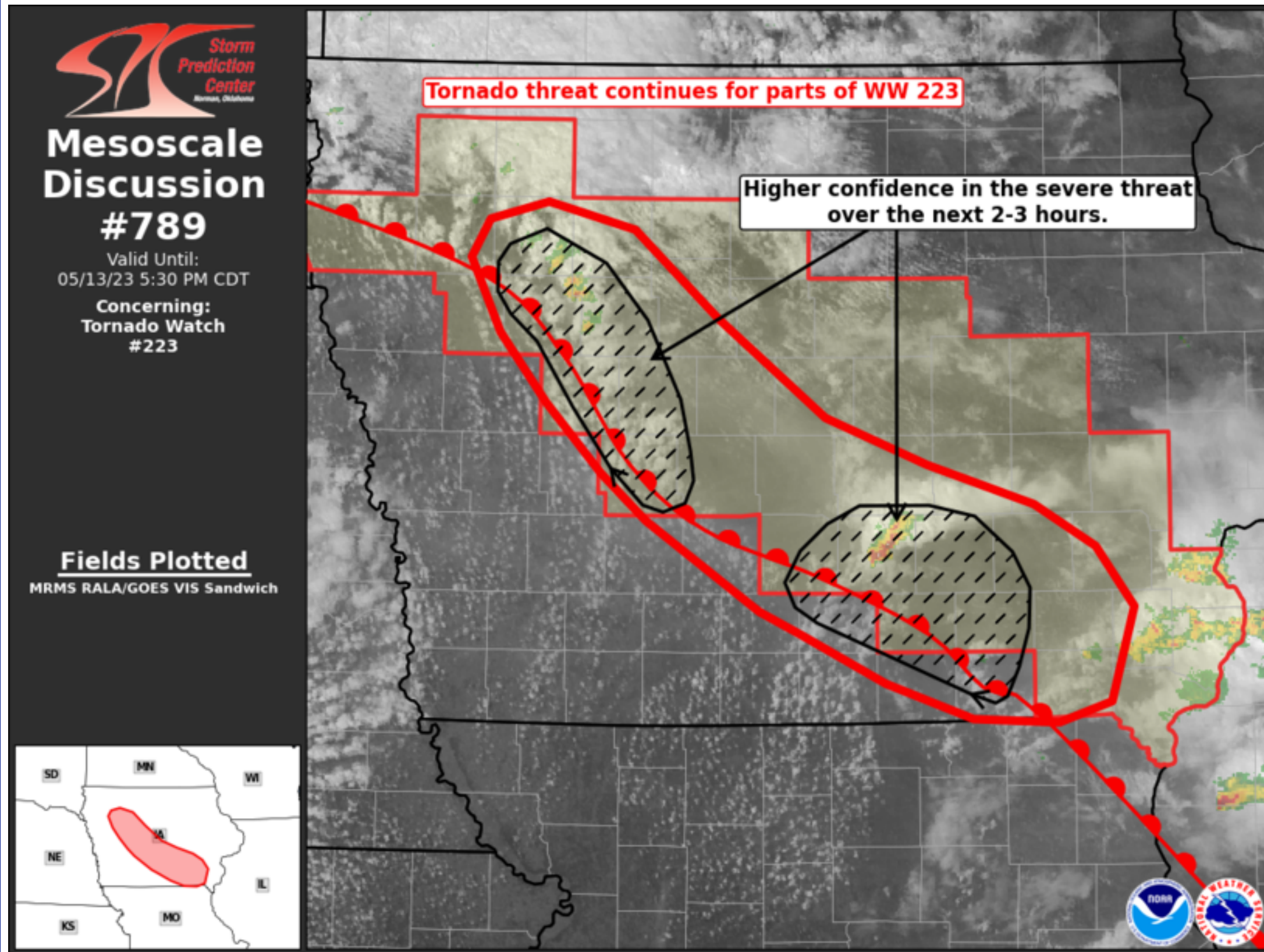


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Mesoscale Discussion 789

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Mesoscale Discussion 0789
 NWS Storm Prediction Center Norman OK
 0331 PM CDT Sat May 13 2023

Areas affected...Central to southeast Iowa

Concerning...Tornado Watch 223...

Valid 132031Z - 132230Z

The severe weather threat for Tornado Watch 223 continues.

SUMMARY...The tornado threat continues across parts of WW 223. Confidence in the severe threat is highest across parts of central/northwest IA as well as south-central/southeast IA for the next few hours.

DISCUSSION...Regional radar imagery over the past couple of hours has shown a broken band of discrete convection across northwest IA as well as more discrete convection across central/southeast IA. Despite a favorable thermodynamic and kinematic environment for supercells (MLCAPE over 1000 J/kg and 40-50 knots of effective bulk shear per latest RAP analyses), convection thus far appears to not be fully realizing the available environment based on the relatively short lifespan of individual cells and rather anemic appearance of most convection in IR imagery. This is likely due to fairly weak low-level forcing for ascent with a notable diminishment of cumulus depth and westward retrograde of the warm front noted in surface obs across central IA. Despite this limitation, a few brief tornadoes have been reported since 18 UTC, and the KDMX VWP continues to sample 0-1 km SHR on the order of 100-150 m2/s2. Given the aforementioned environmental characteristics, a conditional tornado threat continues across the entire watch area.

Over the next couple of hours, a relatively higher severe threat will likely be focused within two corridors to the northwest and southeast of the Des Moines area. Within these corridors, visible satellite imagery has shown persistent agitated cumulus and multiple attempts at more robust convection. This supports recent RAP analyses that depict locally enhanced low-level convergence and ambient vorticity along the frontal boundary that may be conducive for tornadogenesis with any stronger updraft. Recent hi-res guidance continues to hint that the greatest potential for long-lived tornadic supercells resides across south-central IA, which matches environmental trends (higher buoyancy and stronger baroclinicity along the warm front) and recent radar/satellite observations.

..Moore.. 05/13/2023

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

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