EMPOWERING DECISION MAKERS 24/7

LONG RANGE WEATHER FORECAST

By Steve Mirsky – Senior Long-Range Meteorologist

GENERAL FORECAST DISCUSSION

July 29, 2024

NATIONAL SUMMARY

While most signs point to hot weather in most of the country, there are questions about a possible polar air mass intrusion later in the 11-15 day period and possible influences by a tropical feature around mid-month. Meanwhile, interaction between an upper atmospheric trough and a possible disturbance from the equatorial Atlantic could make for another hot West, cool Central, hot East alignment for a good portion of next month.

In the near term, thunderstorm potential will shift from Plains to the Middle Atlantic. Hot air from the West will expand as far east as the Mississippi Valley.

The 6-10 day period is largely hot, save for some spots in the West due to the monsoon and perhaps with a tropical disturbance in the Southeast.

The extended period may see weather go from hot-dominated to a cooler trend in the middle of the U.S., particularly if a tropical system enters the Gulf of Mexico as some of the 16-20 day numerical model forecasts are showing**.**

In August, the model derived forecast and the analog set generally show above normal precipitation from the Lower Mississippi Valley to New England with below normal rainfall over the Plains into western part of the Midwest (page 39). Temperatures will be near or above normal except over the Southeast (page 40).

CHICAGO AREA

An active week as we end July and begin August with several systems bringing a few rounds of showers and thunderstorms, some of which can be strong. But as an upper ridge builds into the Midwest, dry conditions are expected for this weekend. Next week should be less active although there will still be a couple of opportunities for some rain. Then the ridge is expected to flatten out which should result in several periods of showers and storms for weeks 3 and 4 with near normal rainfall (pages 36,38). By blending the model forecast with the analogs, rainfall for August should average near/slightly below normal (page 39).

Although clouds will be a limiting factor, very warm to hot weather is in store for the area this week along with rather humid conditions. But then a cool front will usher in less humid air during this weekend. Models show a ridge expanding into the Midwest early next week which would mean another few days of very warm or hot conditions before a cool front arrives later in the week. Then with the ridge breaking down, cooler conditions can occur for week 3 possibly continuing into at least part of week 4 (pages 35,37). The model forecast and the analogs indicate that the temperatures in August should average slightly above normal (page 40).

CENTRAL ILLINOIS

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SOUTH CENTRAL ENERGY REGION

South Central market: Above normal temperatures (except below normal South Texas) in the 1-5 day period will be followed by above normal readings for much of the region in the 6-10 and 11-15 day time frames. Readings will drop to near normal in the 16-20 day outlook.

St: Louis market: Above normal temperatures are expected in the 1-5 day period as well as the 6-10 and 11-15 day time frames. Readings will drop to below normal in the 16-20 day outlook.

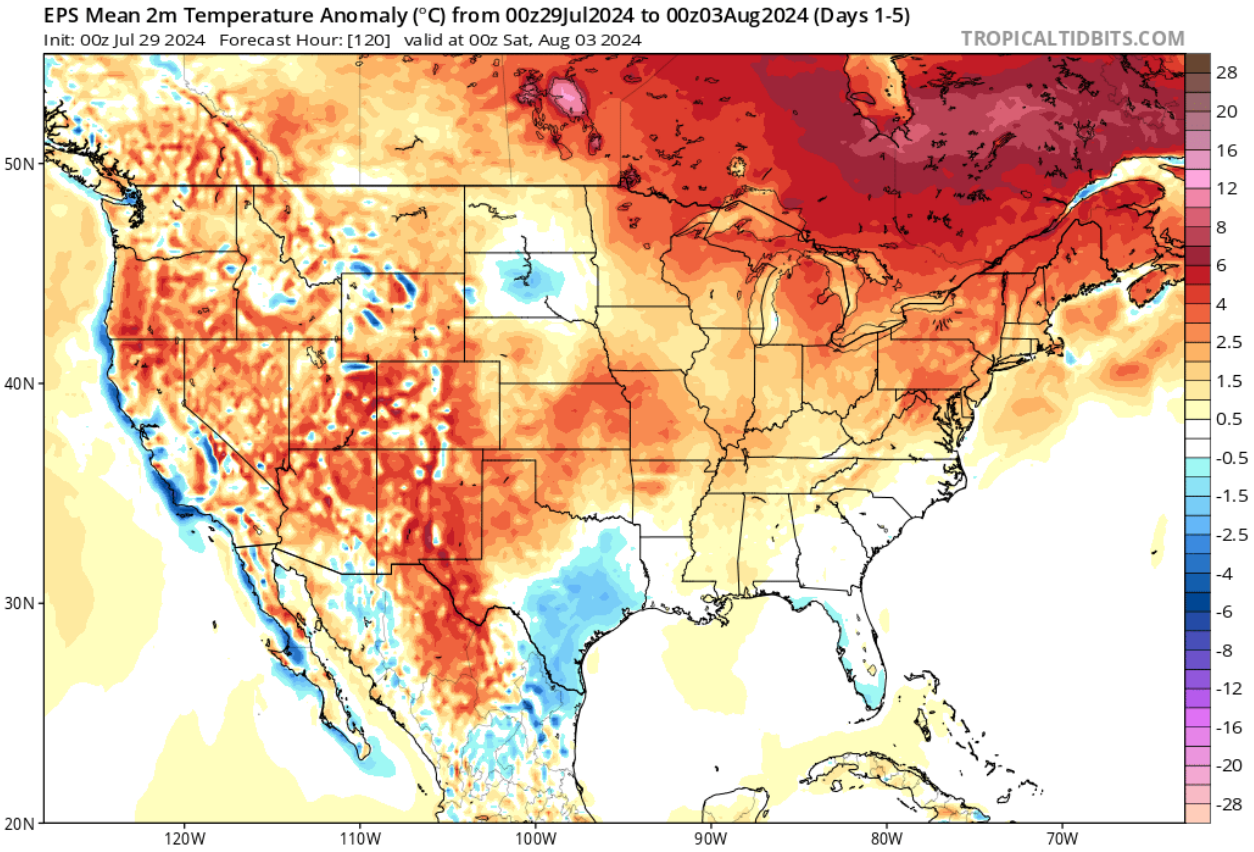
Thunderstorms could limit temperatures in South Texas during the 1-5 day period while the rest of the region is in a hot mode. A huge heat ridge will take over with hot weather and high cooling demand this weekend and into next week. Then cooling can take place for week 3 into part of week 4 due to ridges on both coasts and a gap in the middle in the central part of the nation (pages 35,37). In addition, a tropical disturbance will also be possible. For August, rainfall will average near/below normal (page 39). I prefer using a blend of the very warm model derived forecast and the hotter look of the analog solution (page 40). In any case,

it should be a very good month for energy usage/cooling demand with any tropical systems of course, being a limiting factor.

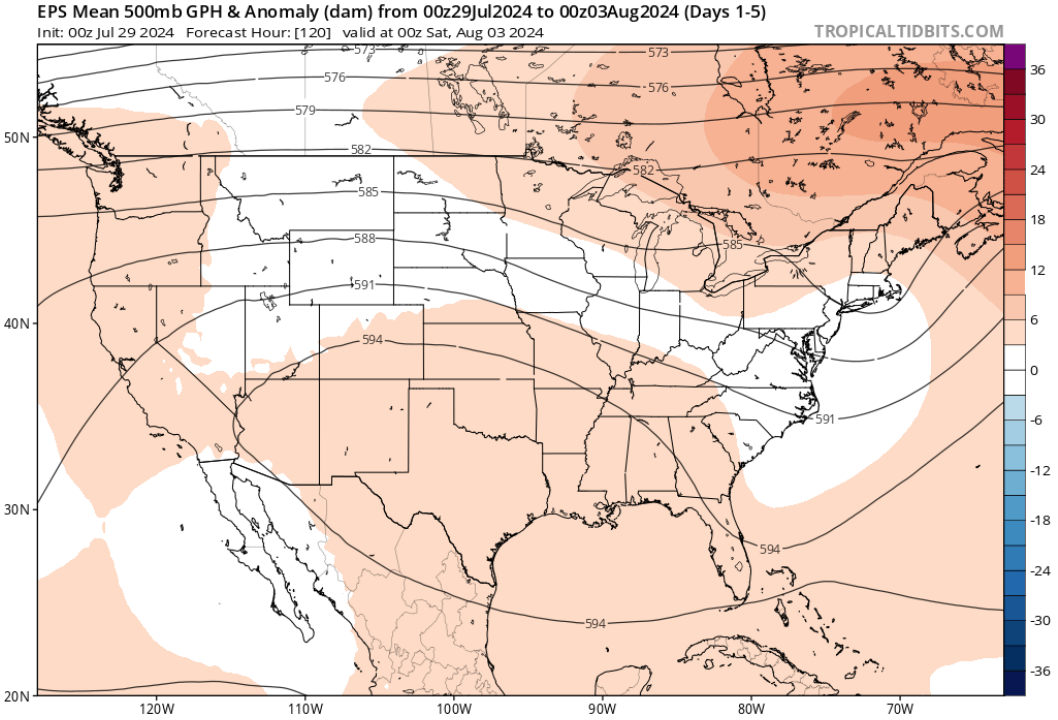
Days 1-5 (July 29-August2)

The continued slow rise in temperature brings heat to much of the central and eastern thirds of the country. Showers and thunderstorms will be plentiful from the Mid-Mississippi Valley and Midwest into the Northeast but start to decrease from the west late in the period as a cool front sweeps through.

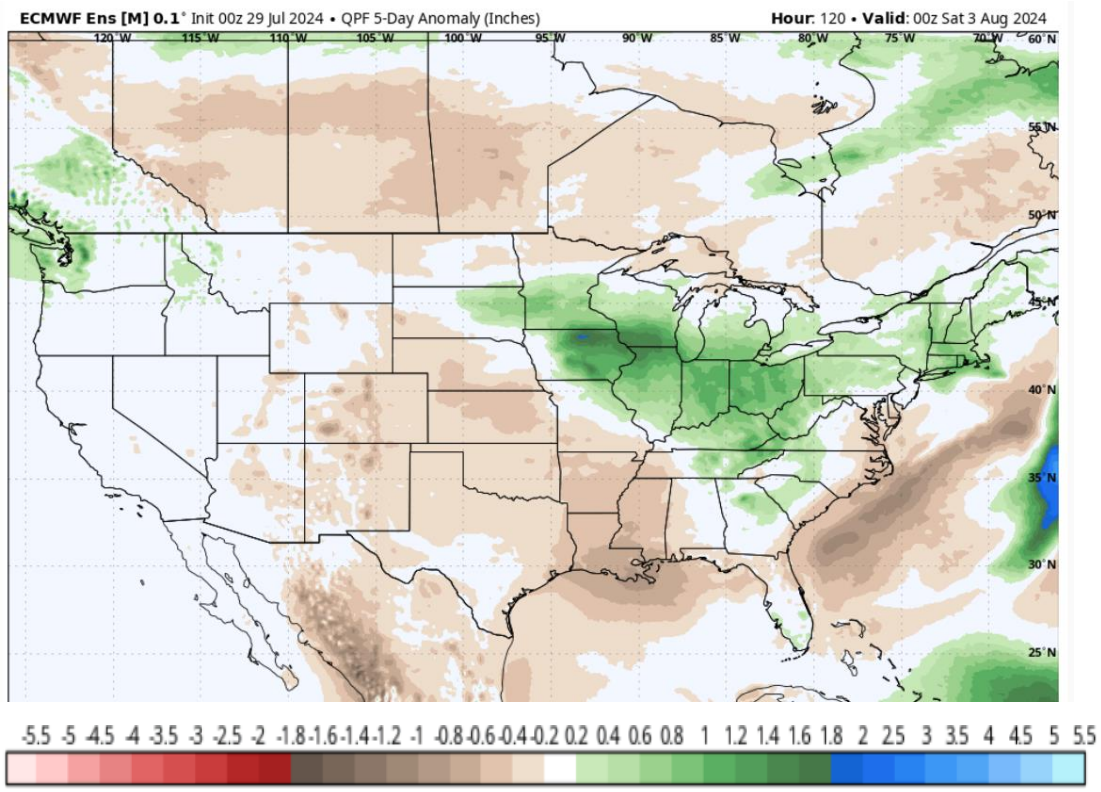
Temperature Anomaly



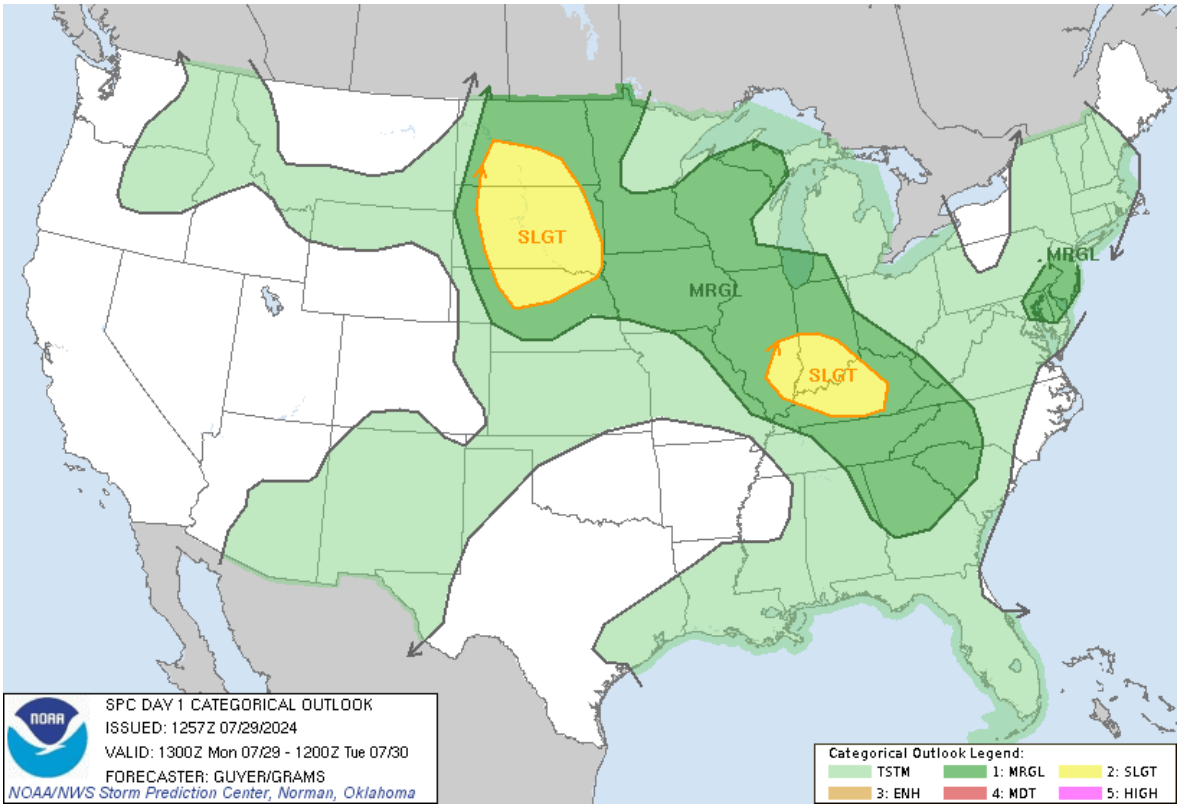
Upper Level Pattern



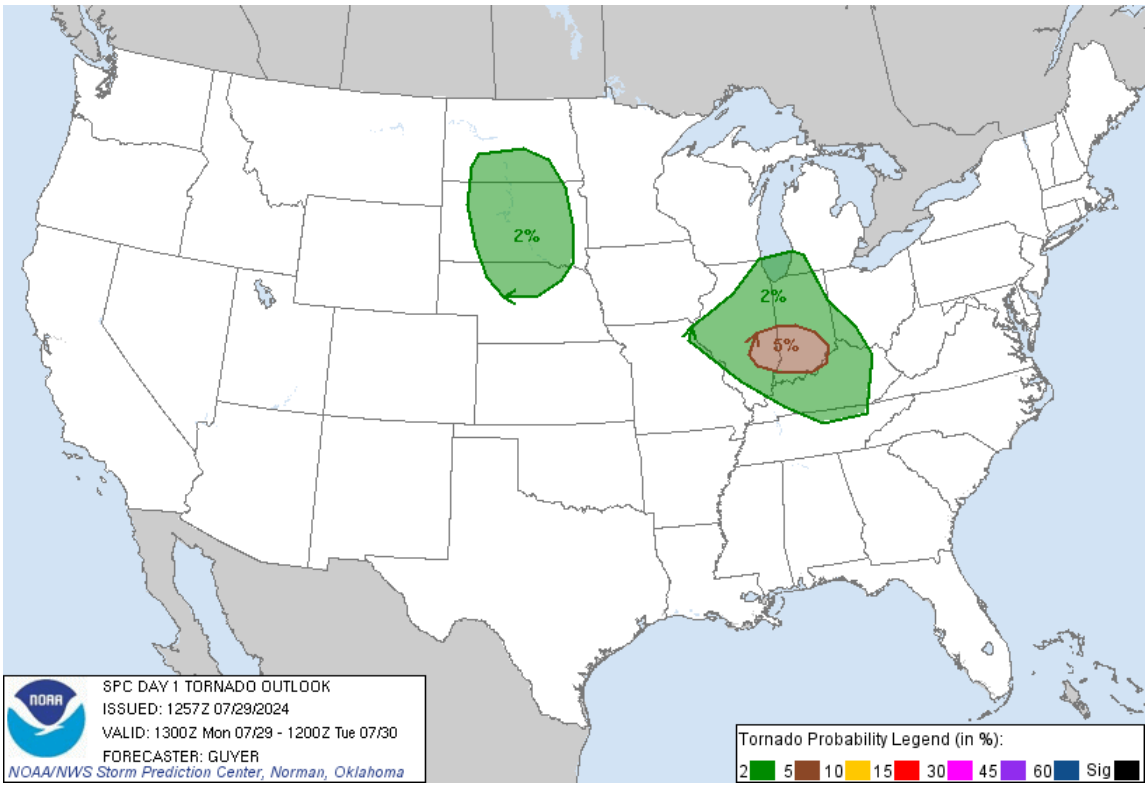
Precipitation Anomaly



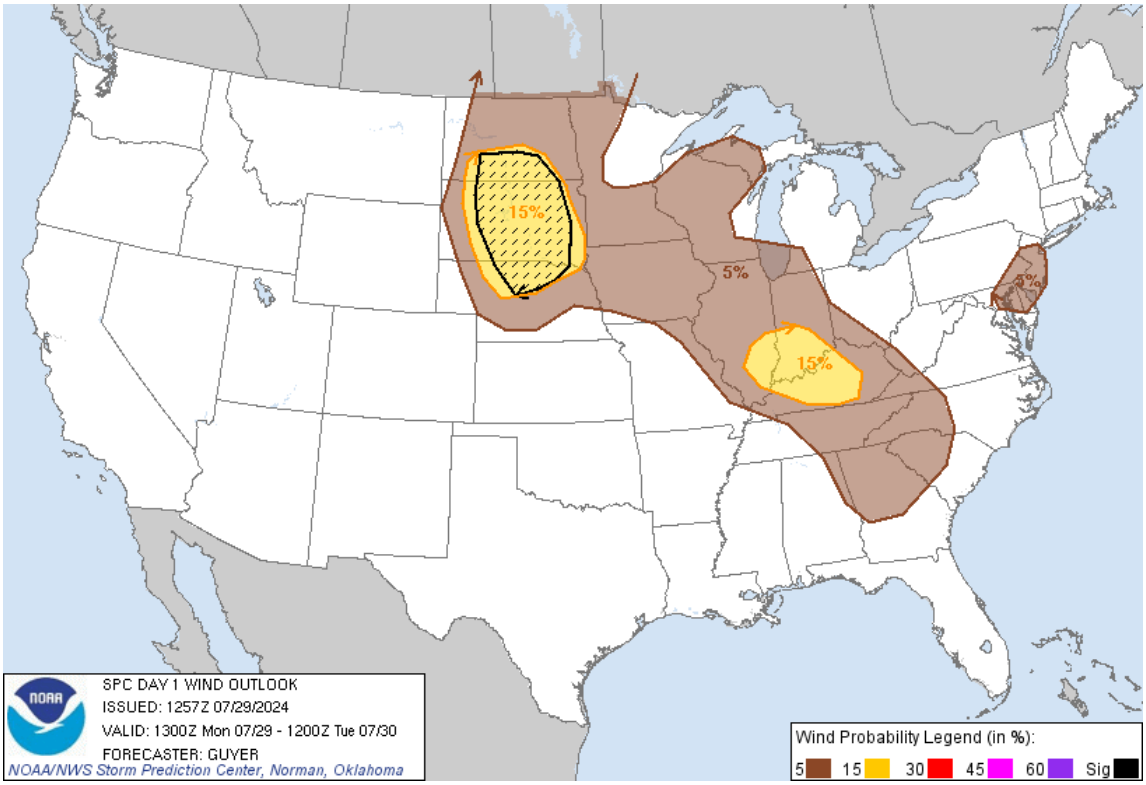
SEVERE THUNDERSTORM THREAT THROUGH TONIGHT



