Severe Weather Report:

25 - 28 July 2016

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i. Document Control

- Version and Amendment Schedule

Version	Version Date	Author (s)	Description of Amendments
1	22 July 2016	K Turner	Document Created
2	23 July 2016	T Ntleko	Document Updated
3	24 July 2016	M Barnes	Document Updated

1. Current conditions and expected developments

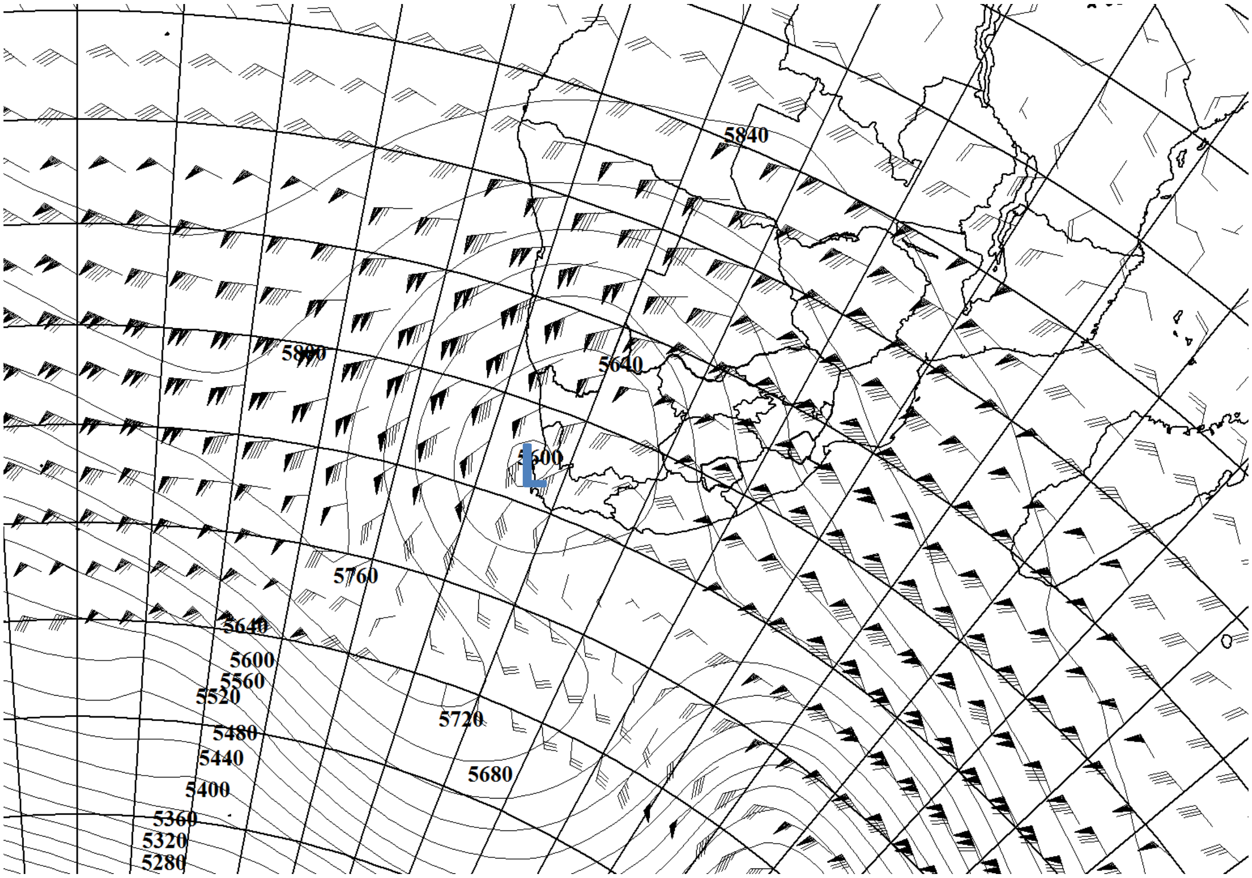

Figure 1: ECMWF model projection showing the position of the upper cut-off low pressure over the western parts of the country on Monday 25 July 2016 at 02:00 SAST.

