

# **WEDNESDAY FULL US GRAIN WEATHER**

## **6/21/17 OVERVIEW**

Tropical storm Cindy continues to fall apart at a steady pace and it is clearly not even a tropical system anymore. The impact of the breakdown of the system is significant because it reduces the chances of the rains getting north of the Ohio River. Still the deep south is going to see a lot of rain over the next few days and there's gonna be significant flooding in some rain areas especially over the lower delta and portions of Alabama and Mississippi.

There remains significant differences in the 6 to 10 day forecast between the GFS the European models. The GFS has come up the brand new solution which produces very heavy rain over the WCB which does not exist on the GFS ensemble ....the European model ...the European ensemble .. the Canadian model or the Canadian ensembles.

The 11 to 15 day continues to show strong signal for a large area of above normal and perhaps much above normal rainfall over the heart of the Midwest and especially the WCB region.

All that being said it should also be pointed out that none of these rains reach the Dakotas in any significant way or Eastern Montana or southern Saskatchewan Canada and those areas are likely to remain very dry all the next two weeks.

As you can see from these images the radar overnight exploded over portions of Illinois Indiana and Missouri. Some rainfall amounts there were significantly heavier than forecasted by the various short range models . . This image shows the rainfall amounts over the past two days and you can compare it to the GFS model from Tuesday morning .... you can see even in the places where the GFS model had 1-2"/25-50mm in Indiana ...the rainfall amounts are closer to 3-4"/ 75-100mm in some areas. The GFS also missed significant rain in portions of Missouri and Illinois There also areas which saw very little rain during the overnight hours.

In summary it is probably best to say that the GFS coverage was too high but the rainfall amounts were pretty close. The European rainfall amounts were too low but the coverage was a close match to reality.

### [FAST LOADING RADAR](#)

The morning radar shows of heavy thunderstorms in 2 clusters over the northwest IA & southeast IA But there also some moderate rain showers & weak storms over southern Manitoba into north central MT. To the south the rains coming off of tropical storm Cindy but has moved into much of central and southern AL MS & FL panhandle.

## **TEMPS JUNE 20-21**

[MAX TEMPS JUNE 20](#) - [NORMAL MAX TEMPS FOR MID JUNE](#)

[MIN TEMPS JUNE 21](#) [NORMAL MIN TEMPS FOR MID JUNE](#)

**TUESDAY MAX TEMPS** -- 70s over ND northeast SD MN WI MI.. 80s over eastern MT rest of SD IA MO ARL LA ILL IND OH KY TN MS AL GA.. 90s over eastern TX/ OK/ KS / NEB... 95-100 over western TX/ OK/ KS/ NEB and eastern COL

## NEXT 5 DAYS

There is not much to change. The main issue has to do with the north would extend of the rains from tropical storm Cindy. But as I argued yesterday the system is not really a tropical storm. NHC at 5am mentioned that Cindy is mostly non tropical -- the low level center and thunderstorms have separated from each other and the system now actually looks more like a subtropical storm.