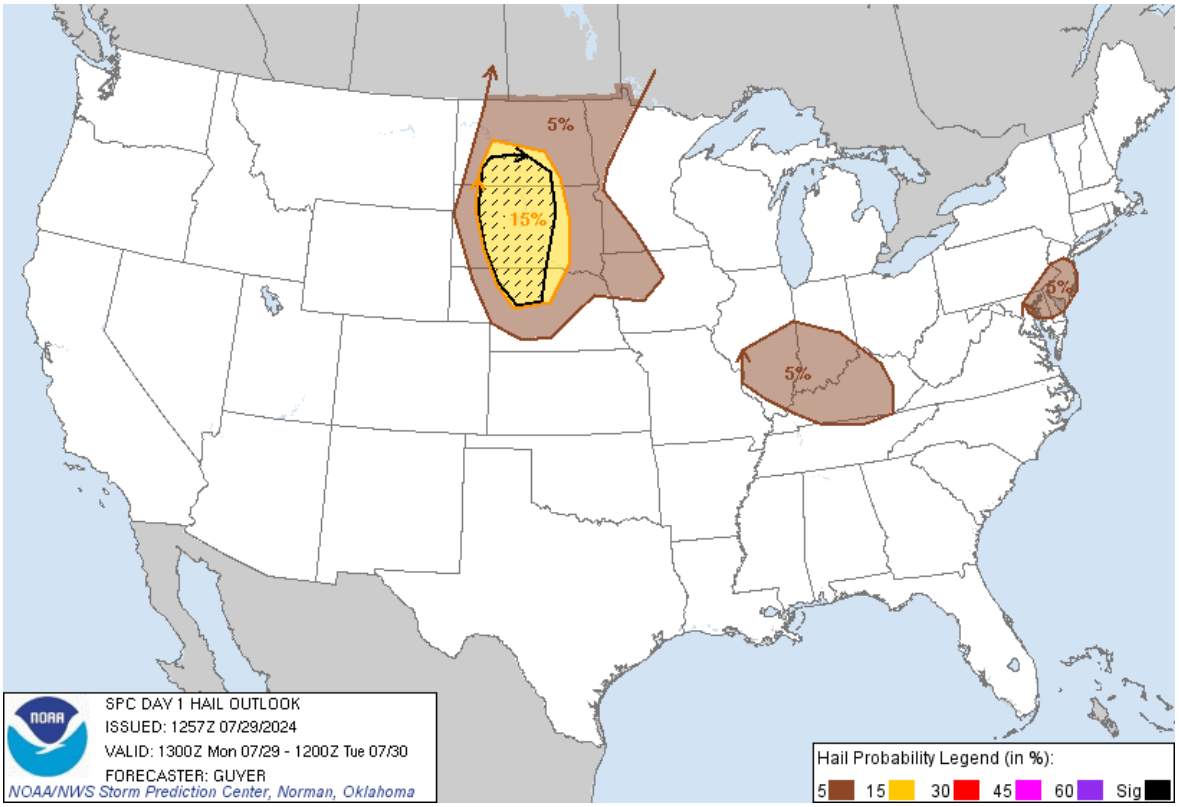
TORNADO THREAT THROUGH TONIGHT



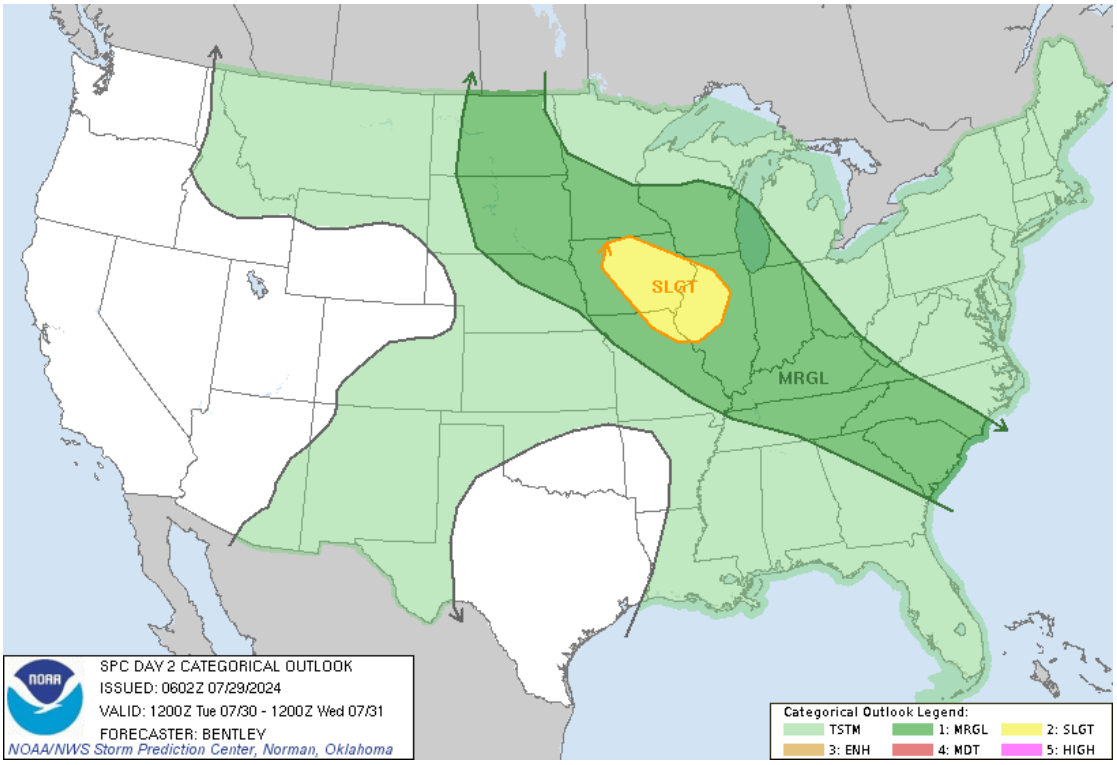
WIND THREAT THROUGH TONIGHT



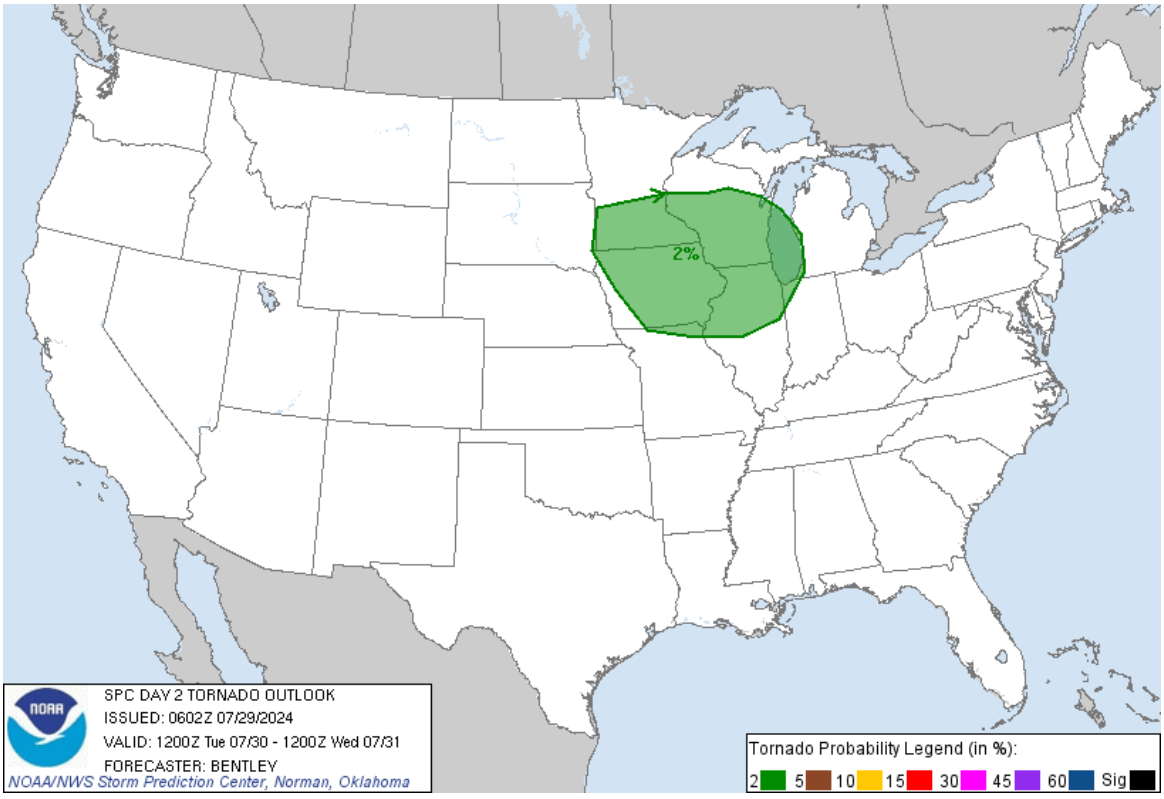
HAIL THREAT THROUGH TONIGHT



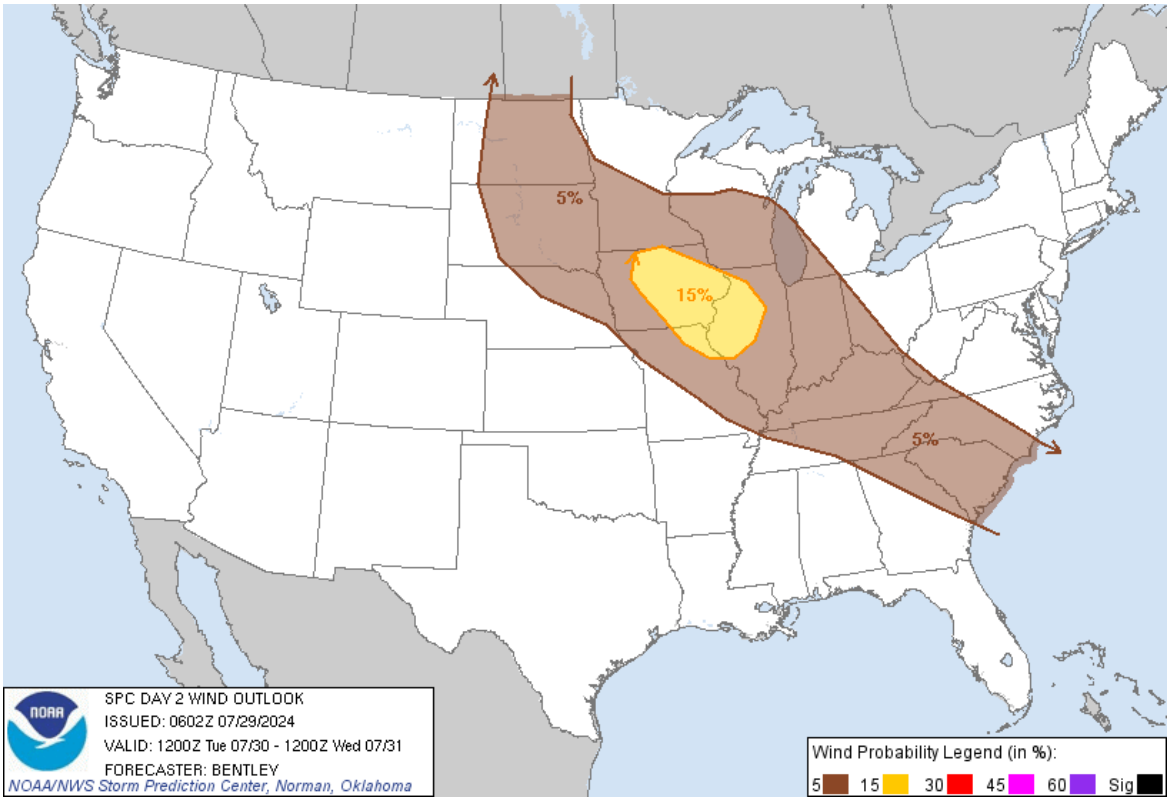
SEVERE WEATHER THREAT TOMORROW



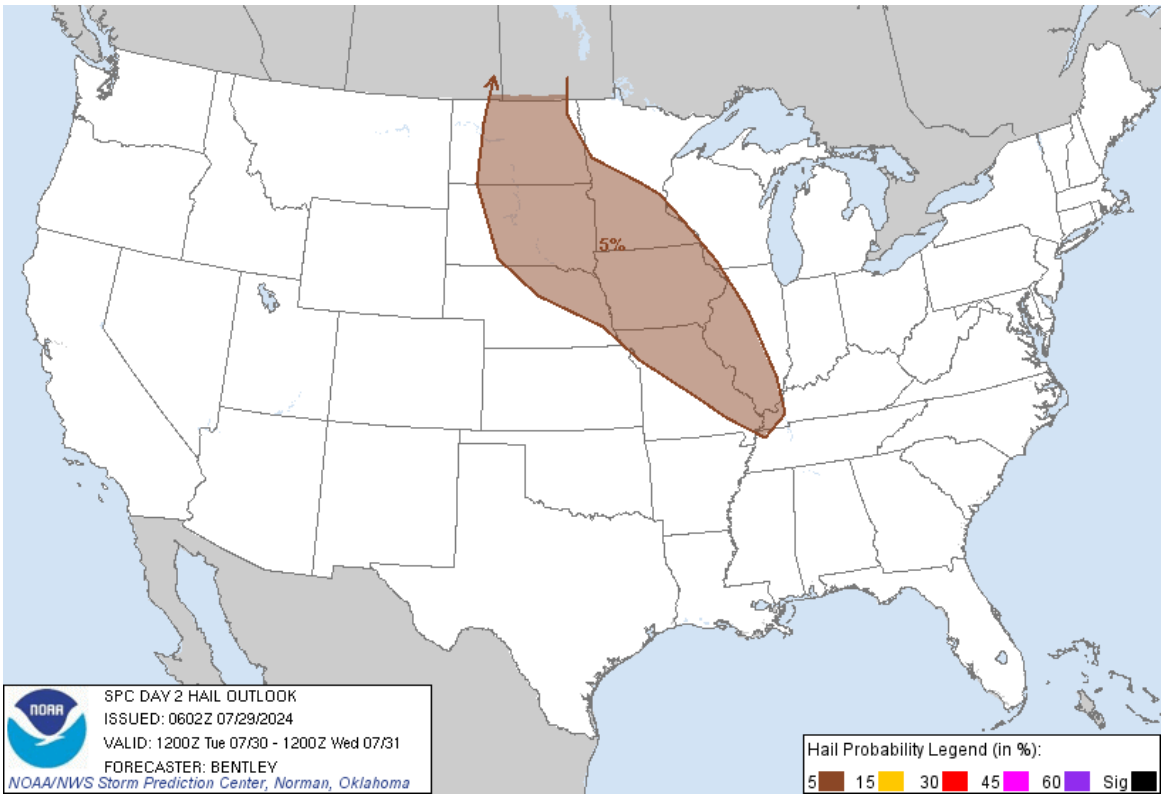
TORNADO THREAT TOMORROW/TOMORROW NIGHT



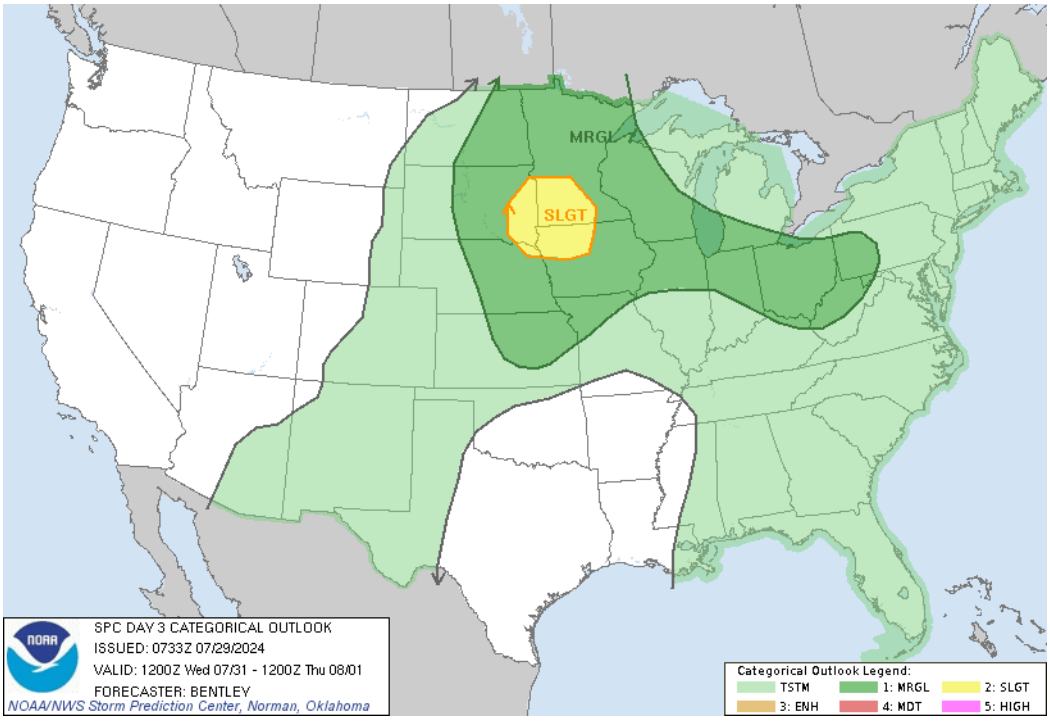
WIND THREAT TOMORROW/TOMORROW NIGHT



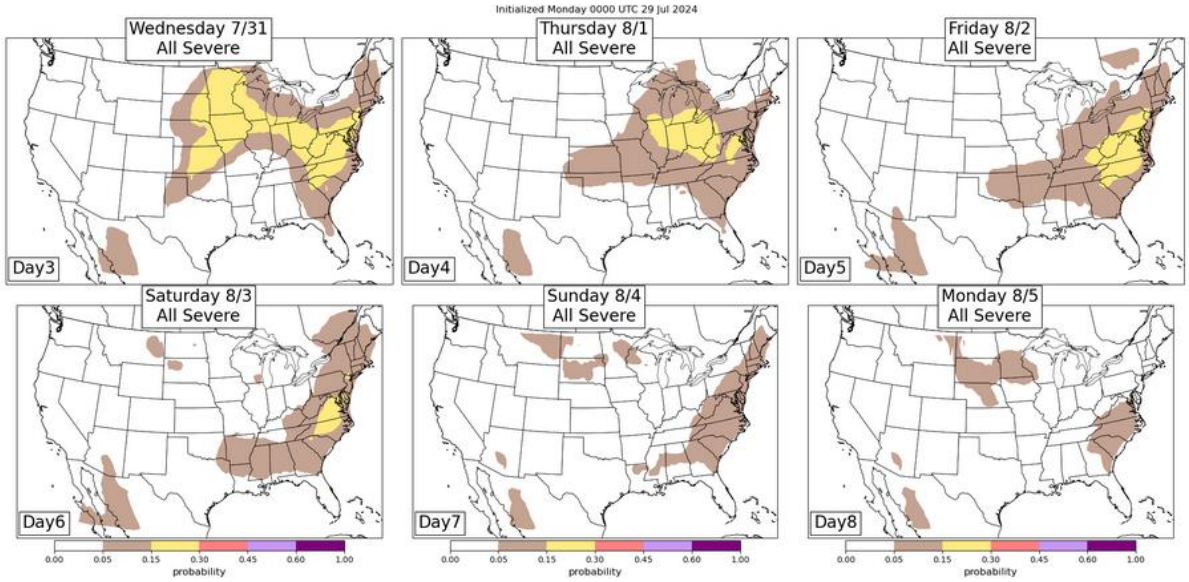
HAIL THREAT TOMORROW/TOMORROW NIGHT



SEVERE THUNDERSTORM THREAT WEDNESDAY



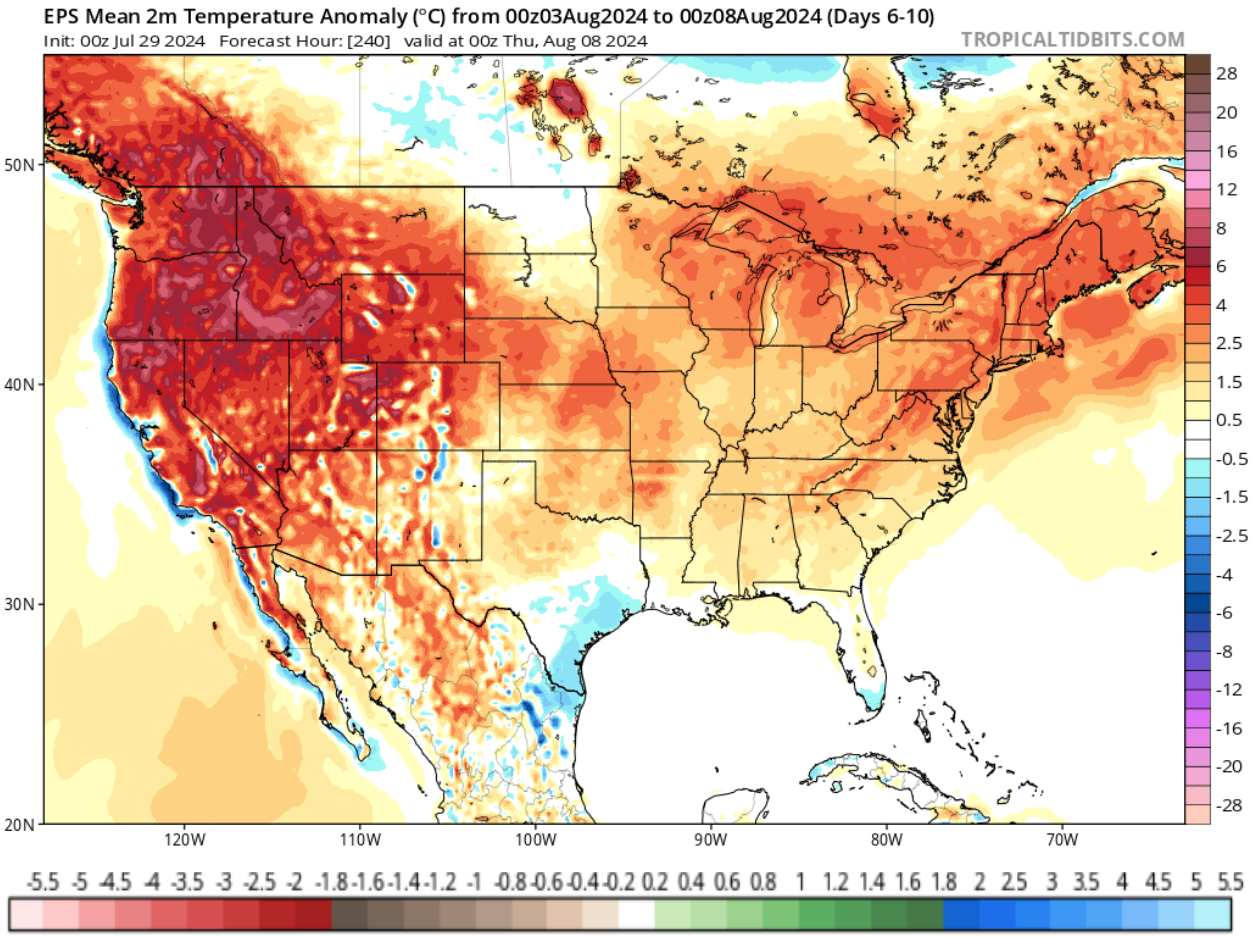
SEVERE WEATHER THREAT WEDNESDAY-MONDAY



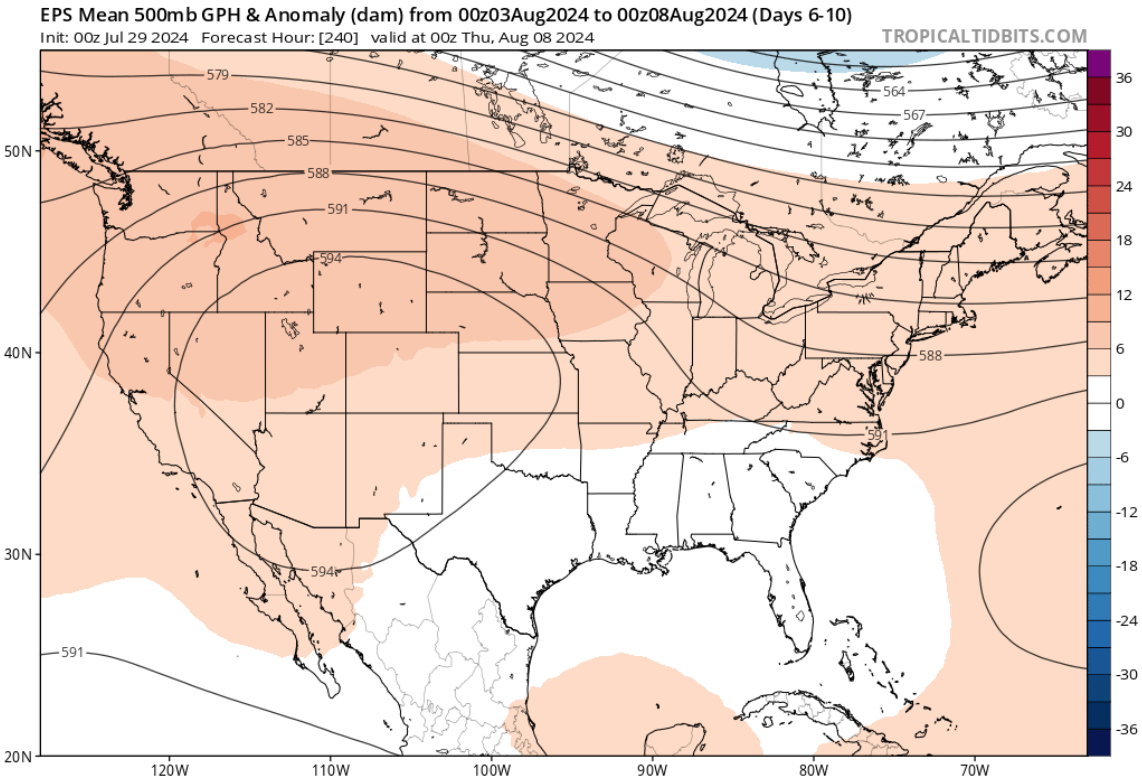
Days 6-10 (August 3-7)

