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# The Canadian Agriculture Weather Prognosticator

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## *World Weather At A Glance*

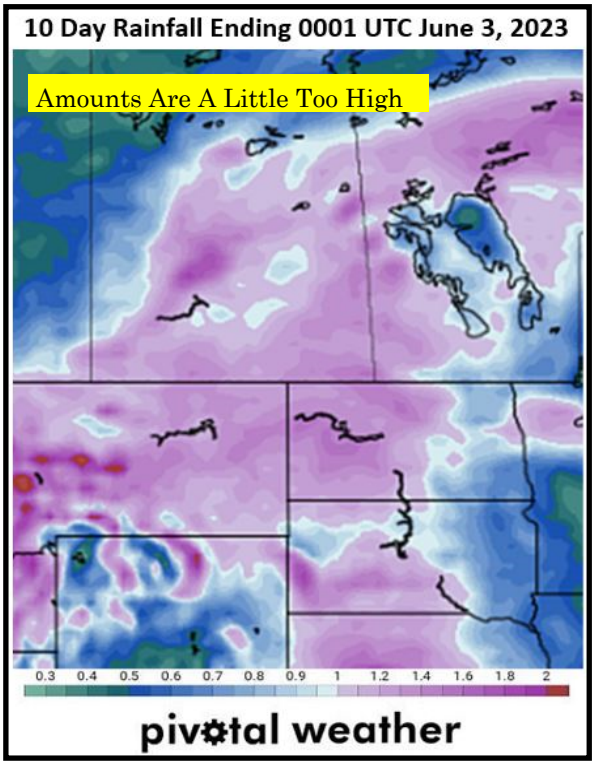
- Australia needs greater rain in interior Western Australia, interior South Australia, Queensland and northern New South Wales
- Eastern parts of Russia's New Lands are drying out and greater rain will be needed in its spring wheat and sunseed region east of the Ural Mountains
- Safrinha corn production areas in Brazil were planted very late, but seem to be doing well and timely rain is forthcoming
- Wheat areas of Argentina have been getting "some" rain and a little more is expected to improve planting
- U.S. Midwest planting weather has been ideal recently, but the region is drying out
- North Africa gets unusual late season rain raising some grain quality concerns in durum wheat areas
- China weather remains mostly very good

## Needed Break In Ridge Bringing Rain

For the next week, a ridge of high pressure that has been prevailing over western Canada will be relocated over the U.S. Midwest and during that period rain is expected in many areas across the Prairies. The precipitation will disfavor the driest areas of eastern Alberta and a few of the western most dry areas in Saskatchewan while it will be widespread in the remainder of Saskatchewan.

Sufficient amounts of moisture are expected to bring relief to the recent bout of very warm and dry conditions. Soil moisture will be increased sufficiently in the majority of Saskatchewan and across much of Manitoba to not only support recently planted crops, but to improve the planting prospects for late season crops.

Rain has already fallen this week across western Alberta and parts of the Peace River and Swan Hills regions are now notably wetter in the topsoil than they were just one week ago. The same kind of relief is now expected in Saskatchewan and it will greatly change the outlook for those struggling with limited soil moisture.



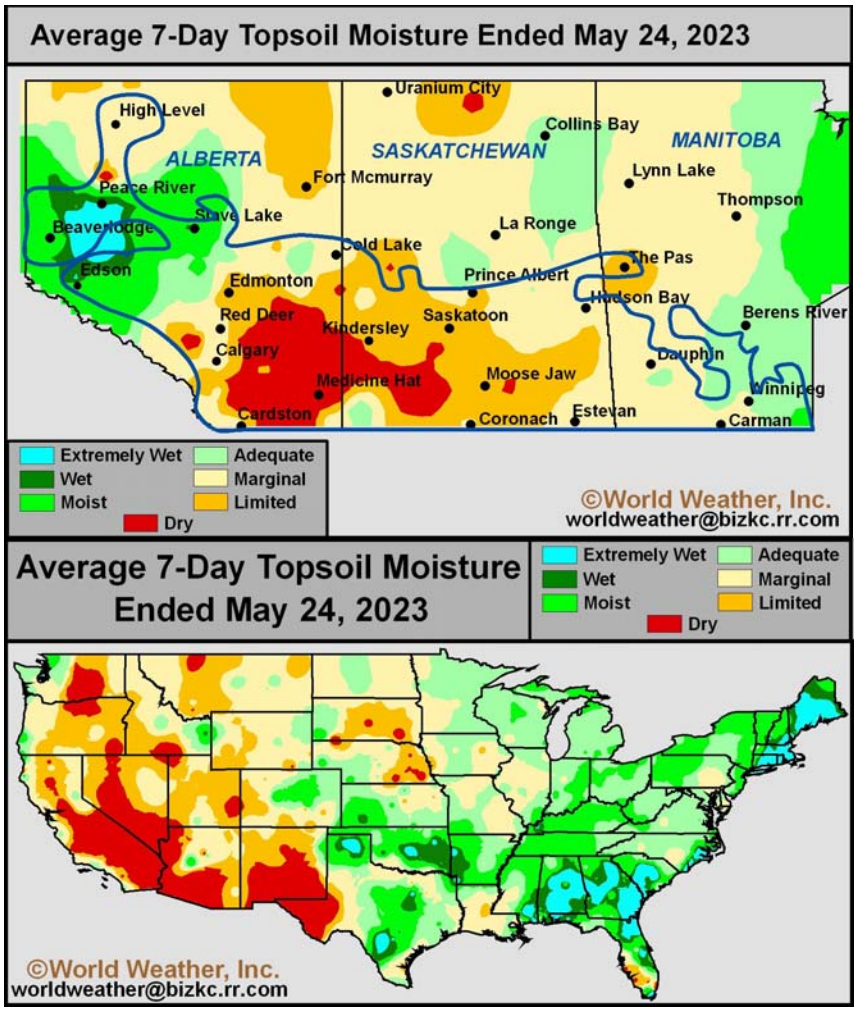

Topsoil moisture is rated very short across a big part of Saskatchewan and Alberta and is rated short to very short in the northwestern U.S. Plains. The environment has been great for advancing spring fieldwork; including the planting of wheat, peas, lentils, sugarbeets, mustard, canola and some early season corn. Oat and barley planting and establishment have also been impacted by dryness. The ground has become too dry for the germination and emergence of some recently planted crops, especially canola, making the need for rain much greater than it has been this spring. Without the moisture, early season crops could suffer in the warmer than usual and dry biased environment. So, now more than any other time this spring, rain is needed.

