

MONDAY US GRAIN WEATHER

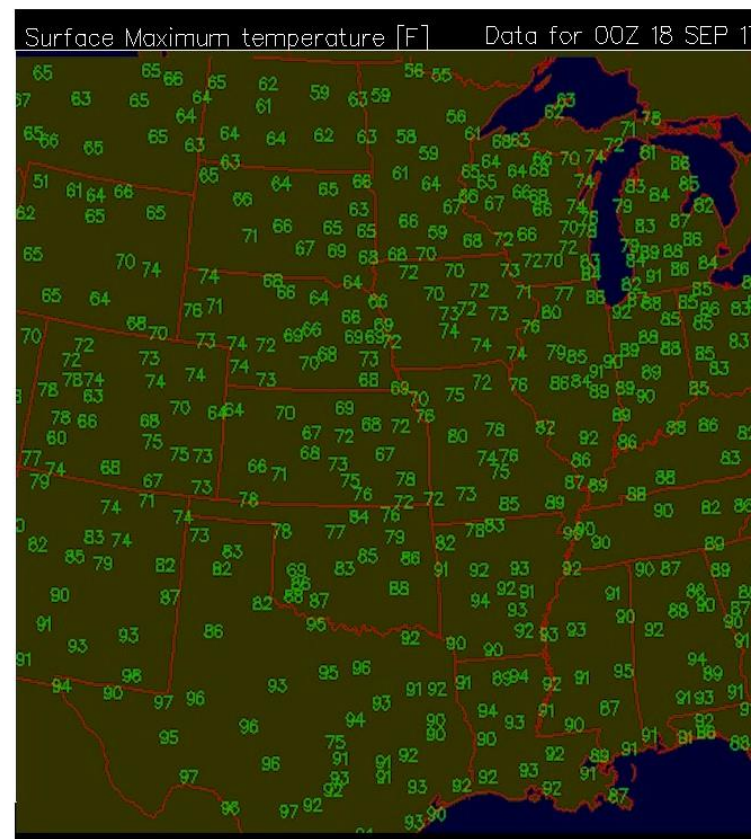
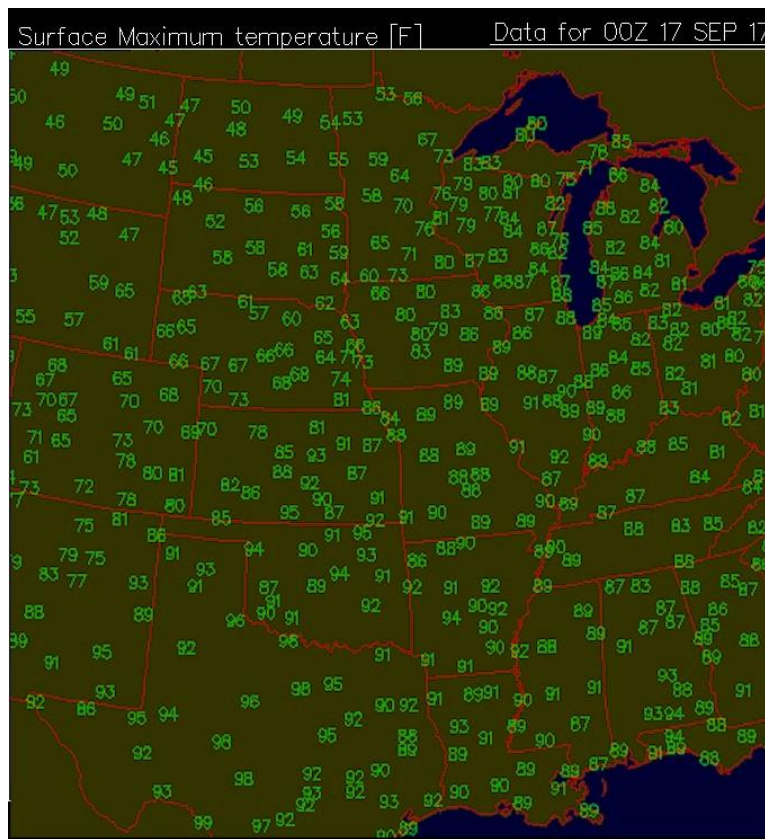
9/18/17 OVERVIEW

SUMMARY

The never ending tropical season of 2017 continues but there are important changes going on over North America itself. Last week the models indicate a major trough is going to form over the western third of the country and a major ridge is going to form over the eastern third of the country. That has not changed as of Sunday night Monday morning. All the weather models show a massive trough quite impressive for mid September developing over the western third of the country. This trough will bring below much below normal temperatures to the West Coast the Pacific Northwest Southern Canada and most of the Rockies. At the surface the cold front will try and push through the plains states but the powerful ridge over the eastern third of the country will force this front to crawl very slowly eastward. This will allow for significant rain developing mostly in the 6-10D. Complicating this will be the arrival of another category four hurricane This one called I Maria which will be in the Bahamas by this weekend and moving through the Bahamas early next week. This looks like a East Coast threat. Finally the model data is pretty strong that a major trough is going to move through the Midwest by the end of the month and possibly bring about the first frost for some areas

MAX TEMPS 16 SEPT and 17 SEPT

Temperatures on both Saturday and Sunday were significantly above normal over much of the Midwest and especially over the Deep south and Lower Plains. Max temperature readings and ND MN WI and MI this time of year are in the 60s .. and 70s over OH KY IND ILL IA MO NEB SD.. and Low to Mid 80s over OK TX ARK LA MS AL TN GA . Max temps on the Saturday the 16th saw readings near normal over the Upper Plains and WCB but over the ECB temperatures were in the mid and upper 80s and some lower 90s over the Delta and lower Plains. Temperatures were somewhat cooler more seasonal on Sunday in all areas.



