

Monthly Drought Bulletin

May 2024

I. Overview

Rainfall received during May 2024 was below-normal to near-normal over large parts of the country except over far northeastern parts of KwaZulu-Natal, the northwestern parts the Limpopo Province, and the central coastal areas of the Eastern Cape, where above-normal rainfall was received. Somewhat dry conditions were dominant over the country, with moderate to severely dry conditions in isolated areas of the Western Cape, extending the adjacent areas of the Eastern and Northern Cape. Moderately dry conditions were also experienced in northeastern parts of the Eastern Cape, extending to adjacent areas of the Free State and KwaZulu-Natal.

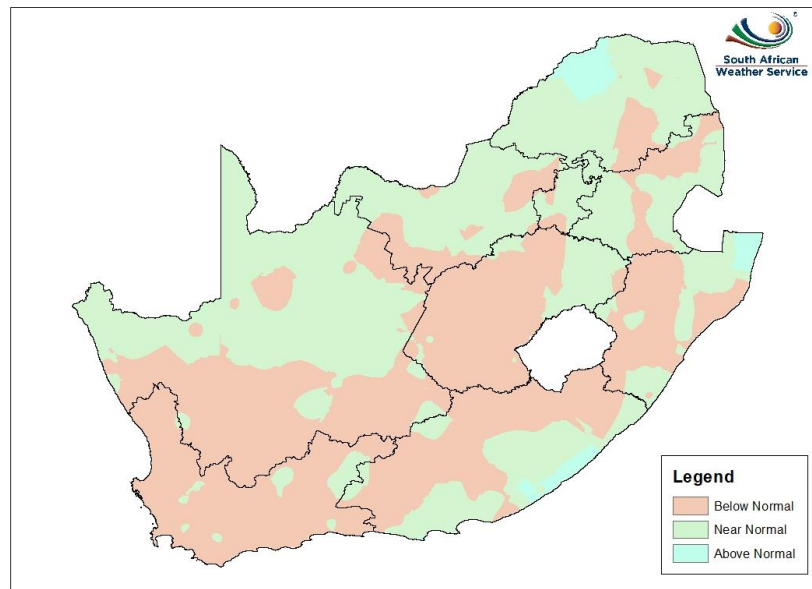
During the 3-month period from March to May 2024, below-normal to near-normal rainfall was received in isolated areas across the country. Above-normal rainfall was received over large parts of the Western Cape extending to adjacent areas of the Northern and Eastern Cape as well as in isolated areas across the country except in Gauteng. Moderate to severely dry conditions, with extremely dry conditions in isolated areas, were experienced in parts of the Northern Cape extending to parts of the Western Cape, the Free State and North-West. The remainder of the country experienced somewhat dry conditions in isolated areas.

During the 6-month period from December 2023 to May 2024, moderate to severely dry conditions were experienced isolated areas of the Northern Cape, extending to adjacent areas of the Western and Eastern Cape, as well as parts of the Free State and North-West. However, extremely dry conditions were also experienced in central parts of the Free State and southern parts of the Northern Cape. The remainder of the country experienced somewhat dry conditions in isolated areas.

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, severely dry to extremely dry conditions are most noticeable in central to southeastern parts of the Northern Cape and northern parts of the Free State. On the 24-month SPI map, severely dry to extremely dry conditions continue to dominate the Northern Cape, spreading to almost the entire eastern half of the province.

