

FAX-ALERT WEATHER SERVICE



OHIO, MICHIGAN AND INDIANA PATTERN TRENDS UPDATE

WHILE THERE IS NO STRONG MODEL SUPPORT SUGGESTING I SHOULD RUN AWAY FROM MY CALL FOR AN OVERALL WARMER THAN NORMAL SUMMER SEASON, THERE REMAINS A SNEAKY COOL SIGNAL THAT SHOULD KEEP ANY EXCESSIVELY HOT PATTERN AT BAY

One of those cool / cold periods will come into play in the short-term with legs on through the upcoming holiday weekend...

Discussion: As we close out May and head into the first full month of summer, the large-scale pattern continues to suggest warmer than normal departures will win-out overall, but some cool shots will come into play from time to time.

Nothing I have seen to date, be it in modeling trends or in the actual pattern alignment, leads me to believe an overly hot summer season will occur this year.

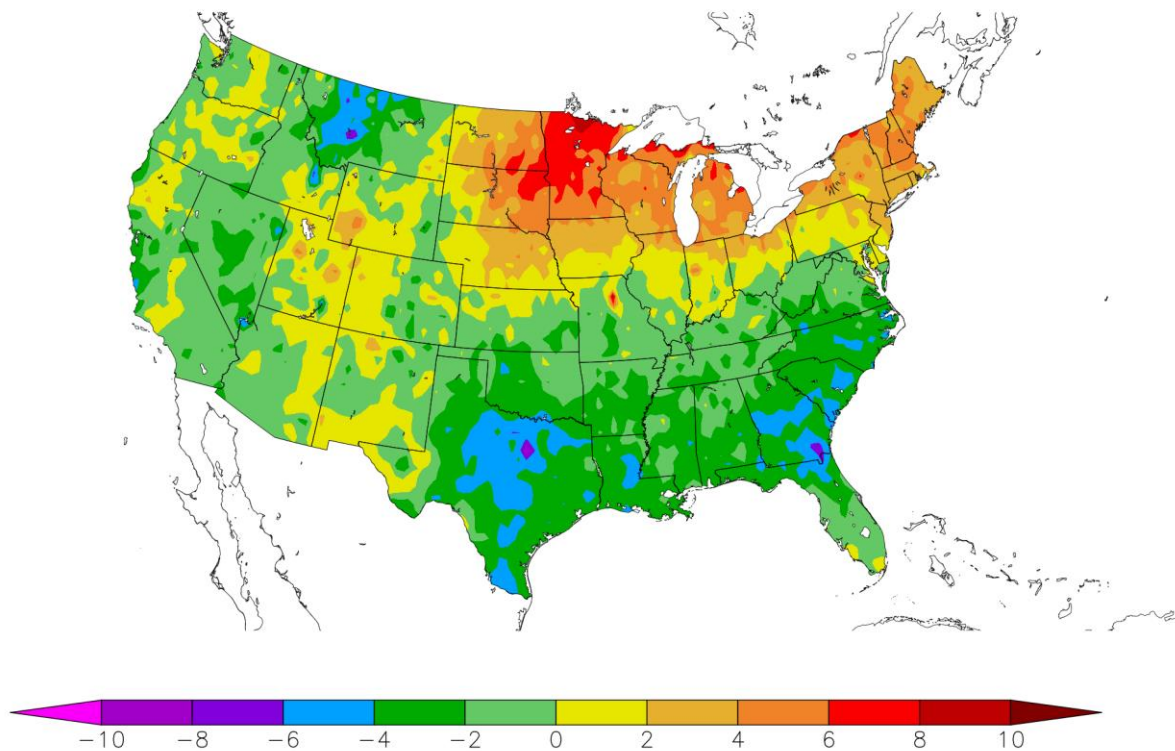
Yes, there will be some hot periods, and maybe even a noteworthy one prior to the end of June. But I continue to believe we are looking at a modestly warmer than normal summer season with a bit of a back-and-forth tenor to the pattern. Cooling will occasionally come along to break the back of any hot stretches. When averaged out, over 10 to 15 day periods, above normal conditions will likely win the battle.

May 2021 was interesting. Cooler than normal conditions dominated the first half of the month, before a decidedly warmer regime unfolded during and shortly after the midmonth period. The month, as a whole, will finish with a cooler than normal anomaly for many areas of the Great Lakes and Upper Midwest. This will be due to the cool first half of the month and the likelihood of a much cooler than normal finish.

