NDMC

SEASONAL HAZARD PROFILE

Winter 2026

Prepared by:

Directorate: Disaster Risk Assessment and Early Warning

June 2026

Drafter:

Mr Mark Van Staden

Acting Director: Disaster Risk Assessment and Early Warning

Date: 11 June 2026

Seasonal Profile noted and approved/……….

eliassithole

Dr Bongani Elias Sithole

Deputy Director-General (Head) NDMC

Date:13/06/2026

CONTENTS

LIST OF FIGURES

LIST OF GRAPHS

LIST OF TABLES

1. SUMMARY STATEMENT

The NDMC Seasonal Hazard Profile is designed to guide and inform disaster management stakeholders across all spheres of government by providing a medium-term outlook (three months) on potential hazards across South Africa.

Each profile aims to highlight, at a national scale, the spatial patterns associated with key hazards expected during the specified period. Profiles have been developed for South Africa’s most prevalent hazards, including fires, floods, droughts, windstorms, and snow. Partnerships with strategic institutions possessing specialised hazard and risk expertise have enabled the NDMC to produce a more scientifically informed and relevant national product.

As many hazards in South Africa are weather-related, the hazard profiles should be interpreted alongside the accompanying three-month seasonal weather forecasts provided by the South African Weather Service (SAWS). Weather conditions may significantly influence the occurrence and intensity of hazards. It should also be noted that the seasonal hazard profile is a static product and does not account for short-term weather variability.

The intended audience for the seasonal hazard profile includes disaster management practitioners and stakeholders at national, provincial, district, and municipal levels who are involved in medium-term planning and disaster operations.

The release of this product will be aligned with the South African seasonal calendar, with the following timeframes:

a) Early December for Summer (December, January, February)
b) Early March for Autumn (March, April, May)
c) Early June for Winter (June, July, August)
d) Early September for Spring (September, October, November)

Cautionary Note: *It is important to note that the product primarily illustrates a national view and should not be used to obtain what may be perceived to be "exact" parameter values at very specific localities. Often when spatial detail is presented on a map, values are derived by means of simulation models and often smoothing of local effects and dampening of outlier values occur. Values at a specific point should thus be viewed in relative rather than absolute terms.*

2. SEASONAL HAZARD PROFILE – WINTER 2026

The specific goals of the seasonal profiles are to:

(a) Provide insights into the spatial and temporal nature of hazards throughout South Africa
(b) Create awareness around potential and current conditions (situational awareness) to augment short –term early warning systems.
(c) Guide medium term operational and tactical planning to mitigate identified risk.
(d) Assist in identifying possible areas where disaster risk reduction (DRR) initiatives, aimed at minimizing risk, may be targeted.

2.1 Hazard Profiles

2.1.1 Fire

Fires are among the most destructive hazards in South Africa, resulting in loss of life and causing billions of rands in damage to agriculture, infrastructure, and natural resources. The occurrence of fires in the country follows a distinct seasonal pattern, with the summer fire season typically concentrated in the western parts of the country and gradually shifting toward the eastern provinces during winter and spring.

The indicative fire hazard profile for South Africa draws on the historical spatial distribution of fire observations, burn scars, fire danger ratings, veldfire ecology, and recorded fire-related fatalities. These datasets help to characterise the hazard by considering key components such as likelihood, frequency, predictability, and magnitude.

Following autumn, the winter fire risk profile shown in Figure 1 reveals a significant shift in fire hazard toward the eastern parts of South Africa.

High to medium-high fire hazard conditions (Brown to Orange categories) are present across a number of regions, notably in **Mpumalanga** (Gert Sibande, Ehlanzeni and Nkangala), the **Eastern Cape** (Joe Gqabi, Chris Hani and Alfred Nzo), **KwaZulu-Natal** (Harry Gwala, uMgungundlovu, uThukela, Amajuba, Zululand, Umzinyathi and King Cetshwayo), and **Gauteng** (City of Johannesburg Metropolitan Municipality, City of Tshwane Metropolitan Municipality, West Rand, City of Ekurhuleni Metropolitan Municipality and Sedibeng). Elevated fire hazard levels are also observed in smaller areas of the **North West** (Bojanala) and **Limpopo** (Sekhukhune).

According to forecasts issued by the South African Weather Service (Figure 9), there is a high likelihood of above-normal maximum temperatures across much of the country. These conditions, coupled with medium to high wind hazard levels (Figure 3) over the eastern regions of South Africa and the presence of abundant fire fuel loads (Figure 6), are likely to contribute to elevated seasonal fire danger and an increased risk of veld fires.