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

Assessment of Rainfall for May 2024



Assessment of Rainfall for March to May 2024

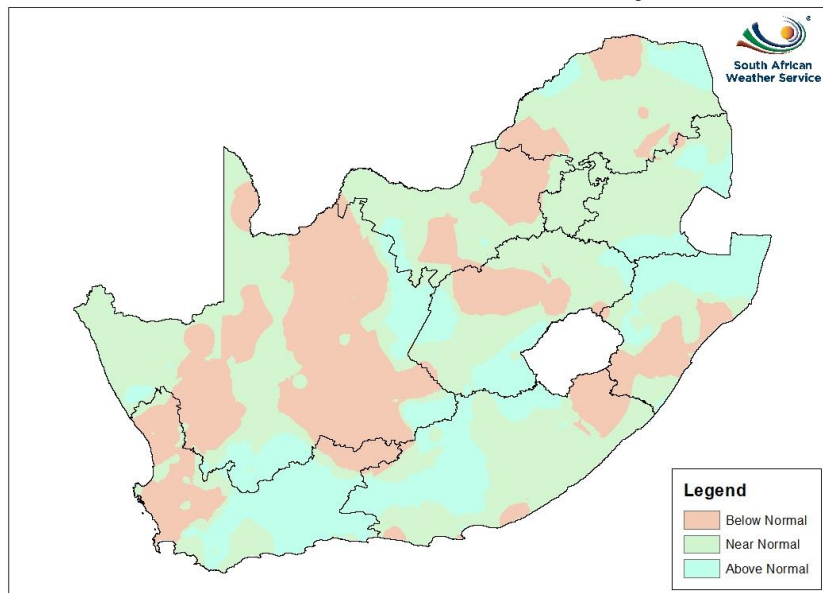


Figure 1: Assessment of rainfall maps for 1-month (May 2024; top) and for 3-month (March to May 2024; bottom)

3. Indications of Drought

3.1. Standardized Precipitation Index (SPI)

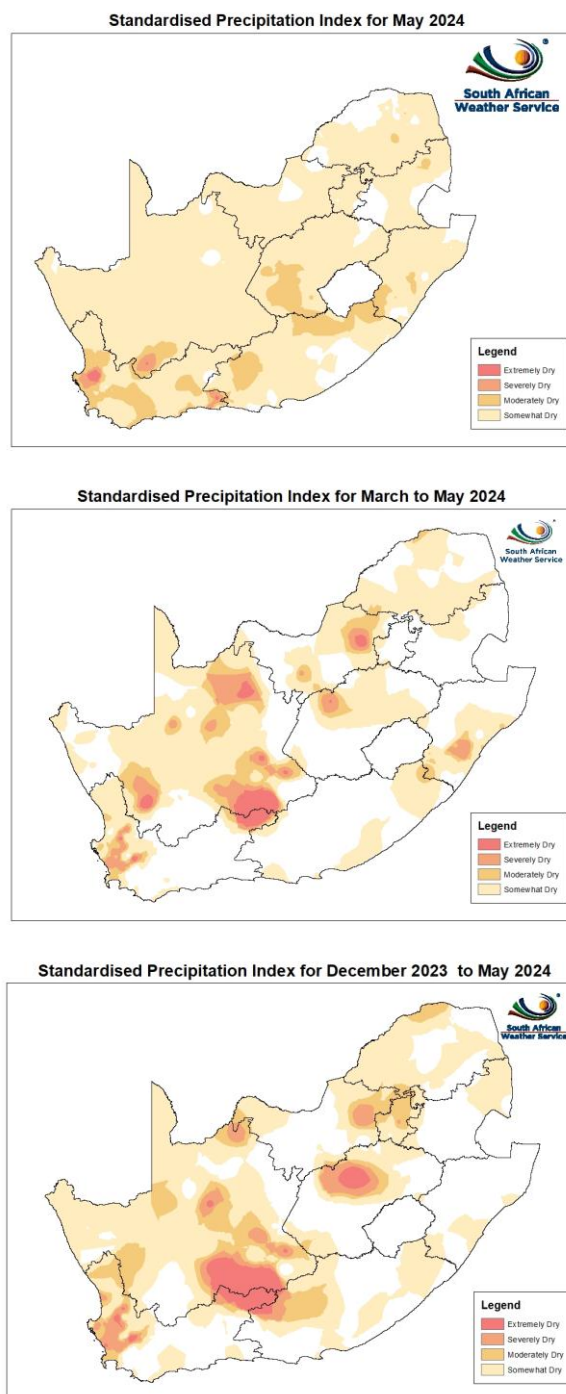
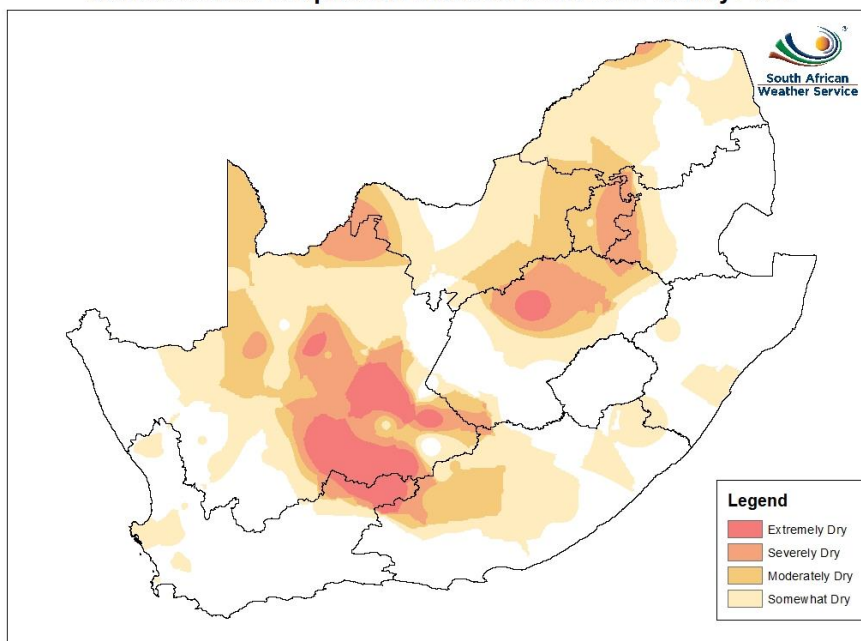


