

The 2022 Durban floods were the most catastrophic yet recorded in KwaZulu-Natal, says study

April 11 2023



The floods that impacted Durban in April 2022 were the most catastrophic yet, recorded in KwaZulu-Natal. Credit: Chante Shatz.

The disastrous flood that hit Durban in April 2022 was the most

catastrophic natural disaster yet recorded in KwaZulu-Natal (KZN) in collective terms of lives lost, homes and infrastructure damaged or destroyed and economic impact.

This is according to a new study by researchers from the University of the Witwatersrand in Johannesburg, South Africa, and the University of Brighton, UK, published in the *South African Geographical Journal*.

Professor Stefan Grab from Wits University and his colleague, Professor David Nash constructed a geographical history of flooding disasters in KZN by sifting through thousands of archived articles held in old newspapers, colonial and government records, early missionary records, and meteorological records which became available from the 1850s onwards.

They define extreme flooding events, where major rivers were overflowing their banks, together with one or more significant consequences, such as the loss of human life, livestock, [agricultural fields](#) and crops, and infrastructure such as buildings, roads and bridges.

The study, which reconstructed the history of floods in KZN since the 1840s, confirmed a widely-held—yet anecdotal view—that the April 2022 floods were likely the most catastrophic natural disaster yet recorded in KZN and that flooding events have doubled over the last century or more.

"Right after the floods, many commentators like the media, some scientists and others were quick to report that the floods were the most severe ever recorded. Our aim was to place the floods into perspective and see if this and other statements related to the disaster were factually correct by building a historic geographic account of past floods and associated [extreme rainfall events](#) for the province of KZN and particularly the greater Durban region," says Grab, lead author of the

study.

The scientists found that while the floods were indeed the most catastrophic in terms of lives lost, infrastructure damaged, and economical loss, the flood was not actually the biggest in terms of the area affected, homes destroyed, or the amount of rainfall that fell collectively over a few days.

"When you look at a natural disaster you need to look at it in context. Whether the April 2022 floods were the 'worst in living memory' is debatable, as a flooding event in September 1987 affected a larger geographic area of KZN and destroyed more homes than the 2022 event," says Grab. Similarly, a catastrophic flooding event in Durban, 1856—also in April—produced a greater quantity of rainfall over a three-day period than last year's floods.

In April 2022, the KZN [coastal zone](#), including the greater Durban area and South Coast, received more than 300mm of rain in 24 hours. This led to calamitous flooding, with 459 people losing their lives and 88 people still missing by the end of May 2022. Over 4000 homes were destroyed, 40 000 people left homeless, and 45 000 people were temporarily left unemployed. The cost of infrastructure and business losses amounted to an estimated US\$2 billion.

In April 1856, 303mm of rain fell in Durban over 24 hours, and a record of 691mm over a three-day period from April 14 to 16. During these historic floods, an unknown number of people drowned, the entire central area of Durban was flooded, bridges were destroyed and roads were closed for several days, cutting off all communication with other parts of the country.

The floods extended inland to Howick and the Umgeni bridge was swept away. Over a 16km stretch of beach between the mouths of the Umgeni

and Umhlanga rivers, 200 drowned oxen were deposited.

"It is difficult to compare the two floods in terms of which was the most severe. We must recognize that back in 1856 Durban was only a town with a much smaller population and economic infrastructure to that of today, and thus the percentage of individuals impacted or percentage economic loss may well have been greater back in 1856. In addition, coping mechanisms and 'outside' support would have been far more restricted during the 19th century," says Grab.

It is highly likely that recent anthropogenically-induced global climate warming has contributed to trends of increased flooding as we have demonstrated here, and this trend is likely to continue so in the foreseeable future. However, it is also important to recognize that catastrophic climate events such as severe floods are not temporally restricted to a 'warmer world' as the 1856 floods happened during a much colder climatic period.

"With regards flood disasters—history is repeating itself. We need to prepare for bigger rainfall events in our cities, and that doesn't just apply to Durban, it applies to all South African cities and towns. We must get our infrastructure, especially drainage systems, in order. It is urgent that we better prepare ourselves for the [heavy rainfall](#) and [flood](#) events that are guaranteed to come in times ahead," says Grab.

More information: S.W. Grab et al, A new flood chronology for KwaZulu-Natal (1836–2022): the April 2022 Durban floods in historical context, *South African Geographical Journal* (2023). [DOI: 10.1080/03736245.2023.2193758](https://doi.org/10.1080/03736245.2023.2193758)

Provided by Wits University

Citation: The 2022 Durban floods were the most catastrophic yet recorded in KwaZulu-Natal, says study (2023, April 11) retrieved 19 June 2024 from <https://phys.org/news/2023-04-durban-catastrophic-kwazulu-natal.html>

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