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The Canadian Agriculture Weather Prognosticator

Volume X, Issue VIIII | http://www.worldweather.cc | August 3, 2018

Ontario And Quebec

Rain Developed Over The Past Two Weeks Easing Dryness That Had Evolved In Ontario And SW Quebec In June And Early July. Corn And Soybean Crops Are Rated Favorably While Wheat Harvesting Was Slowed.

WORLD WEATHER ISSUES

- Europe Drought Remains In North; Little Relief For Next Ten Days
- East-Central Australia Drought Prevailing, Despite A Few Showers
- Western And Southern India Drying Down; Rain Needed NW Now
- Dry Area From SE Ukraine To Russia's Southern Region Gets Partial Relief
- SW U.S. Corn Belt Still Dry While All Other Midwest Crop Areas Remain In Good Shape
- SE U.S. Receives A little Too Much Rain Past Two Weeks
- South and NW U.S. Plains Still Too Dry Along With Pacific NW
- Eastern Russia New Lands Trending Wetter

Autumn Rain Needed Before El Nino

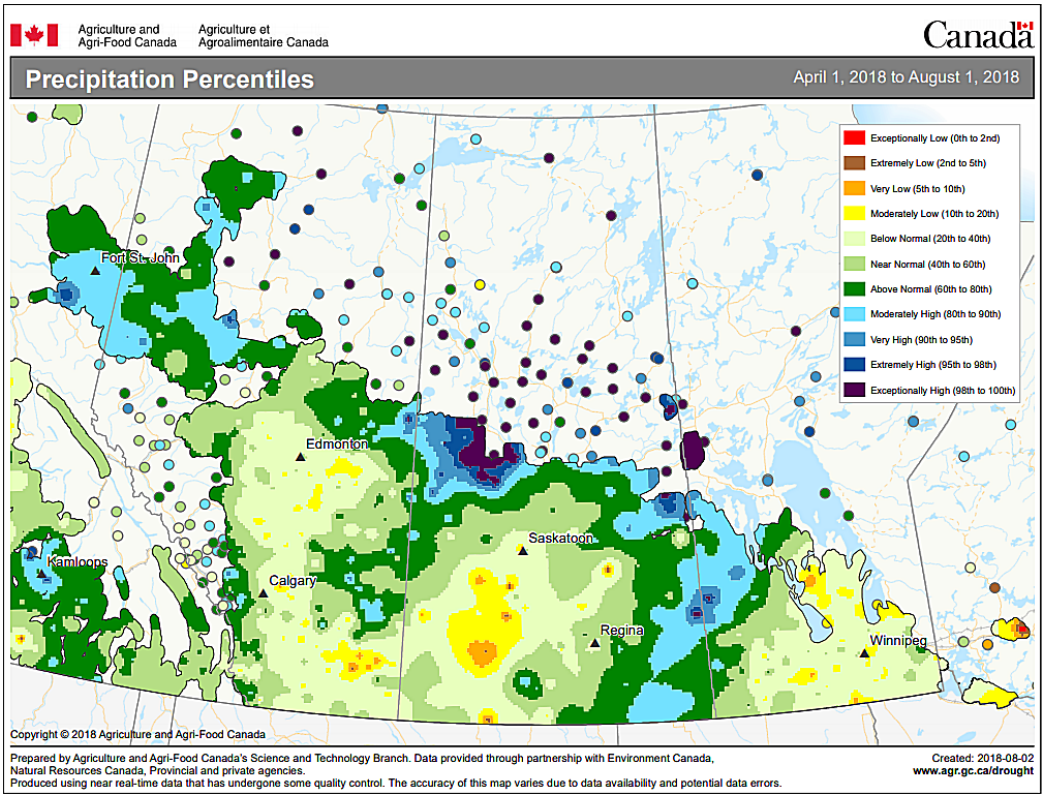
Conflicting reports about the severity of dryness are still being received from various locations across the Prairies, but generally speaking conditions are still at their worst from near Saskatoon southward to the Consul, Val Marie and Rockglen areas where the driest conditions have persisted all season.

Conditions elsewhere across the Prairies seem to vary greatly because of the erratic distribution of rain in the past few weeks. Some areas are reporting relatively good crop conditions, but just a short distance away fields are parched and crops struggling to stay alive. These conditions complicate the assessment of how serious crop and field conditions are across the Prairies. The situation also makes it difficult to understand the impact on production.

August will make conditions worse in some areas. As we have stated since last winter, the intensity of drought and the region's most seriously impacted will be determined by the positioning of the high pressure ridge in North America.

The mean position of the ridge is expected to run from west Texas into Saskatchewan and on average it is supposed to be a weak ridge. The most important characteristic of this year's ridge is the fact that is going to be a wanderer, as it already has been.

