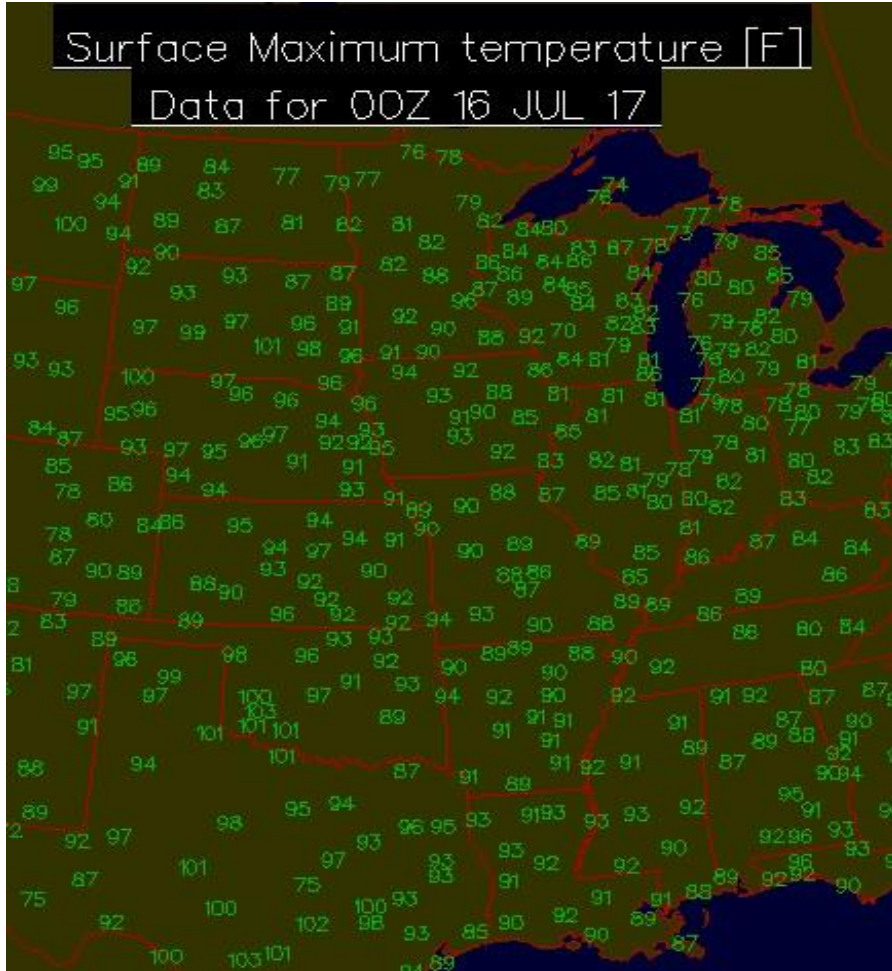


LATE SUNDAY/ EARLY MONDAY US GRAIN WEATHER 7/16/17 OVERVIEW

SUMMARY

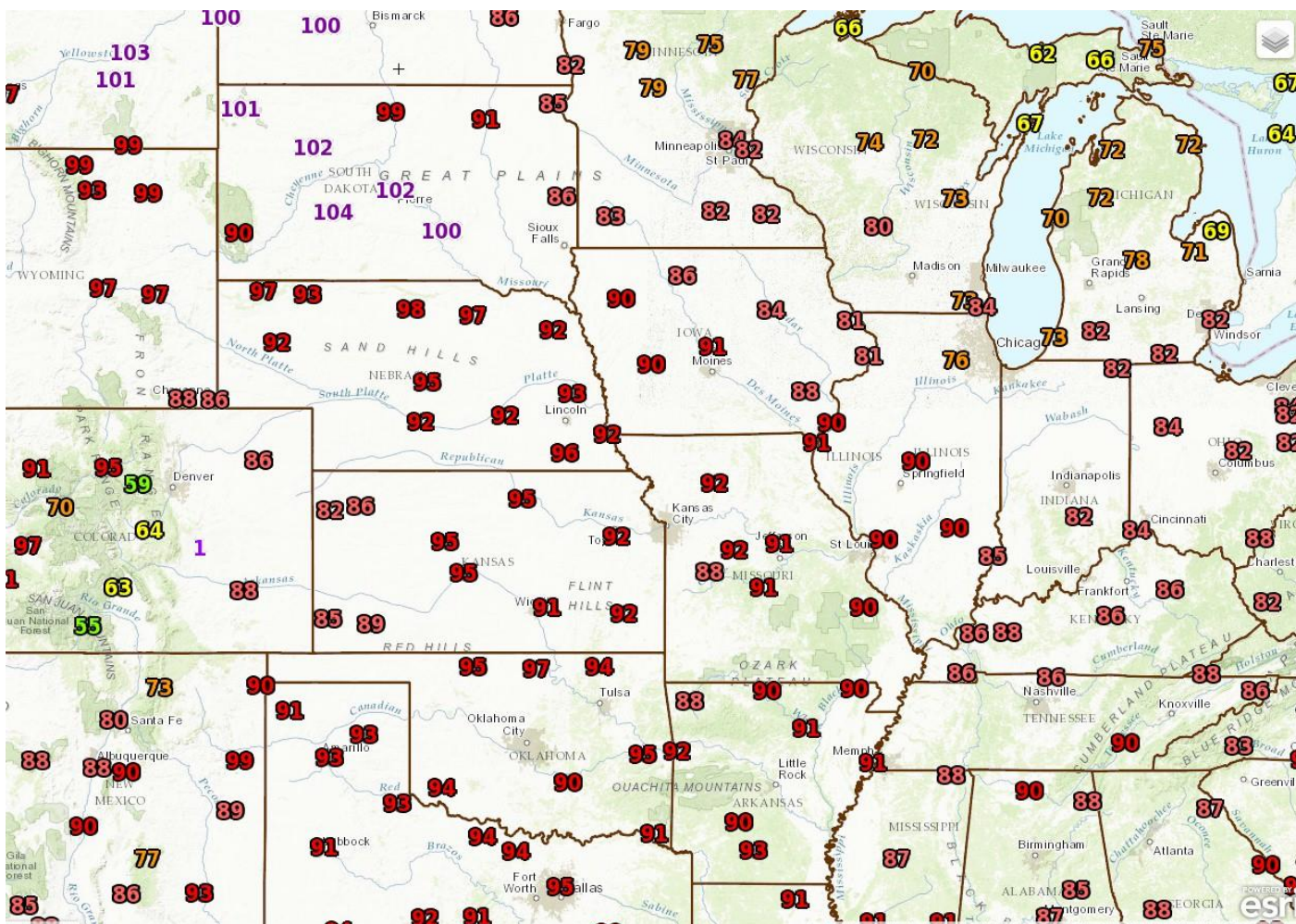
The main issue remains the impending heat which is going to be impressive this week for much of the WCB as well as central and southern portions of Illinois ...all of Arkansas ...and perhaps western Tennessee and Kentucky. Vs the cold front and how far / fast does it arrive and how much rain does it have? The KEY will be the arrival of the cold front which will be coming southward between July 20 - 21 -22 . Since Friday most of the weather models have kept this front further to the north and that trend continues on most of the weather models on Sunday afternoon. The heat of course will NOT reach into northern ILL/ Chicago area and it will NOT impact IND OH and most of KY. South of the front the temps will stay south over ALL of the Plains and much of the WCB . The hot pattern WILL come to end over NEXT weekend and the last week of JULY.

