



Weather Forecasting For
Traders, Investors, and Businesses

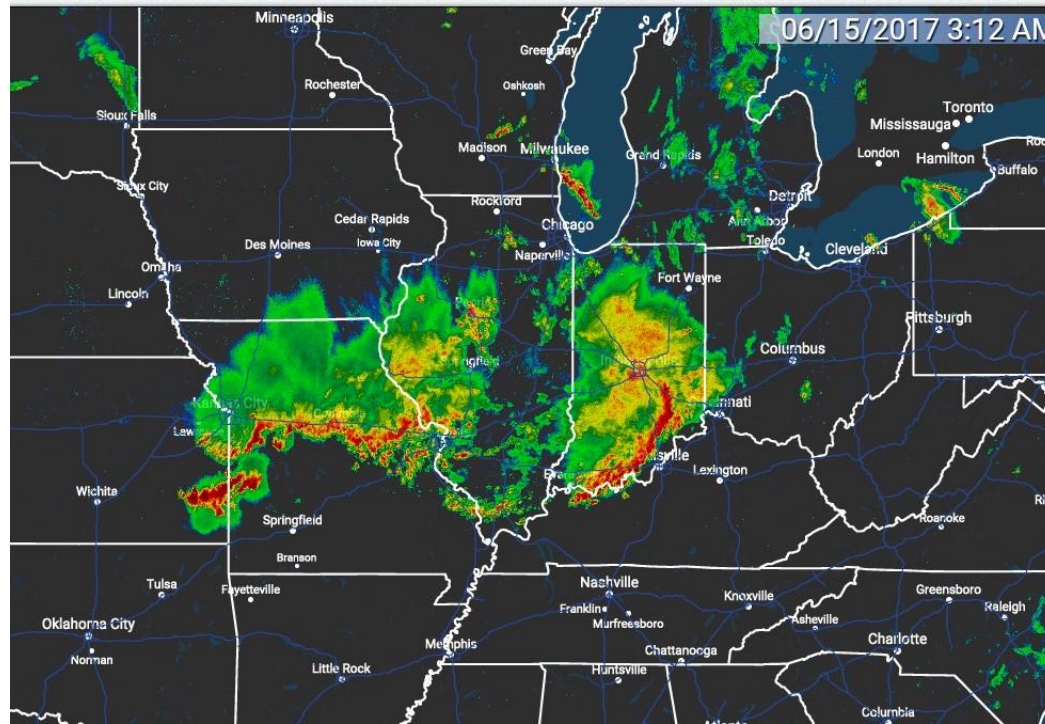
THURSDAY FULL US GRAIN WEATHER

6/15/17 OVERVIEW

The rains they came in during the overnight hours were significantly heavier than expected by any of the short range models. Even the GFS which was the wettest on all the models and had high coverage significantly under forecasted the amount of rain which fell over Indiana and portions of Missouri and Eastern Nebraska. There were scores gaps of the rain shield which the GFS also over forecasted to much rain.

The other important change in the models has to do the position of the trough over the Midwest. Earlier in the week there was some debate as to whether not the current trough over the Midwest would move to the East Coast by the weekend. This would have allowed for drying over the Midwest with a seasonal temperatures. BUT that no longer appears to be the case as the models have built up a strong ridge in the southwest Atlantic Ocean just off the East Coast. This is going to keep the deep trough over the Midwest and the Great Lakes into most of the 6-10 day. As a result the pattern is wetter over the Midwest when compared to what the data was showing earlier in the week. As we move to the end of the month and into early July the models are showing a strong ridge developing over the Deep South which is going to set up the classic ring of fire thunderstorms scenario for portions of the upper Plains and upper Midwest.