*Tropical Storm Cindy Discussion Number 8*

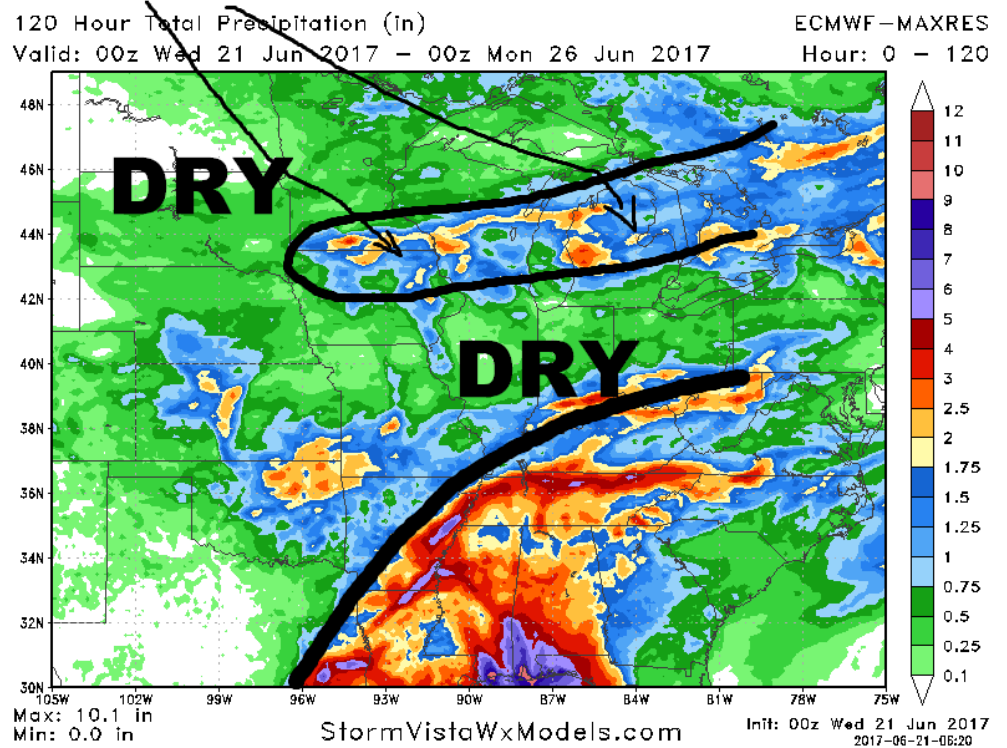
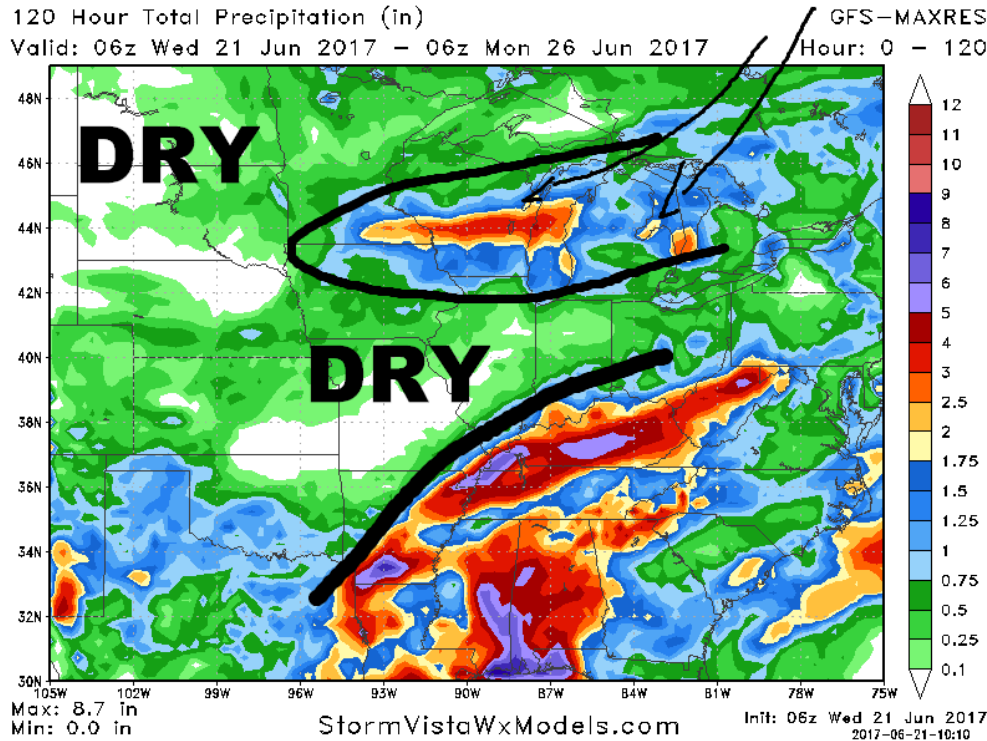
*NWS National Hurricane Center Miami FL AL032017*

*1000 AM CDT Wed Jun 21 2017*

*Cindy has the overall appearance of a subtropical cyclone this morning with a convective cluster just northwest of the center and additional convection in a ragged band well removed from the center in the eastern semicircle. However, there is more convection near the center than earlier, so the system remains a tropical cyclone on this advisory.*

Because the rains have shifted away from the center and to the east away this decreases the chances of these heavy rains moving into southern ILL IND OH. Most of the models this morning have the heavy rains over the next five days between 2-10"/50-300mm over the gulf coast state and up to 6" 150mm in portions of TN and KY. But north of the Ohio River most of OH IND ILL KY & MO remain more less dry over the next 5 days. To the north there still remains at weak front which brings significant rains to northern IA south WI & much of MI -- with amounts of 0.5-2.0" /12-50mm.