The warming after midmonth was significant, but it could not overcome the early month cool anomaly, and will now be suppressed by another cool intrusion.

Here is the May 12th through May 25th anomaly; courtesy of the High Plains Regional Climate Center.

Departure from Normal Temperature (F) 5/12/2021 – 5/25/2021



Generated 5/26/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers

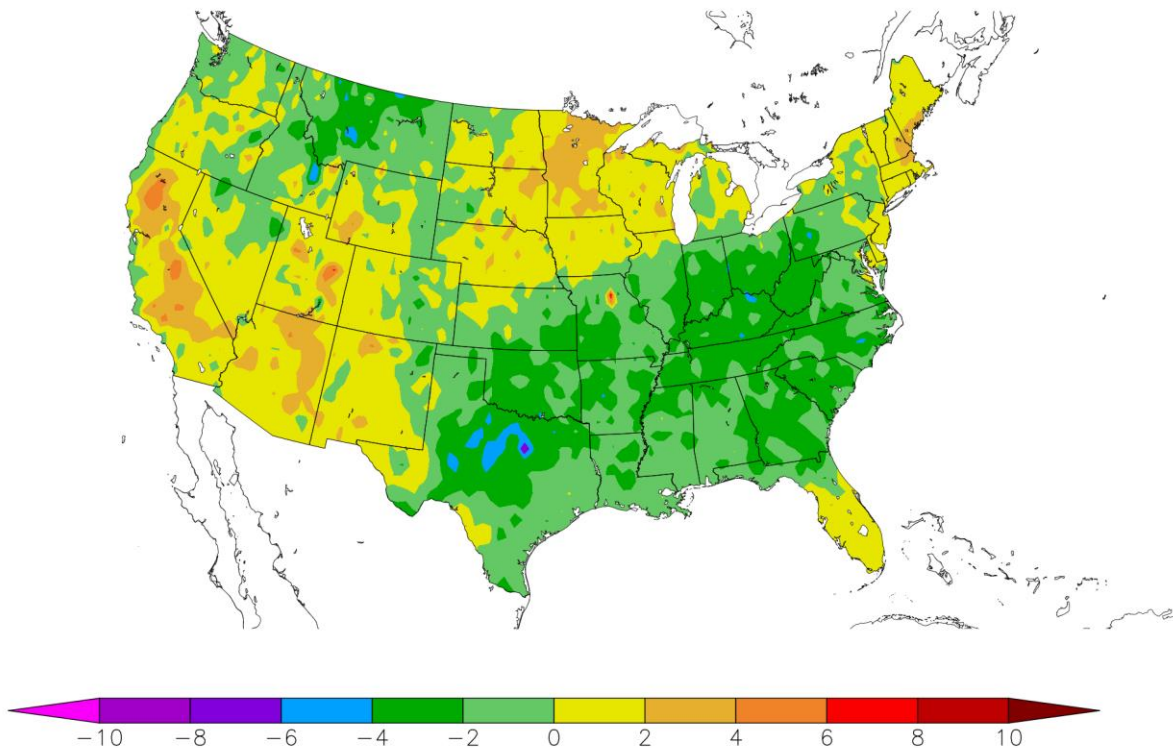
- Note, most of the OH/IN/MI region averaged above normal to well above normal during this period. The small cooler anomaly noted across parts of southern OH was a function of cloud cover issues more so than air mass issues.

In fact, the large cooler than normal area across the southern tier of the U.S. is a function of abundant cloud cover and above normal rainfall, not cold air mass intrusions.

But when you take a look at the anomaly pattern from the 1st of the month through May 25th, you can see the impacts of the early month cooling.

Here is the month-to-date anomaly pattern through May 25th.

Departure from Normal Temperature (F) 5/1/2021 – 5/25/2021



Generated 5/26/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers

- While there are modest above normal anomalies across portions of MI, the vast majority of the 3-state region averaged cooler than normal from the 1st of the month through May 25th.

