

Monthly Drought Bulletin

January 2023

I. Overview

Rainfall received during January 2024 was below-normal to near-normal over large parts of the country except for large parts of KwaZulu Natal, selected western parts of the North West, central Limpopo, northern Gauteng, and northeastern parts of the Eastern Cape where above-normal rainfall was received. Somewhat dry to moderately dry conditions, with severely dry conditions in some small places, were experienced in large parts of the Northern Cape, the Western and western parts of the Eastern Cape, central Free-State, small, isolated areas of the North West, southern Gauteng, North eastern Mpumalanga, and south eastern Limpopo.

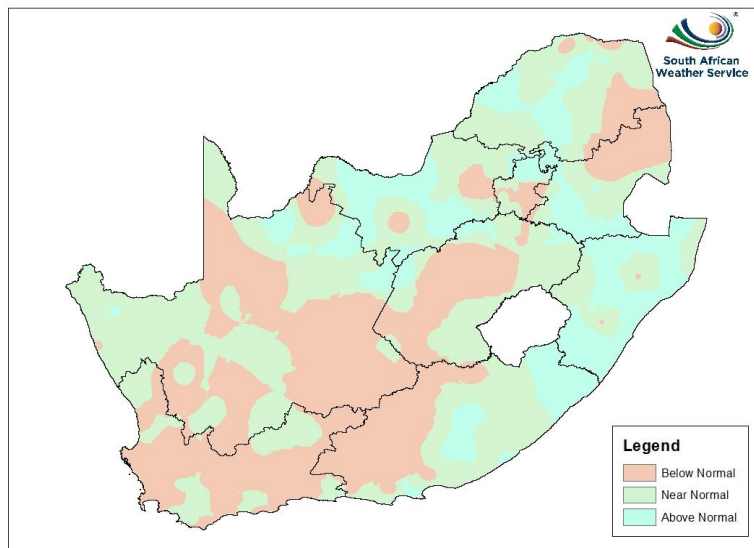
During the 3-month period from November 2023 to January 2024, Below-normal to near-normal rainfall was mainly received in large parts of the country. Above-normal rainfall was mainly received over KwaZulu-Natal, eastern parts of the Eastern Cape, southern parts of the Free State, northeastern parts of Limpopo, northern parts of Gauteng as well as in small area in the northeastern parts of Northern cape. Somewhat dry to moderate dry, with extremely dry conditions in small, isolated areas, were experienced in the Western and Northern Cape, western parts of the Eastern Cape, Gauteng, central Free State as well as adjacent areas of the North West and western parts of the Limpopo Province.

During the 6-month period from August 2023 to January 2024, somewhat dry conditions, moderately dry to severely dry conditions in small areas, were experienced mainly in the Northern Cape, North West, northern parts of the Free State, far western parts of the Eastern Cape as well as northern parts of the Western Cape.

The 12- and 24-month SPI maps indicate areas where prolonged droughts exist, in other words, where below-normal rainfall occurred over one year or longer. On the 12-month SPI map, somewhat dry conditions are noticeable in central Free State, Gauteng, western Mpumalanga, eastern parts of North West, western Limpopo Province while the Northern Cape and northern parts of the Eastern Cape experienced moderately dry to extremely dry conditions. On the 24-month SPI map, somewhat dry conditions are mostly noticeable over the Northern Cape, western parts of the Free State, northern parts of the Eastern Cape as well as the far western parts of North West.

1. Rainfall assessment (1- and 3-monthly maps)

Assessment of Rainfall for January 2024



Assessment of Rainfall for November 2023 to January 2024

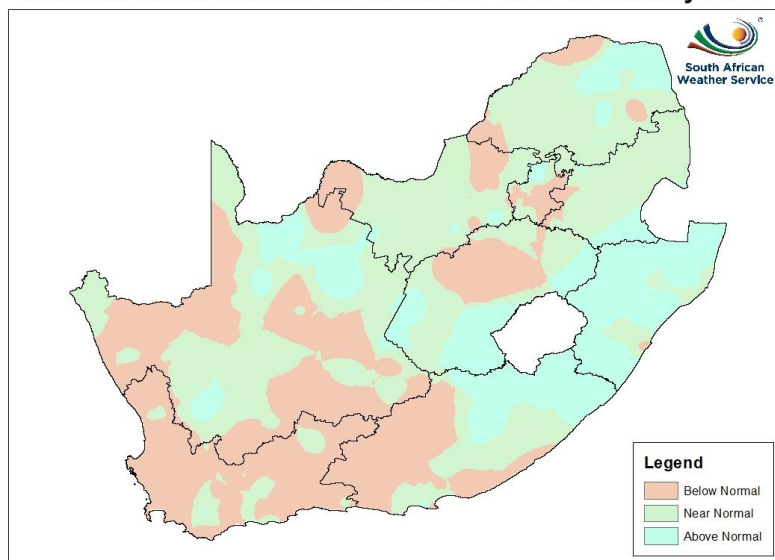


Figure 1: Assessment of rainfall maps for 1-month (January 2024; top) and for 3-month (November 2023 to January 2024; bottom)

