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# The Canadian Agriculture Weather Prognosticator

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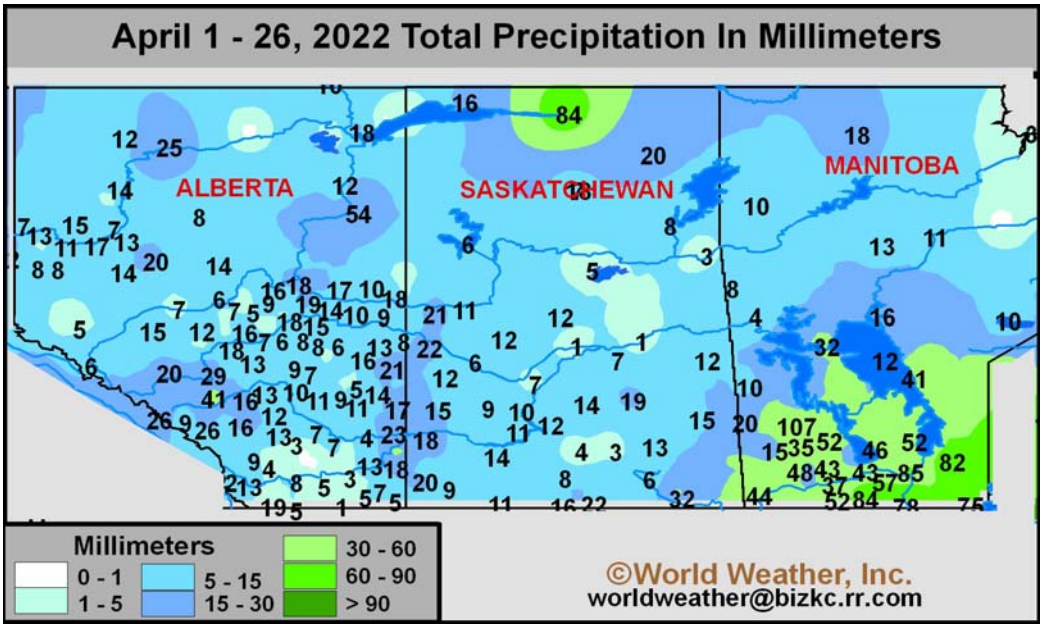
## *World Weather At A Glance*

- Drought continues from western Canada to northern Mexico
- U.S. hard red winter wheat production will be down this year
- U.S. spring wheat, canola, sugarbeet, oat and corn planting to be delayed in North Dakota and Manitoba
- Safrinha corn and cotton production in Mato Grosso, Brazil is being stressed and needs rain
- Western Argentina wheat areas will need rain in May to support planting and emergence
- Northern China is a little dry, but not a big concern….yet.
- Europe will continue wet from southwest to east-central countries
- North Africa wheat production will be down in Morocco and up in Algeria
- Australia winter wheat, barley and canola planting expected to advance well

## SE Prairies Too Wet; Drought Stays In SW




April weather turned hostile in the southeastern Prairies with significant snow and rain occurring in areas that were drought stricken a year ago. Now, the situation is more of a concern because of too much moisture rather than not enough. The ground is saturated and some flooding has already begun on rivers in southern Manitoba.

Moisture totals in April varied from 15 to 52 millimeters across much of central and southern Manitoba and extremes of 60 to 107 millimeters were noted. That much moisture at this time of year when temperatures were well below normal translates into a surplus of moisture some of which is still tied up in snow that was still lying on the ground at the time of this report.

Some of the greater precipitation bled over the border into southeastern Saskatchewan where 15 to 40 millimeters of moisture occurred during April and most of that fell in mid- to late month.

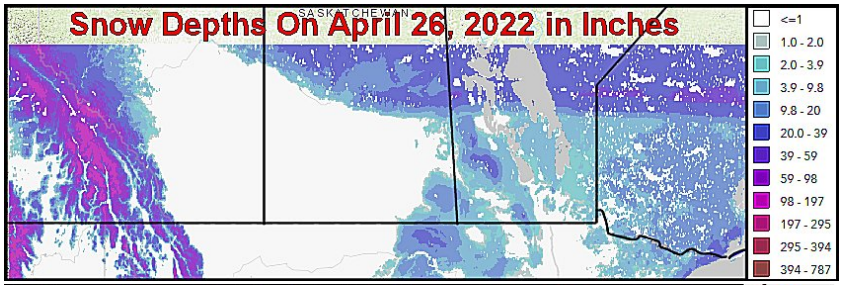
Snow remained on the ground following two back to back blizzards that impacted the southeastern Prairies. Snow accumulations at the time of this report varied from 2 to more than 20 inches and the snow water equivalency in the snow was varying from 15 to more than 100 millimeters.