Some fields have sufficient subsoil moisture and only need light rain briefly to support seed germination and early development while others are dealing with a serious bout of drought and have no subsoil moisture.

The driest areas are in east-central and southern

# Needed Break In Ridge Bringing Rain (continued from page 1)

Alberta and western Saskatchewan and some fields in that part of the Prairies have a dire need for rain. A few of those driest areas were planted on marginally adequate topsoil moisture earlier this season and crops have emerged, but the lack of subsoil moisture is stressing the young seedlings raising the potential for wilting and possibly death.




## WEATHER OUTLOOK

A complex weather pattern has sent one storm system into western Alberta, Canada already this week resulting in hefty amounts of rain in that part of the Prairies. By Wednesday some of the Swan Hills and Peace River Region of Alberta will have received 1.00 to 3.00 inches of rain with some 4.00-inch amounts. However, that is a separate storm system from that which is expected in Saskatchewan and the northwestern U.S. Plains. The Alberta storm will stall out over western and northern parts of that province preventing much, if any, rain from reaching the drought areas of eastern Alberta or western Saskatchewan.

A new low pressure system and associated cool front will induce showers and thunderstorms beginning today in Saskatchewan and the Northern U.S. Plains. The system will be slow enough moving that there will be multiple waves of precipitation occurring from Montana and western North Dakota through the heart of Saskatchewan and into western portions of Manitoba. By Saturday, the region will receive 0.30 to 1.25 inches of rain with several amounts of 2.00 inches or more in north-central and northeastern Saskatchewan. Additional rainfall is expected Saturday through Wednesday of next week, May 31. That will push some of the rain totals into the 1.00 to 2.00-inch range with a few areas in the north possibly getting 2.00 to 3.00 inches. The greater rain totals may be a little overdone, but this much rain or even half of that will prove to be perfect for relieving dryness and inducing a much better environment for future planting, seed germination, plant emergence and crop establishment.

## EASTERN DAKOTAS, MINNESOTA AND MANITOBA

Manitoba and the eastern Dakotas as well as Minnesota may not get much rain through Saturday, but showers and thunderstorms Sunday into next Wednesday will help improve the moisture profile in some of those areas as well. Not all of this region needs rain. Some areas in eastern North Dakota and Minnesota are behind in their spring fieldwork because of significant snowmelt, cold temperatures and frequent bouts of rain and snow in April. More recently, field conditions have been improving and fieldwork has begun to make some significant strides. Waiting for rain until Sunday in some of these more eastern locations will be a blessing and should provide some producers with a large enough window of dry weather to get some fieldwork completed before rain returns.

Meanwhile, portions of the Peace River and Swan Hills regions reported some impressive rainfall Monday and Tuesday. Rain totals through dawn Tuesday ranged from 0.80 to 2.00 inches with a few areas getting more than 2.50 inches. That brought notable relief to dryness in that end of the Prairies and the region will get another shot of rain in about a week after rain ends today. By the middle part of next week, western Alberta, much of Saskatchewan and portions of Manitoba will be notably wetter than they were at the start of this week changing the production outlook greatly for many areas.

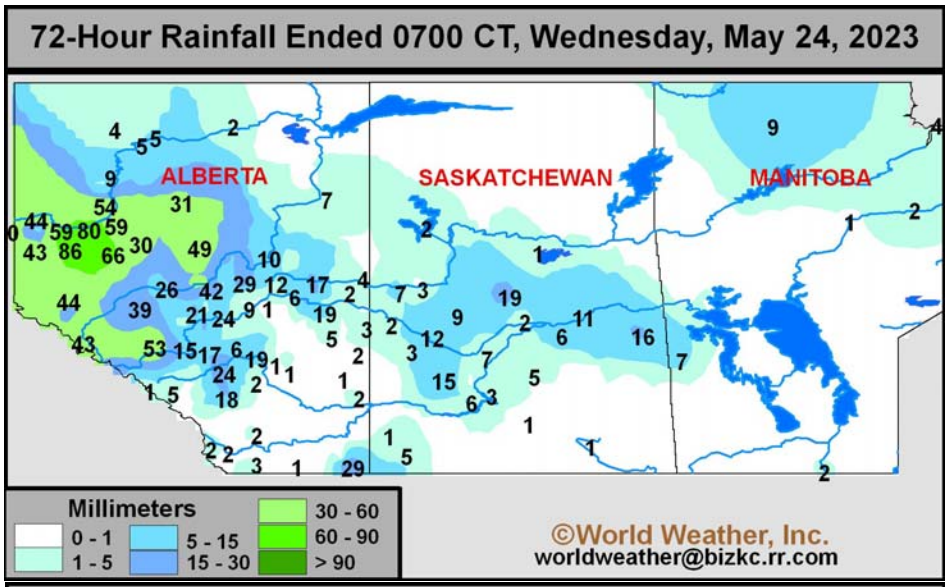
# May's Rain Distribution A Little Light Until Recently

