

Monthly Drought Bulletin

November 2024

I. Overview

Rainfall received during November 2024 was near-normal to above-normal across most of the country. However, below-normal rainfall occurred in the southern to central and the northern parts of the Northern Cape, and into the western parts and northern adjacent parts of the Western Cape as well as into the northwestern parts of the Eastern Cape. Furthermore, below-normal conditions could also be observed over Gauteng, extending to the far eastern parts of the North West and Western parts of Mpumalanga, the northeastern parts of KwaZulu Natal as well as the far north adjacent parts of Limpopo. In addition, somewhat dry conditions, with small isolated moderately dry conditions in places, were mainly experienced in large parts of the Northern Cape, the Western Cape, Gauteng, Mpumalanga, North West, northern adjacent areas of Limpopo as well as the northeastern parts of KwaZulu Natal.

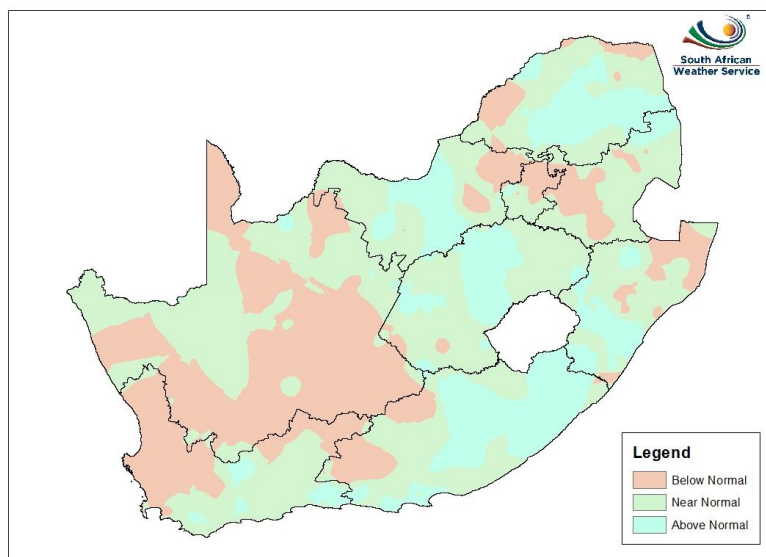
During the 3-month period from September to November 2024, near-normal to above normal rainfall was mainly received over KwaZulu-Natal, the Free State extending to central and northern parts of the North-West, central Limpopo and Mpumalanga, the Eastern Cape into the Western Cape, extending to the western parts of the Northern Cape. Meanwhile, somewhat dry to moderately dry conditions with moderately dry to extremely dry conditions in small isolated places, were experienced over large parts of the Northern Cape extending to northern parts of the Western and Eastern Cape, and over Gauteng, Limpopo, Mpumalanga, and the eastern parts of the North West.

During the 6-month period from June to November 2024, somewhat dry conditions, with moderate dry conditions, and severely dry to extremely dry conditions in small and isolated areas, were experienced mainly over large parts of the Northern Cape into the northern parts of the Eastern Cape and of the Free State, the western parts of North-West. Furthermore, somewhat dry conditions can be observed over the north and eastern parts of the country, and that is over Gauteng, Mpumalanga and the Limpopo Province.

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. The 12-month SPI map highlights somewhat dry, with moderately dry to extremely dry conditions in other parts, are still noticeable over the south-central parts of South Africa, from the northern parts of the Eastern Cape into Northern Cape, North-West, Gauteng, the Limpopo, northern half of the Free State, as well as the eastern parts of Mpumalanga. The 24-month SPI map shows somewhat dry to moderately dry conditions, with severely dry to extremely dry conditions in other places continue to dominate the Northern Cape extending to the northern parts of the Eastern Cape, Free State, Gauteng, western half of Mpumalanga, Limpopo as well as the southern parts of North West. Substantial rainfall is still needed to alleviate dry conditions in these areas.