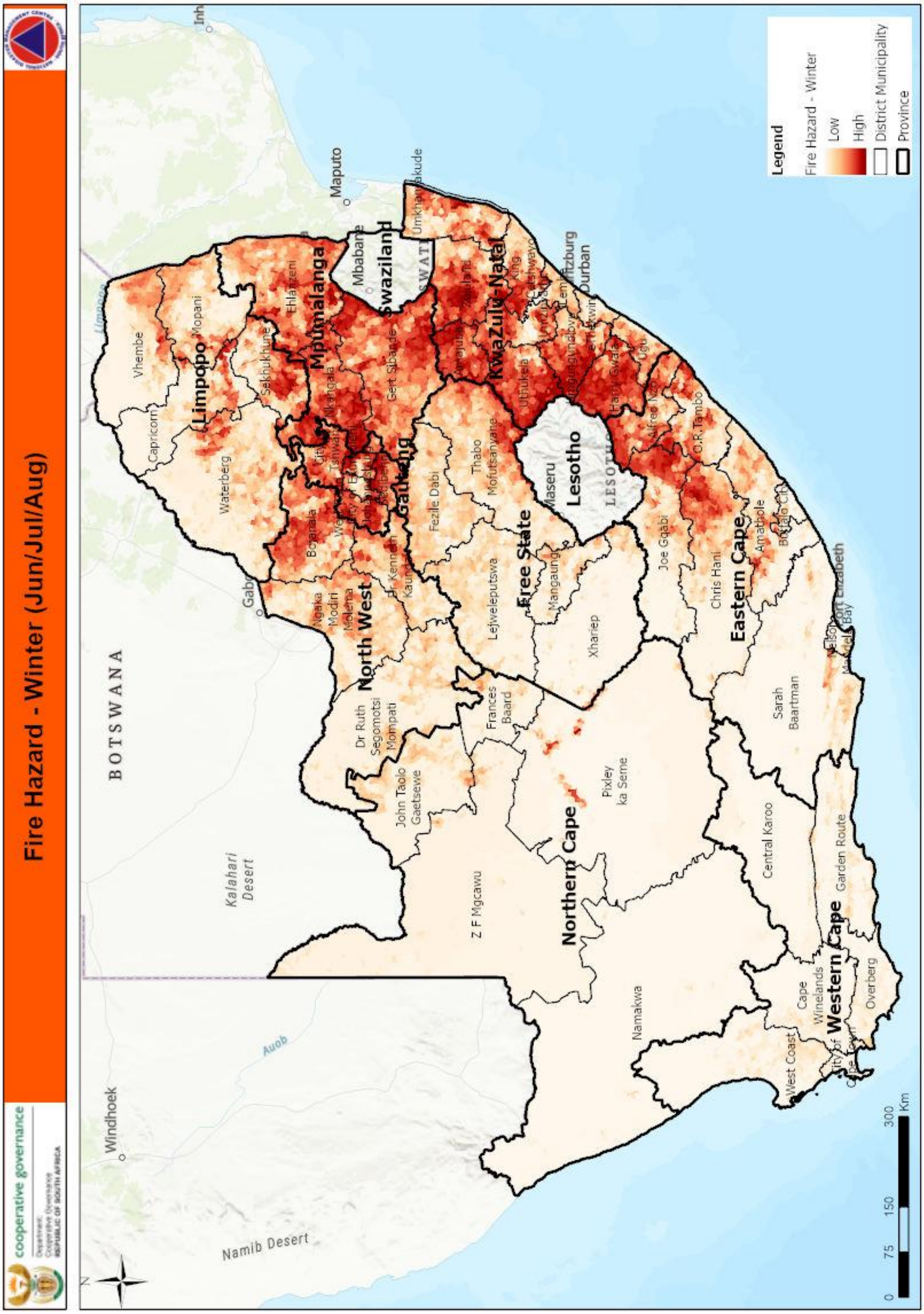


Figure 1: Fire hazard map – winter

2.1.2 Flood

The historical hazard profile for South Africa, derived from the EM-DAT, the CAELUM maintained by the South African Weather Service, and situation reports submitted to the National Disaster Management Centre (NDMC), identifies flooding as the most frequent hazard in the country.

The indicative risk profile, developed through desktop analysis, assesses several hazard parameters, including likelihood, frequency, magnitude, and predictability. This assessment draws on multiple studies—such as *Land Capability* by the Agricultural Research Council (2002) and the South African Atlas of Agrohydrology and Climatology produced by the University of KwaZulu-Natal—as well as historical event data. These inputs are integrated using a weighted scoring model to generate the indicative hazard profile.

The winter flood risk profile (Figure 2) highlights areas of elevated flood hazard (darker blue shading) across parts of the **Western Cape**, including the City of Cape Town, Overberg, and Cape Winelands districts. Increased flood risk is also evident in the northern and coastal regions of **KwaZulu-Natal**, encompassing eThekwini Metropolitan Municipality, Umkhanyakude, King Cetshwayo, and iLembe districts, as well as in portions of the **Eastern Cape**, including the Nelson Mandela Bay and Buffalo City metropolitan municipalities and the OR Tambo, Amathole, and Sarah Baartman districts.

SAWS (Figure 7) indicate a generally higher likelihood of above normal precipitation (Green) for greater parts of the country. However, the south-western (winter rainfall) areas of the **Western Cape** show a higher likelihood (Brown) of below normal rainfall during winter. This, however, does not exclude the occurrence of short, intense rainfall episodes that may likely cause localized flooding during winter.

Stakeholders are advised to carefully consider these findings and closely monitor short-term forecasts and early warning updates provided by SAWS and the NDMC.

