Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 22nd May 2007

AFRICAN DESK
CLIMATE PREDICTION CENTER
National Centers for Environmental predictions
National Weather Service
NOAA
Camp Springs MD 20746

FORECAST DISCUSSION 14H00 EST 22nd May 2007
Valid: 00Z 23rd May 2007- 00Z 25th May 2007.

FLOW AT 200MB

At T+24 hrs, the general flow pattern over Southern Africa (South of the Equator) shown by the GFS, ECMWF and UK-MET models indicates a trough over the southeastern coast of the sub continent, with a closed circulation near 31°S 39°E associated with southwest-northwesterly stream up to 110 kt, causing convergence over areas which are to the east of 35°E longitude but to the south of 16°S latitude. There is a shallow trough over the northern parts of the Mozambican Channel, causing convergence over these areas. A high pressure system cell centered above central D.R. Congo is causing divergence over the most of the sub continent. Areas which are between 50°E and 70°E longitude but between 15°S and 0° latitude are under subsidence, due to a high pressure cell centered at 8°S 62°E. The rest of the sub continent is under a ridge.
At T+48 hrs, the trough which was over the southeastern coast of the sub continent has shifted eastward, due to a ridge. The shallow trough which was over the northern parts of the Mozambican Channel has also shifted eastward. There is a trough over the Atlantic Ocean, approaching the southwestern coast of the sub continent. Divergence prevails over the rest of the sub continent.
At T+72 hrs, the trough which was above the southern coast of Madagascar has shifted eastward, weakening in amplitude, and the winds has also weakened. The trough which was above the Atlantic Ocean approaching the southwestern coast of the sub continent has shifted eastward, causing convergence over western South Africa.

FLOW AT 500MB

At T+24 hrs, the GFS models show a upper level trough above southeastern coast of the sub continent with a closed circulation near 41°S 42°E, associated with southwest-northwesterly stream up to 80 kt, causing convergence over these areas. Areas which are to the north of 8°S latitude but to the east of 23°E longitude are under convergence due to a southeasterly trough. The Mascarene high with two cells, centered at 19°S 58°E and

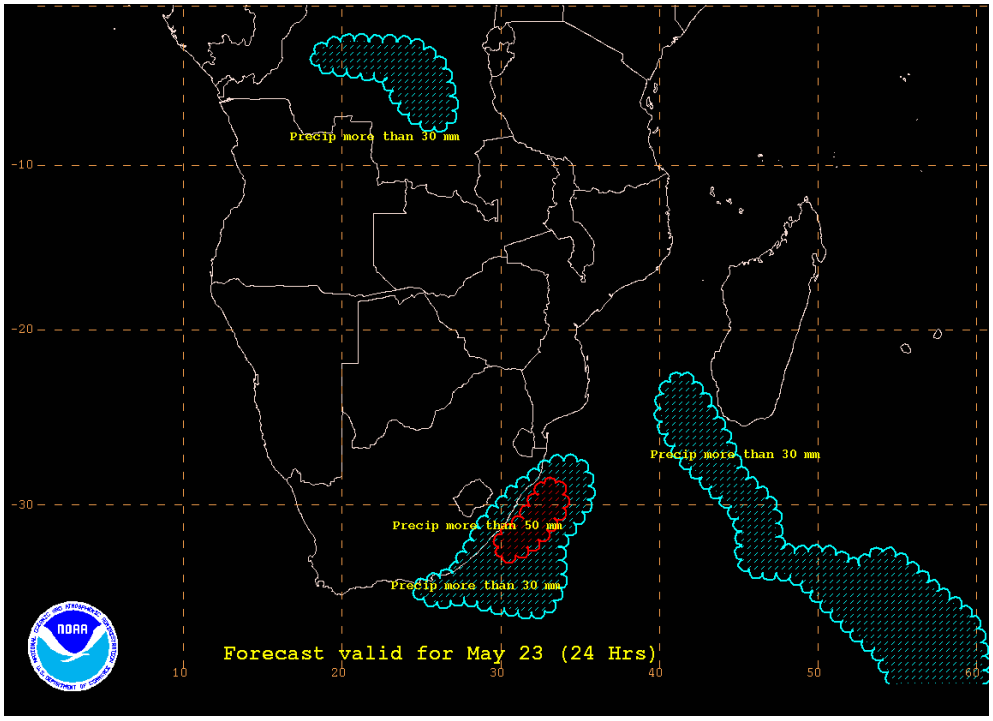
over southwestern D.R. Congo (4°S 20°E), is ridging the most of the sub continent. The southwestern parts of the sub continent are under a ridge of a sub tropical high which is causing onshore flow along the southern coast of South Africa.
At T+48 hrs, the upper level trough associated to a cut-off low, which was over the southeastern coast of the sub continent is slightly shifting eastward, and the main stream approaches from the rear and is expected to catch the upper level low, merging and weakening. Convergence over areas which are to the north of 8^{o}S latitude but to the east of 23^{o}E longitude prevails. There is a trough to the southwestern coast of the sub continent. The rest of the sub continent is under divergence of the Mascarene high.
At T+72 hrs, the upper level trough which was to the southeast of the Mozambican Channel has shifted southeastward weakening. The trough which was over the southwestern coast of the sub continent has shifted eastward. Over the rest of the sub continent, there is no significant change in the general flow pattern.
The ensemble members of the GFS show a large spread of the 5700m and 5870m height contours to the northeastern coast of Madagascar and over southwestern coast of South Africa, which implies uncertainty in location of the height gradient and also in the amplitude of the trough to the southwestern coast of South Africa up to T+48 hrs.