So, while significant warming did occur, as expected during the second half of May, the coolness of the first half of the month, along with what will be a cool finish will keep the month end anomaly biased cooler than normal

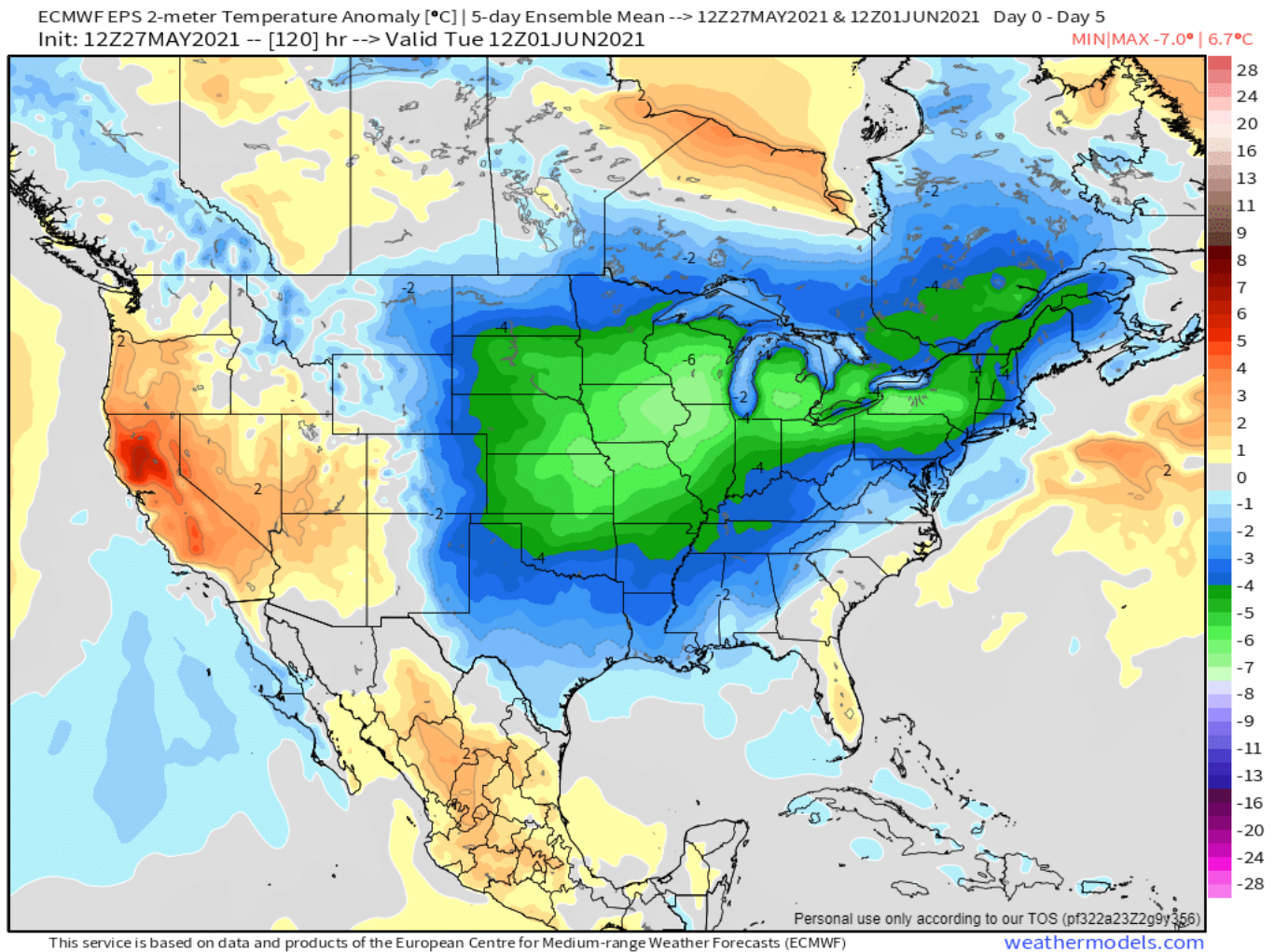
The short-term pattern and model trends continue to strongly suggest the large-scale pattern is not yet ready to settle down into a lazy above normal regime.

Yes, I do favor 10 to 15 day periods to average above normal, along with some 1 to 2 day hot periods, as we move into the summer season. But given the continued hints of

lower-than-normal jet stream heights across parts of central or eastern Canada, we cannot dismiss the occasional cool shot that will tend to temper the intensity of long-running warm anomalies.