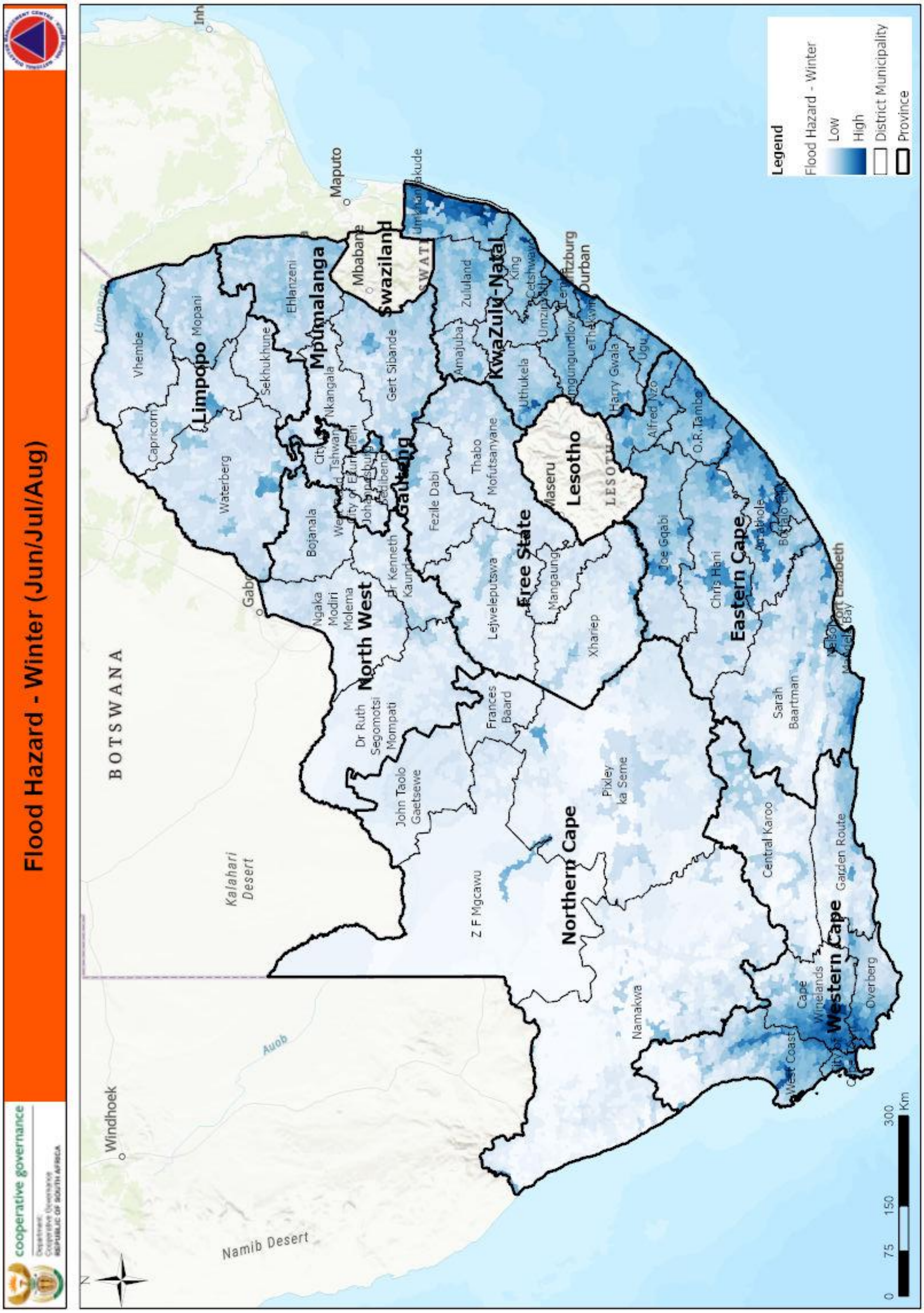


Figure 2: Flood hazard map - winter

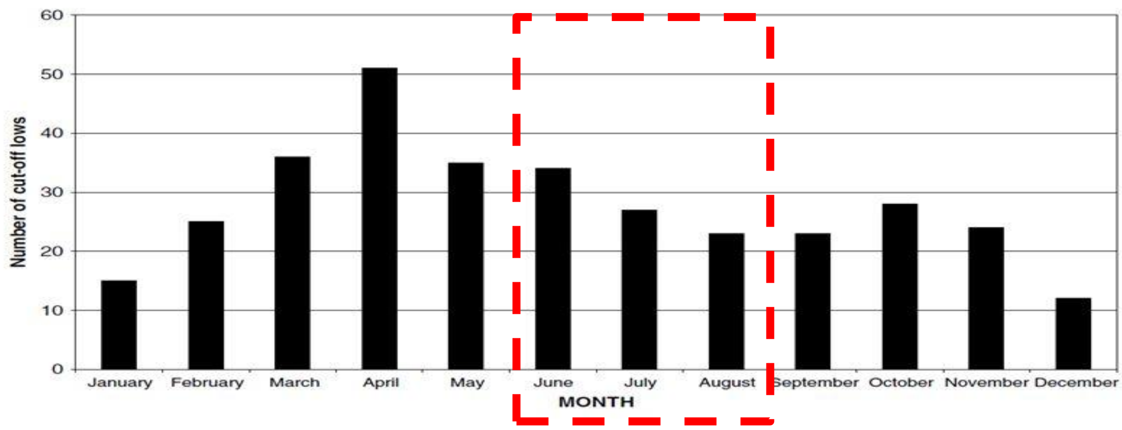
2.1.2.1 Cut-Off Low

Cut-Off Lows are unstable, systems over a confined region leading to heavy rainfall usually prevailing over an area for more than a day (can last up to 6 days). Precipitation associated with upper-air cut-off lows can be both heavy and prolonged, often affecting several provinces simultaneously.