The extent of heat ridging locks in a wide area of hot weather. Thunderstorms may cool parts of the Gulf Coast and lower Appalachia (some risk for a smaller tropical feature could also be an influence). Drier air means less rainfall from the Plains to the Midwest, but not so much from the Ohio Valley to the Northeast.

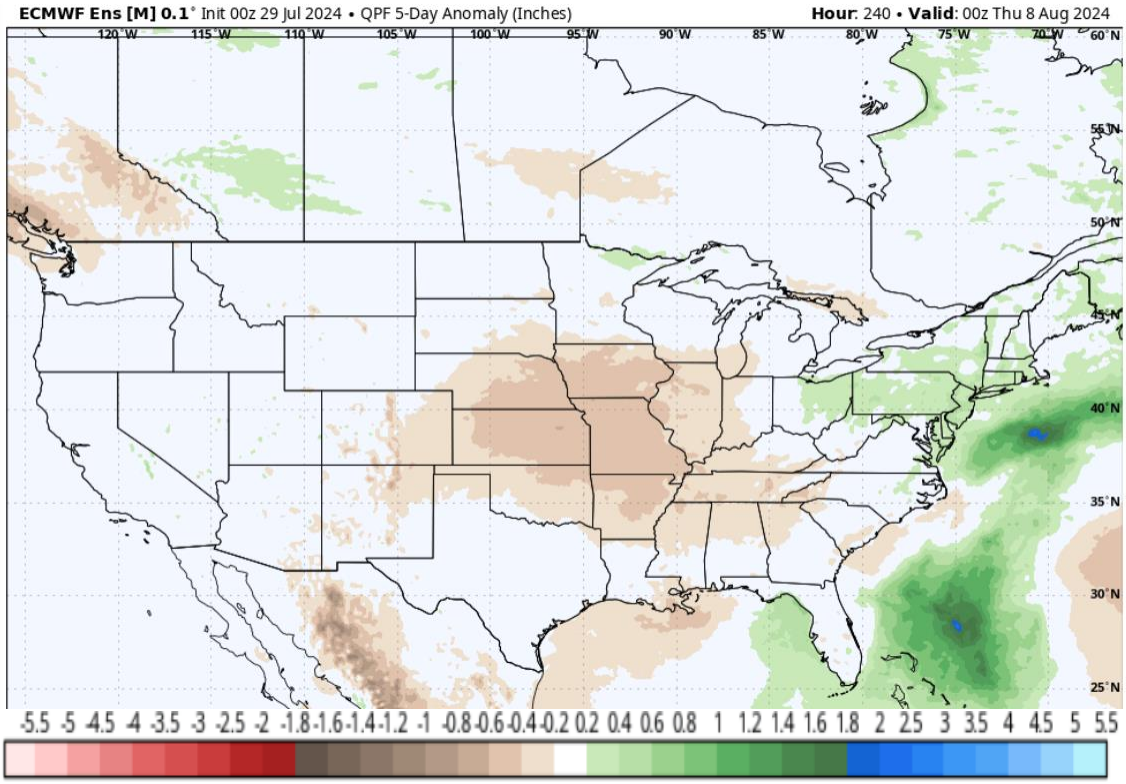
Temperature Anomaly



Upper Level Pattern

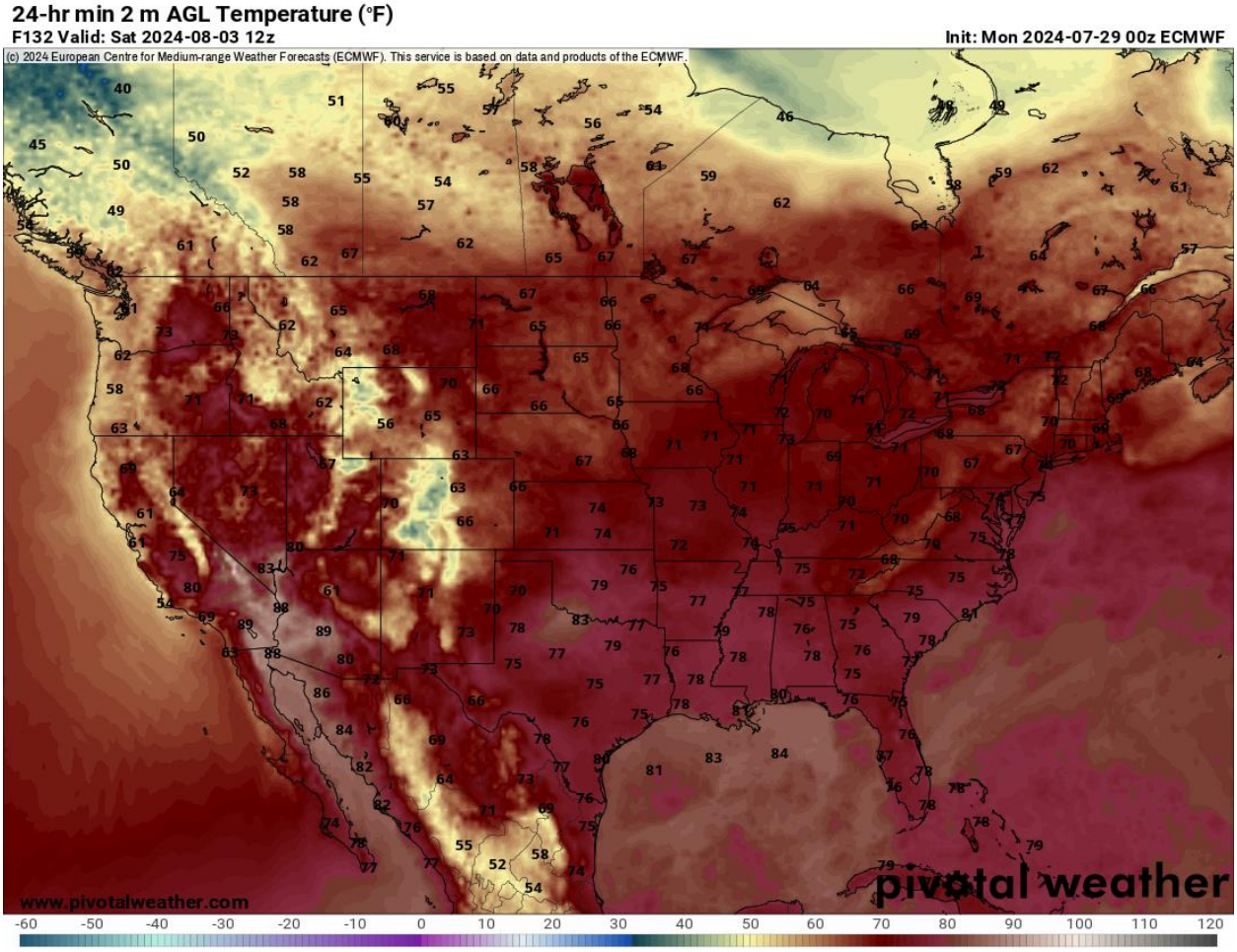


Precipitation Anomaly



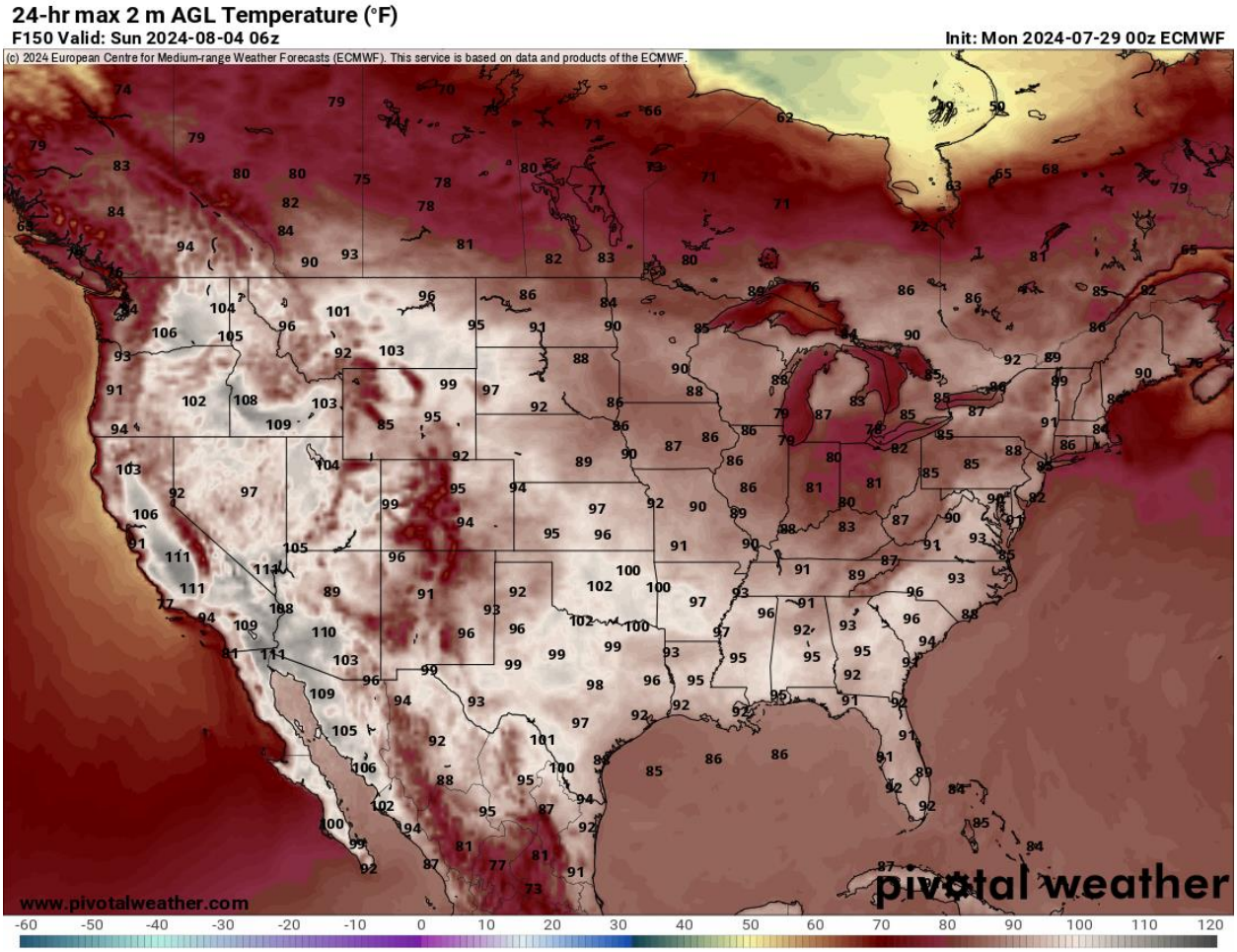
Temperatures are model derived.

Day 6 Min Temperature



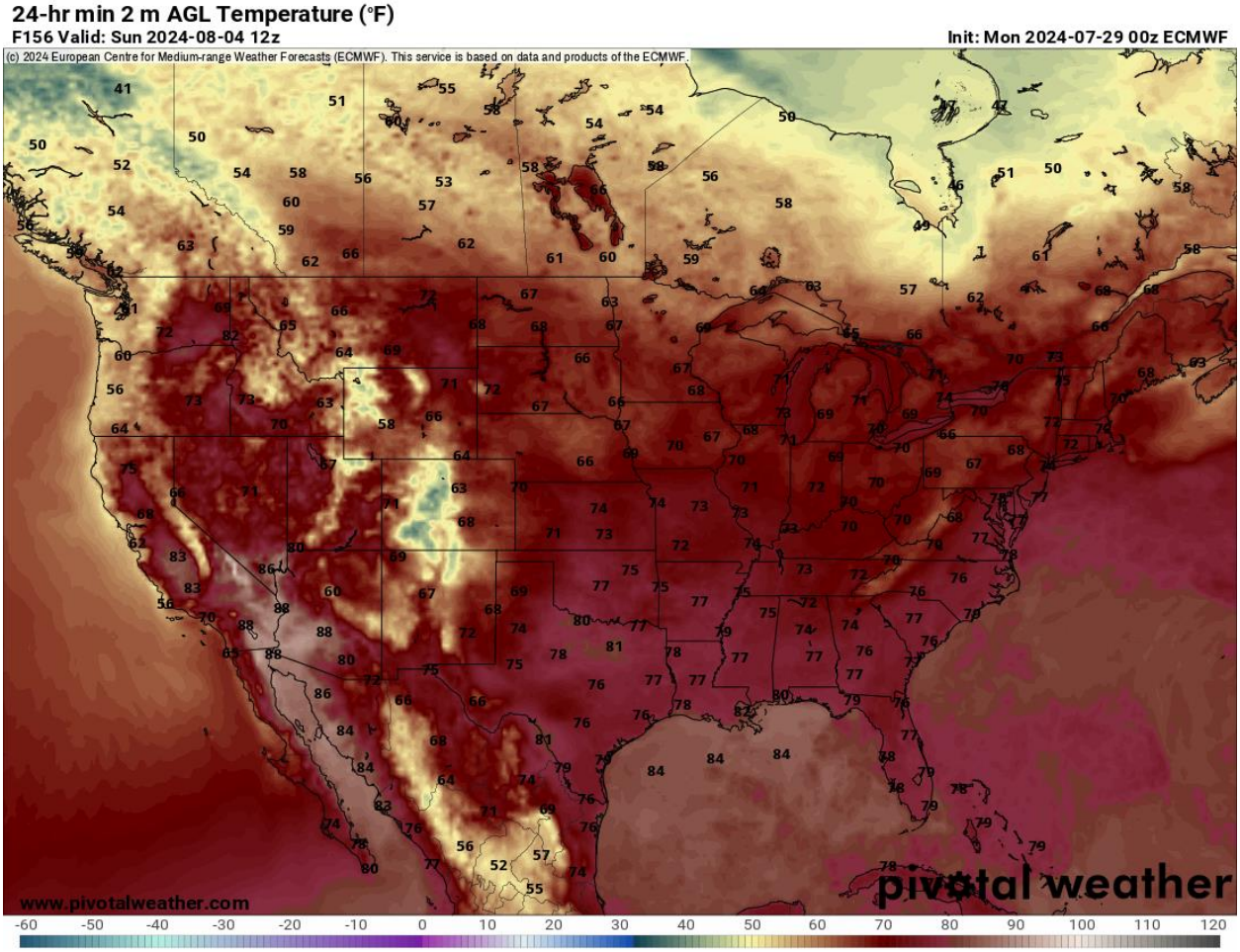
Temperatures are model derived.

Day 6 Max Temperature



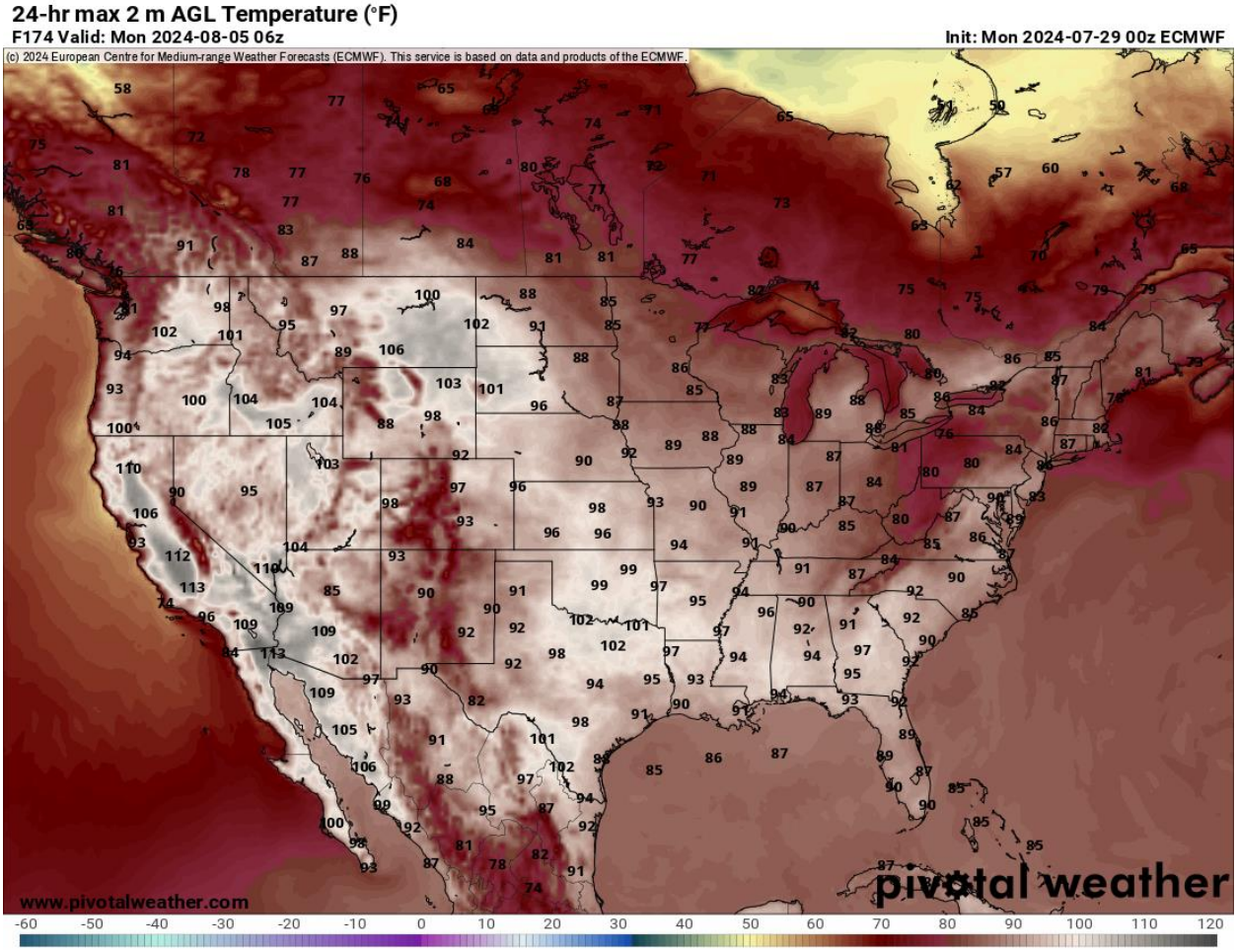
Temperatures are model derived.