RADAR 3AM



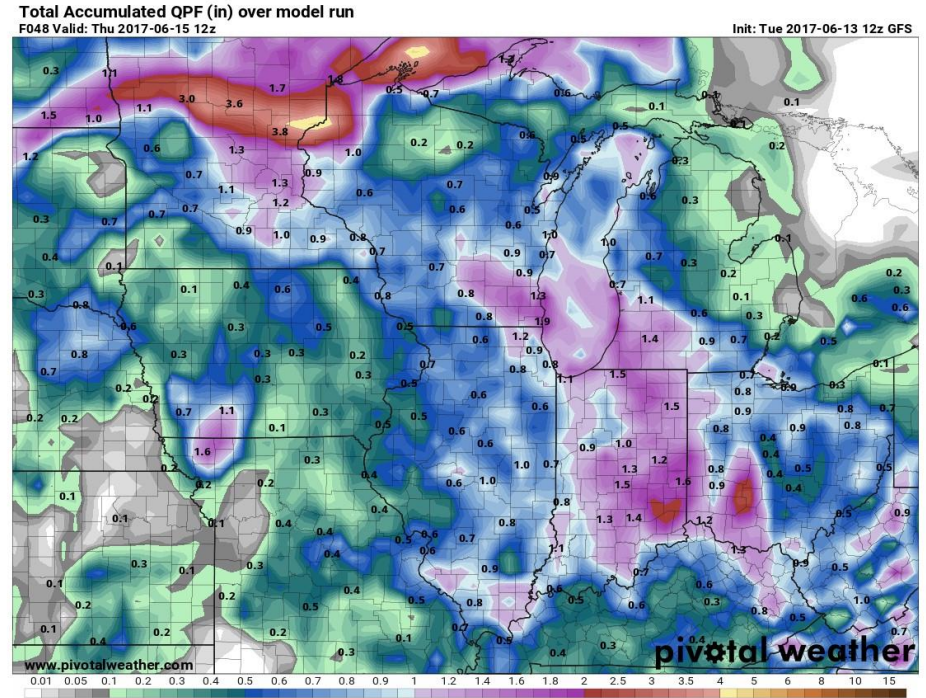
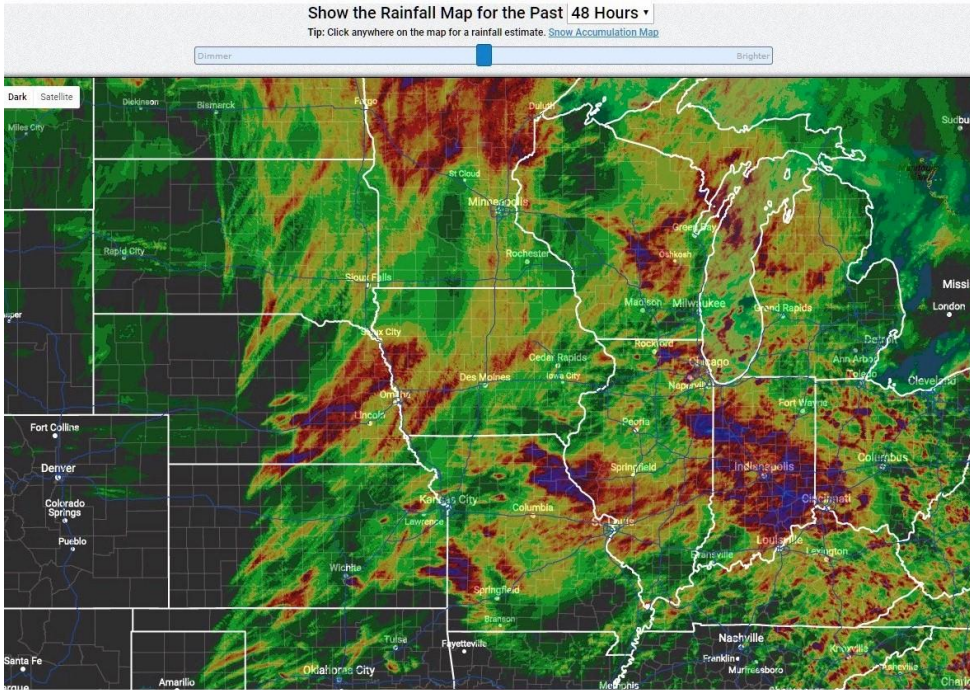
As you can see from these images the radar overnight exploded over portions of Illinois Indiana and Missouri. Some rainfall amounts there were significantly heavier than forecasted by the various short range models . . This image shows the rainfall amounts over the past two days and you can compare it 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.

ACTUAL RAINFALL LAST 2 DAYS

GFS RAINFALL FORECAST FROM TUES TO THURS 8AM

MODEL " MISSED " BIG RAINS OVER northeast MO south central ILL southwest MO... eastern NEB... Model was not wet enough over INd



FAST LOADING RADAR

The Mid morning radar as quiet down significantly from the early morning activity. There are some moderate storms that move in two Western Kentucky and Tennessee and scatter activity over central and Northern Arkansas.

TEMPS JUNE 14-15

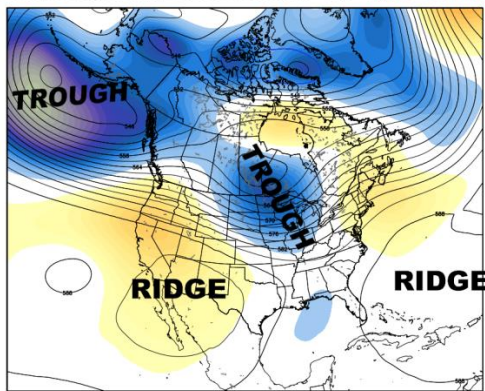
[MAX TEMPS JUNE 14](#) - [NORMAL MAX TEMPS FOR MID JUNE](#)

[MIN TEMPS JUNE15](#) [NORMAL MIN TEMPS FOR MID JUNE](#)

WEDNESDAY MAX TEMPS -- 60s were common over eastern MT northern ND... 70s over eastern WY into western SD and southern ND 80s over NEB east COL MN WI IA MO ARK nw ILL IND OH MI..Low 90s over LA se ILL eastern KS OK TX... 95-100 over western TX into OK Panhandle and south central KS.

NEXT 5 DAYS

ECMWF EPS Ensemble Mean 500 hPa Geopotential Height [dm] & Anomaly [m] fr --> Tue 00Z20JUN2017
INT: 00Z15JUN2017 5-day Mean between 00Z15JUN2017 & 00Z20JUN2017 Day 5 - Day 15: -228.9 | 156.0 m



This image shows the Upper air pattern for the next 5 days of North America. As you can see we have a deep persistent trough centered over the upper Plains and Midwest . As long with the Upper trough remains in the upper Midwest ...the wet pattern is likely to continue over the Midwest.