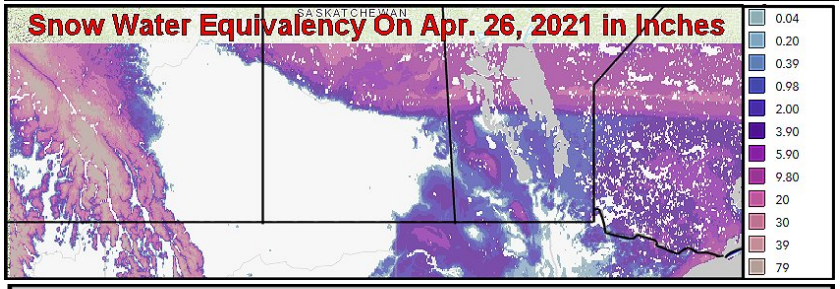
The combination of saturated soil, recent snow melt, additional snow melt coming and another storm system due into the region Friday into the weekend suggests flooding will get worse before it gets better. The Red River was already in flood long before the recent bout of stormy weather arrived because of significant snow melt in eastern North Dakota and northern Minnesota earlier this month and in late March. With the addition-

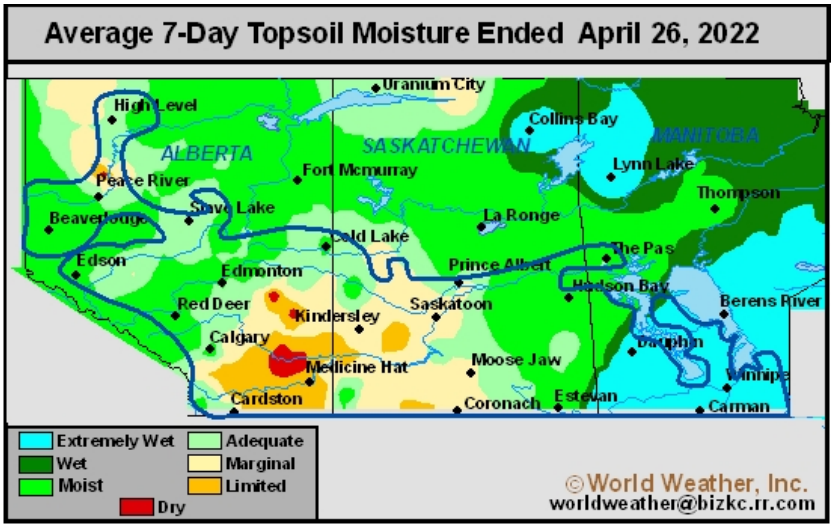
# SE Prairies Too Wet; Drought Stays In SW (continued from page 1)

al storm system due into the region this weekend and the melting snow that is expected farmers will be out of their fields in central and southern Manitoba through the middle of May.

A break from the stormiest weather is expected after this weekend. May precipitation should become more limited—at least during the first half of the month as the jet stream shifts to the south taking the most active weather into the United States. However, seasonal warming later in May and June will return the wetter bias leading to additional concern over spring planting for much of Manitoba and southeastern Saskatchewan.




In contrast, precipitation in the drought stricken areas in the southwestern Prairies was not abundant, but many areas reported at least a little moisture during April. The moisture totals were still too light to seriously improve soil moisture from east-central through southern Alberta where some areas received less than 4 millimeters of moisture. The majority of the region reported 6 to 13 millimeters which was welcome, but not nearly enough to raise soil moisture sufficiently to support long term crop development.

Moisture totals in Saskatchewan—away from the far southeast and the central and southwestern border with Alberta—varied from 1 to 14 millimeters most often. The moisture was conserved by cooler than usual temperatures, but some of the drier biased areas were still drier biased and in need of significant moisture.

The greatest precipitation in western parts of the Prairies occurred in pockets one of which extended along the Alberta/ Saskatchewan border early in the month resulting in 13-23 millimeters of moisture which was like gold to the region.

Another area of significant moisture fell near and west of Calgary where 12 to 41 millimeters of moisture resulted. There were a few other areas in Alberta that received greater precipitation , but much of the month's total precipitation was light.

Temperatures in April were near to below normal with the greatest cold anomaly occurring in Manitoba and southeastern Saskatchewan.

The cool and wet bias in southeastern parts of the Prairies was responsible for nearly no fieldwork during the month. Cool conditions elsewhere helped to conserve soil moisture by keeping evaporation rates low and soil temperatures cool.

The cool soil temperatures were important since many areas reported soil temperatures below the minimum for seed germination and emergence. As noted in the previous prognosticator (April1) the best solution for dealing with ongoing drought in the southwestern Prairies was to plant late because seasonal rains are expected, but will begin very slowly. The cool weather helped to squelch plans of early planting and should help producers get a little closer to the relief that is expected during June, July and August.

