.

Future Diversions: The uplift associated with the incipient rift may eventually deflect the Okavango River into the Chobe-Zambezi River system via the graben structure and associated fault controls.

Further information including geological maps, flood details and a list of references are included at the end of this brief Okavango Delta overview.





Elephant gathering - South-Gate Camp Site

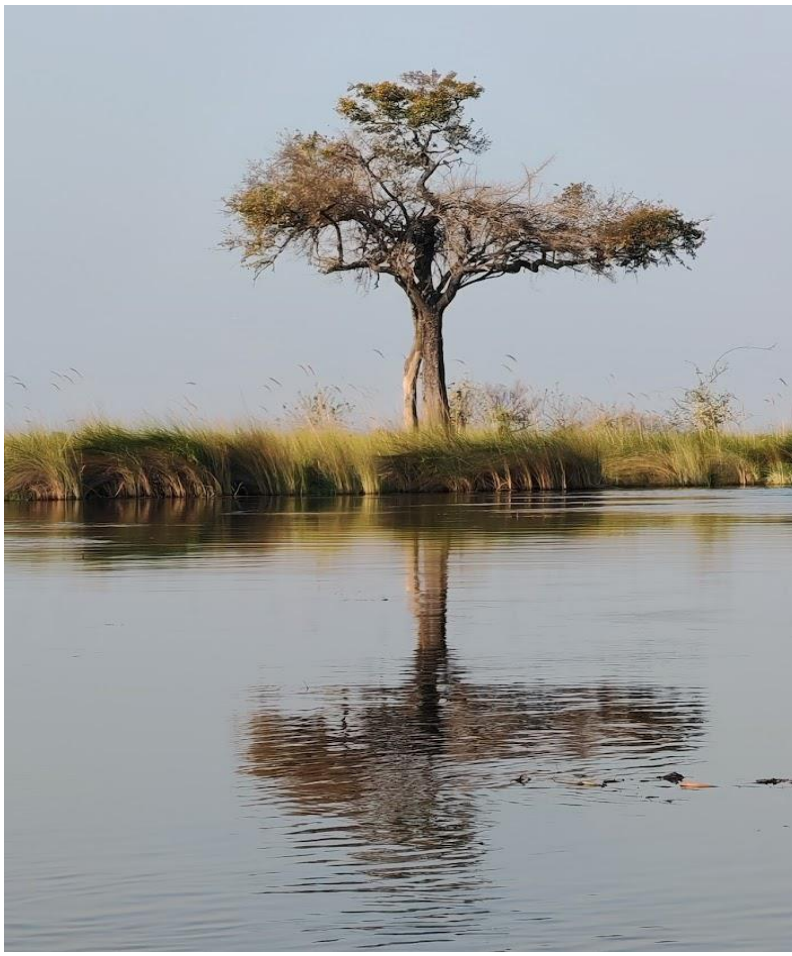


Cathedral Mopani near North-Gate which are being progressively destroyed by Elephants