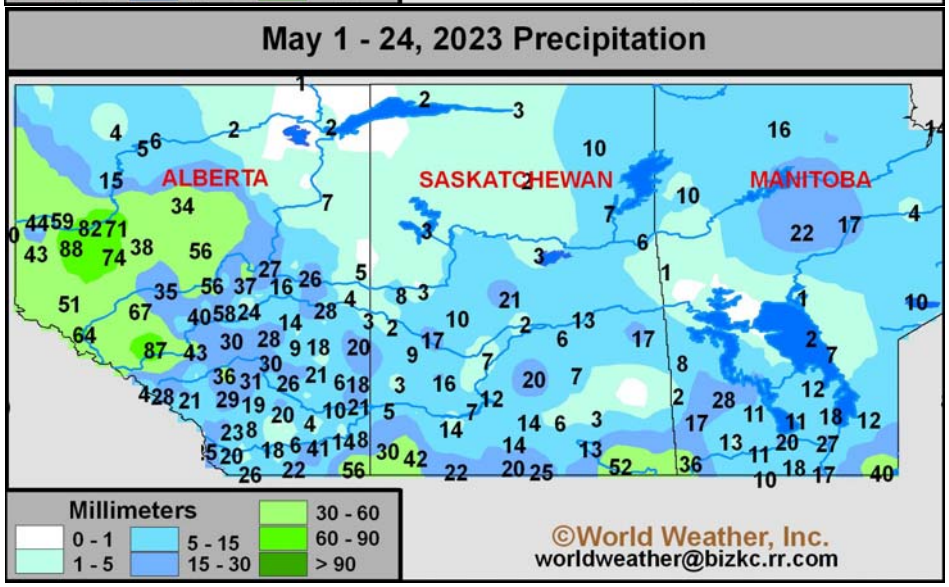
Most of the rain that has occurred in western Alberta and central Saskatchewan during May occurred in the past 72 hours. The most significant rainfall impacted areas from the Slave Lake and Swan Hills region into the Peace River Region and southward to the Grande Cache and Jasper areas where 1.00 to 3.40 inches resulted—most of which fell in 2 days. The ground was quite dry prior to the rain's arrival and the rain may have been a little more than desired, but there was plenty of space in the soil for the moisture to be absorbed. Fieldwork will resume soon especially with a drier biased outlook coming along for the next week to ten days.

The drought areas of east-central and southern Alberta did not receive much rain this week, but many areas in that region benefitted from some timely rainfall earlier this month. The early May rain was a bit too erratic with some farms getting significant rain while others were left much too dry and the same was true for a large part of western Saskatchewan.

Dryness actually expanded during the first three weeks of May in Saskatchewan. The entire province had lost its topsoil moisture by the start of this week, but dryness in northwestern areas of the province was becoming much more significant. Most of Saskatchewan received very little precipitation until recently, although there were some impressive rain amounts near the U.S. border and a few other pockets, but the primary theme for the month so far was net drying and aggressive fieldwork. Planting progress advanced extremely well in much of the Prairies, including Manitoba after a slow start early in the month.

Manitoba rainfall during the majority of May has also been limited, though several areas did receive amounts varying up over 1.00 inch. The greater rainfall areas were quite limited in number and just like the majority of Saskatchewan net drying was more the rule than the exception.