A wandering ridge



Autumn Rain Needed Before El Nino (from page 1)

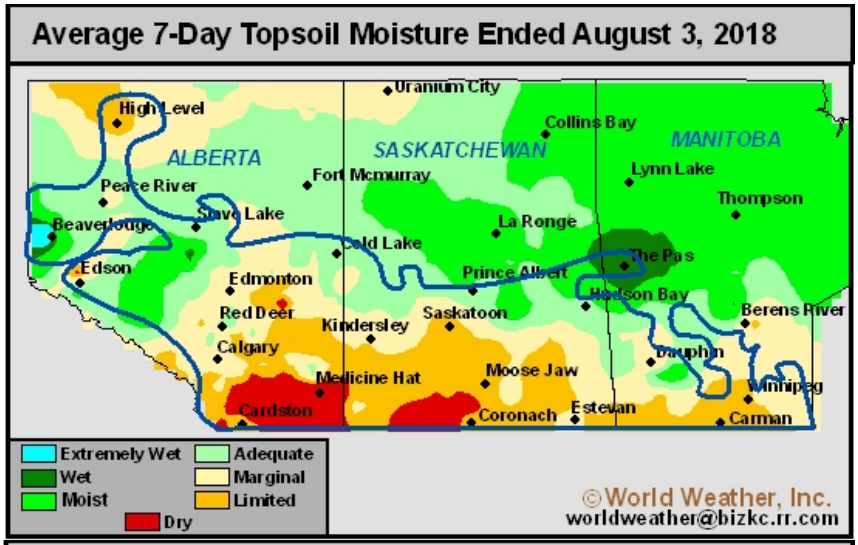
tends to provide some shower activity, but it tends to keep temperatures warmer biased and rainfall below average. The poor soil moisture situation in the central and southern Prairies is making this below average precipitation bias a more serious phenomenon because there is limited to no subsoil moisture for crops to rely upon when dryness prevails. Rainfall has been so poorly distributed in recent weeks that soil moisture has been depleted in many areas and below average precipitation and slightly warmer biased temperatures are not going to provide any help to the situation. The earliest than a change can evolve will be when seasonal cooling begins in September.

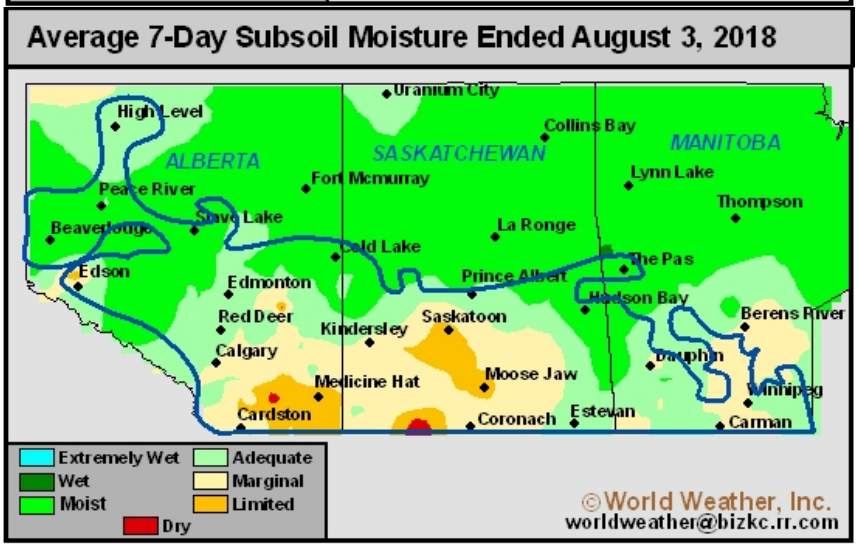
Until September arrives, conditions in the Prairies are expected to remain mostly unchanged. The driest areas in the Prairies of late will be the same areas to experience the driest conditions in the Balance of August. Crop stress and production cuts have already been serious in parts of the central and south and weather in August will not make matters worse for the driest areas, but there will be an expansion of the driest condition.

Some of the crops that have managed to get along on restricted rainfall in recent weeks will find that process becoming more and more difficult as time moves along because of poorly timed rainfall of limited significance and warm temperatures.

Some producers have already lost much of the their crop and whether it rains or not in the next few weeks is not much of an issue, but for areas where crops are just hanging in there by a thread the need for rain is tremendous.

All of the dryness is not just a worry for 2018 production, but concern remains over soil moisture and water supply for the spring of 2019. Replenishment will be extremely important for the most seriously dry areas in Saskatchewan and southern Alberta. El Nino events are not very kind in bringing winter precipitation of significance to the Prairies and it looks as though El Nino is going to evolve later this year. That places greater pressure on autumn precipitation so that at least some improved soil moisture is present before winter arrives and locks moisture out of the fields.





Prior to the past couple of weeks soil moisture was still rated favorably in many areas in far western, northern and some eastern Prairies locations. However, net drying is now impacting a larger part of eastern Alberta and reaches a little farther into northern Saskatchewan and seems to be expanding into southern Manitoba. Soil moisture is still favorable in western Alberta and some northern parts of the province, as well. far northern Saskatchewan. Soil conditions are also mostly favorable eastern Saskatchewan and western Manitoba where production potentials are more favorable than areas to the west.