FLOW AT 850MB

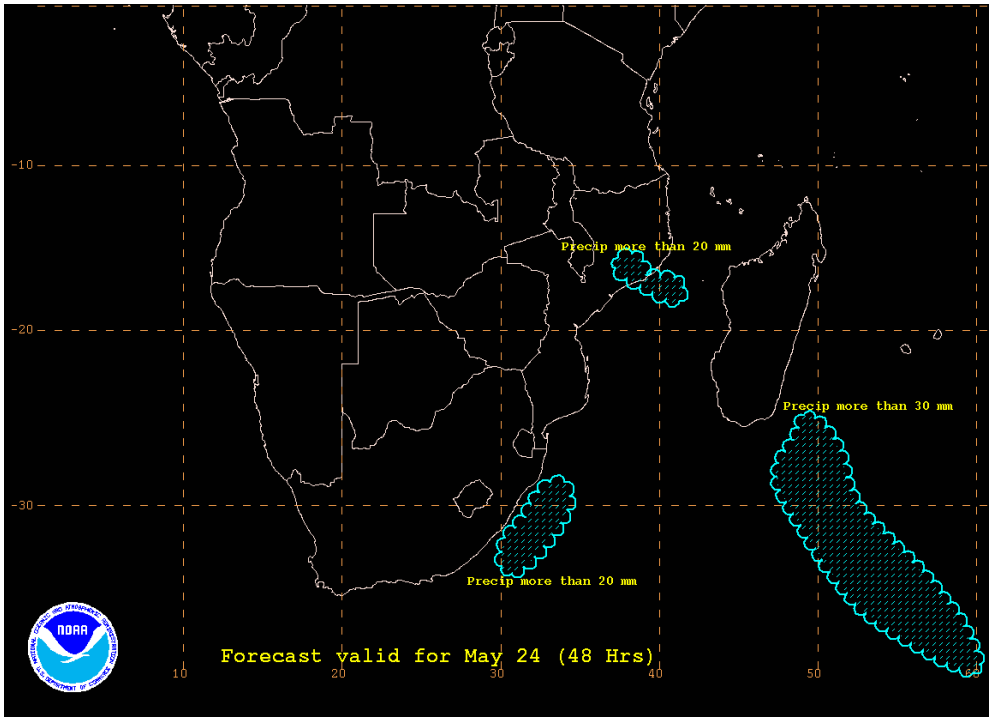
At T+24 hrs, there is a trough to the southeast of the Mozambican Channel associated to a deep low near 40°S 43°E and cyclonic winds up to 30 kt, stretching into central Mozambican Channel, causing convergence over these areas. Areas of convergence can be seen to the southwestern coast of Angola, due to a cut-off low. Areas which are to the north of 6^{o}S latitude are under convergence due to a southeasterly trough, which is sustained by subsidence in 200 mb. The Mascarene high pressure cell centered at 31°S 70°E is hardly throwing a ridge into the northeastern parts of the sub continent, but causing onshore flow regime along the eastern coast of Madagascar, northeastern extreme of the coast of Mozambique and along the coast of Tanzania. A sub tropical high pressure system, centered over southwestern coast of South Africa (34^{o}S 20^{o}E) is ridging the most of the sub continent and causing onshore flow along the southern coast of South Africa and also along the southern and central coast of Mozambique.
At T+48 hrs, the trough which was to the southeast of the Mozambican Channel has shifted to the south of Madagascar as the sub tropical high shifts eastward ridging the most of the sub continent and causing onshore flow along the southern and central coast of Mozambique. There is a trough to the southwestern extreme of the coast of South Africa, aligned with a cut-off low to the northwest of the coast of Namibia, causing convergence over these areas. The St Helene high centered at 38^{o}S 2^{o}W is hardly ridging the western coast of South Africa. Over the rest of the sub continent, there is no significant change in the general flow pattern.
At T+72 hrs, the trough which was to the southwestern extreme of the coast of South Africa has rapidly shifted into southeastern parts of the sub continent has the St Helene high is ridging in from the southwest. The sub tropical high which was over the southern parts of the sub continent has shifted northeastward into the center of Mozambique. Convergence over areas which are to the north of 6^{o}S latitude and to the northwest of the