An intense cut-off low pressure is expected to develop on Sunday evening, intensifying into Monday. This is expected to bring widespread rainfall over the southern and eastern parts of the country from Monday through to Wednesday. The majority of the rainfall is expected for the south coast and adjacent interior of the Western Cape where rainfall is projected already from the morning, spreading further inland during the day. The heaviest downpours are expected on Tuesday. This widespread rainfall is very likely to lead to accumulated rainfall exceeding 50mm over an extensive area (not only confined to the mountainous areas). Rainfall is expected continuously throughout the period, where this continuous rainfall, along with the heavy downpours at times, can lead to localized flooding as well as flash flooding. Rainfall is expected to persist into Wednesday, and due to saturated ground from the high rainfall amounts expected from the cut-off low, flooding is still likely to continue.

A surface low with an associated with a surface cold front is alos expected to make landfall in the western parts of the Western Cape province where heavy rainfall exceeding 50mm is expected in the Cape Metropole, Cape Winelands and Overberg Districts for Thursday.

Strong easterly to south-easterly winds are expected along the south coast during Monday, turning more southerly during Tuesday. The strong southerly to south-easterly winds along the coast are expected to feed high moisture content into the south coastal areas which, with enhanced orographic uplift, is expected to promote heavy downpours, leading to high rainfall accumulations for Tuesday.

The strong to gale force coastal winds are also expected to churn up sea conditions along the south coast. Since the very strong coastal winds are from an easterly to south-easterly direction on Monday, the swell conditions generated are also easterly in direction. Very rough seas reaching high seas conditions are expected with an easterly to south-easterly swell direction. These high seas along with the strong winds and rainfall will result in adverse sea conditions. However, since the swells’ orientation is not the usual south-westerly direction, the sea conditions will be even more dangerous. Furthermore, the bays along the south coast will be exposed to these south-easterly swells, where very rough seas are likely to penetrate directly into the bays and harbours. This could cause considerable damage to vessels in the harbours as well as to the roads and infrastructure on the beach front.

Very cold conditions are expected over the Western and Northern Cape from this weekend, remaining very cold into next week. Some light snowfalls may also be expected over the Nuweveld and Swartberg mountains during Monday afternoon into the early hours of Tuesday morning.

2. Weather Alerts Issued

Warning:
Nil
Watch: 1.Heavy falls of rain is expected in places over the Eden and Overberg districts tomorrow (Monday) evening,spreading to the Cape Metropole,Cape Winelands and West Coast districts on Tuesday. 2. Localised flooding is expected in places over the Eden and Overberg districts tomorrow (Monday) evening,spreading to the Cape Metropole,Cape Winelands and West Coast districts on Tuesday. 3. Gale force south-easterly winds (65-75km/h) are expected between Stilbaai and Table Bay Tuesday afternoon. 4. High seas with wave heights 6-9m are expected between Cape Agulhas and Plettenberg Bay on Tuesday.
Nil
Special Weather Advisory:
An intense cut-off low pressure system is expected to affect the Western Cape from tomorrow (Monday) through to Thursday. The public and small stock farmers are advised that heavy rain, flooding, very cold conditions and light snowfalls can be expected.