Figure 2: Short to medium-term SPI Maps for 1-month (May 2024; top), 3-month (March to May 2024; middle) and 6-month (December 2023 to May 2024; bottom)

Standardised Precipitation Index for June 2023 to May 2024



Standardised Precipitation Index for June 2022 to May 2024

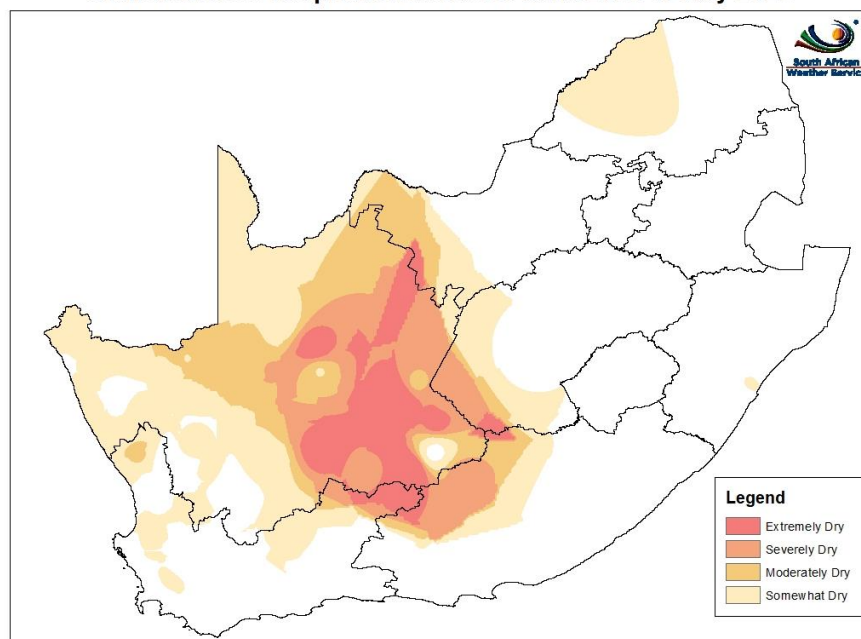


Figure 3: Long-term 12-month SPI map (June 2023 to May 2024; top) and 24-month SPI map (June 2022 to May 2024; bottom).