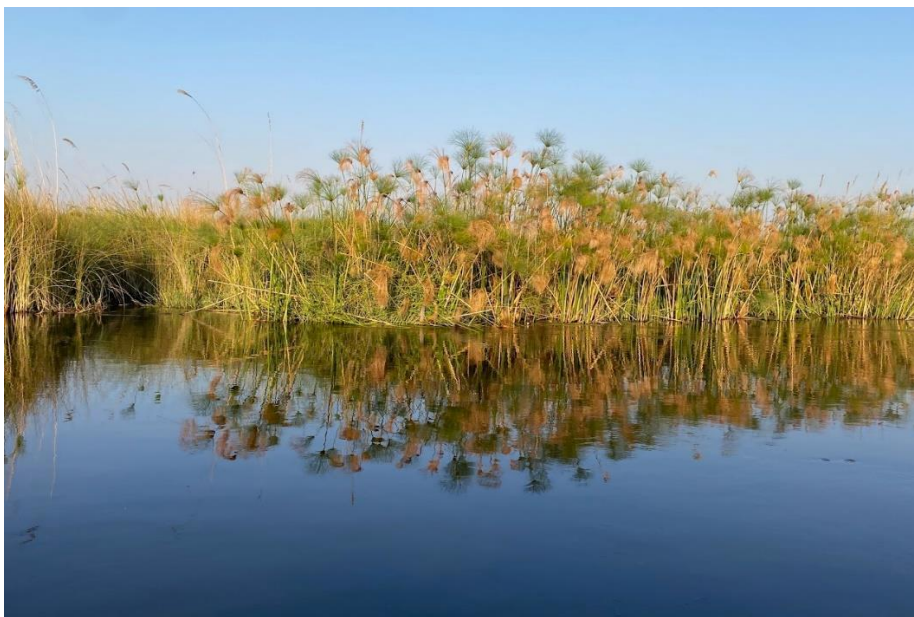


Majestic Baobab tree – Xakanaxa Campsite



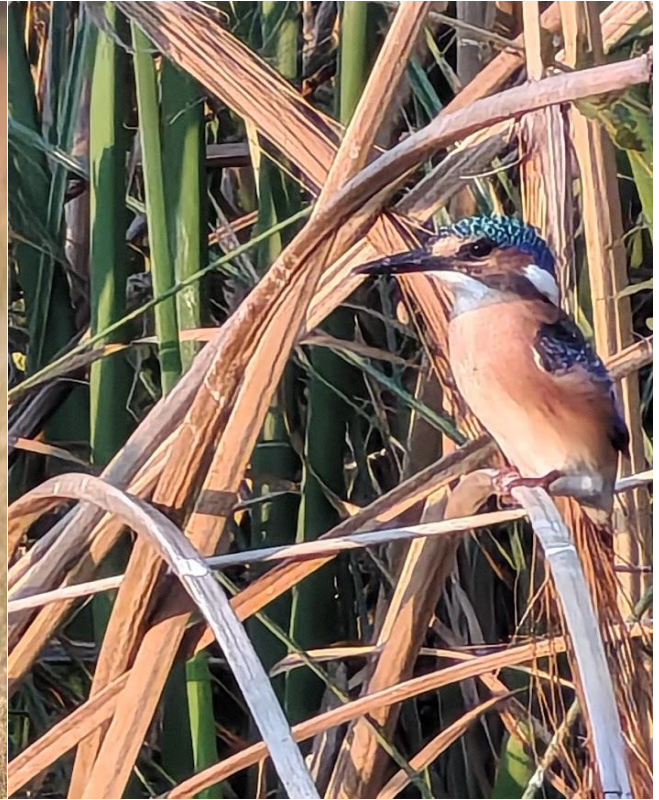
Exploring the Waterways north-east of the Xakanaxa Campsite (Moremi) (above & following images)







Red Lechwe



Malachite Kingfisher



Dead elephant being progressively dismembered by crocodiles





Elephant feeding on the roots of papyrus and sedges in the Delta and keeping channels open