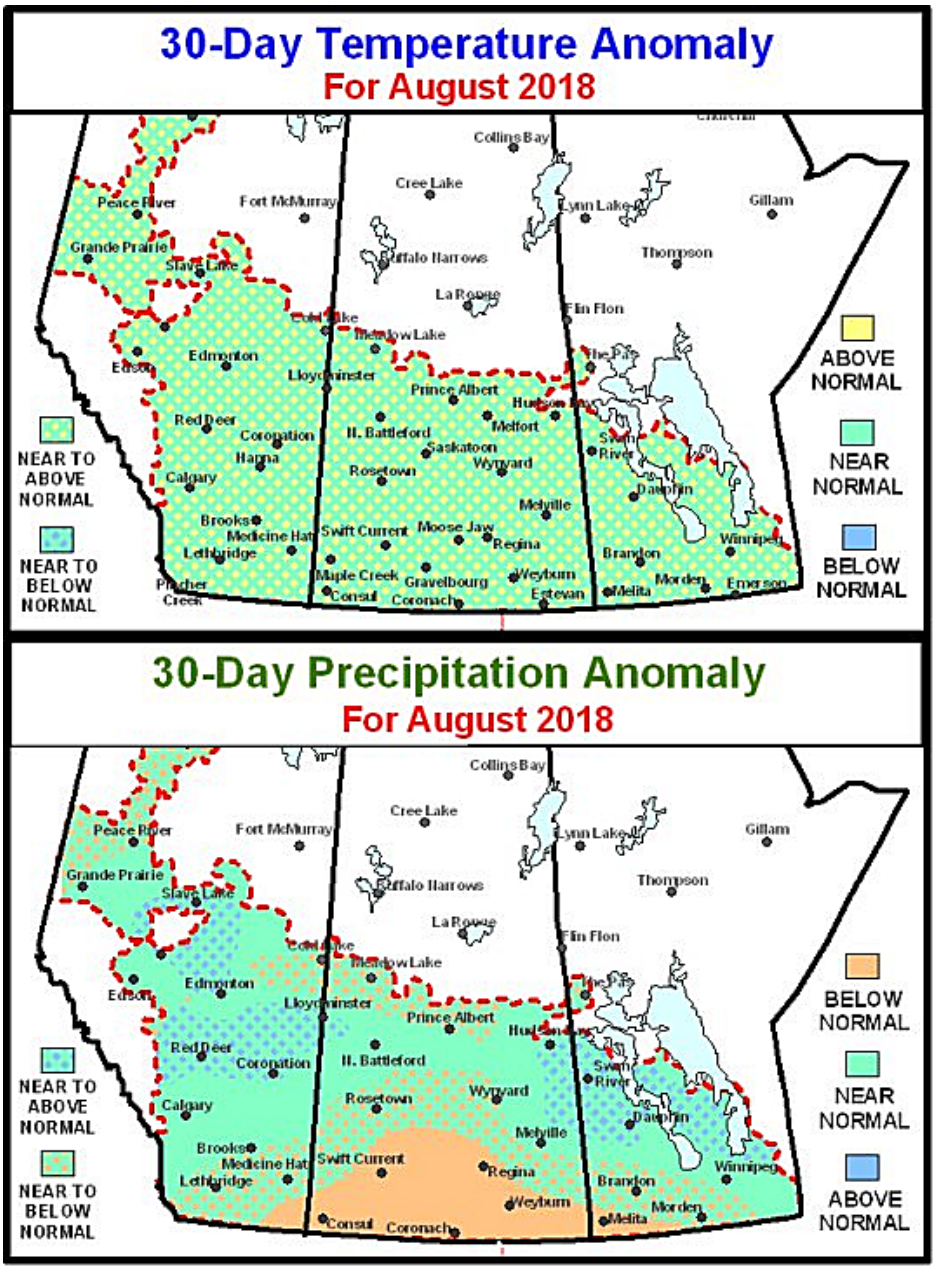
However, even those areas that still have favorable soil moisture today could be notably drier by the end of this month. And determining the extensiveness of dryness will be made by the high pressure ridge as it continues to wander around over central and western parts of North America.

The odds are high that little change in drought status will occur in those areas suffering from it—at least not through early September and other areas may trend drier in the next few weeks.

Aug. Outlook Unchanged, Despite Advertised Storms

Inconsistency in the computer weather forecast model data this week has left big question marks over Canada's Prairies regarding mid-month rainfall potentials. At the time of this writing some computer forecast models were attempting to shift a high pressure ridge out of western North America during this coming week and into the eastern part of the United States near mid-month. The amplitude of the ridge was very impressive and so was the upstream storm system that comes into the western Prairies from the U.S. Pacific Northwest and Montana. There are actually two storm systems advertised to move through the region described and with the intensity of the eastern U.S. ridge being what it is there would be a better chance for generalized rainfall of significance in the western drought areas.

However, World Weather, Inc. believes this advertised feature has many flaws in it. First the ridge of high pressure in the eastern United States in the second weekend of August is much too intense and so is a second ridge of high pressure advertised over the eastern half of North America August 13-17. The two storms that are advertised in the western parts of North America are very impressive, but also exaggerated.

