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The Canadian Agriculture Weather Prognosticator

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World Weather At A Glance

- Eastern Australia will be closely monitored for too much moisture during the wheat, barley and canola harvest later this month and next
- India's winter crop planting season should go well with some needed moisture expected to support reproduction in January and February
- China's winter crops are expected to perform well this year, but it may be a cold winter
- Argentina's dryness this spring is not nearly as severe as that of last year; timely rain will continue
- Brazil spring planting has advanced very well, but La Nina should reduce rainfall in the south late this month into January threatening some yield
- U.S. hard red winter wheat areas in the west -central and southwestern Plains will not have abundant moisture.
- Russia's wheat is adequately established

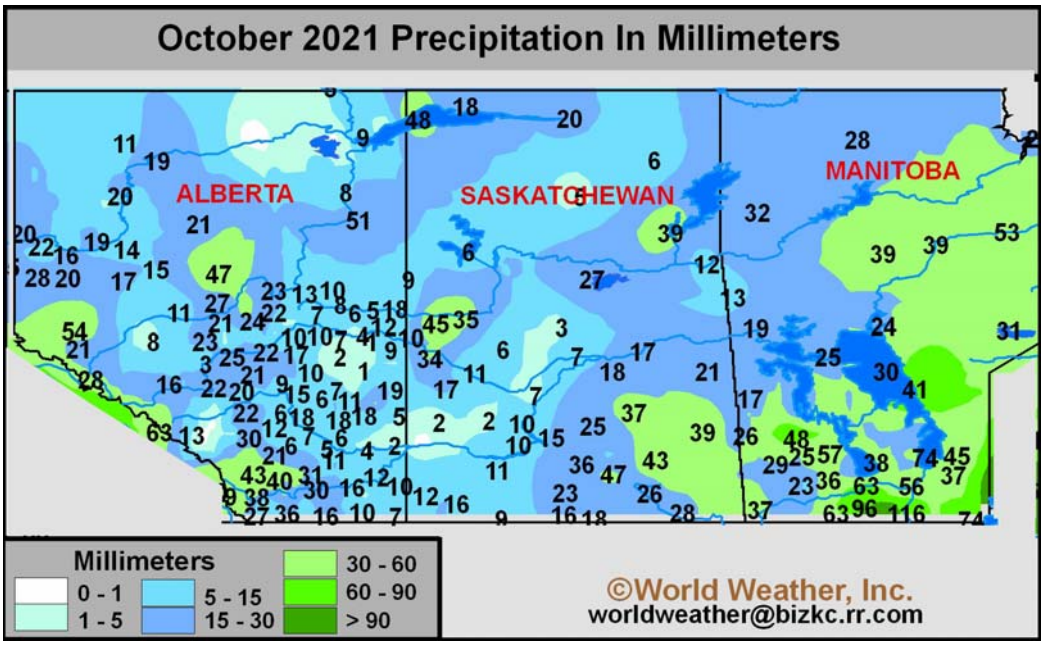
Is Drought Ending Or Not?

October proved to be a good month of weather for the Prairies. Not all would agree with that statement, but what rain occurred during the month was a more unsettled weather pattern that brought significant relief to drought in a part of the Prairies.

Droughts rarely end in a single swoop of precipitation. They are usually whittled down by a succession of weather disturbances that gradually break the dry mechanism down in the atmosphere. The multiple precipitation events that occurred in October were extremely important for helping to get some moisture back into the topsoil prior to winter frost getting into the ground.

Much of the precipitation that fell during October occurred as the atmosphere began to transition from summer to autumn. Drought has been extremely broad based in western and north-central parts of North America this year and getting moisture to flow into Canada from either the Gulf of Mexico or the Pacific Ocean has been extremely tough and for a little while during October 9-14 the Gulf of Mexico opened up as a moisture source and brought much needed precipitation to the eastern Prairies. Since then significant storminess has been much more localized and the same problem with getting significant moisture into the Prairies and neighboring northern U.S. Plains has resumed. Because of this resumption in dryness confidence is not good that additional soakings of the soil can or will occur before winter frost gets into the ground.

With that said, November promises one more period of transitioning weather in which a warm temperature bias and a periodic southwesterly upper air wind flow will bring "opportunities" for rain and snow. However,



Is Drought Ending Or Not? (continued from page 1)