Our next cool period is in the process of developing now. Modeling back in mid-May frequently showed the potential for some significant cooling by early June. Well, that will arrive a few days earlier than originally predicted.

Here is the expected anomaly pattern for this upcoming 5-day period; May 27th through June 1st.



- Obviously that does not look like a warm start to the unofficial kick-off to the summer season (this upcoming holiday weekend).

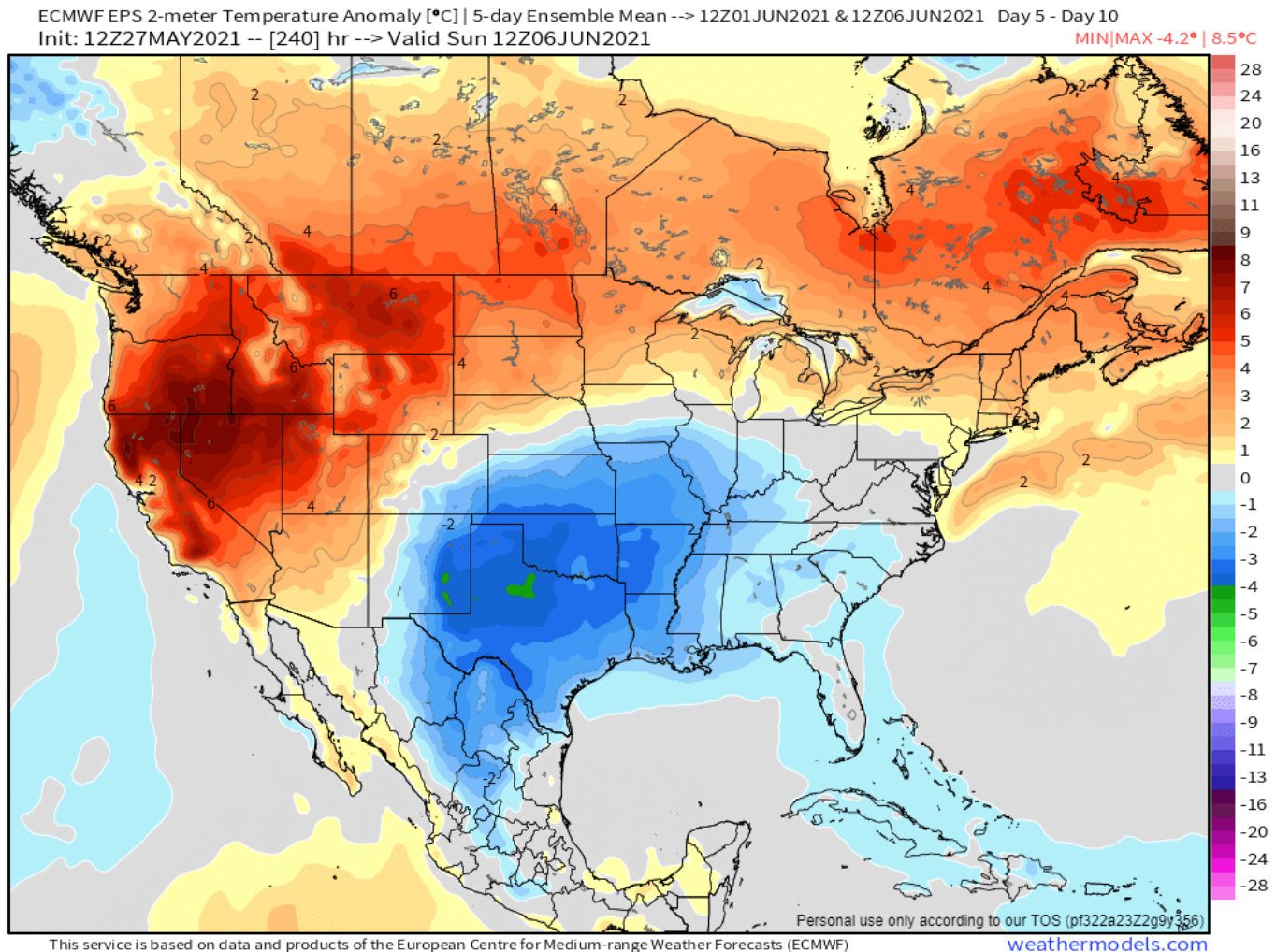
The core of the coldest conditions over the next 5 days will setup across the Central Plains on eastward into portions of the Great Lakes.