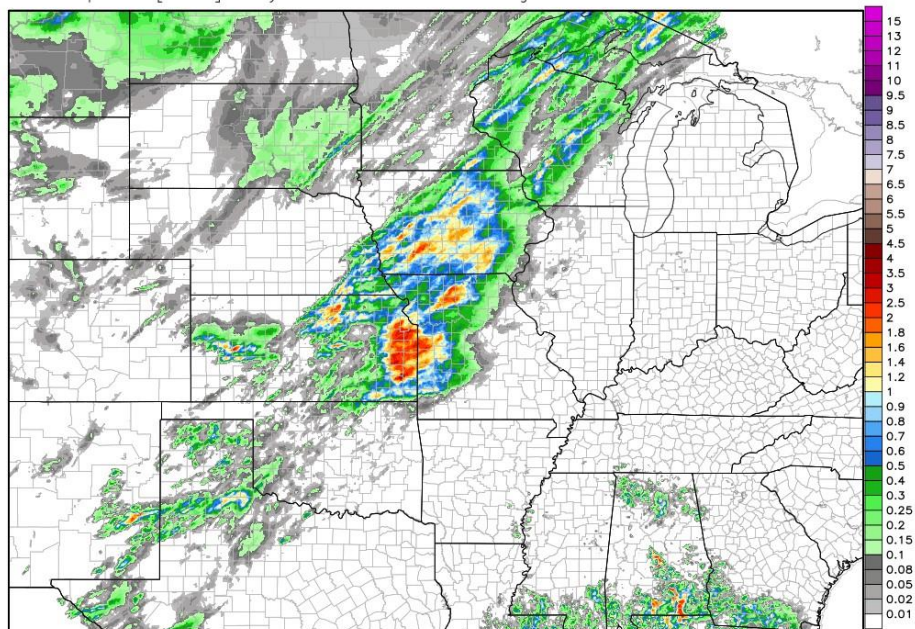
RAINFALL SATURDAY 16 SEPTEMBER 0700 cdt - MONDAY 18 SEPTEMBER 0700 CDT

Rainfall Friday into Saturday saw a band of moderate to heavy rain over 70% of central and eastern IA the northwest half of MO and far

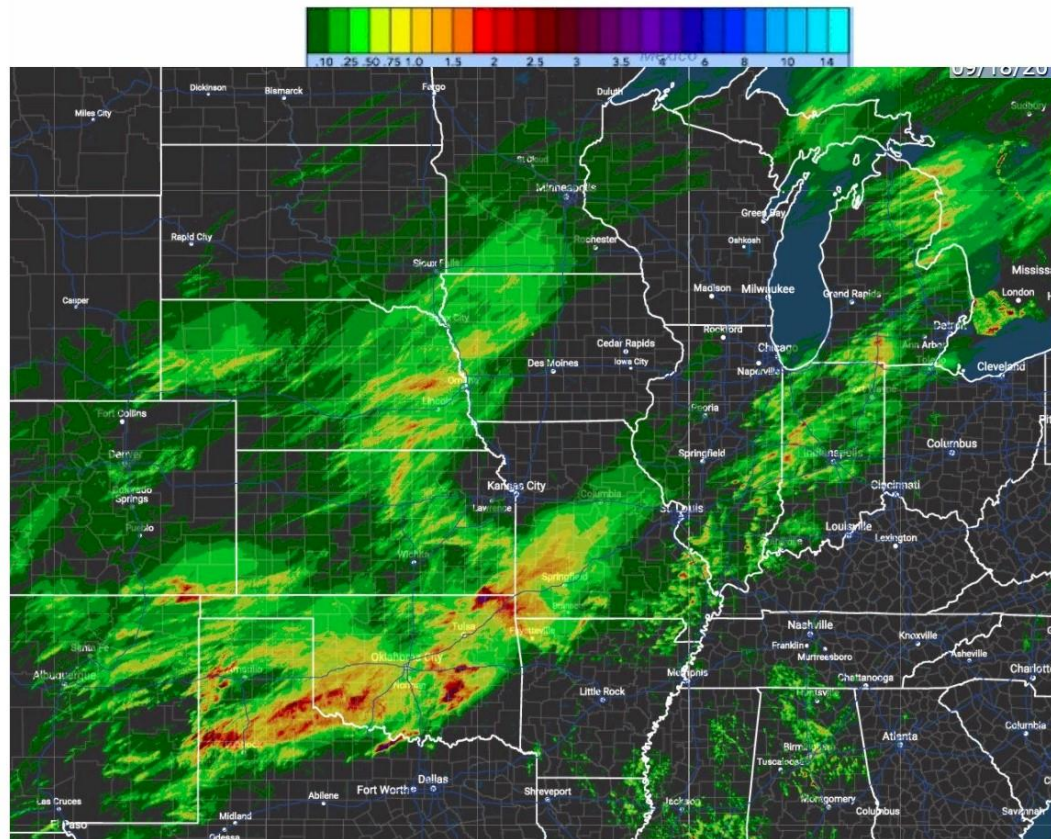
northeast 25% of KS. Rainfall amounts range from 1-3"/ 25-75mm. Additional lighter rains with 50% coverage fell over western and central WI with amounts of 0.25-0.75"/ 6-20mm . Additional light rain showers under 0.50" / 12mm fell over 50% of eastern SD and 50% of western ND.

Rainfall Sunday into Monday saw the same general band of rain shift southward. There was significant rains of 0.25- 2.5" / 6- 60mm that fell over 60% of the TX panhandle ..75% of all of OK -- h except for the southeast corner-- into southwestern third of MO. Lighter rains of 0.25-1.0"/ 6-25mm fell over 50% of eastern KS ...60% of eastern NEB and the northwest 25% of IA Additional lighter rains of the same amounts and intensity fell over the eastern third of ILL .. central and northern IND into central MI

NWS Precipitation Analysis 4-km HRAP Grid -- 1-day Total Accumulation Domain Max: 5.1 in.
Total Precipitation [inches] 1 days 12Z16SEP2017 --> through --> 12Z17SEP2017



