

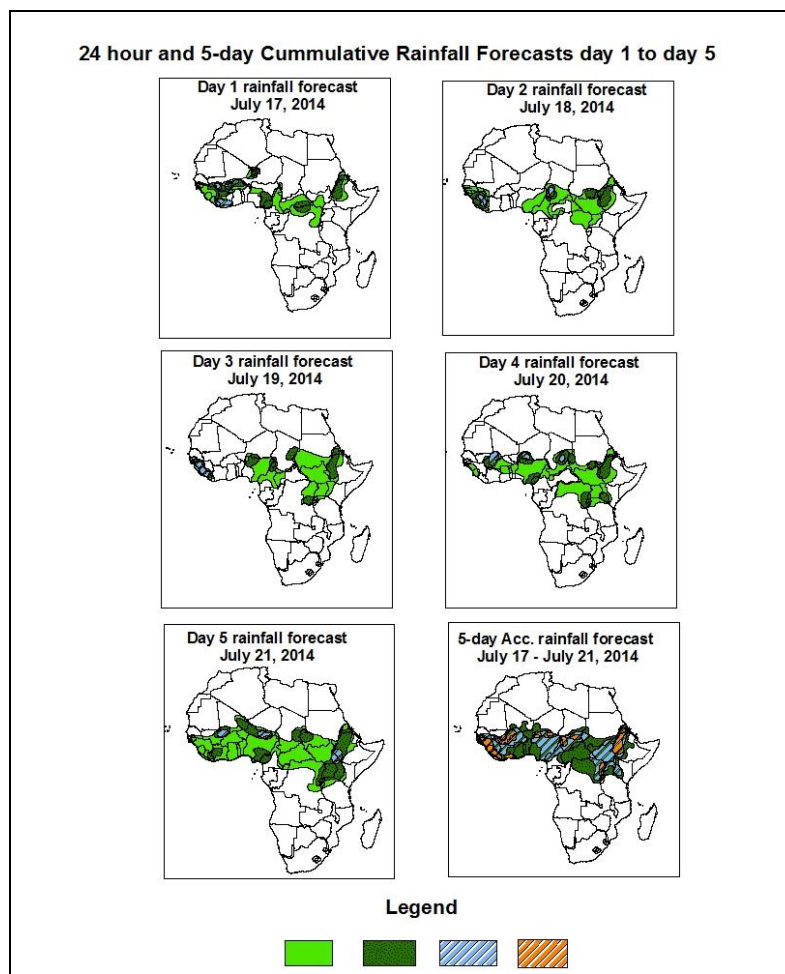


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of July 17 – 06Z of July 21, 2014. (Issued at 1600Z of July 16, 2014)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP/GFS and UK Met Office NWP outputs, and the NCEP global ensemble forecasts system (GEFS) and expert assessment.

