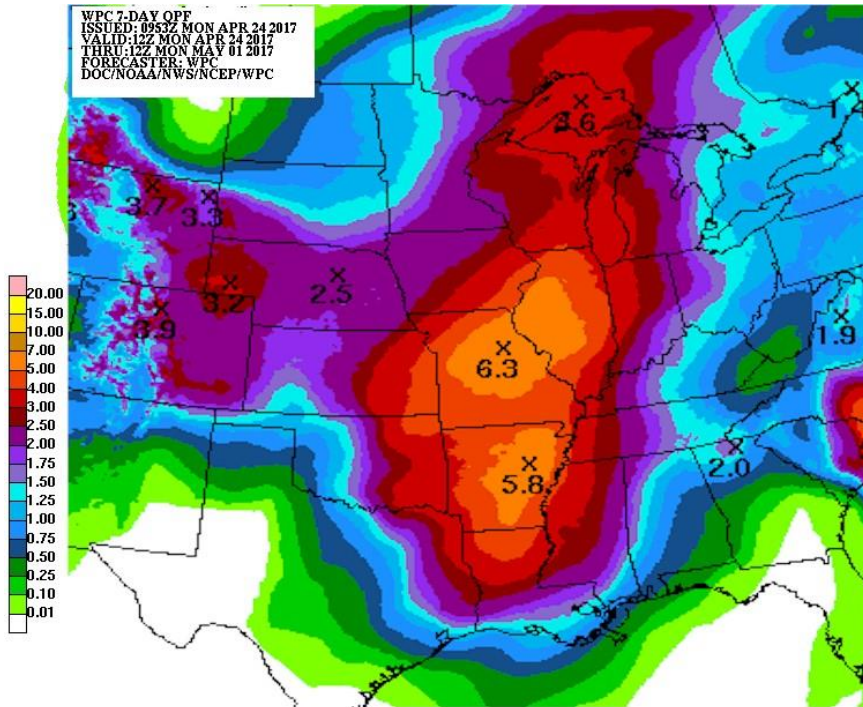


# MONDAY US GRAIN WEATHER 4/24/17

## OVERVIEW



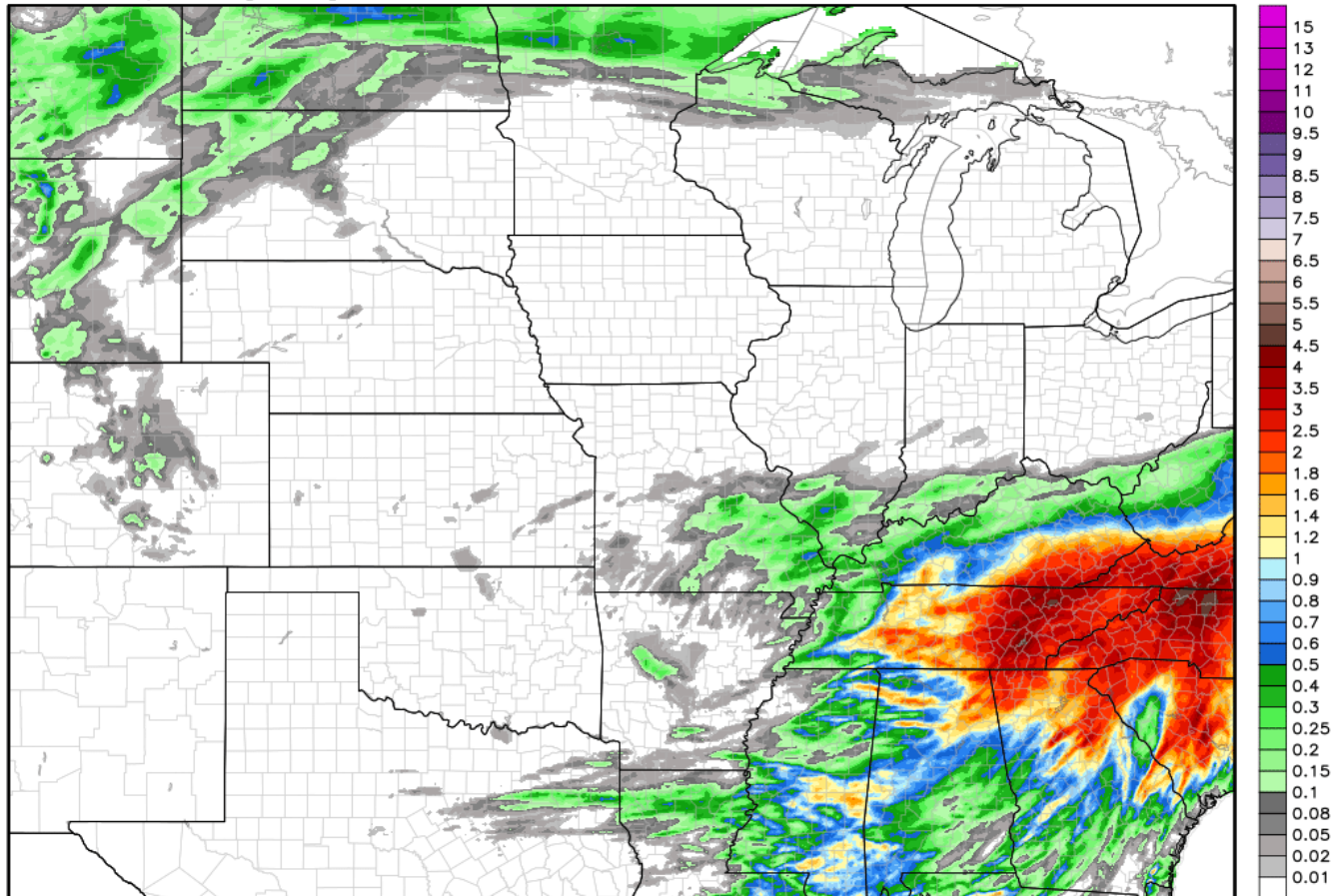
The official 7 day rainfall forecast from NWS continues to INCREASE as more and more data comes in. The reason for this is that the weather models are seeing the development of a very strong ridge or heat dome over the East Coast by this weekend. This feature causes the deep trough over the Midwest to stall and as a result the same areas will continue to see significant rains. This is why the weather models are showing such widespread and heavy rains over large portions of the Midwest Upper Delta and eastern Plains. There is still some uncertainty as to where the heaviest rains will fall. Right now the model consensus seems to favor northern Arkansas ...central and east Missouri ...into western and central Illinois. Longer term there is more data which suggests that the middle and end of MAY 2017 will turn dry but it won't be warm.