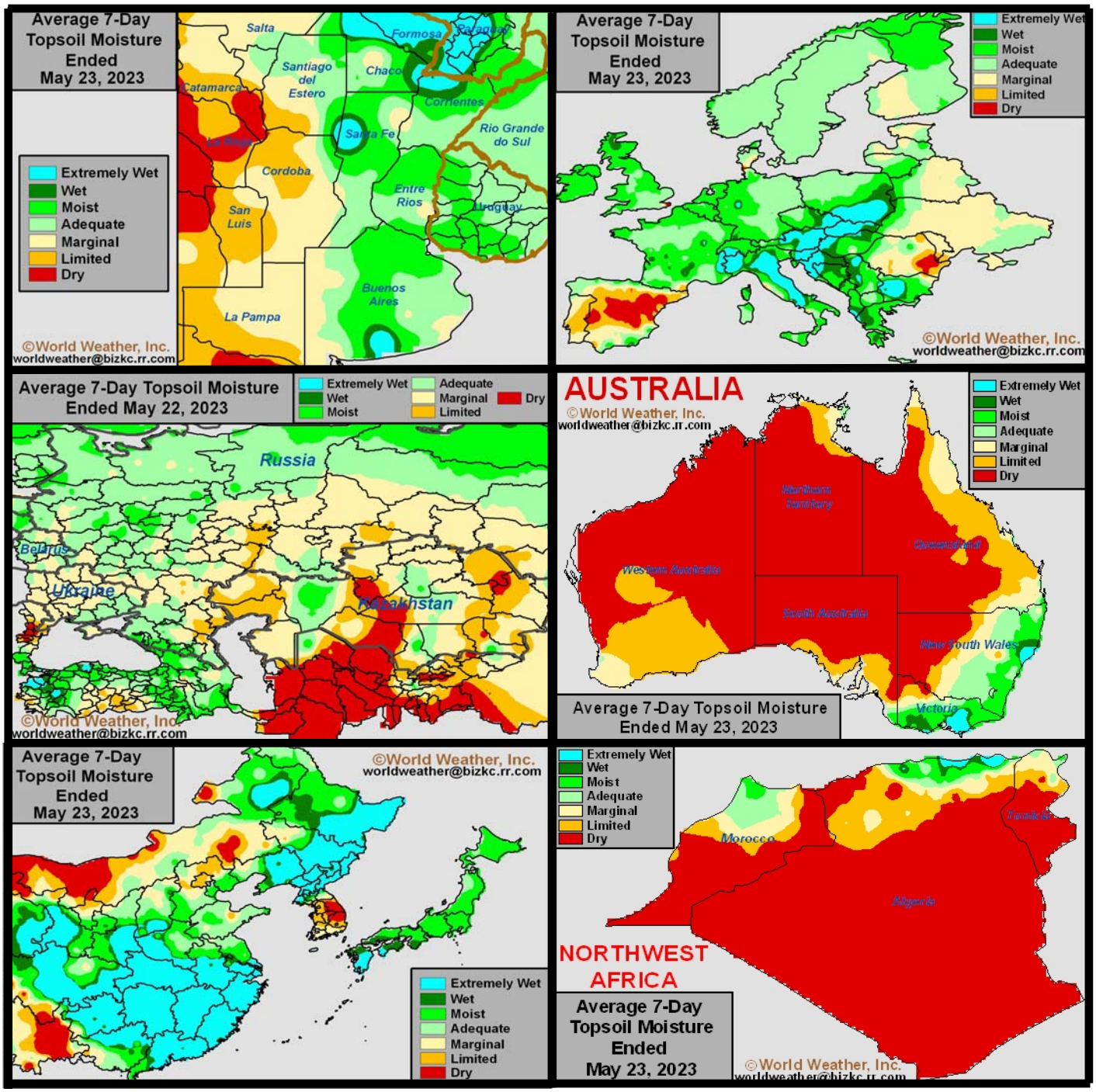




Warmer than usual weather was almost as impressive as the dryness was in early to mid-May with multiple occurrences of 30– plus degree afternoon temperatures The heat was a key factor in the soil moisture depletion that occurred earlier this month. Several areas reported extreme highs in the lower 30s which is tough in the middle of summer, let alone in mid-spring.

The heat and dryness matched well with some of the research conducted in preparation for the spring and summer outlooks. World Weather, Inc. has been encouraged by this verification even though weather conditions have added a considerable amount of stress to some producers daily activity. The verification of tough weather in May does help raise confidence for the summer outlook; however, we are not quite done with the moisture and heat stress.

Temperatures are largely expected to remain above average in the Prairies through at least the first week on June. Rain in this coming week will bring the temperatures down to a seasonably warm range; however, a ridge of high pressure will be back over the Prairies in early June sending temperatures higher and cutting off the rain once again.

# Selected Weather Images From Around The World




Argentina's topsoil moisture has improved in many winter wheat production areas during the past week and more relief from drought is expected over the coming week. Western wheat areas will need significantly greater rain, though. Recent weather in Europe has been drier than usual in the North and Baltic Sea regions while rainy conditions in the south has eased a prolonged period of dryness in Spain and brought a little too much moisture to south-central Europe. Russia's eastern New Lands spring wheat and sunseed areas need significant rain, although the region is not excessively dry today. Australia's wheat, barley and canola production areas would benefit greatly from generalized rain. Western Australia, South Australia, northwestern Victoria and Queensland are all dry enough to raise a little concern about winter crop establishment. China soil moisture is almost ideal , but a little too wet in the south. North Africa's recent rain and that which is coming could induce some grain quality concerns.

# An Encouraging June Outlook Remains

The coming ten days will prove to be among the best of the young growing season so far with near to above normal rainfall occurring across Saskatchewan and the northwestern half of Manitoba. The moisture will be great enough to temper the daily temperatures to a mostly normal range and most importantly is the associated boost in soil moisture that is expected.

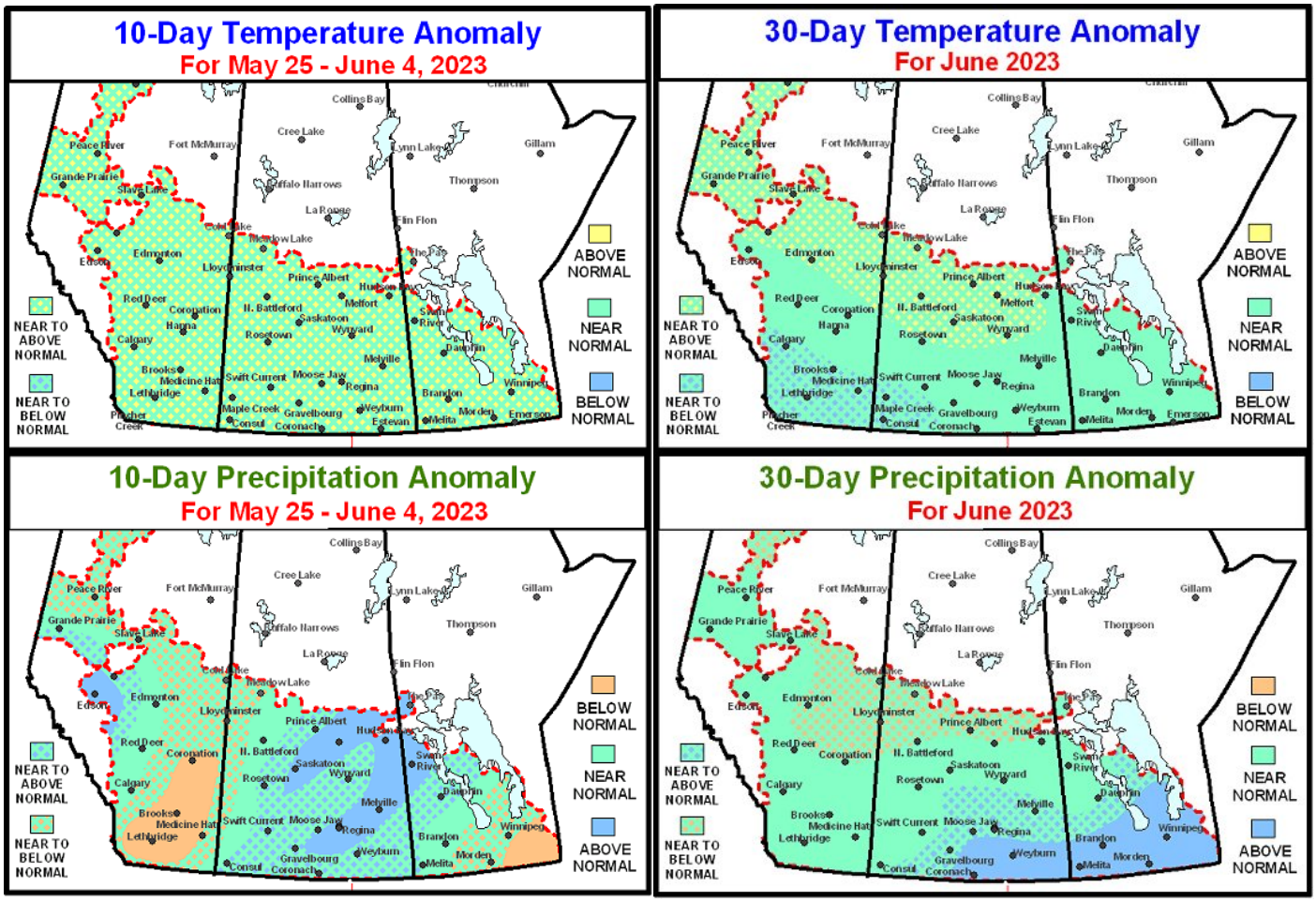
The drought areas of Alberta are most unlikely to get rain of significance and the impact of that will be another stressful period in crop development. The odds are very high that early June temperatures will rise more notably above average once again in much of the Prairies and for areas in the southwest that have seen little or no drought relief the heat will pose a serious threat to any young seedlings trying to survive until greater rain falls.