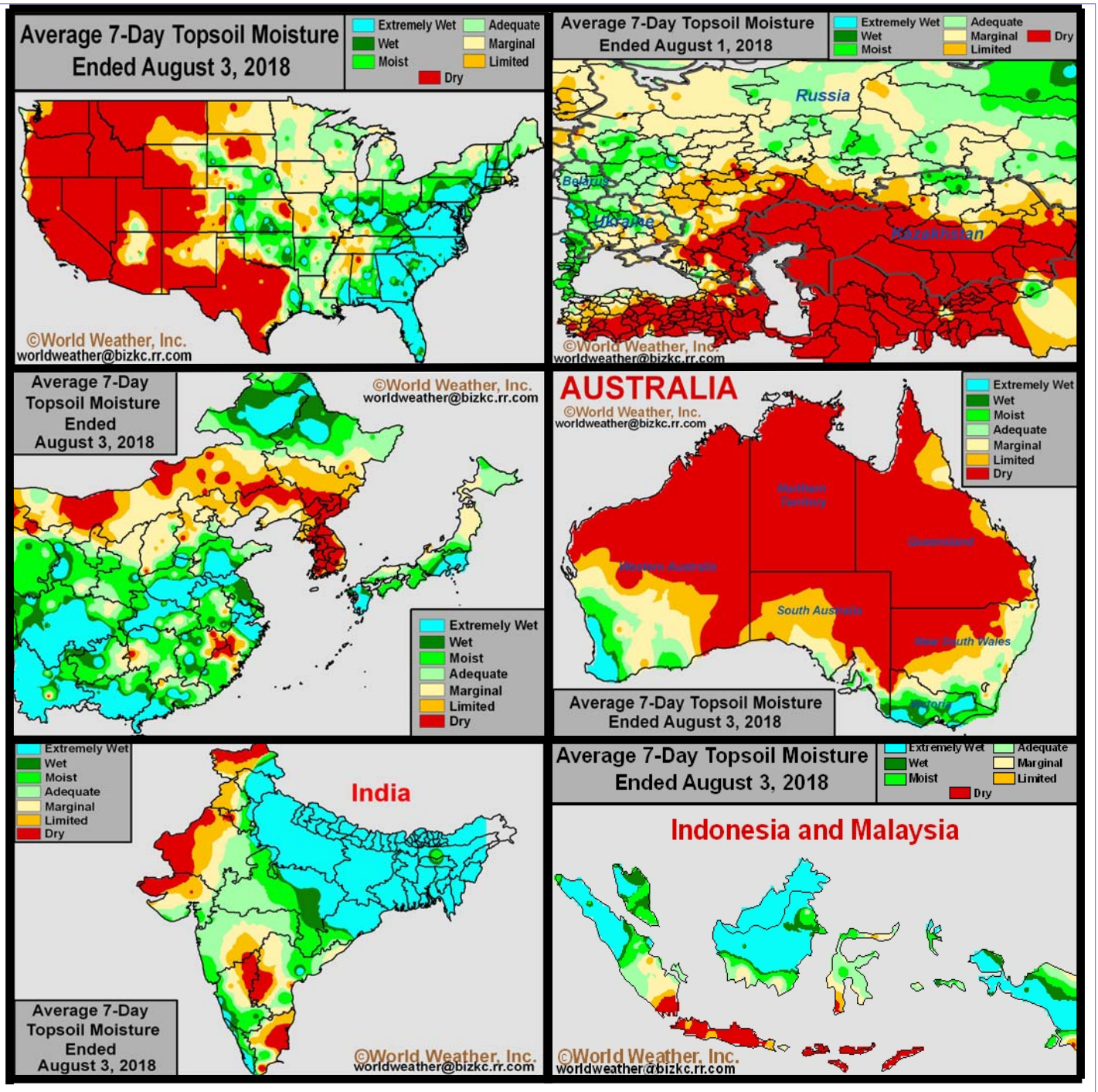


Even though these two advertised storm systems are very impressive along with the eastern North America ridge of high pressure, World Weather, Inc. believes it will be quite difficult to achieve the kind of storm systems advertised to verify. There is likely to be a better chance for rain in the Prairies during the middle part of this month and that might help bring a little easement to the region's drought, but a significant drought easing storm seems a little doubtful.

Our Trend Model suggests the mean ridge position for the month of August will run from Texas to Saskatchewan and that is not far enough to the east to allow a significant amount of rain to reach into the drought region. Without a doubt, there is potential that a high pressure ridge will drift away from the western Prairies for a short period of time near mid-month, but it is unlikely to shift east through all of North America and it is unlikely to be as strong as suggested. For that reason there is likely to be some mid-month scattered showers and thunderstorms in the Prairies and then a return of drier and warmer biased conditions after a short term bout of relief from the driest conditions.

If we are correct, August weather will look much like that of July with some rain expected in many areas, but ongoing restricted amounts from central Saskatchewan into southern Alberta, southern Saskatchewan and southern Manitoba. We do believe that some expansion of dryness to the east into Manitoba is probable in August while most other areas will see weather similar to that of July.

Selected Weather Images From Around The World



Western Europe continues to suffer from persistent below average rainfall. Many areas in the North Sea region have reported below average spring and summer crop yields due to below average rainfall and warm weather prevailing since the summer season began. Relief is expected to come over the next two weeks. Dryness from southern Russia into Ukraine is expected to increase once again over the next couple of weeks after some temporary relief occurred in mid-July. Drier weather in western Russia recently has helped to firm the topsoil for better winter crop harvesting and improved 2019 winter crop planting conditions. Eastern Australia is another area enduring drought. Its recent rainfall has been minimal in Queensland and northern New South Wales where a reduction in wheat and canola planting has occurred. Dryness in Australia is not likely to abate anytime soon. India's soil has been drying down over the past week and will continue doing the same for one more week before monsoonal rain resumes. The returning rainfall will be very important. Indonesia experienced some improved rainfall recently, but more rain is needed.