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 Cape, Limpopo, the Free State and western parts of the 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.

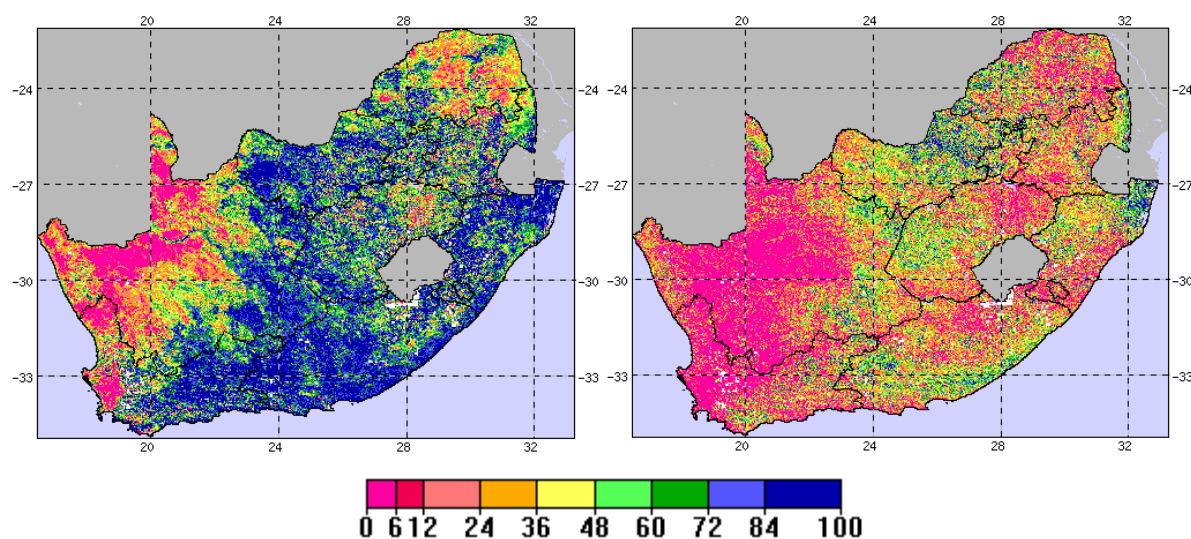


Figure 4: VCI (left) and TCI (right) in the week of the 10th of June 2024

4. Drought stricken regions

4.1 SPI and SPEI

Based on the SPI maps shown in Figure 3, dry conditions persist in the Northern Cape, Free State and Gauteng. Figure 5 presents 12- and 24- months SPI at Strydenburg, representative of the eastern region of the Northern Cape. Figure 6 presents 12- and 24- months SPI at Carnarvon, representative of the southern parts of Northern Cape. Extremely dry conditions persist in the eastern and southern parts of Northern Cape. Figure 7 presents 12- and 24- months SPI and SPEI at Johannesburg, representative of Gauteng. This region is experiencing somewhat dry to moderately dry conditions. Figure 8 presents 12- and 24- months SPI and SPEI at Welkom, representative of Northern Free State. This region is experiencing moderately dry to extremely dry conditions.

