

## OHIO, MICHIGAN AND INDIANA PATTERN TRENDS UPDATE

**STRONG PATTERN TREND REVERSAL NOW UNDERWAY AND IT WILL PRODUCE A SOLIDLY COLDER THAN NORMAL SECOND HALF OF APRIL**

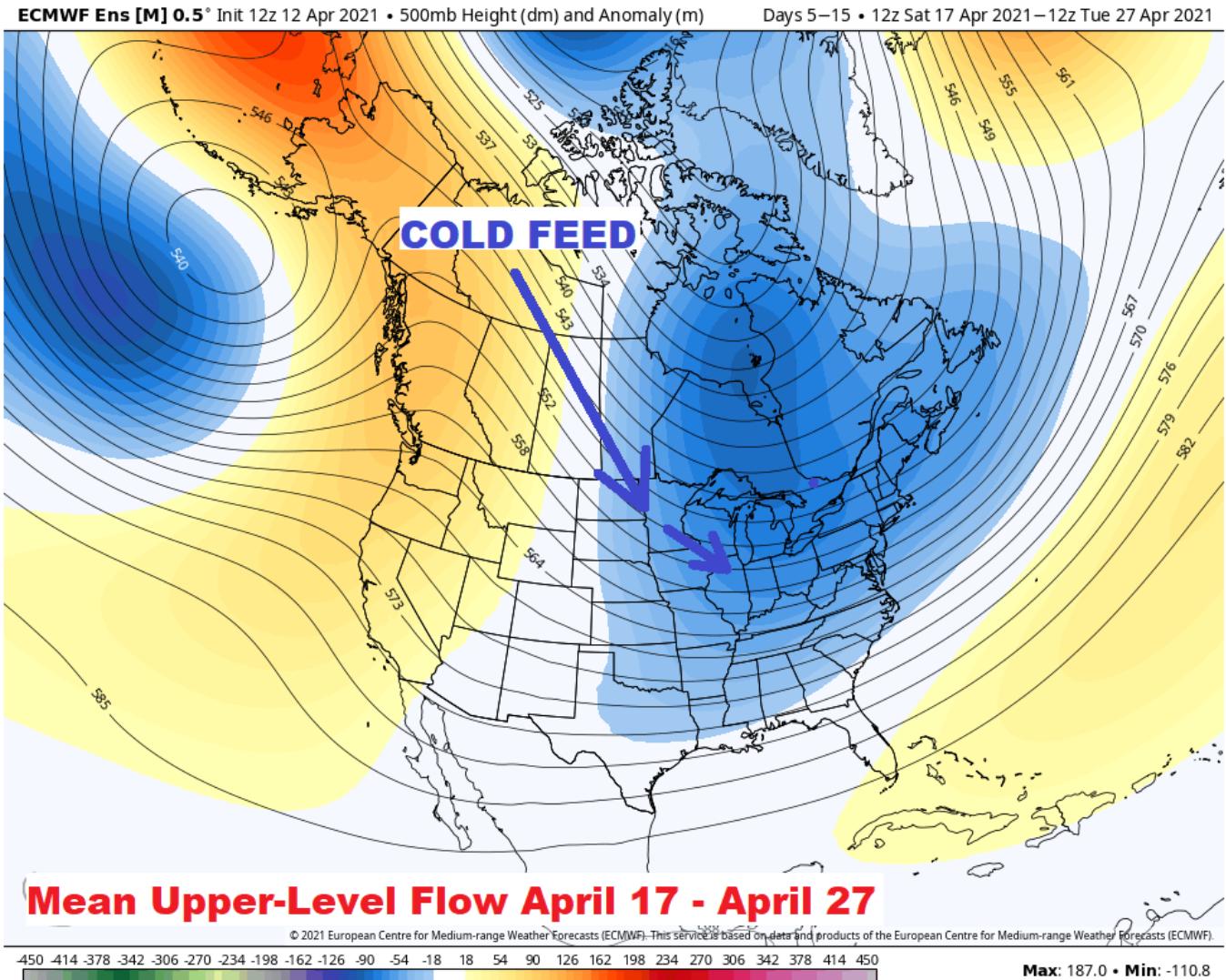
**Discussion:** In my last update, there was little to no support for an extended period of colder than normal conditions during April across the Midwest and Great Lakes regions.