June temperatures will be near to above normal, although the second half of the month could be more notably cooler biased in the southwest. The late month cool off loses its significance in light of the warm weather that is expected early in the month.

Rainfall during June is expected to be the most complex part of the forecast. The negative phase of Pacific Decadal Oscillation (PDO) will still have a big influence on North America producing a deep trough of low pressure in the western United States and supporting a ridge of high Pressure in the middle of North America. The pattern should help induce rain across the southern Prairies . Some high pressure will be present across the northern Prairies in June and that could leave a warmer and drier than usual bias in place across some of those areas.

Most of the rain of significance in June should occur during mid– to late month and southern Manitoba, southern Saskatchewan and the northern U.S. Plains will be most favored for the greatest rainfall. There is a relatively good chance that too much rain is advertised in the southeastern corner of the Prairies and that may have to be adjusted downward in the next prognosticator, but the most important part of the June outlook is the likely unsettled weather pattern during the middle and latter part of the month in the central and southern Prairies resulting in periodic rain.

The precipitation may not be enough to push totals for the month above normal as shown here, but sufficient amounts should occur to support crop development well enough to raise hopes for a good production year.



# Warm, Dry Weather Will Be Back Briefly

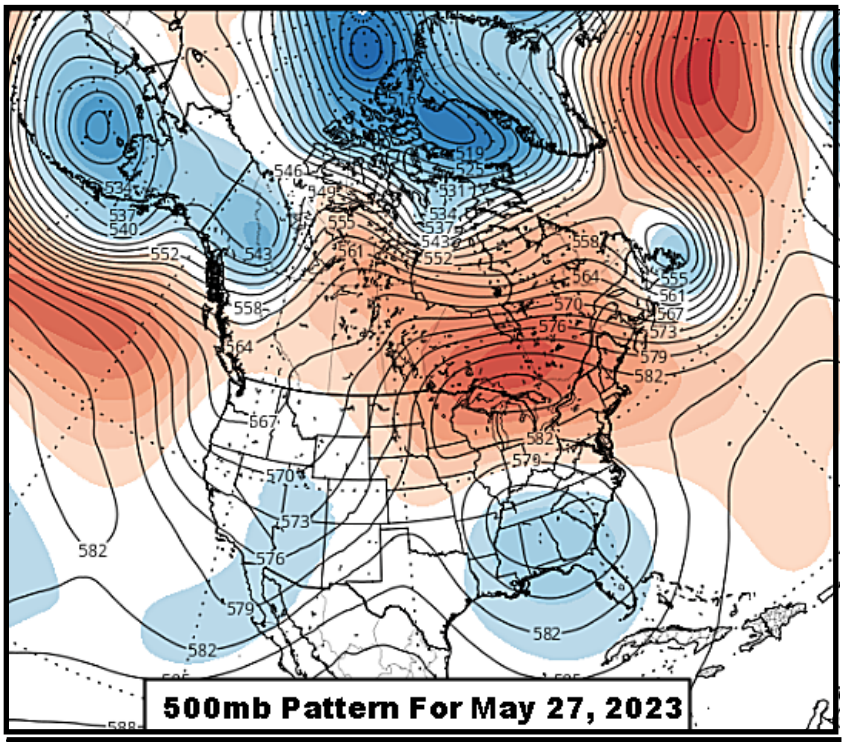
A very interesting weather pattern is expected in North America through the coming week. A "Rex" block is expected over the eastern United States. This occurs when a ridge of high pressure and a trough of low pressure are cut off from the jet stream and both are circulating air independently of each other and of the jet stream. The pattern will not allow much rain to fall from the U.S. Midwest through Ontario and Quebec while showers occur in the southeastern corner of the U.S. Meanwhile, farther to the west repetitive rain opportunities occur from the southwestern U.S. Plains through the northern Plains and the into the eastern half of the Prairies. Rainfall farther to the west should be limited in this pattern.