2.1. Heavy Falls of rain

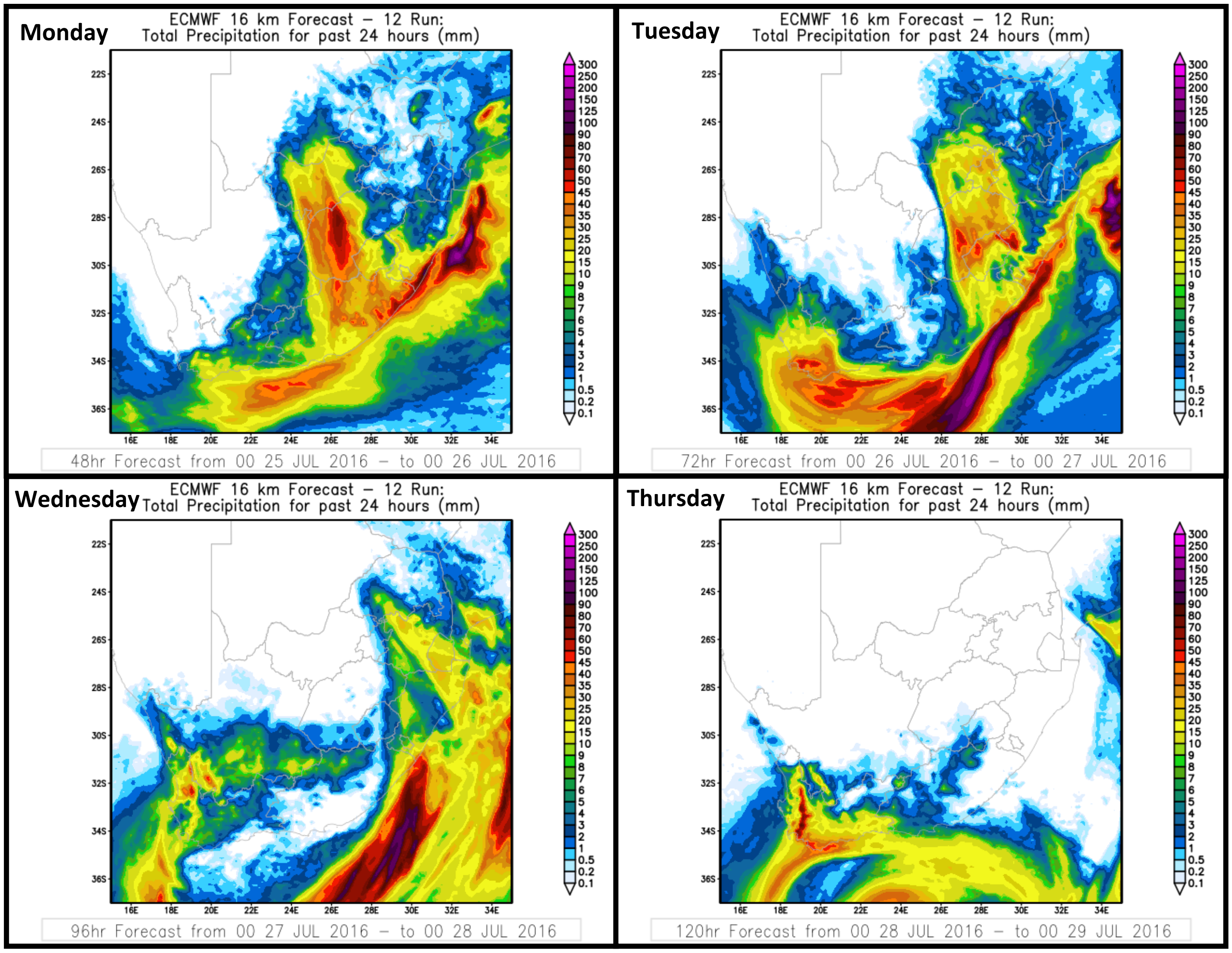

Figure 2: Accumulated rainfall (in mm) projection for Monday (top left), Tuesday (top right), Wednesday (bottom left) and Thursday (bottom right).

Rainfall is expected to start over the eastern parts of the Western Cape during Monday late morning, spreading westwards into the Cape Winelands and into the southern parts of the Northern Cape from the afternoon. Showers and thundershowers are expected to be embedded in the extensive rain bearing cloud. Rainfall is expected to spread westwards towards Cape Town overnight on Monday under possible black south-easter conditions. Figure 2 shows the accumulated daily rainfall from Monday through to Thursday. Heavy falls of rain are possible during Monday in places in the Eden and Overberg Districts.