Evening Cruise on the Xakanaxa channels and lakes





Xakanaxa Sunset

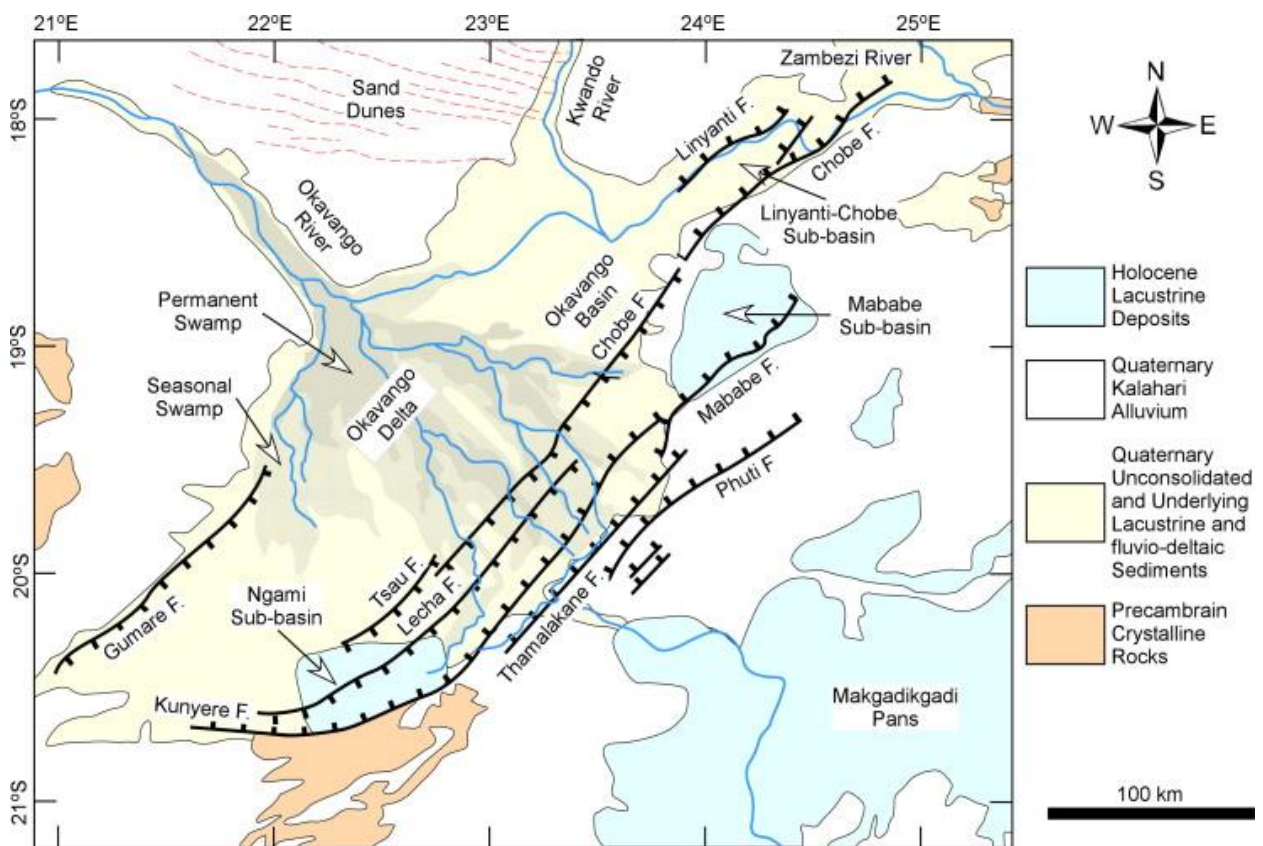


Figure 1: Generalised geology and structure of the Okavango Delta