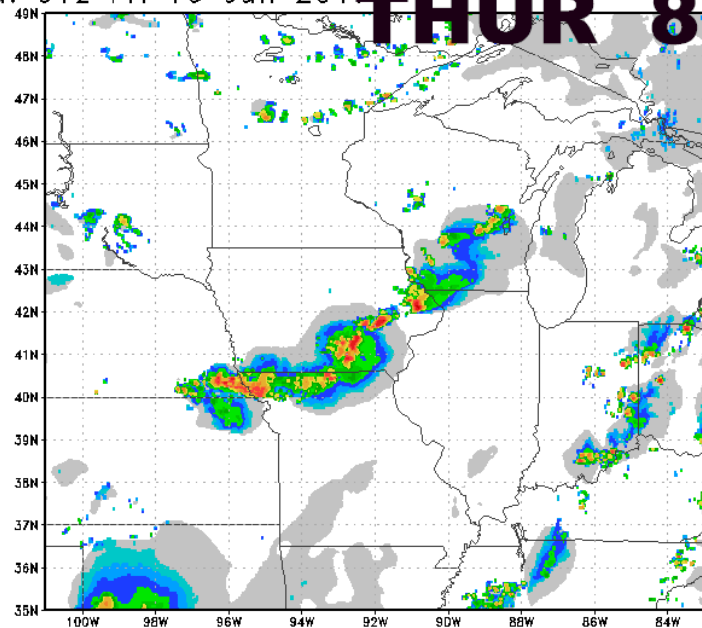
The short range there going to be a few more clusters of strong thunderstorms which will develop during the evening hours and move through various portions of the Midwest. The next one is likely to form tonight and bring significant rain and storms to eastern Iowa into northwest Missouri and eastern / southeastern Kansas during the overnight hours. Additional showers -but no heavy storms or heavy rain --will move through southern Minnesota and

northern Iowa Friday morning. Friday night into Saturday will see more storms developing over southeastern Illinois into western & southwestern Indiana and some small storms will develop over west central and central Iowa. There maybe a cluster of thunderstorms with significant rains moving through eastern South Dakota and southern Minnesota during the predawn hours on Saturday.

Composite Reflectivity, Cloud Cover (> 75%)
Valid: 01z Fri 16 Jun 2017

THUR 8P

NAM-HIRES
Hour: 19



StormVistaWxModels.com

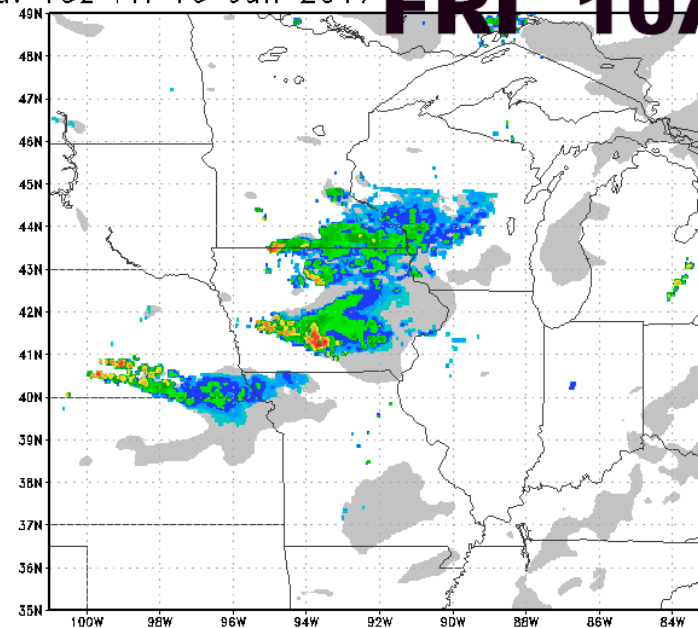
Init: 06z Thu 15 Jun 2017
2017-06-15-04:11

GrADS: COLA/IGES

Composite Reflectivity, Cloud Cover (> 75%)
Valid: 15z Fri 16 Jun 2017

FRI 10A

NAM-HIRES
Hour: 33



StormVistaWxModels.com

Init: 06z Thu 15 Jun 2017
2017-06-15-04:24

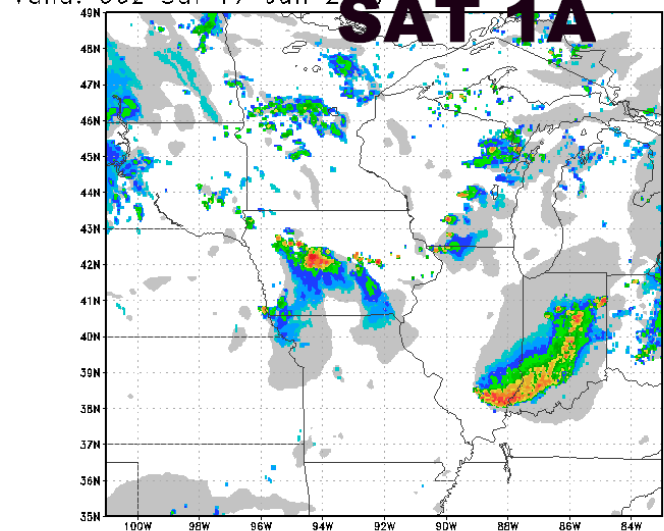
GrADS: COLA/IGES

Starting Saturday night as into Sunday morning a deepening trough in the jet stream moves into the Midwest which will cause LOW pressure the form over the Great Lakes and cold front will sweep through the Midwest on Sunday morning. The cold front will bring significant showers and thunderstorms into eastern Iowa... central and northern Illinois ... much of Wisconsin and the central and northern portions of Missouri. Those storms will fall apart Saturday morning and midday ... but reform Sunday afternoon and evening over Kentucky eastern Ohio Tennessee West Virginia and western Pennsylvania. The cold front will reach the East Coast on Monday