The expansive nature of this cool intrusions will allow the entire Midwest on into the Northeast to average significantly colder than normal into early next week.

This will quickly suppress cooling demand and while not winter cold, there will likely be some response on the heating demand side of things.

The second 5-day period of this upcoming 15-day period will feature a relaxing of the cool signal and slow return to near normal early June conditions.

Here is the predicted 5-day anomaly pattern for the June 1st through June 6th period.



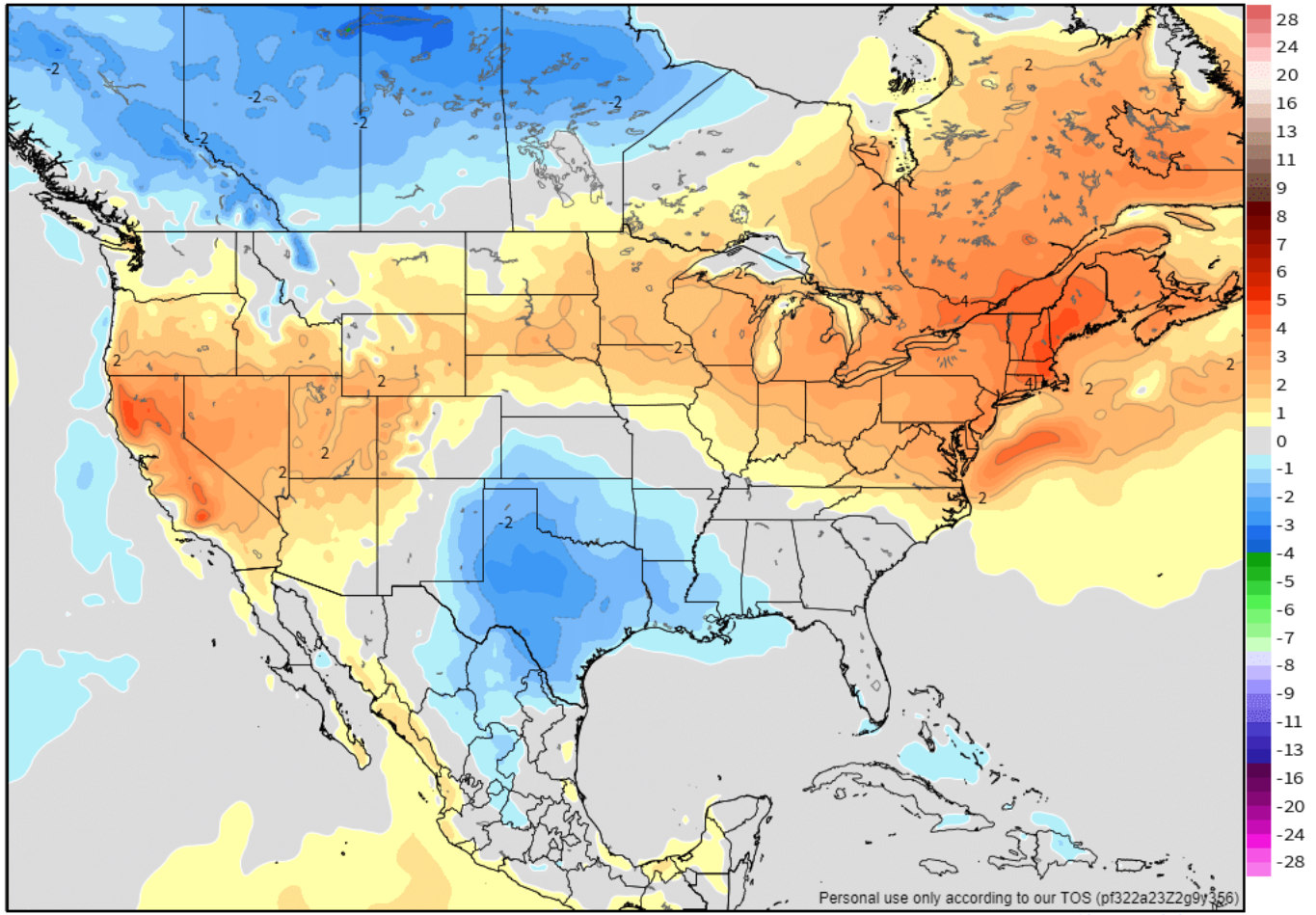
- If correct, this will suggest the trend to normal or slightly above normal by the end of the period will be a gradual correction, not a fast flip back to a “suddenly summer” pattern again.