## RAINFALL OVER THE LAST 24 HRS - 0700 CDT SUN 23 APRIL - 0700 CDT 24 APRIL

As you can see southern Kentucky and most of Tennessee as well as northeastern Georgia and western Carolinas into southwest Virginia saw heavy rains over the last 24 hours. Rainfall amounts and some areas have been 3-4"/ 75-100mm. Lighter rains fell over southeastern Missouri ... northern Kentucky and far southern Illinois. Most of the Midwest and Phe plains regions were dry. Light precipitation and snow -- fell over eastern Montana and North Dakota and northern Minnesota but the amounts were not significant.

NWS Precipitation Analysis 4-km HRAP Grid -- 2-day Total Accumulation  
Total Precipitation [inches] between 12Z22APR2017 -- 12Z24APR2017

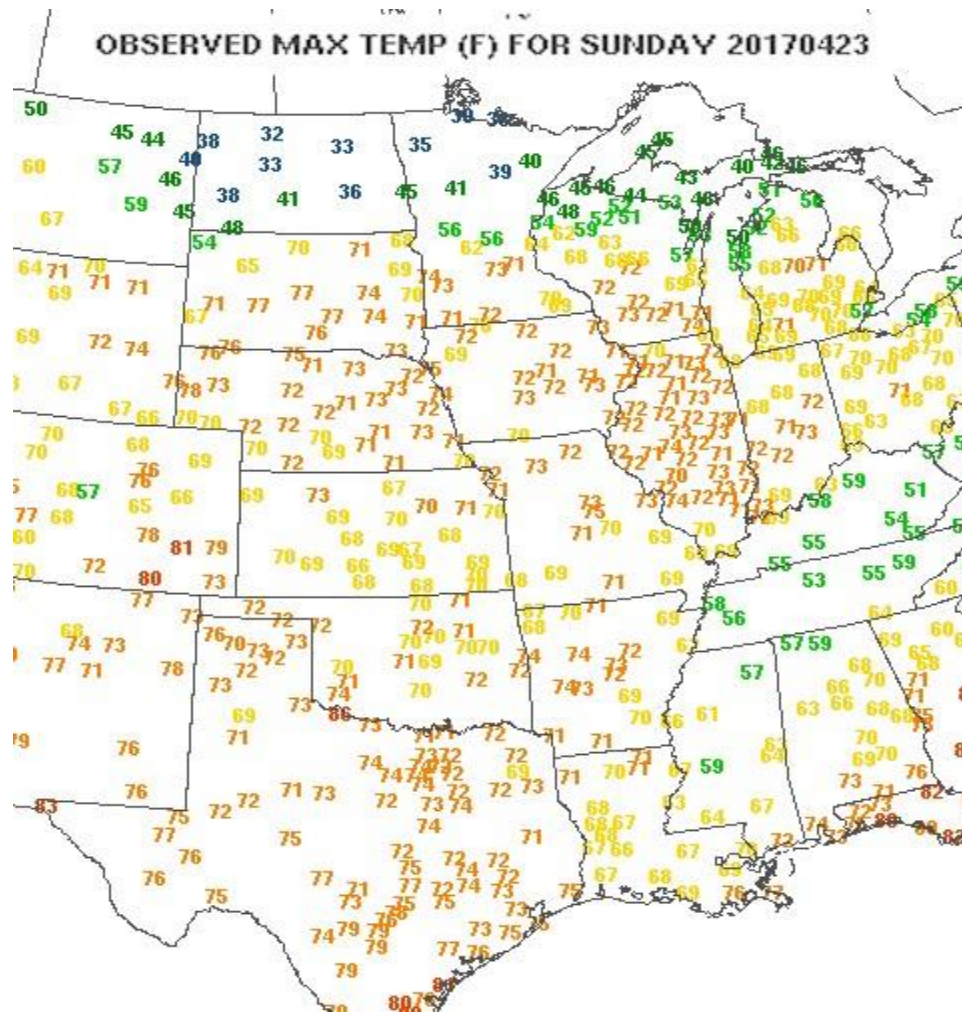
Domain Max: 6.0 in.