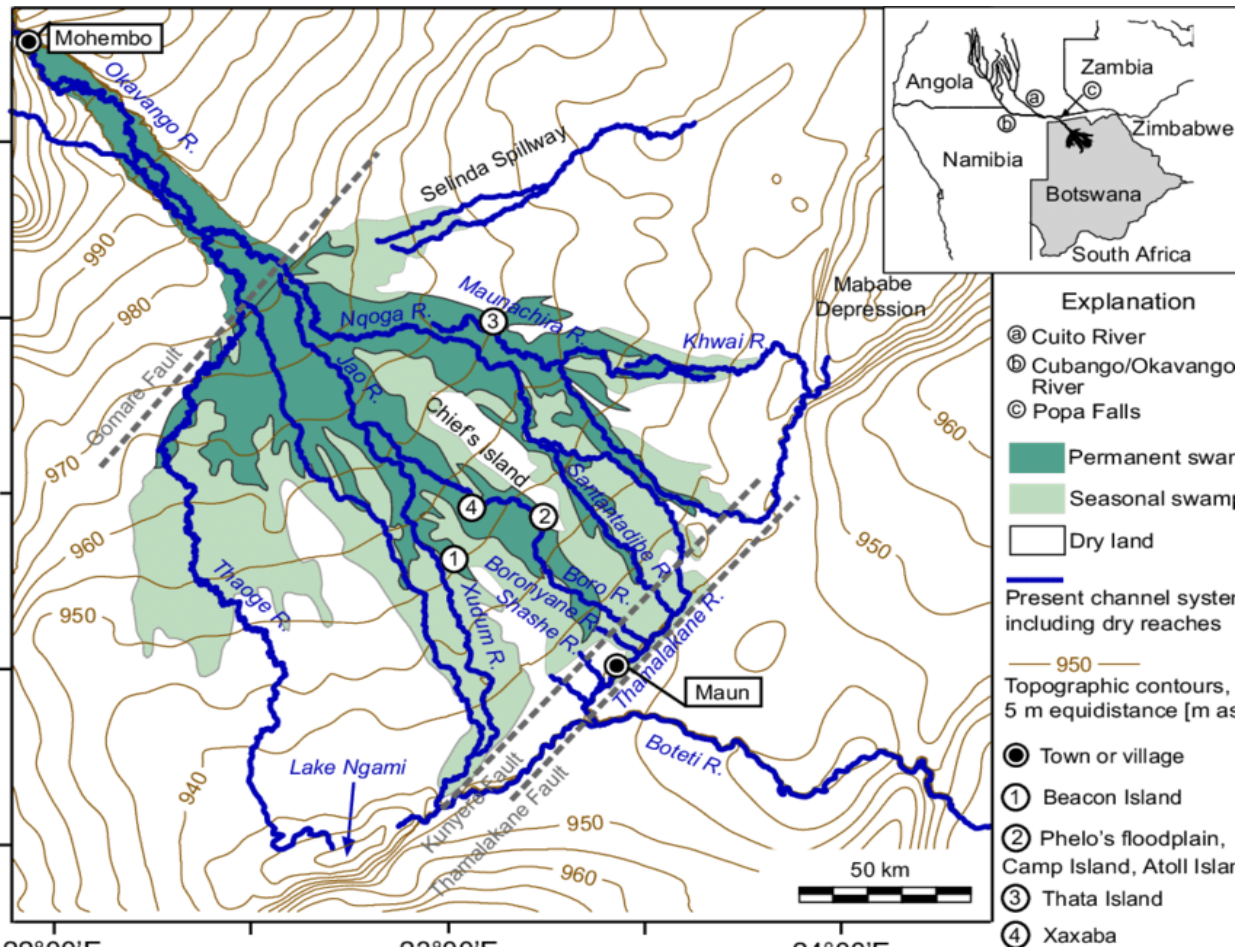


Figure 2: Key rivers of the Delta system; note positions of Mohembo and Maun at upper and lower extremities

