

Day 1 Convective Outlook

NWS Storm Prediction Center Norman OK  
1120 AM CDT Tue Jul 30 2019

Valid 301630Z - 311200Z

...THERE IS A SLIGHT RISK OF SEVERE THUNDERSTORMS OVER PARTS OF PENNSYLVANIA...NEW YORK...AND VERMONT...

...Synopsis...

In mid/upper levels, the synoptic pattern will continue to be dominated by a quasistationary single wave over the CONUS, whose troughing will extend over the Great Lakes, Ohio Valley and southward to the central Gulf. As a cyclone moves northeastward across the James Bay region and deepens, the synoptic trough to its south/southwest will drift eastward toward the Appalachians through the period, with a chain of embedded vorticity maxima near or just ahead of the height axis.

Upstream, the ridging portion of the wave will extend from an upper high anchored over the southern Rockies northward across the northern High Plains. Weak, convectively aided/induced vorticity maxima are evident over the northern Rockies of ID/MT, and are expected to move generally eastward across MT and the Dakotas today amidst amplifying larger-scale ridging aloft. Around the southwestern rim of the anticyclone, similarly low-amplitude/convectively modulated perturbations are apparent in satellite and composited radar imagery over portions of AZ (contributing to ongoing clouds/precip there) and southward across Sonora to the eastern Gulf of California.

At the surface, 11Z analysis showed a cold front extending from the area of its related James Bay mid/upper cyclone southward over northeastern ON to Lake Huron, then southwestward across northwestern IN, southern IL, and southeastern MO, becoming quasistationary from the western MO/AR Ozarks across northern OK. The western part of this boundary should become diffuse today, while the remainder moves slowly southeastward across the lower Great Lakes, OH, KY, western TN and northern/central AR. A prefrontal surface trough was drawn across central/northern NY and east-central PA into northern VA, and should remain near that corridor through the day. A wavy lee trough, with several weak surface lows attached, was drawn from central/southeastern MT southward across eastern portion of WY/CO. The MT part of the trough should realign more meridionally today over east-central MT.

...SUMMARY...

A few severe thunderstorms are possible today over parts of the Northeast, with more isolated strong storms affecting parts of the northern Great Plains, Gulf Coast, and central/southern Arizona.

...Northeast...

A broad upper trough is present today over eastern Canada and the Great Lakes region, with 30+ knot southwesterly midlevel winds

across parts of the Northeast. Visible satellite imagery shows mostly clear skies and strong heating occurring across much of PA/NY and New England, which combined with dewpoints in the mid/upper 60s will yield afternoon MLCAPE values of 1000 J/kg. A weak MCV is noted over western PA, which should help to organize convection over northern PA and central NY this afternoon. More isolated convection is expected farther east over eastern NY into VT. Forecast soundings throughout this area show only modest midlevel lapse rates, but sufficient low-level lapse rates and steering flow to pose some risk of damaging wind gusts. Have therefore upgraded the corridor of greatest confidence to SLGT risk.