



10 October 2017

## **Severe thunderstorms wreak havoc in Gauteng on 9 October 2017; further warnings for KwaZulu Natal and Eastern Cape on 10 October 2017**

Severe thunderstorms with heavy downpours, strong damaging winds and large hail, hit parts of Gauteng and surrounding provinces on the afternoon of the 9<sup>th</sup> October 2017. Areas that were most affected were the West Rand District, City of Johannesburg and Ekurhuleni Metropolitan Municipalities. There were also 2 sightings of tornadoes in Ruimsig (adjacent to Roodepoort and Krugersdorp) and Eloff, near Delmas (Mpumalanga). Other provinces affected were the eastern parts of North, West, eastern Free State, KwaZulu-Natal, Mpumalanga and Limpopo. Extremely large hail (golf ball to tennis ball size) was also reported near Krugersdorp. Elsewhere in the Free State, a tornado was also observed near Bethulie yesterday.

Extensive damage to property was reported, which included the Cradlestone Shopping Mall in Roodepoort, where a roof partially collapsed, as well as numerous formal and informal dwellings which were completely destroyed. This resulted in more 100 people being displaced from their homes. Some roofs were ripped off residential dwellings and small office complexes in Krugersdorp and Roodepoort. Major roads were also affected by the flooding and resultant debris that were caused by the storm. At this stage, one death has been reported as well as a number of injuries.

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Figure 1: (left) An apartment complex in Fourways significantly damaged by the storm. Picture courtesy of Tiro Molokele, (right) portion of the Cradlestone Mall that collapsed. Picture courtesy of Twitter @capvma

### **Weather System**

On the 9<sup>th</sup> October 2017, a line of thunderstorms developed east of a cut-off low pressure system which was situated over the western parts of the country. These storms developed through the central parts of the central parts of the North West and northern Free State, and then started moving eastwards. Due to prevailing favourable conditions (including abundant low-level moisture and strongly \*sheared airflow in the lower portion of the storms), some of these storms developed into supercell thunderstorms. Supercell storms are the most intense class of thunderstorm and are characterised by a deep rotating updraft, are generally very long-lived (a lifespan of a few hours) and are associated with some sort of severe weather (one or more of large hail, tornadoes, strong winds and urban flooding) in at least 90% of cases. (\*wind shear occurs when there is a marked change in wind speed and/or wind direction, across a short vertical distance)

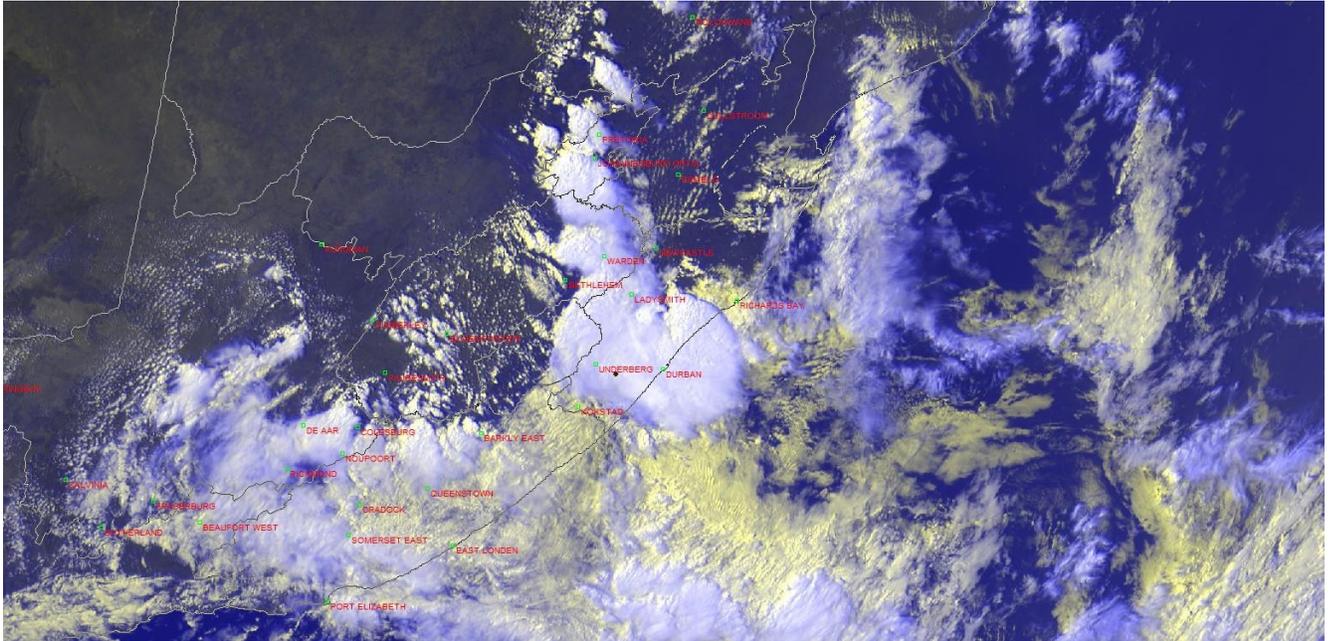


Figure 2: High Resolution Satellite image of 09 October at 15:30 SAST, showing a band of thundershowers over western Gauteng. © EUMETSAT

### **Guidance issued by SAWS**

The South African Weather Service issued a watch on Sunday afternoon (for Monday) for severe thunderstorms in places over the eastern parts of North West, eastern parts of the Free State, northern and central parts of KwaZulu-Natal and in places in Gauteng, Limpopo and Mpumalanga. This was upgraded to a warning on Monday afternoon as thunderstorms moved into the province from the west. These warnings were also carried extensively on social media channels of Twitter and Facebook.

A severe thunderstorm warning is issued by the South African Weather Service when a thunderstorm is expected to be associated with one or more of the following severe weather criteria\*;

- Hail of greater than 19mm diameter. Alternatively, large amounts of small hail
- A tornado
- Wind gusts of 50 knots (93 km/h) or more
- Heavy downpours leading to localised urban or flash flooding

\*This is closely aligned with international practise, particularly with respect to USA as well as Australia

### **Upcoming expected severe weather**

The weather system that caused this weather has now moved to the east and most of the areas affected by yesterday's storms can now expect predominantly sunny weather. There is however still a warning for heavy rain over **KwaZulu-Natal** (we have already received report of heavy rain and flooding in and around Durban) and eastern parts of the **Eastern Cape** before the weather system moves off the country later today (Tuesday). Thunderstorms are expected to return to the country on Saturday.

The South African Weather Service will continue to monitor further developments during this period and will issue subsequent updates as required. Furthermore, the general public are urged to regularly follow weather forecasts on television and radio. Updated information may also be accessed on [www.weathersa.co.za](http://www.weathersa.co.za) as well as via the South African Weather Service Twitter account @SAWeatherServic

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