Day 7 Min Temperature



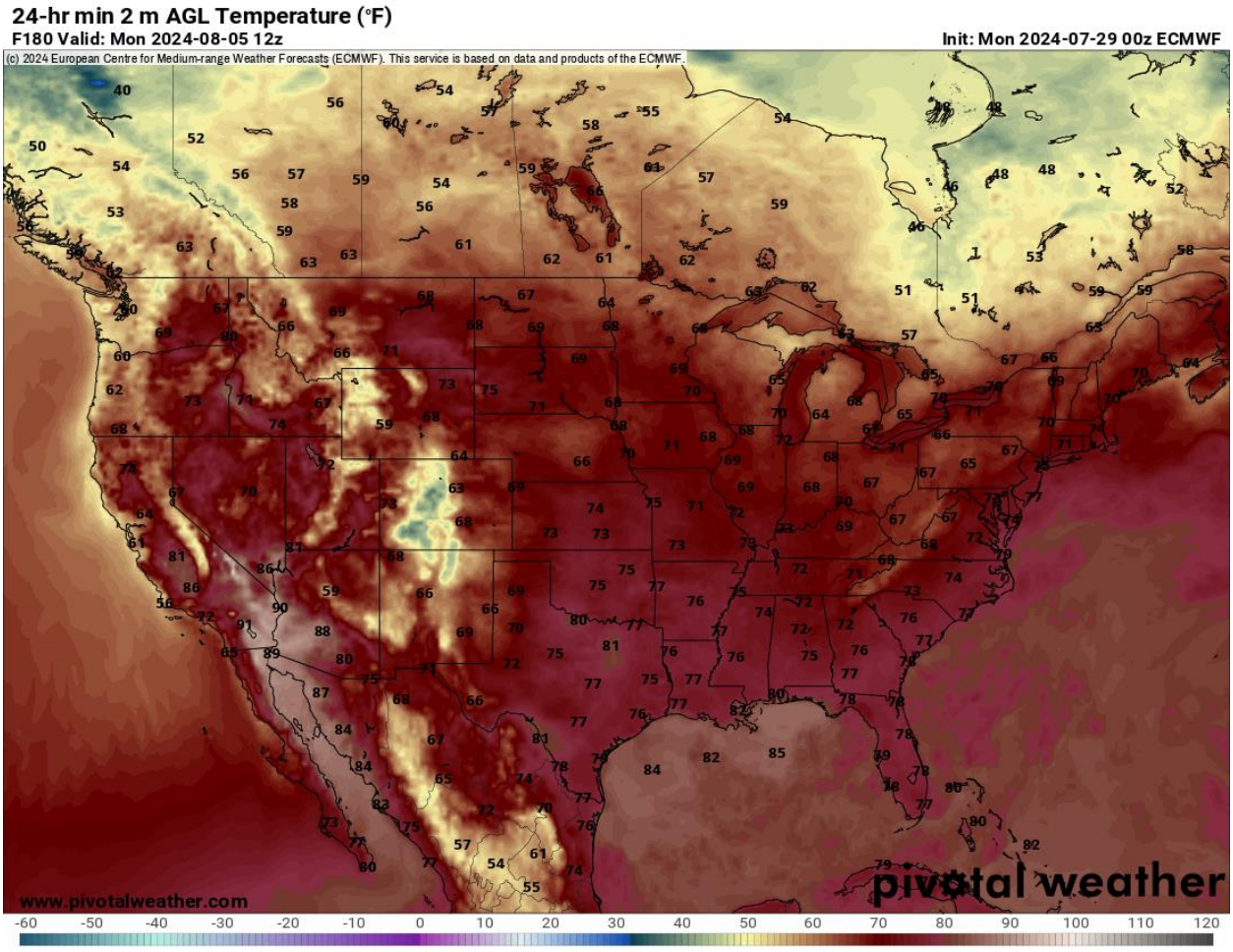
Temperatures are model derived.

Day 7 Max Temperature



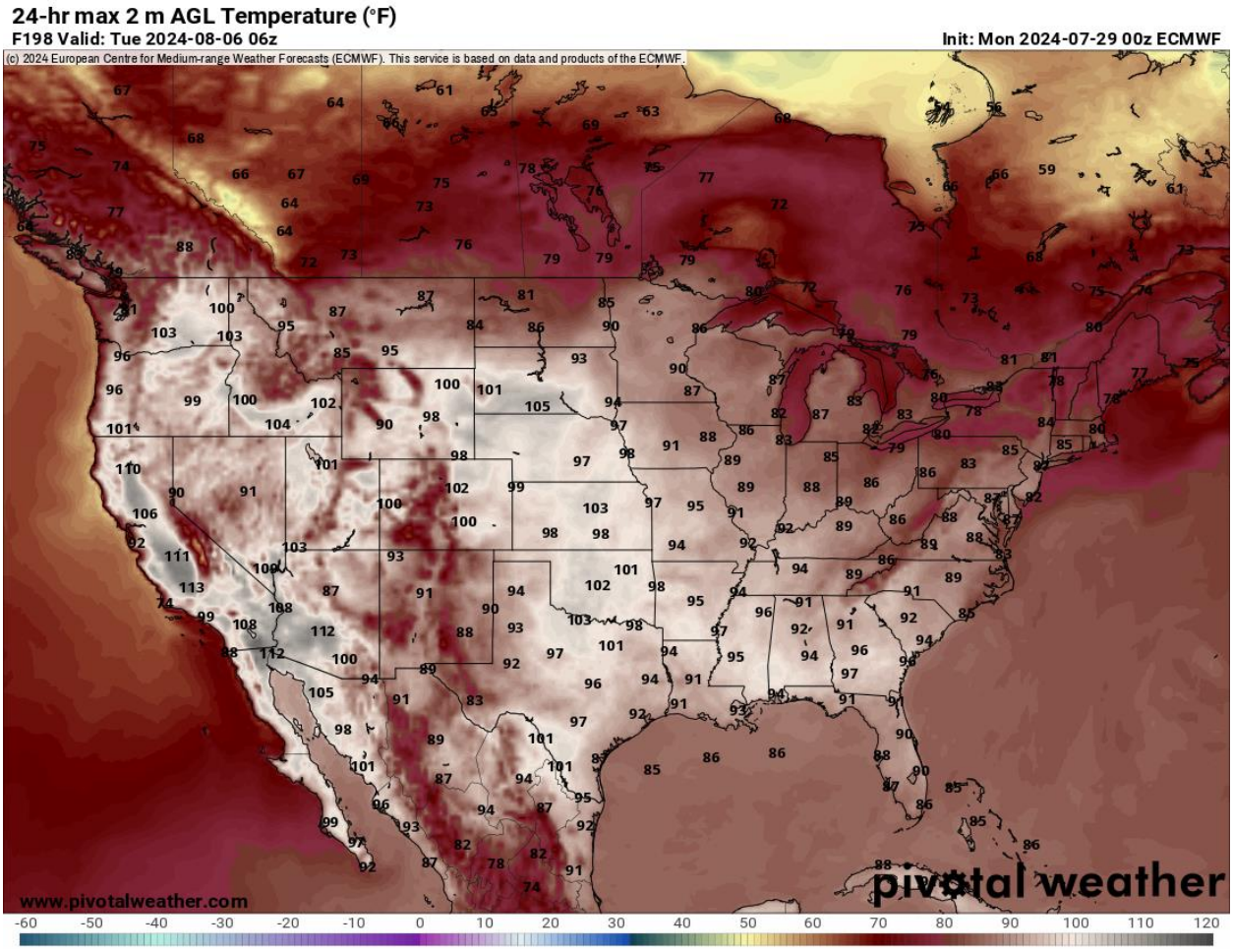
Temperatures are model derived.

Day 8 Min Temperature



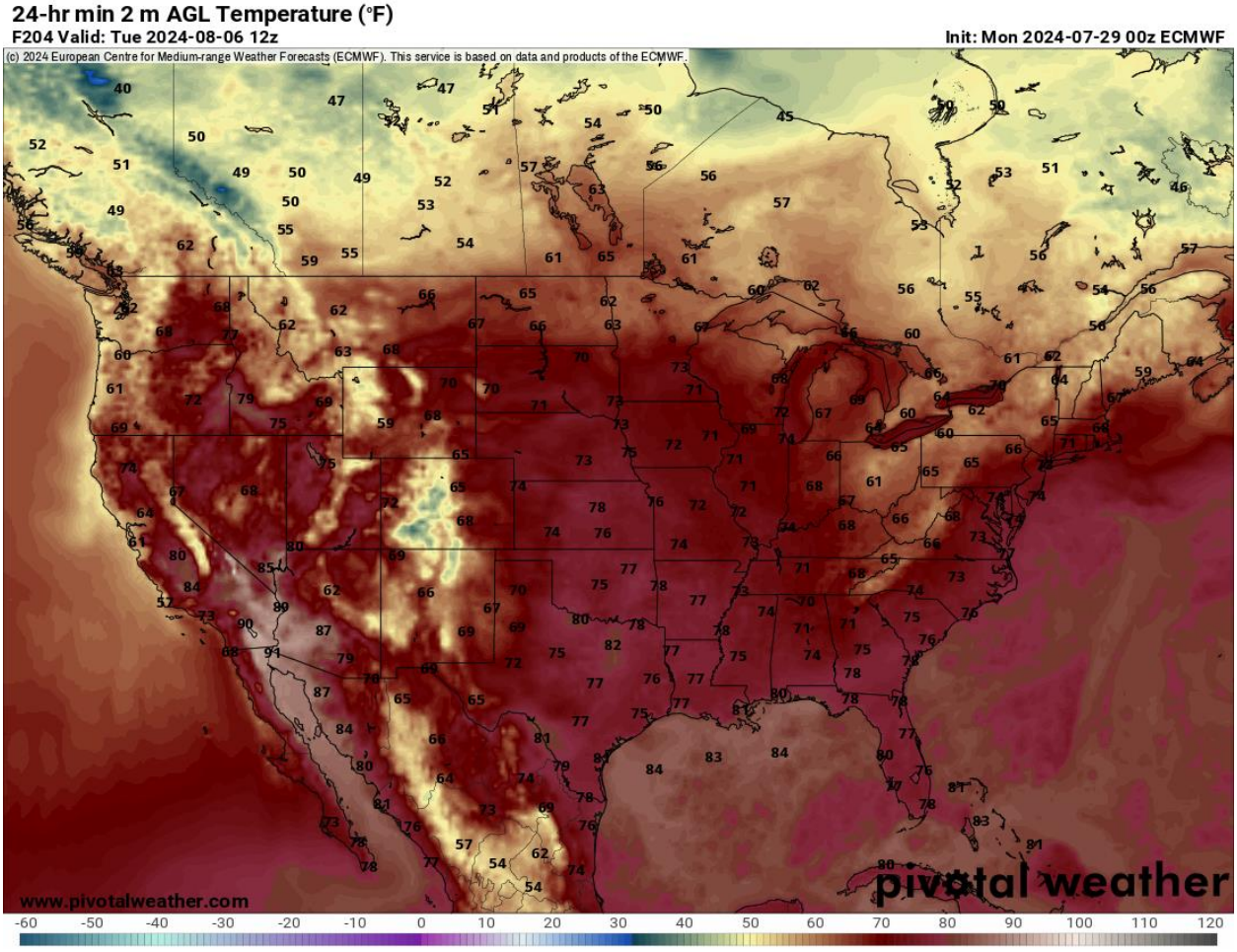
Temperatures are model derived.

Day 8 Max Temperature



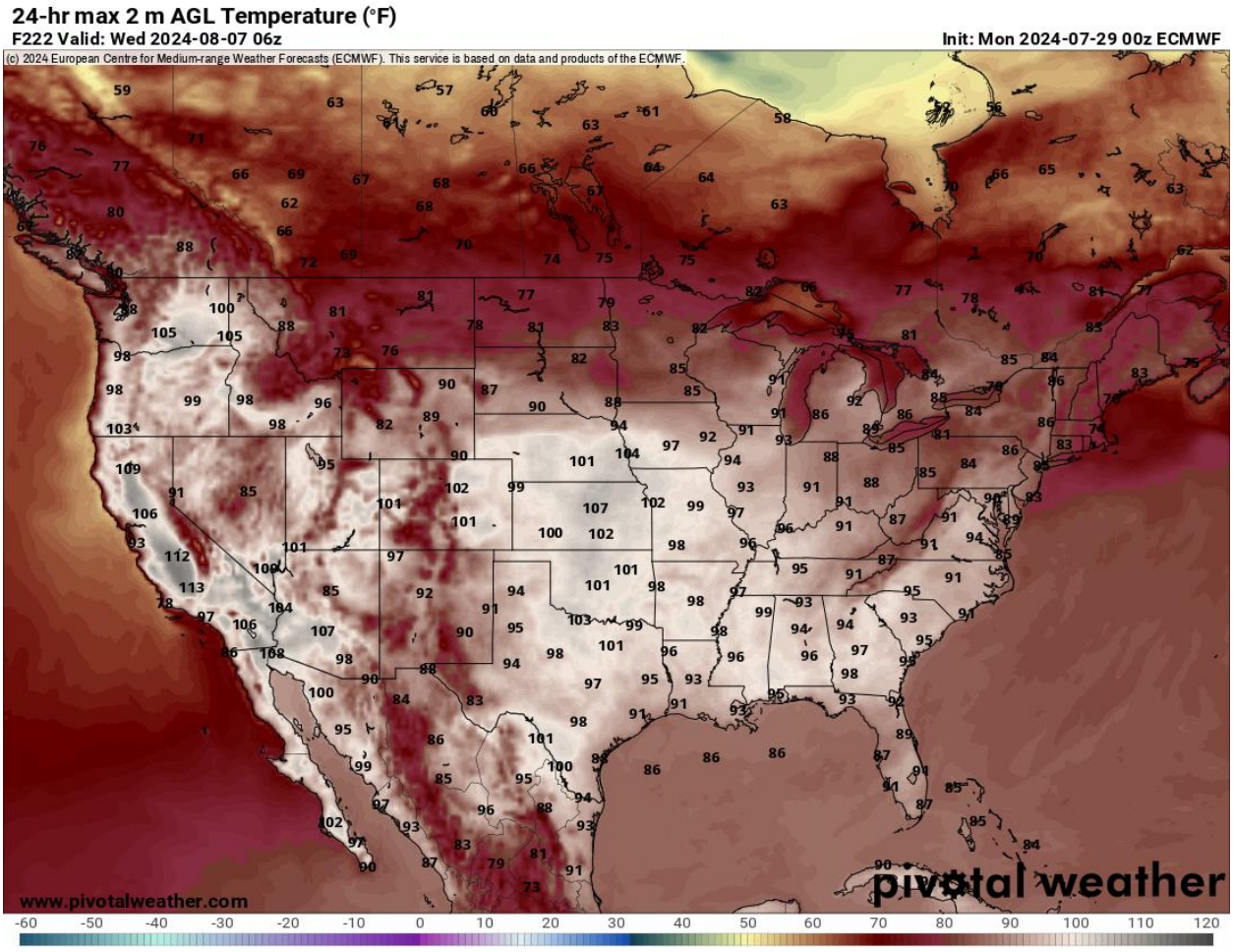
Temperatures are model derived.

Day 9 Min Temperature



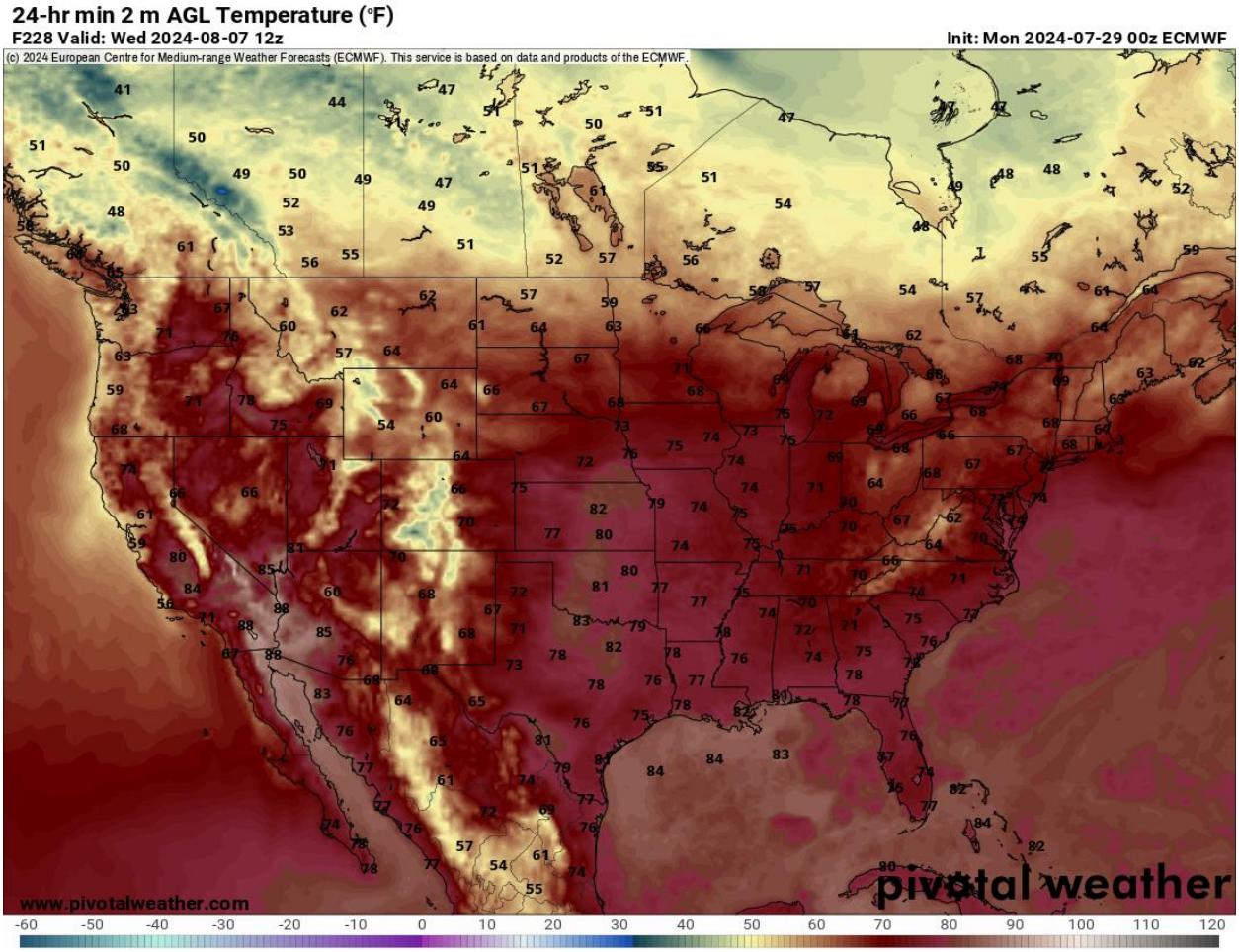
Temperatures are model derived.

Day 9 Max Temperature



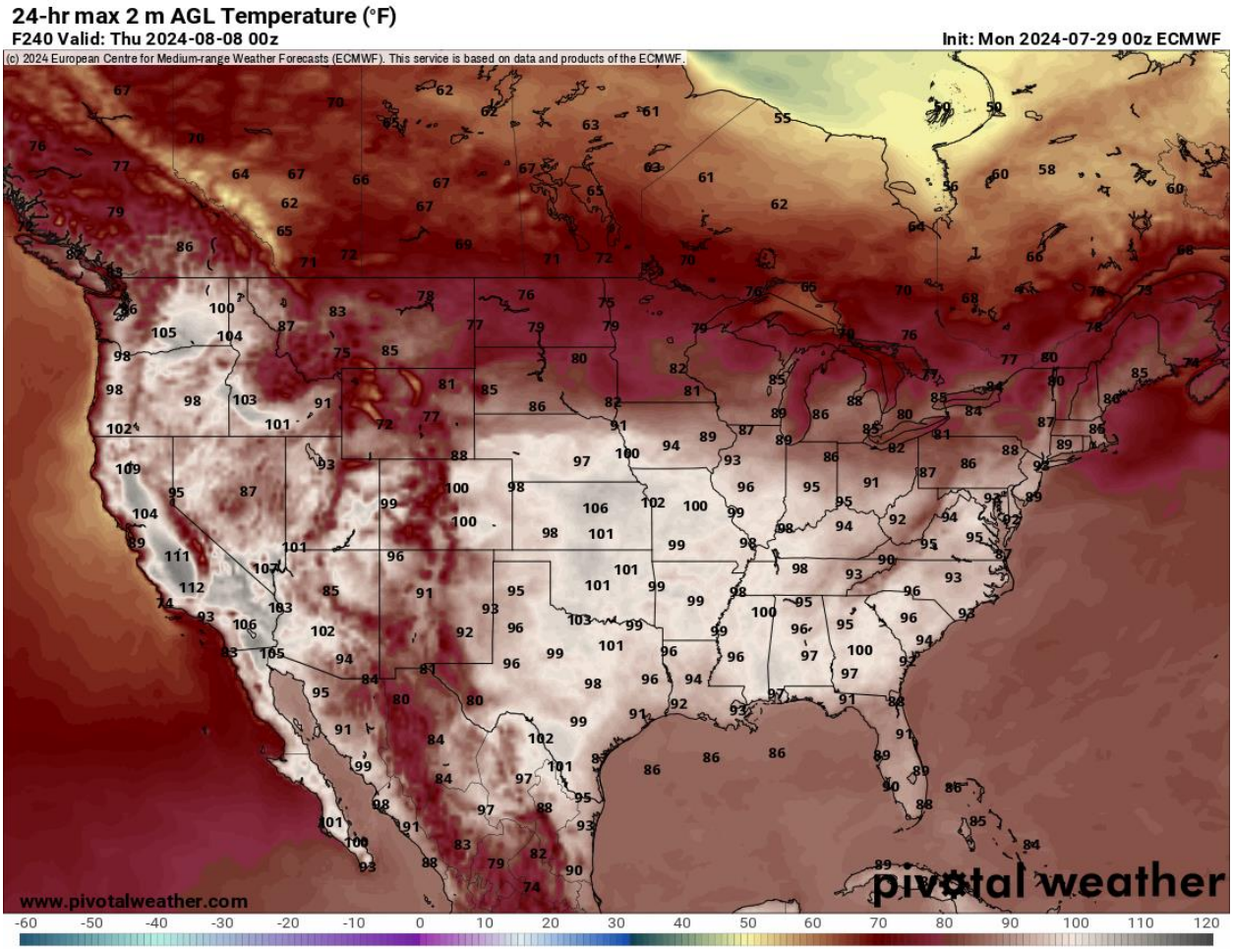
Temperatures are model derived.

Day 10 Min Temperature



Temperatures are model derived.