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

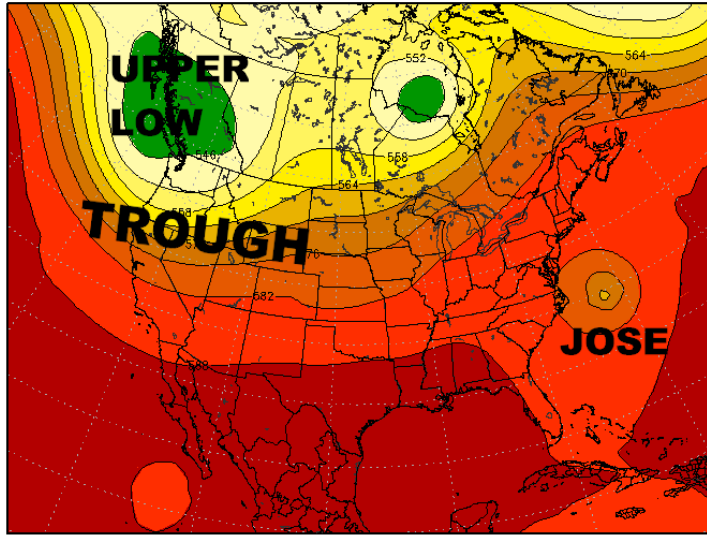


1-5 DAY

The main forecast has not changed from late last week. These 2 maps show the upper air patterns developing over the next 4 days across North America. We can see a major trough over the Pacific Northwest and western Canada pushing southward into California and east into the Rockies home and eventually into the western Plains. In response to this the atmosphere has to develop an equally strong ridge near the equally impressive trough. In this case it means a strong ridge over the entire Midwest that also stretches into New England. As a result the cold front that develops along the eastern side of the trough will move very slowly through the Rockies into the Plains and try and reach the Mississippi River at some point. This slow movement will allow for significant rain to develop over much of the Plains

500 mb Height
Valid: 21z Mon 18 Sep 2017

ECMWF-EPS
Hour: 21



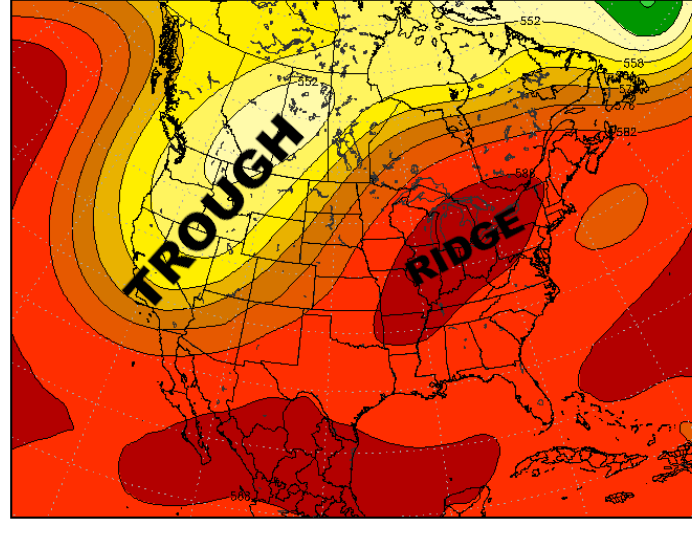
@ADS: COLA/IGES

StormVistaWxModels.com

Init: 00z Mon 18 Sep 2017
2017-09-18-03:03

500 mb Height
Valid: 00z Fri 22 Sep 2017

ECMWF-EPS
Hour: 96

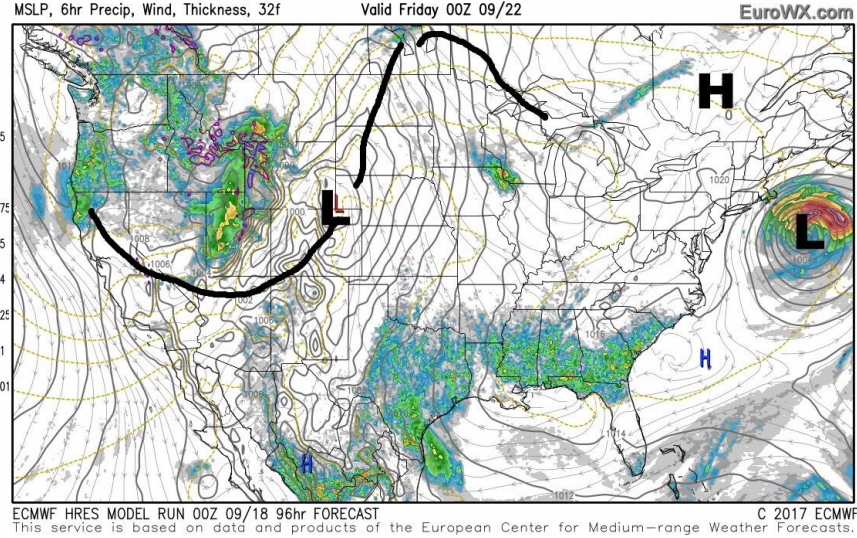
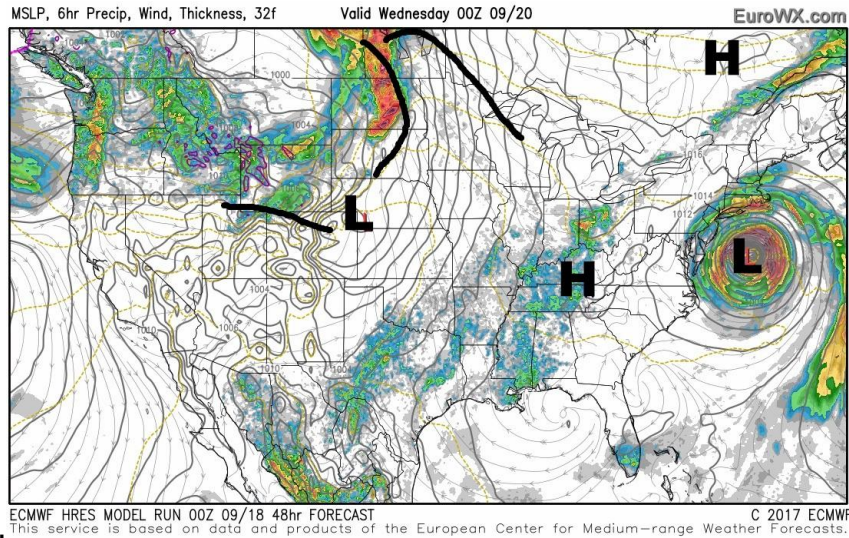