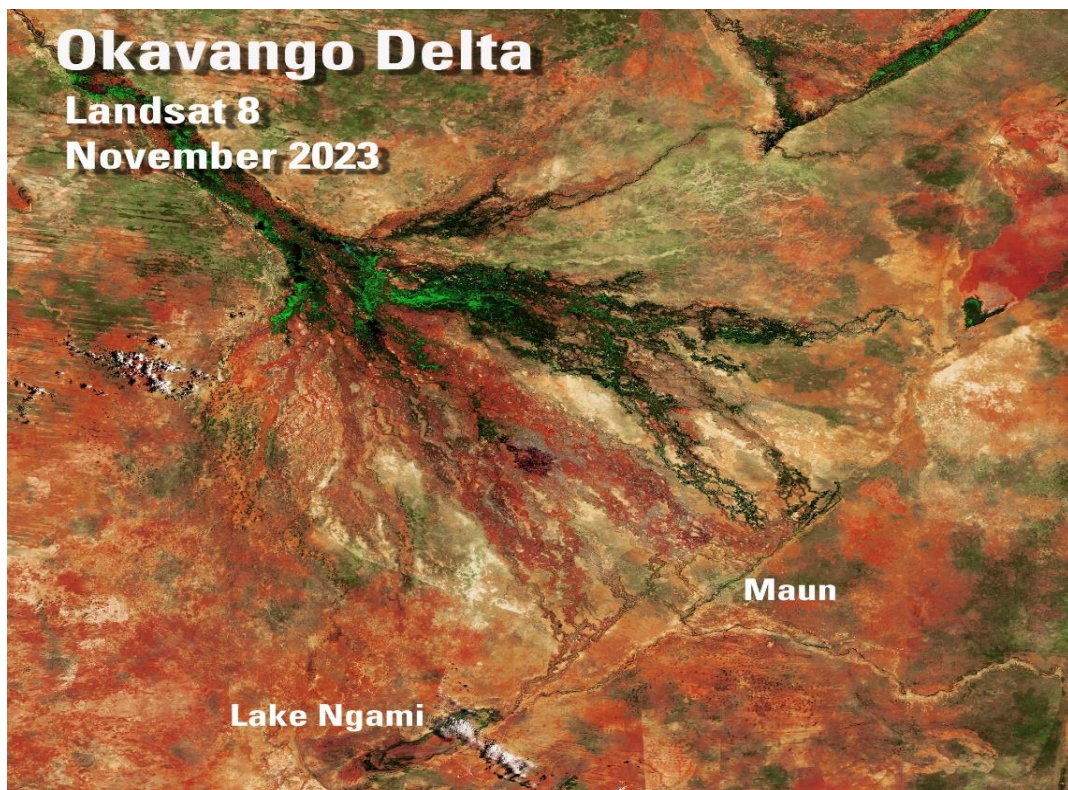


Figure 3: Satellite view of the Okavango Delta (Landsat_8, November 2023)



Okavango Delta Flooding - The Delta is sustained by seasonal flooding as the Okavango River drains summer rainfall (*January - February*) from the Angolan highlands, with the flood-surge flowing some 1 200 km into the Delta. The waters reach the Delta during the following four months (*March through June*), the early part of Botswana's dry winter months, and permeate and spread over an area of some 37,500 km².

The Okavango Delta is very flat, with less than 2m variation in height across its 15,000 km², while the water flow drops about 60 m from Mohembo to Maun (see Figure 1 above).

Flooding levels may show some fluctuation subject to the amount of inflow caused by early local rainfall in the nearby catchment areas of the Okavango, with a subsequent stronger surge in flow caused by the Angolan Highlands rainfall and water flow reaching Mohembo. The Delta's high summer temperatures cause rapid transpiration and evaporation adding to the fluctuations.

Peak flooding is from *June to August*, and causes the delta to swell to about 3 times its permanent size, creating a thriving oasis of channels and lagoons attracting animals and birdlife from kilometres around, creating one of Africa's greatest concentrations of wildlife.

The 2025 flood has been particularly significant (see Figure 4 below), with waters reaching further south than they have for many years, causing lagoons to be reborn and old channels to reawaken.