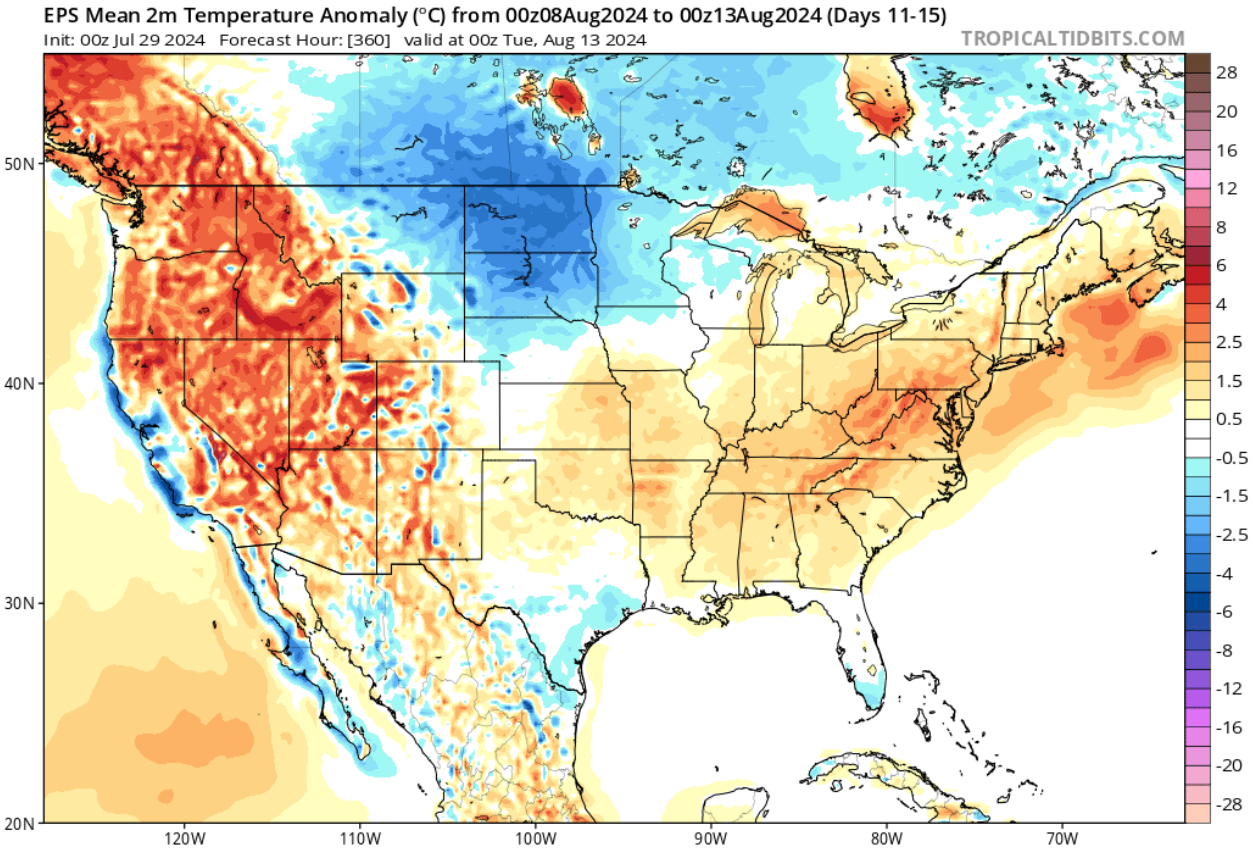
Day 10 Max Temperature



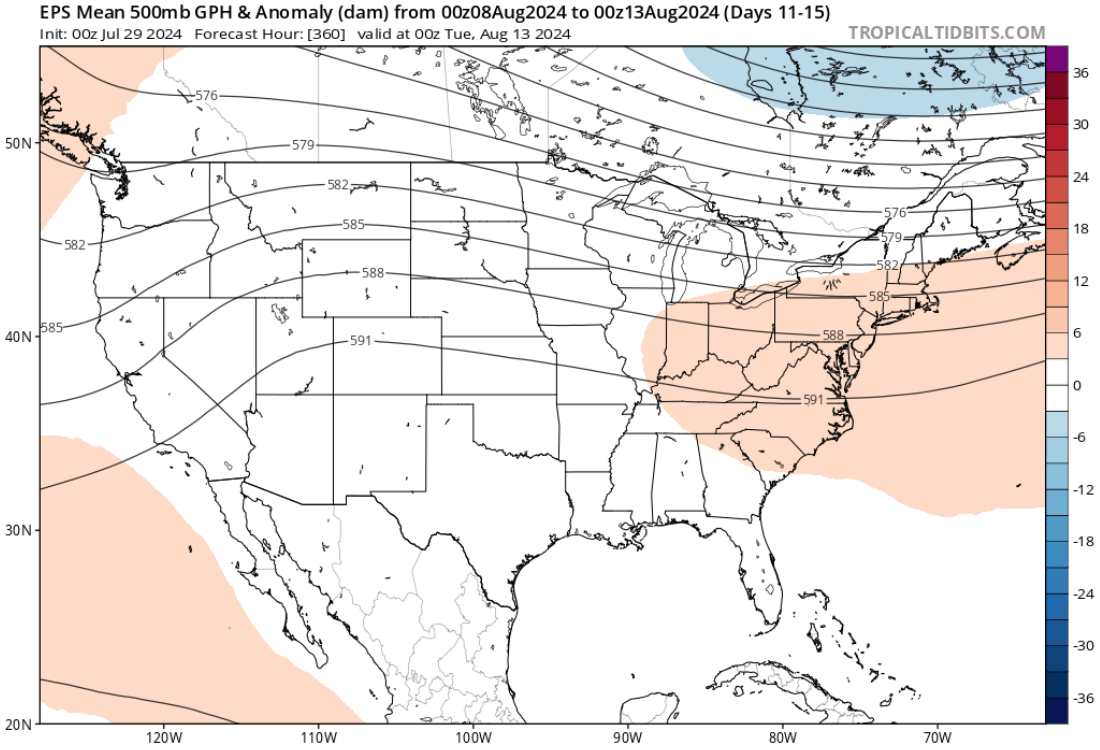
Day 11-15 (August 8-12)

Cooler air starts to move southward form Canada, and a tropical threat may emerge underneath the heat ridge complex across the eastern two-thirds of the nation. The warm/moist area over the Gulf of Mexico must be watched as Texas and Louisiana may be at risk for some type of surprise precipitation event. Rainfall can increase from the Northern Plains into the Great Lakes.

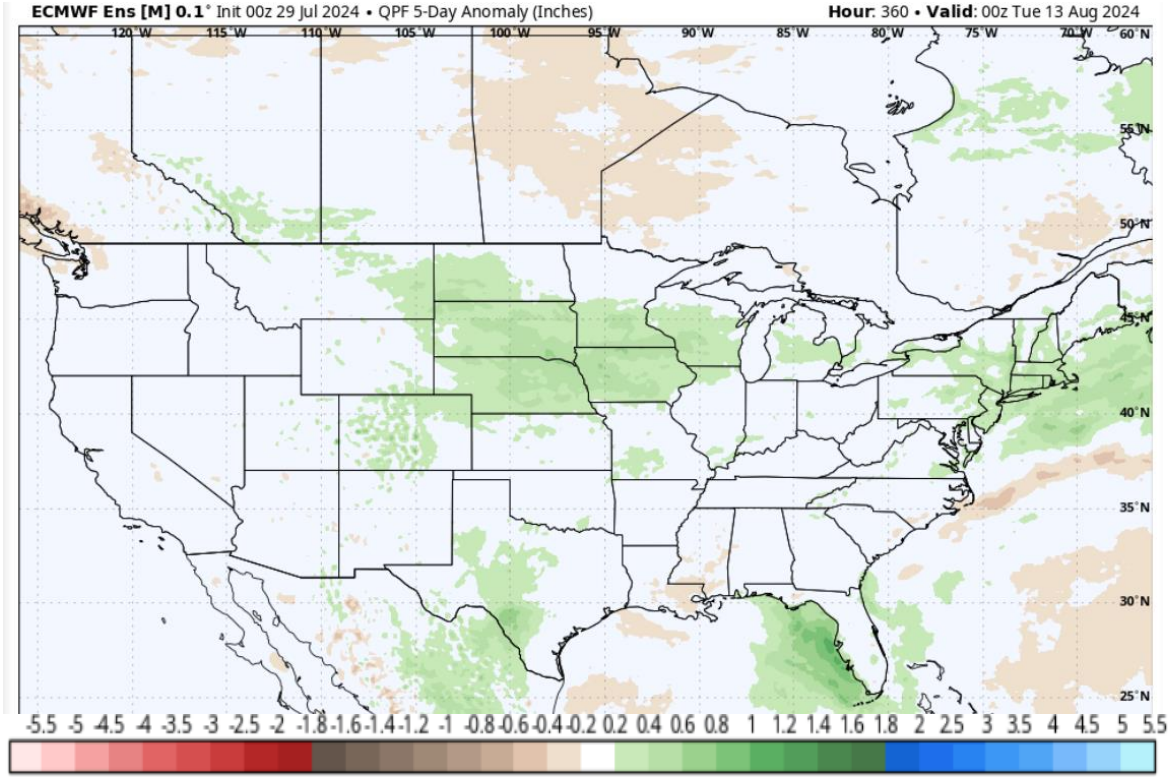
Temperature Anomaly



Upper Level Pattern

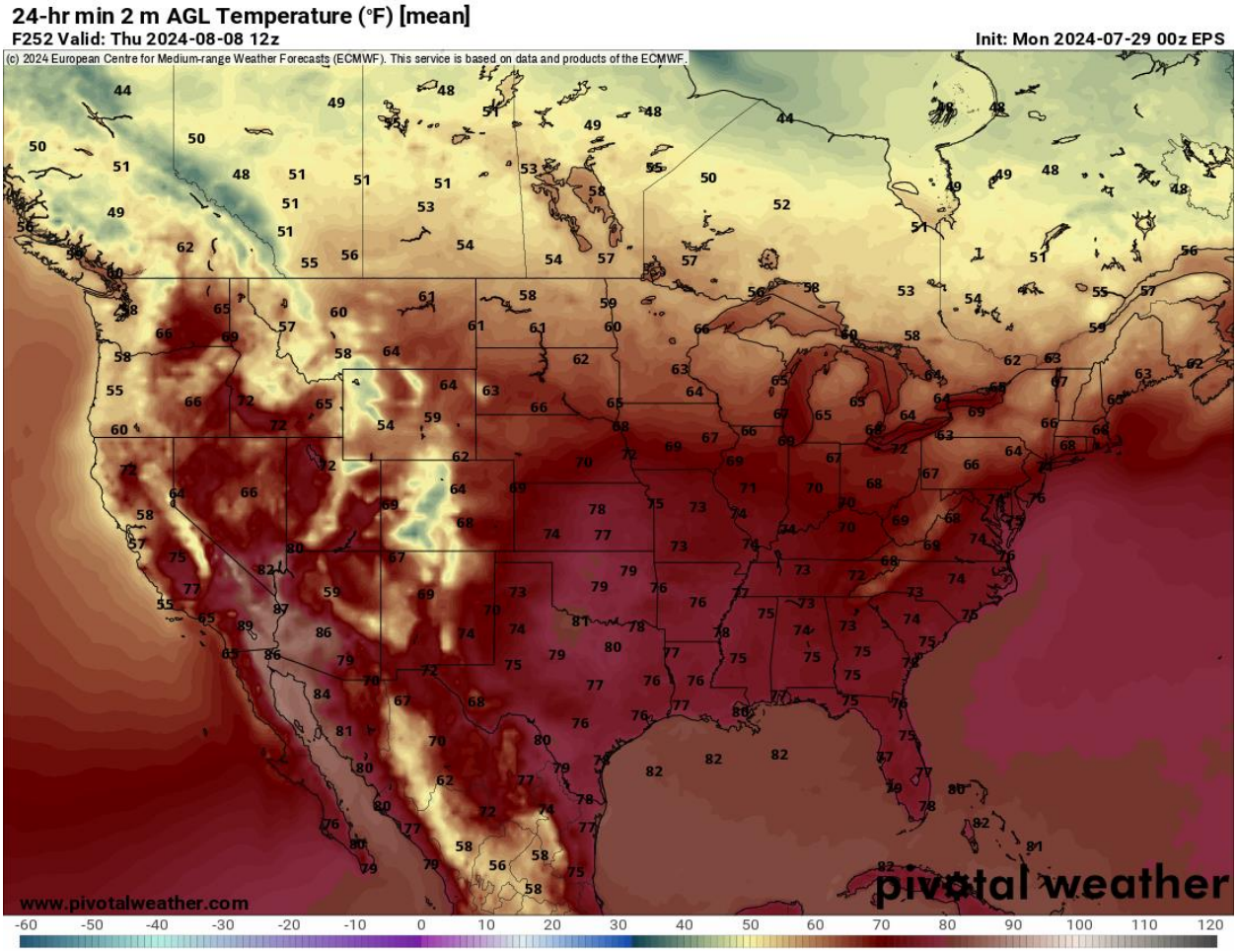


Precipitation Anomaly



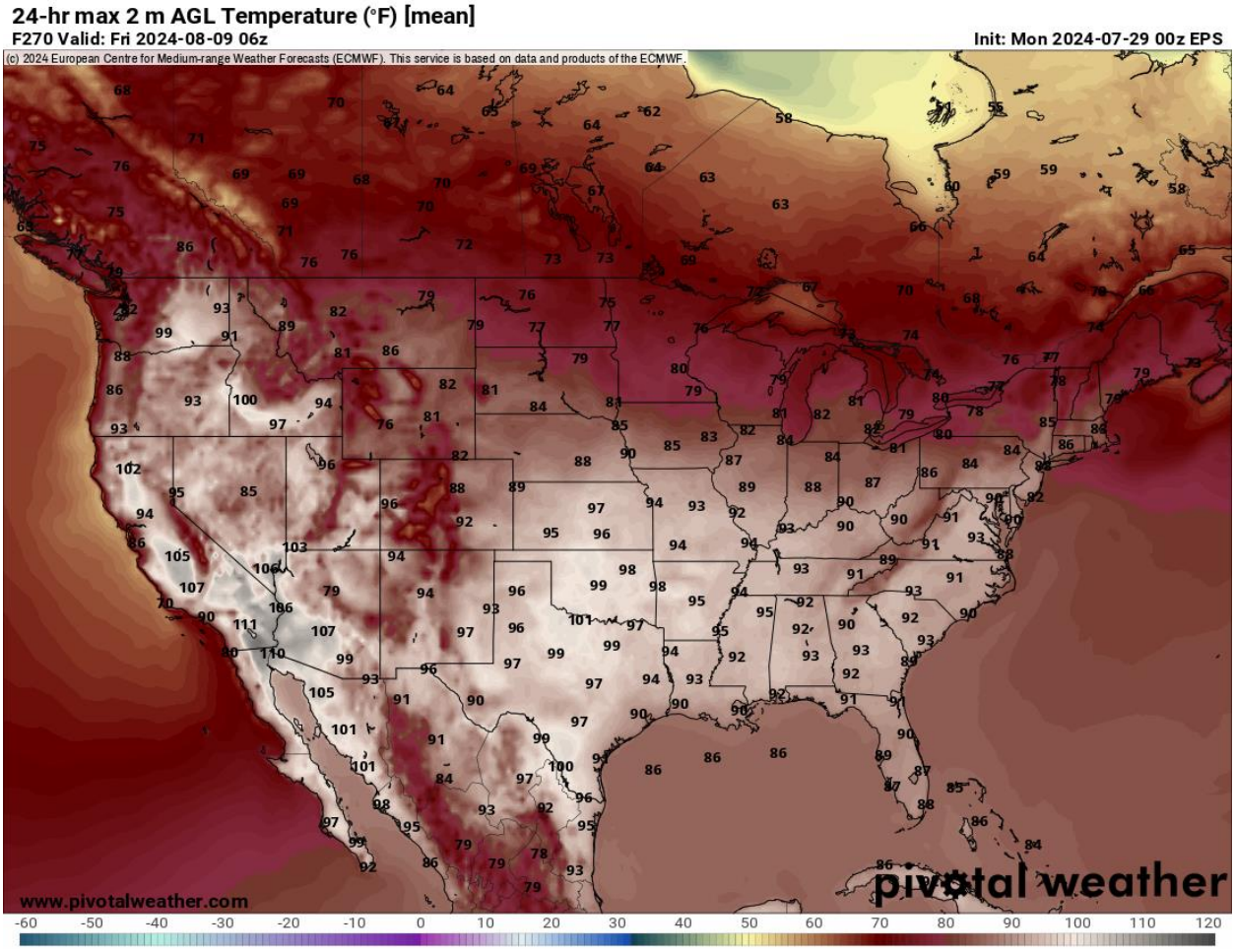
Temperatures are model derived.

Day 11 Min Temperature



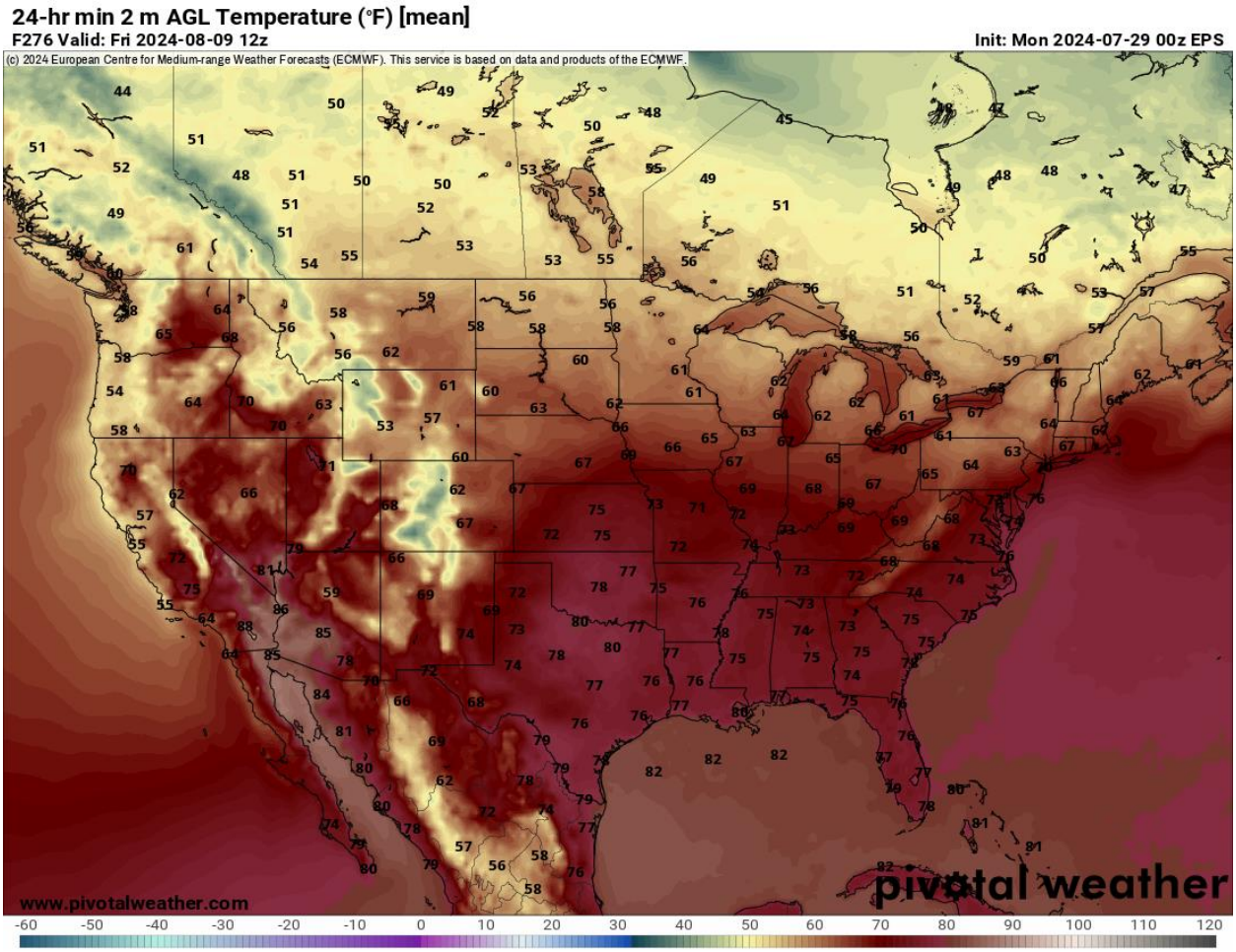
Temperatures are model derived.

