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Friday, 20 October 2023

Heavy rain and storms over Western and Eastern Cape this weekend (21-22 October)

Scarcely a week after the last bout of heavy rainfall over southern Africa, numeric weather prediction (NWP) models are suggesting yet another episode of significant rainfall, this time over the Western and Eastern Cape. This system may also produce some severe thunderstorms, with appropriate warnings already issued for Saturday (21 October).

A cut-off low-pressure system (the equatorward displacement of a low-pressure system at high altitudes) is in the process of developing over the southern Atlantic Ocean, to the south-west of the Western Cape. This fast-moving system is evolving rapidly and is expected to be encroaching on the west coast of Western Cape as early as this evening (20 October).

Whilst cut-off lows are typically efficient producers of rain, often of a heavy nature, these systems also have a reputation for causing widespread severe weather such as flooding, heavy rainfall, and severe thunderstorms. Widespread showers and thundershowers can be expected over parts of the Western and Eastern Cape tomorrow (21 October), shifting eastwards on Sunday (22 October), when continuing to affect the Eastern Cape.

Figure 1 (below) indicates the current location of the developing cut-off low, positioned to the south-west of the country. By this evening, the system will start to invade of the western extremities of the Western Cape. Notably, the system is fast-moving and will affect the majority of the Cape provinces, especially Western Cape and Eastern Cape, tomorrow.

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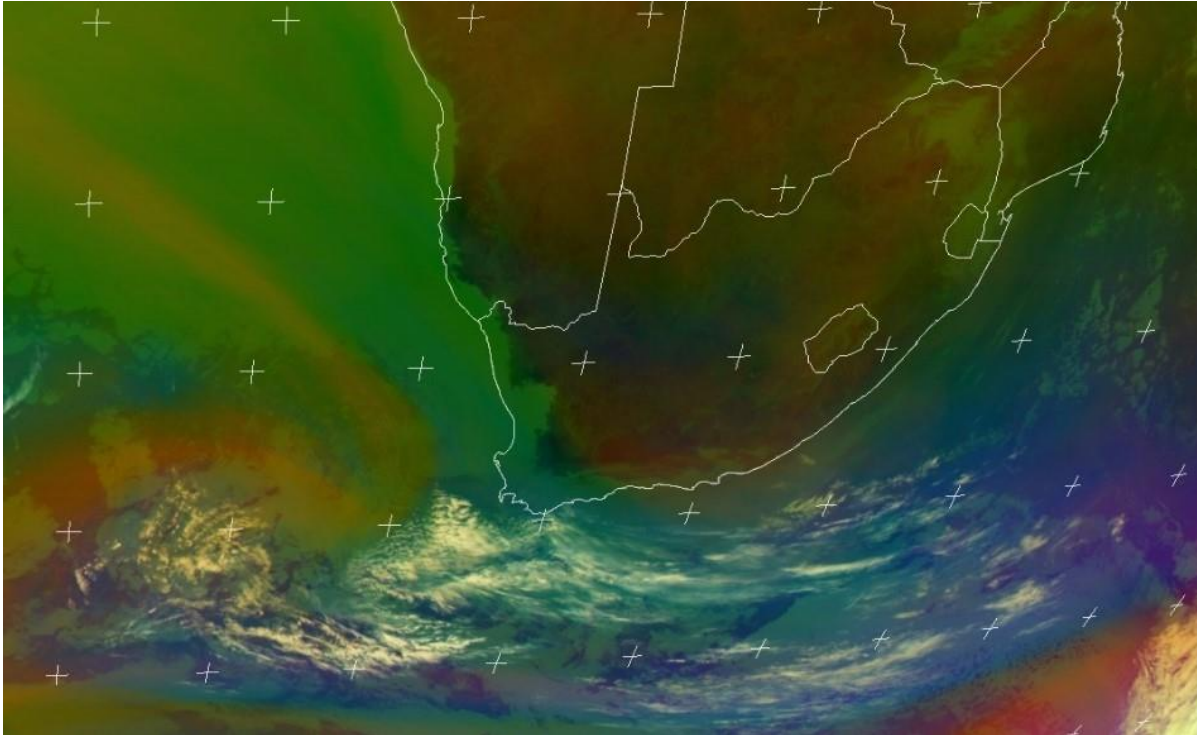


Figure 1: “Airmass” RGB false-colour satellite image at 09h00SAST, Friday 20 October 2023, indicating largely clear conditions over much of South Africa, whilst the cut-off low system is currently positioned off the south-western part of southern Africa, at bottom left of the satellite image. Source: Eumetsat 2023.