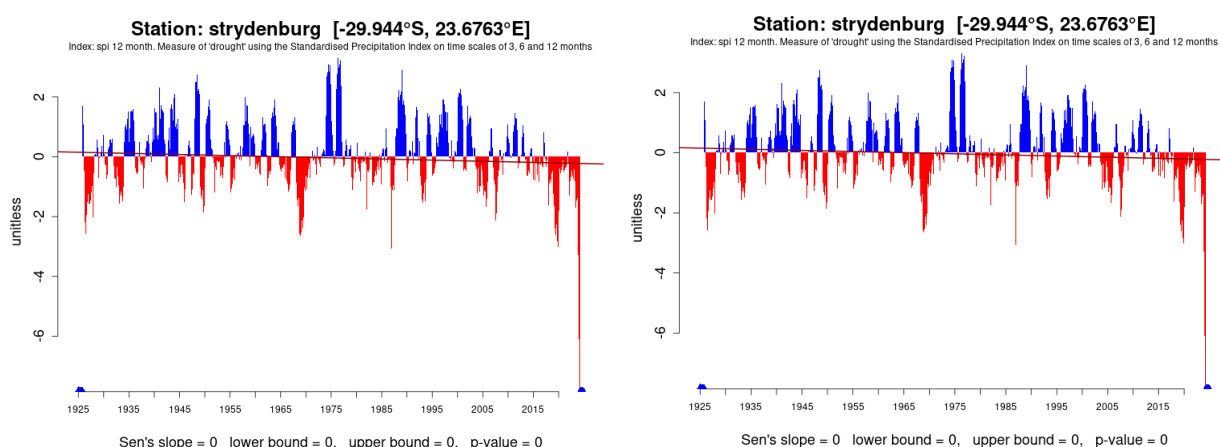


Figure 5: Time series plots for Strydenburg weather station for 12- and 24-month SPI.

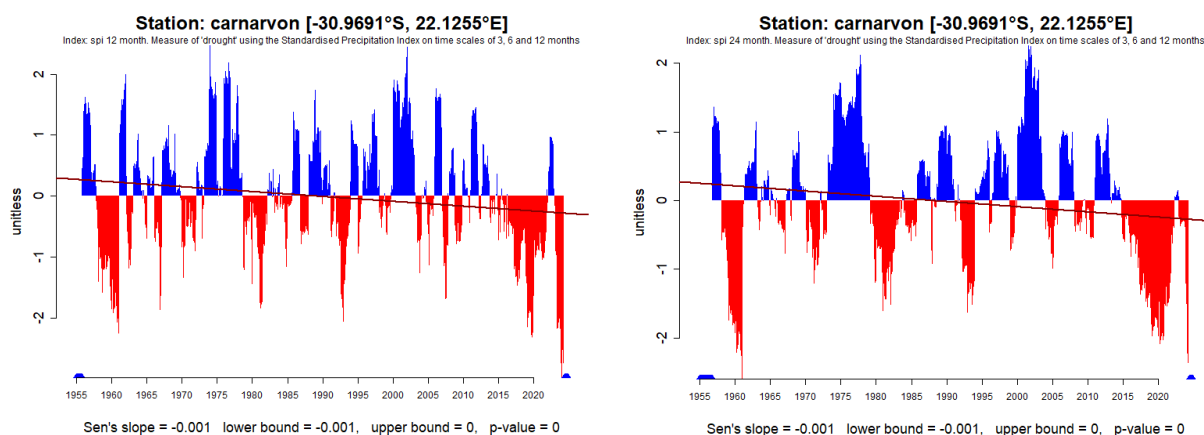


Figure 6: Time series plots for Carnarvon weather station for 12- and 24-month SPI.