The cut-off low moves further south-eastwards and together with onshore flow directly onto the south-western coastline will result in widespread rainfall over the Overberg District, Cape Winelands and Cape Metropole on Tuesday with vast regions expected to recieve greater than 50mm of rainfall and possibly up to 70 or 80mm in the mountainous regions over a 24 hour period. The region of most intensive rainfall is expected to spread northwards towards the West Coast District, south-western parts of the Northern Cape province and northern parts of the Cape Winelands on Wednesday. A break in the showers and thundershowers are expected along the south coast and Cape Metropole on Wednesday morning but are expected to return ot these areas by Wednesday evening.

On Thursday, a surface low and associated cold front associated with the cut-off low which is now situated top the south-east of the country will make landfall over the western parts of the country. This wilol result in a large amount of rainfall particularly in the mountainous areas of the Cape Metropole and Cape Winelands where rainfall amounts could exceeed 50mm in a 24 hour period.

This considerable rainfall continuing over the four days may lead to localized and flash flooding. Flash flooding may occur during the heavy downpours over the southern and eastern parts of the Western Cape. Rivers and small streams also carry the risk of flooding due to the high accumulations of rainfall expected within the catchment basin. Due to long periods where continuous rainfall is expected, the ground may also become saturated as the water table rises, causing more run-off and localized flooding. The highest risk for flooding is for Tuesday and Wednesday.