4 km HRAP grid | End of hydrological day at 1200 UTC | <http://water.weather.gov/precip>

## MAX TEMPS SUNDAY APRIL 23

Temperatures across all of the Midwest and Plains were several degrees warmer with most areas in the 60s and 70s. There were some readings that stayed in the 30s and 40s across eastern Montana .. North Dakota ...and northern Minnesota.

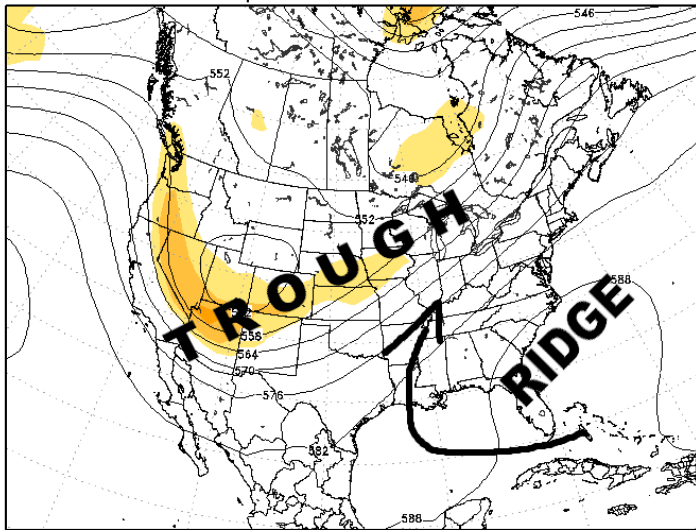


# NEXT 5 DAYS

The map on the LEFT shows the upper air pattern as we move into the weekend. The development of a large strong RIDGE over the Southeast US is going to force the deep trough over the Rockies and the Plains to slow down significantly. This will set up a storm track which will run from Texas to the Great Lakes and waves of Low pressure will travel up this front over the next several days. That is why the pattern is going to turn so wet. The image on the right shows the first area of LOW pressure coming in the day 4-5 bringing moderate to heavy rains of 1-3"/ 25-75mm with 60 to 70% coverage over Missouri western Illinois ...Wisconsin ...and Arkansas and 0.50 -1.5"/12-38mm over 50 to 60% of Nebraska Iowa and Minnesota.

500 mb Height & Vorticity  
Valid: 00z Sat 29 Apr 2017

ECMWF-EP5  
Hour: 120



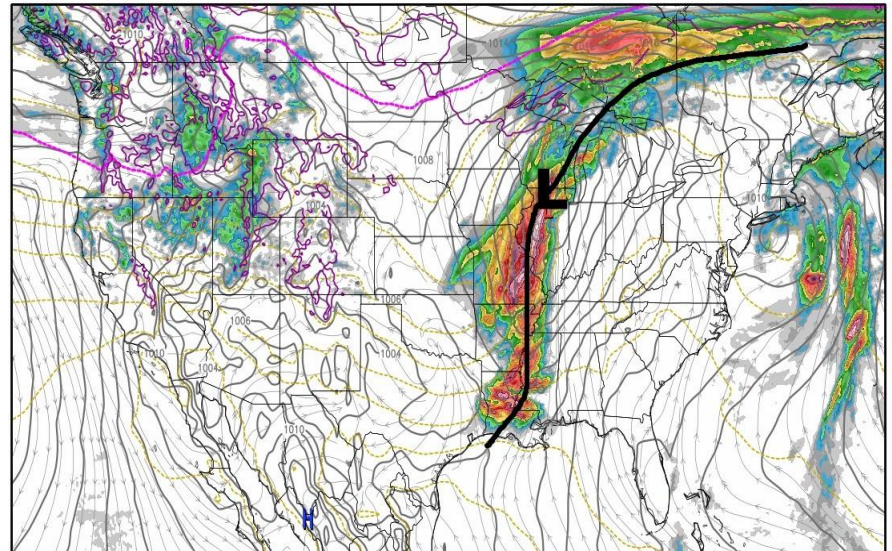
GRADS: COLA/IGES

StormVistaWxModels.com

Init: 00z Mon 24 Apr 2017  
2017-04-24-03:20

MSLP, 6hr Precip, Wind, Thickness, 32f  
Valid Thursday 06Z 04/27

EuroWX.com



ECMWF HRES MODEL RUN 00Z 04/24 78hr FORECAST

C 2017 ECMWF

This service is based on data and products of the European Center for Medium-range Weather Forecasts.