MAX TEMPS SATURDAY 14 JULY



70s over eastern ND all of MN WI most of IA MI... 80s western SD eastern MT / WY/COL... eastern SD/ eastern NEB KS OK most of TX MO northern ARK ILL IND OH KY TN 90s over GA AL MS southern ARK LA western NEB and western SD.

MAX TEMPS SUNDAY 2 JULY



7 Low 80s over OH MI IND WI
 eastern ILL Uoover 80s over KY TN
 MO west ILL eastern IA central MN
 ND... Low 90s western IA eastern
 NEB western KS eastern COL ARK
 LA MD AL GA 95-100 most of TX
 OK LA rest of KS all of NEB SD
 eastern WY eastern MT

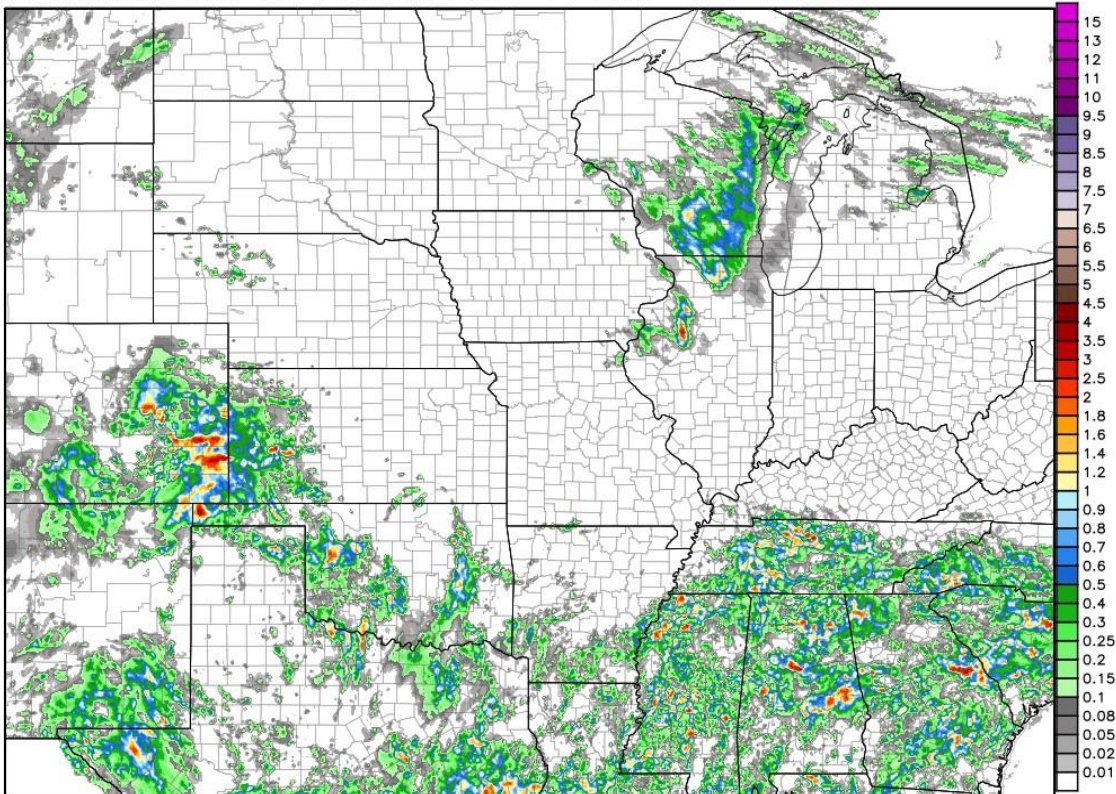
RAINFALL SATURDAY 15 JULY 0700 cdt - 16 JULY 0700 CDT (image on the right)

100% dry over all of ND SD NEB MN IA MI IND OH KY... Thwere was 0.5-2.0"/ 12-50mm with 50% coverage over SE third of COL ...0.50-1.5"/ 12-38mm over far western 25% of KS... 0.25-1.0"/56-25mm over 50% of eastern WI.. Similar rains over 30% of southern OK eastern TX LA 40% coverage 0.25-1.5"/6-38mm over central TN MS AL GA