## northern rain area

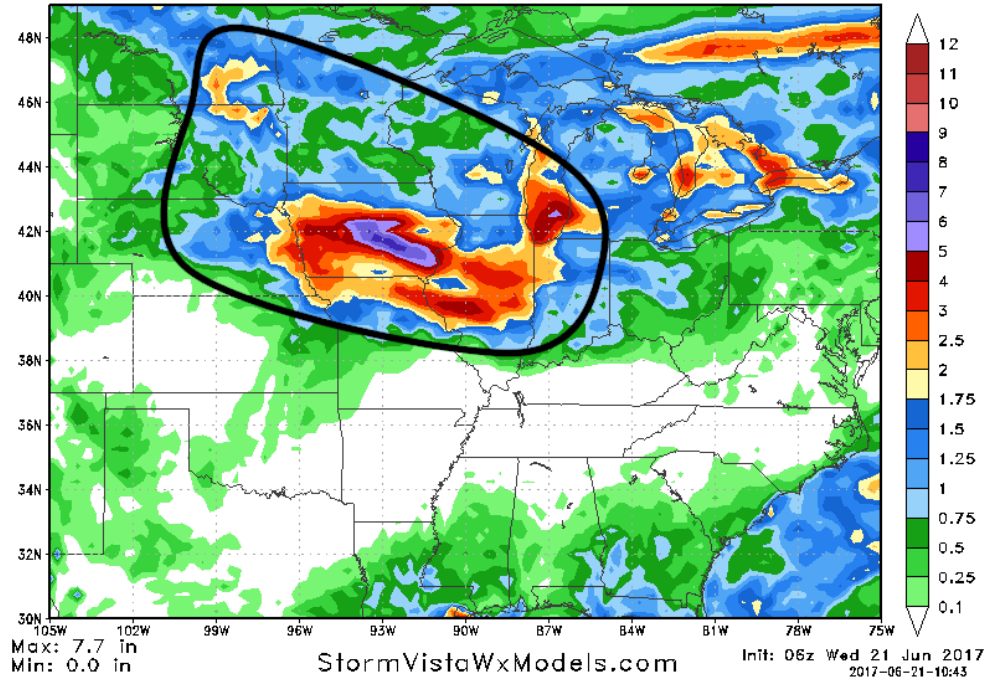


## 6-10 DAY

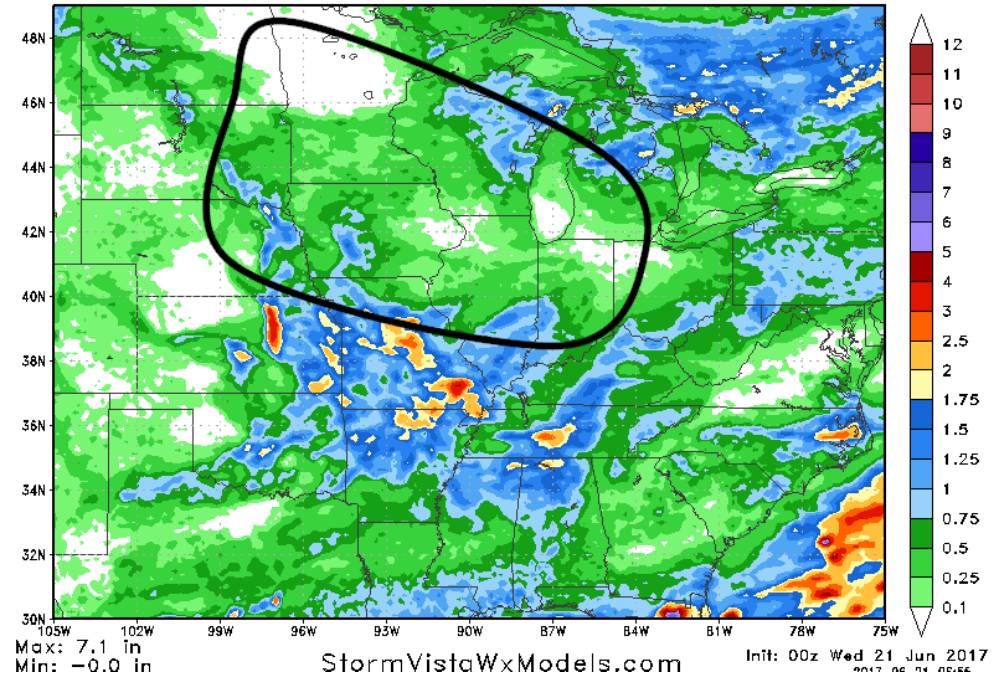
The models are in BIG disagreement here. The operational GFS model has a large area of heavy as rains of 1-7"/25-175mm with a core of 3-7"/ 75-175mm s centered over much of IA into west central ILL. This is a new development which the GFS model did not had yesterday. The European model has been an