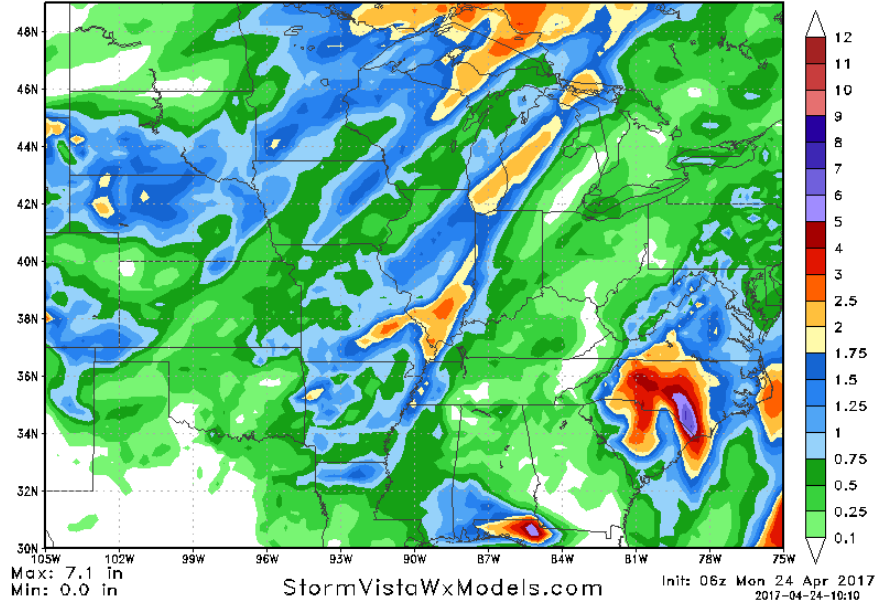
# EXCELLENT MODEL AGREEMENT

120 Hour Total Precipitation (in)

Valid: 06z Mon 24 Apr 2017 - 06z Sat 29 Apr 2017

GFS-MAXRES

Hour: 0 - 120

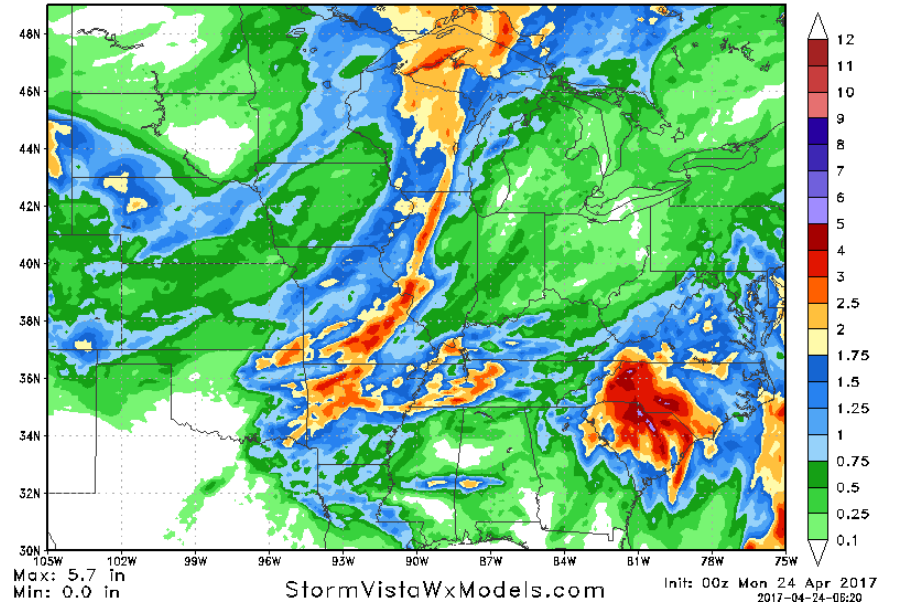


120 Hour Total Precipitation (in)

