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Mesoscale Discussion 1338

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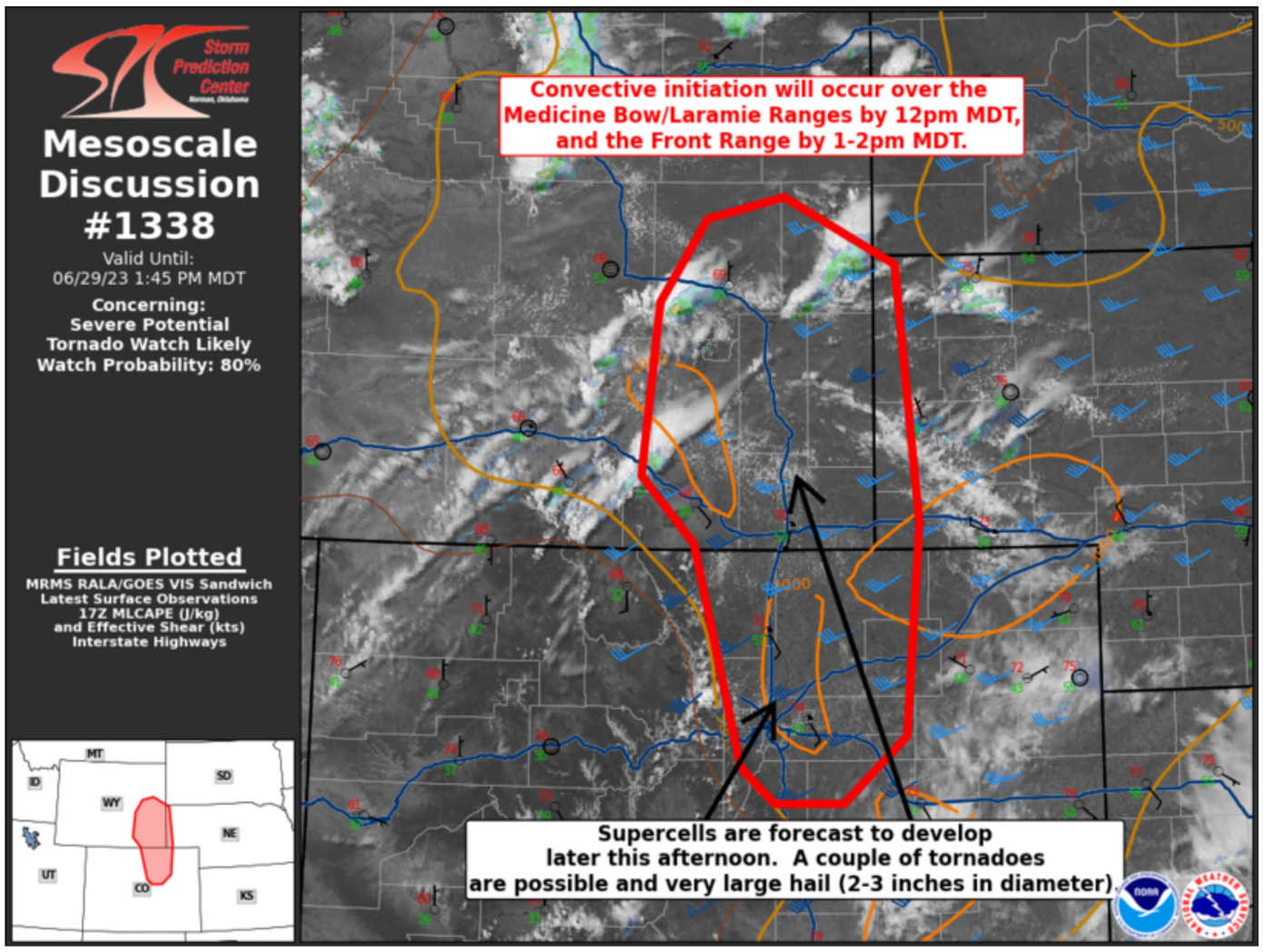

Mesoscale Discussion 1338
NWS Storm Prediction Center Norman OK
1240 PM CDT Thu Jun 29 2023

Areas affected...CO Front Range and adjacent high plains...southeast and eastern WY...western NE Panhandle

Concerning...Severe potential...Tornado Watch likely

Valid 291740Z - 291945Z

Probability of Watch Issuance...80 percent

SUMMARY...Convective initiation will occur over the Medicine Bow/Laramie Ranges by 12pm MDT, and the Front Range by 1-2pm MDT. Discrete supercells are forecast to develop later this afternoon once updrafts mature/intensify. A couple of tornadoes are possible, including very large hail (diameters 2-3 inches).

DISCUSSION...Visible satellite imagery shows developing convection over the Medicine Bow Range with a building cumulus field located near the Continental Divide west of Denver. The airmass is very moist with mid 50s surface dewpoints prevalent from the Palmer Divide northward through Cheyenne and into northeast WY. Strong heating will continue to occur through mid-late afternoon as temperatures warm through the 70s. Forecast soundings indicate convective inhibition is minimal as temperatures warm into the mid-upper 70s. Very steep lapse rates are denoted on the forecast soundings (around 8 deg C/km in the surface to 300 mb layer).

The moist low-level upslope flow coupled with orographic lift downstream of a mid-level trough pivoting eastward through the eastern Great Basin, will promote scattered thunderstorms developing by mid afternoon from near I-70 northward along I-25 into eastern WY. Moderate buoyancy (2000-2500 J/kg MLCAPE) and long hodographs will favor discrete supercells initially with the more intense storms. Large to very large hail is becoming increasingly probable this afternoon both in the general Denver vicinity and near/north of the Cheyenne Ridge per CAM model guidance. The moist low levels coupled with a supercellular mode lend the possibility for tornadoes. As storms move into the western NE Panhandle and far northeast CO during the early evening, expecting storm outflows to promote some clustering into a potential MCS.

..Smith/Guyer.. 06/29/2023

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

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