Day 11 Max Temperature



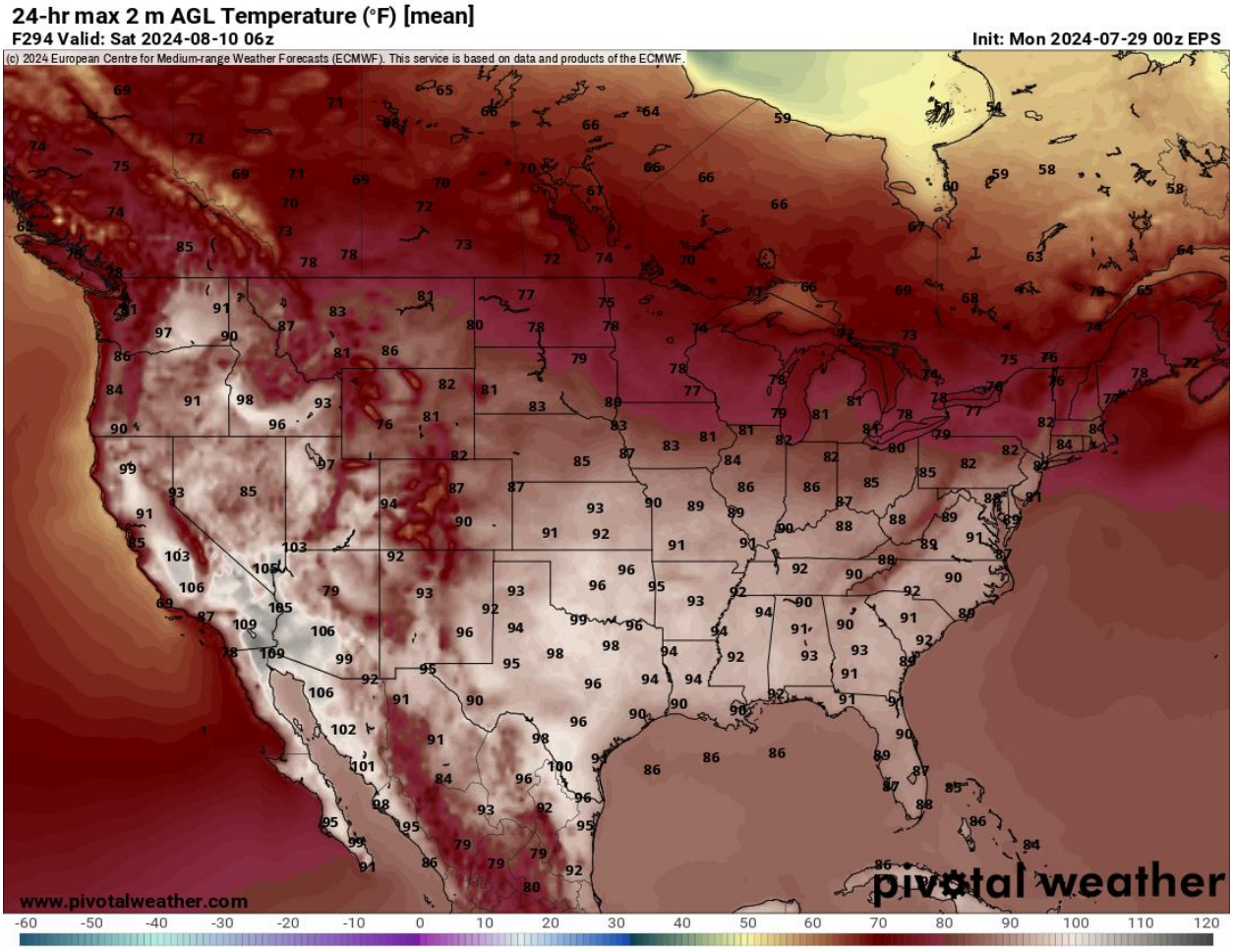
Temperatures are model derived.

Day 12 Min Temperature



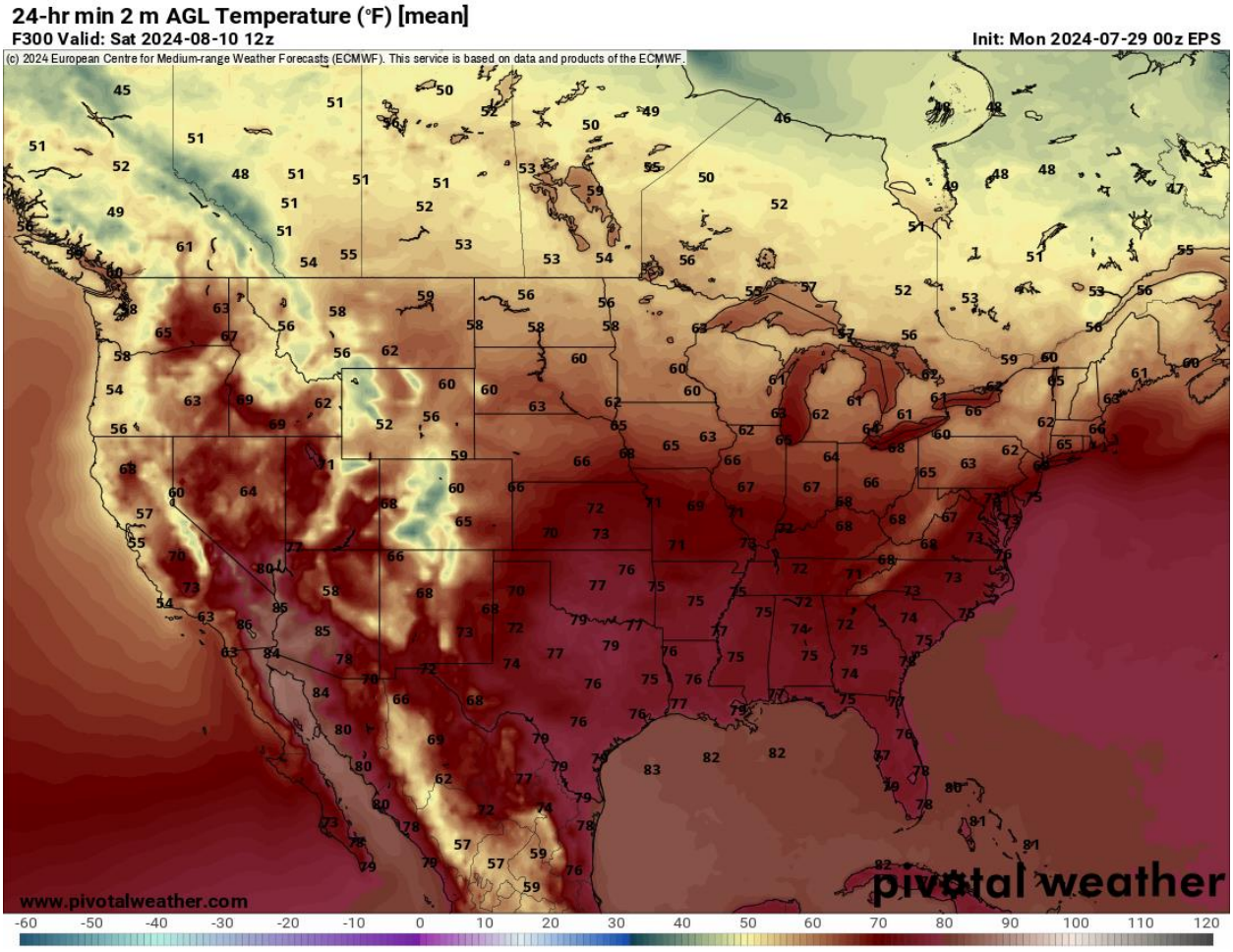
Temperatures are model derived.

Day 12 Max Temperature



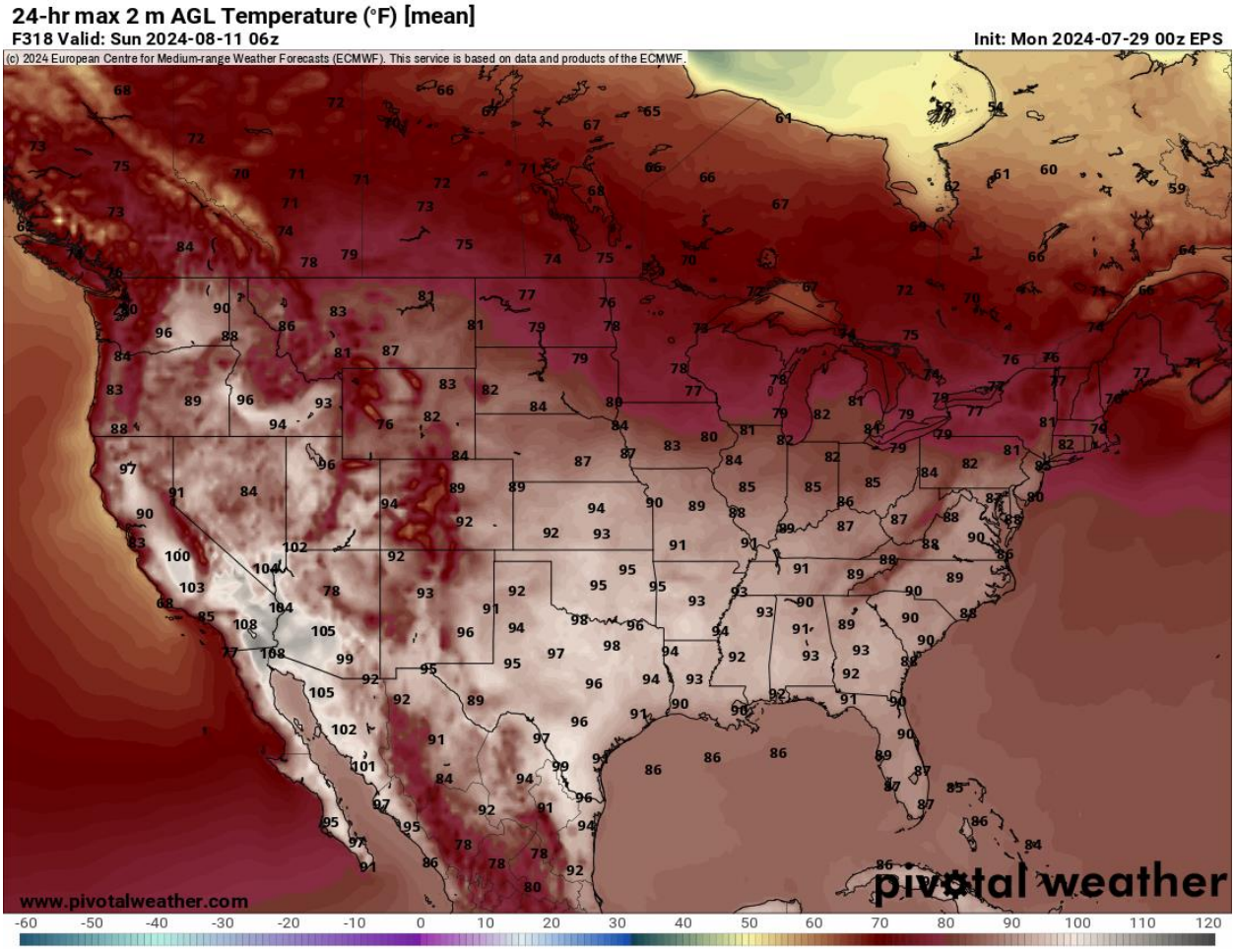
Temperatures are model derived.

Day 13 Min Temperature



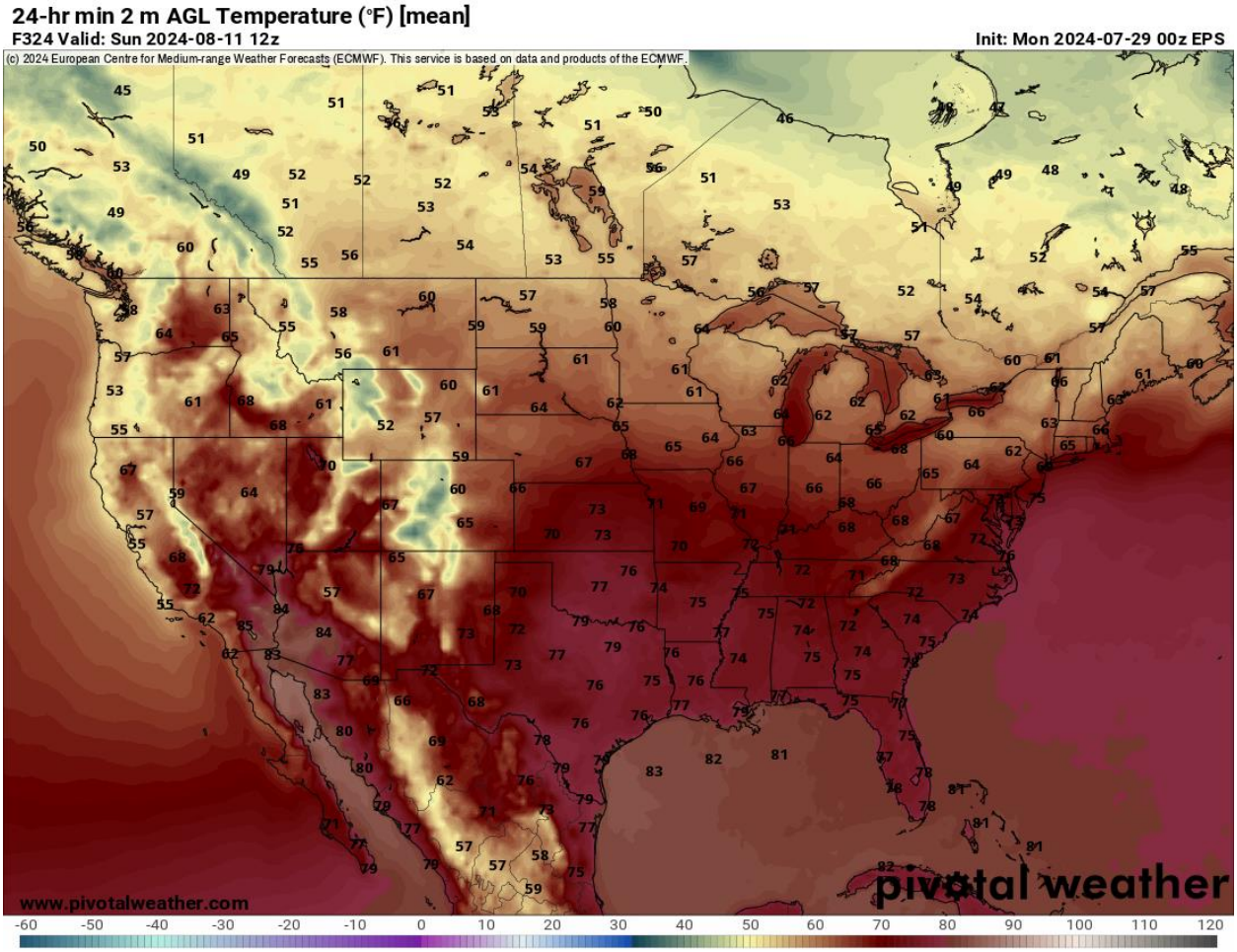
Temperatures are model derived.

Day 13 Max Temperature



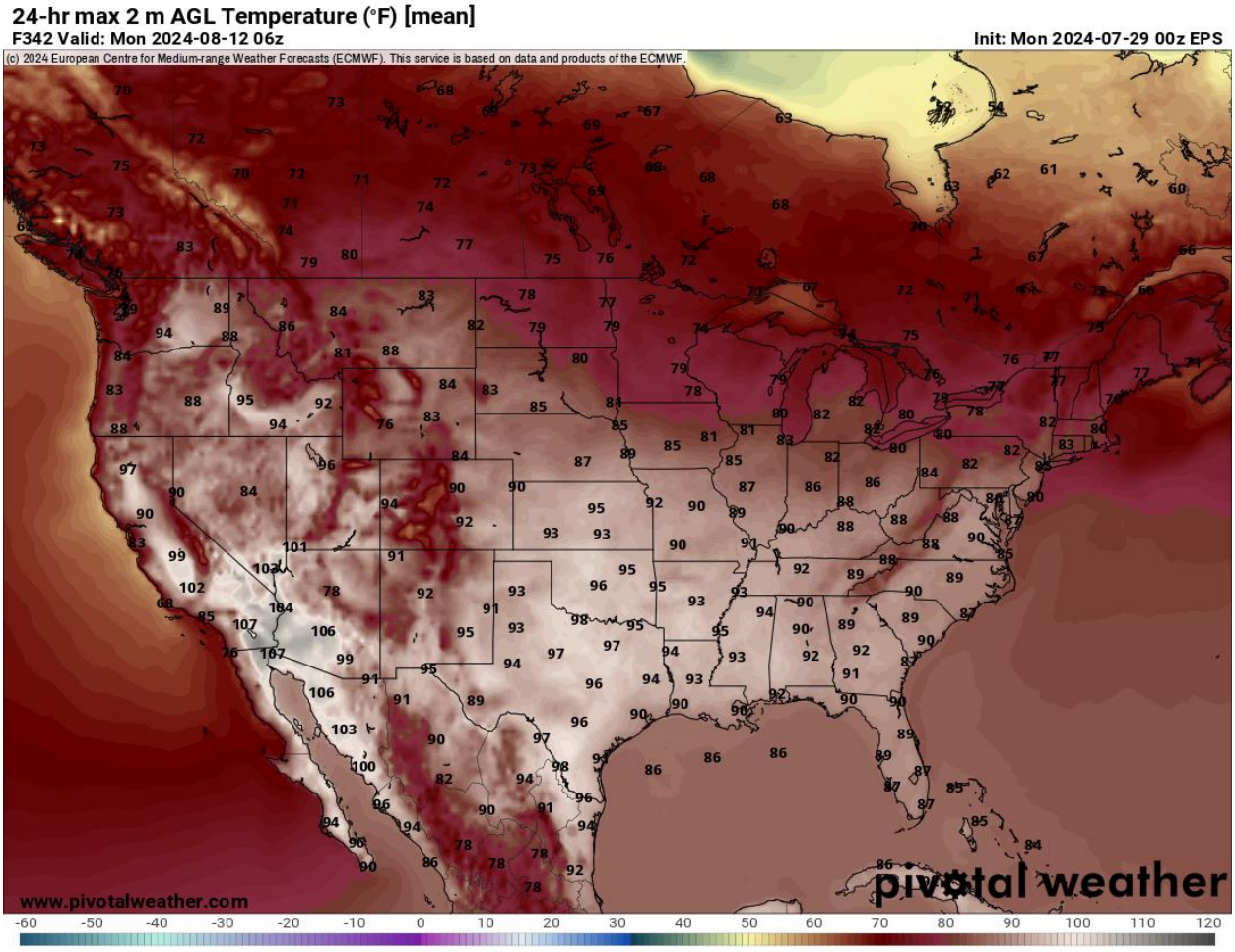
Temperatures are model derived.

Day 14 Min Temperature



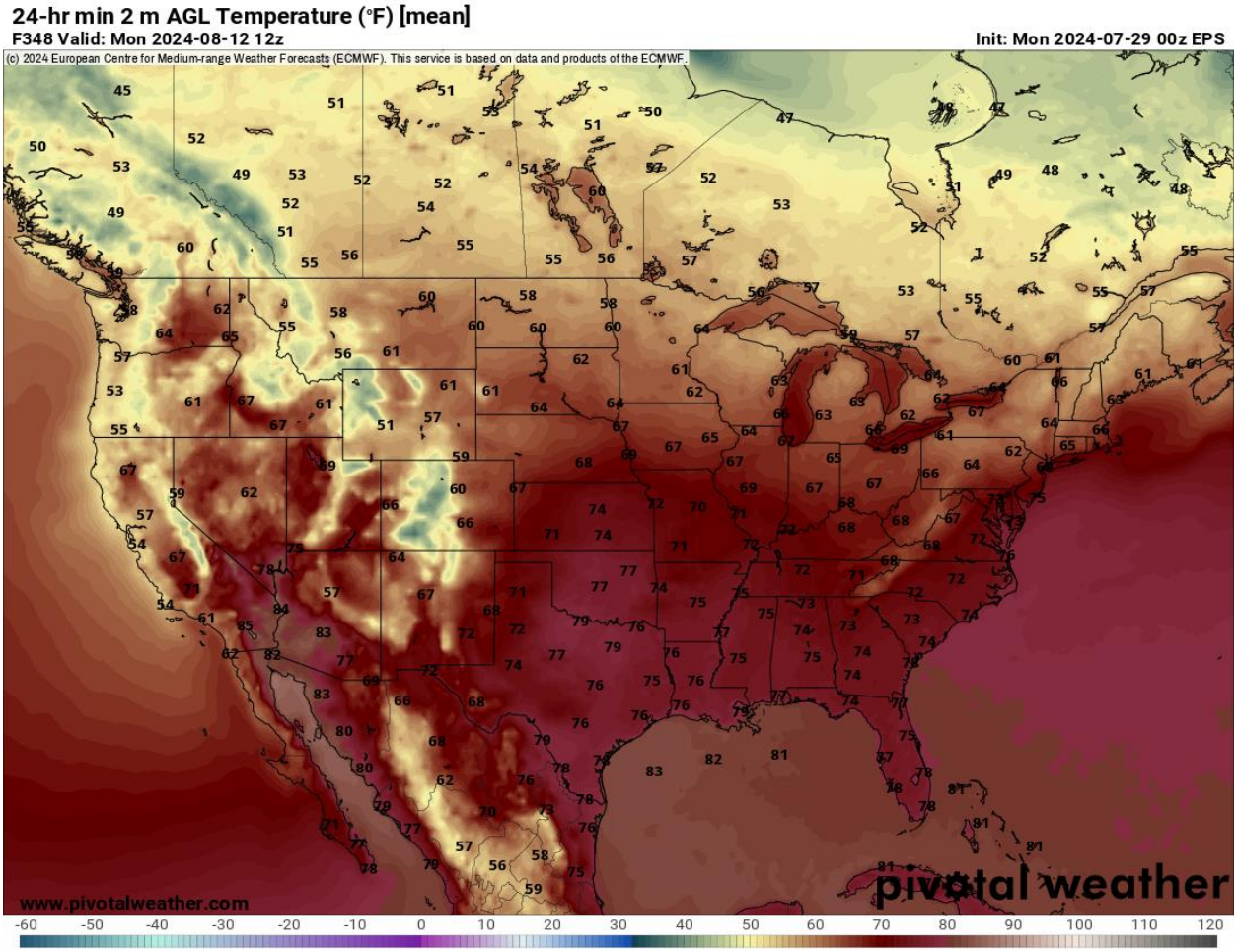
Temperatures are model derived.