Valid: 00z Mon 24 Apr 2017 - 00z Sat 29 Apr 2017

ECMWF-MAXRES

Hour: 0 - 120



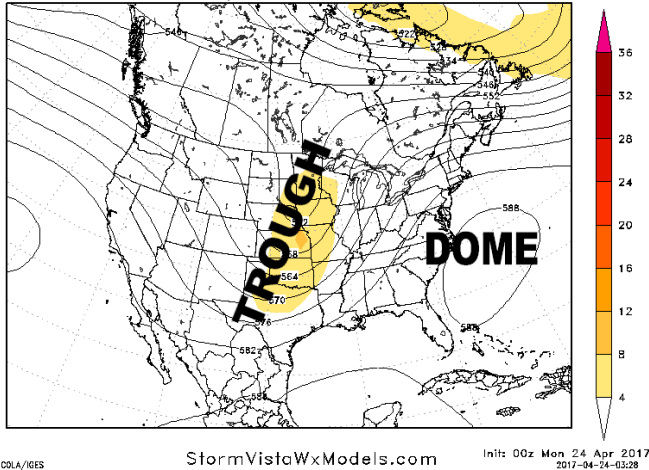
## 6-10 DAY

500 mb Height & Vorticity

Valid: 00z Mon 01 May 2017

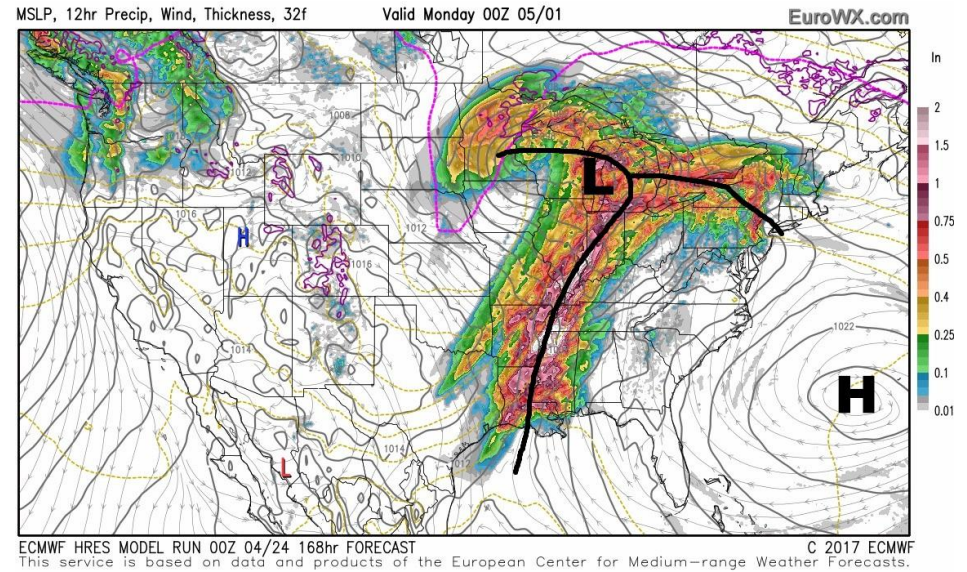
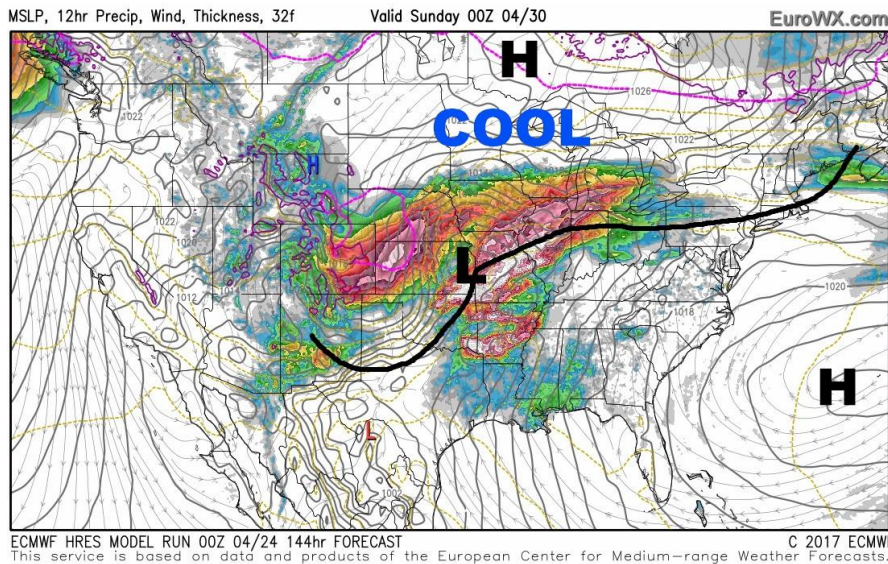
ECMWF-EPS