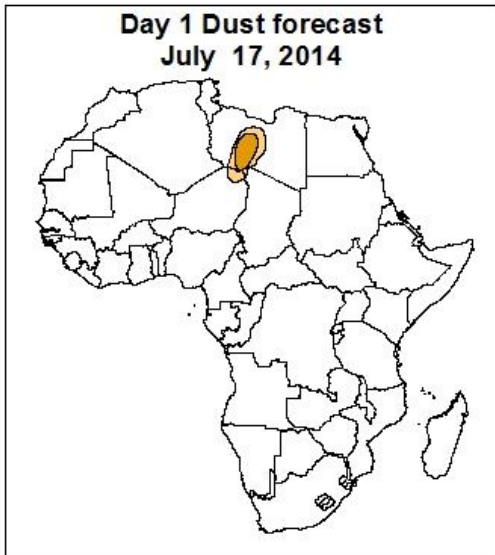


Summary

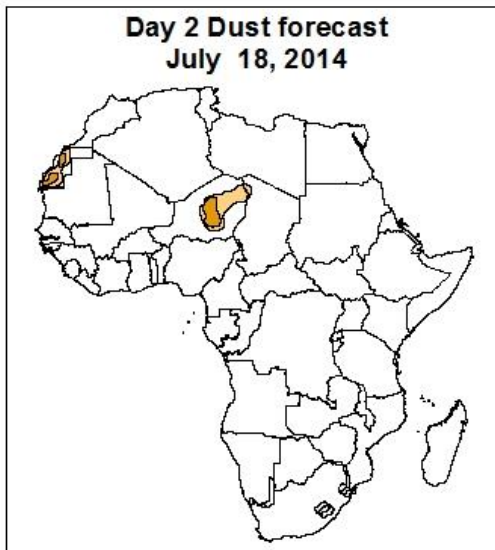
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Ethiopia, DRC, Uganda, and the neighboring areas, and westward propagating convective systems across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over southern Senegal, Guinea-Conakry, Sierra Leone, Liberia, portion of Mali, Ivory-Coast, Ghana, local part of Niger, Togo, Benin, Nigeria, and portion of Cameroon, local part of CAR, southern Chad and Sudan, northern DRC, portion of Uganda, Eritrea, western Kenya and Ethiopia.

Atmospheric Dust Forecasts, day 1 to day 3,
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

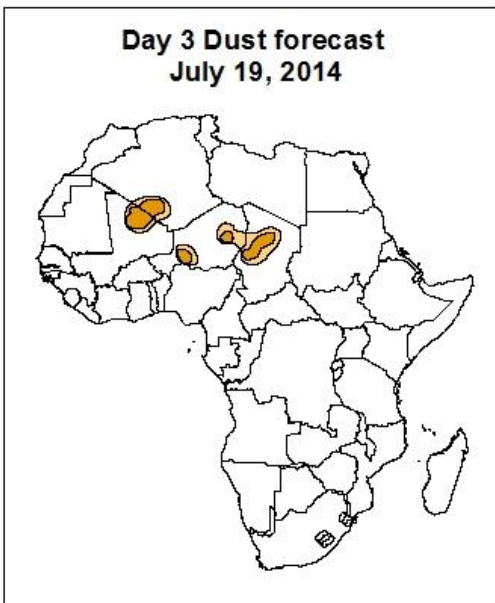
Day 1 Dust forecast
July 17, 2014



Day 2 Dust forecast
July 18, 2014



Day 3 Dust forecast
July 19, 2014



Highlights

There is an increased chance for moderate to high dust concentration over Mali, Niger, Chad, Algeria, and Libya.

Legend



MDC, Vis. < 5km



HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of July 16, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify through 24 to 48 hours with its central value increasing from about 1030hpa in 24hours to 1032hpa in 48hours, and then it is expected to weaken from 72 to 120 hours with its central value decreasing from about 1030hpa in 72hours to 1027hpa in 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken through 24 to 120 hours with its central pressure value decreasing from about 1039hpa in 24 hours to 1029hpa in 120 hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken through 24 to 48 hours with its central pressure value decreasing from about 1029hpa in 24 hours to 1021hpa in 48 hours and then it is expected to intensify from 72 to 120 hours with its central pressure value increasing from about 1026hpa in 72 hours to 1029hpa in 120 hours, according to the GFS model.

The central pressure associated with the heat low in the region between western Sahel and Chad is expected to vary in the range between 1004hpa to 1006hpa from 24 to 120 hours. The heat low over Sudan is expected to deepen from 24 to 72 hours with its central pressure value decreasing from about 1006hpa in 24 hours to 1004hpa in 72 hours, and then it is expected to fill up from 72 to 120 hours with its central pressure increasing about 1004hpa to 1006hpa. The heat low across central Sahel is expected to deepen from 24 to 96 hours with its central pressure value decreasing from about 1012hpa in 24 hours to 1010hpa in 96 hours, and then it is expected to fill up with its central pressure value increasing from about 1010hpa in 96hours to 1011hpa in 120 hours, according to the GFS model.

At 925Hpa level, a zonal wind convergence is expected to prevail in the region between Mauritania and Sudan through 24 to 120 hours. Dry northeasterly winds are expected to prevail over parts of Mauritania, Mali, Algeria, Chad, Libya and north of Sudan. Local wind convergences are also expected over DRC, Uganda and Ethiopia during the period of forecast.

At 850Hpa level, seasonal wind convergences are expected to remain active in the region between Mali and Sudan through 24 to 120 hours. Local wind convergences are also expected to remain active over DRC, Uganda, and Ethiopia during the forecast period.