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

Assessment of Rainfall for November 2024



Assessment of Rainfall for September to November 2024

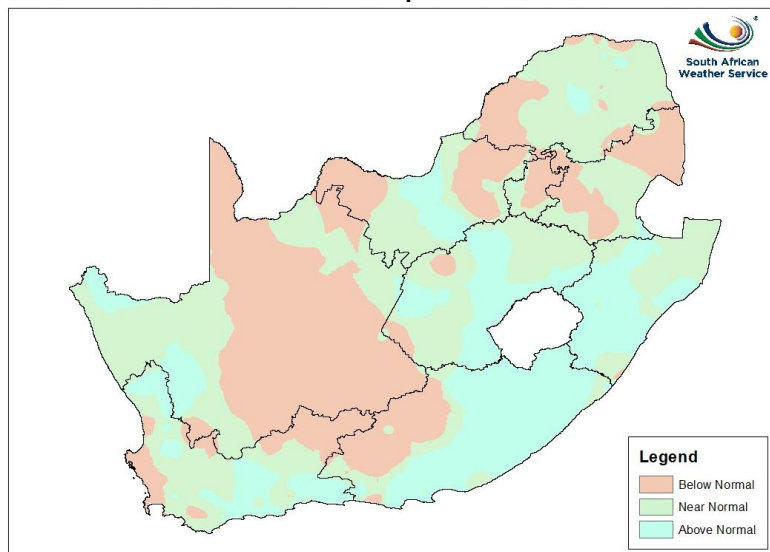


Figure 1: Assessment of rainfall maps for 1-month (November 2024; top) and for 3-month (September to November 2024; bottom)

3. Indications of Drought

3.1. Standardized Precipitation Index (SPI)

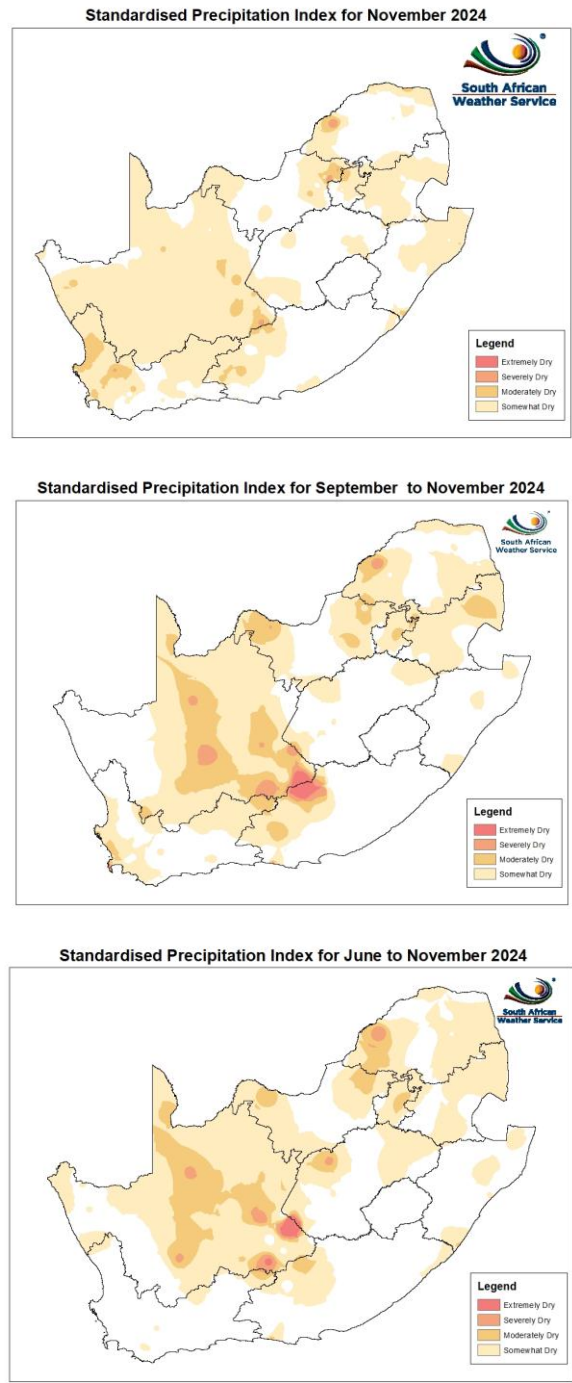
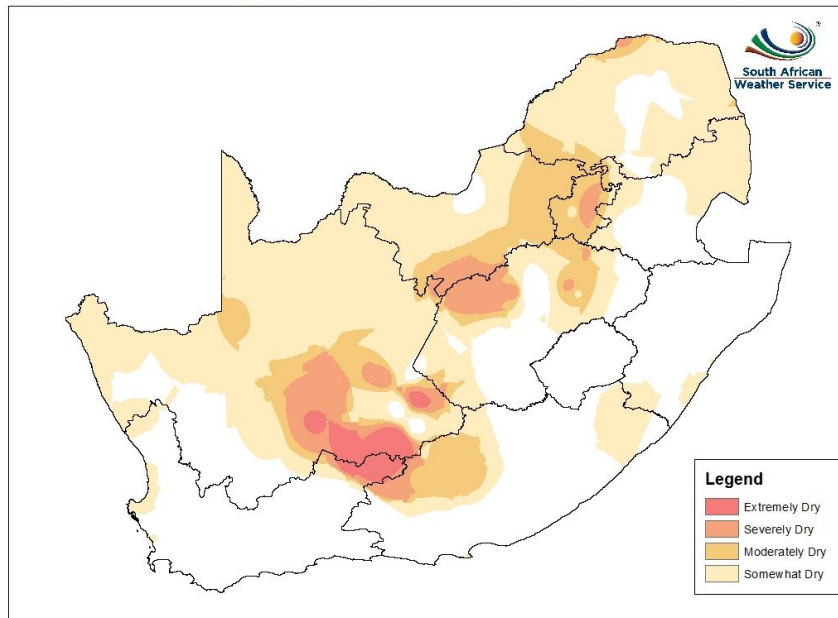