Entering April, the upper-level flow appeared likely to support a mean west to southwest flow across the OH/IN/MI area, which in turn supported the call for warmer than normal conditions to be favored on average.

It appeared any flow change to northwest would be short-lived and not capable of delivering significant or prolonged cold into the region. I did mention there was some potential for the upper flow to bend northwest for short-periods, but the pattern trends and modeling did not look capable of producing an extended period of cold. So, while there was some cool potential, overall, the pattern looked very strongly suggested a warmer than normal month would be the result.

But that is no longer the case. The upper flow pattern is getting ready to lock into a configuration very favorable for cold air delivery into the Plains, Midwest & Great Lakes areas.

Here is the expected mean upper-level flow for the period from this upcoming Saturday, April 17<sup>th</sup> through Tuesday, April 27<sup>th</sup>.



The pattern will favor a unseasonably deep upper-level trough extending southward from east-central Canada into the Deep South. Meanwhile, a strong upper-level ridge is modeled to sit across western and northwest Canada.

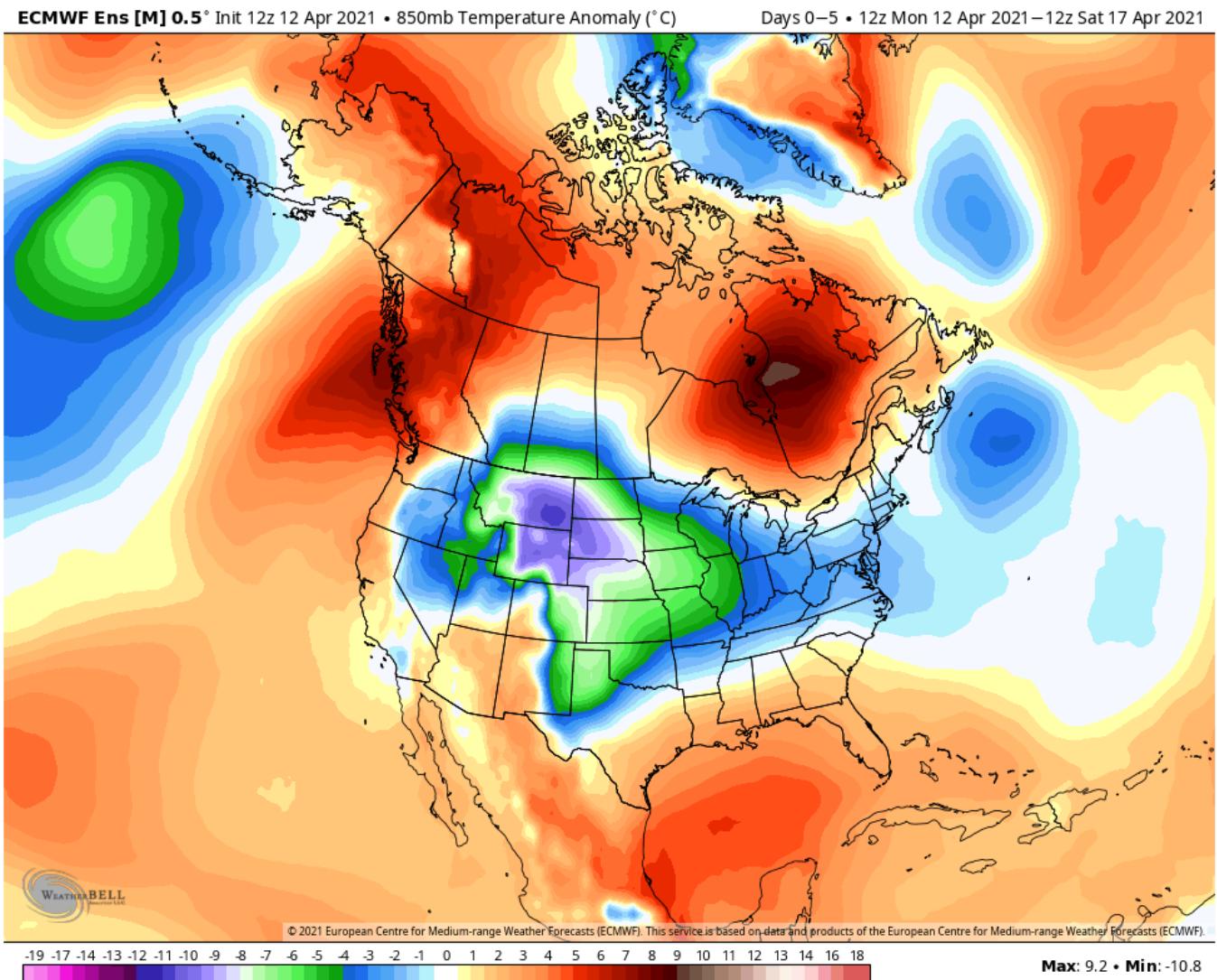
In the winter or early spring, this setup would produce a series of bitter cold intrusions. In fact, it is not terribly different from the flow pattern that produced the historic Southern Plains / Texas cold wave.