Hour: 168



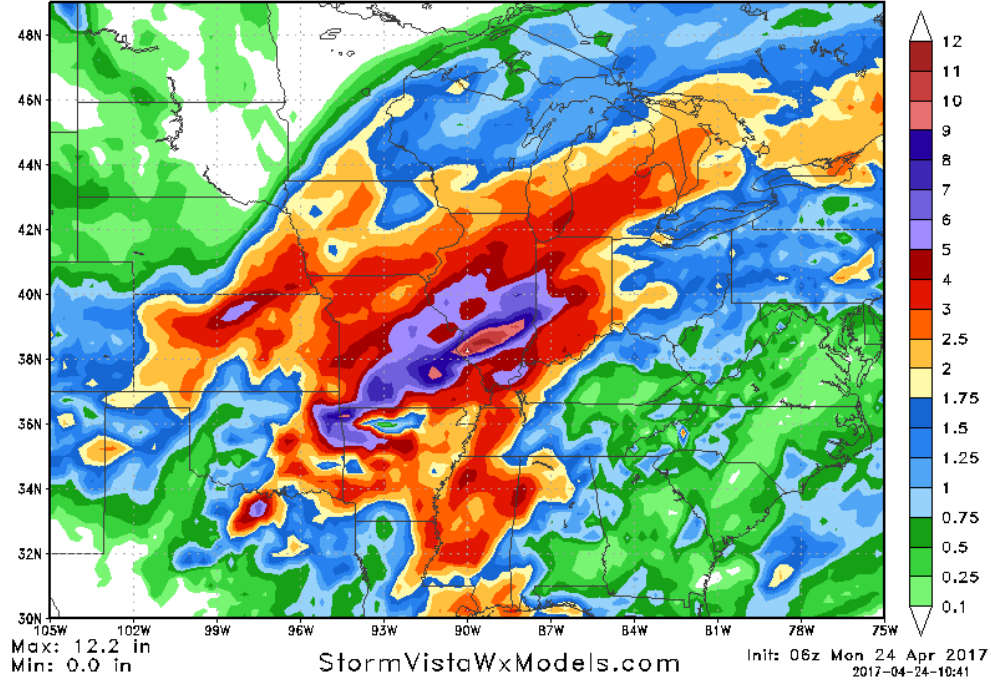
The map on the LEFT shows the upper air pattern as we move into the weekend. The development of a large strong RIDGE over the Southeast US is going to force the deep trough over the Rockies and the Plains to slow down significantly. This will set up a storm track which will run from Texas to the Great Lakes and waves of Low pressure will travel up this front over the next several days. That is why the pattern is going to turn so wet.

These two maps show the surface maps valid for Saturday April 29 and the Sunday, April 30 and from April 30 into May 1. Notice the large area of HIGH pressure off the Southeast US coast which does not move. This means the weather systems will only be able track in one direction -from Texas to the Great Lakes. As a result heavy rains keep hitting the same areas across Missouri ...Illinois ...and Arkansas.

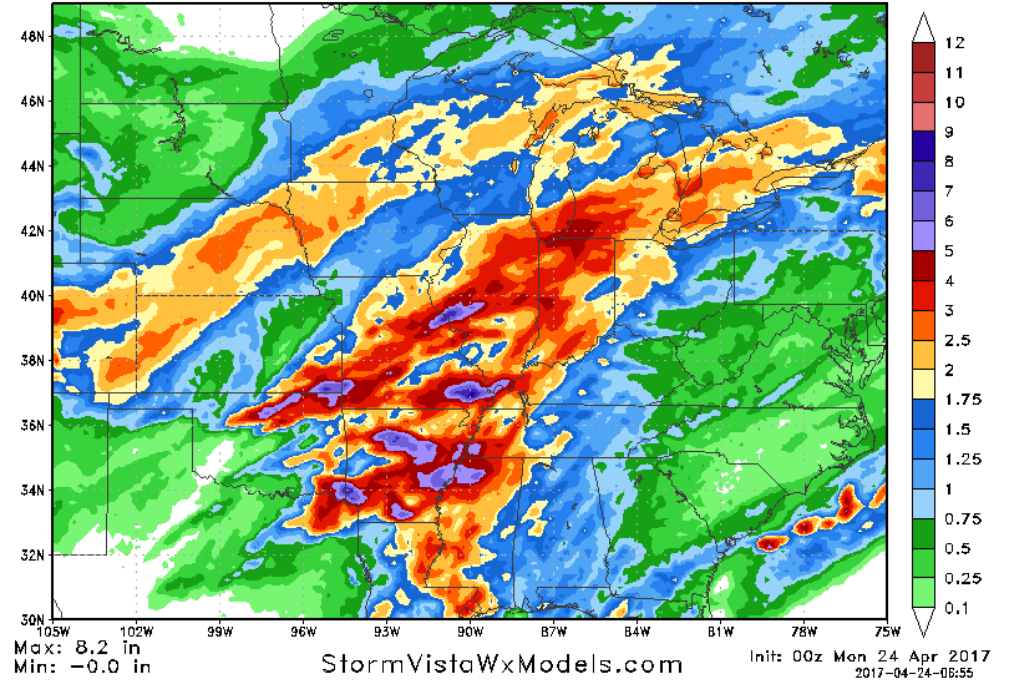


These maps from early Monday morning show the extremely heavy rains which are showing up on all the weather models. The GFS actually has a small area of rainfall amounts up to 10 inches across southern Illinois. The European model does not have that much but it does show several areas of 4-8" / 100-200mm rains across significant portions of southern Illinois ...southern and central Missouri and much of Arkansas. Notice there are additional rains of 1-3" / 25-75mm across the rest of the WCB into portions of Kansas and Nebraska .... and over Indiana and much of Ohio.