The increasingly warm look to much of Canada is a signal that warmth will eventually have the upper hand fairly soon. We have seen widespread warm anomalies develop across Canada several times this spring only to fade after a week or so. If we are going to get a long-running, uninterrupted warm pattern, Canada is going to have to stay consistently warmer than normal. As long as cold pockets develop across Canada, the risk of a prolonged, multiweek very warm or hot summer period will be minimal.

Here is the last 5-day period for this upcoming 15-day time frame; its valid from June 6th through June 11th.

ECMWF EPS 2-meter Temperature Anomaly [°C] | 5-day Ensemble Mean --> 12Z06JUN2021 & 12Z11JUN2021 Day 10 - Day 15
Init: 12Z27MAY2021 -- [360] hr --> Valid Fri 12Z11JUN2021

MIN|MAX -5.0° | 5.5°C



This service is based on data and products of the European Centre for Medium-range Weather Forecasts (ECMWF)

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- Note that by the end of this upcoming 15-day period, warmer than conditions are back in play across the entire northern tier of the U.S., including the Great Lakes and Upper Midwest on into the Northeast.
- The warmth, at least right now, is not anything terribly noteworthy and certainly does look like a hot signal. But it does fit the forecast mode of warmer than normal conditions winning out overall, but enough cooling from time to time to keep things in check.

It should always be noted that we are looking at the average of a 5-day period. There will some days that are much warmer than the 5-day average, as well as a day or two that might only reach normal levels, or a bit below.

You can have a hot day or two within an anomaly that looks fairly bland over a 5-day period.

If you take the multi-year recent bias for predicted temperatures to verify warmer than modeled projections, it is almost always safe to boost the anomalies a degree or two.

SUMMARY

1. After a solid warming during the mid to late month period, we are going to see a meaningful cool anomaly develop across the Upper Midwest and Great Lakes areas.
2. The cold anomaly will peak during the period from Friday, May 28th on through Monday, May 31st.
3. The pattern will moderate early next week, but the lingering impacts of the cool period will continue into the first few days of June before a trend toward normal arrives by the end of next week.
4. A decidedly warmer than normal period will develop, as we move into and through the June 5-10 period.
5. Large-scale pattern trends continue to support a warmer than normal, on average, for June. But currently there is no strong evidence to support an extended period of hot weather; multiple days in a row above 90 degrees. This does not mean there will not be any hot days during June; there will be.
6. I have seen some hints of a major pattern reversal that favors a more significant hot pattern developing during the mid to late June period. But, the lack of model consistency and large-scale pattern support for such a pattern makes me very wary, of going too hot, too soon...

SUMMER TRENDS

As with the short and medium range periods, I continue to favor the summer season, as a whole, averaging warmer than normal, but not excessively so. Overall cooling demand is likely to run above normal, but current trends do not support a record setting cooling demand season ahead.

Assuming some of the fingerprint of the spring season lingers, I expect we will see some sporadic cool intrusions that keep the summer heat from getting out of control, as well as limiting the number of true heat wave periods. Again, this does not mean no heat waves, or limited number of 90-degree days. There will be hot periods and sometimes we will string together some 3+ days of 90-degree heat and that will qualify, as a heat wave. But there is not a strong signal for a long-lasting heat dome to develop across the central U.S., at this point in time. In past years with truly hot summers, the footprint was already in place. Not seeing it at this time...