Figure 2: Short to medium-term SPI Maps for 1-month (November 2024; top), 3-month (September to November 2024; middle) and 6-month (June 2023 to November 2024; bottom)

Standardised Precipitation Index for December 2023 to November 2024



Standardised Precipitation Index for December 2022 to November 2024

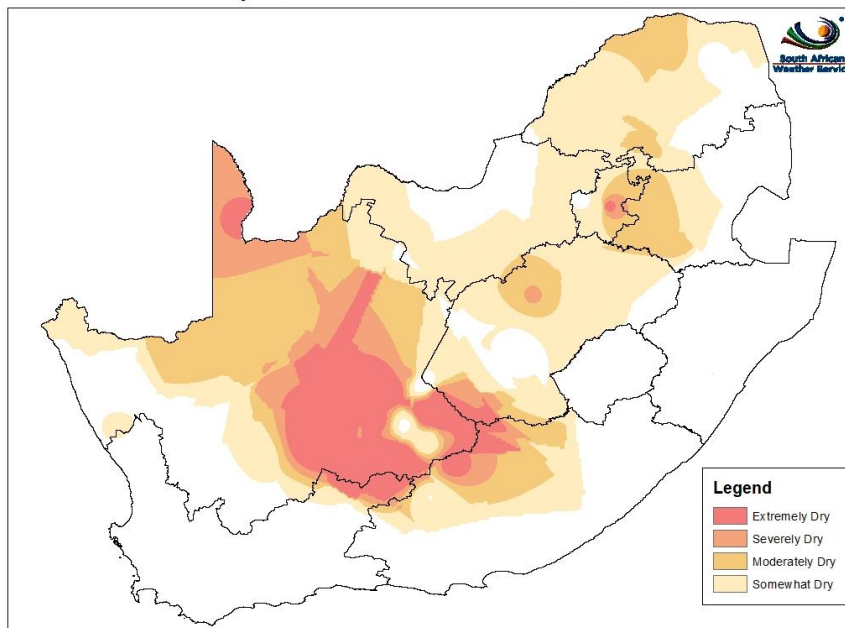


Figure 3: Long-term 12-month SPI map (December 2023 to November 2024; top) and 24-month SPI map (December 2022 to November 2024; bottom).