Composite Reflectivity, Cloud Cover (> 75%)
Valid: 06z Sat 17 Jun 2017

SAT 1A

NAM-HIRES
Hour: 48



StormVistaWxModels.com

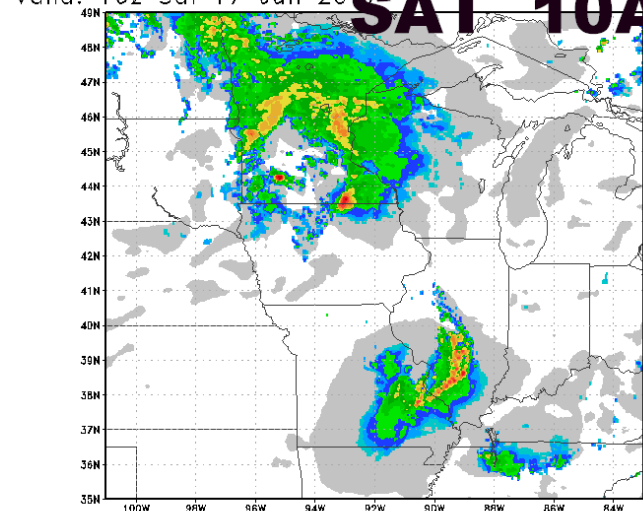
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2017-06-15-04:36