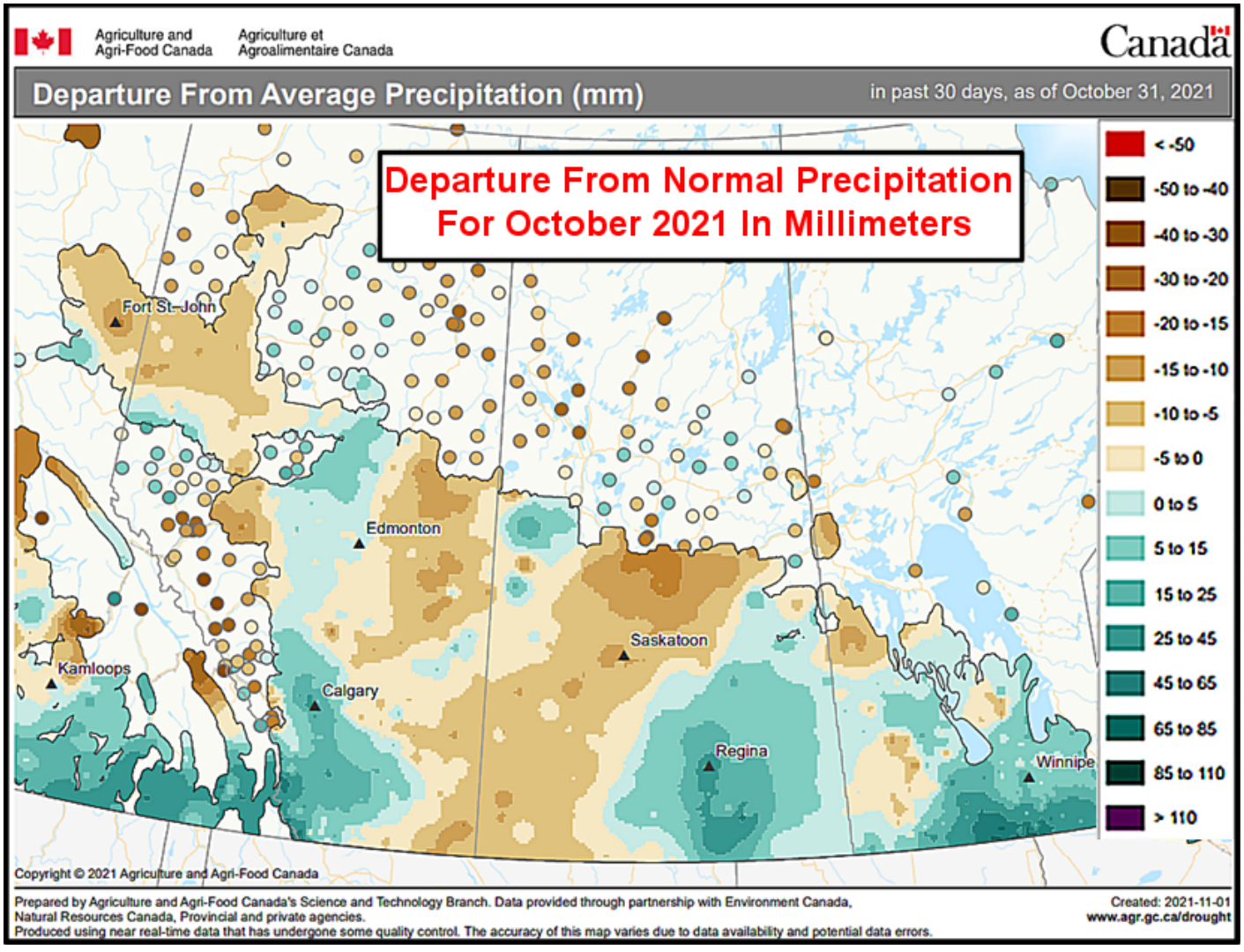
unlike October this bout of transitioning weather will be led by La Nina and the onset of winter resulting in a drier northwesterly wind flow pattern aloft evolving and prevailing by the end of November. The evolving northwesterly wind flow pattern aloft will then dominate the winter making it difficult for high volume precipitation events to occur across the Prairies.

Classic La Nina winters do create cold-biased temperatures and bring disturbances through the Prairies from northwest to southeast. The pattern usually results in frequent snow events along the Alberta Rocky Mountain front range and into southwestern Saskatchewan. This pattern should bring some significant snowfall to southwestern and far southern Alberta and far southwestern Saskatchewan. However, areas to the east and north will only experience frequent bouts of very light snow of low moisture content resulting in a gradual accumulation of snow , but water content will be low.

This winter will not be nearly as warm and dry as that of last year. The temperature bias should be cold especially in December and January with some western parts of the region warming up in late winter. Because of the colder bias in temperatures this year, snow will accumulate and stick around during much of the winter. Unfortunately, frost will get into the ground after November and it will be difficult to get a notable soil moisture boost to occur prior to spring since the frost will act as a barrier to for melting snow to get deep into the ground.

The best news is that another period of transitioning weather is expected in the spring that will raise potential for much needed moisture across the Prairies near and shortly after the spring thaw. That should translate into a new opportunity for topsoil moisture improvements prior to the start of the growing season.

There is evidence that the eastern Prairies could trend a little dry and warm again in summer 2022 which puts much pressure on the spring transitioning period of weather in which moisture can and should get into the soil.



Nov. Precipitation May Boost East Prairie Moisture

November weather is expected to be a mixed bag. Alternating periods of warm and mild to cool conditions are expected, but at the very end of the month a more notable surge of cold will be evolving in northwestern parts of the region in northern and western Alberta. That change to cooler weather will then prevail in December and possibly January with a few brief breaks.

The conflict in air masses during November will offer some opportunities for periodic precipitation. The greatest volume of moisture is expected in southeastern parts of the Prairies similar to that of mid-October. Other areas in the Prairies will likely see periodic precipitation during November, but only a few areas will get enough moisture to seriously change topsoil conditions. There will also be a few more bouts of snow during November and that will help to slow down the temperature swings making it harder for more significant storms to impact the region.