120 Hour Total Precipitation (in)  
Valid: 06z Sat 29 Apr 2017 - 06z Thu 04 May 2017  
GFS-MAXRES  
Hour: 120 - 240



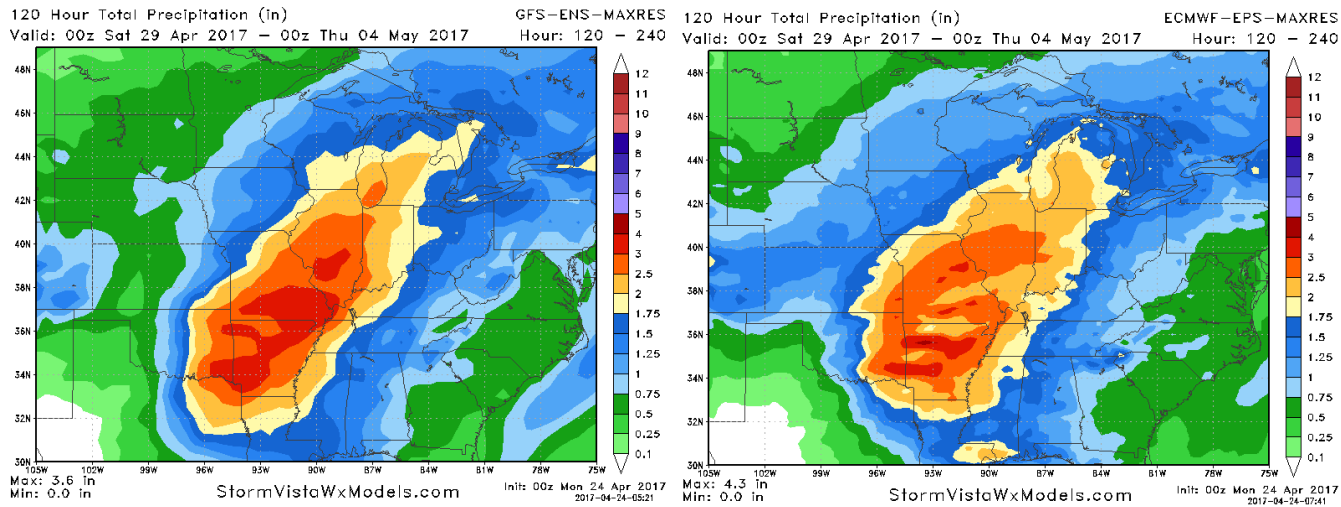
120 Hour Total Precipitation (in)  
Valid: 00z Sat 29 Apr 2017 - 00z Thu 04 May 2017  
ECMWF-MAXRES  
Hour: 120 - 240



## 6-10 DAY ENSEMBLE

The ensemble model agreement here is truly outstanding with very little variation showing up between the GFS of the European in the 6-10 DAY.