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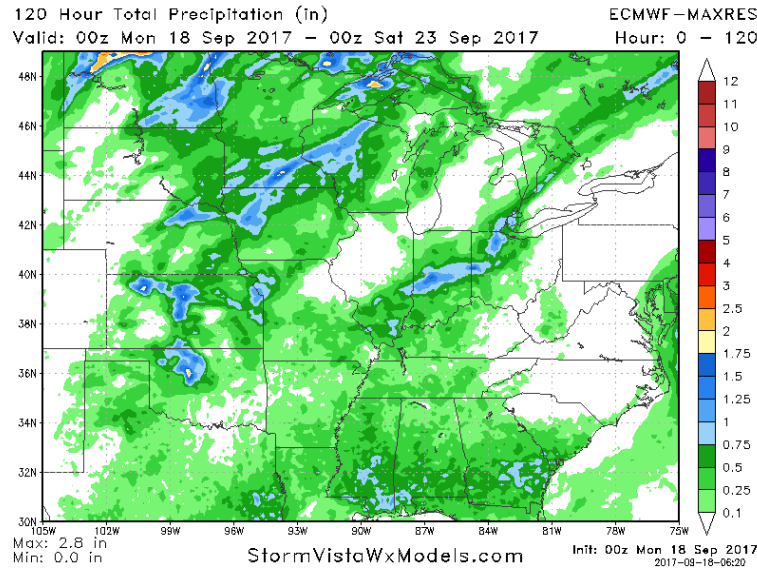
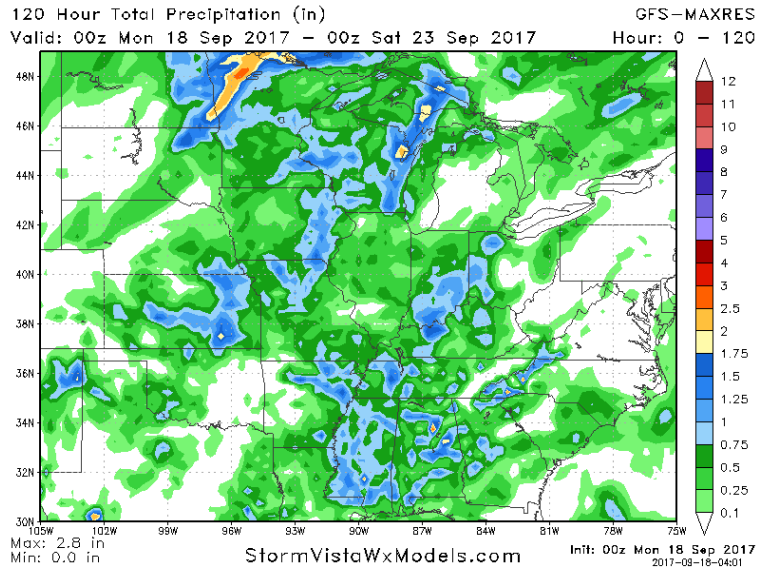
StormVistaWxModels.com

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2017-09-18-03:16

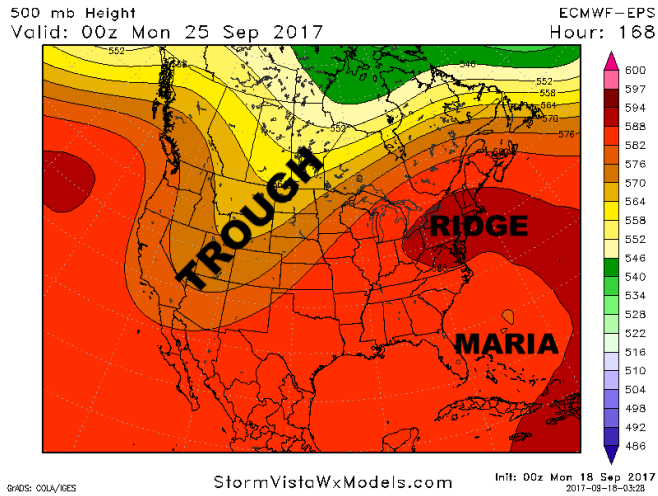
And these two images show the surface map at the Day 2 and Day 4r. We can see the slow movement of hurricane Jose off the US East Coast and eventually JOSE turns out to sea to the south and east of Massachusetts. Meanwhile the deep trough over the Rockies and Pacific Northwest pushes steadily eastward while the same time .. strong south winds over the Plains and Mississippi Valley feed moisture northward.



The rainfall all the next 5 days does not look particularly significant and most of it falls on day 4 and 5 as the moisture increases from the Gulf of Mexico and the cold front begins to push in from the Rockies. This rainfall pattern is generally scattered showers with small areas of moderate rain embedded in the areas of rain. Generally the coverage across all the Midwest appears to be anywhere from 50 to 70% depending on where you are ...and the amounts of 0.25-1.25"/ 6-32mm

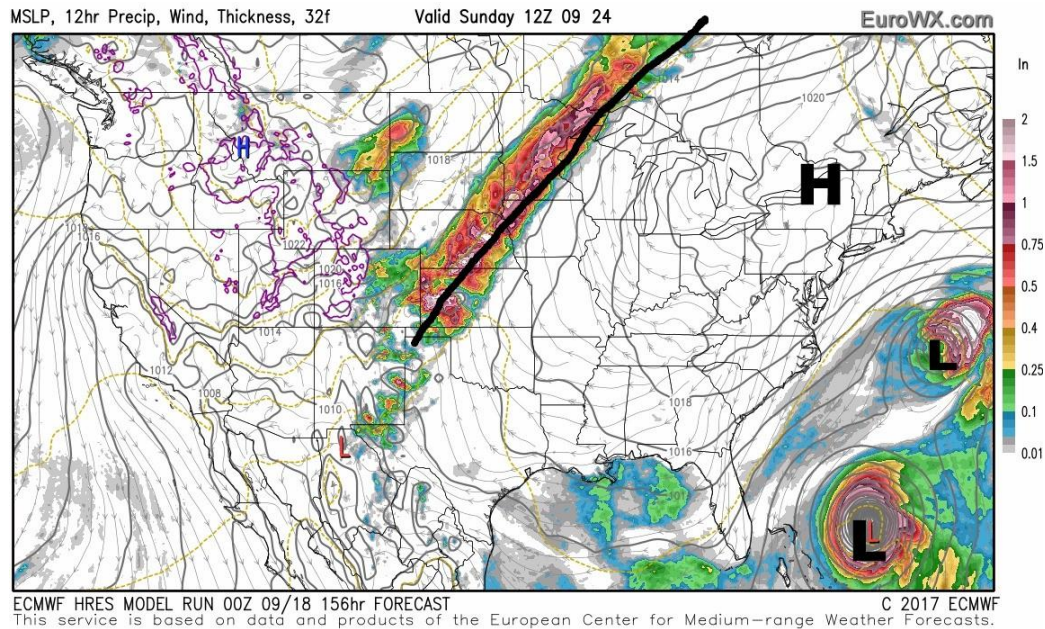


6-10 DAY.