We are now into mid-April and the potential for bitter cold is rapidly fading. But the evolving upper-level flow that is getting ready to lock in and will likely produce an extended period of colder than normal conditions.

While not true winter cold, it will be cold enough to significantly increase normal heating demand for the time of the year across the region.

Let's take a look at the next 15-day period in 5-day segments using the 5,000 foot anomaly map, which is one of the best ways to gauge low level anomalies.

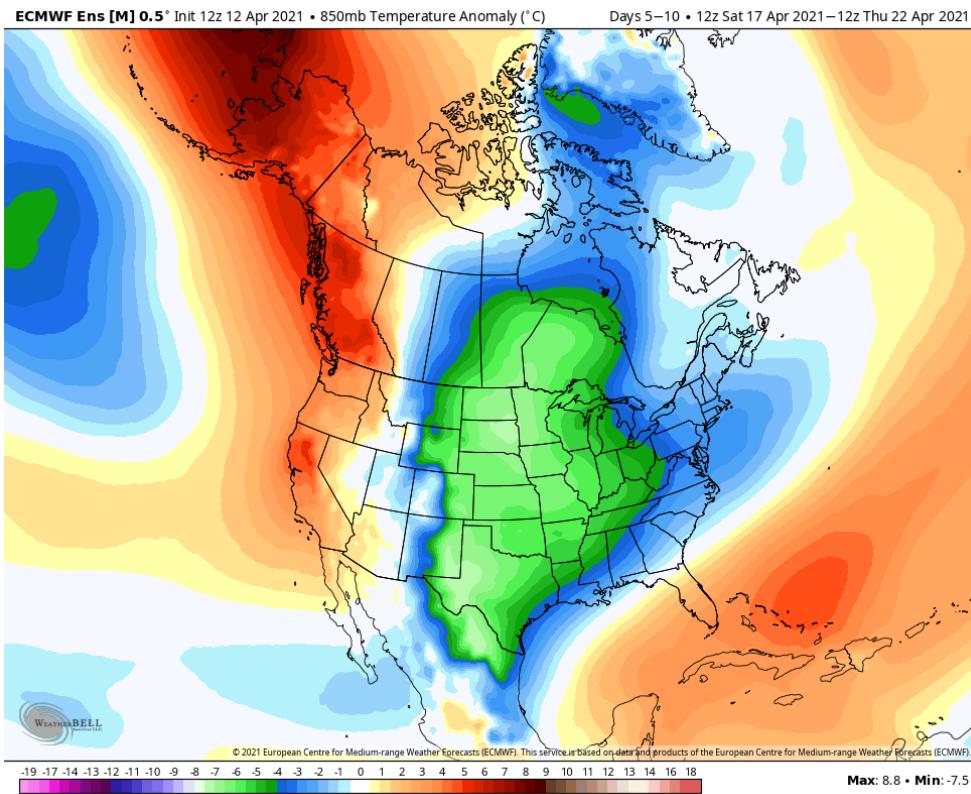
Here is the 5-day period Monday, April 12<sup>th</sup> through Saturday, April 17<sup>th</sup>.