At 700hpa level, a trough in the easterly wind flow is expected to propagate across the western and central Sahel from 24 to 120 hours. A cyclonic circulation and its associated trough is expected to propagate across the southwestern corner of West Africa towards end of the forecast period.

At 500Hpa level, a zone of moderate easterly wind (30kts), associated with African easterly jet is expected to prevail over western Sahel and Chad with the core of the jet propagating westward between central Sahel and western Sahel, through 24hours to 120 hours.

At 150hpa level, moderate wind (>30kts) is expected to prevail over western Africa and western central Sahel through 24hours to 120 hours, and strong wind (>50kts) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over, Niger, Chad, Sudan, Ethiopia, Djibouti, and Somalia through 24 hours to 120 hours.

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Ethiopia, DRC, Uganda, and the neighboring areas, and westward propagating convective systems across West Africa are expected to enhance rainfall in their respective regions.

Thus, there is an increased chance for moderate to heavy rainfall over southern Senegal, Guinea-Conakry, Sierra Leone, Liberia, portion of Mali, Ivory-Coast, Ghana, local part of Niger, Togo, Benin, Nigeria, and portion of Cameroon, local part of CAR, southern Chad and Sudan, northern DRC, portion of Uganda, Eritrea, western Kenya and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

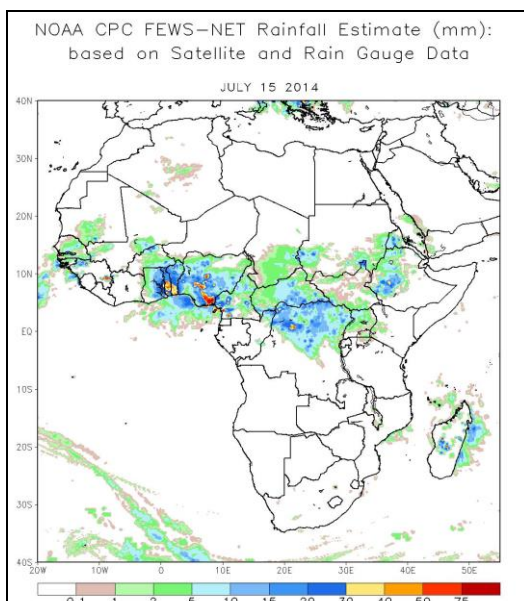
(July 15 2014 – July 16, 2014)

2.1. Weather assessment for the previous day (July 15, 2014)

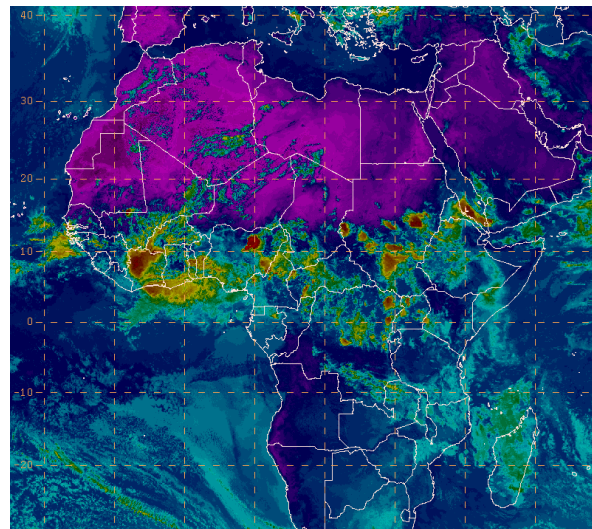
During the previous day, moderate to heavy rainfall was observed over southern Mauritania, Togo, Benin and Nigeria, local part of Senegal, Mali, Burkina-Faso, Cameroon and Sudan, eastern Ghana, portion of CAR, northern DRC, central Madagascar, Western Ethiopia and Eritrea.

2.2. Weather assessment for the current day (July 16, 2014)

Intense clouds are observed over southern Mauritania, Burkina-Faso, local part of Mali, Benin, Togo, portion of Ivory-Coast, local part of Nigeria, Cameroon, CAR, DRC and Uganda, western Kenya, northern Ethiopia and eastern Eritrea .



IR Satellite Image (valid 1600 Z of July 16, 2014)



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image

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