El Nino Evolution Unlikely To Begin In August

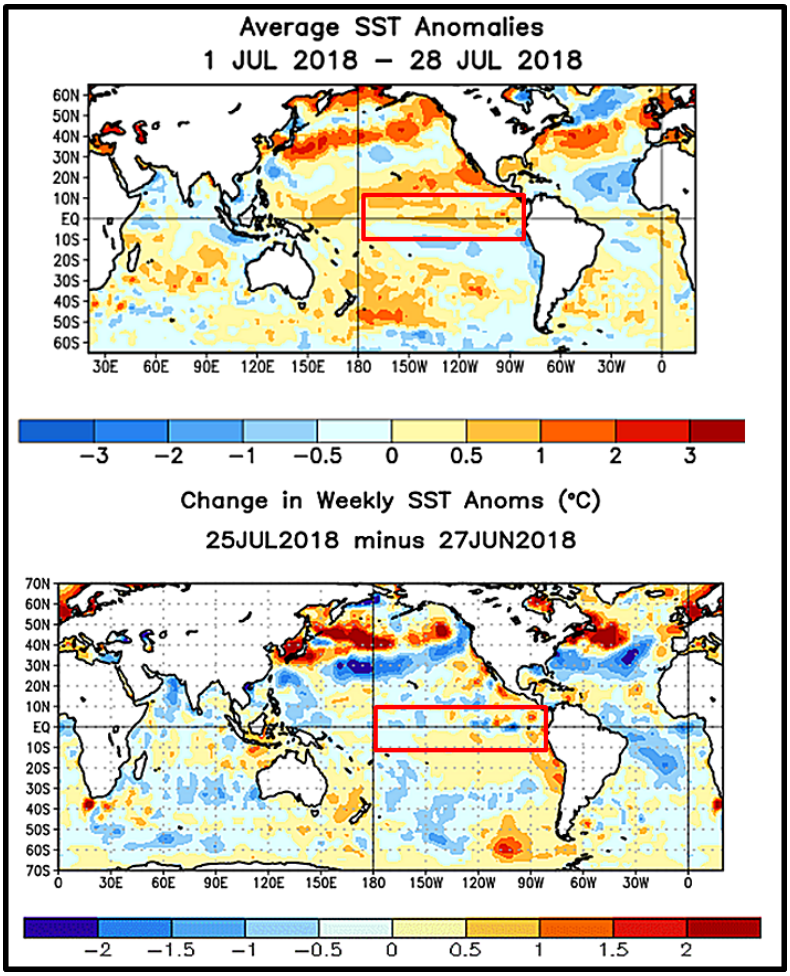
The latest data from the equatorial Pacific Ocean continues to suggest no El Nino evolution is under way and none is expected during the month of August. Dry biased weather that is currently impacting eastern Australia, portions of Indonesia, Malaysia and India is associated with a general region of poor vertical velocity in the atmosphere. That means there is less rising air over these regions than usual which is suppressing convection and rainfall. Many official ENSO forecasting groups are still looking for El Nino development to begin late in this third calendar quarter and on into the fourth quarter of this calendar year, but conditions today and those expected in August will continue to promote neutral ENSO conditions.

The latest ocean surface data in the eastern equatorial Pacific Ocean shows some warmer than usual water in the region, but the anomaly is not nearly great enough to signal El Nino development. The warm weather is certainly of interest, but mostly because there is a huge volume of warm water below the surface of the ocean that is poised to lift upward to the surface of the ocean in time. Once the warmer water from below the surface of the ocean reaches the surface there will be a good chance that El Nino development will begin.

Changes in surface ocean temperature anomalies in the past few weeks has been mostly insignificant. The image attached to this page shows that ocean surface temperatures have cooled in a few areas and warmed in others and the net result has been non-directional suggesting neutral ENSO conditions are prevailing and may continue for a while.

Subsurface ocean temperatures have changed quite a bit in the eastern equatorial Pacific Ocean in recent weeks. The changes have actually occurred in such a manner to reduce the potential for El Nino development to begin in this month and if the situation prevails much longer early September will also be free of any El Nino development.

When El Nino begins to evolve will have much to say about the finish of Northern Hemisphere crop development and about the fate of eastern Australia, Indonesia, Malaysia, India and other southeastern Asian countries' late season rainfall.



Since mid-July, subsurface ocean temperatures have turned cooler in areas immediately east of the International Dateline to around 135 west longitude. The cooling has reduced subsurface temperature anomalies that had been well above average to near and just slightly above average. Another area of cooling has occurred off the west coast of South America where temperatures had been notably warmer than usual in June and early July, but are now mixed with a pool of cooler than usual water near another pool of slightly warmer than usual water. The reduction of warm subsurface ocean water limits the amount of warming that is possible at the surface if the water continues to be lifted upward by an upwelling ocean current. This change in subsurface ocean temperature anomalies may continue for the next couple of weeks. The loss of warm water and additional cooling expected temporarily reduces the potential for El Nino development over the next few weeks.

Not having El Nino in August will help raise the potential for improved rainfall in India, Southeast Asia and eastern Australia during the month and possibly in early September as well. However, please keep in mind that rainfall in these areas is not totally controlled by ENSO and not having El Nino around is no guarantee that below average precipitation will abate from these areas.