Day 14 Max Temperature



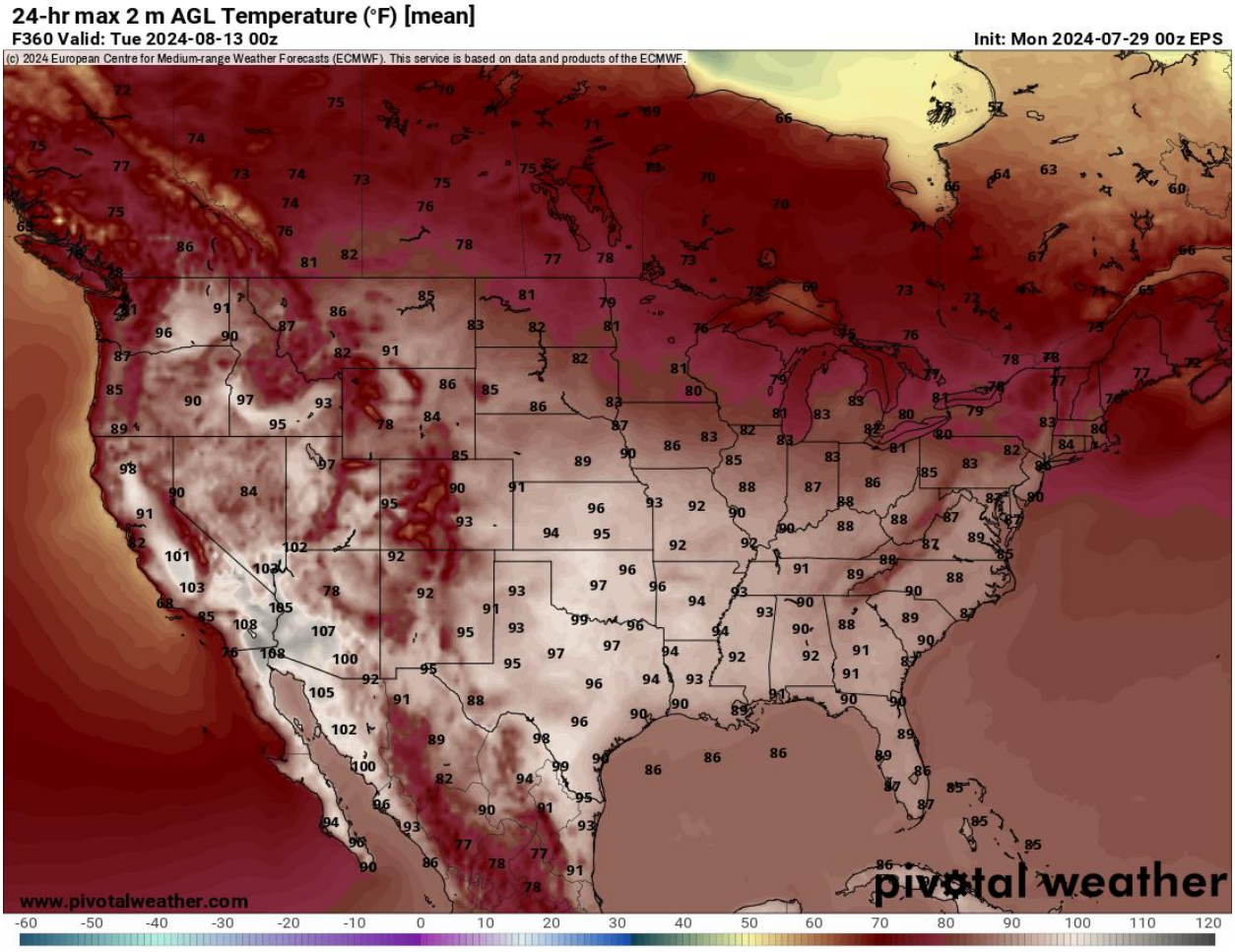
Temperatures are model derived.

Day 15 Min Temperature



Temperatures are model derived.

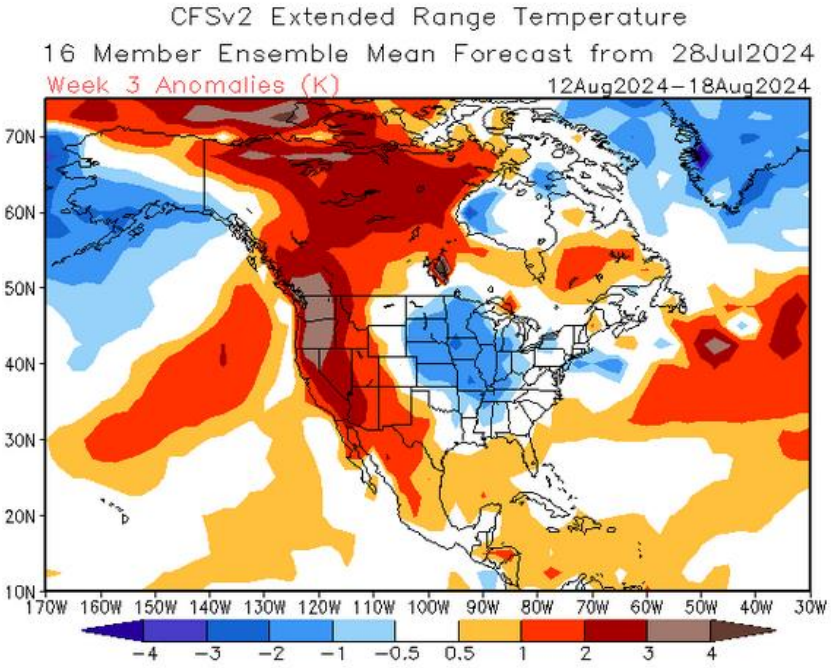
Day 15 Max Temperature



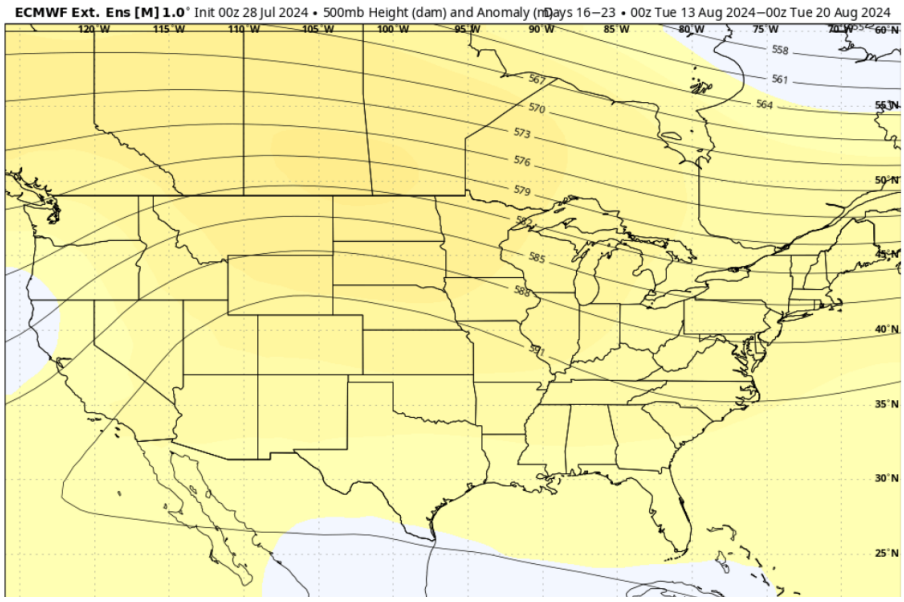
WEEK 3 (August 12-18)

Using the cooler CFS model, cooler air should drop into the middle of the nation. But warming would occur either side of the developing trough in the center of the country. There may be a tropical feature over the Western or Central Gulf of Mexico.

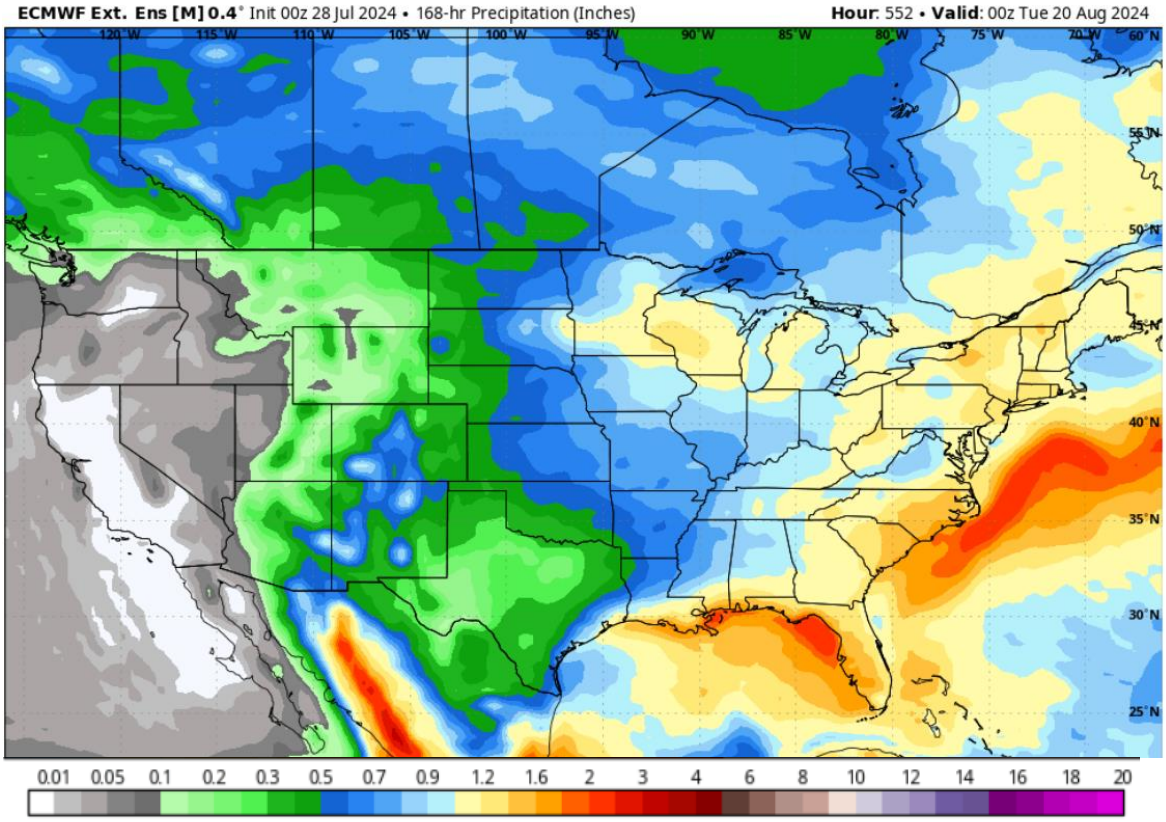
Temperature Anomaly



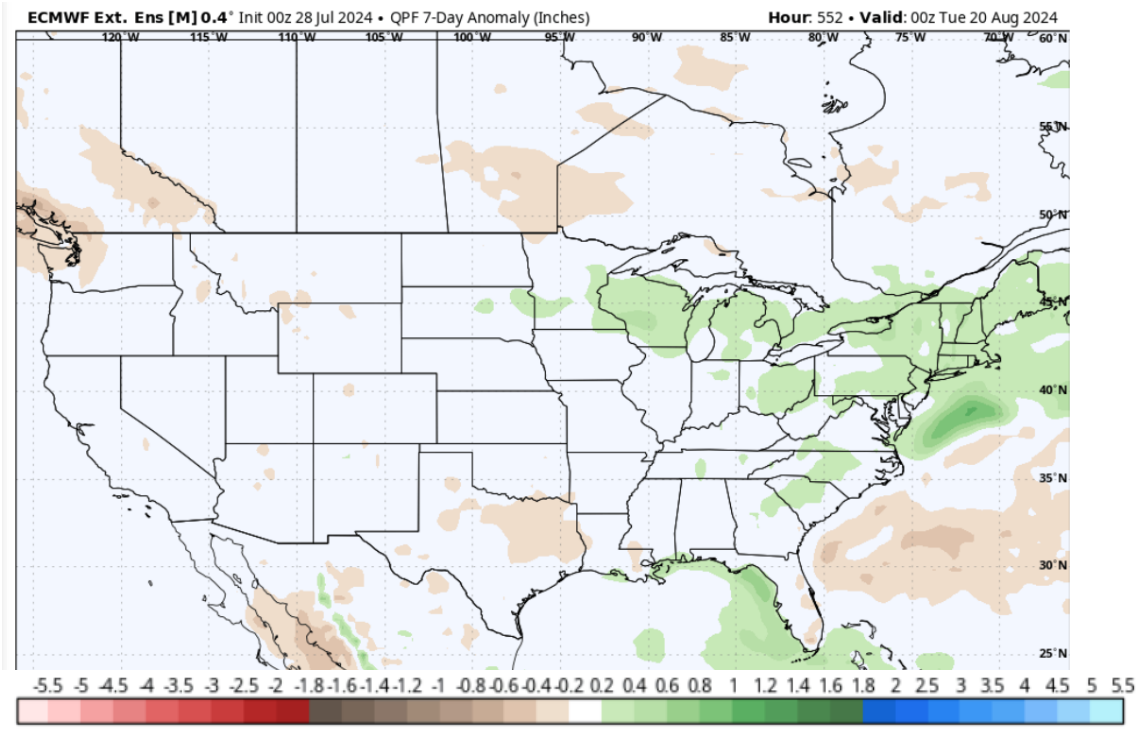
Upper Level Pattern



Week 3 Precipitation Amounts



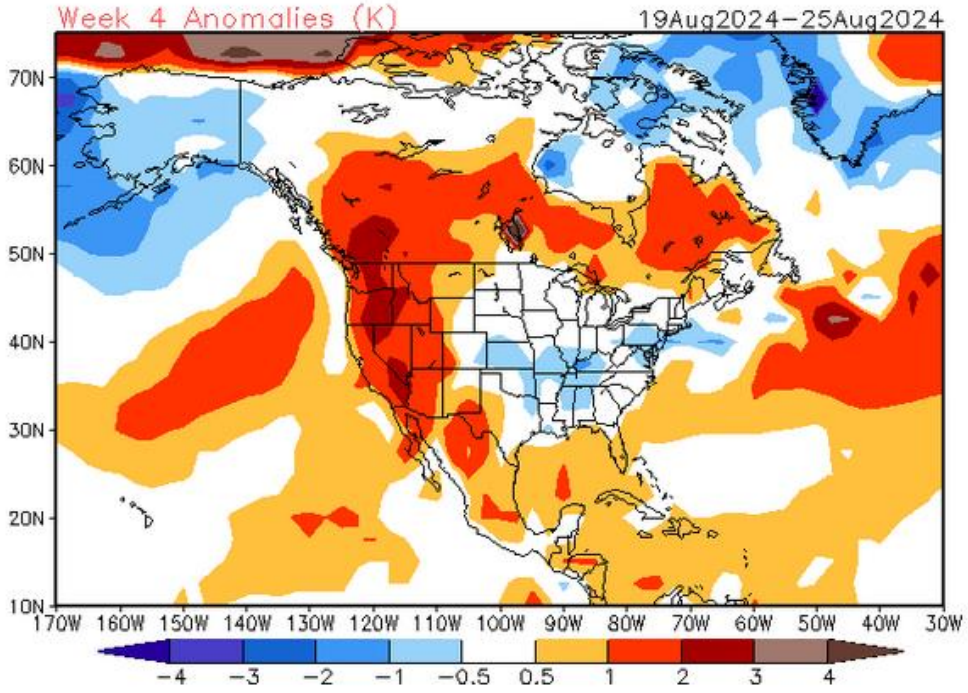
Week 3 Precipitation Anomaly



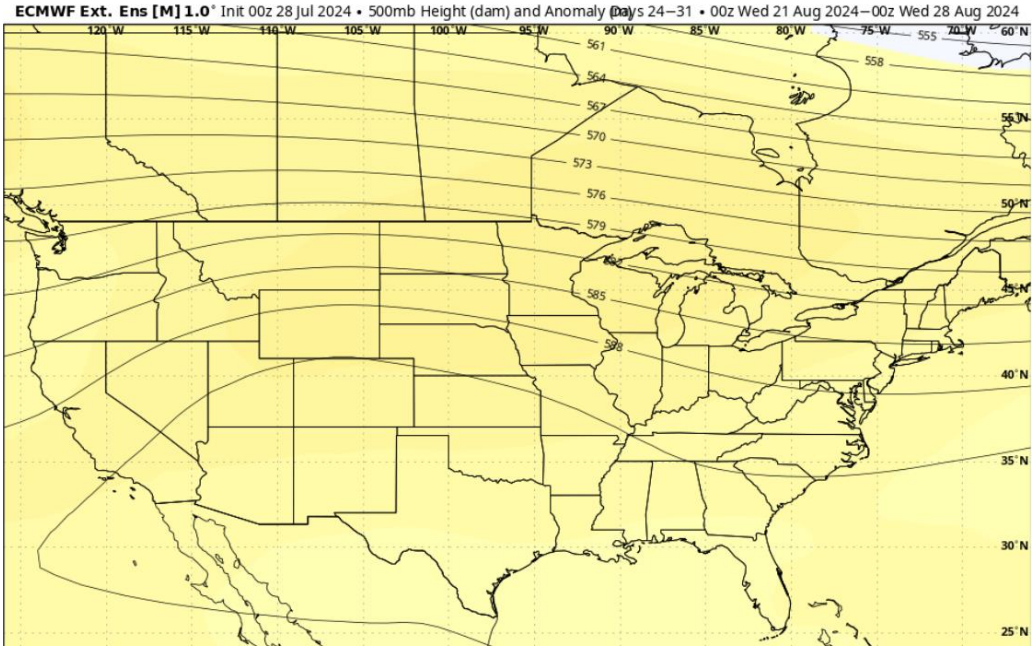
WEEK 4 (August 19-25)

The cooler air modifies from the previous week. Heat dominates the West.