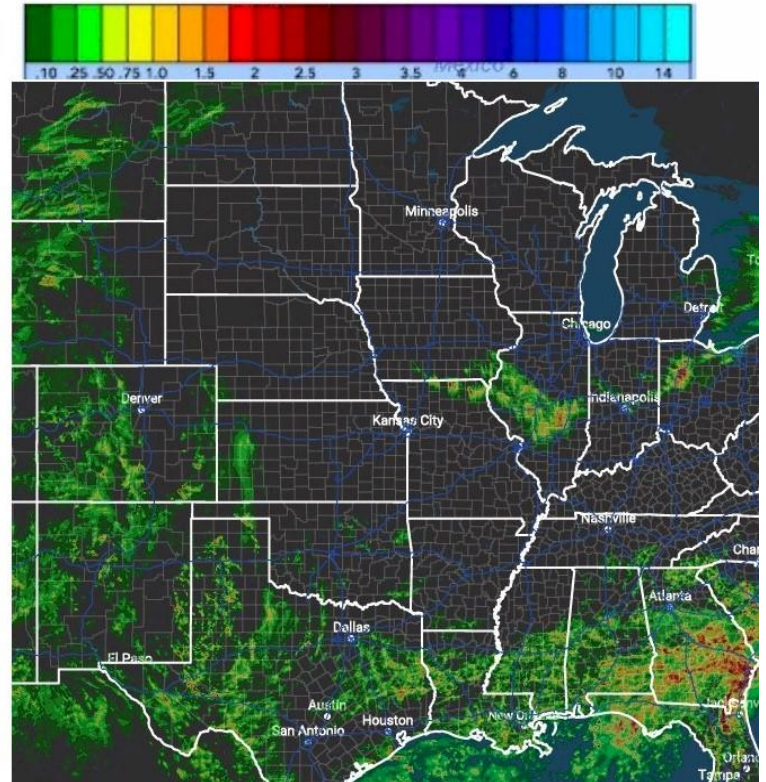
RAINFALL SUNDAY 7AM-7PM 16 JULY 0700 CDT (image on right)

very little activity over the Plains and WCB/ Midwest

NWS Precipitation Analysis 4-km HRAP Grid -- 1-day Total Accumulation Domain Max: 5.2 in.
Total Precipitation [inches] 1 days 12Z15JUL2017 --> through --> 12Z16JUL2017



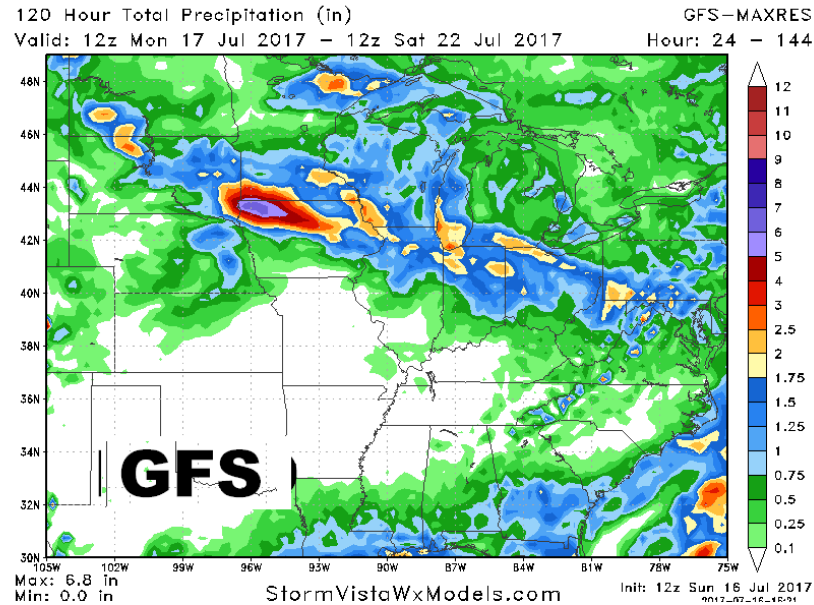
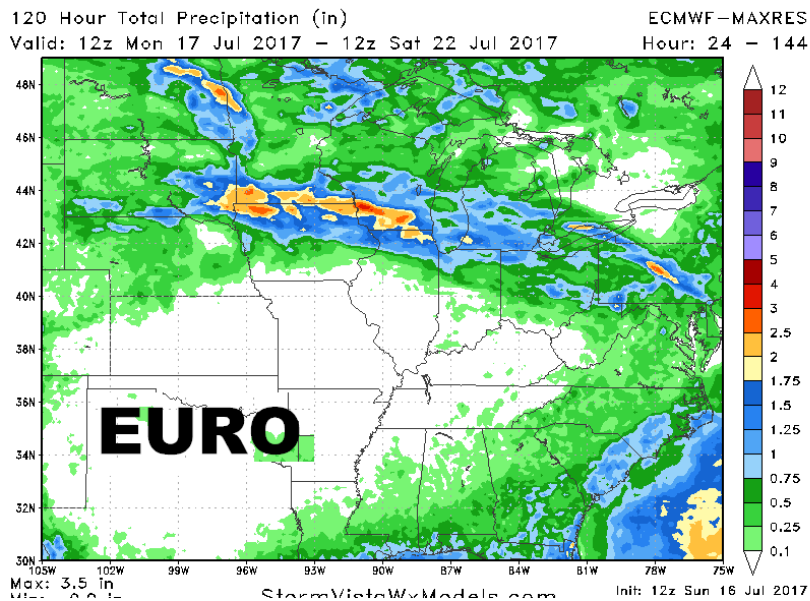
RAINFALL 6AM - 6PM SUN



THIS WEEK JULY 17-22

This image shows the position of the front and its rainfall over a 5 day interval and as you can see the band of rain runs in WNW- ESE direction --from along or close to the Minnesota Iowa border into northern Illinois ...central Indiana and into northern Kentucky / southern Ohio. The GFS model produces a large area of significant rain 1 to 6"/25-150mm rains over the northeast third of Iowa with the heaviest rains over the northwest 25% of Iowa. The European model also has decent rain but only 1-2"/ 25-50mm across the northeast third of Iowa and then into central and southern Wisconsin ...far northeastern Illinoiscentral & northern Indiana and much of Ohio.