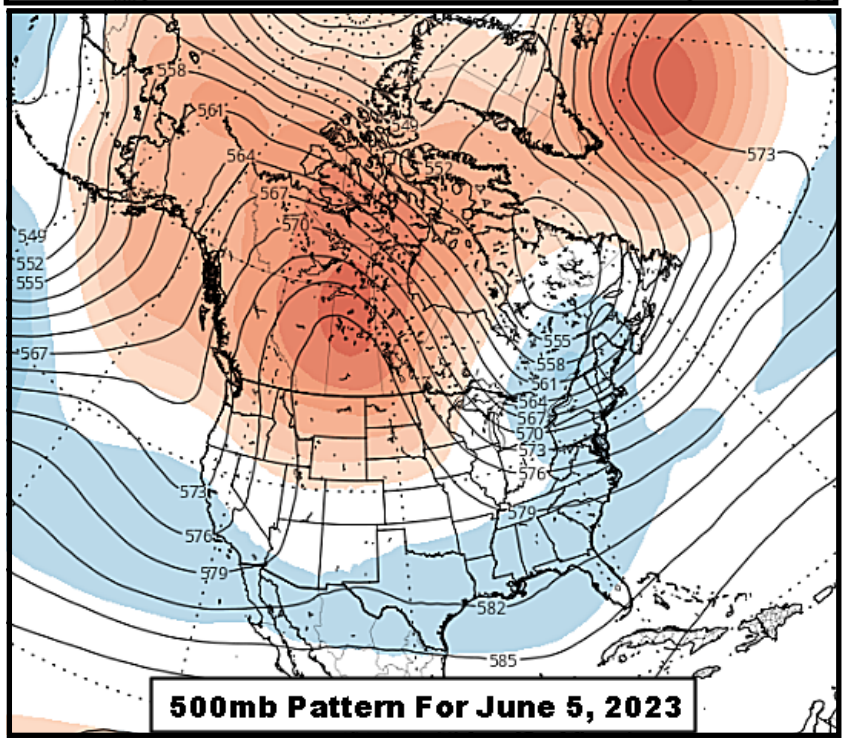
Significant changes are expected to occur next week and into the second weekend of the two week outlook. Those changes will shift the ridge that is over the Midwest and northeastern United States to the west. The westward shift in the ridge of high pressure will perpetuate drier biased conditions in the U.S. Midwest and will return drier than usual conditions to the Prairies, northern Plains and western fringes of the Midwest.

The western U.S. trough of low pressure retrogrades (shifts) to the west bringing rain showers and thunderstorms to the Pacific Coast States while limiting precipitation from the Rocky Mountain states and southwestern desert region into the western Midwest, Delta and southeastern states.

All of these changes will present the Prairies with a favorable mix of weather except in the drought areas of Alberta and western Saskatchewan where there is not likely to be much more rain after this weekend for at least a 10 day period that follows. Similarly, there will not be much change in U.S. Midwest dry biased conditions through the first ten days to two weeks in June. Both of these drier biased areas will be of greater interest to the marketplace than they are now.

The U.S. drier and warmer bias could influence the corn and soybean market trade especially if the longer range outlook disfavors rain in the heart of the corn and soybean producing areas. Most likely the drier bias in the Midwest will break down for short periods of time and if that occurs there would likely be at least some periodic relief from dryness. The western Prairies may not see much improved weather for a while in late May or early June, but the prospects for greater rain later in June look good.



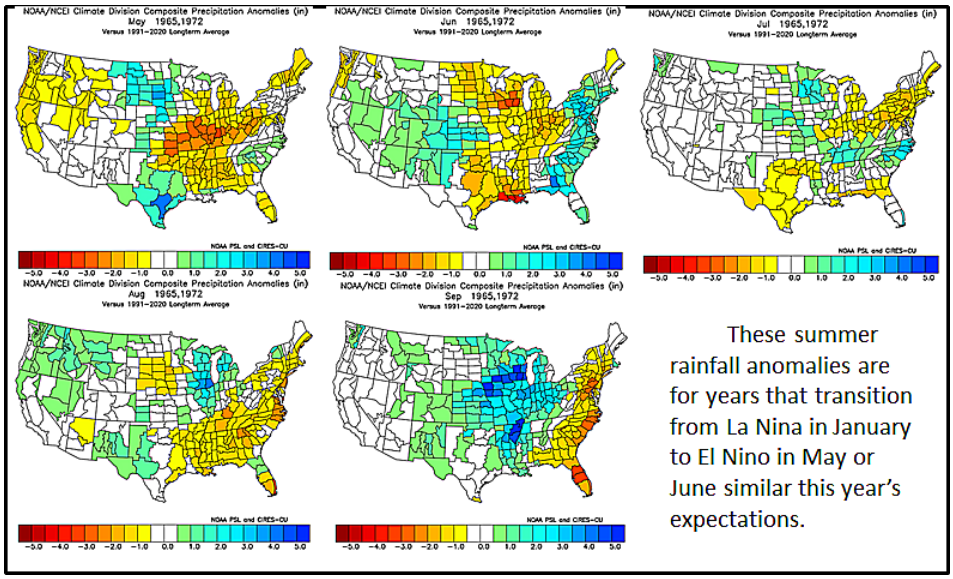

July weather is expected to be mixed once again so that some areas are given a favorable amount of rain while some of the drier areas stay drier biased. The driest and warmest bias in the Prairies should shift to northern and western Alberta while late season rainfall increases elsewhere.

# Negative PDO Weakening, But June Influence Strong

The latest Pacific Ocean surface temperature data released by the U.S. Climate Prediction Center showed a more accelerated weakening trend in the negative phase of Pacific Decadal Oscillation (PDO). This change was expected, though perhaps a little more aggressive than anticipated. The weakening trend in PDO coincides with the developing El Nino and the passing of La Nina. PDO will play an important role on central North America weather during the late spring and early summer until El Nino gains control of the atmosphere, but what kind of an impact will it have on U.S. weather this summer?

As a reminder, negative phases of PDO include cooler than usual ocean surface water temperatures off the west coast of North America and warmer than usual surface water south of the Aleutian Islands in the north-central Pacific Ocean. The negative PDO has been extremely strong recently as it was during the drought years of 1955, 1933 and several times in the mid- and late-1800's. The April PDO index value of -3.05 was the strongest since October of 2021 and the persistent 21-month period of strongly negative PDO that has occurred in recent years is the longest such stretch of less than -1.0 index values ever recorded and NOAA's index goes back to January 1854.

Typically, strong negative PDO events are associated with deep troughs of low pressure along or immediately off the North America Pacific Coast. PDO is not as strong a phenomenon as significant La Nina or El Nino events and for that reason its influence is sometimes washed out a bit and hard to see. However, the significance of this PDO event has been seen multiple times over the past year as La Nina fell apart. The signature of the strongly negative PDO has been the above average precipitation from California to the northern Plains and upper Midwest.