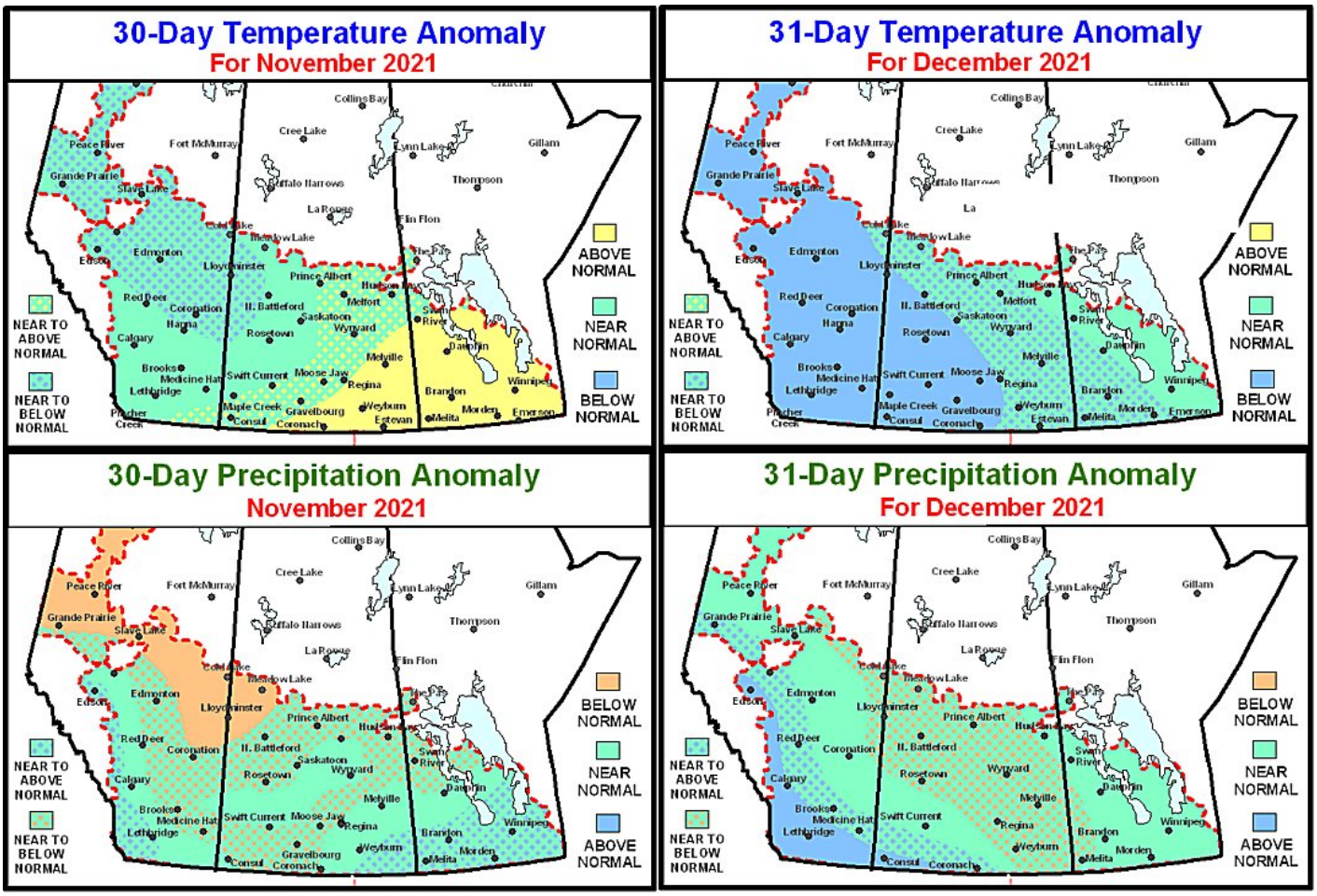
November temperatures will be warmest relative to normal in the eastern Prairies, but there will be some widely swinging temperatures from early to late month that will be associated with larger storm systems.

The one region in the Prairies that should not see much precipitation during November will be the Peace River region and areas east across northern Alberta to the far northwestern corner of Saskatchewan.

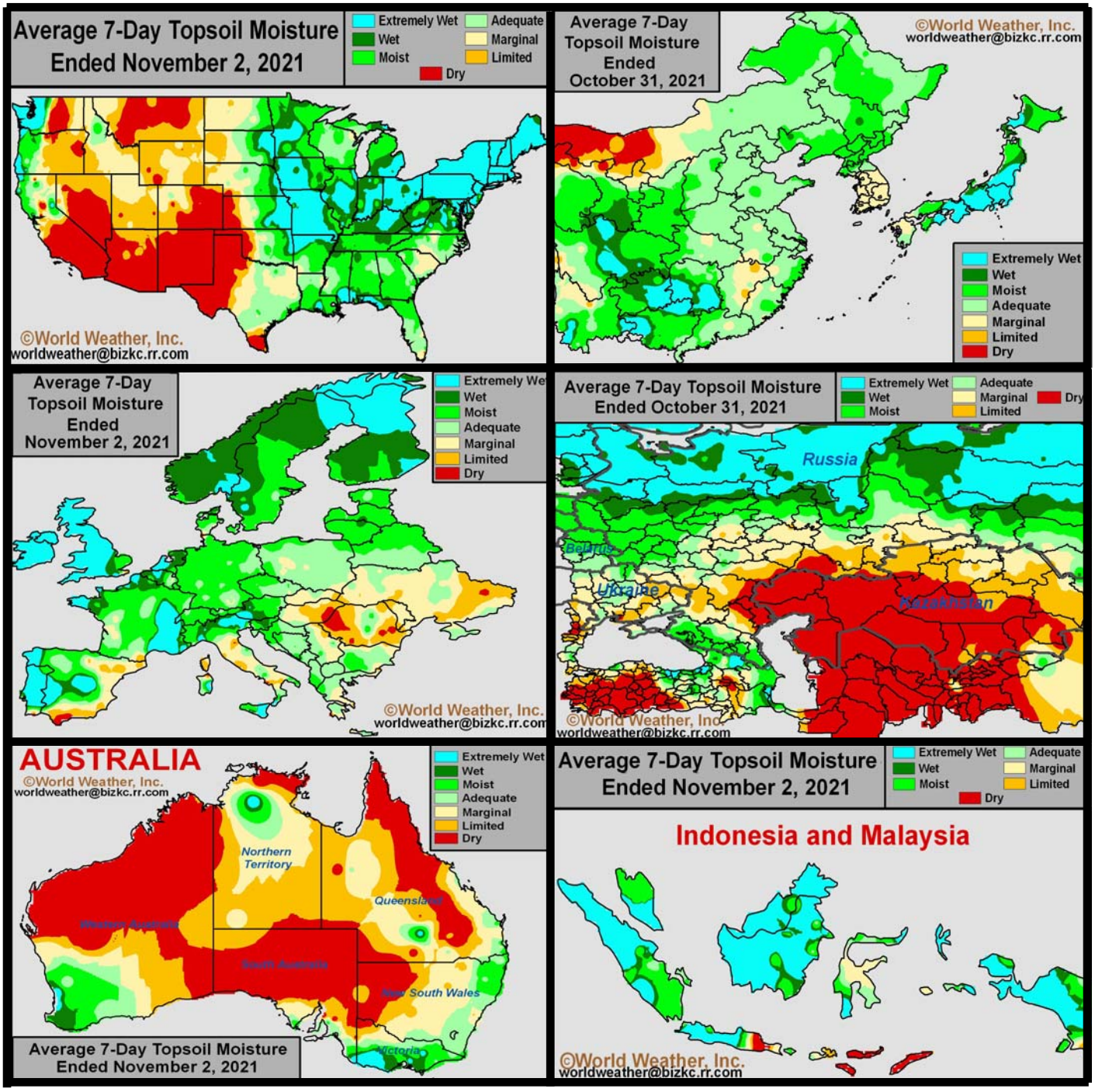
December will be dominated by a northwesterly flow of air aloft brought on by La Nina and the 18-year cycle. However, cooling ocean water off the west coast of North America will allow the jet stream in North America to become split keeping the Prairies mostly in a northwesterly flow pattern aloft while the central and southern United States see a more west to southwesterly flow pattern. This split in the jet stream will limit the potential for significant moisture to reach the Prairies.