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 state of vegetation to that of the same period in the previous year. Low VCI and TCI values signify poor vegetation health, while high values indicate thriving conditions.

Figure 4 shows the state of vegetation across South Africa. Compared to the same period last year, the Northern Cape, Free State, North West, Gauteng, Mpumalanga and Limpopo province are experiencing stressed vegetation conditions, while the Eastern Cape, Western Cape and KwaZulu Natal show signs of improved vegetation health.

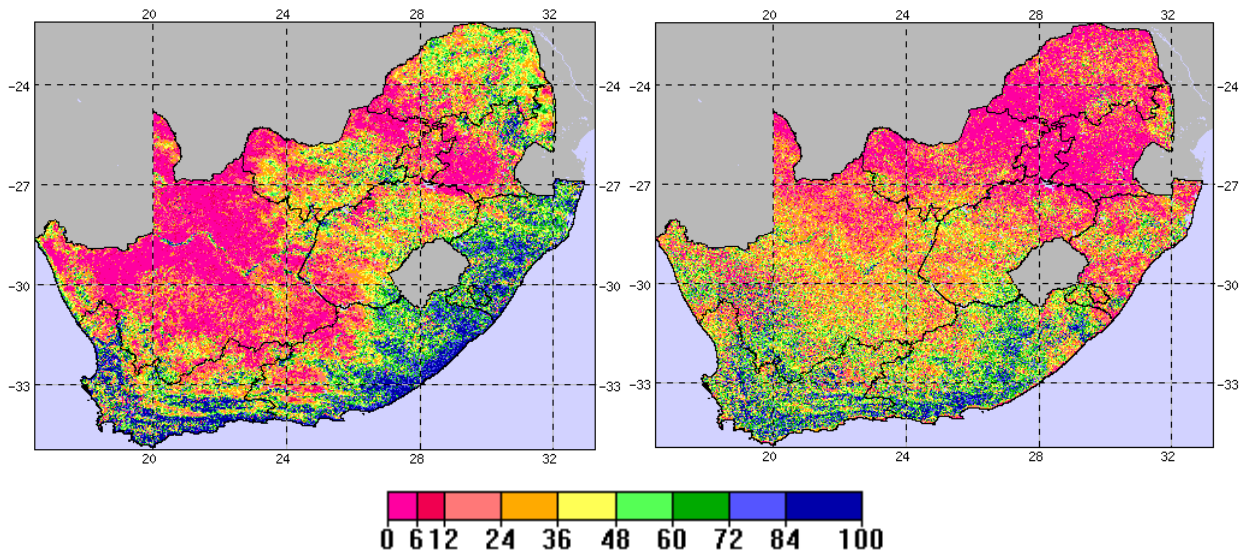


Figure 4: VCI (left) and TCI (right) in the week of the 9th of December 2024.

4. Drought stricken regions

4.1 SPI and SPEI

The SPI maps in Figure 3 show persistent dry conditions across Gauteng, Free State, and the Northern Cape. Figure 5 presents the SPI and SPEI for OR Tambo International Airport in Gauteng, which is currently experiencing from moderately dry to extremely dry. Figure 6 highlights extremely dry conditions in Welkom, Free State. In the eastern Northern Cape, Strydenburg (Figure 7) continues to experience extremely dry conditions, the same conditions are experienced in Richmond to the south (Figure 8). These prolonged drought conditions could significantly impact water resources and agricultural productivity in these regions.