This band of frequent precipitation seen periodically since last autumn is largely the reason for California's excessive snow and rain events . During the winter, high level winds are usually too strong for a significant high pressure ridge to develop downstream from the deep trough of low pressure resulting from negative PDO. However, as the warm season arrives and the high level winds begin to weaken a high pressure ridge will evolve in the middle of North America and strong negative PDO events can help to strengthen the ridge more than it would otherwise be whenever the trough of low pressure along the west coast becomes deep and broad-based.

There has been considerable chatter about this late spring and early summer trending drier than usual in the Midwest as a part of this phenomenon and there has certainly been a trend like that showing up recently. The dry biased forecast in the Midwest for the next ten days could be a by-product of the negative PDO. And if that verifies, there may soon be greater rainfall in at least portions of Canada's Prairies.

The high level winds (jet stream) have been weakening recently and yet they remain a little too strong to support a strong ridge of high pressure in central North America. Nevertheless, a weak high pressure ridge is over the Midwest this week and will induce some warmer and drier biased conditions. As the trough of low pressure along the west coast weakens, the ridge is expected to retreat to the west and locate more in the central and western Plains. This position may remove the warmer temperature bias from the Midwest, but it could maintain a lighter than usual rainfall bias as we move into June. Anytime the trough of low pressure along the west coast deepens or intensifies so will the ridge of high pressure and the ridge could be pushed back to

# Negative PDO Weakening, June Influence Strong (from page 7)

the east at times when the west coast trough is most broad based.

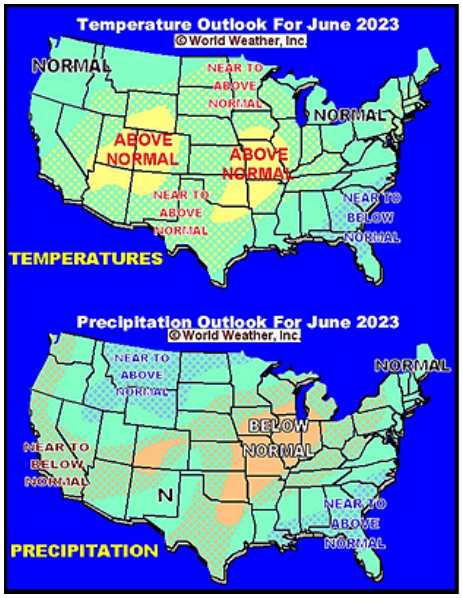
The longer PDO remains strongly negative the more likely that this tendency for dryness will remain. However, the latest data from the Pacific Ocean is showing (for the first time this season) a more aggressive weakening trend. The weakening is expected to continue, but this PDO has been so anomalously negative for such a long period of time that it will take a few months to diminish enough to reduce its influence on both the trough and the ridge.

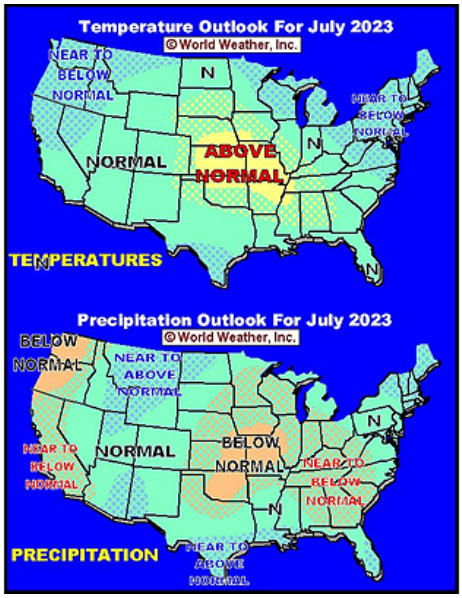
June may be the driest and warmest of our summer months if PDO continues to weaken and El Nino strengthens. The chart (shown on page 7) illustrates what precipitation anomalies were in two years in which La Nina was present in January and El Nino evolved in late spring or early summer. Notice that May and June were the drier months relative to normal and as time moved along the anomalies weakened. That suggests June will be driest of the U.S. summer months. But a factor that needs to be considered is the negative PDO.

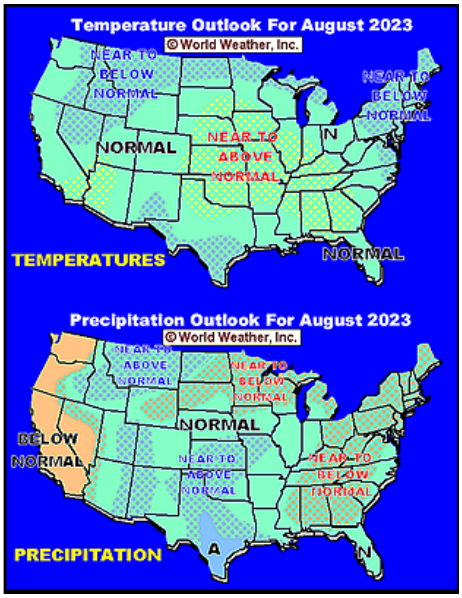
World Weather, Inc. is convinced that we have entered a season of predominating negative PDO; however, weakening in the intensity of the PDO is expected to continue over the next few months. In the past when PDO index values hit -3.0 or lower, the following months showed a steady weakening trend in the index (moving toward less negative values); however, the index usually spent a few months strongly negative while the phenomenon was weakening. Because of that tendency, World Weather, Inc. believes there will be potential for a little more strength in the North America summer ridge is possible this year and that could prolong the lighter than usual rainfall bias in the Midwest deeper into summer. That does not mean drought, but it does suggest that rainfall may be lighter than usual over a larger part of the summer and the fate of crops will be left to the timeliness of rainfall and how warm the temperatures become. Drought "could" evolve, but it will take a special set of circumstances for that to occur and World Weather, Inc. does not perceive such conditions in this growing season.