GRADS: COLA/IGES

Composite Reflectivity, Cloud Cover (> 75%)
Valid: 16z Sat 17 Jun 2017

SAT 10A

NAM-HIRES
Hour: 58



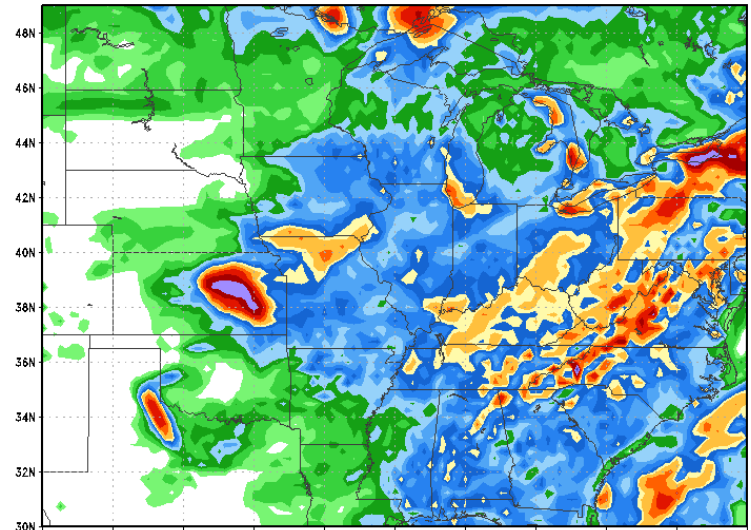
StormVistaWxModels.com

Init: 06z Thu 15 Jun 2017
2017-06-15-04:44

GRADS: COLA/IGES

120 Hour Total Precipitation (in)
Valid: 06z Thu 15 Jun 2017 - 06z Tue 20 Jun 2017

GFS-MAXRES
Hour: 0 - 120



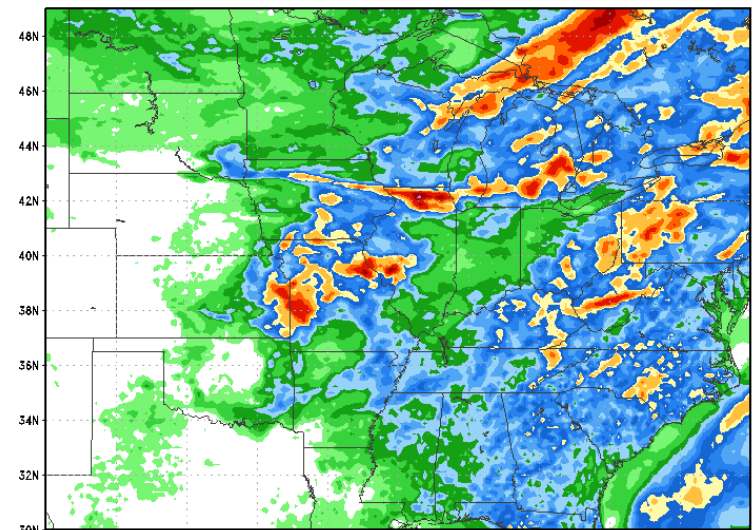
StormVistaWxModels.com

Init: 06z Thu 15 Jun 2017
2017-06-15-10:14

Max: 7.2 in
Min: 0.0 in

120 Hour Total Precipitation (in)
Valid: 00z Thu 15 Jun 2017 - 00z Tue 20 Jun 2017

ECMWF-MAXRES
Hour: 0 - 120



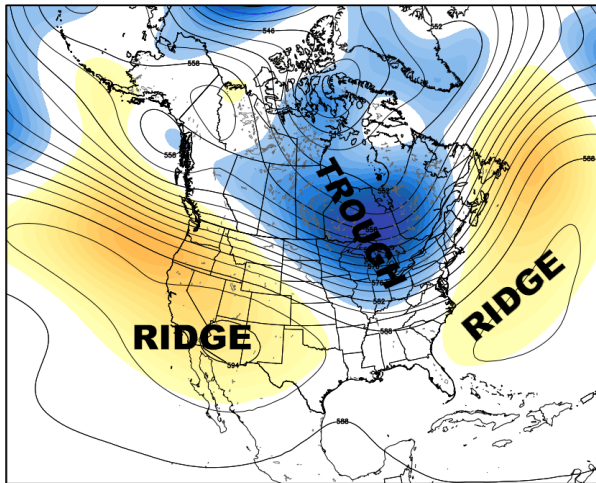
StormVistaWxModels.com

Init: 00z Thu 15 Jun 2017
2017-06-15-10:20

Max: 5.2 in
Min: 0.0 in

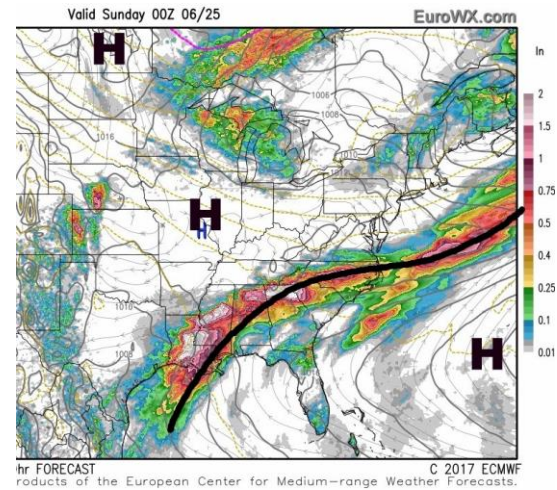
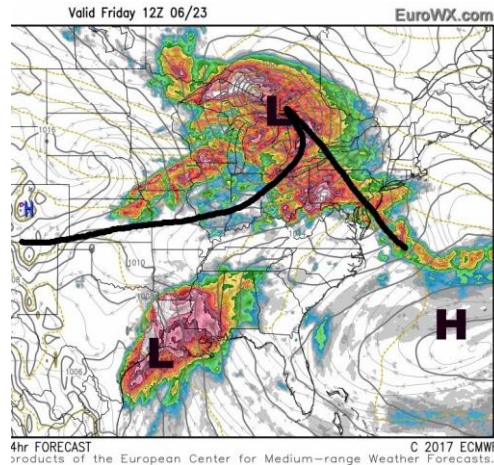
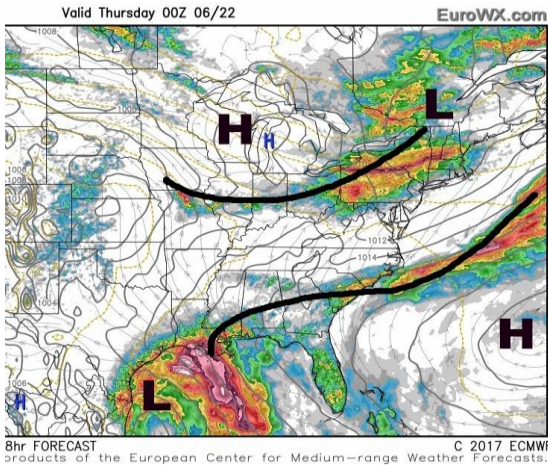
6-10 DAY

ECMWF EPS Ensemble Mean 500 hPa Geopotential Height [dm] & Anomaly [m] fx: [228] hr --> Sat 12Z24JUN2017
 INIT: 00Z15JUN2017 5-day Mean between 12Z19JUN2017 & 12Z24JUN2017 Day 4.5 - Day 9.5 -199.5 | 115.9 m