Planting too early this spring could have led to some poor emergence and establishment and at least some risk of crop failure in the driest areas because of limited precipitation and poor subsoil moisture. Planting now in the southwest makes a little more sense and crops that emerge and establish soon might not have to go quite so long before rain finally arrives.

# Drought Remains Most Serious In West, Central Prairies

Drought has ended in far southern parts of Manitoba and in a region surrounding Regina in east-central parts of Saskatchewan. Drought of varying degrees of severity remain in most other areas in the Prairies excepting the far western portions of Alberta where moisture remains adequate to abundant.

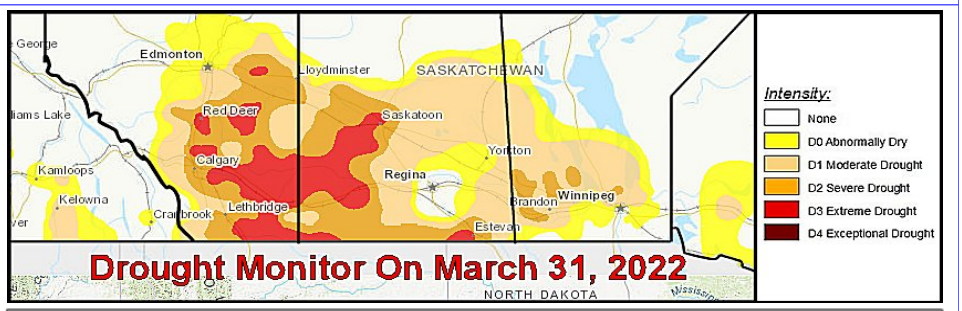
Drought status in the eastern Prairies has been greatly reduced by autumn precipitation and by that which has occurred this month, but an "all clear" cannot be declared on the drought of 2021 until some greater precipitation evolves this spring.

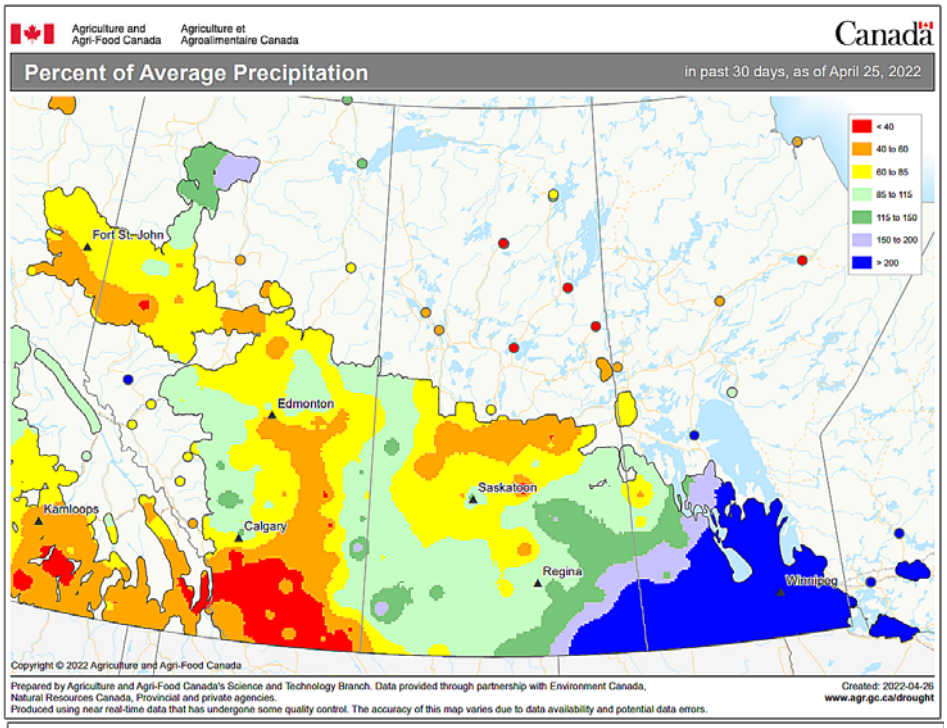
The largest and most significant drought ratings in the Prairies are in eastern and southern Alberta and both western and far south-central Saskatchewan where the classification varies from severe to extreme drought.