Whilst such rainfall can occur at any time of year, peaking in April (Graph 1), these events tend to deliver heavier rainfall in mid to late winter, given that the cut-off low weather systems are typically more intense at this time of year. One out of ten Cut-Off Low's produces severe conditions and leads to flash flooding.

Parameter	Description
Precipitation	Heavy rainfall; exceeding 50mm at a given station over a 24-hour period. Snowfall
Temperature	Very cold conditions, maximum temperatures of 10° C or below
Wind (incl. gusts)	Gale force winds exceeding 17m/s
Other relevant information	Very rough seas, total sea in excess of 4-6m.

Table 1: Cut Off Low Parameters and Descriptions



Graph 1: Number of Cut-Off Low Temporal Distribution

2.1.3 Windstorm

Wind-related hazards rank third in frequency among weather-related events in the historical data analysed by the National Disaster Management Centre (NDMC). Wind hazards may be defined either by wind speed thresholds or by the meteorological systems that generate strong winds, such as tornadoes, tropical cyclones, and severe thunderstorms. The specific definition or threshold for a wind hazard can vary depending on the socio-economic sector affected, as different sectors have varying levels of sensitivity to wind intensity (South African Weather Service, 2013).

The windstorm hazard profile considers key parameters including likelihood, frequency, magnitude, and predictability. These are assessed using a methodology consistent with previous hazard analyses for fire, flood, and snow, which applies a weighted scoring approach within a GIS-based modelling framework.

Figure 3 indicates elevated winter windstorm hazard (Darker Blue Green) levels along coastal areas and selected inland districts. The highest hazard scores are concentrated in parts of the **Eastern Cape**, **Western Cape** and **Northern Cape**, while medium to high hazard levels are also evident in areas of the **Free State**, **KwaZulu-Natal** and **Mpumalanga**.

In addition, berg winds during mid- to late winter can intensify ahead of cold fronts, increasing the risk of destructive wildfires, particularly in the **Eastern Cape, KwaZulu-Natal, Mpumalanga** and **Limpopo**. Continued monitoring of weather conditions and atmospheric circulation preceding cold frontal systems is therefore recommended.