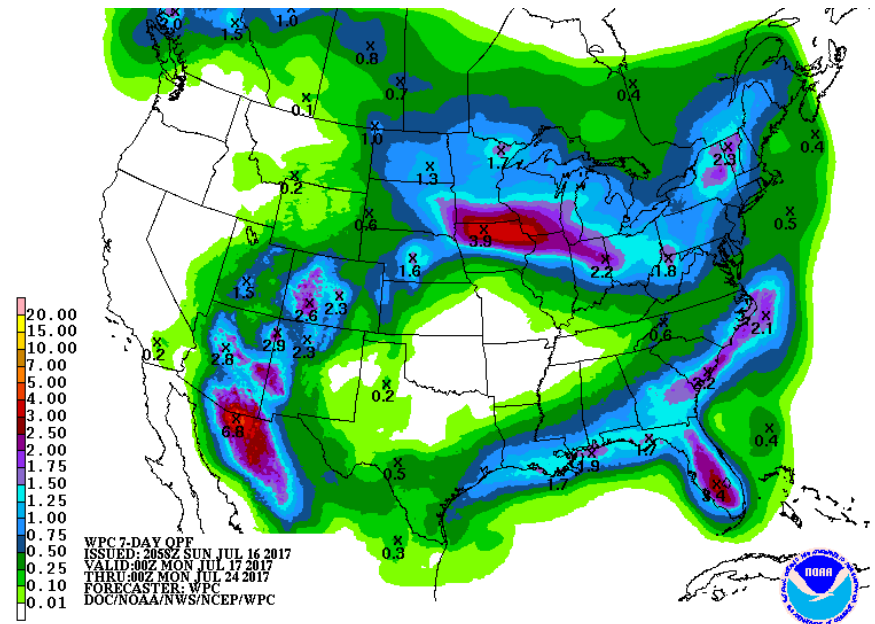
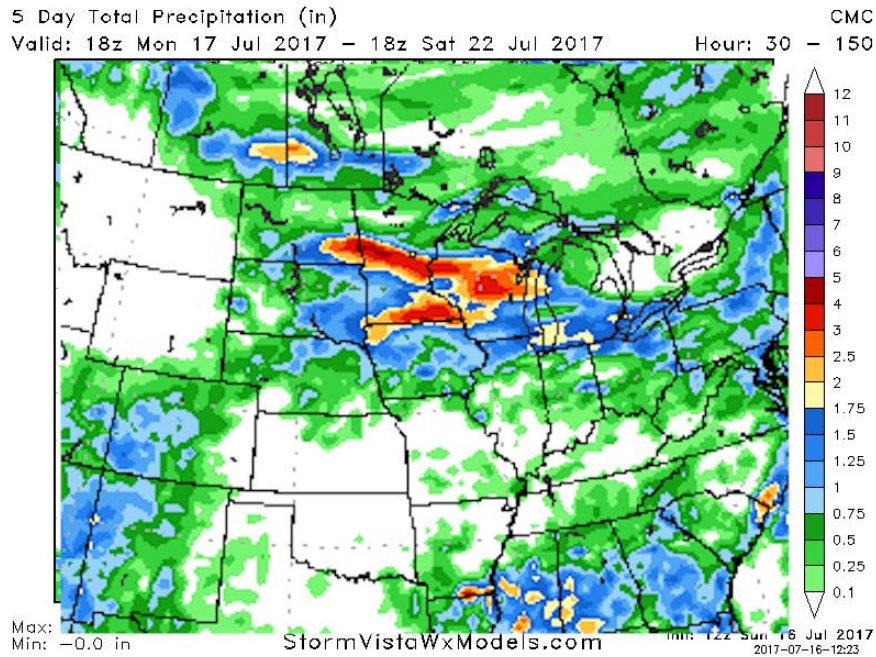
As you can see GFS has large area of 1-6" rains over ne half of IA & 1-2" eastern SD south MN most of WI north third ILL north half of IND all of OH...**12z EURO is very different - rain area is smaller & much less =with 1-2.5" rains over ne half of IA south WI/ north 25% of ILL far north IND south MI far north OH. Both models DO agree that south of the front/ rain it will be a very hot week of in all areas EXCEPT for IND OH KY**



In addition because of the cold model bias of the GFS ..the front comes a little further south on the GFS than it does on the European model. It should be noted that the midday Canadian model also agrees the European model and keeps the best rains associated with this front along the Iowa Minnesota border and into central and southern Minnesota and Wisconsin.