This year's serious drought also has the air quite dry across the central Prairies and that phenomenon should prevail all winter resulting in a few impressive bouts of extremely cold air. The cold surges are likely to be more anomalous in the central United States than in the Prairies, but it will still get cold.

Central parts of the Prairies will receive the lightest amounts of snowfall this winter. Accumulations should be around during much of the winter, but the water content of the snow will be below average.



Selected Weather Images From Around The World



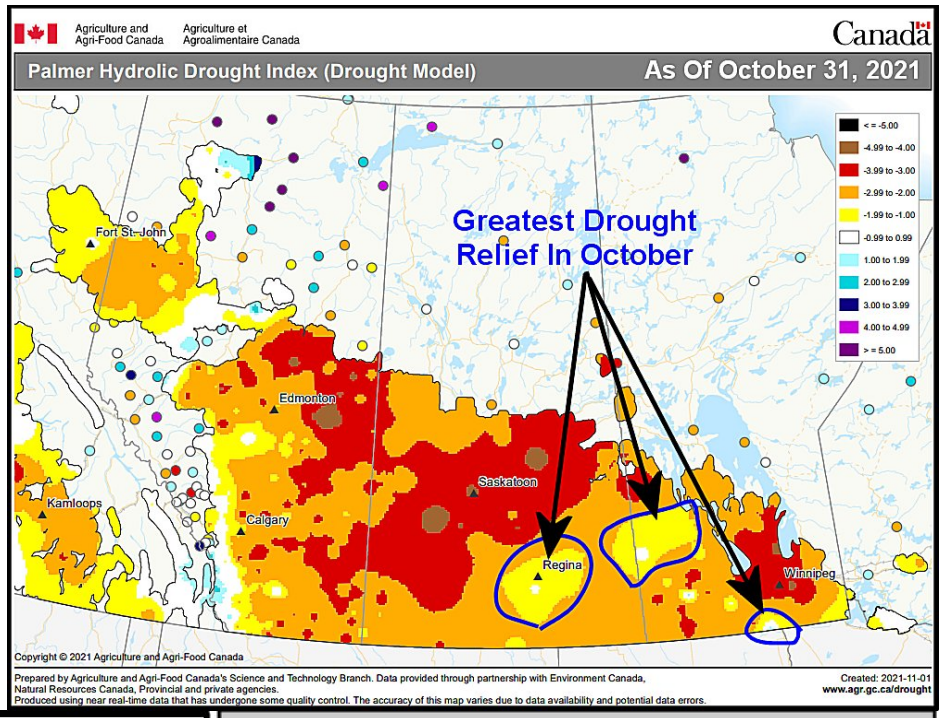
Despite drought in western and north-central parts of the United States, the Midwest continues adequately to abundantly wet causing some harvest delay in this most recent past week. Drying is expected for a while, but more rain will fall late in the second week of November. China's weather has finally improved enough for good harvest progress and winter crop planting. The nation was a little late in getting to this year's harvest because of too much September and October rainfall. Winter crop prospects are still looking good in China and Europe. Europe weather has been well mixed recently, but pockets of dryness remain in Romania, Ukraine and Hungary. Winter planting is complete in Russia and Ukraine and crop establishment went well, although not ideally. A boost in moisture is still needed in Russia's Volga Basin before bitter cold weather begins. Australia will see more frequent rain in the next two weeks which may slow wheat, barley and canola harvesting, but a quality decline is not very likely.