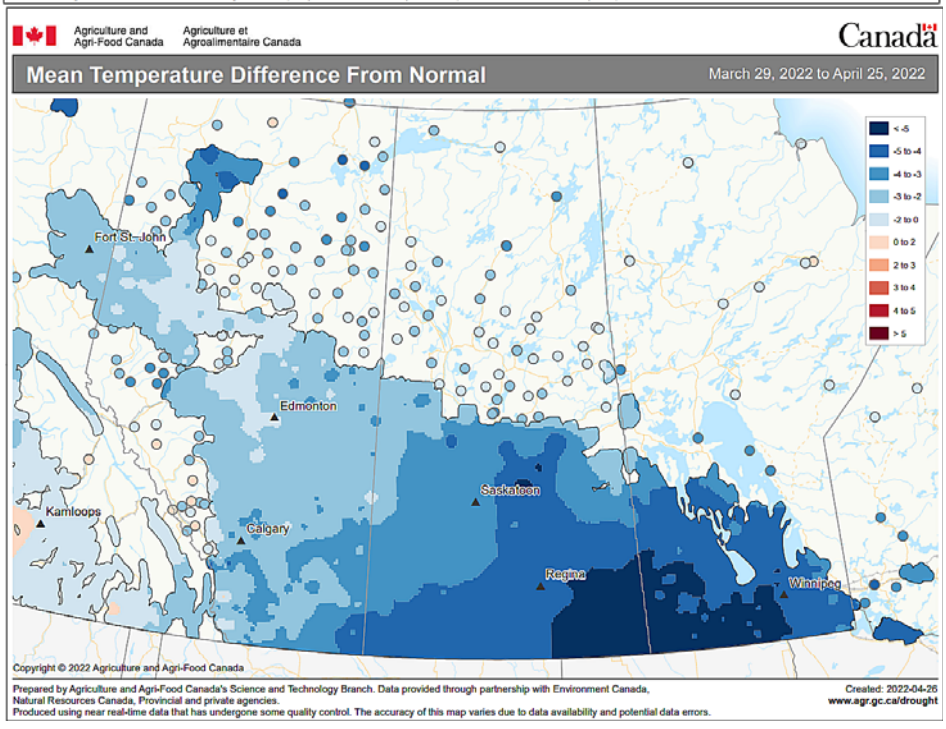
The moisture reported in April has whittled away at drought conditions in the eastern Prairies and a larger part of central and southern Manitoba and southeastern and east-central Saskatchewan may be free of the drought status, but areas to the west are still chronically dry and in desperate need for moisture.

Cool temperatures in April helped to hide the significance of moisture deficits in the region, but that will change in May and June as seasonal warming arrives. Precipitation in May is expected to be greatest in the southeastern Prairies once again, but many areas in Alberta and western Saskatchewan are expected to receive sufficient moisture to ease the dryness and support better crop planting and development conditions.

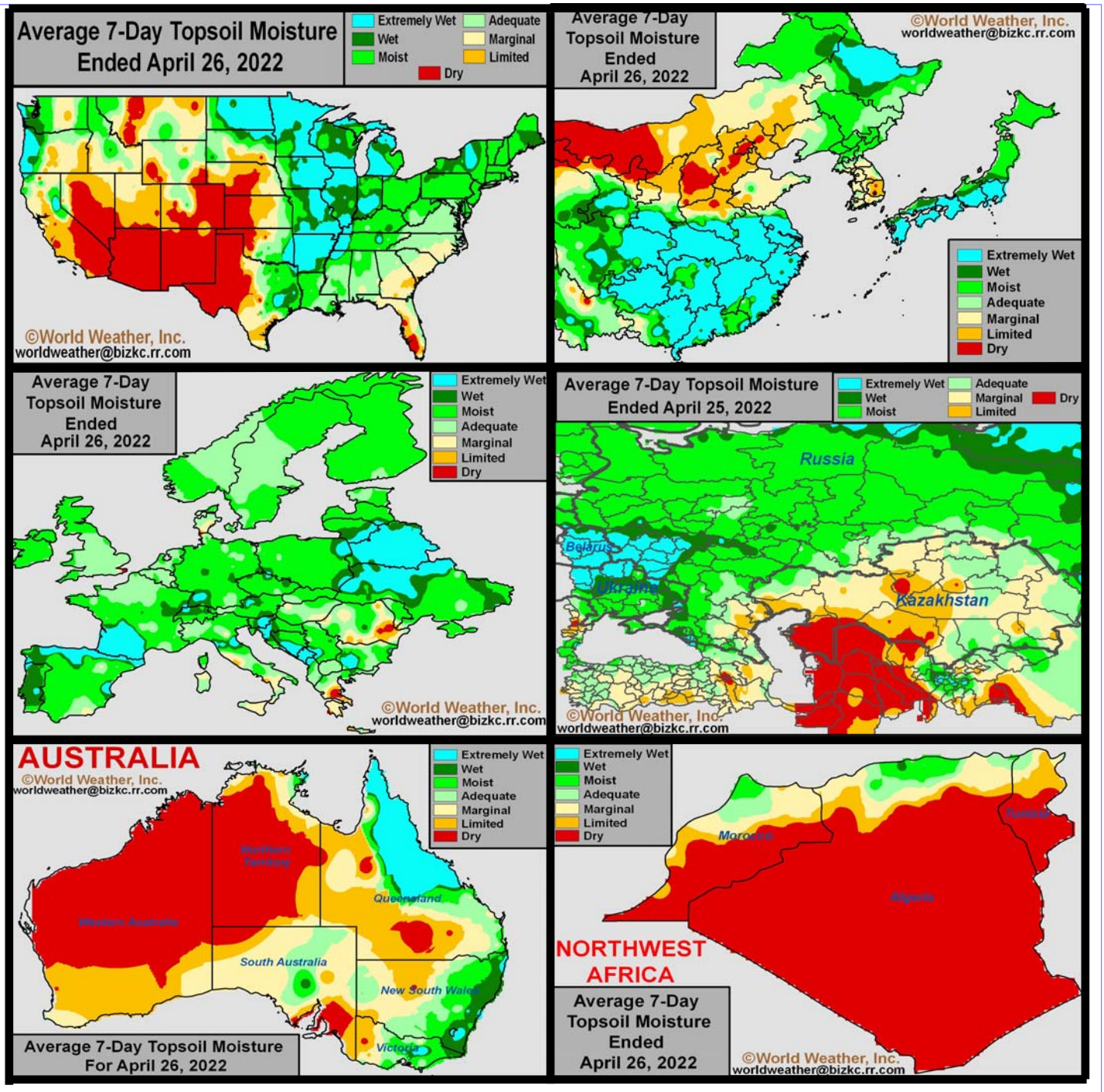
The greatest rainfall in the drought areas is unlikely to show up until late in May and more likely June, July and August. The wettest conditions will occur during the summer and until then relief is expected to come slowly leaving some concern over crop development in 2022.