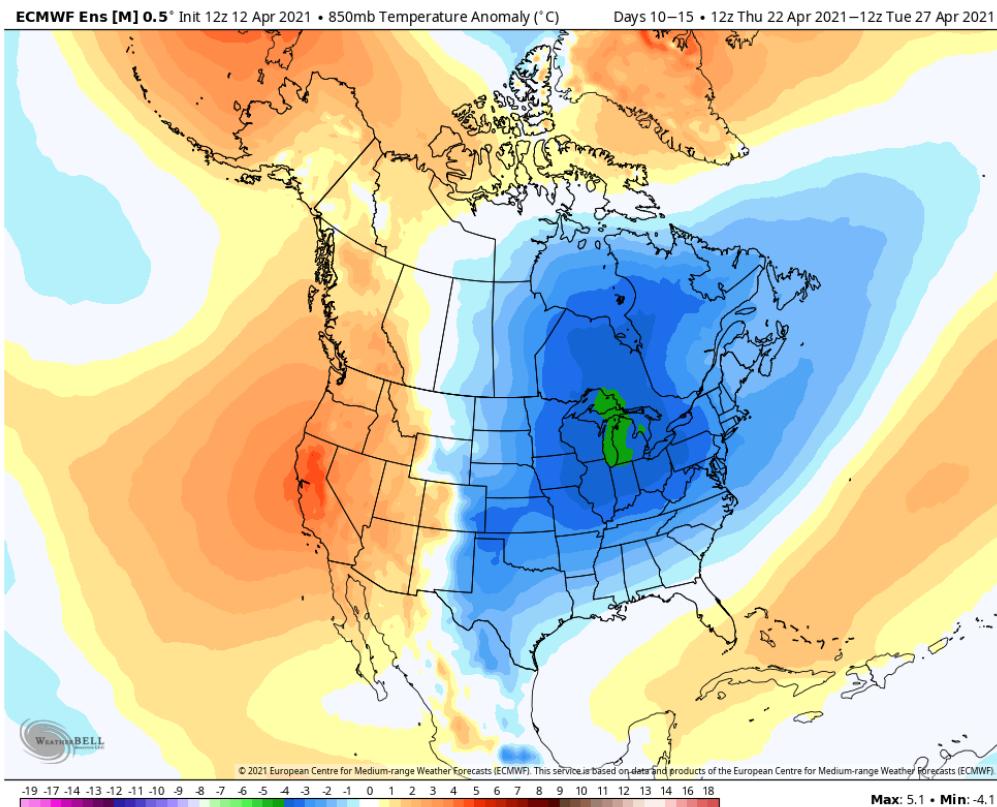
- The cold pattern will first settle into the Northern Rockies & central & northern Plains.
- As this week progresses, the cold will start spreading eastward and should overwhelm the Great Lakes and Midwest region as we shift on into the weekend.
- During this first 5-day period, the core of the cold will continue to sit west of the OH/IN/MI area, but as the shape of anomalies contours indicate, the cold will be spreading almost due east.

As you will see in the following 2 graphics, the core of the cold will grow increasingly large and will encompass most of the central and northeast portions of the country.

The graphic below is the forecast anomaly for the April 17<sup>th</sup> through April 22<sup>nd</sup>.



Now here is the April 22<sup>nd</sup> through April 27<sup>th</sup> period.



If correct, and right now there is strong support for these outlooks to verify, we are looking at an extended colder to occasionally much colder than normal period develops this week and likely continues through the end of the month.

The coldest period is expected to be the period from late this upcoming period on through next week.

The only thing holding this cold pattern back is that we are moving into mid & late April period with an ever-increasing sun angle, which right now is at about the same elevation, as late August.

**So cold, yes; record cold, maybe? But true bitter cold; no!**

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