The negative phase of Madden Julian Oscillation (MJO) has been responsible for much of the suppressed convection and limited rain-

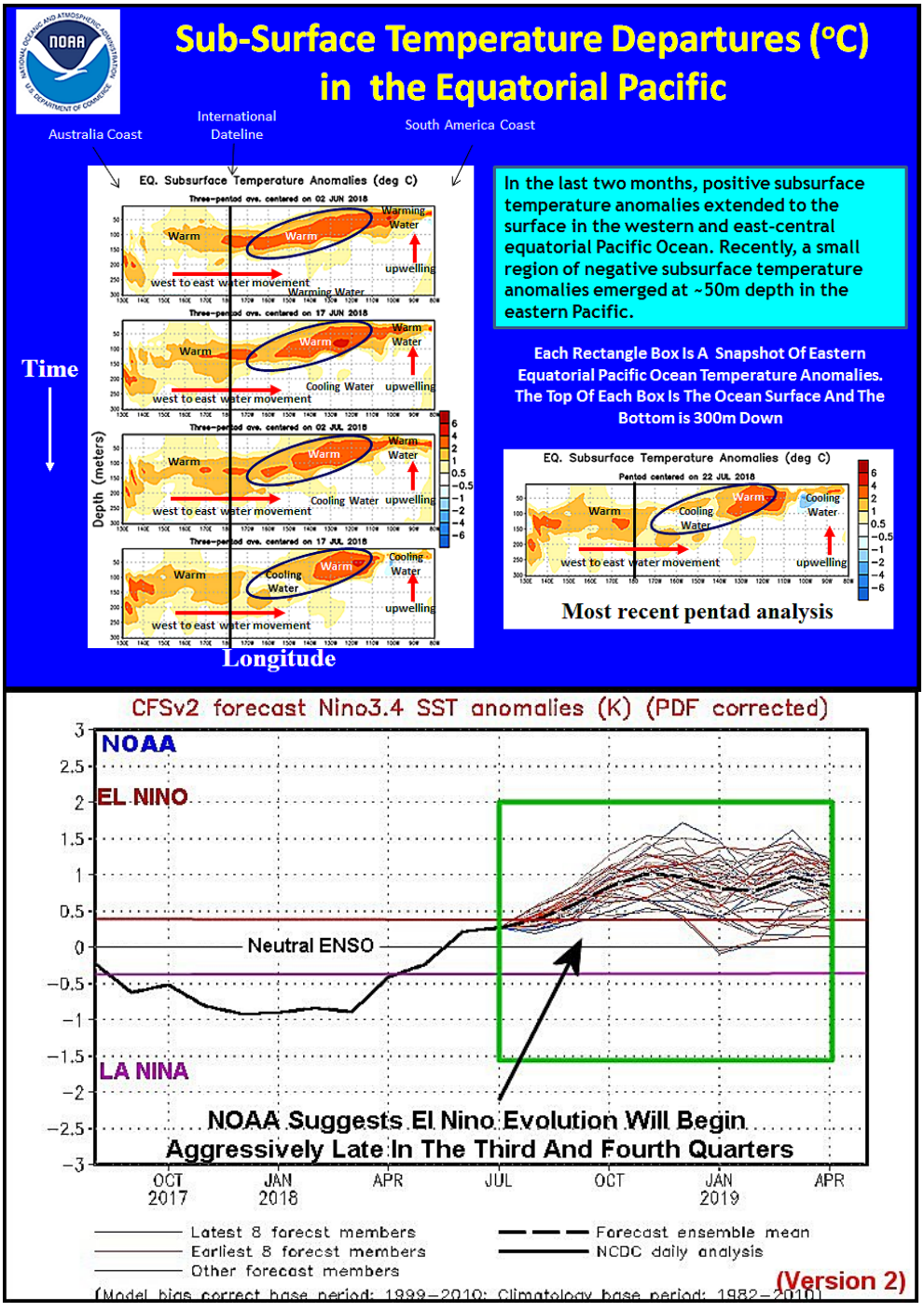
El Nino Unlikely To Begin in August (continued from Page 5)

fall in the past couple of weeks from India into Indonesia and the Philippines. It was hoped that as the MJO event moved into the eastern Pacific Ocean that a new period of greater rain might develop over India and Southeast Asia. However, the coming week of weather is expected to remain as dry as it has been in western and southern India, eastern Australia, Indonesia and from the mainland areas of Southeast Asia into the Philippines.

August 9-15 will be the first period of possible greater rainfall for many of the above-mentioned areas. Rain should increase during the period, although it is not likely to rise above average. The increase in rainfall should bring some temporary relief to dryness in parts of India, Indonesia, Malaysia and the Philippines.

Many producers in India and Southeast Asia are hoping for a significant improvement in rainfall this month and in September to bolster topsoil moisture after recent weeks of suppressed rain.

Many areas are drier biased in Indonesia, Malaysia, the Philippines and parts of mainland Southeast Asia.



These areas along with eastern Australia are normally the first areas in the world to feel the effects of developing El Nino and that heightens the level of concern about weather and ENSO conditions in September.

The U.S. National Oceanic and Atmospheric Administration's (NOAA's) ENSO forecast model has suggested El Nino will begin to evolve in September and will become most significant from October through most of the first quarter in 2019. If El Nino begins developing early enough in September it could interfere with the normal withdrawal of the summer monsoon in India and curb rainfall potentials for eastern Australia September through December. The trend might also reduce rainfall once again in Indonesia, Malaysia and the Philippines.