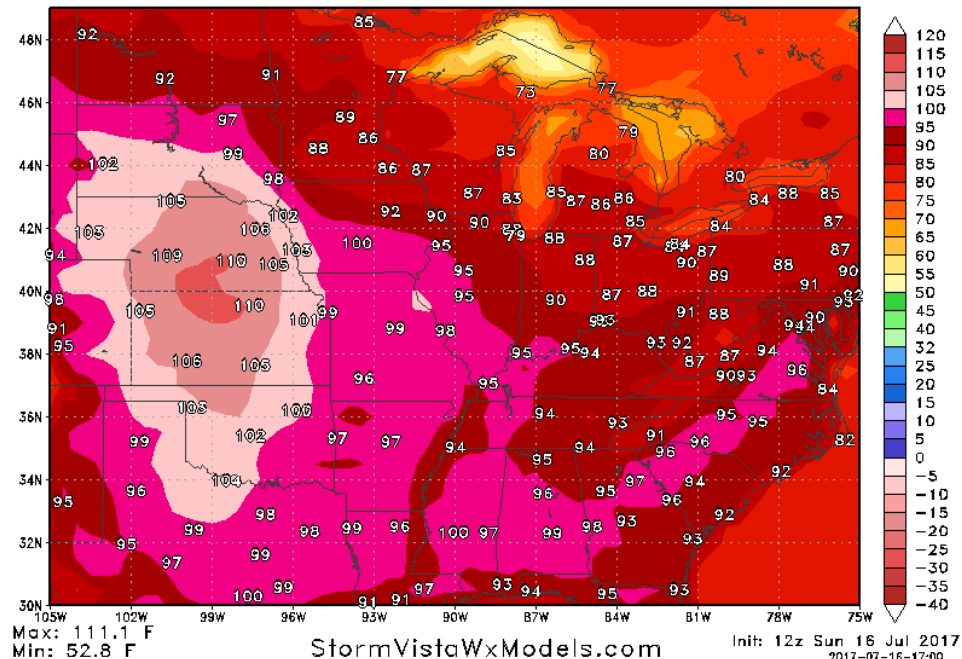
CANADIAN MODEL ALSO KEEPS FRONT NORTH !! - everyone south of the front & NOT in KY IND OH.. sees DAYS of Heat

Despite the vast majority of the model data showing the front staying further to the north and keeping the rain further to the north the official five and seven day forecast from NWS show rainfall forecast and map which is almost identical to the GFS model. **In other words the forecasters at NWS issued the official rainfall forecasts are ignoring what the Canadian and European model data showing.** NWS also appears to be ignoring their own GFS ensemble model which has a good size areas of 1.0-2.5"/ 25-60mm centered north of the Minnesota Iowa border and into Southern Wisconsin..

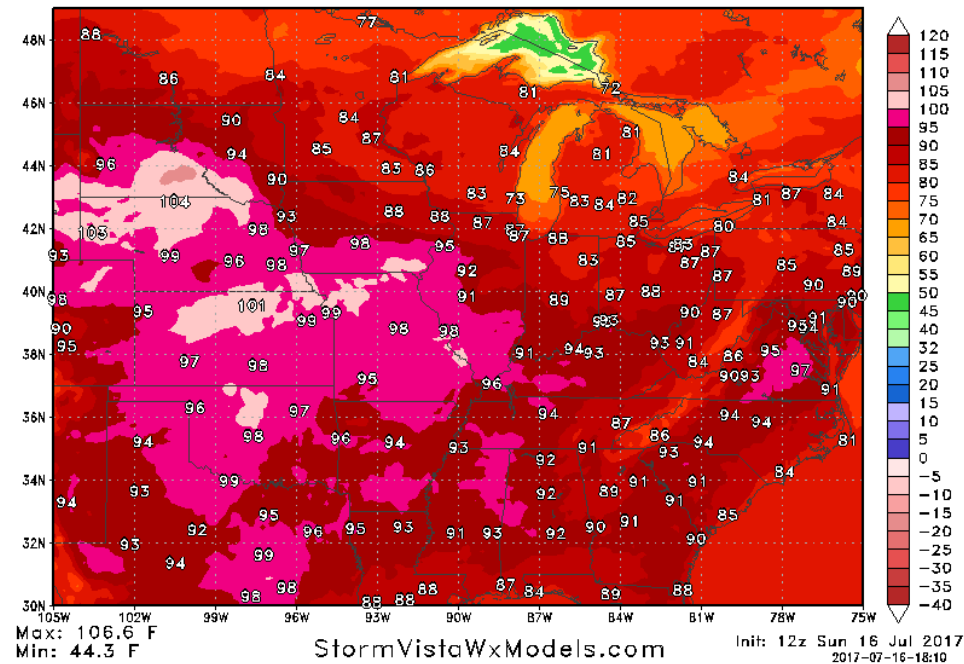


This image shows the forecasted Max temperatures for Wednesday evening and these numbers speak for themselves. The GFS models on the left and the European model is on the right. The 2nd image below This image shows the forecasted Max temperatures for FRIDAY