area of light to moderate rains 0.5-1.5"/12-38mm covering 70% of MO the northern half ARK south ILL & east KS & OK. .

# HUGE DIFFERENCES

120 Hour Total Precipitation (in)  
Valid: 06z Mon 26 Jun 2017 - 06z Sat 01 Jul 2017  
GFS-MAXRES  
Hour: 120 - 240



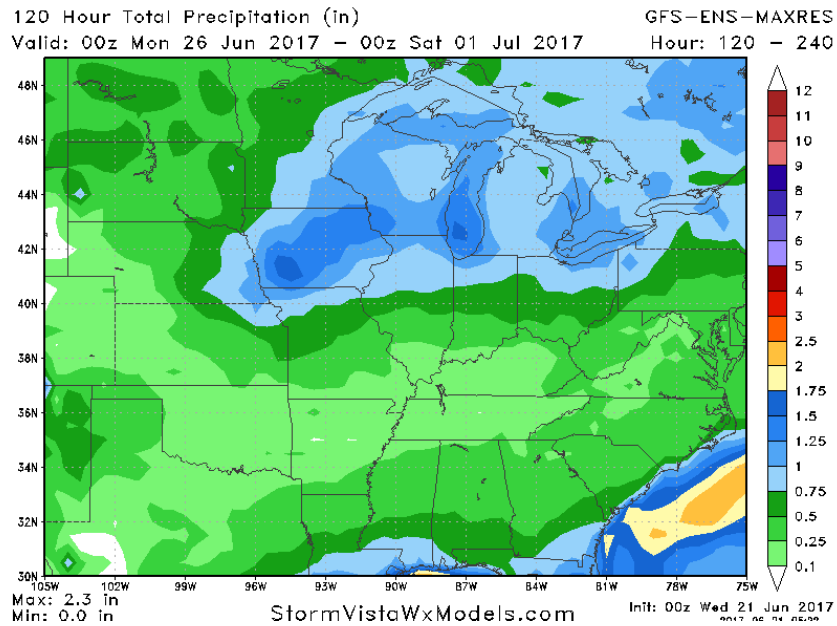
120 Hour Total Precipitation (in)  
Valid: 00z Mon 26 Jun 2017 - 00z Sat 01 Jul 2017  
ECMWF-MAXRES  
Hour: 120 - 240