# Selected Weather Images From Around The World




U.S. Midwest crop areas have been a little too wet in recent weeks and there is concern that this trend will continue in May delaying corn planting at a time when world ending stocks are low. Corn yields will be lower if the crop gets planted later than mid–May. China's Yellow River Basin and North China Plain is drying out, but there is plenty of time for improved precipitation before the situation becomes a problem. Rapeseed conditions in interior southern China are favorable. Europe is experiencing mostly good weather this spring and there will be some potential for wetter than usual conditions in the south and east-central areas over the next few weeks. Russia and Ukraine's weather is mostly good, although less rain and warming would be best in the west. Rain is needed in Kazakhstan. Australia summer weather was mostly good this year and autumn rainfall should support wheat, barley and canola planting. Some areas in North Africa would have benefited from greater rain this year, but it is a little too late now.

# May Weather To Test Our Faith; June Offers Some Relief

May weather will likely test our faith and induce some significant stress for the drought stricken areas of the Prairies. As we have mentioned before, the ridge of high pressure which has been hanging out over British Columbia and western Alberta this winter has to move from that region to the U.S. Plains sometime in the May/June period. In the process of moving, there will be a period of time when the ridge will settle over the heart of the Prairies resulting in warmer than usual temperatures and restricted rain. For those areas already too dry or reporting marginally adequate topsoil moisture the period of warm and dry weather will translate into a period of distress for both farmers and their early planted crops.

It looks like weather conditions in early May are going to turn warmer and dryness may be perpetuated for a while in Alberta and Saskatchewan. The far eastern parts of the Prairies may be a little cooler biased for a while and near to above normal precipitation in May will be more limited to the southeastern corner of the Prairies.