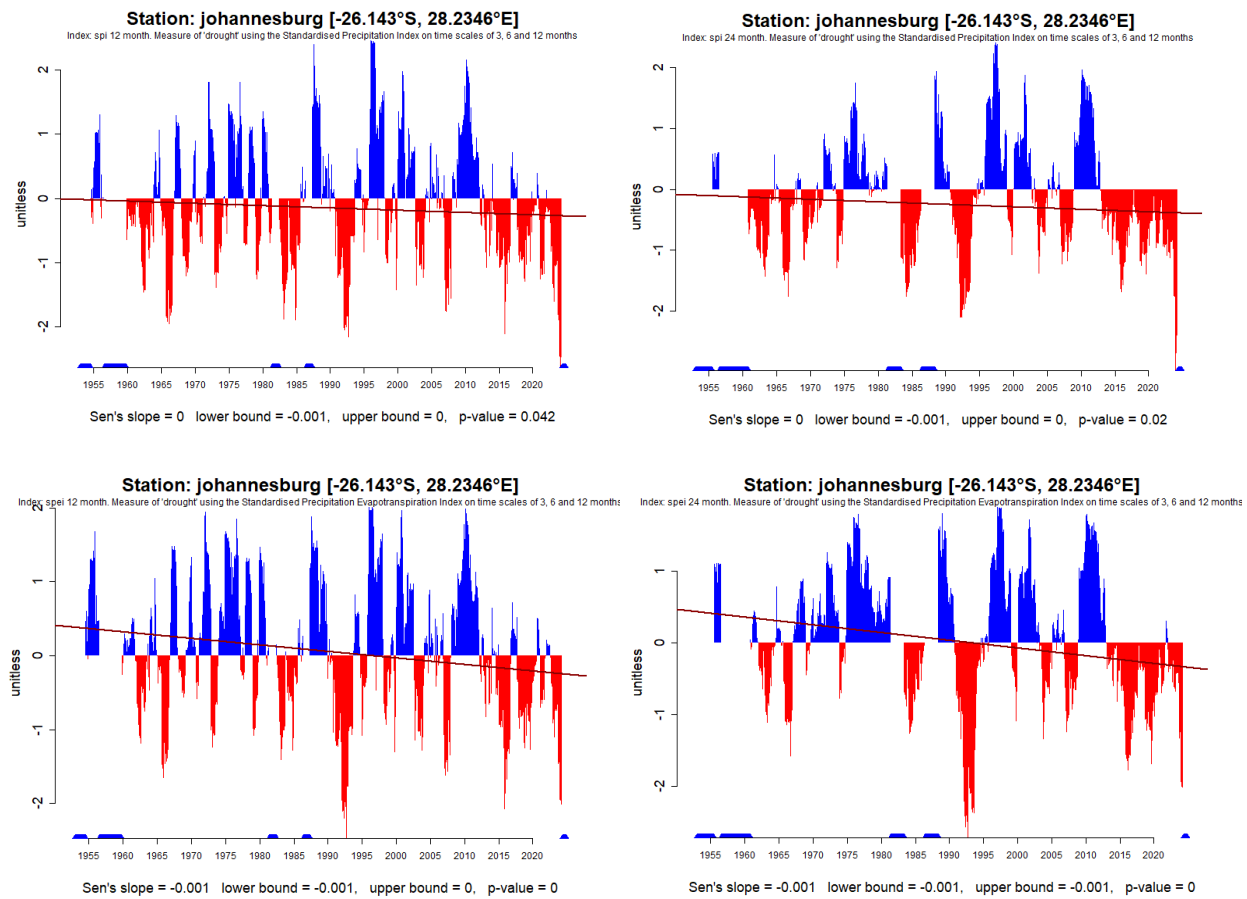


Figure 7: Time series plots for Johannesburg weather station for 12- and 24-month SPI (top) and SPEI (bottom).