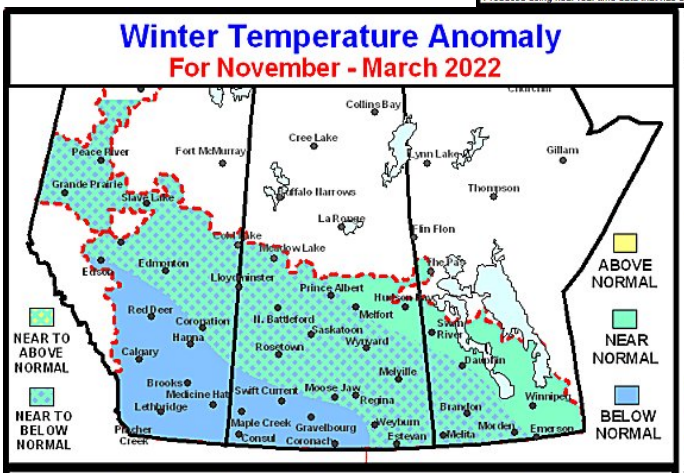
Drought Relief In Eastern Prairies; Central Areas Too Dry

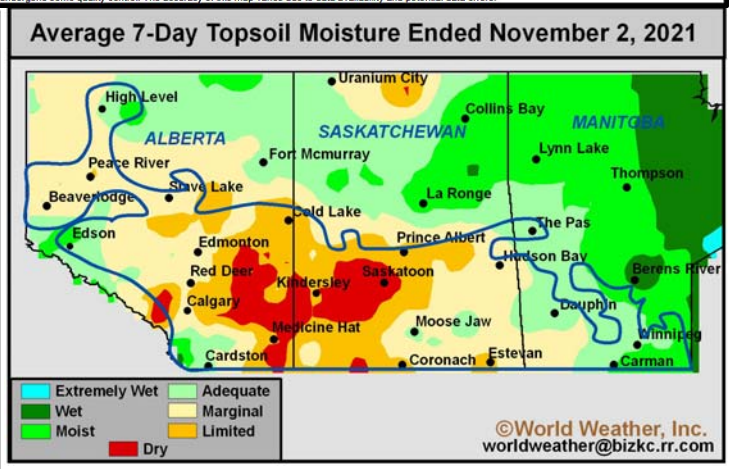
Enough rain fell in October to seriously ease drought in the Regina area as well as in a part of northwestern Manitoba and a few areas just over the border in east-central Saskatchewan. Several other areas in southeastern Manitoba also received enough rain to break drought conditions, but much of the Prairies are still solidly in a drought.

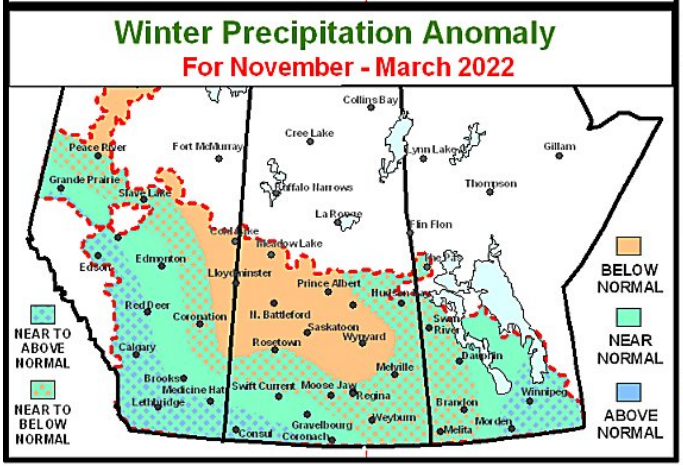
Winter is not expected to bring much relief to the central Prairies, but those areas could get a break from drought in the spring and more likely later in the summer next year.

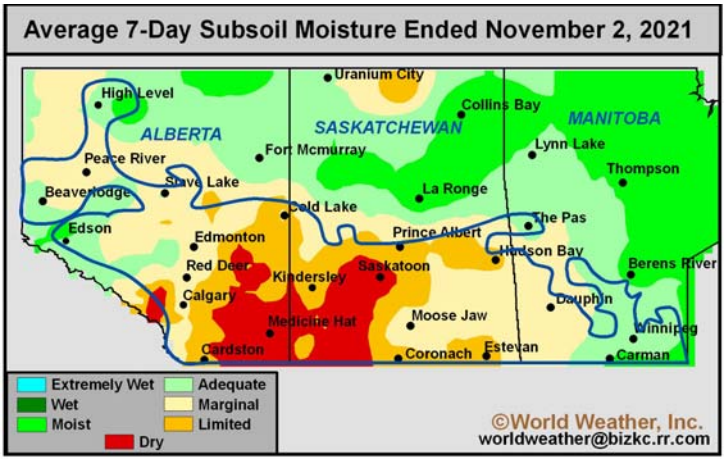
Despite the improvements in eastern parts of the Prairies there may still be another year of drought in North America. This time the dryness may be most significant from the U.S. Plains into the U.S. western Corn and Soybean Belt, but the dryness could extend north of the border into Manitoba and eastern Saskatchewan during the summer of 2022 while drought relief occurs farther to the west. That is the best first guess, but no forecast made for summer 2022 this far in advance is a for sure deal.