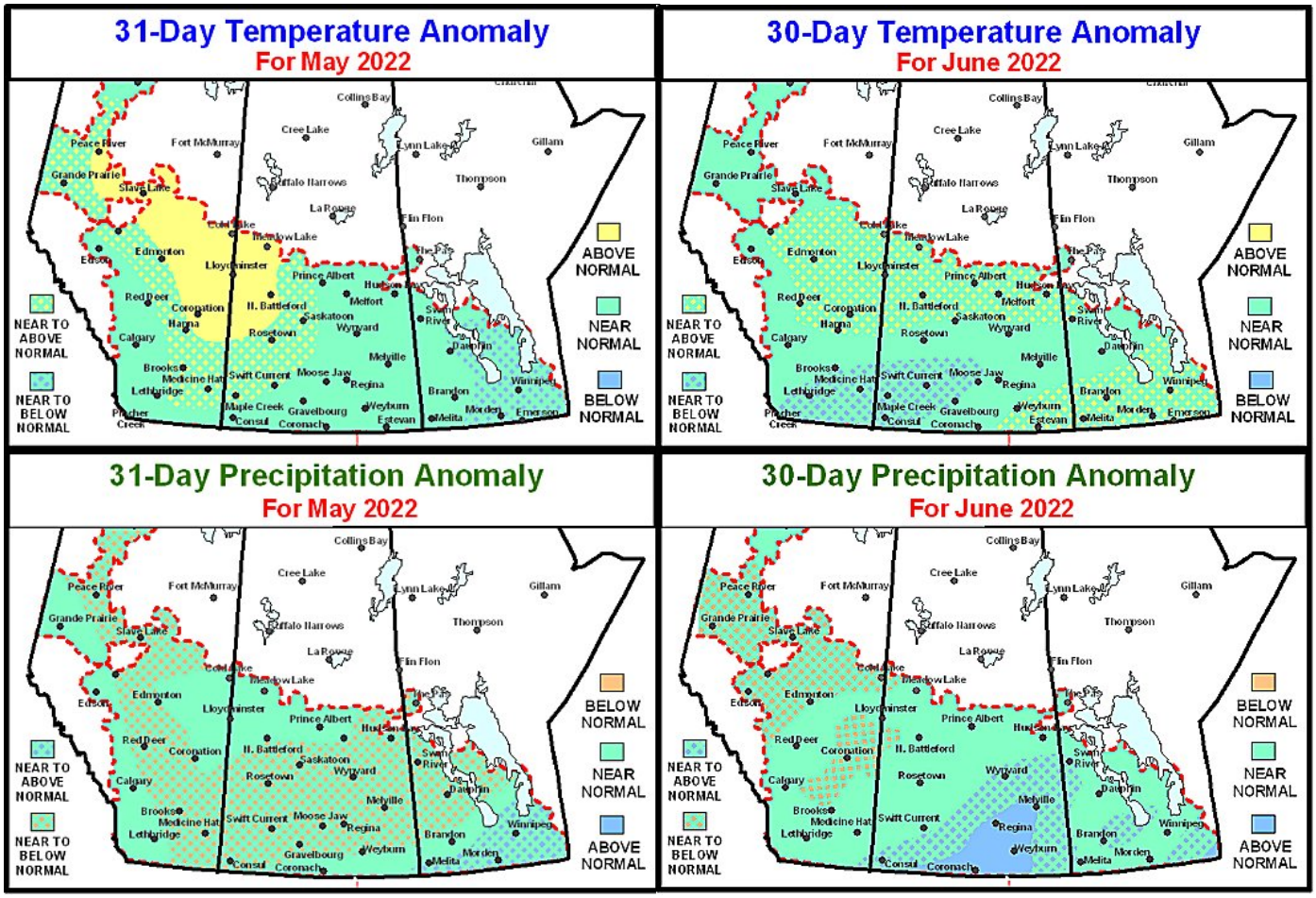
It is possible that the warm and drier biased conditions will dominate the first half of May and then give way to "some" increase in precipitation during the second half of the month, but it does not have to be that way. The drier biases could last into the second half of May along with warmer biased temperatures raising some serious concern over crop development; however, June should change the position and orientation of the ridge so that at least some rain evolves.

June is expected to be wet enough to bring some relief to dryness after May's limited rain and warm weather. June precipitation may be a little lighter than usual in western and a part of northern Alberta while a little greater than usual in southern and eastern portions of Saskatchewan and in a few pockets in Manitoba.

June should bring an opportunity for relief from dryness and there is some potential that the relief could begin in the second half of May, but confidence is low over both solutions and the situation will be closely monitored.

June temperatures will likely trend a little cooler because of the increase in rainfall, but areas that do not see much precipitation will still have a warmer than usual bias.

Rainfall should continue to increase during July and August across the heart of the Prairies and temperatures should also cool down a little .