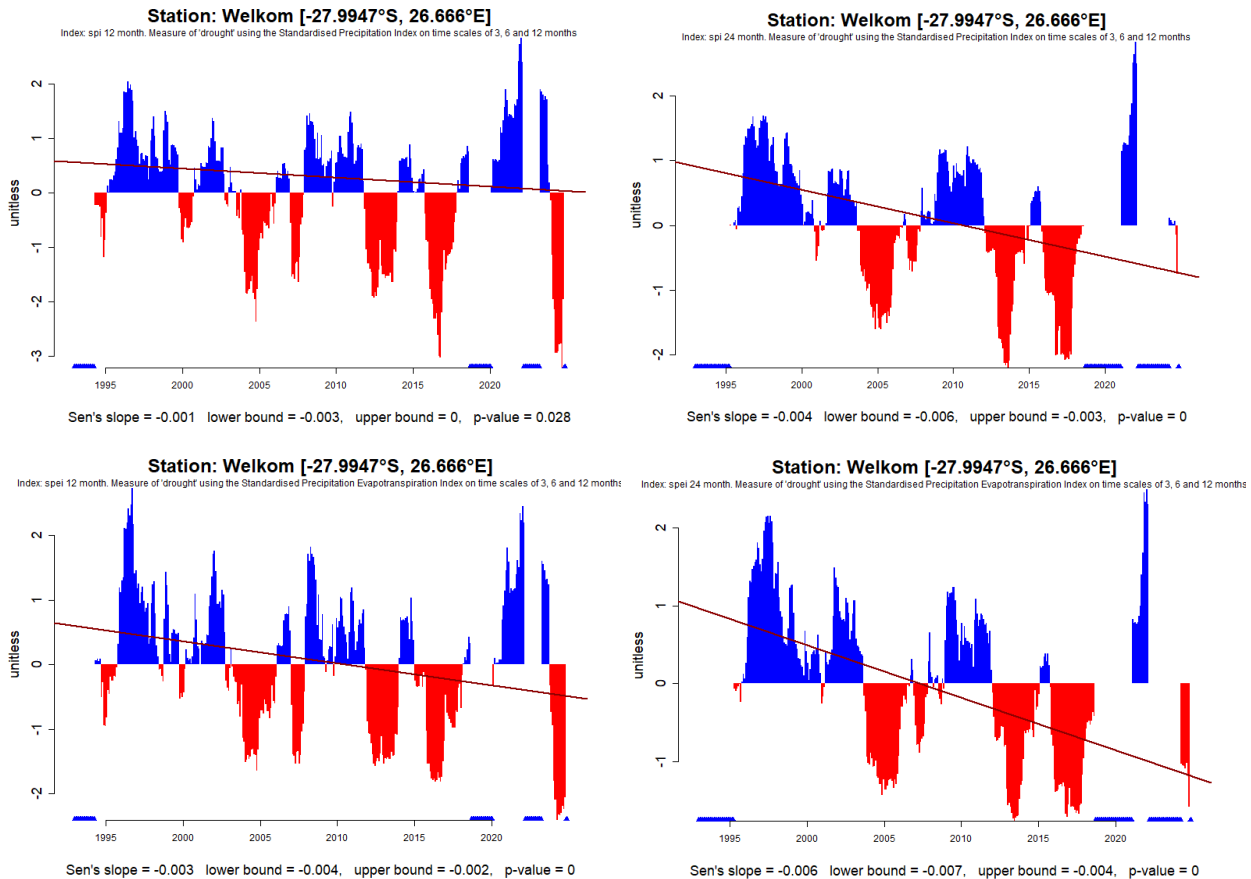


Figure 5: Time series plots for Welkom weather station for 12- and 24-month SPI (top) and SPEI (bottom).