These potential changes heighten the importance of improved rainfall in August. The first week to ten days of the month does not look to be any different than late July weather leaving many of the areas noted above with below average precipitation. That reduces the amount of time the atmosphere has to generate greater rainfall before El Nino starts suppressing rainfall once again. The concern is that with dryness already

El Nino Unlikely To Begin in August (continued from Page 6)

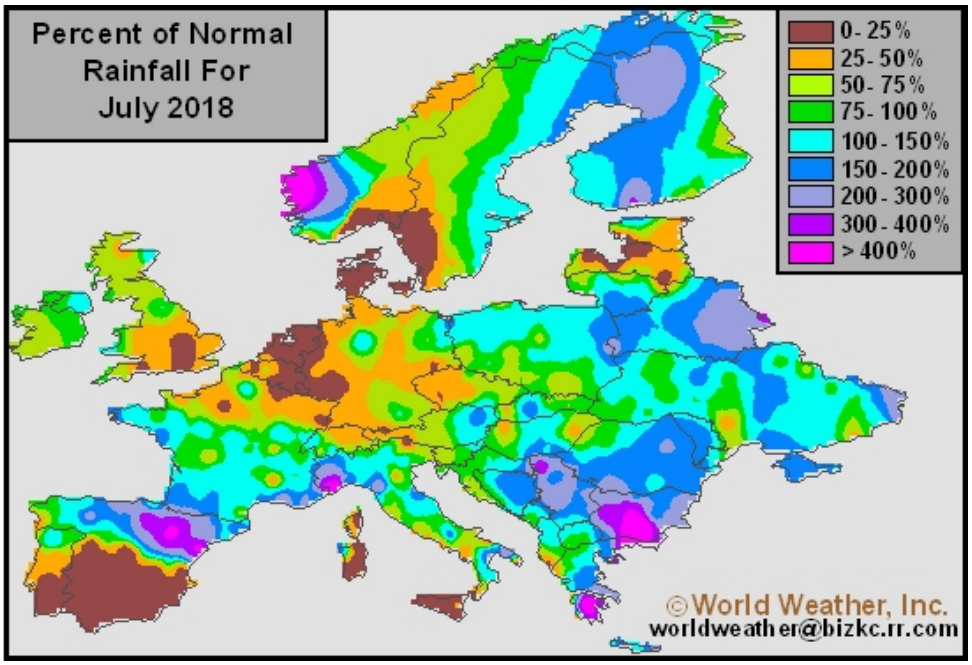
prevalent in some of these southern Asian locations and eastern Australia the impact of El Nino could be worse than usual if rainfall is reduced without any period of improved rainfall occurring first.

The coming El Nino may last a while with some forecast models suggesting it will prevail into the second quarter of 2019. World Weather, Inc. has been speculating in recent weeks that many forecast models and forecasting agencies may be bringing El Nino on a little too quickly. Studies show that El Nino events that occur at the time of solar minimums usually do not become significant events until after the long term mean in sunspot numbers has reached its minimum. If that is the case El Nino may not get started in September, but could evolve in October or November. A one month delay could save many crop areas in southern Asia and eastern Australia from another month of dryness as long as other atmospheric conditions are supportive of greater rainfall.

In the meantime, the coming El Nino event is expected to bring favorable weather to both Argentina and Brazil in the 2018-19 growing season suggesting high yields from both nations.

Western Europe Moisture Shortages Persisting

Drought in Europe continues to deepen and expand impacting many areas from France and the United Kingdom into Scandinavia, including Germany and now building into western Poland. Some of the first significant rain seen in weeks occurred during the weekend, but it proved to be a little too erratic and often light for a serious change in drought status. Production cuts have occurred and will continue to occur through at least the next week. Portions of Eastern Europe also dried during the past week, although most crops are in better shape than those of northwestern Europe.



Some much needed rain fell in western Europe during the past week. The greatest amounts occurred in the United Kingdom where the greatest cooling also occurred. Rain totals through the seven-day period ending dawn Tuesday varied from 0.75 to 1.42 inches. A few rain totals of 0.30 to 1.50 inches and locally more than 2.00 inches also occurred erratically in far northern France and in central portions of Sweden and eastern Norway. A couple of locations in northern Germany reported more than 1.00 inch of rain while most other areas from France through the bulk of Germany to western Poland received less than 0.50 inch.

Rain fell more significantly in southeastern Europe from the Balkan countries into central and western Ukraine where rain totals of 0.50 to 2.00 inches occurred with local totals reaching up to 4.27 inches in central Romania. The rain in southeastern Europe was more than sufficient to support soybeans, corn, sunseed and sorghum produced in the region along with some other crops. Rain totals elsewhere in Europe varied from 0.05 to 0.40 inch with a few totals reaching 1.00 inch.