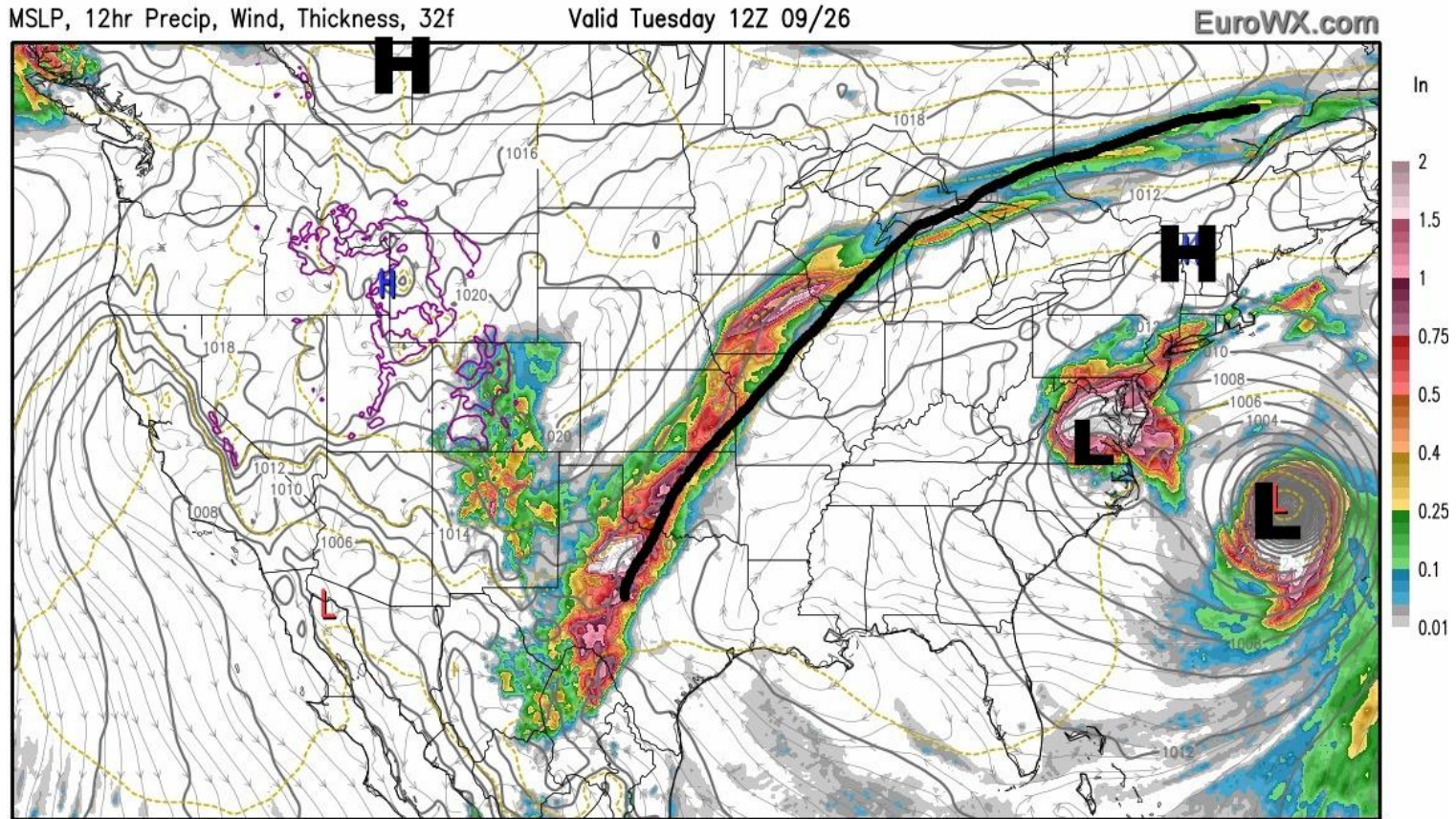


In the 6-10D we can clearly see the impact of the huge trough over the West Coast and Rockies and the correspondingly large powerful ridge in the jet stream over the Midwest and the Northeast. This will create a complicated forecasts with regard to the track of hurricane Maria. This will be a major hurricane coming out of the Bahamas sometime early next week.

The surface maps clearly shows slow moving cold front trying to reach the Mississippi Valley but having a hard time doing so. The slow moving of the front will cause significant rain to fall over much of the Plains.



We can also see the interaction between remains of hurricane Jose and a very powerful intense hurricane Maria. The weather models are having a great deal of difficulty handling how these two features and they are going to interact. In this case the European model has Jose and Maria spinning around each other. In the weather business this is called the Fujiwara affect and it could mean that Jose might come back and hit the Middle Atlantic Coast or perhaps Maria might.