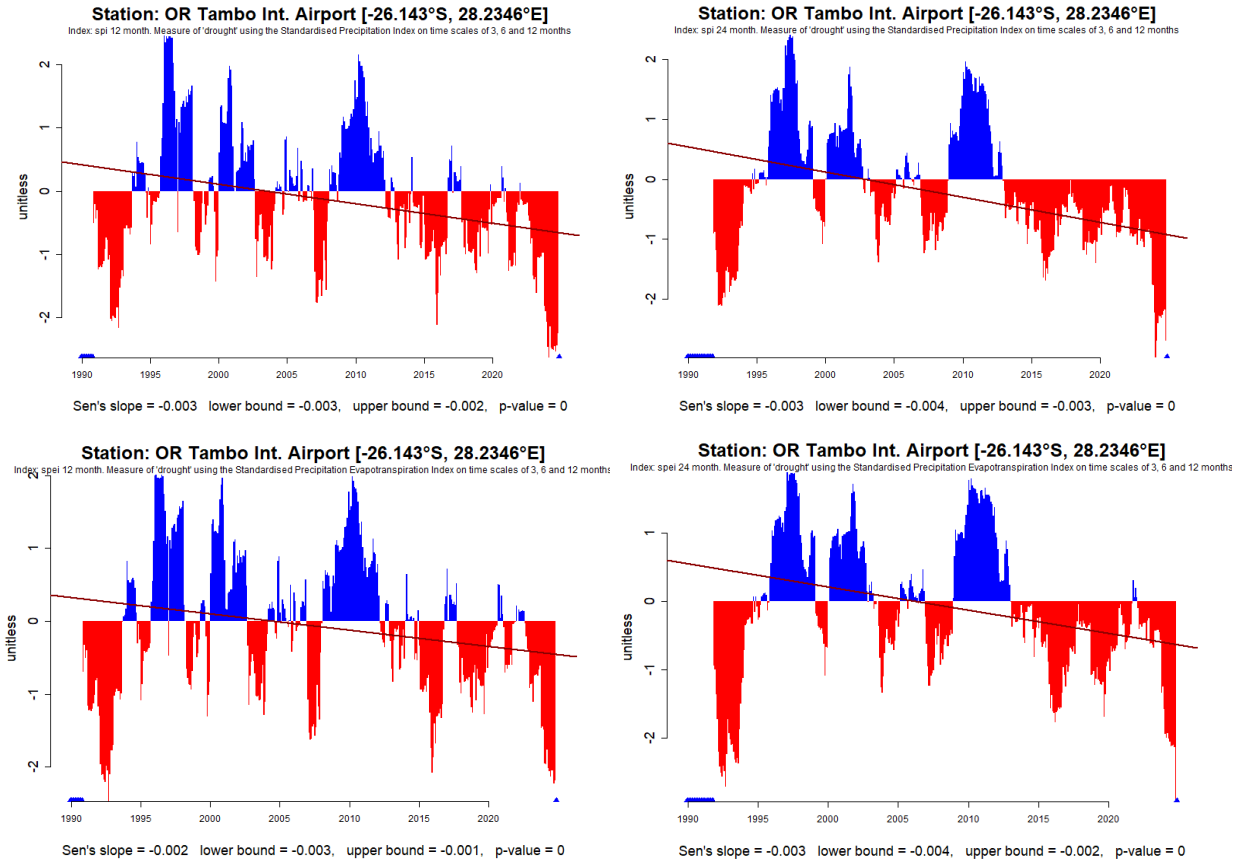


Figure 6: Time series plots for OR Tambo international airport weather station for 12- and 24-month SPI (top) and SPEI (bottom).