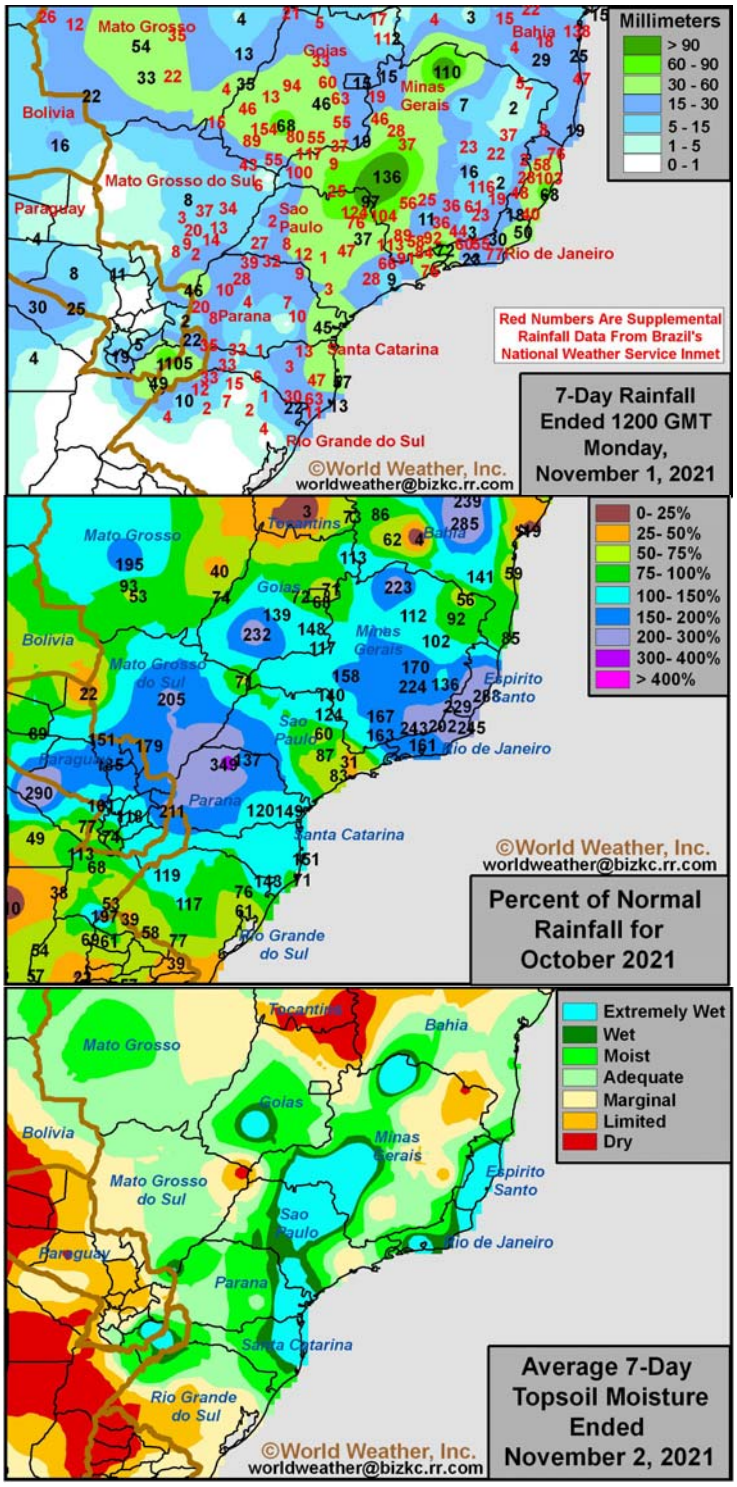
Brazil November Weather To Turn Drier South

October ended in Brazil with a good weekend of rain for much of the nation. However, there was a notable decline in rainfall during the last week of the month in western Mato Grosso do Sul, parts of Rio Grande do Sul and a few neighboring areas. These drier biases were welcome after earlier month rainfall in southern Brazil had been much greater than usual resulting in moisture surpluses that were causing some brief delays to spring fieldwork.

The lighter than usual rainfall tendency in southern Brazil will appear more often in November than in October and it may eventually lead to some drier biased topsoil conditions that if allowed to fester too long might stress summer crops later this growing season.

Rainfall during the past week was widespread in many areas, but it did lighten up in parts of Rio Grande do Sul, Parana, central Santa Catarina and in a few Sao Paulo locations. There was also little to no rain reported in western or northern Mato Grosso do Sul or in some of the neighboring areas in Paraguay. These drier tendencies were welcome since early to mid-October rainfall was a little too great and some fields were getting too wet causing a little delay in farming activity. The drier weather was well timed and took some of the excess moisture away so that planting could occur more aggressively.

Topsoil moisture in many of the previously wettest areas from Mato Grosso do Sul into Rio Grande do Sul, Santa Catarina and Parana was rated much more favorably today and that should translate into a more aggressive week of farming activity because of continued limited rainfall.



Rain was increasing during the past week in center west and northeastern parts of Brazil as well as northern portions of center south. These areas all needed greater rainfall and some of the region is still seasonably dry. More rain is needed in Tocantins, northern Goias, parts of Bahia, northern Minas Gerais and in a few Mato Grosso locations. However, it is very important to note that some of the northeastern grain and oilseed production areas of Brazil do not usually get abundant rainfall in October. Precipitation in the northeast usually increases in November and December which is why normal planting dates for some of that region do not usually begin until late in the fourth quarter.

Needless to say, October rainfall this year was sufficiently great enough to bolster soil moisture to induce good planting, germination and emergence conditions for corn, soybeans rice and cotton. Many of the coffee, citrus and sugarcane crops have experienced improved conditions as well, but drought earlier this year and the July freezes set back crop development raising some production worry for the current crop. The great start to the rainy season will help heal drought and freeze damaged crops quickly, but that will not necessarily return full production potentials.

October rainfall was near to above average in much of Brazil, but there were some exceptions in the north

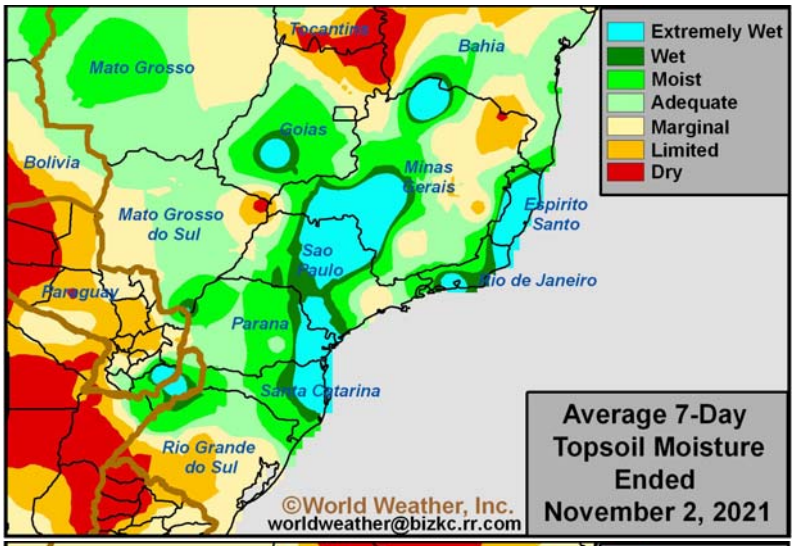
Brazil Weather To Turn Drier South (Continued From Page 6)