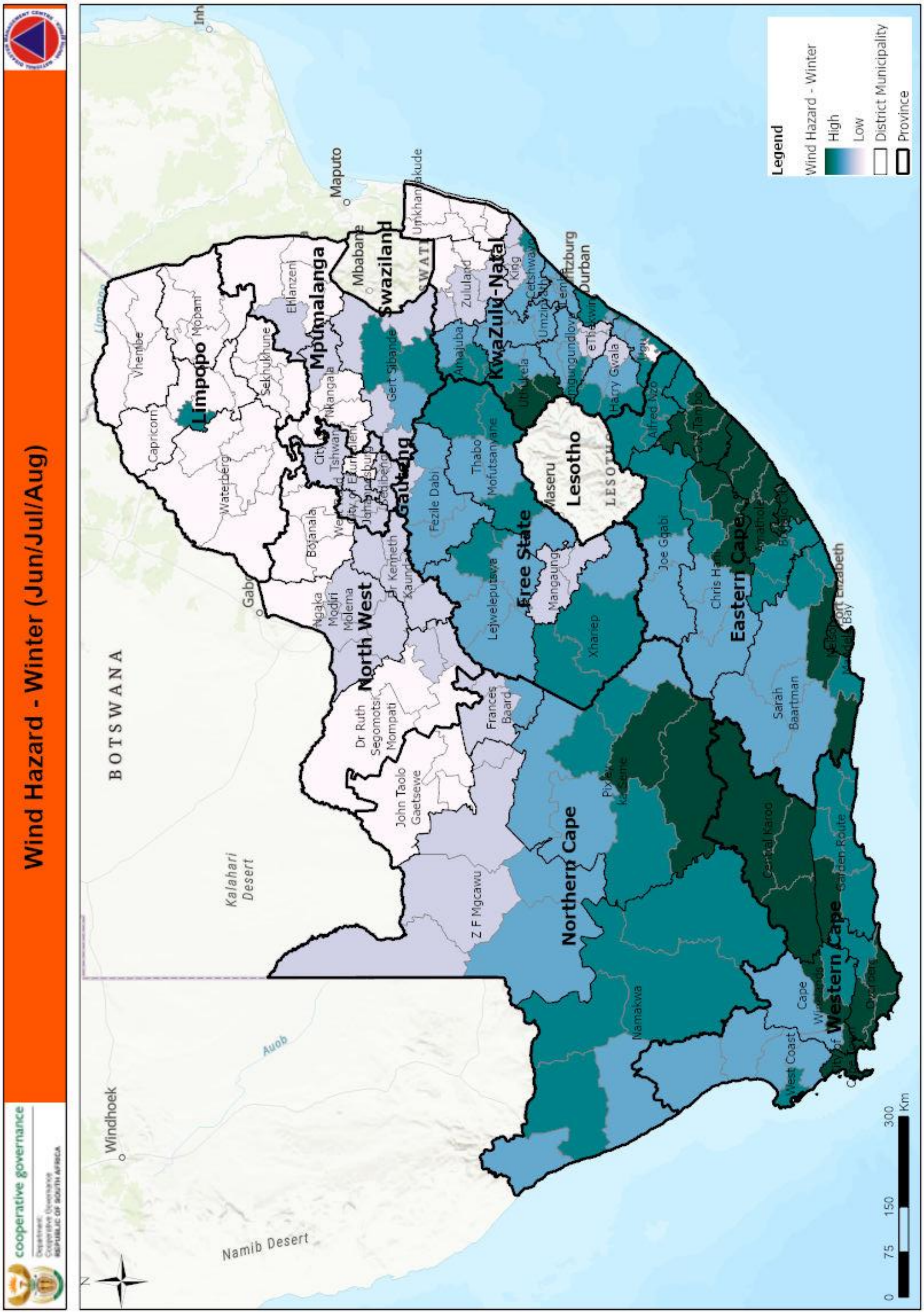


Figure 3: Windstorm hazard map – winter

2.1.4 Snow

In 2015/16, snow hazard assessments were conducted through a collaborative partnership between the National Disaster Management Centre (NDMC) and the Council for Scientific and Industrial Research (CSIR). The assessment quantified key hazard parameters, including likelihood, frequency, magnitude, and predictability, using a weighted scoring GIS model with a seasonal component. Historical datasets obtained from the South African Weather Service (SAWS), together with optical remote sensing techniques, were incorporated into the analysis.

Figure 4 indicates elevated winter snow hazard levels (red and orange) across the high-lying areas of the **Western Cape, Eastern Cape** and **KwaZulu-Natal** bordering Lesotho. While seasonal snowfall is typical in mountainous regions, the greater Drakensberg is more susceptible to severe and disruptive events, particularly towards the end of winter and into September.

However, the South African Weather Service (SAWS) forecasts an increased likelihood of above-normal minimum temperatures across much of the country (Figure 8), which may reduce the extent and severity of snow occurrence in the coming months.