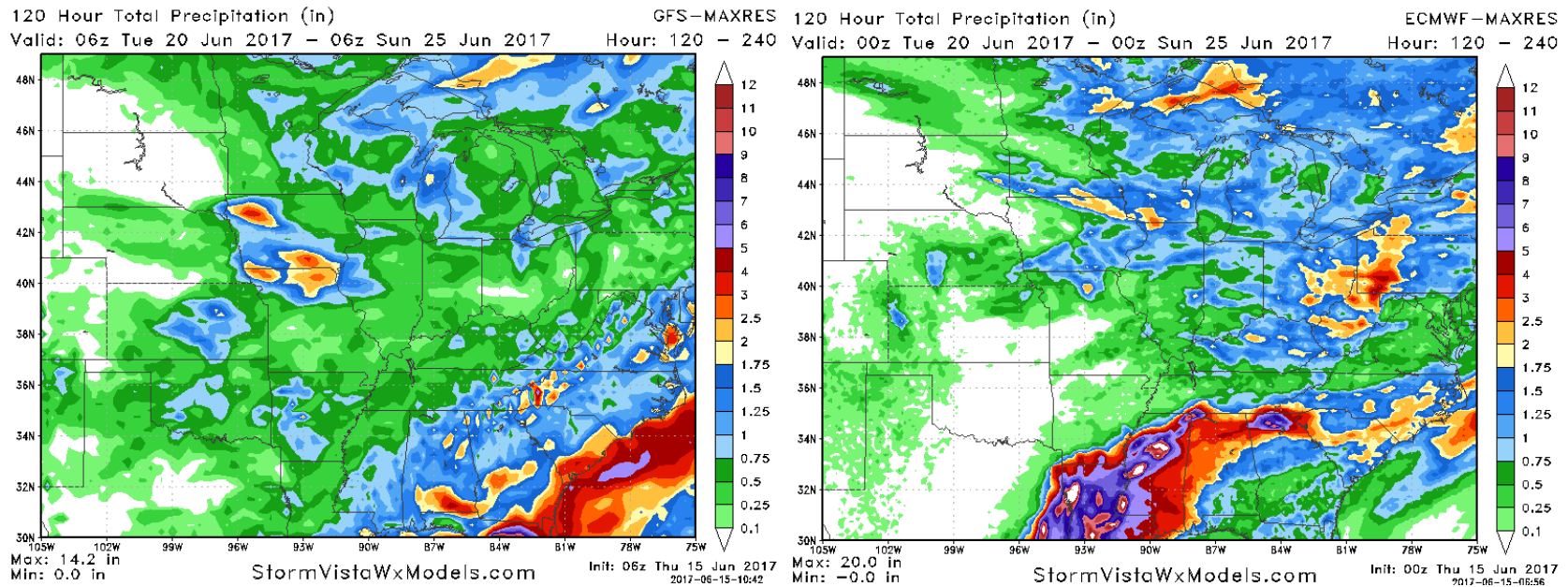


The Upper air pattern show that the trough remains over the Midwest /Great Lakes . The trough cannot move to the East coast because of a huge RIDGE just off the southeast US Coast. This IS a change from data earlier in the week which did show this Midwest rough moving to the East coast.

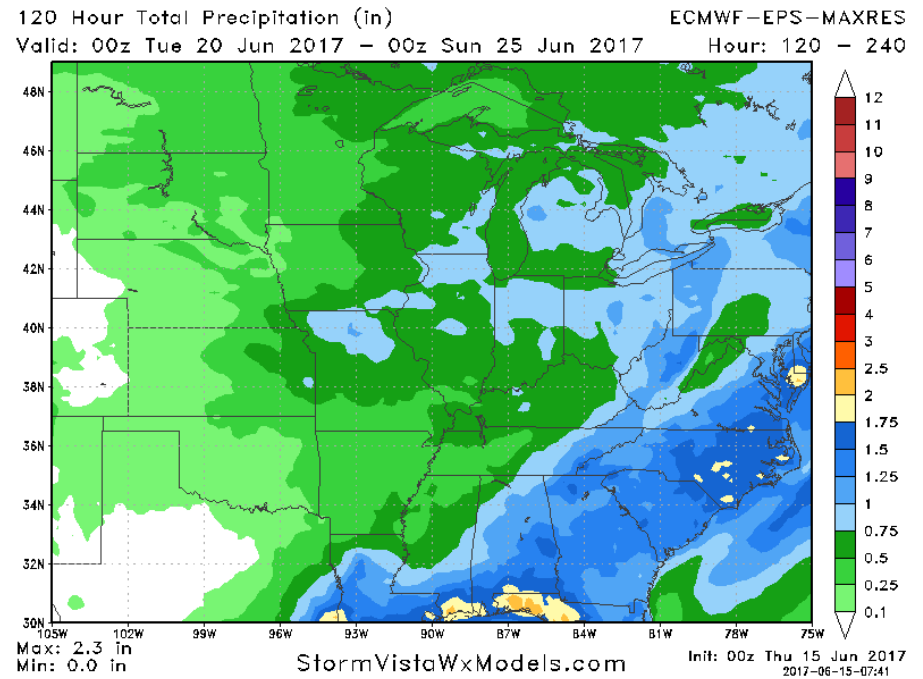
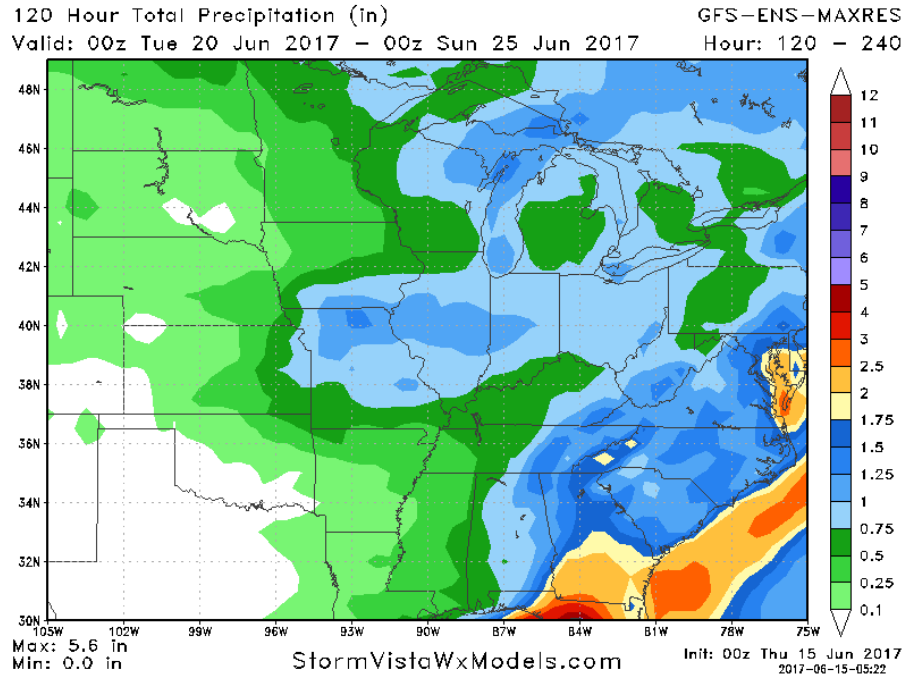
The 6 to 10 day starts off dry but there is another fairly strong system which comes in from Central Canada and moves through the upper Midwest and the Great Lakes June 22-23 which will bring clusters of showers and storms over 40-50% of the Midwest. The GFS model has its best rains and storms up to 2.5"/60mm over much of Iowa and Northern Illinois while European seems to have the best activity over Ohio and eastern Kentucky and over southern Wisconsin into northeast Iowa. At this point in time it is difficult to know which areas will see the best rains but generally the pattern looks somewhat favorable for moderate to significant rains over several areas of the Midwest during this time frame.



