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Mesoscale Discussion 799

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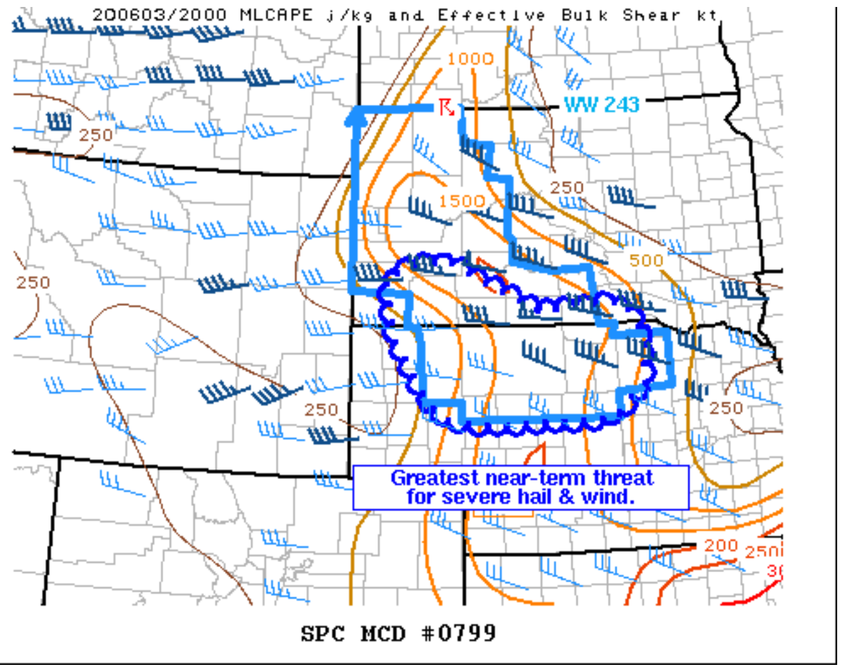

Mesoscale Discussion 0799
NWS Storm Prediction Center Norman OK
0356 PM CDT Wed Jun 03 2020

Areas affected...Western and southwestern South Dakota into northern Nebraska

Concerning...Severe Thunderstorm Watch 243...

Valid 032056Z - 032300Z

The severe weather threat for Severe Thunderstorm Watch 243 continues.

SUMMARY...The threat for severe thunderstorms continues for WW 243. The greatest near-term threat for severe hail and wind will lie from southwest South Dakota eastward along the SD/NE border.

DISCUSSION...Isolated thunderstorms continue to develop across the WW 243 area both along a weakly convergent trough axis along western SD and in the vicinity of an outflow boundary that has stalled out north of the NE/SD border. The environment over the watch area remains supportive of a severe weather threat with severe hail already reported near Rapid City, SD. MLCAPE has increased slightly to 1500-2000 J/kg and deep layer shear remains supportive of organized convection. Discrete modes remain likely along the trough axis across western SD, but lingering MLCIN and weak forcing for ascent has limited the convective coverage so far. Additionally, storms that develop along the trough axis may be limited in eastward extent by the more stable cold pool air north of the outflow boundary (as indicated in mesoanalysis 0-3 km lapse rates). Despite these factors, a window for severe hail/wind remains with any storm that can become established.

Further south along the NE/SD border, weak forcing for ascent may limit the coverage of storms, but less mixed-layer inhibition will increase the potential for sustained, mature convection. Steeper low-level lapse rates will also support a better wind threat compared to areas further north along the trough axis. Given these considerations, this southern extent of the watch will see the better near-term potential for severe wind and hail.

..Moore.. 06/03/2020

...Please see www.spc.noaa.gov for graphic product...

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