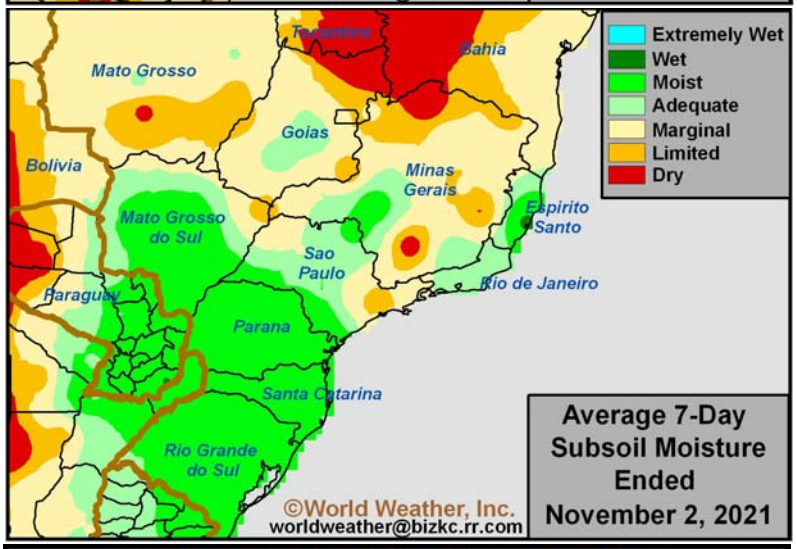
and near the port city of Sao Paulo. Southern rice areas of Rio Grande do Sul also reported 39-77% of normal rainfall and if that dryness prevails too long there could be some negative impact on unirrigated crops.

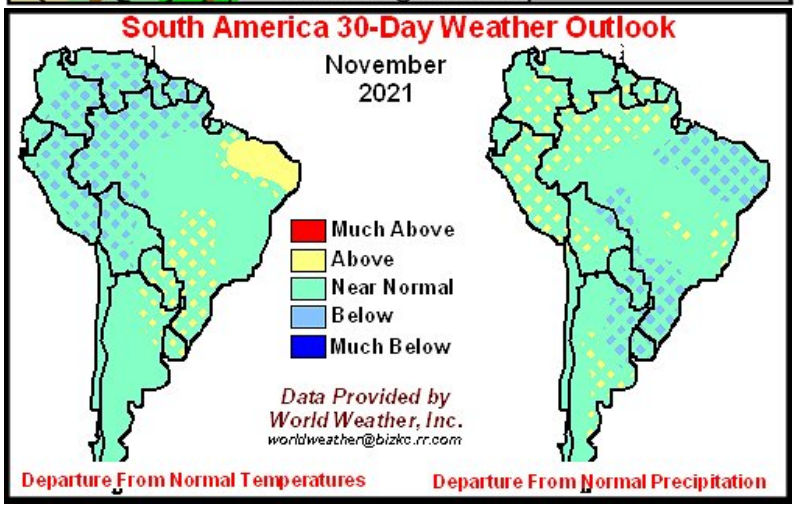
NOVEMBER WEATHER OUTLOOK

Brazil rainfall should be near to above average in northern portions of center south and a few northeastern crop areas during November. However, a large part of eastern Argentina, Uruguay, Paraguay, Bolivia and neighboring areas of southern Brazil will experience near to below average precipitation. There is a good chance that Uruguay, extreme eastern Argentina, far southern Paraguay and areas from Rio Grande do Sul into southwestern Parana will be more drier biased than other areas in the region. Temperatures are also expected to trend warmer in these drier areas and that will likely translate into a risk of greater drying later in November and during December.

The drying tendency in southern Brazil, Uruguay, southern Paraguay and extreme eastern Argentina will contrast from the greater than usual rainfall that is expected in the December through February period in a large part of center west, northern portions of center south and northeastern crop areas of Brazil. As a result of these trends, production in Brazil will be good except in the driest areas of the south where there may be some eventual yield reduction, but that is certainly not imminent.