2.2. Strong to gale force winds

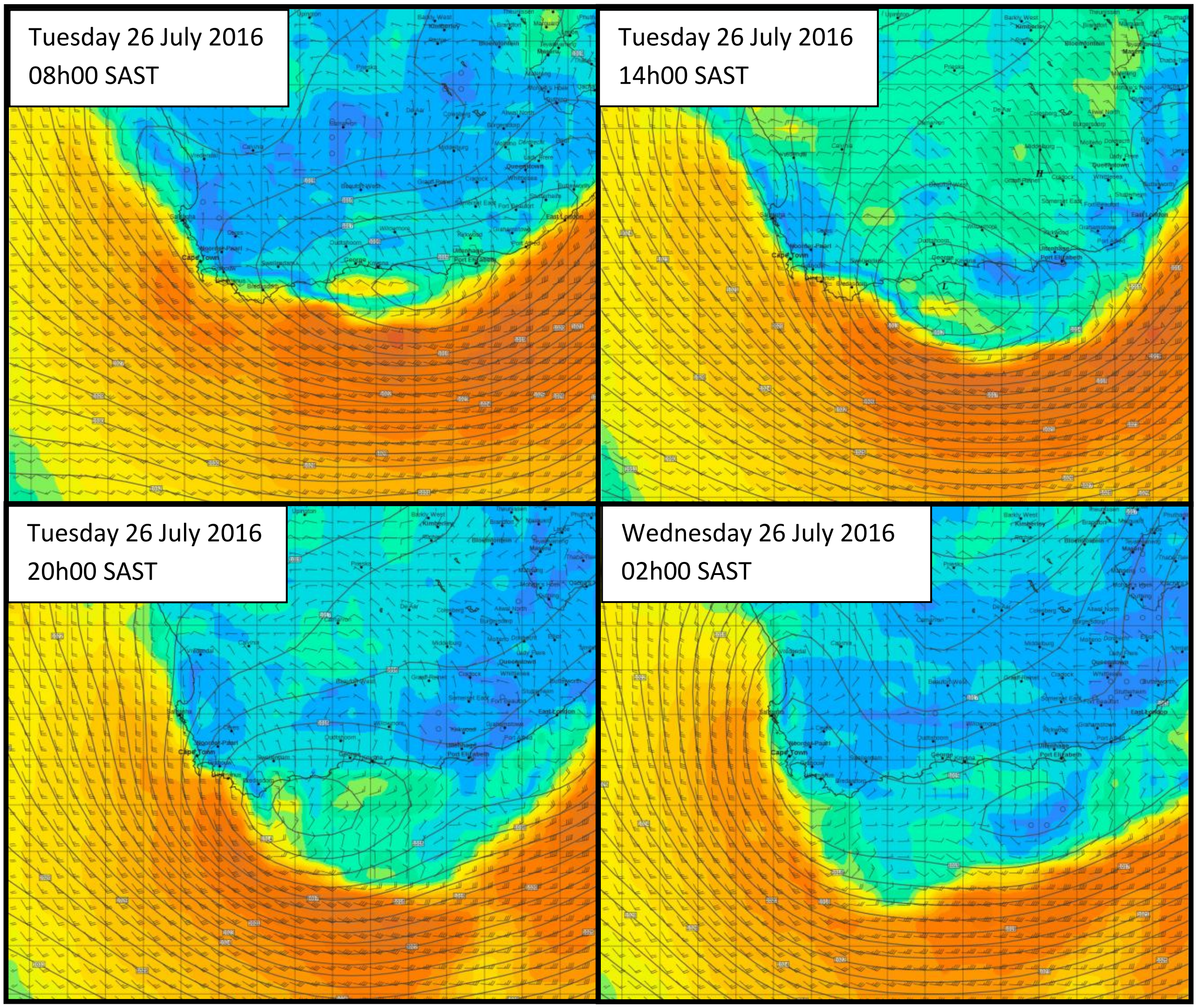

Figure 3: Surface winds (in knots) projected for Tuesday 26 July 2016 at 08:00SAST (top left), 14:00SAST (top right), 17:00SAST (bottom left) and 20:SAST (bottom right).

Strong winds are expected along the south coast during Monday, increasing in speed as the day progresses. Overnight the low pressure deepens quickly, slightly moves off the coast and starts propagating westward along the coast. This causes strong to gale force winds behind the low pressure for the south coast. As the low pressure propagates further west, the gale force winds propagate with the low becoming more southerly during Tuesday late morning, i.e. directly on-shore (Fig. 3) and affect the south-west coast into the Atlantic Sea Board side.

2.3. High seas

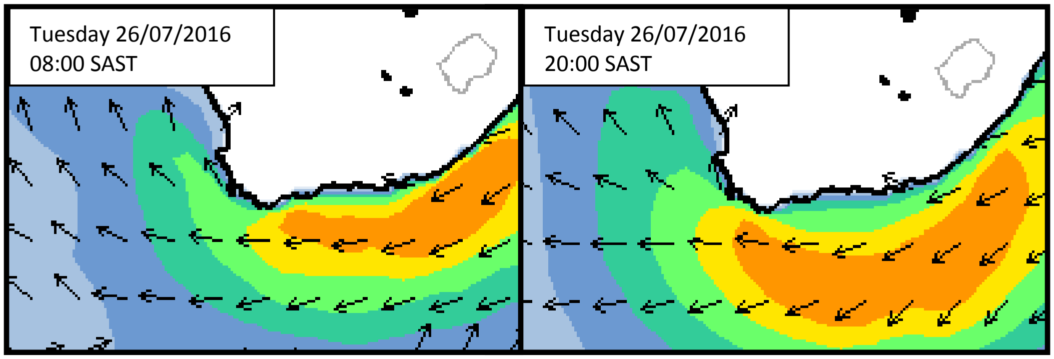

Figure 4: Wave heights for Tuesday at 08:00 SAST (left) and 20:00SAST (right) (Source: PassageWeather.com).

High sea conditions are expected along the Western Cape southern coastline where wave heights increase overnight Monday into Tuesday. Wave heights (expected to be 4-5m in the morning) increase during the day, and may even reach between 6-8m during the early afternoon. Waves start to subside during Wednesday morning. The swell direction is expected to be from an easterly to south-easterly direction, which does not commonly occur along the south coast. Therefore, the combined effect of this uncommon swell direction, the very high wave heights expected, adverse weather associated with precipitation, and gale force winds, will result in extremely dangerous sea conditions.

Furthermore, the bays all along the south coast are orientated towards the easterly/south-easterly direction, therefore these bays will be exposed to the south-easterly swells and rough sea conditions. High sea conditions are therefore likely to penetrate directly into the bays and harbours. This could cause considerable damage to vessels in the harbours, infrastructure on the beach front, as well as flooding of roads along the beach front.