2 m Max Temperature (F) GFS-ENS-MAXRES
Valid: 00z Thu 20 Jul 2017 Hour: 84

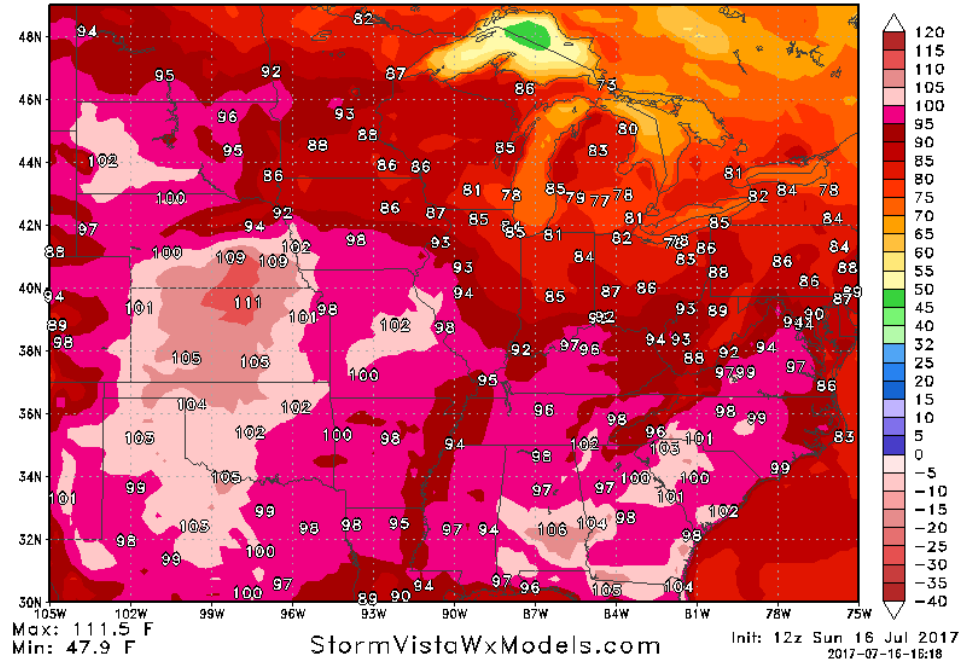


2 m Max Temperature (F) ECMWF-MAXRES
Valid: 00z Thu 20 Jul 2017 Hour: 84



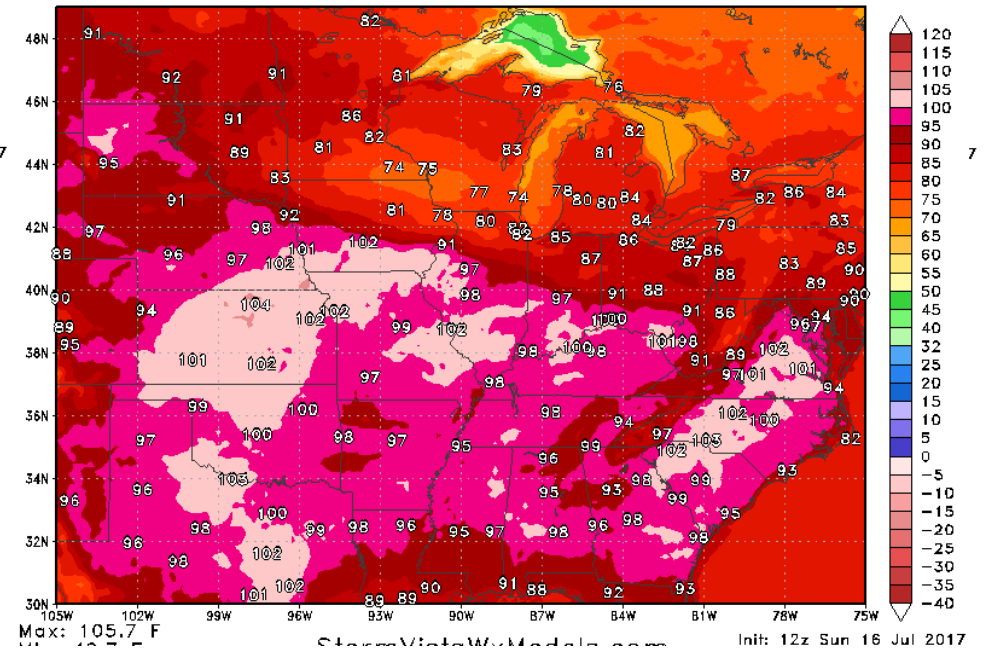
2 m Max Temperature (F)
Valid: 00z Sat 22 Jul 2017