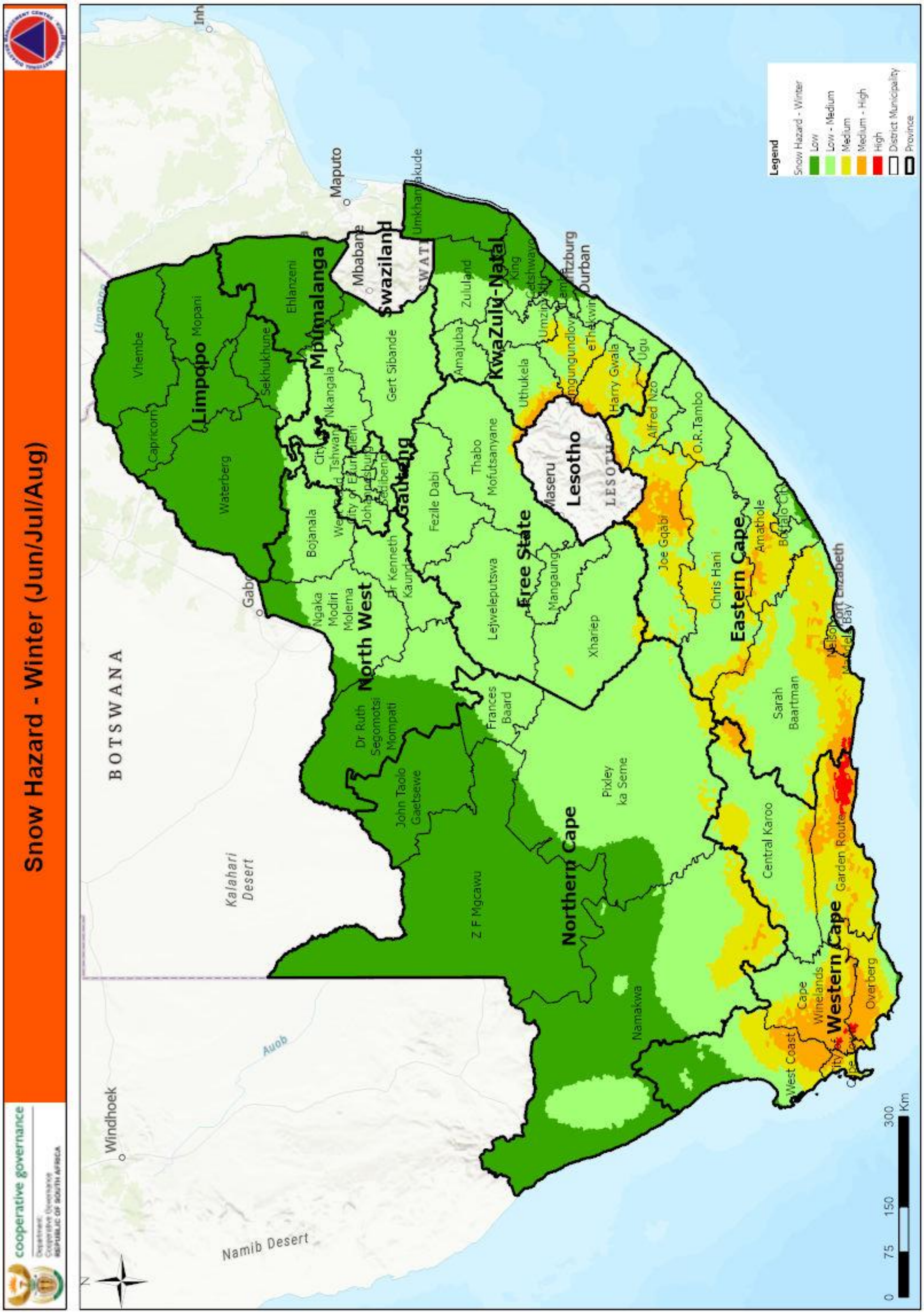


Figure 4: Snow hazard map – winter

2.1.5 Current Drought Status

A drought is usually identified when a shortage of water (surface/underground) over a long period (more than 24 months) results in a negative impact. Drought can be detected and characterized using the Standard Precipitation Index (SPI – McKee et al., 1993). The SPI was developed to monitor the occurrence of drought from rainfall data. The index quantifies precipitation deficits on different time scales and therefore also drought severity. The ARC-ISCW calculates the SPI at various time scales per quaternary catchment. (Malherbe et al. 2016).

The latest drought observations (Figure 5) indicate that drought conditions across South Africa remain relatively limited, particularly over longer timescales. Above-normal rainfall following the summer season has contributed significantly to favourable moisture conditions across much of the country. In the winter rainfall region, recent frontal systems have also provided short-term relief from drought conditions.

Notwithstanding these improvements, isolated areas of the Eastern Cape continue to experience moderate (Orange) to severe (Red) drought conditions, warranting continued monitoring and preparedness measures.

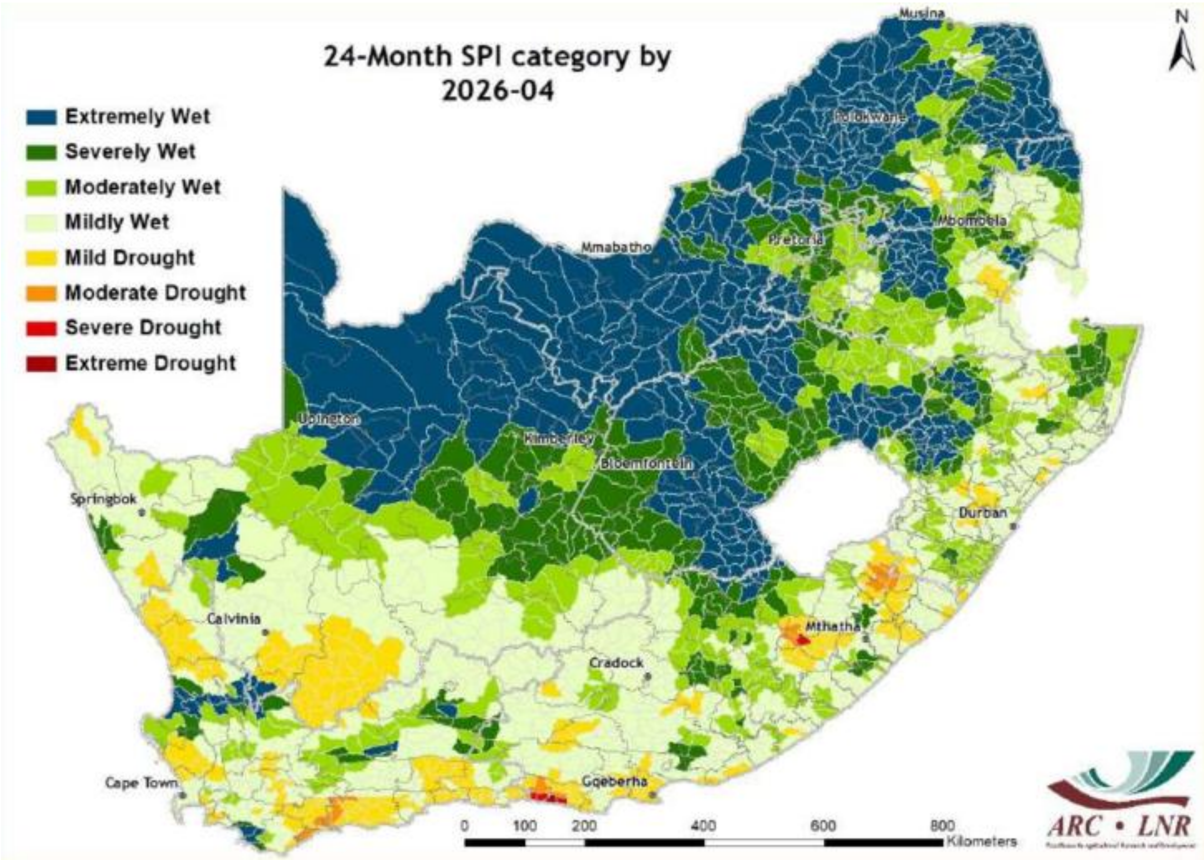


Figure 5: Drought Status Map – April 2026

The Percentage of Average Seasonal Greenness (PASG) (Figure 6) demonstrates deviations from the long-term average vegetation activity over a given timeframe. From the legend provided, vegetation activity is categorized from presenting well above average (in green) to areas showing potential drought (orange) and drought conditions (red).