# Brazil's Safrinha Corn, Cotton Stressing In Mato Grosso

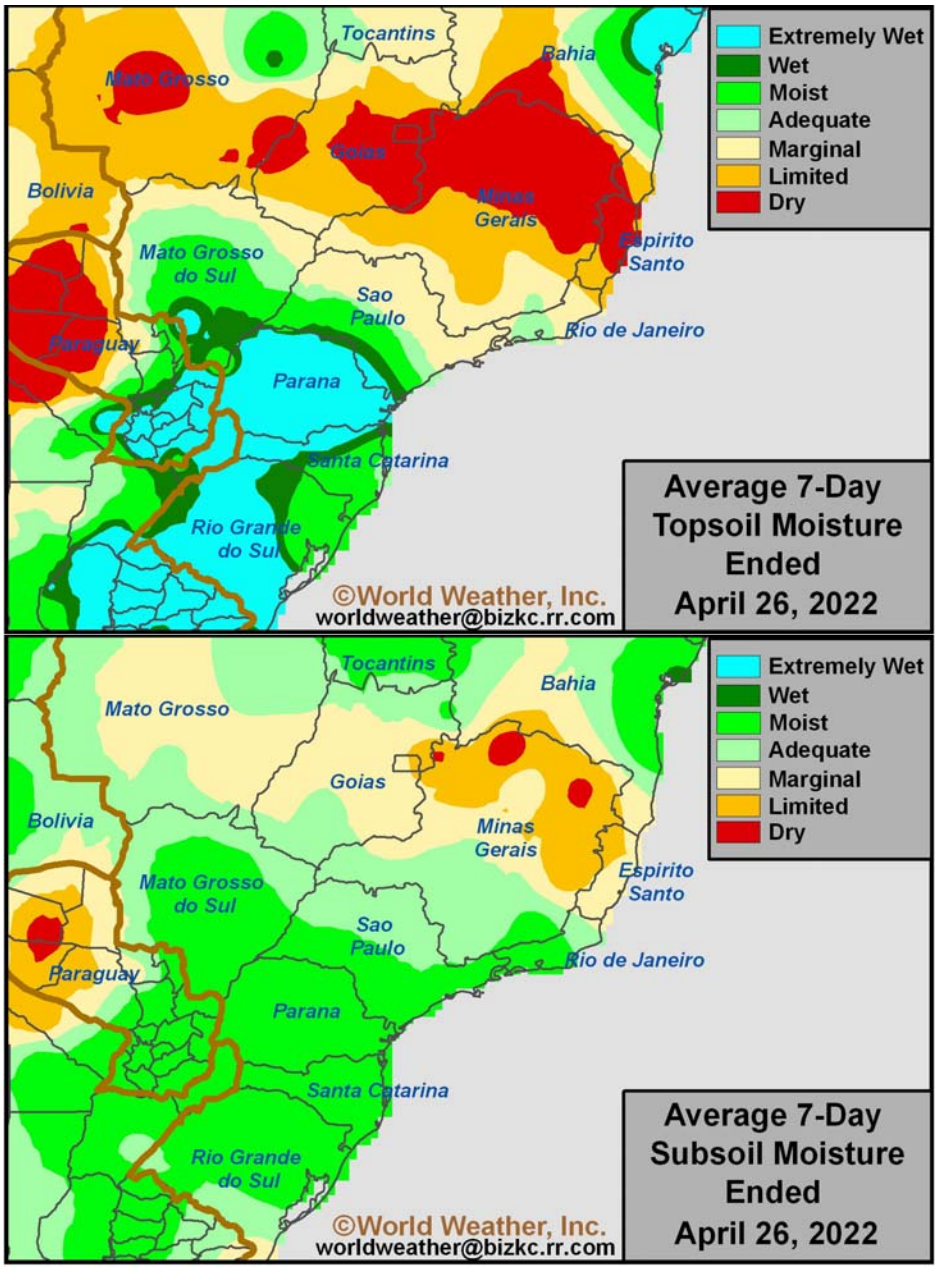
Rainfall in Brazil's center west, northeast and northern portions of center south have been subjected to less than usual rainfall this autumn. The decline in precipitation occurred mostly in late March and early February when the monsoon season normally is finishing up. Seasonal rainfall became notably light forcing Safrinha corn and cotton to begin feeding off soil moisture to sustain normal crop development.

The monsoon season then ended in April leaving soil moisture more used up than usual. As time has progressed, that earlier than usual start on the dry season has brought topsoil moisture to the very short category in Mato Grosso and Goias while the crop was reproducing. Subsoil moisture was rated marginally adequate to slightly short at the same time which implies crop stress is under way, but it has not lasted long enough or been serious enough so far to have a big impact on production potentials.

A brief bout of rain is needed now to recharge soil moisture just enough to carry crops through the second half of the reproductive season. Without a little supplemental rainfall, the region will experience increasing crop stress that will eventually hurt late season crop yields and quality.

Cotton will be least impacted in this environment since it naturally performs better in a drier environment. That does not mean production is going to be just fine. Cotton will experience a little decline in yield if May turns out to be a drier and warmer than usual month.

All the corn and cotton needs is a couple of rain events over the next few weeks that would bolster topsoil moisture while crops are reproducing and filling. Corn will require more rain than cotton to restore then best production potentials because of its natural tendency to require more water to induce the best yields.