GFS-MAXRES
Hour: 132



2 m Max Temperature (F)
Valid: 00z Sat 22 Jul 2017

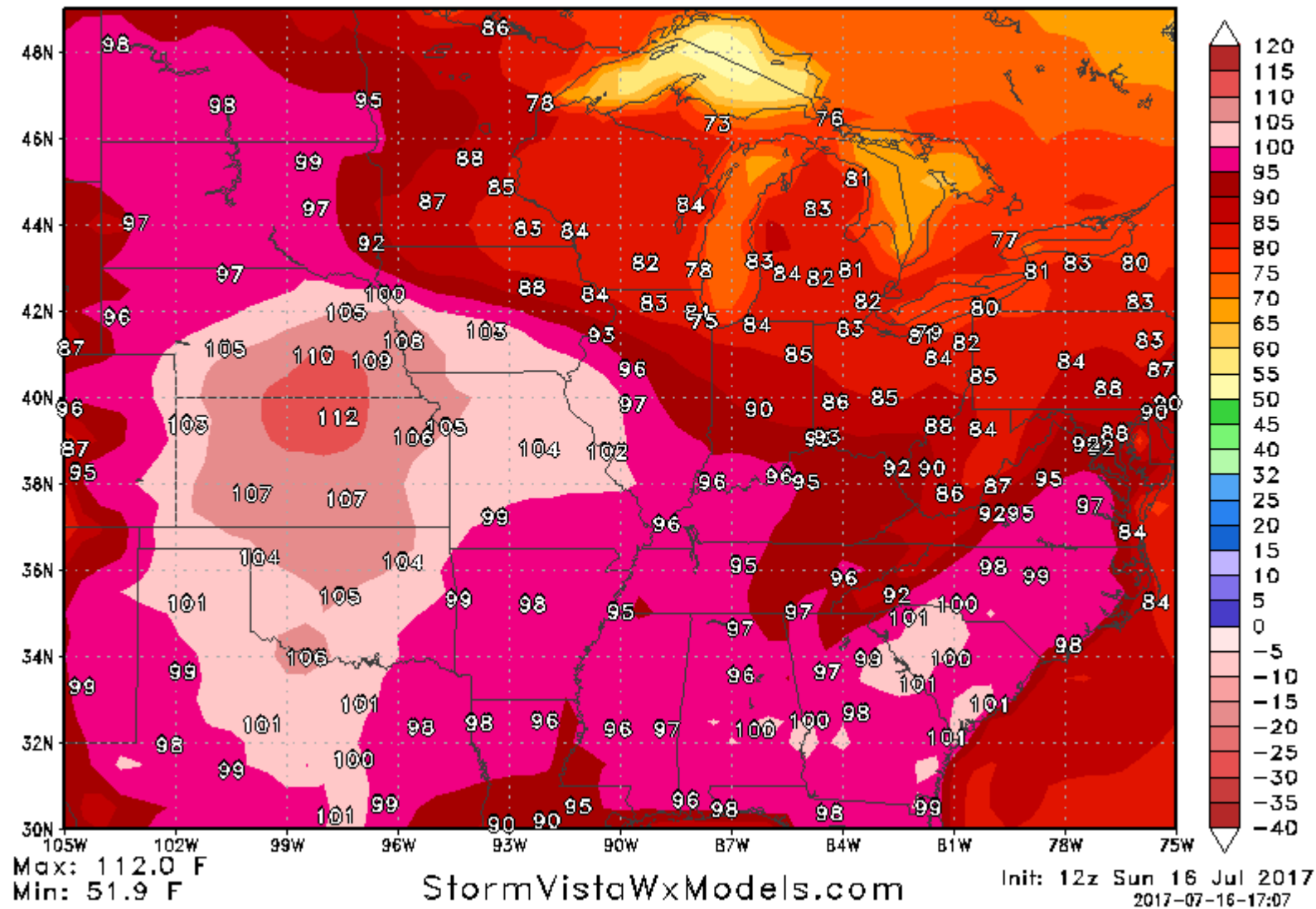
ECMWF-MAXRES
Hour: 132



Even more stunning is the fact of the GFS ensemble which almost always runs colder than the operational run ... is in this case hotter!. Here is the GFS ensemble for Friday afternoon and it has temperatures in the Moines Iowa of 103°and Omaha Nebraska 108°.

2 m Max Temperature (F)
Valid: 00z Sat 22 Jul 2017

GFS-ENS-MAXRES
Hour: 132





The temperatures forecasts presented in the Table is based on the 12z SUNDAY operational models run of the GFS and European Models. That being said the **KEY to the these temps verifying over the next 7 days** is that the **cold front on JULY 20-21-22**. Over the past 3 days all of the models have kept this front **MORTH.. impacting** far eastern SD southern MN northern third of IA southern third of WI north third of ILL and most of IND and OH.

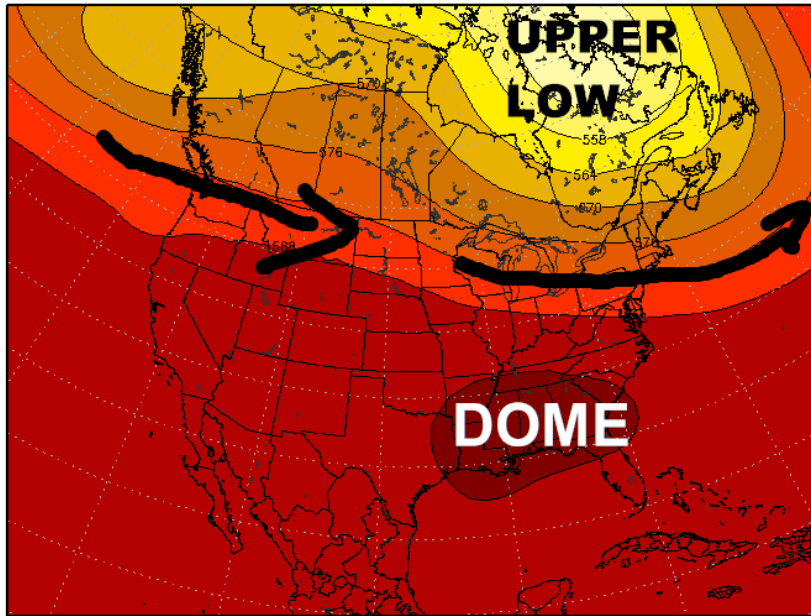
Please keep in mind JULY 20-22 is still 4-7 days away. So far the "trend" is to keep the front to the north BUT the Model data COULD change and drop the cold front further south.

DATE	COLUMBUS NEB		DES MOINES IA		ST LOUIS MO	
	GFS	EURO	GFS	EURO	GFS	EURO
7/17 (day2)	93	95	87	90	85	89
7/18 (day3)	95	95	98	90	90	96
7/19 (day4)	100	98	95	98	98	98
7/20 (day5)	102	100	98	97	98	101
7/21 (day6)	198	102	99	102	98	102
7/22 (day7)	98	101	97	101	97	101
7/23 (day8)	100	93	98	92	97	101