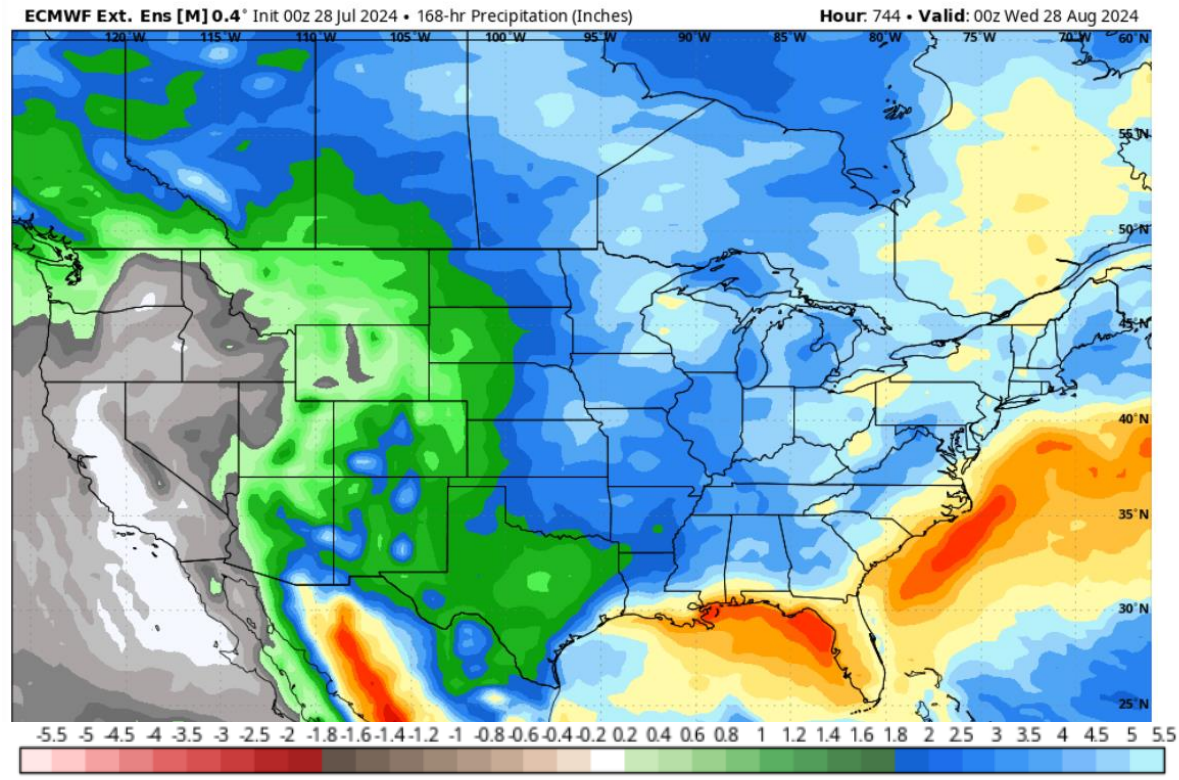
Temperature Anomaly



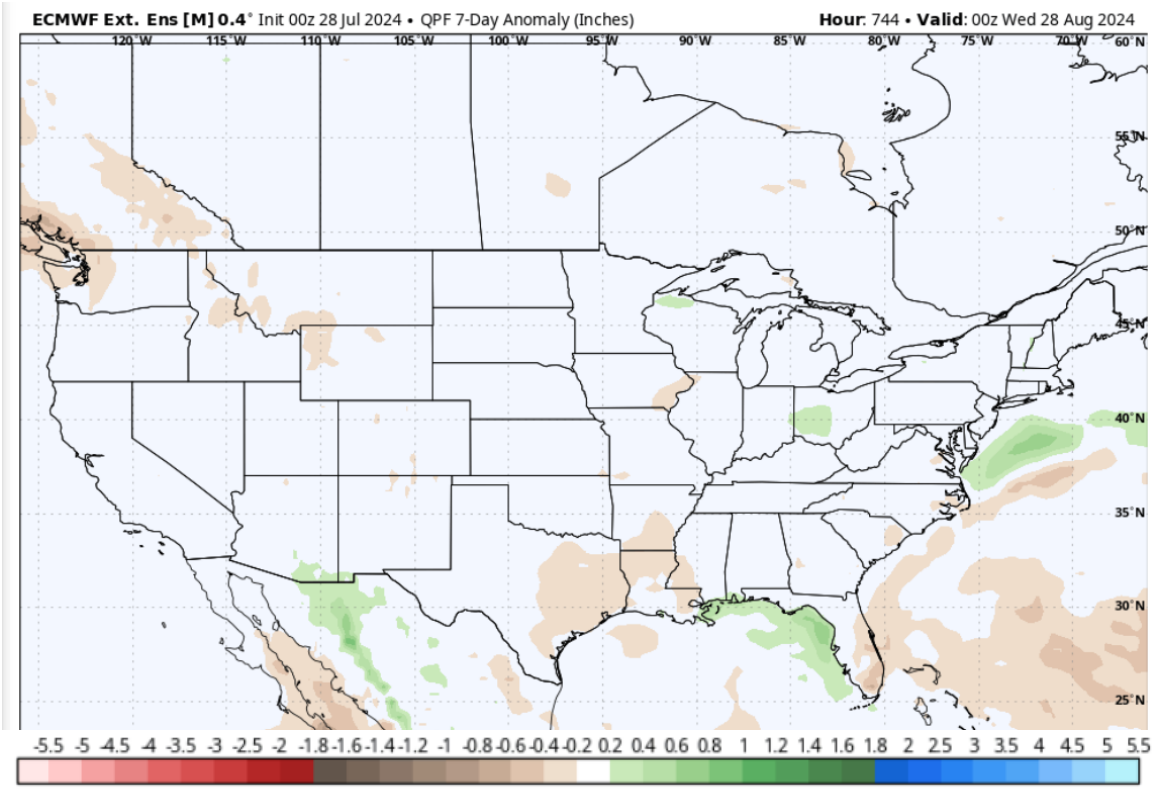
Upper Level Pattern



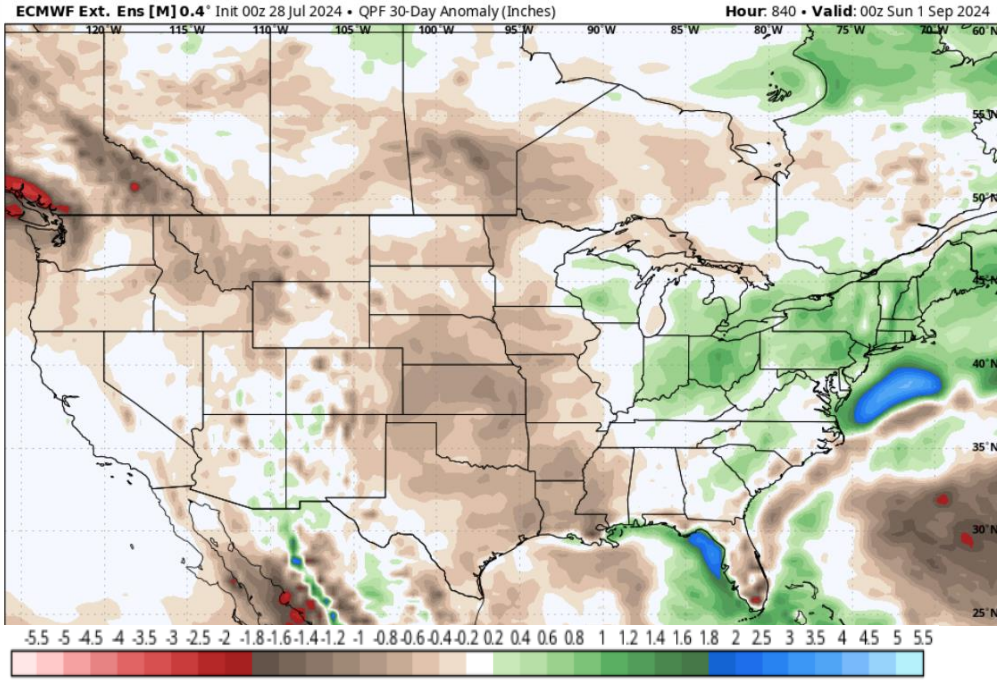
Week 4 Precipitation Amounts



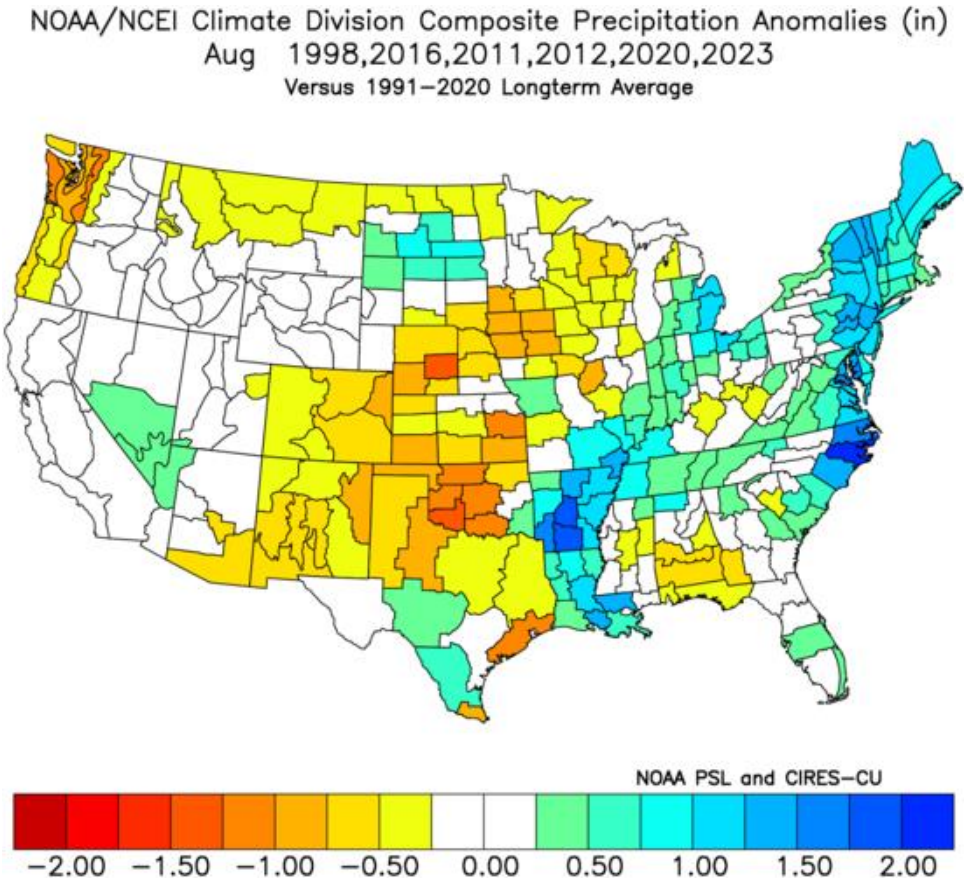
Week 4 Precipitation Anomaly



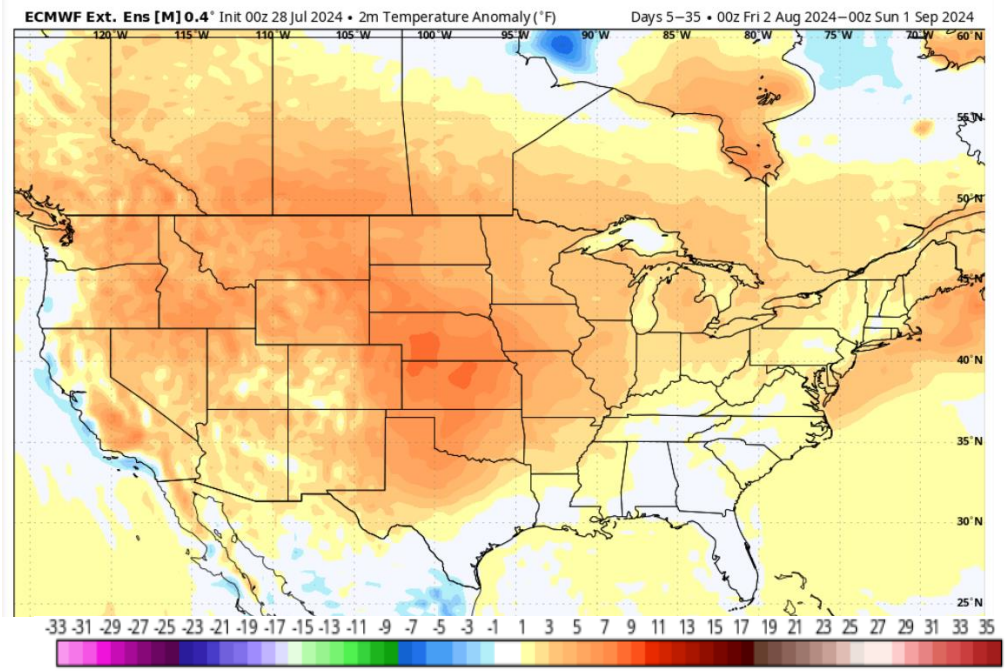
MODEL DERIVED AUGUST PRECIPITATION ANOMALY



ANALOG DERIVED AUGUST PRECIPITATION ANOMALY



MODEL DERIVED AUGUST TEMPERATURE ANOMALY



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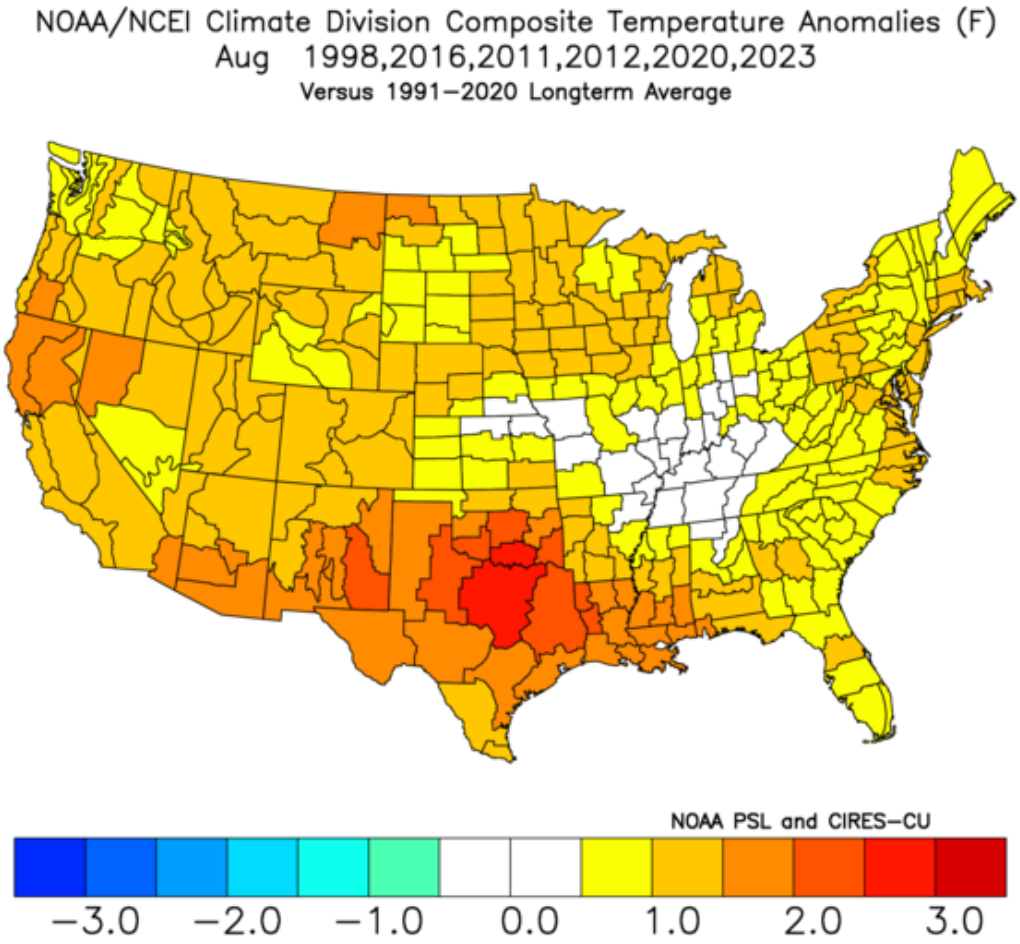
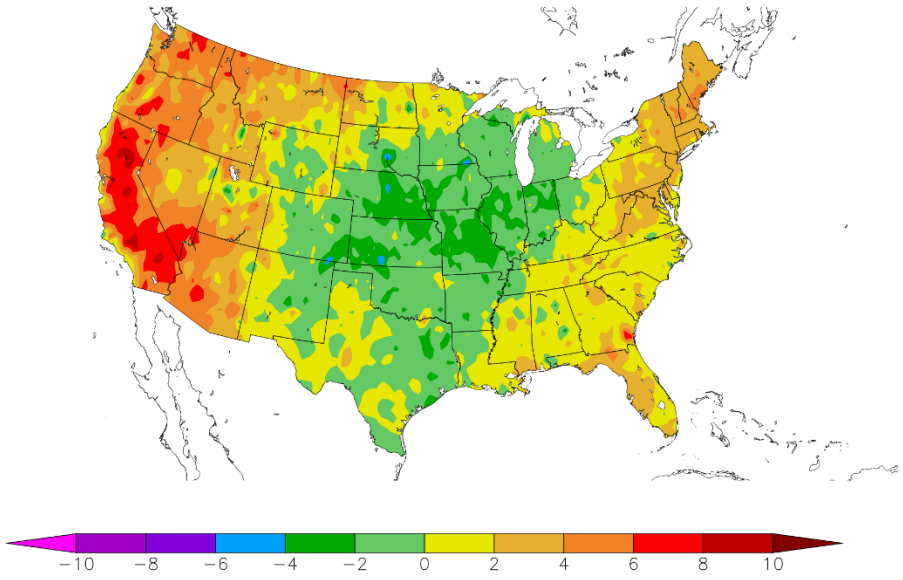


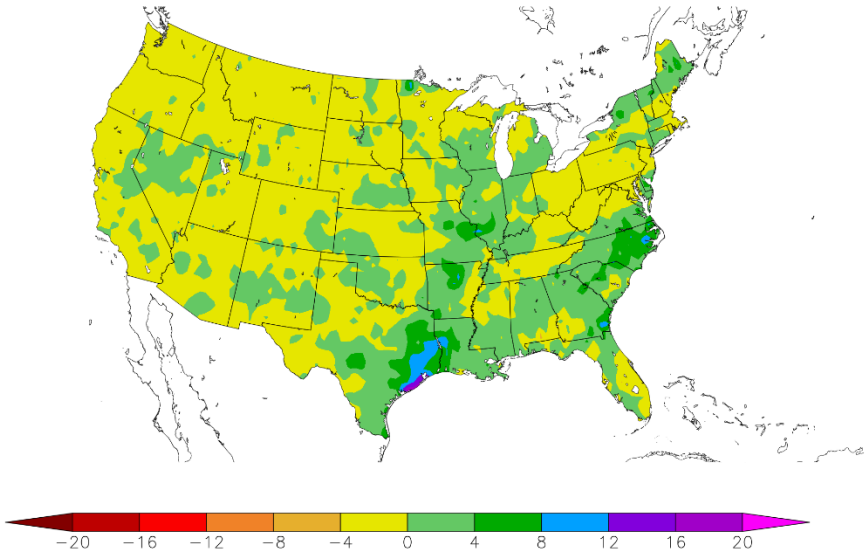
Departure from Normal Temperature (F)
7/1/2024 – 7/28/2024



Generated 7/29/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

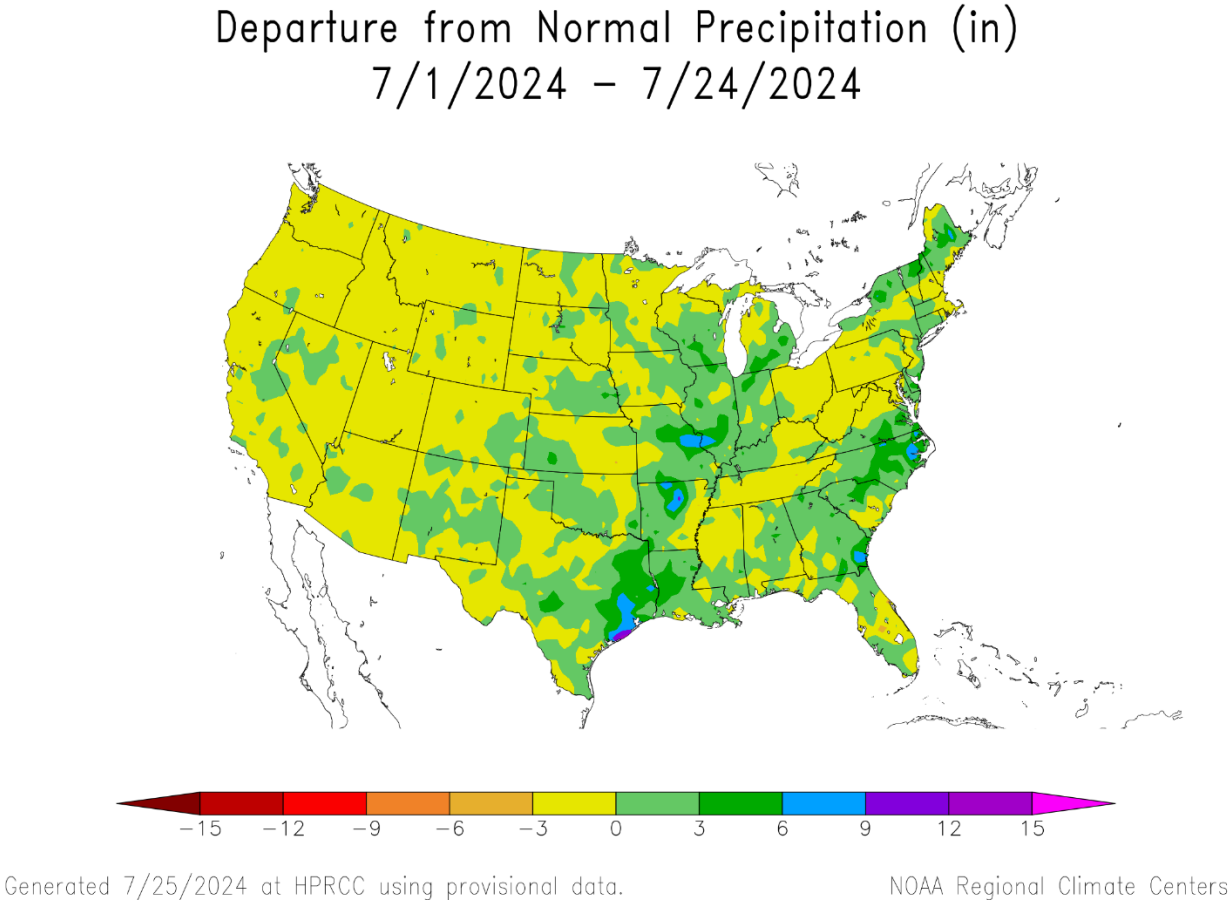
Departure from Normal Precipitation (in)
7/1/2024 – 7/28/2024

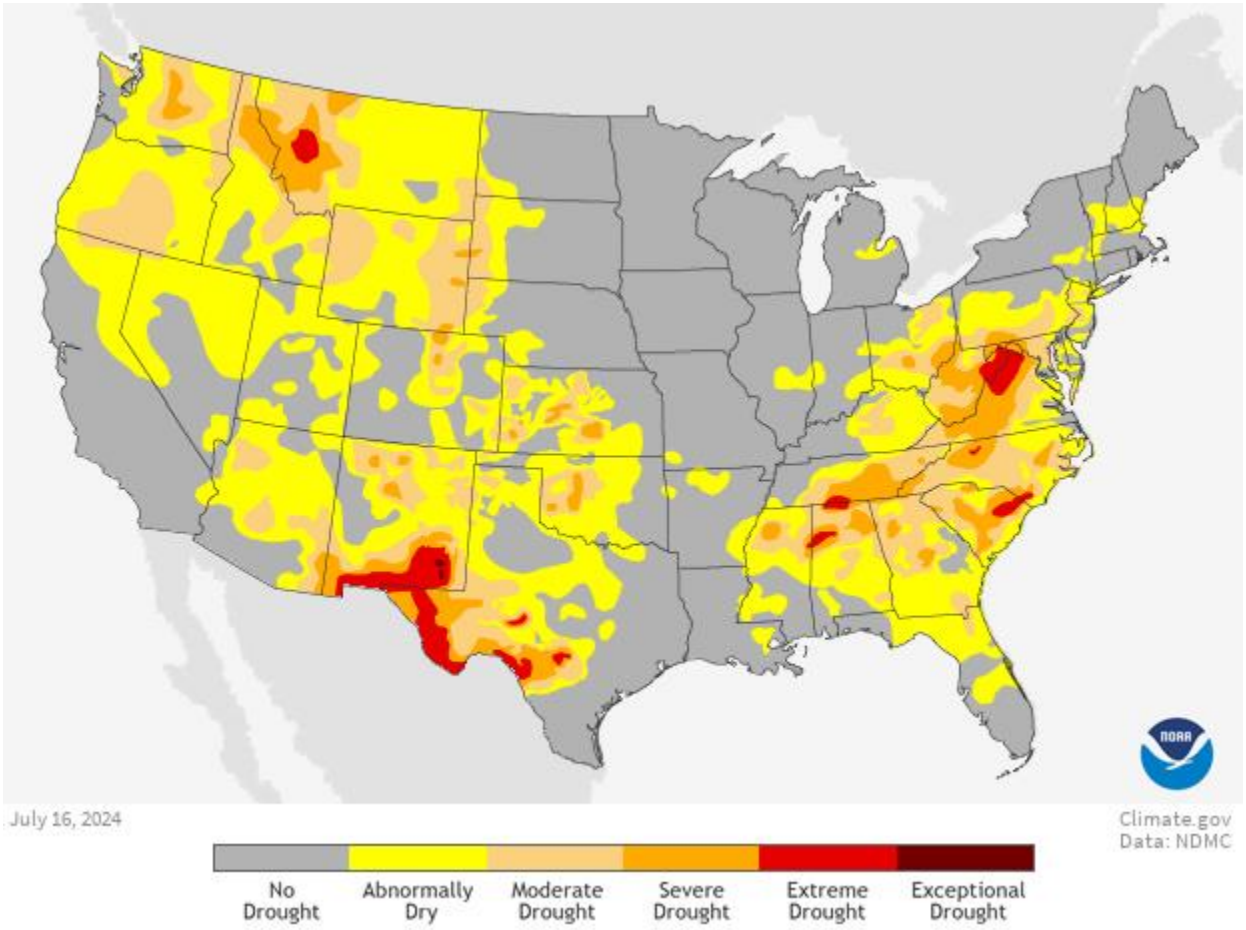


Generated 7/29/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

DROUGHT MONITOR





Disclaimer: This forecast is subject to the inherent limitations of the science of meteorology. While every attempt was made to provide the most accurate forecast possible, it should not be construed as a definitive fact. There is a margin of error in all weather forecasting that must be acknowledged and accounted for.

This forecast is that of the author and does not necessarily represent Murray and Trettel, Inc./Weather Command.

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