El Nino is expected to continue evolving, but it will have more influence on the tropics initially than it will on the mid-latitudes and for that reason the lingering negative PDO will have "opportunity" to have more influence on North America weather for a longer period of time. The more negative the index remains while it is weakening, the more likely rainfall will continue lighter than usual.

The ridge of high pressure's position will then determine much about temperatures in the Midwest and Plains and how much of the lighter than usual rainfall will be a threat to Midwest corn and soybean production this summer. World Weather, Inc. does not expect the temperatures to be oppressively hot on a consistent basis due to the lunar cycle suggesting a low amplitude ridge is more likely this summer than usual. If that is correct, there will be a few bouts of hot weather, but it will not be a persistently hot summer.



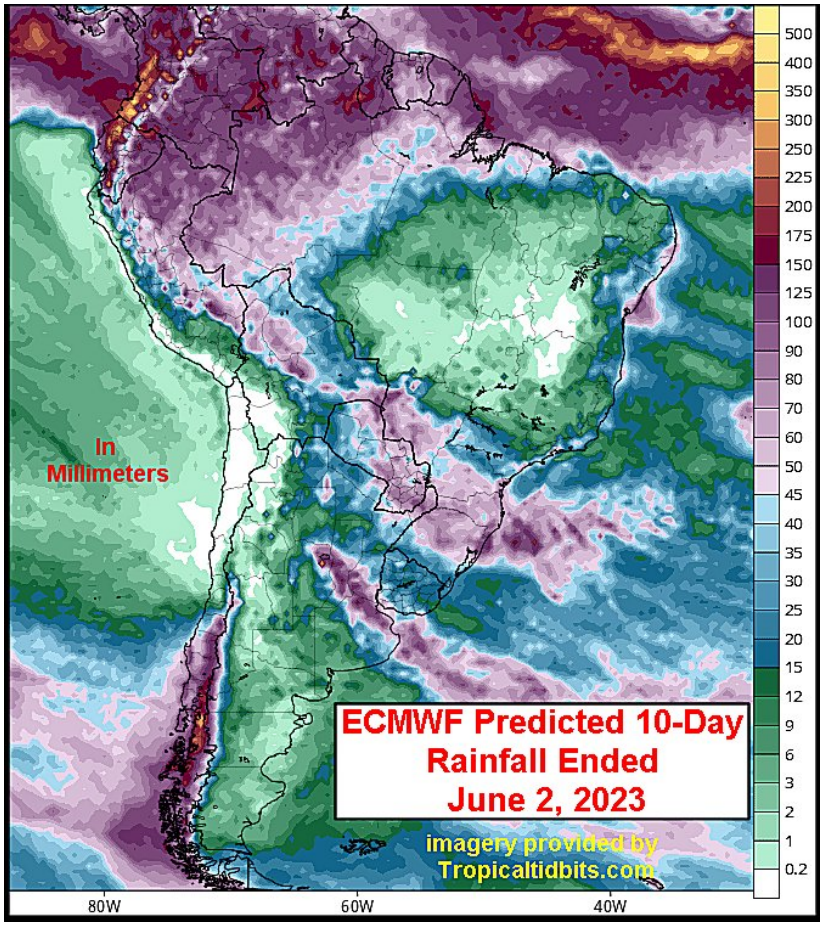



# Brazil Rain To Support Good Corn, Wheat Prospects

Rainfall in Brazil was limited during the past week and the lack of rain was beneficial for late-season harvesting of grain, oilseeds, rice and cotton while supporting good maturation and harvest conditions for sugarcane and coffee. Winter wheat planting in Rio Grande do Sul also advanced swiftly. Dry conditions will prevail for a few more days, but rain this weekend into early next week will prove to be timely and of great importance in ensuring the best possible environment for late reproducing and filling Safrinha crops. Wheat establishment and development will also advance well. Rain in Mato Grosso and Goias is needed most, but it may be difficult to get significant amounts in those areas.

Soil moisture across Brazil contrasts from short to very short from Mato Grosso to northern and western Minas Gerais and Bahia to the range of adequate to slightly short in most areas to the south. These conditions are quite typical for this time of year, but with 20-25% of Safrinha corn planted notably later than usual there may be need for additional moisture soon. Most of the latest planted crops, though, went into the ground in Sao Paulo, Parana and Mato Grosso do Sul where soil moisture is most favorably rated. Safrinha cotton and corn in Mato Grosso and Goias were also planted late, but the planting was not as seriously delayed as it was farther to the south; nonetheless, rain is needed for some of that late crop.

The lack of rain during the past week promoted all kinds of fieldwork and crop maturation. Wheat planting advanced well as did the late harvest of early corn, late soybeans, late rice, cotton, sugarcane and coffee. Drying was good for the harvest, but some the cotton and late corn in Mato Grosso and Goias would benefit from some significant rain. Soil moisture farther to the south has been sufficient to support good yield potentials for most of the Safrinha corn, but it must prevail that way for a while longer to ensure the best yields.




Sufficient rain will fall from Mato Grosso do Sul and Sao Paulo through Parana to Rio Grande do Sul to support most late season crop needs. Reproduction and filling will likely conclude without any serious moisture stress if the forecast verifies. However, a little farther to the north in Mato Grosso and Goias the prospects for rain are not nearly as good and seasonal drying will continue.

Dryness in Mato Grosso and Goias will only hurt a small part of the Safrinha corn and cotton, but the very latest planted crops will be stressed enough to yield a little lighter than usual without greater rain soon. The impact of lower yields in these areas is unlikely to be very great – at least not relative to the nation's entire Safrinha crop - since the greatest portion of late planting occurred in the areas expecting the greatest rainfall and the moisture profile is liable to remain favorable through at least the first ten days of June.

Field working delays are expected because of the precipitation, but none of that should prove to be problematic since the wet weather is unlikely to last very long.

Coffee and sugarcane harvesting will advance around some infrequent shower activity during the next ten days to two weeks. Any rain delays should be brief and the impact on production will be minimal.