WEEK 2 JULY 23 - 29

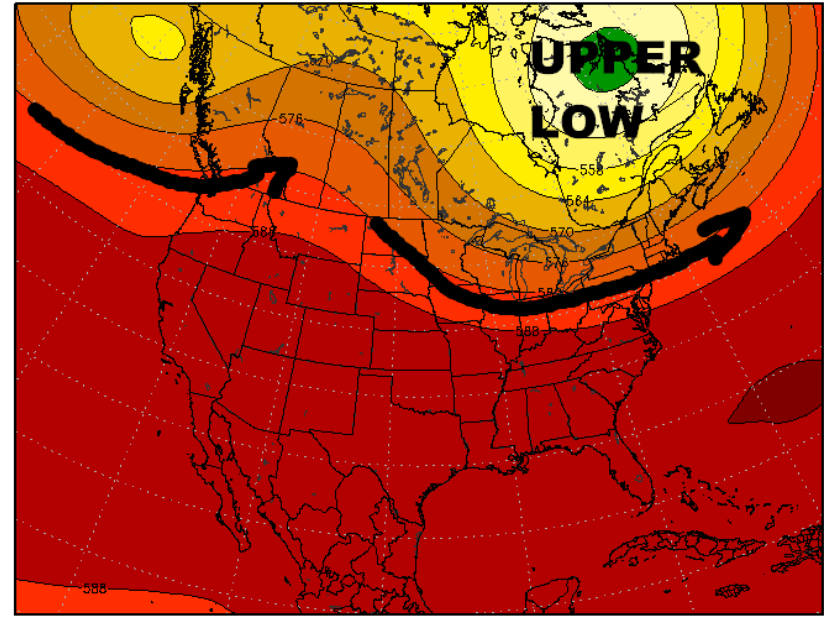
Most of the model data continues the heat right through July 23. But after the 23rd the model agreement is very strong with the European GFS and the Canadian models all showing the heat dome breaking down and sliding back into the Rockies and a fairly deep trough will develop over the eastern half of the country during the last week of July.

500 mb Height
Valid: 06z Mon 24 Jul 2017



GFS-ENS
Hour: 186

500 mb Height
Valid: 00z Mon 24 Jul 2017



ECMWF-EPS
Hour: 180

GrADS: COLA/IGES

StormVistaWxModels.com

Init: 12z Sun 16 Jul 2017
2017-07-16 13:11

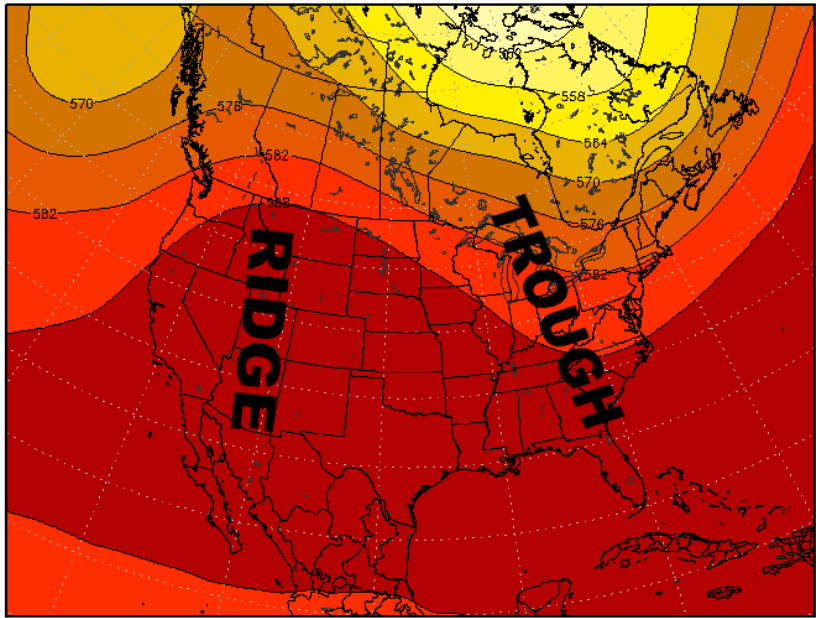
GrADS: COLA/IGES

StormVistaWxModels.com

Init: 12z Sun 16 Jul 2017
2017-07-16-15:30

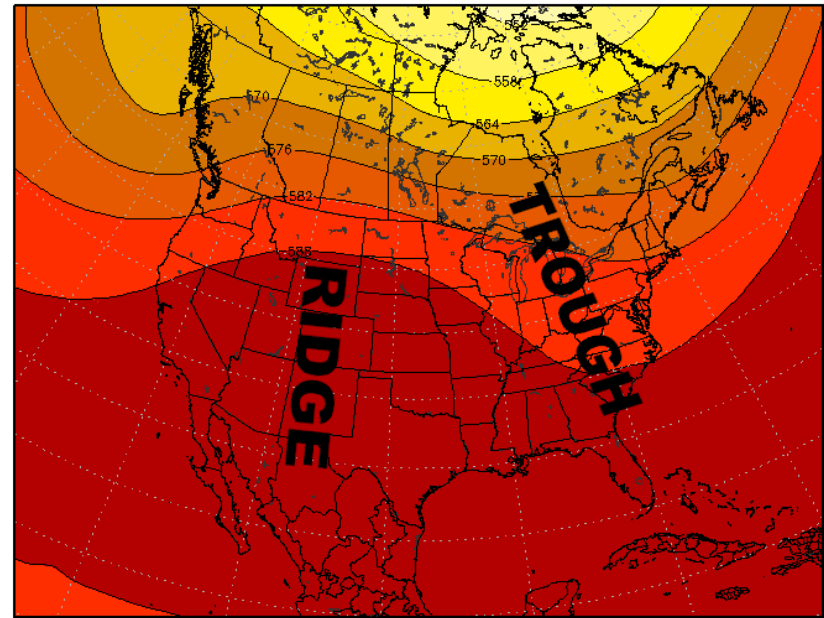
By the END of JULY the trough over the eastern US becomes rather broad and deep. This pattern would keep the Plains dry and seasonal ..some rain and cooler than normal temps in the WCB and Below Normal temps and above normal rains over the ECB.

500 mb Height
Valid: 12z Sun 30 Jul 2017



GFS-ENS
Hour: 336

500 mb Height
Valid: 00z Sat 29 Jul 2017



ECMWF-EPS
Hour: 300

GRADS: COLA/IGES

StormVistaWxModels.com

Init: 12z Sun 16 Jul 2017
2017-07-16-13:32

GRADS: COLA/IGES

StormVistaWxModels.com

Init: 12z Sun 16 Jul 2017
2017-07-16-13:32

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