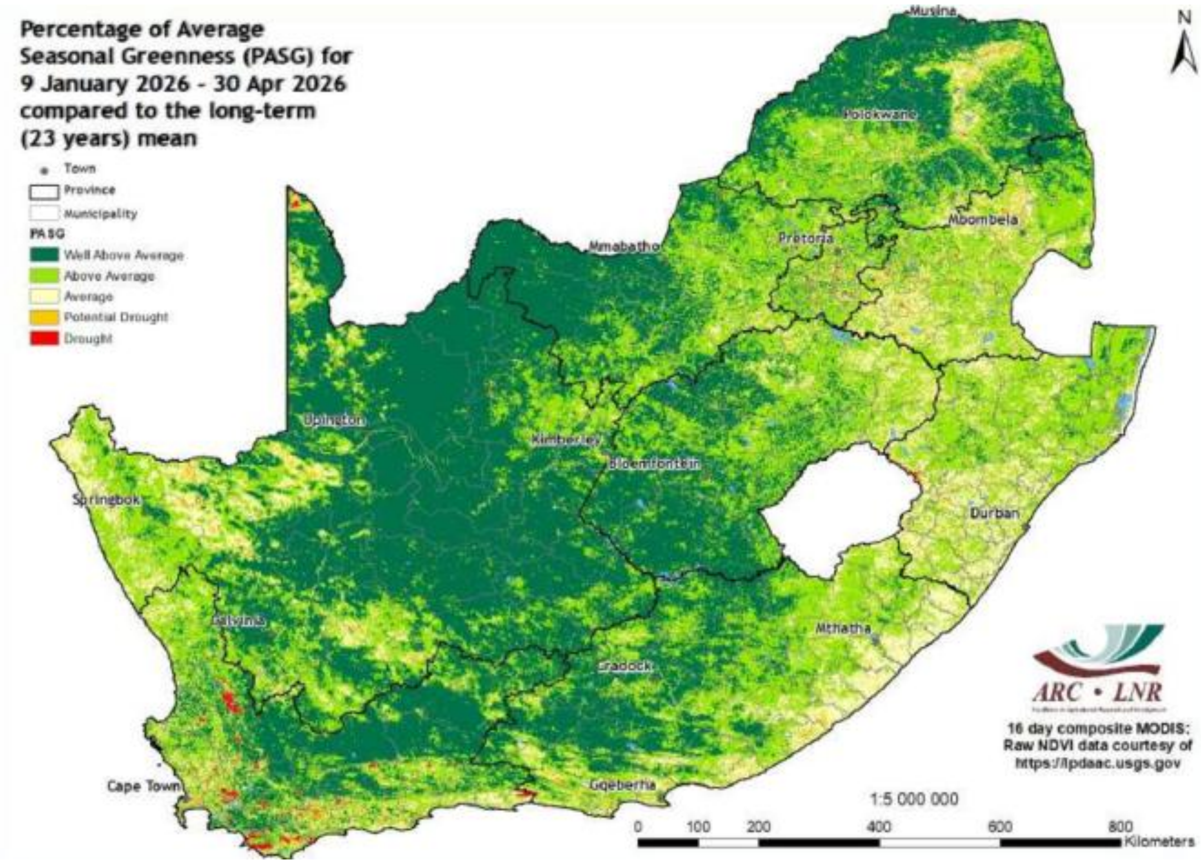


Figure 6: Percentage of Average Greenness (PASG) – 9 January – 30April 2026

Generally, the latest observations above indicate well above average (dark Green) and above average (Green) vegetation activity over vast areas of the country. Isolated areas in the **Western Cape** indicate Potential Drought (Orange) and Drought (Red) conditions.

2.2 Seasonal Weather Forecasts

To provide further context to the hazard profiles, the following seasonal forecasts are sourced from the South African Weather Service (SAWS). For more details regarding the Seasonal Climate Watch products and services, please contact:

(Mr) Cobus Olivier
Scientist: Prediction Research
Tel: 012 367 6008
E-mail: cobus.olivier@weathersa.co.za
Website: www.weathersa.co.za

2.2.1 Overview

"The El Niño-Southern Oscillation (ENSO) is currently still in a neutral state; current predictions indicate that it will rapidly move towards an El Niño state within the next month and continue to strengthen up to early summer and last at least until the end of the next summer season. Predictions are more confident now as we have moved out of the reduced performance period for ENSO forecast. Current predictions for South Africa only extend towards October 2026 currently so the impact on South Africa can only be estimated from typical El Nino's. which is for a drier and warmer summer season.

During the winter seasons, it is only the south-western, southern and eastern coastal areas that receive significant rainfall. The eastern coastal areas are expected to receive above-normal rainfall during winter and early spring and below-normal rainfall is expected for the south-western and southern coastal areas during this late winter and early spring.

Minimum and maximum temperatures are largely expected to be above normal for most parts of South Africa during the winter seasons.