In addition the weather models are still developing some sort of tropical system-- possibly a tropical storm or depression in a Northwest Caribbean and moves into the Gulf of Mexico next Tuesday and Wednesday, June 20 or 21st. The system makes landfall on the European model over the Texas Louisiana Coast but the rains are deflected up as the coming inland and mainly fall over the southeastern states and the East Coast. The model data does not take these rains into the Midwest but we are still a long way from this event and several different solutions are possible.

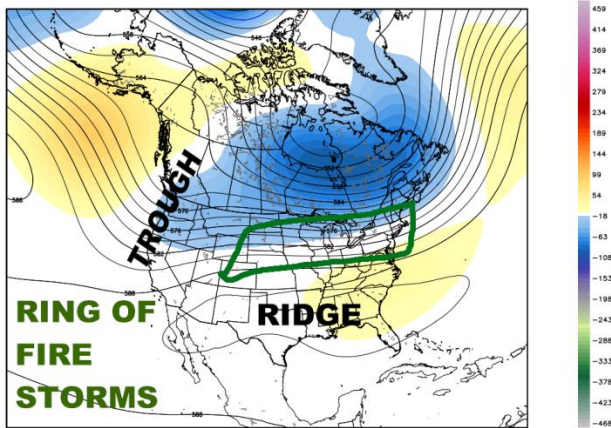


6-10 DAY ENSEMBLE



11-15 DAY

ECMWF EPS Ensemble Mean 500 hPa Geopotential Height [dm] & Anomaly [m] fr: [336] hr --> Thu 00Z29JUN2017
INIT: 00Z15JUN2017 5-day Mean between 00Z24JUN2017 & 00Z29JUN2017 Day 9 - Day10 Max: -121.0 | 92.5 m

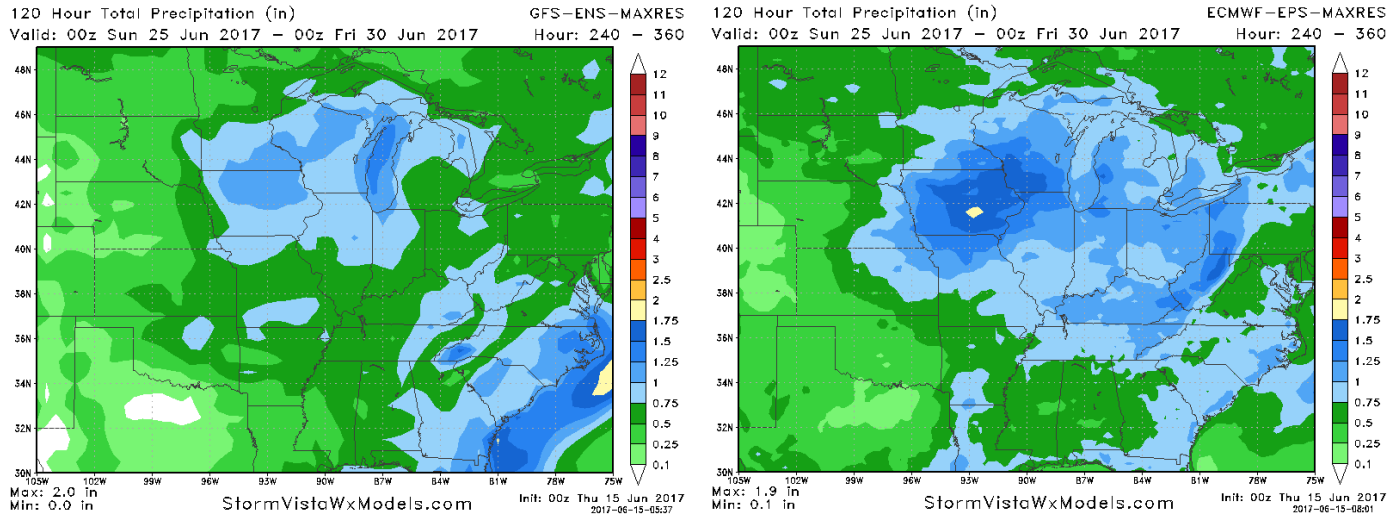


The 11-15 D begins with a deep trough over East coast. Eventually this trough is going to lift out and a new pattern will form. This NEW pattern will feature a broad trough over central and eastern Canada and a strong RIDGE over the Deep South.

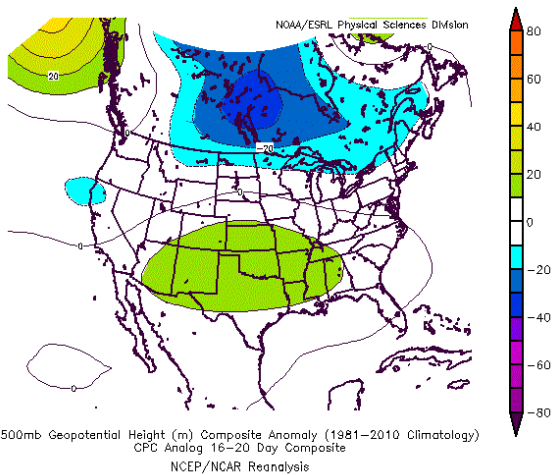
Obviously the location of this ridge is going to be very important. As you may know typically on the north side of the big summer ridge like this we often have what's known as "ring of fire thunderstorms"---that is to say thunderstorm activity which develops over the "top" or northern side of the ridge. Obviously a lot is going to depend on how strong this ridge will be in late JUNE and early JULY

The stronger larger the ridge then the better chance for the thunderstorms to move into the Dakotas and south central Canada and across the Great Lakes leaving most of the Plains and the Midwest hotter and drier.