As indicated by Figure 2 as well as Figure 3, rainfall, in the form of scattered showers and thundershowers, can be anticipated over Western Cape tomorrow, when some of the storms may become severe. Western Cape Districts expected to be affected include the Cape Winelands, Overberg, Garden Route and central Karoo. The southern extremities of Northern Cape could also be similarly affected by severe storms.

With reference to Figure 2 (A), it is significant that disruptive rainfall may occur over parts of Eastern Cape on Saturday (21 October), resulting in possible flooding as well as posing a significant risk to life and property. Numeric Weather Prediction (NWP) models suggest 100 mm or more of rainfall, within a 24-hour period, for some places. Hence, a Level 6 ORANGE Warning has been issued for parts of the Eastern Cape, as indicated in Figure 3. It is also relevant to mention that the surface terrain over many parts of the Eastern Cape is still wet and saturated, following recent episodes of good rainfall. Saturated ground has a reduced capacity for infiltration of rainfall. Fresh rainfall on saturated ground rapidly leads to overland runoff, thus exacerbating the risk of flooding, as excess rainfall is diverted to swell river systems.

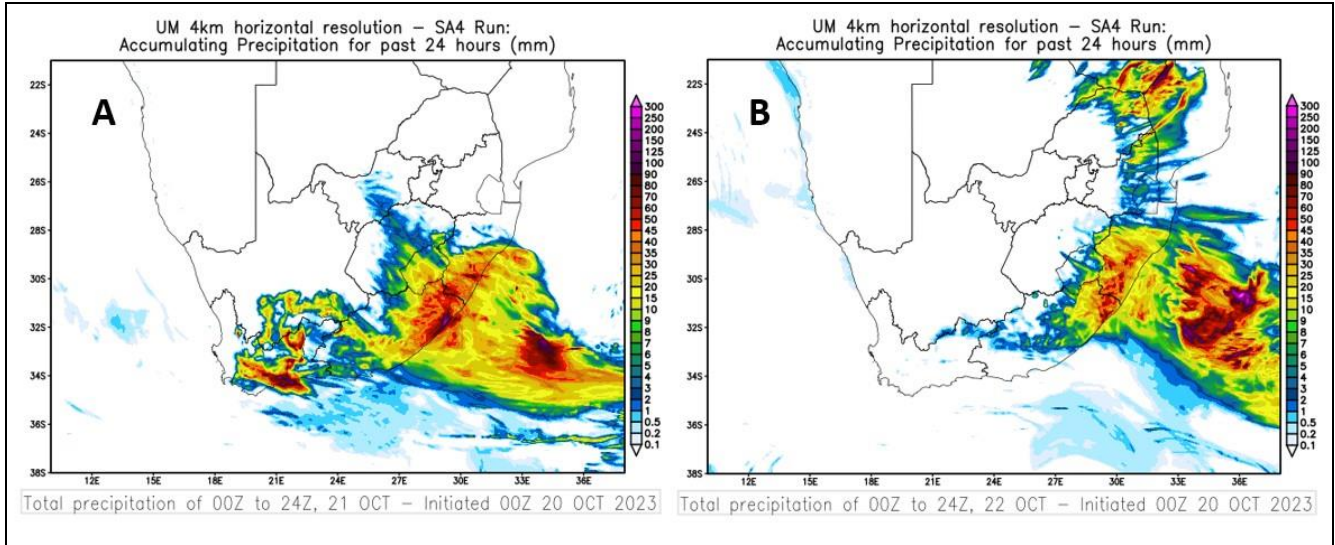


Figure 2: Numerical weather prediction data indicating 24-hour accumulated rainfall for (A) Saturday, 21 October 2023 and (B) Sunday 22 October 2023. (Source: Unified Model (UM))