3. Indications of Drought

3.1. Standardized Precipitation Index (SPI)

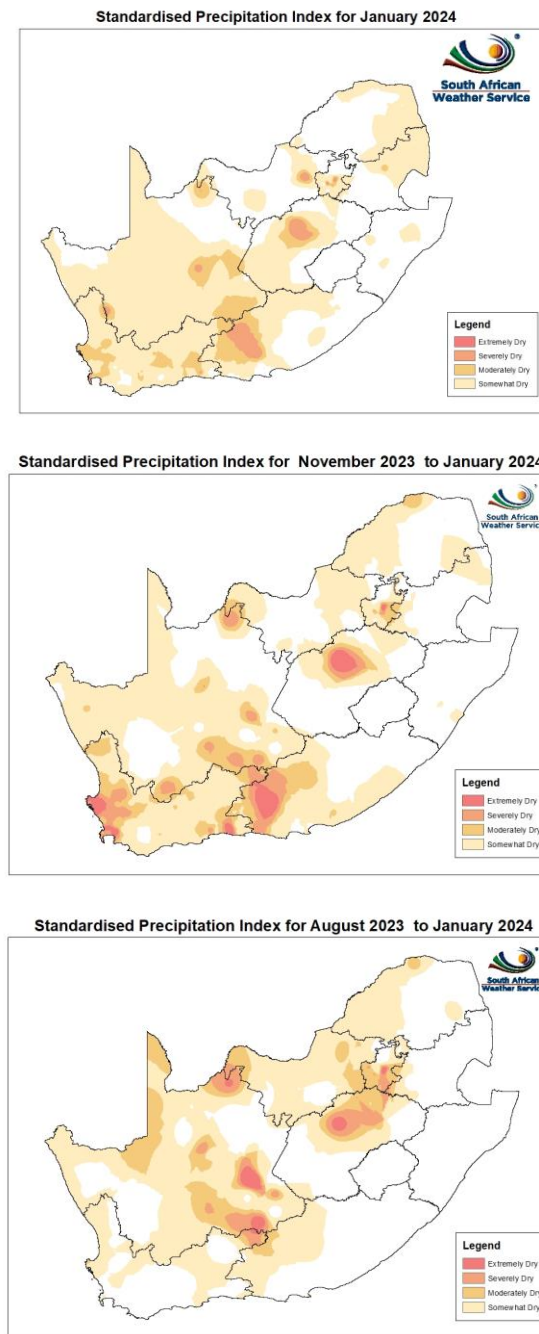
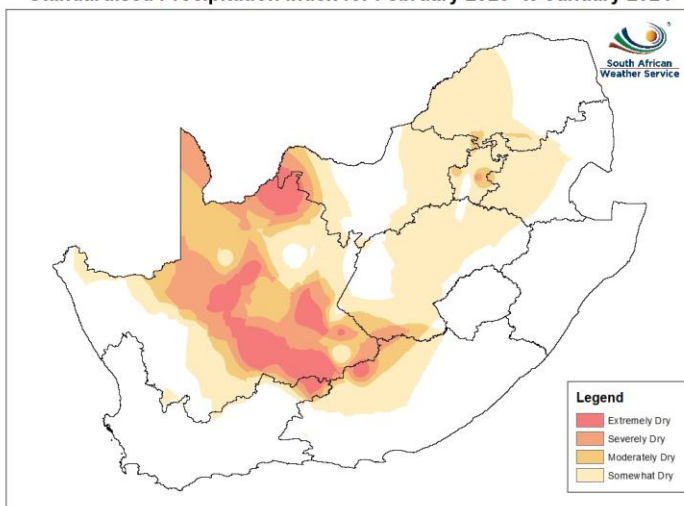


Figure 2: Short to medium-term SPI Maps for 1-month (January 2023; top), 3-month (November 2023 to January 2024; middle) and 6-month (August 2023 to January 2024; bottom)