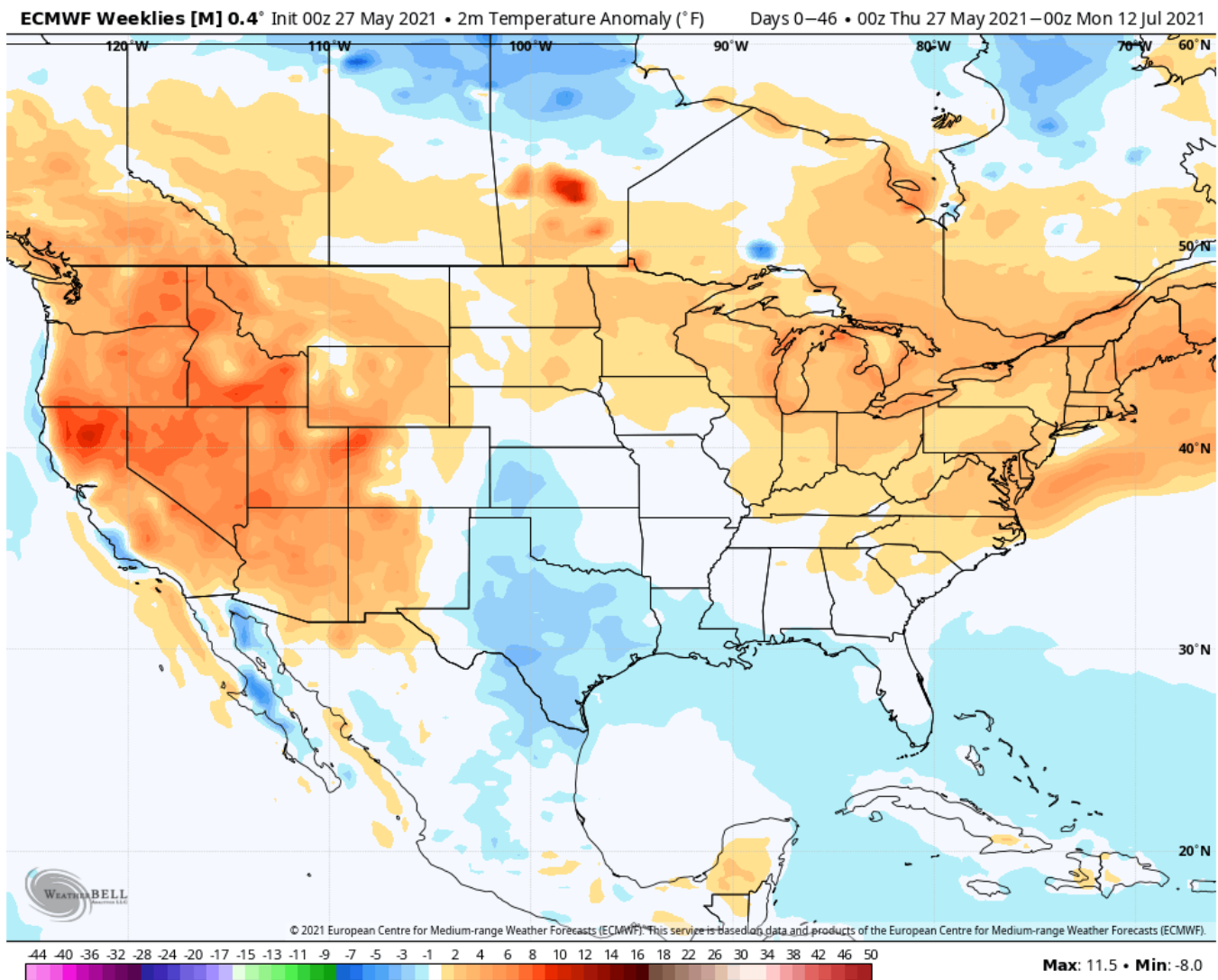
Part of the issue with the summer is the lack of a coherent equatorial Pacific signal.

During this past winter, there was a clear La Nina signal (cooler than normal conditions along the equatorial Pacific).

While the La Nina has faded, it is not totally gone. There have been some model trends indicating a weak El Nino might develop this summer, but so far no guarantee.

A weak El Nino (warmer than normal equatorial Pacific) would likely enhance the potential for a hotter summer than now predicted. But the state of the Pacific is not still influx and I think a weak La Nina imprint is still most likely, or possibly a slow trend toward a weak El Nino later in the summer or early next fall. The bottom line is that there is no overwhelming Pacific signal to key on right now.

Here is the current 46-day temperature anomaly predicted...



Once again, we see a clear signal for a warmer than normal for the eastern U.S. through July 12th.

Not surprising given the recent pattern trends. While the warm anomaly is extensive, it is not overly intense, which implies there must be some cooling periods incorporated into this 46-day forecast. All in all, I agree with the current model graphic...

Meteorologist John Bagioni
FAX-ALERT WEATHER SERVICE, LLC
BURLINGTON, CT Tel. (860) 675-9091, cell: (860) 930-6534 email:
john@faxalertweather.com