But if the Ridge that develops in the 11 to 15 day over the Deep south stays fairly weak.. there will be more showers and thunderstorms over the WCB and the upper Plains and conditions will be quite as hot.

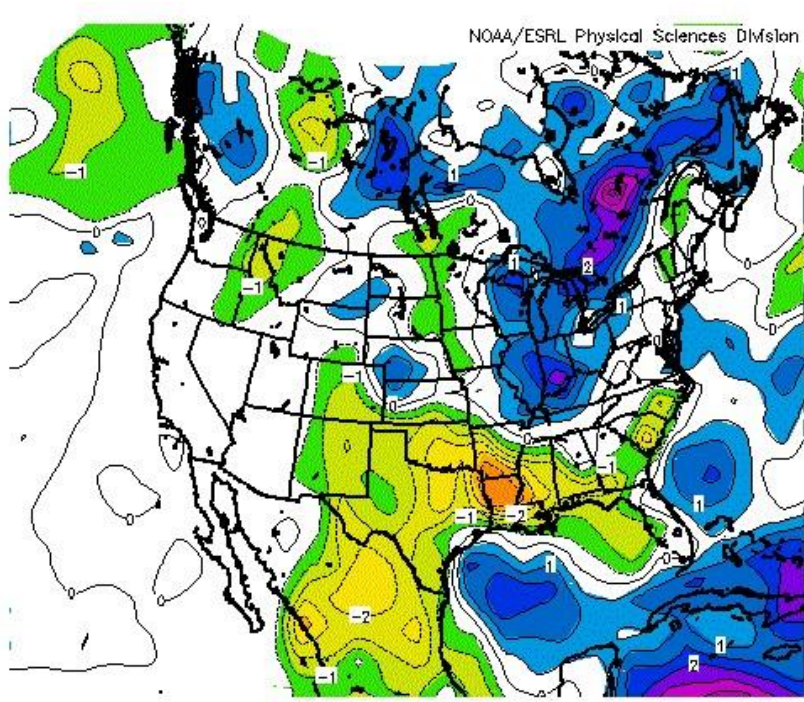


16-20 DAY

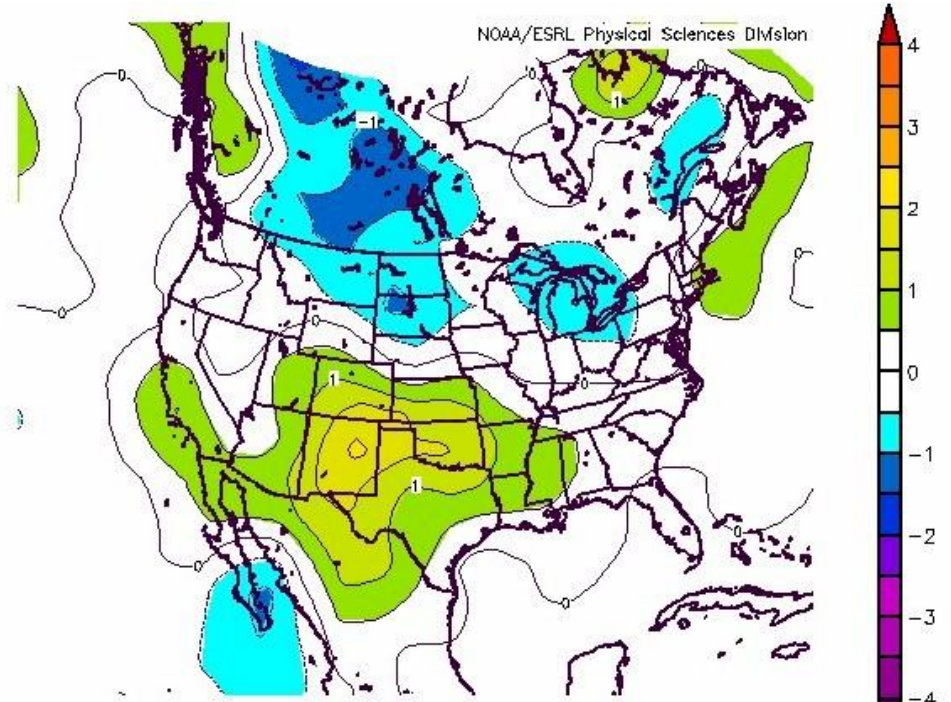


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Taking a look at the 16 to 20 day we see the models continuing with this pattern from the 11 to 15 day in developing and keeping the Ridge over the lower plains and the Delta and a trough over the West Coast. This sets up an ideal situation for more ring of fire thunderstorms and much again will depend on the exact position and size of this summertime ridge over the Deep south and lower Plains. The ROLLOVER model shows above normal rainfall over much of the Midwest but below normal rainfall over the Deep south and Texas. Similarly the hottest temperatures over the lower Plains and the Delta and below normal temperatures over the Dakotas and South Central Canada and the northern Great Lakes.



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

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