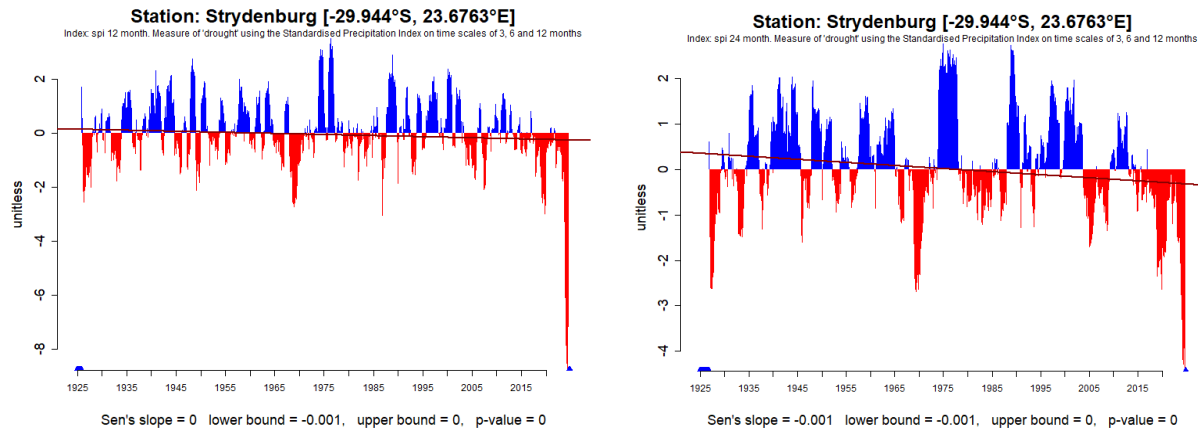


Figure 7: Time series plots for Strydenburg weather station for 12- and 24-month SPI.

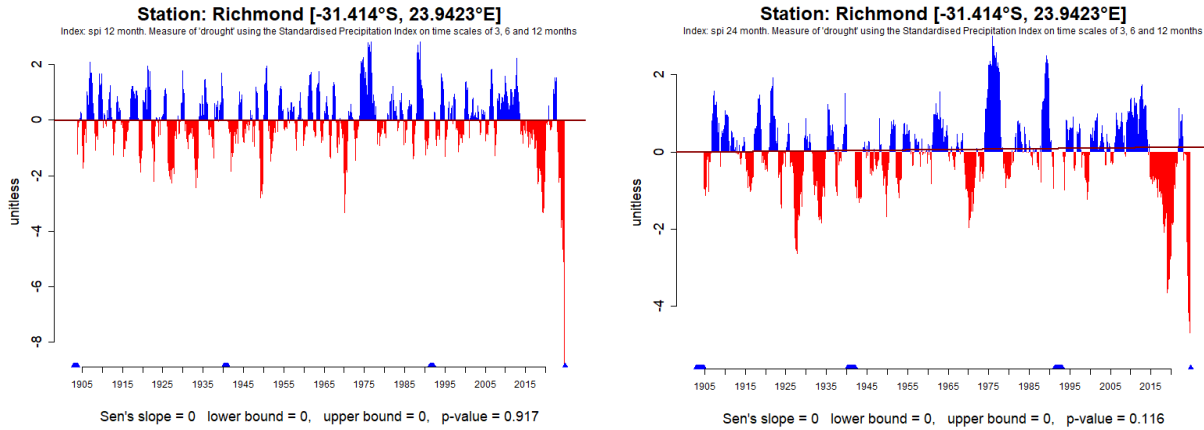


Figure 8: Time series plots for Richmond weather station for 12- and 24-month SPI.

5. Dam levels

The table below shows the average dam level per province for the week of the 9th of December 2024 compared to the same period last year. The Western Cape is notably the only province that is showing an increase (2.8%), whilst the other provinces are experiencing a decline in dam levels ranging from 0.6% to 22.3%.

Table: Provincial Dam levels in the week of the 9th of December 2024 and for the same period in 2023. (Source: DWS).

Provinces	% Of Full Capacity	
	Last Year	This Week
	2023/12/09	2024/12/09
Eastern Cape	84.6	84
Free State	85.3	71.9
Gauteng	91.9	84.5
Kwazulu-Natal	80.6	79.1
Limpopo	78.6	67.8
Mpumalanga	90.1	75.6
Northern Cape	80.7	71.8
Northwest	77.4	55.1
Western Cape	87.3	90.1

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