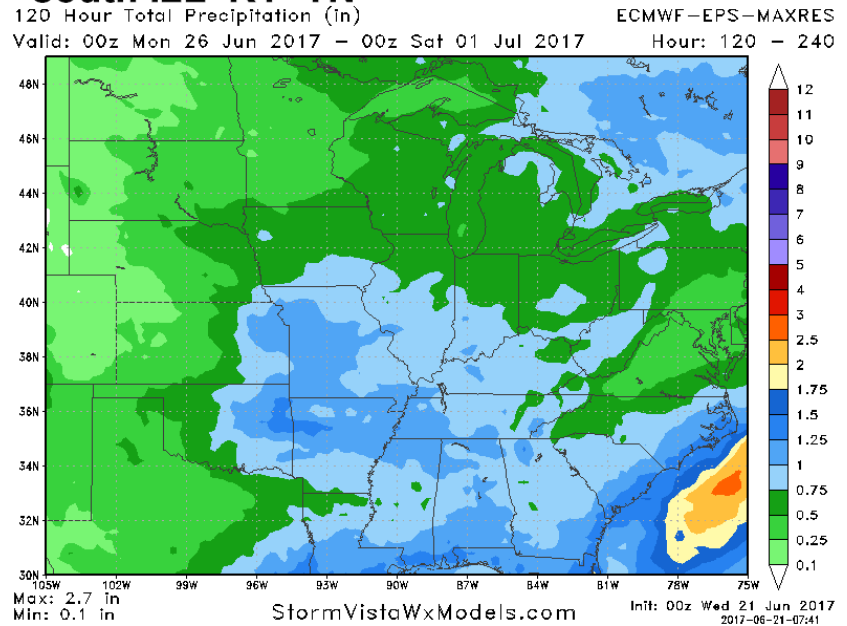
## 6-10 DAY ENSEMBLE

But the GFS ensemble does NOT support the operational GFS in the 6-10D. Instead the GFS ensemble has an area of moderate rain covering much of IA southeast MN WI and into the north n third of ILL IND OH. The European ensemble however does support the regular Euro idea of moderate rains over portions of MO ARK south ILL east KS east OK into the Deep south .

**GFS Ensemble supports SOME rain into WCB but NOT 7"/ 175mm in IA**

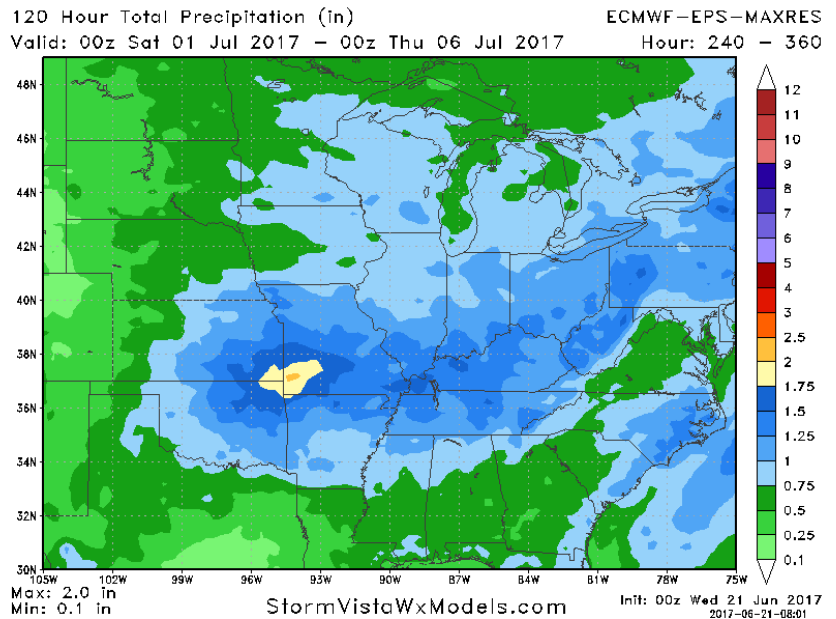
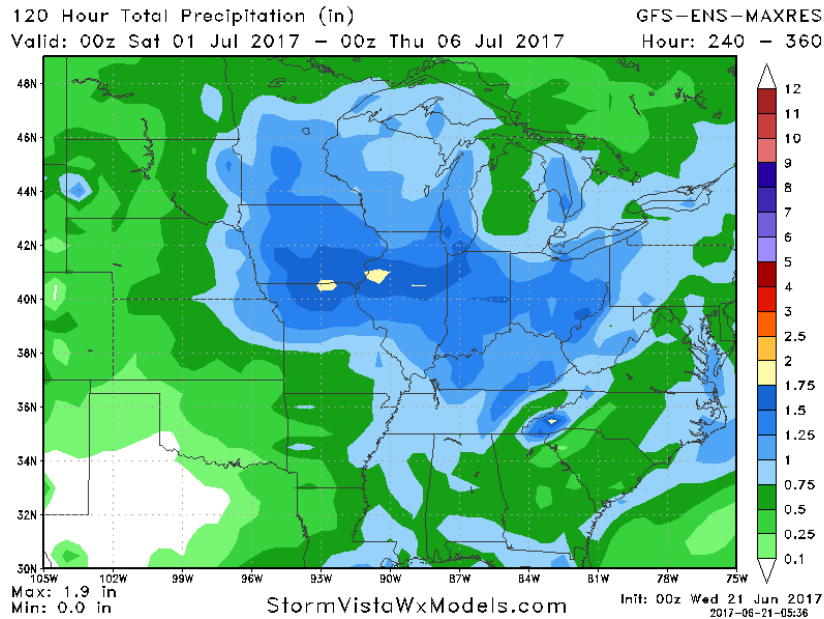