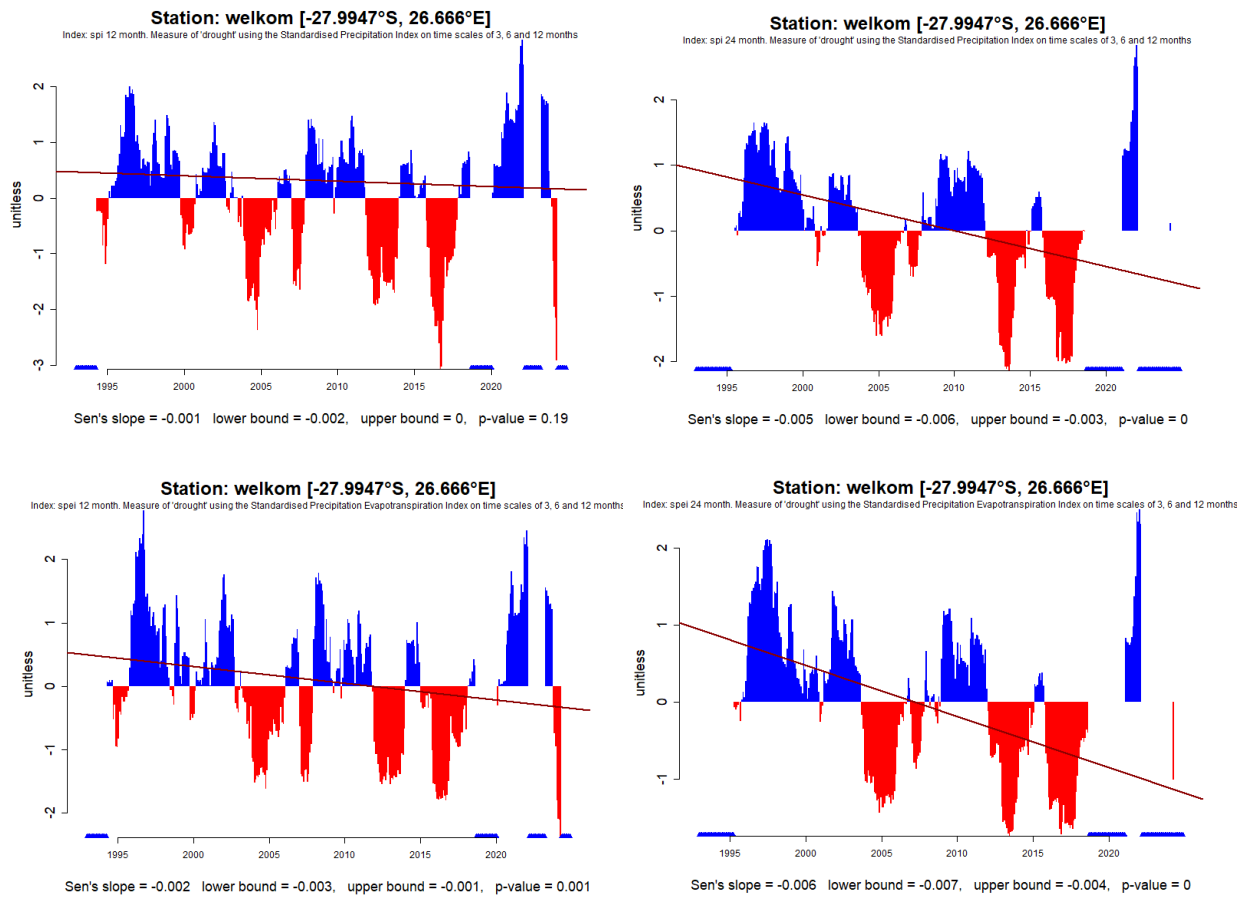


Figure 8: Time series plots for Welkom weather station for 12- and 24-month SPI (top) and SPEI (bottom).

5. Dam levels

The table below shows the average dam level per province for the week of 10th of June 2024 compared to the same period the previous year. The Eastern Cape and the Western Cape show an increase of 5.3% and 0.9% respectively, while the other seven provinces have shown a decrease.

Table: Provincial Dam levels in the week of the 10th of June 2024 and for the same period in 2023.
 (Source: DWS).

Provinces	% Of Full Capacity	
	Last Year	This Week
	2023/06/10	2024/06/10
Eastern Cape	78.7	84
Free State	100.4	85.1
Gauteng	99.9	88
Kwazulu-Natal	90.8	90.7
Limpopo	88.6	82.3
Mpumalanga	98.6	94.8
Northern Cape	94	80.7
Northwest	87.8	74.9
Western Cape	66.1	67

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