Standardised Precipitation Index for February 2023 to January 2024



Standardised Precipitation Index for February 2022 to January 2024

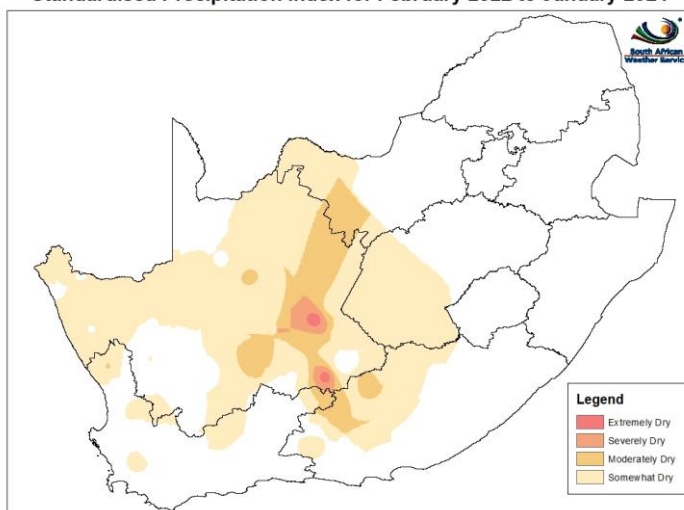


Figure 3: Long-term 12-month SPI map (February 2023 to January 2024; top) and 24-month SPI map (February 2022 to January 2024; bottom).

3.2 Vegetation Condition Index (VCI) and Temperature Condition Index (TCI)

The use of VCI and TCI help to monitor the severity of drought by comparing the current vegetation state with the same period the previous year. Low and high values indicate bad and good vegetation state conditions respectively.

Figure 4 shows the state of vegetation in South Africa. The Northern, Eastern and Western Cape are experiencing stressed vegetation conditions compared to the same period the previous year. The rest of the country is showing improved vegetation conditions compared to the same period the previous year.

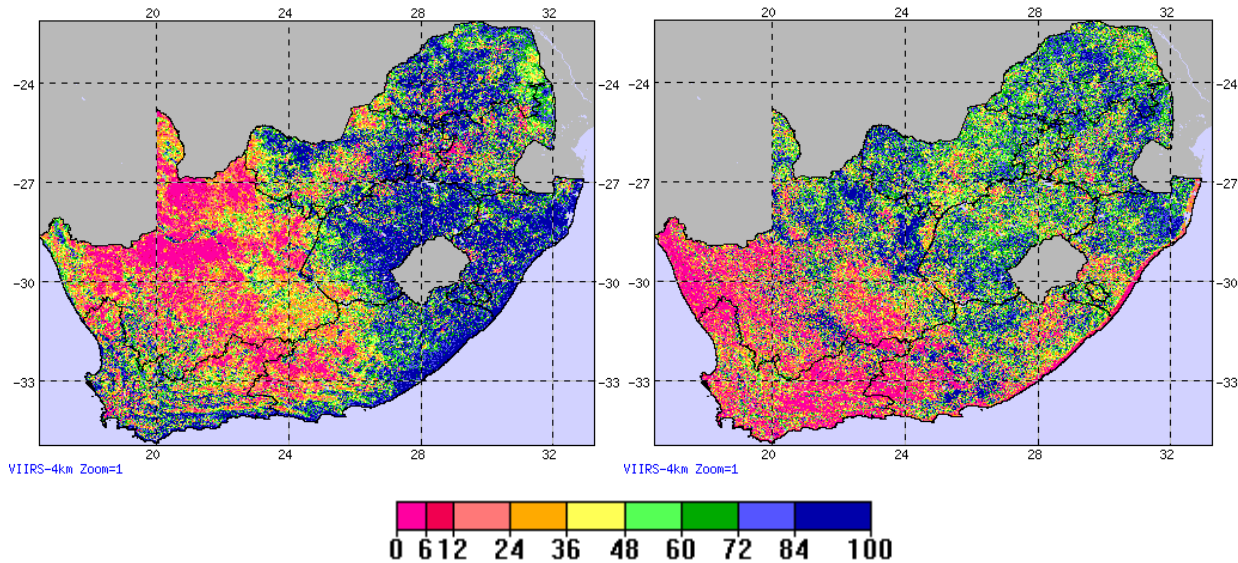


Figure 4: VCI (left) and TCI (right) in the week of the 5th of February 2023

4. Drought stricken regions

4.1 SPI and SPEI

Based on the SPI maps shown in Figure 3, dry conditions persist in the Northern and Eastern Cape. Figure 5 presents 12- and 24- months SPI at Richmond, representative of the central Karoo region of the Northern Cape. This region is experiencing extremely dry conditions. Figure 6 presents 12- and 24- months SPI at Middelburg, representative of the western parts of the Eastern Cape. This region continues to experience somewhat dry to severely dry conditions.