coast of Namibia is maintained. Anticyclonic flow prevails over the rest of the sub continent, hence subsidence.

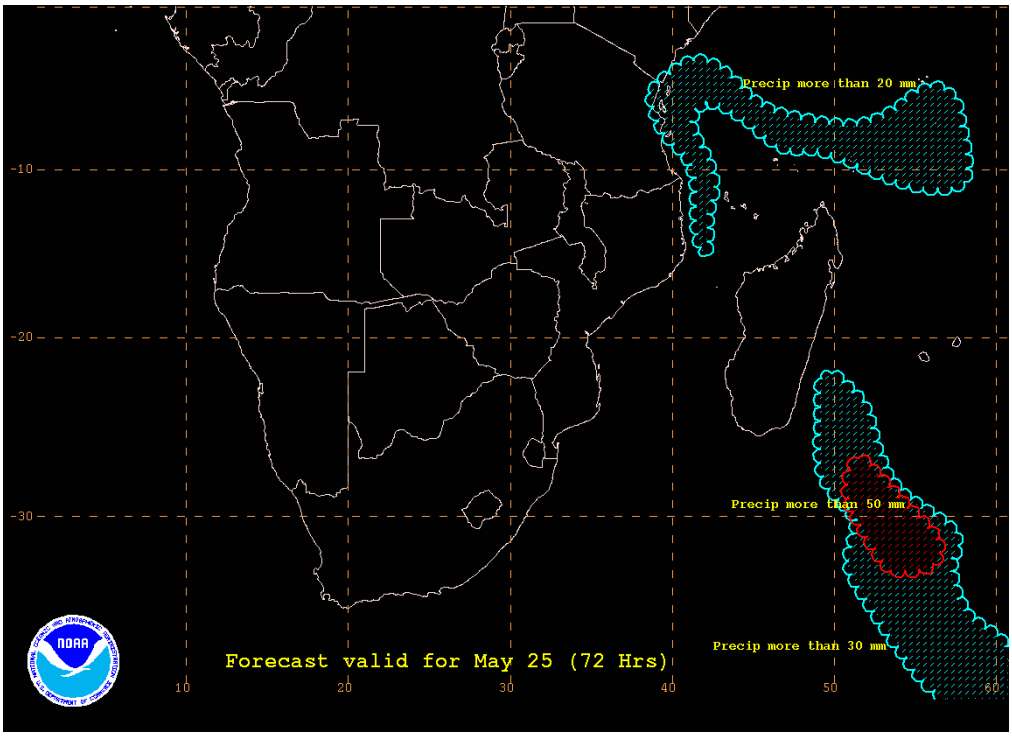
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



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