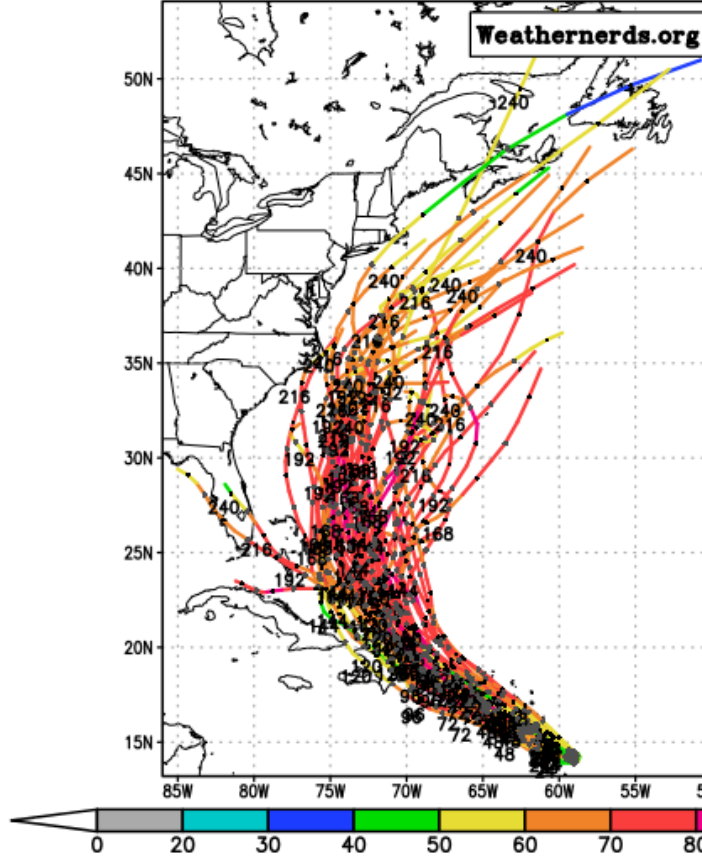
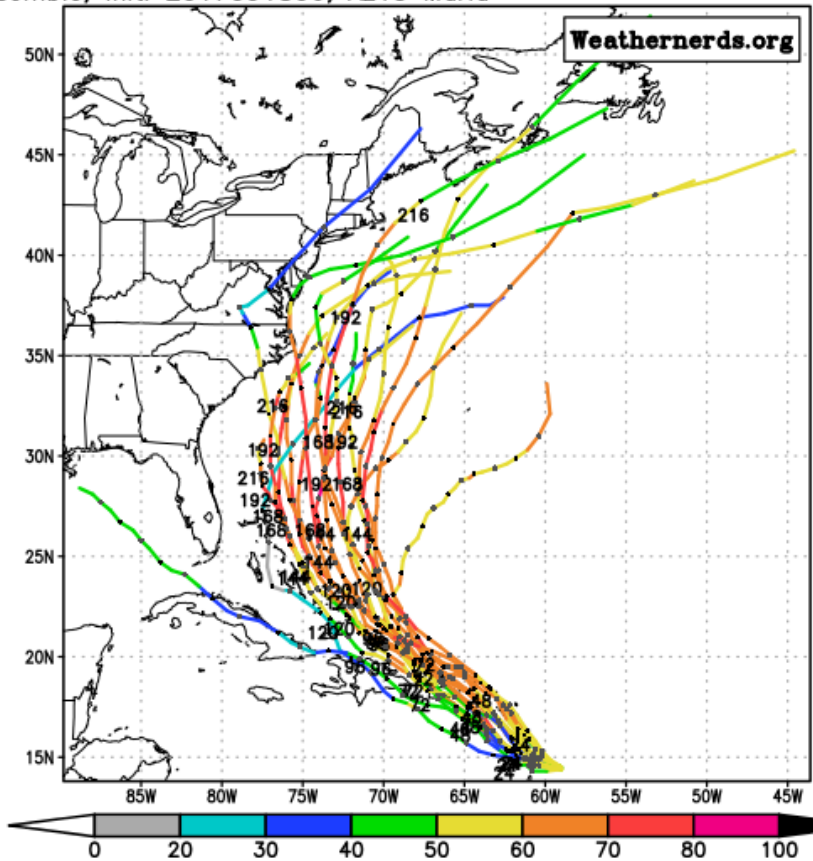


ECMWF HRES MODEL RUN 00Z 09/18 204hr FORECAST C 2017 ECMWF
This service is based on data and products of the European Center for Medium-range Weather Forecasts.

If we look at the European and GFS ensembles we can see that most of them take a system close to the East Coast or paralleling the East coast over the next 7 to 10 days. None of the models are showing a strike into Florida or the Gulf of Mexico

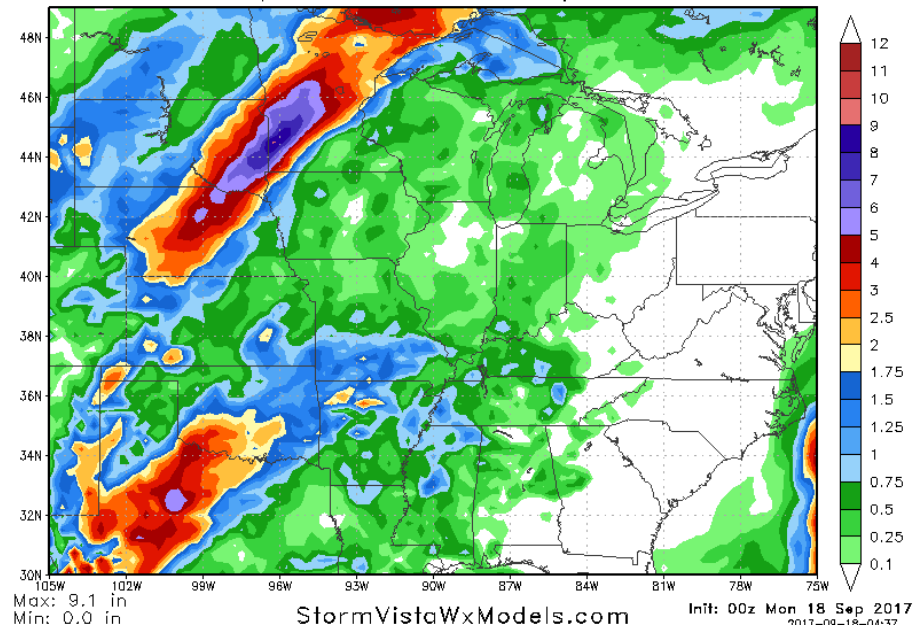
GFS Ensemble, init: 2017091806, AL15 Maria