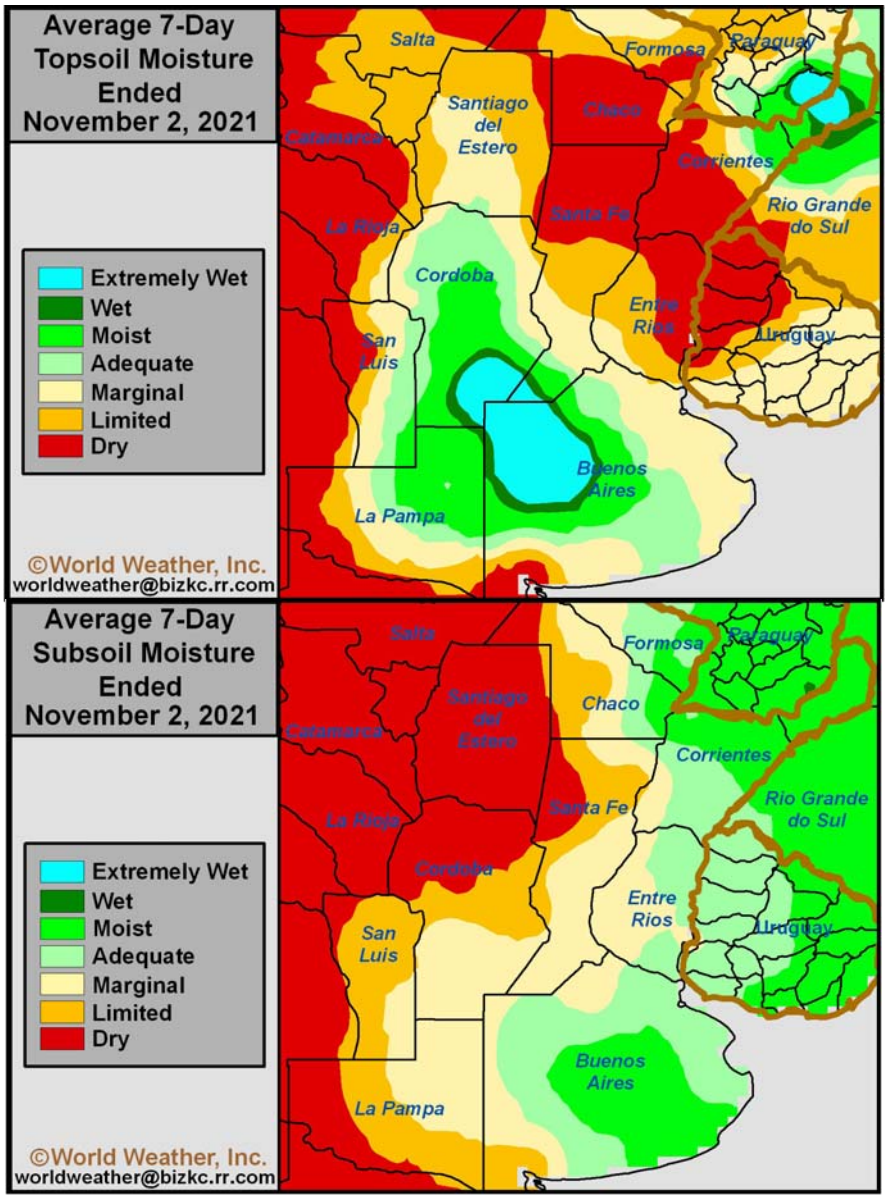






Huge Rain Of Importance In Western Argentina

No one will deny the importance of this week's rain in the previously driest areas of western Argentina. The precipitation came in time to support wheat as it was reproducing and filling and to benefit some of the struggling early season corn and sunseed. The moisture was also very well timed with the start of soybean planting which normally begins this week. Argentina's battle with dryness is not over and there are still many areas needing greater rainfall, but moisture that falls later this week will be of great help and the ongoing influence from La Nina may continue to support some of the more important summer crop areas in the west with additional rainfall later this month and in December.



Argentina's precipitation in October was not nearly as abundant and significant as that which is needed to ensure the best planting and production year. However, World Weather, Inc. believes the precipitation distribution during the month was sufficient to have winter and spring crop conditions at least somewhat better than those of last year.

Rain that evolved Sunday and Monday of this week proved to be a Godsend for the nation especially in some of the driest areas of the west. Moisture totals during the past week (most of which occurred Sunday into this morning) varied from 1.00 to 1.50 inches from western through south-central Santiago del Estero to north-central Cordoba. Rainfall was greater in the central through southern parts of Cordoba into La Pampa and the northwestern half of Buenos Aires where 1.00 to 2.00 inches and local totals to 3.66 inches resulted.

The greatest rain fell on top of the nation's most important peanut, corn and soybean production region with a part of the nation's sorghum and sunseed crops also impacted. Rainfall farther to the east was lighter and more sporadic. Areas from eastern Buenos Aries through Entre Rios to Corrientes, eastern Chaco and eastern Formosa were driest. None of the driest areas received enough rain to counter evaporation which led to a net loss in soil moisture for the week.

Argentina's biggest dry region now extends from central parts of both Formosa and Chaco into northern Santa Fe and then northwest into Santiago del Estero and Salta. These areas will have a huge need for significant rain and the forecast models are suggesting an opportunity for some further relief later this week. In the meantime, the greatest relief from dryness has occurred in Cordoba,

Important Rain In Western Argentina (Continued From Page 8)

northwestern Buenos Aires and northeastern La Pampa where topsoil moisture is rated adequate to surplus.

Subsoil moisture is still sufficient to carry on normal crop development in central through southeastern Buenos Aires and from eastern Entre Rios into Corrientes and extreme eastern parts of both Formosa and Chaco, despite the past week of drying. The key for Argentina's future crop development lies within the distribution of rainfall during November and December. Timely rain events must continue.

Rainfall during the next ten days will be greatest in the driest areas of northern Argentina. Santiago del Estero, Chaco, northwestern Santa Fe and immediate neighboring areas will get 1.00 to 3.00 inches of moisture and that should help to ease long term dryness in most of that region. Rainfall from northern Cordoba into Entre Rios will vary from 0.50 to 1.50 inches and the same will occur in San Luis. Rainfall from southern Cordoba through much of Buenos Aries and northeastern La Pampa will vary from 0.25 inch to 0.75 inch with a few totals near 1.00 inch. Much of the driest region in the coming ten days is the same region that received the greatest rainfall early this week and that should leave most of the nation in good shape for crop development and fieldwork for a little while. Follow up rain will be very important later in November since most areas will still have moisture deficits to deal with despite the new and recent past rainfall.

A close watch on eastern Argentina will be warranted through the balance of this month and into December because of La Nina. La Nina events tend to dry out eastern Argentina, Uruguay, southern Brazil and southern Paraguay and World Weather, Inc. believes that bias will evolve again this year. Eventually, that dryness could threaten rice, and eastern grain and oilseed production areas in the nation, but that should not be a problem for a while.