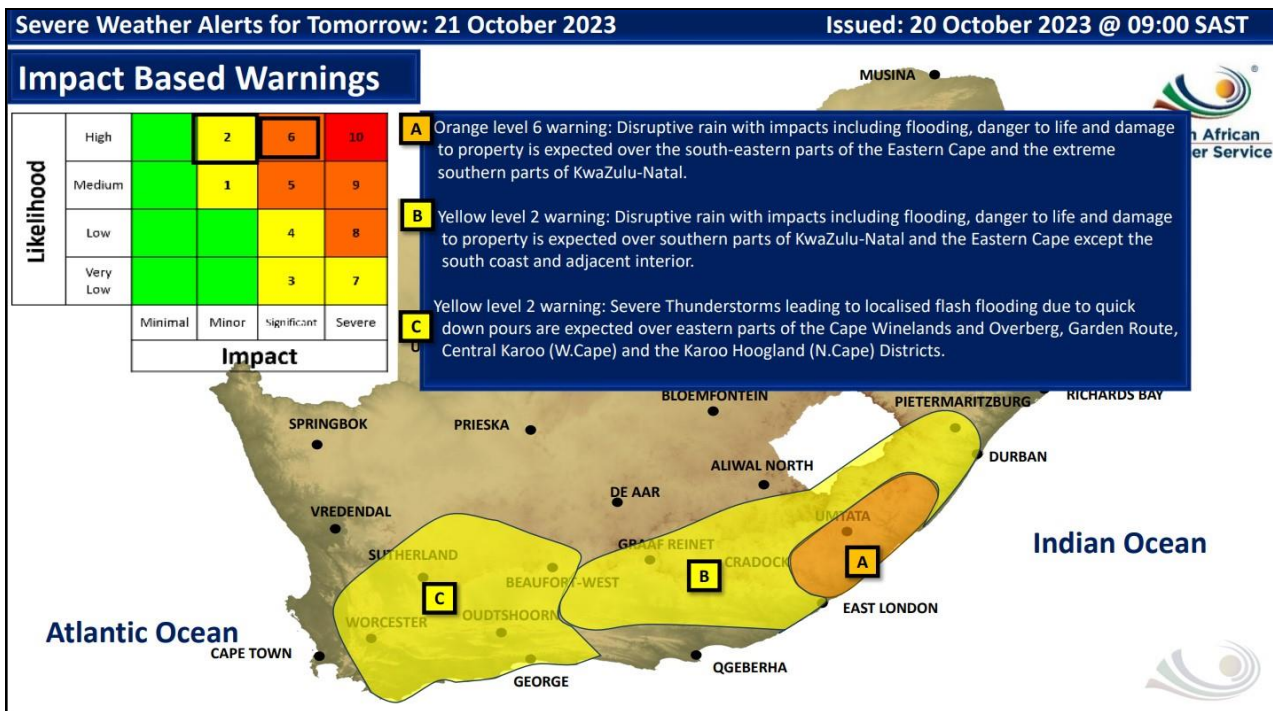


Figure 3: Impact-Based Warnings valid for tomorrow, Saturday, 21 October 2023. Note the Level 6 Orange warning for the eastern extremities of Eastern Cape. Source: South African Weather Service (SAWS)

The cut-off low will continue to rapidly intensify during the weekend as it migrates eastward. By Sunday, most of the thunderstorms will have cleared over the Western and Northern Cape, with the focus shifting to the Eastern Cape and KwaZulu-Natal, where further rainfall is expected to persist.

The South African Weather Service will continue to monitor this weather system and issue subsequent updates over the next few days. Updated impact-based warnings will be issued in due course. It is strongly advised that the public regularly follow weather forecasts on television, radio, as well as all social media platforms. Updated information in this regard will regularly be available at www.weathersa.co.za as well as on X @SAWeatherServic and Facebook @SouthAfricanWeatherservic.

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