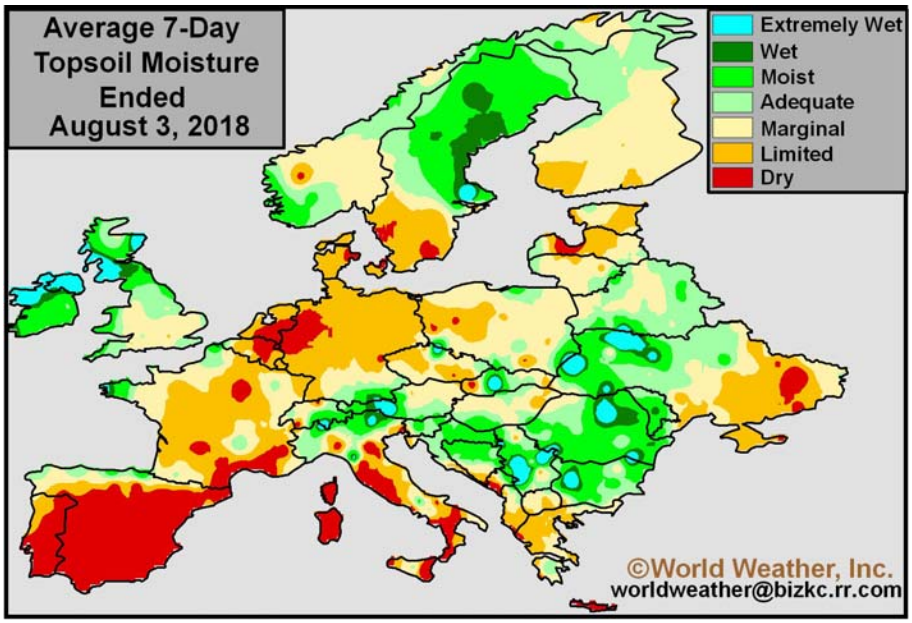
Despite the fact that rain was recorded in many areas across the European Continent, net drying resulted because of warm to hot temperatures. Most of the rain was not enough to counter evaporation resulting from daily high temperatures in the 80s and lower to a few middle 90s Fahrenheit. Dryness actually expanded during the week with short to very short topsoil moisture prevailing from France through most of Germany to southern Sweden. Marginally adequate to short topsoil moisture was present in other areas in the North Sea region and from Poland south into Hungary.

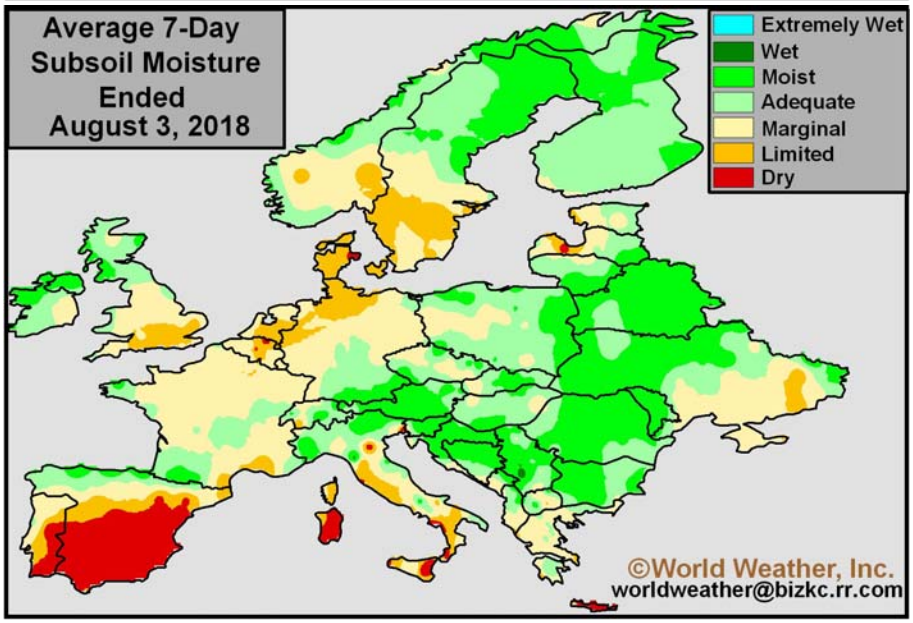
West Europe Moisture Shortages Persist (from page 7)

Dryness was also widespread in Spain, Portugal and in much of Italy, but those areas are normally dry at this time of year.

Subsoil moisture was also rated short to very short in most of northwestern Europe from northern France and southern parts of the U.K. to Scandinavia. However, areas from Poland to Hungary have better subsoil and crop stress was kept to a minimum in that region.

The coming week of weather does not offer much change for the continent. Some shower activity is expected in the drier biased areas in the northwest, but temperatures will continue much too warm for any lasting increase in topsoil moisture or change in crop conditions to take place. The environment will continue stressful for many crops from France into Scandinavia, including most of Germany.





The most significant rain will fall in Germany and portions of northeastern and central France with a trace to 0.60 inch expected and a few local totals to 1.00 inch. Other portions of the United Kingdom, France, and the Iberian Peninsula will receive little to no rain. Most of the precipitation that falls will be lost to evaporation within a very short period of its occurrence. Below average precipitation will continue in western Europe August 8-14, although there will be some increase in shower activity relative to this first week of the outlook.

Temperatures August 8-14 will also be less hot than those of this first week of the outlook.

Daytime highs through Tuesday will be in the 80s and 90s with portions of the United Kingdom and northern France only warming to the 70s.

Much of Eastern Europe will see a mix of light rain and sunshine during the coming week. Portions of the Balkan Countries and Baltic States will receive 0.50 to 2.00 inches of rain and locally greater amounts by next Tuesday morning. Net drying will occur in many areas. A drying tendency will continue for Poland during the coming week where some increased crop stress is possible. Most other countries in eastern Europe have sufficient subsoil moisture to carry on normal crop development despite a net loss in topsoil moisture. Timely rain will be needed later in August to restore soil moisture to adequate levels.