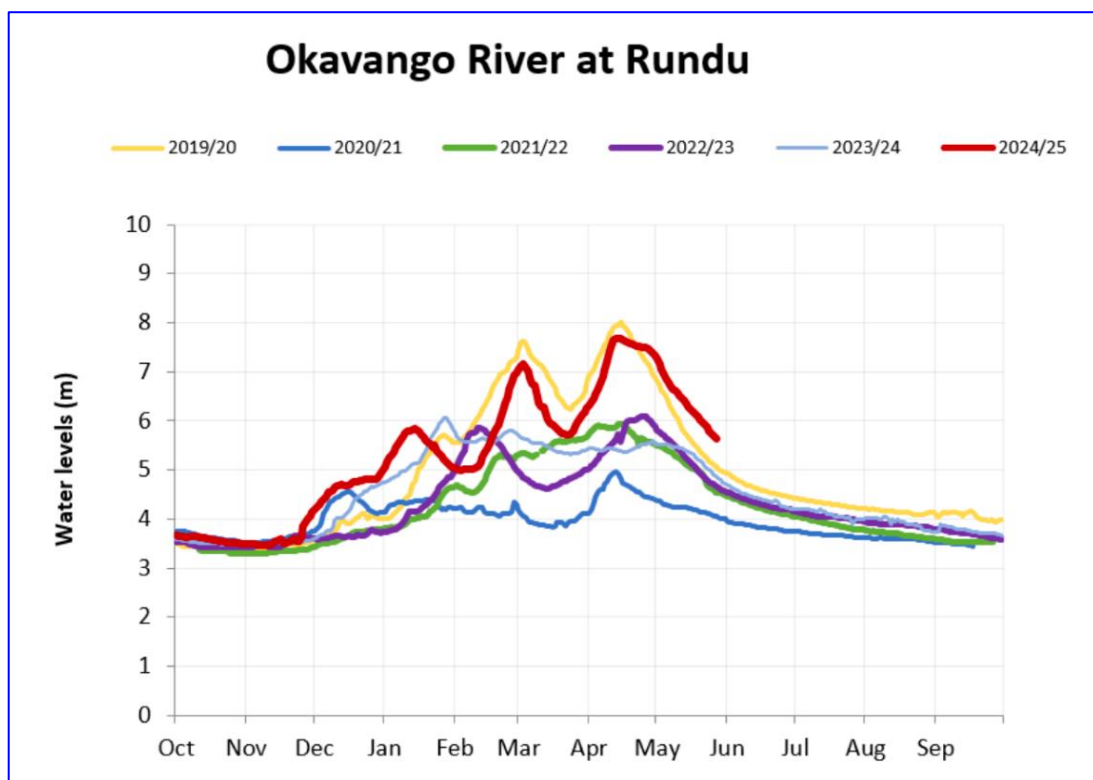


Figure 4: Okavango Delta Flood Levels including 2024/25 data. (Brave Africa Safari Website, July 10, 2025) (Upstream distance from Mahembo to Rundu ~240kms)



Sources of Information:

Bufford, K.M., et al. (2012). Geometry and faults tectonic activity of the Okavango Rift Zone, Botswana: Evidence from magnetotelluric and electrical resistivity tomography imaging. *Journal of African Earth Science*, 65(9), pp61 – 71.

Cronje Wilmot, E. (1955). Always Lightly Tread - Travels in Ngamiland. *Howard Timmins Publishers, Cape Town (First Edition), 254pp.*

Datla, A., et al. (2023). Echoes of the Okavango Delta – Does the Voice of the people matter. *Water Alternatives*, 16(3), 821 – 848.
<https://www.water-alternatives.org/index.php/alldoc/articles/vol16/v16issue3/723-a16-3-7/file>

Ghai, R. (2025). Saving Africa's Lions from Decline in 'The Last Lions'
<https://share.google/O6O3b3pfTCu5lXpts>

Main, M. (2000). KALAHARI – Life's Variety in Dune and Delta. *Southern Book Publishers. 265pp.*

McCarthy, T.S. (2013). THE OKAVANGO DELTA AND ITS PLACE IN THE GEOMORPHOLOGICAL EVOLUTION OF SOUTHERN AFRICA. *A.L. Du Toit Memorial Lecture. GSSA, 116 (1), pp1 – 54.* <https://the-eis.com/elibrary/sites/default/files/downloads/literature/The%20Okavango%20Delta%20and%20its%20place%20in%20the%20geomorphological%20evolution%20of%20southern%20Africa.pdf>

Mendelsohn, J. and El Obeid, S. (2004). OKAVANGO RIVER – The Flow of a lifeline. *Struik Publishers, Cape Town. 176pp.*

Rigby, K. (2022). BOTANICAL ENCOUNTERS: The Okavango Delta - The Wetlands. *Lets Talk Plants, San Diego Horticultural Society, October 1, 2022.*

Roodt, V. (1998). Common Wild Flowers of the Okavango Delta – Medicinal uses and Nutritional uses. *The Shell Field Guide Series: Part II. 174pp.*

Vainer, S., et al. (2024). Chronology of Sedimentation and Landscape evolution in the Okavango Rift Zone, a Developing Young Rift in Southern Africa. *Jour. Geophysical Research, Earth Surface. 129(8), 23pp.*

BBC News – Botswana threatens to send 20,000 elephants to Germany (2nd April, 2024)
<https://share.google/KShJ4tvDw6fEhMFt6>

Challenges facing the Okavango Delta – *Adventure in the Wild Safaris Website, December 13, 2024.*
<https://www.gorillaugandasafaris.com/what-is-the-major-problem-in-the-okavango-delta/#:~:text=One%20of%20the%20most%20pressing,and%20feeds%20into%20the%20delta.>

Elephants: A Crisis of Too Many, Not Too Few – (*Conservation Frontlines Website, 2025*)
<https://share.google/w8xZRzBybDYhFioBa>

Moremi Game Reserve Tourist Map (2nd Edition), An African Souvenir (May, 2024). *Tinkers, THE AFRICAN TRAVELERS.* www.tinkers.co.za; email: info@tinkers.co.za

The Okavango Delta – IUGS (International Commission on Geoheritage)
https://iugs-geoheritage.org/geoheritage_sites/the-okavango-delta/

2025 Okavango Delta Flood Levels. July 10, 2025 - (*Brave Africa Safari Website*).
<https://braveafrica.com/author/braveafrica/>

