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Wednesday 14 December 2022

Yet another cut-off low in the aftermath of record-breaking rainfall

More rain is expected over the coming days over Northern and Western Cape as another cutoff low develops west of the country. This development follows close on the heels of the "black south-easter" circulation pattern, which dominated the western parts of the country over the past weekend, bringing significant record-breaking rainfall and weather-related impacts.

Usually a strong south-easter over the Western Cape during the summer months, is associated with fine, windy and warmer weather conditions. However, in the case of an upper-air cut-off low being present, it can lead to cloudy conditions and sometimes heavy rain, known as a "black south-easter".

Cut-off low system expected from 15 December 2022

The unusual weather which has dominated the western parts of the country this week is not yet over. This is due to yet another cut-off low (a deep, closed low pressure in the mid-troposphere that is displaced equatorward of the main westerly flow) expected to develop west of South Africa on Wednesday. Consequently, showers and thundershowers are expected to develop over the Namakwa interior (western parts of the Northern Cape) from Thursday afternoon, spreading to the western and extreme northern parts of the Western Cape on Friday morning, when the system is expected to intensify. The more noteworthy and significant weather associated with the new upper-air system can be expected on Friday and Saturday (16 - 17 December 2022), mainly over the southern parts of Namakwa and the majority of the Western Cape. Widespread showers and thundershowers are likely to occur, with a chance that some of the storms may become severe, as was the case with the most recent system.

Notwithstanding the fact that the cut-off low is expected to weaken and move eastwards by Saturday, scattered to widespread showers and thundershowers will still be likely over most of the Western Cape. The sustained nature of the showers and thundershowers will be due to the support of a ridging high pressure system over the Cape south coast, feeding in additional moisture from the ocean.

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Public document





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The Cape Town Weather Office has issued the following warnings valid from 16 to 18 December 2022:

- A. A Yellow level 4 warning for Severe Thunderstorms resulting in flooding and large amounts of small hail has been issued for the southern interior of Namakwa (Northern Cape) and Western Cape on Friday into Saturday (16-17 December 2022).
- B. An Orange level 6 warning for Severe Thunderstorms resulting in flooding and large amounts of small hail has been issued for the western and central parts of the Western Cape on Friday, but over the central and southern parts on Saturday (16-17 December 2022).

Heavy downpours (20-30 mm/h) associated with sudden onset and quick cessation can be expected. Showers and storms will also be accompanied by strong, gusty and damaging winds (50-70 km/h, gusting 80-90 km/h) as well as large amounts small hail.

Consequently, these heavy downpours may result in flash flooding. It is important to note that the risk of flash flooding will be enhanced by pre-existing high soil moisture and saturated ground, thus leading to prompt overland runoff into streams and rivers. Difficult and dangerous driving conditions are highly likely over the long weekend, especially on dirt roads and in areas where road quality has already been compromised by previous rain events. These conditions may contribute to minor vehicle accidents and longer travel times on major roads. Given that the weekend in question is a major long weekend and that schools have closed for the December holidays, traffic volumes are likely to be very high and will further contribute (along with the inclement weather) to challenging driving conditions.

The strong and gusty winds, excessive lightning, as well as the possibility of large amounts of small hail could cause some degree of structural damage in formal and informal settlements as well as disruptions to essential services. The agricultural sector is advised that there will be a moderate to high risk of livestock loss as well as further weather-related damage to agricultural crops.

New Western Cape rainfall records

The rainfall that dominated the western parts of South Africa over the past weekend, extending into Monday 12 December 2022, contributed to significant impacts as well as new local records for rain for the Paarl and Wellington weather stations. Over a 48-hour period, Paarl measured 65.2 mm and Wellington 59 mm. Other rainfall figures worth mentioning include Jonkershoek (Stellenbosch region), where 76.4 mm was measured (also over a 48-hour period), 54.8 mm for Elgin Grabouw and 25.4 mm for Cape Town International Airport (CTIA). Moreover, the following preliminary rainfall measurements were recorded during the period 10 to 12 December 2022; Sutherland – 78 mm, Porterville – 54.8 mm, Robben Island – 34.6 mm, Ceres – 51.4 mm, Plettenberg Bay – 43.4 mm and 54.8 mm for Beaufort-West.

The total accumulated rain recorded from 12 to 13 December 2022 over Paarl (40 mm in a 24-hour period) was a new record for December. The Paarl weather station first opened in 1993. The previous record was 35 mm within a 24-hour period, set in December 2002. Correspondingly, the Wellington weather station also broke their December record over a 20-year period from 2002 to date. The previous highest figure recorded was 35.2 mm on the 5th of December 2021 with the new highest figure being 39,8 mm on 12 December 2022.

The public are strongly urged to consult reputable and reliable sources of weather information and to follow warnings and updates as issued by the South African Weather Service.

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