color = ECMWF Ensemble, init: 2017091800, AL15 Maria

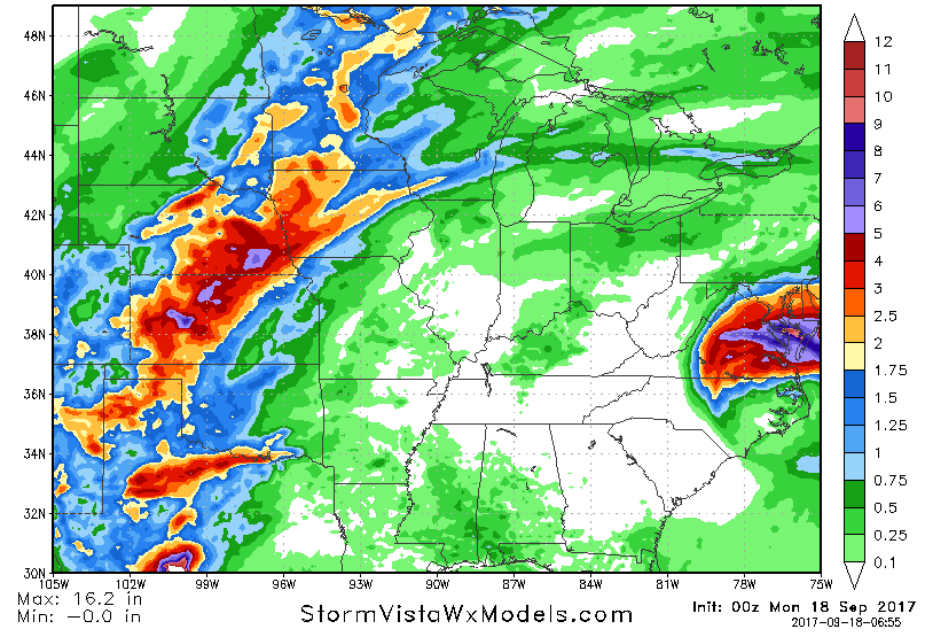


The rainfall maps are pretty impressive for late September. As you can see the operational GFS has a gap in the rain shield over KS .. western OK and the TX Panhandle ...whereas the European does not. But generally both models show significant rains of 1-5"/ 25-125mm with some differences as to where the best rains are going to fall. Notice on the GFS the heaviest rains fall over southwest MN... southeastern SD... and central and northeast NEB. On the European the heaviest rains fall over southwest IA the southeastern NEB and western and central KS.

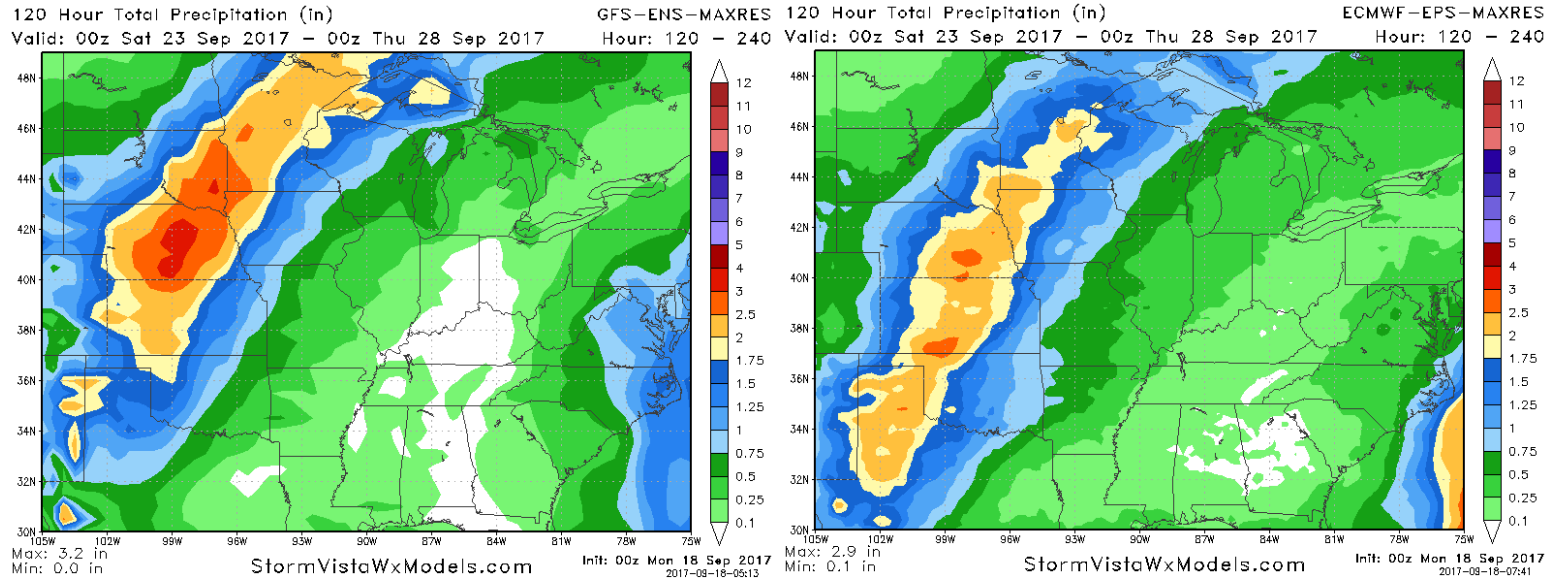
120 Hour Total Precipitation (in)
Valid: 00z Sat 23 Sep 2017 - 00z Thu 28 Sep 2017 Hour: 120 - 240



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Valid: 00z Sat 23 Sep 2017 - 00z Thu 28 Sep 2017 Hour: 120 - 240