2.4. Snowfall and very cold conditions

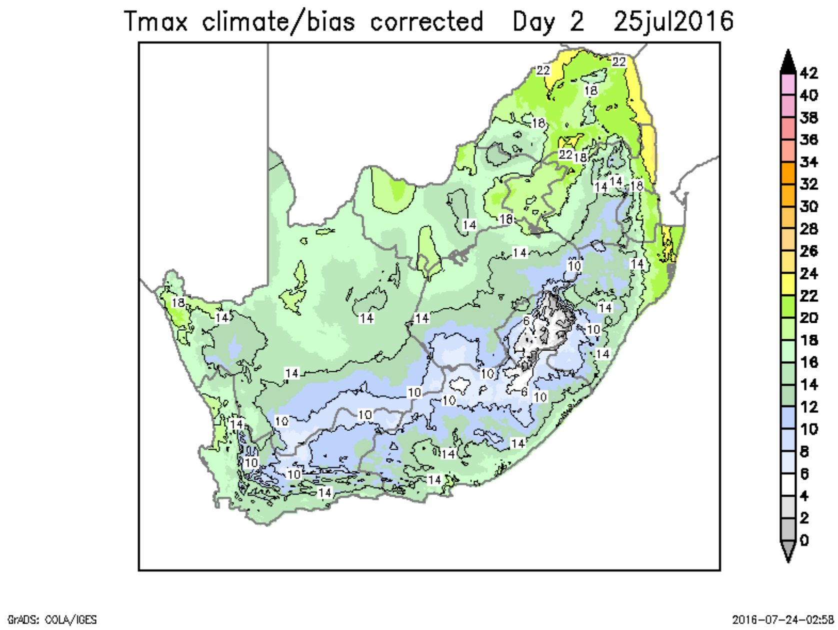

Figure 5: Maximum temperature prediction for Monday 26 July (Copyright: SAWS 2016).

Cold conditions are expected for both the Western and Northern Cape next week. With no opportunity for recovery in temperatures, very cold conditions persist for the week. Possible light snowfalls may occur over the Nuweveld and Swartberg mountain ranges Monday afternoon into Tuesday morning (Fig. 6). However, snowfalls will most likely only be for the mountain peaks and not cause disruption over the Western Cape.

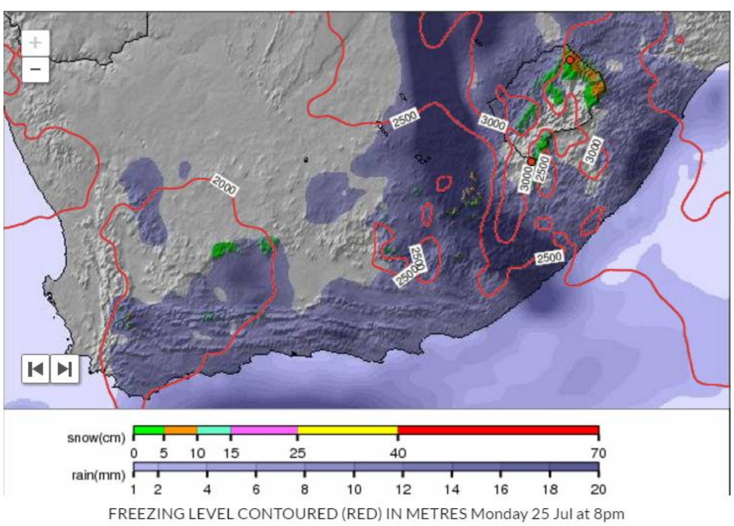

Figure 6: Snow prediction for Monday at 20h00 SAST (Source: Snow-forecast.com).

3. Contact information

The South African Weather Service will continue monitoring the effects of the current weather system and will post updates as the need arises. For further information or clarification you may contact us on:

Duty Forecaster (Cape Town Regional Office) (04h00 – 20h30)	021 935 5777
Duty Forecaster (National Forecasting Centre) (20h30 – 04h00)	012 367 6041

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