**EURO Ensemble supports MODERATE rain east OK/KS most of ARK MO south ILL KY TN**

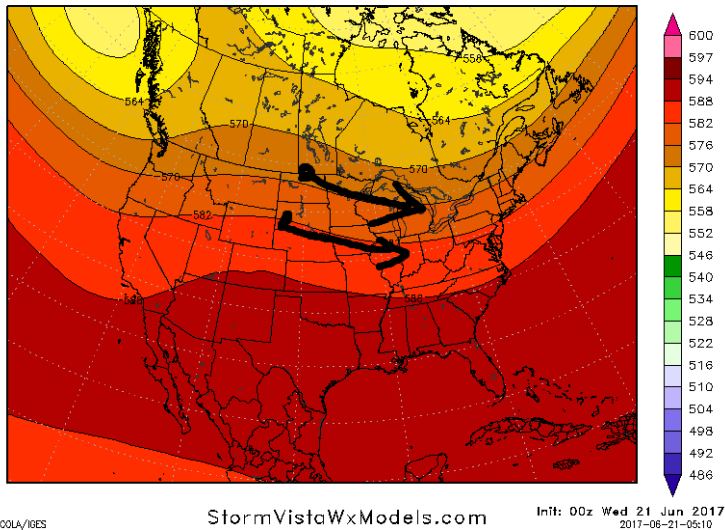


## 11-15 DAY

---All the data continues to show a major rain event is likely for much of the Midwest but especially centered over the WCB as we go into the long July 4 holiday weekend. Obviously this would be a major event if such a rains were to occur and while it is still a long way off I think the probability of this significant rain event is pretty high given the overall pattern and the persistence and the data.



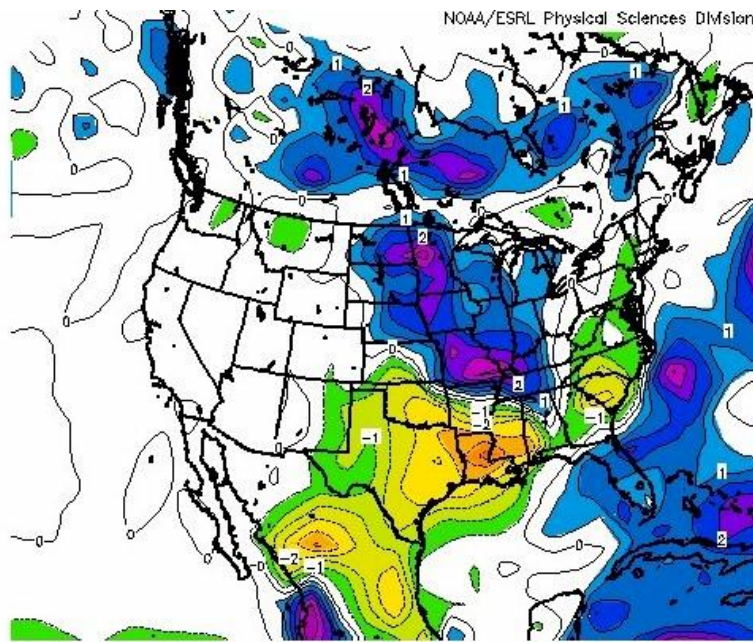
500 mb Height  
Valid: 12z Mon 03 Jul 2017  
ECMWF-EPS-PARA  
Hour: 300