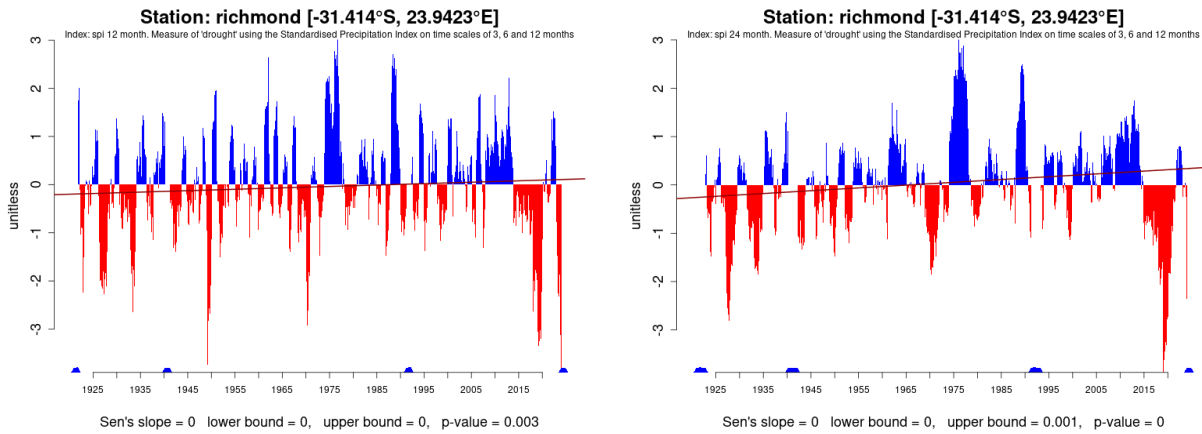


Figure 5: Time series plots for Richmond weather station for 12- and 24-month SPI.

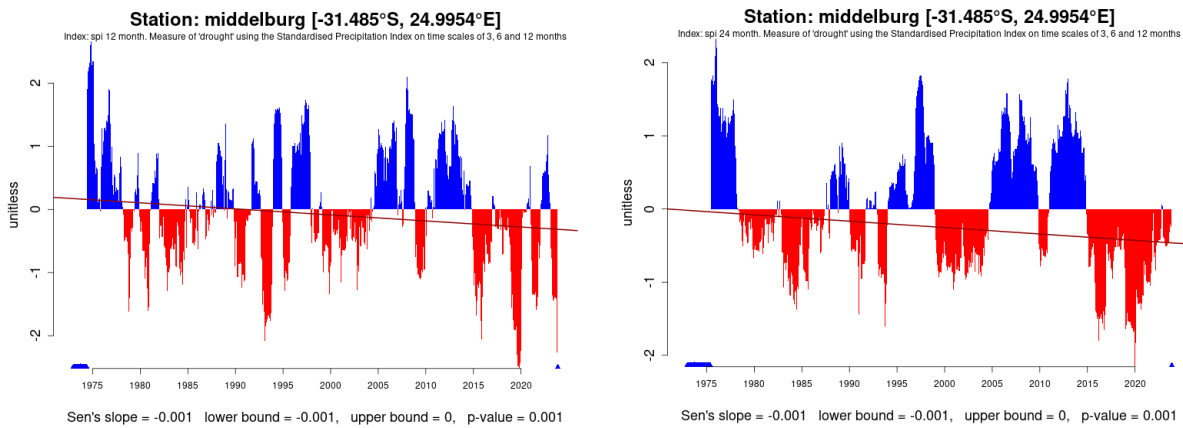


Figure 6: Time series plots for Middelburg weather station for 12- and 24-month SPI.

5. Dam levels

The table below shows the average dam level per province for the week of 5th of February 2024 compared to the same period the previous year. The Western and Eastern Cape have shown an increase of 19% and 8.3%, respectively while the other provinces show a decrease.

Table: Provincial Dam levels in the week of the 5th of February 2024 and for the same period in 2023. (Source: DWS).

Provinces	% Of Full Capacity	
	Last Year	This Week
	2023/02/05	2024/02/05
Eastern Cape	76.8	85.1
Free State	99.8	93.5
Gauteng	100.1	87.3
Kwazulu-Natal	92.4	88.7
Limpopo	86.7	85.7
Mpumalanga	97.9	97.8
Northern Cape	96.8	83.1
Northwest	84	79.1
Western Cape	52.7	71.7

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