The SAWS will continue to monitor the weather and climate conditions and provide updates on any future assessments that may provide more clarity on the current expectations for the coming season." (Seasonal Climate Watch, SAWS: June 2026)

2.2.3 Rainfall

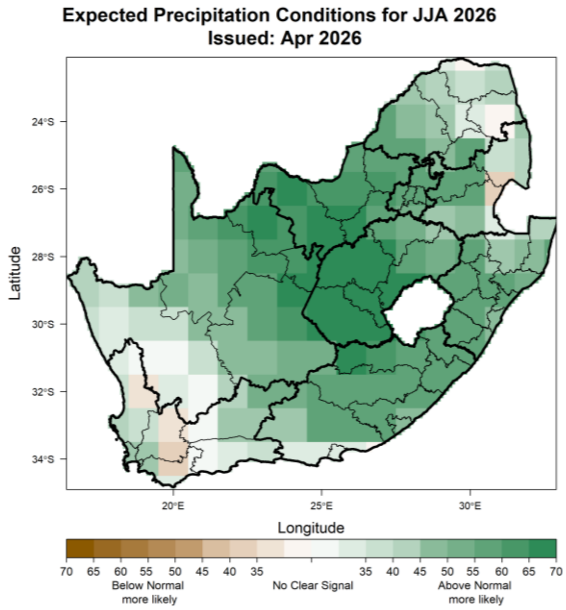


Figure 7: Rainfall - winter 2026 (June / July / August (JJA)).

2.2.4 Minimum and Maximum Temperatures

2.2.4.1 Minimum Temperatures

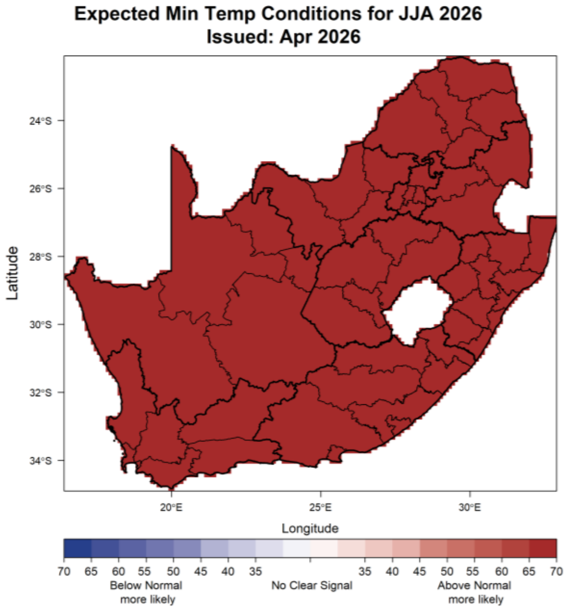


Figure 8: Minimum Temperatures - winter 2026 (June / July / August (JJA)).

2.2.4.2 Maximum Temperatures

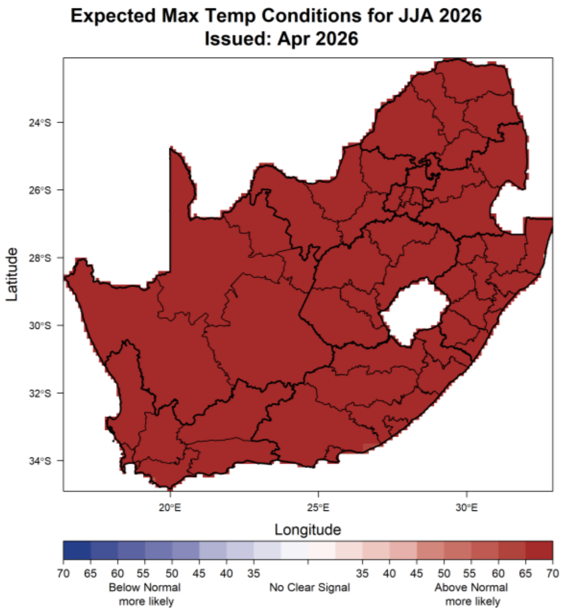


Figure 9: Maximum Temperatures - winter 2026 (June / July / August (JJA)).

3. RECOMMENDATIONS

It is recommended that Disaster Management entities and stakeholders note the content of the seasonal hazard profile for winter 2026 and note the commentary made by the SA Weather Services and contributing stakeholders.

4. APPENDICES

None

5. References

1. ARC. (2026). Umlindi Monthly
2. CSIR. (2015). Hazard Quantification – Snowfall: Project Report
3. Dzanibe S. 2015. Early snowfall on the Drakensberg. Daily News. Available from: http://www.iol.co.za/news/south-africa/kwazulu-natal/early-snowfall-on-the-drakensberg-1.1813338. [February 2015]
4. EUMetTrain Website (https://www.eumetrain.org/)
5. Malherbe, J and Maluleke, P. (2013). Assessment of historical drought events over South Africa
6. National Disaster Management Centre (2016). Indicative Risk Profile for Snow: Desktop GIS Analysis: Project Report
7. National Disaster Management Centre (2015). Indicative Risk Profile for Windstorms: Desktop GIS Analysis: Project Report
8. National Disaster Management Centre (2014). Indicative Risk Profile for Drought: Desktop GIS Analysis: Project Report
9. National Disaster Management Centre (2013). Indicative Risk Profile for Flood
10. National Disaster Management Centre (2012). Indicative Risk Profile for Fire
11. SAWS. (2025). Seasonal Climate Watch Monthly
12. SnowReport.co.za. 2014.Snow Report- Report Sightings. Available from: http://snowreport.co.za. [December 2014]

Switchboard: 012 848 4600

Mark Van Staden

Acting Director: Disaster Risk Assessment and Early Warning

markv@ndmc.gov.za

Tel: 012 848-4625