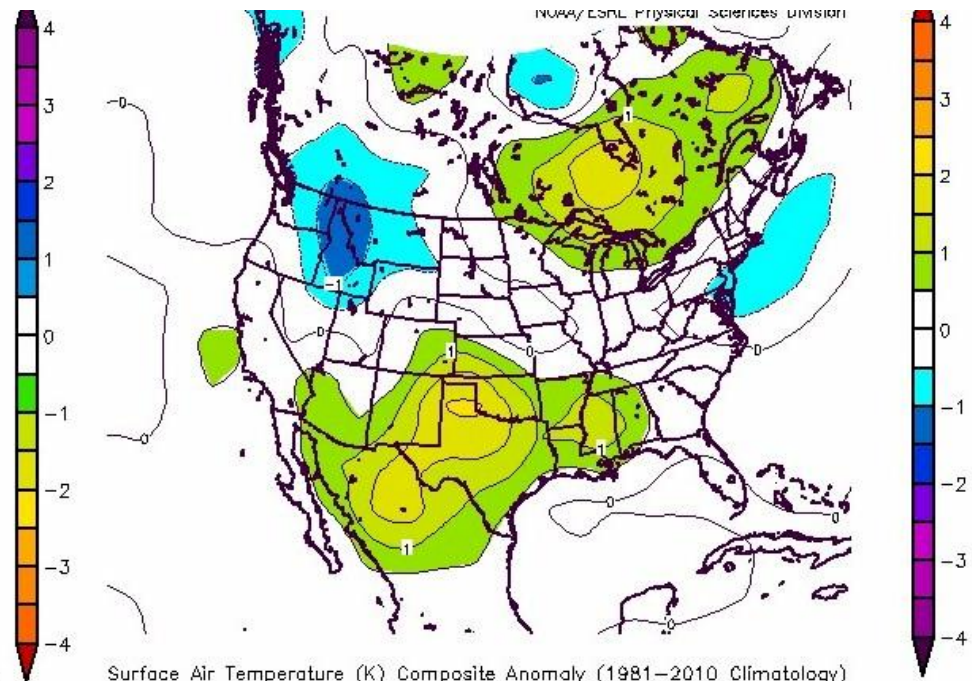
This image shows why the pattern is likely to turn wet and stormy especially over the WCB portion of the Midwest in the 11 to 15 day. This image is the jet stream map representation from the European model for the middle of the 11 to 15 day. The Black Lines show a WNW flow while to the south we have a moderately strong Ridge covering much of a lower Plains and the Deep South. In this sort of pattern a WNW flow over the top of a ridge is an ideal set up for enhanced 'ring of fire' storms over the Midwest. There is of course some uncertainty as to where the best rains will fall. Sometimes the models seem to indicate Eastern Kansas Missouri and Southern Illinois all other times the data seems to suggest

## 16-20 DAY

The rollover analog model continues to show really wet pattern for the WCB into the first week of July past the July 4 holiday. The lower Plains and the Delta remain hot and dry however



Surface Precipitation Rate (mm/day) Composite Anomaly (1981-2010 Climatology)  
CPC Analog 16-20 Day Composite  
NCEP/NCAR Reanalysis

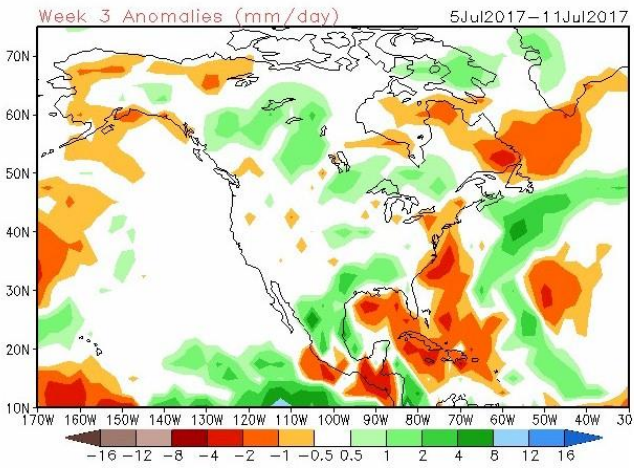


Surface Air Temperature (K) Composite Anomaly (1981-2010 Climatology)  
CPC Analog 16-20 Day Composite  
NCEP/NCAR Reanalysis