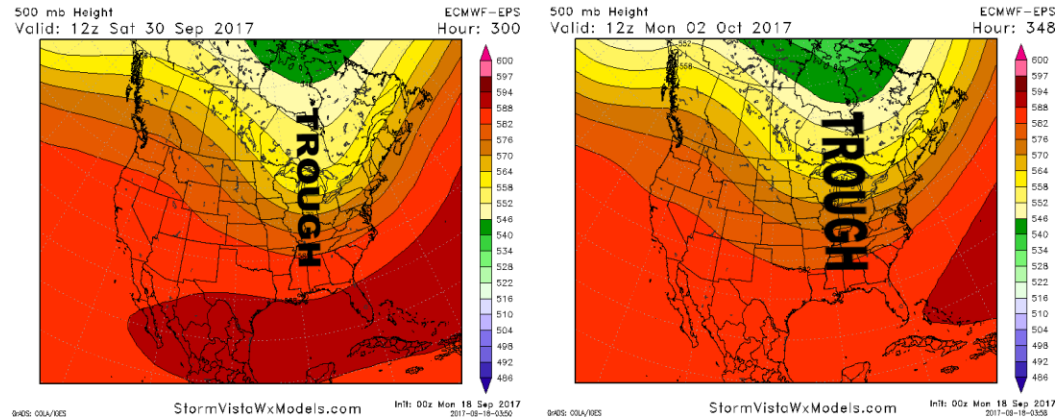


And looking at the GFS and European ensembles we see strong model agreement with only minor differences as to where the heaviest rains are going to be located. This has the makings of a significant rain event with amounts up to 4" / 100mm s over much of the lower and central Plains and into the northwest portions of the WCB.



11-15 DAY

In the 11-15D the models are in strong agreement that a deep trough is going to become established over the central and eastern U.S. as we close out the month. It is possible that this trough may be strong enough to bring about a FROST which would be pretty close to normal for this time of year. This deep trough also implies a dry pattern and this is reflected in the rainfall amounts

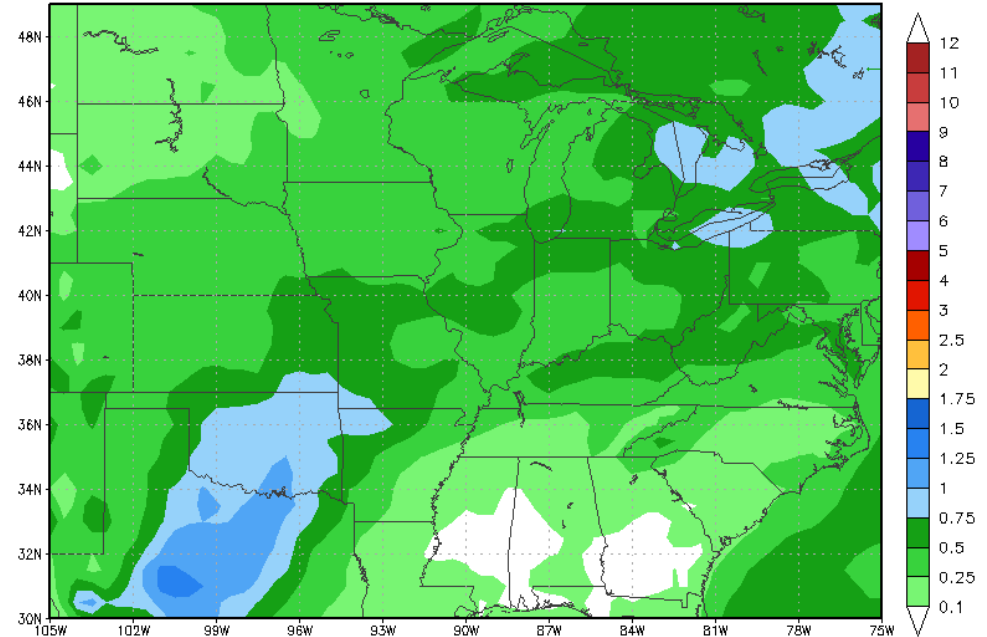


120 Hour Total Precipitation (in)

Valid: 00z Thu 28 Sep 2017 - 00z Tue 03 Oct 2017

GFS-ENS-MAXRES

Hour: 240 - 360



Max: 1.4 in
Min: 0.1 in

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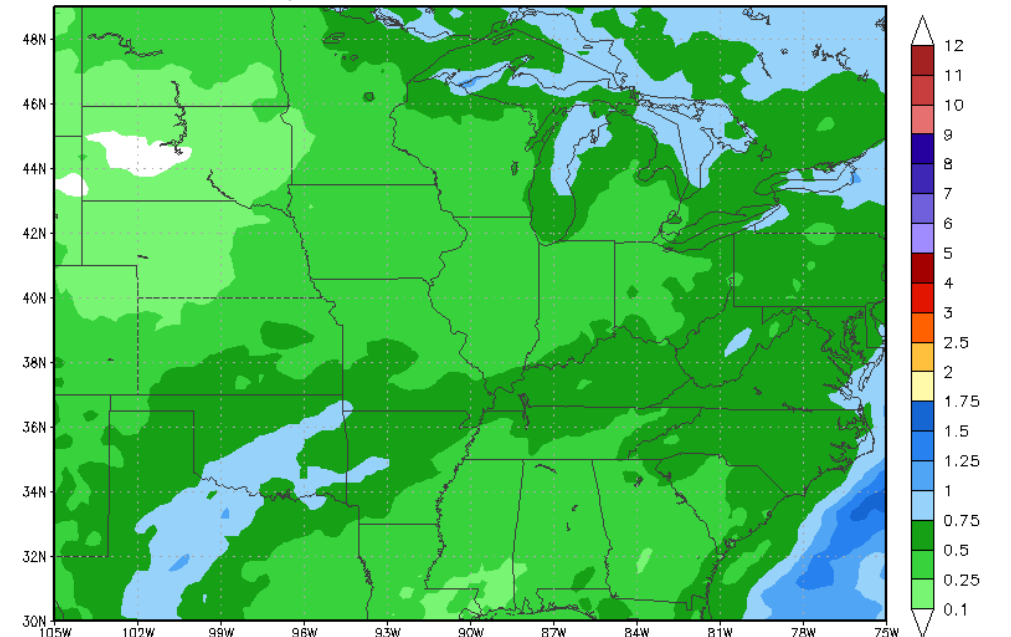
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120 Hour Total Precipitation (in)

Valid: 00z Thu 28 Sep 2017 - 00z Tue 03 Oct 2017

ECMWF-EPS-MAXRES

Hour: 240 - 360



Max: 1.6 in
Min: 0.1 in

StormVistaWxModels.com

Init: 00z Mon 18 Sep 2017
2017-09-18-08:03

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