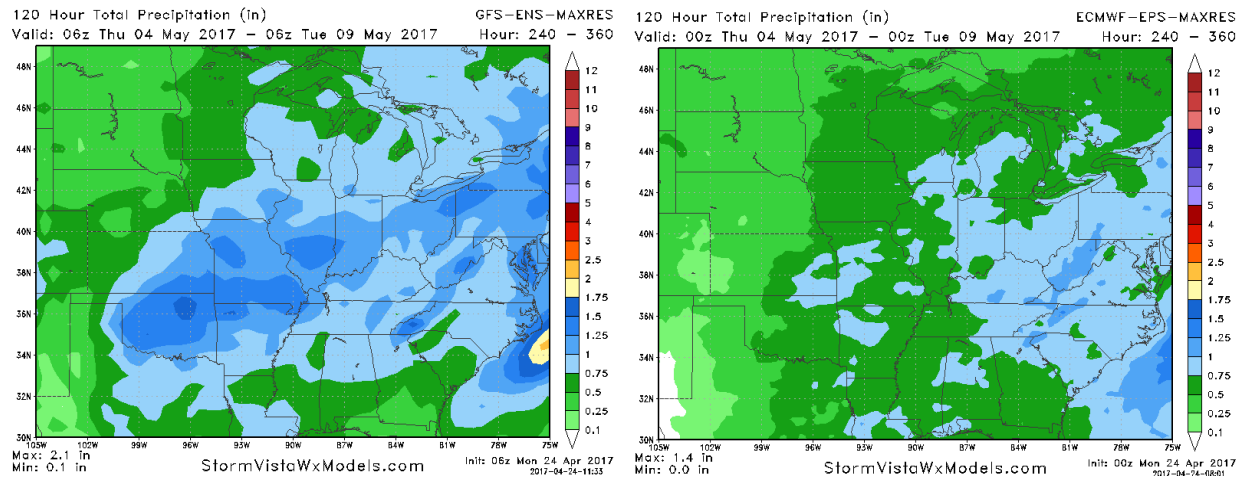
# EXCELLENT MODEL AGREEMENT



## 11-15 DAY

Good agreement between GFS and EURO ensembles as they show widespread 1-2" /25-50mm rains with 80% coverage over the Delta into 70% of WCB ... 80% ECB and into KY TN MS AL

# GFS WETTER THAN EURO



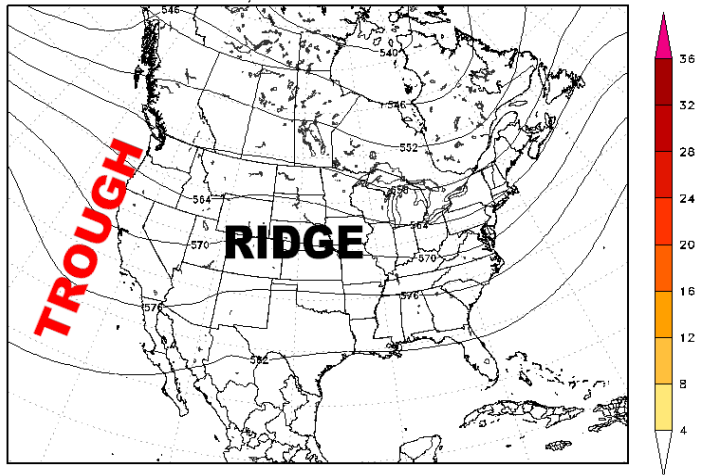


# BRIEF LOOK AT FIRST HALF OF MAY 2017

These upper air maps show the overall jet stream pattern as we move into the middle of MAY 2017. The key feature here is the development of a ridge over the Plains and the Rockies which moves into the WCB and the Mississippi Valley after May 10. The position of this ridge will shut down the stormy pattern over the Plains the Midwest and allow for several dry days to develop. On the other hand the persistent deep trough over the West Coast which doesn't seem to want to ever leave ...will eventually move into the and Rockies at some point and probably into the Plains and the Midwest. Right now most of the weather models do not show this happening before the end of MAY which would allow for the last two weeks of MAY 2017 to stay dry. However we are not convinced that the dry window was going to last a full two weeks and it is possible the rainy pattern might return to the Plains and the Midwest before Memorial Day weekend.

**With the RIDGE over Plains & Midwest pattern turns DRIER for Mid MAY. BUT for how long? Persisten trough on West coast WILL move inland at some point**

500 mb Height & Vorticity  
Valid: 00z Sun 07 May 2017  
ECMWF-EPS  
Hour: 312

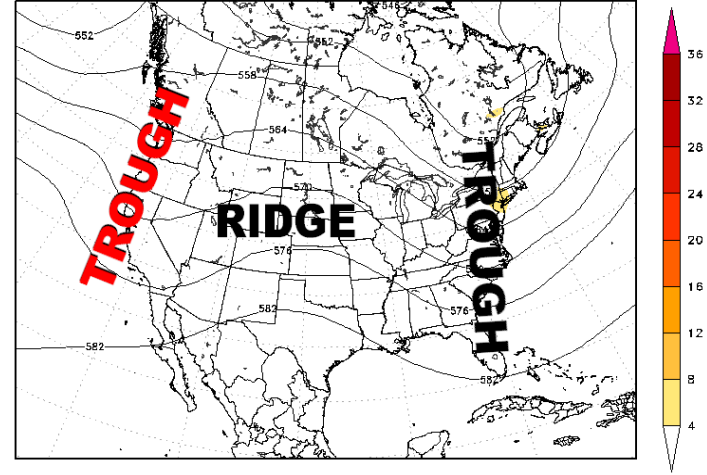


GRAPH: CMA/IGES

StormVistaWxModels.com

Init: 00z Mon 24 Apr 2017  
2017-04-24-01:37

500 mb Height & Vorticity  
Valid: 00z Wed 10 May 2017  
GFS-ENS  
Hour: 384



GRAPH: CMA/IGES

StormVistaWxModels.com

Init: 00z Mon 24 Apr 2017  
2017-04-24-01:37

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DT wxrisk.com OFFICE 804 715 8330 CELL 804 307 8070