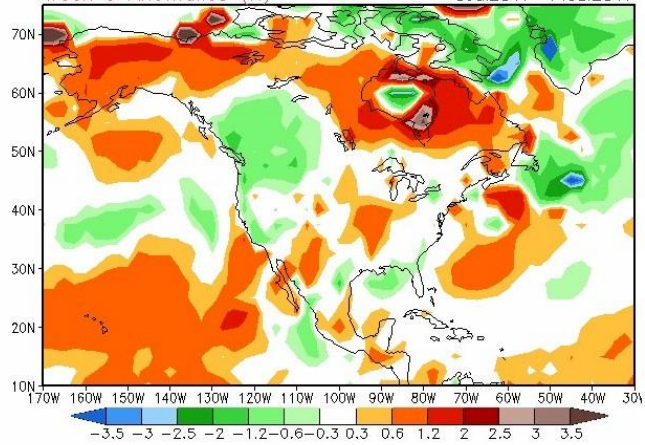
finally take a look in week 3 and week 4 from the latest from the CFS model we continue to see a rather wet pattern and one which features no large area of sustained heat. Week 3 does not look w that wet and it looks a little warmer than normal but clearly it's nothing extreme.



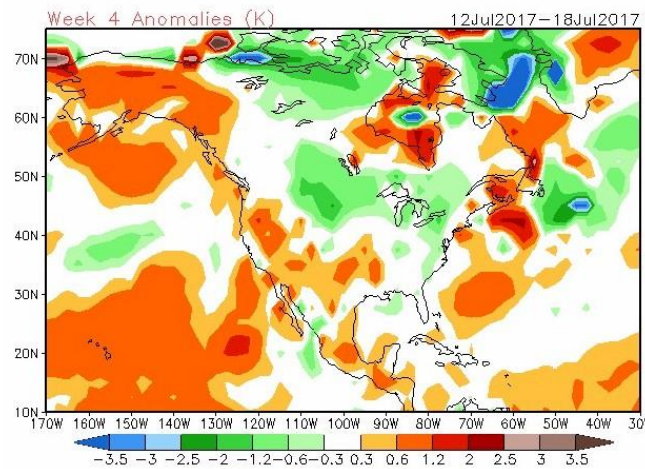
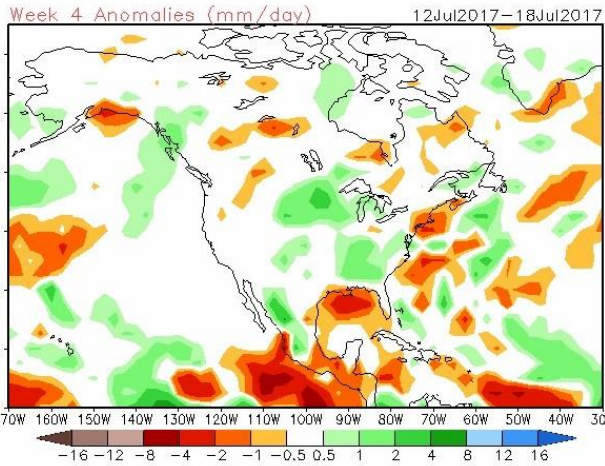
CFSv2 Weeks 3 & 4 Precipitation  
16 Member Ensemble Mean Forecast from 20Jun2017



CFSv2 Extended Range Temperature  
16 Member Ensemble Mean Forecast from 20Jun2017  
Week 3 Anomalies (K) 5Jul2017-11Jul2017



The week 4 CFS model does look pretty wet over much of the Midwest and the Southeastern states and the temperatures continue to run even normal or below normal over all of the central and upper Plains and most of the Midwest



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