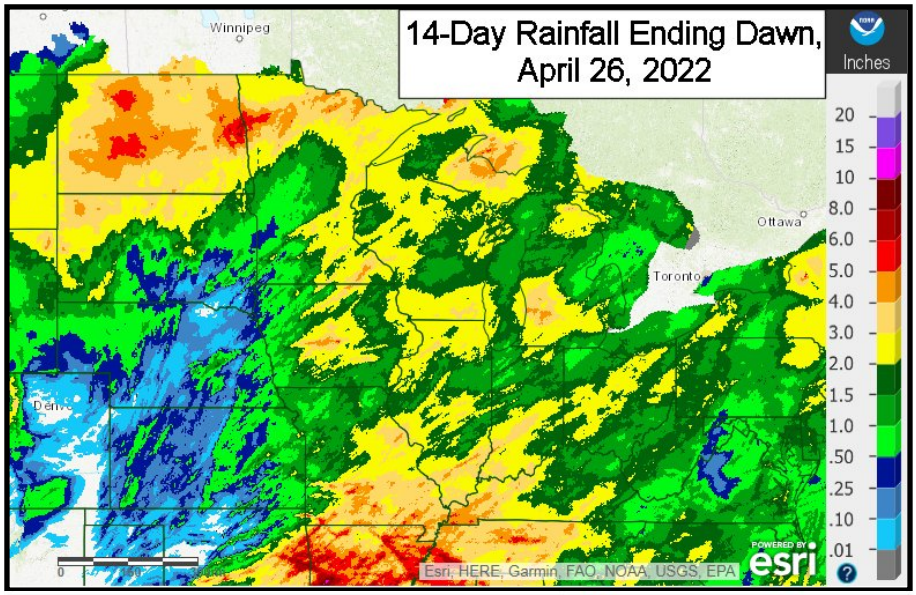


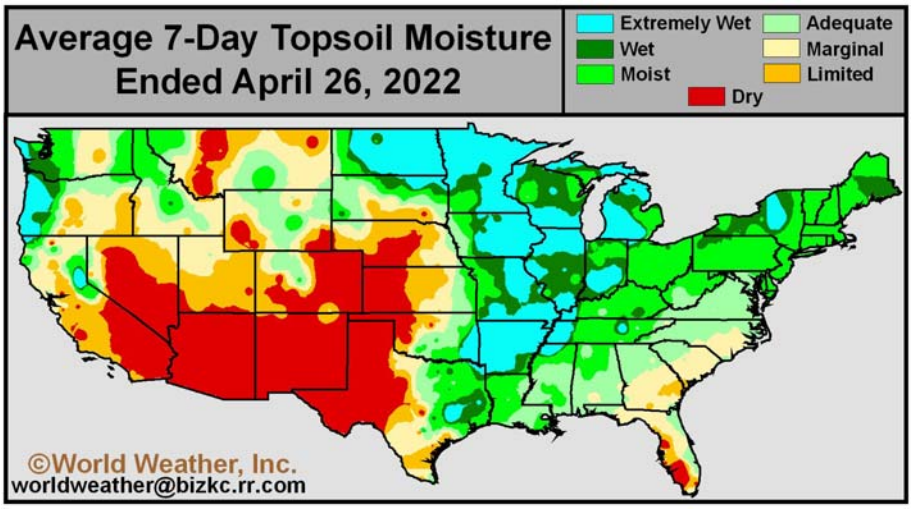

World ending stocks for corn are not great enough to allow another cut in Brazil's corn production to go by without having an impact which is why commodity futures prices have been so high recently. The Russia/Ukraine war has had much to say about market prices, but weather is becoming an influential feature as well because of the tight supply situation. The war will restrict world grain supply and if the U.S. has dry summer in the Plains and western Corn Belt as suggested then the world stock situation will only get worse. Safrinha corn production in Mato Grosso could have a big influence on that grain stock equation keeping market prices high especially if Mato Grosso experiences lower production.

All other states in Brazil are experiencing more favorable weather and Safrinha corn production will be normal to above normal, but Mato Grosso is the most important production state in the nation.

# U.S. Midwest, North Plains Planting Outlook Remains Poor

Early-season planting and general fieldwork are off to a sluggish start for the U.S. Midwest and northern Plains. Frequent precipitation in recent weeks combined with periods of cooler weather has limited fieldwork. An extended period of drier and warmer weather is needed to firm up the ground and support ideal planting prospects. Although these areas will see a brief period of drier and warmer weather during the next few days, rain and cooler weather will return this weekend through all of next week. The rain and cooler weather will continue to limit aggressive planting and fieldwork. The moisture will be of use during the late spring and summer once crops are planted, but for now, the need for drier weather will outweigh the moisture benefit because no crop can yield well if it does not get the ground.




The U.S. Midwest and northern Plains saw several waves of precipitation in recent weeks. North Dakota and northern Minnesota received some of the most significant precipitation with moisture totals ranging from 2.00 to 6.00 inches and locally more for the 14-day period ending Tuesday. Some of this moisture occurred as very heavy snow.

Southeastern Missouri, southern sections of Illinois and Indiana, and western Kentucky also received 2.00 to 6.00 inches of rain during the past week. Moisture totals elsewhere ranged from 1.00 to 3.00 inches with pockets of greater and lighter rainfall.

Topsoil moisture was rated adequate to excessive across the Midwest and much of the northern Plains outside southeastern South Dakota and eastern Montana. Most locations also had adequate subsoil moisture with the exception of Montana which remained a little too dry. Snow cover that had been widespread from northern South Dakota to Manitoba and southeastern Saskatchewan, Canada had dwindled to about half of that region in recent days.

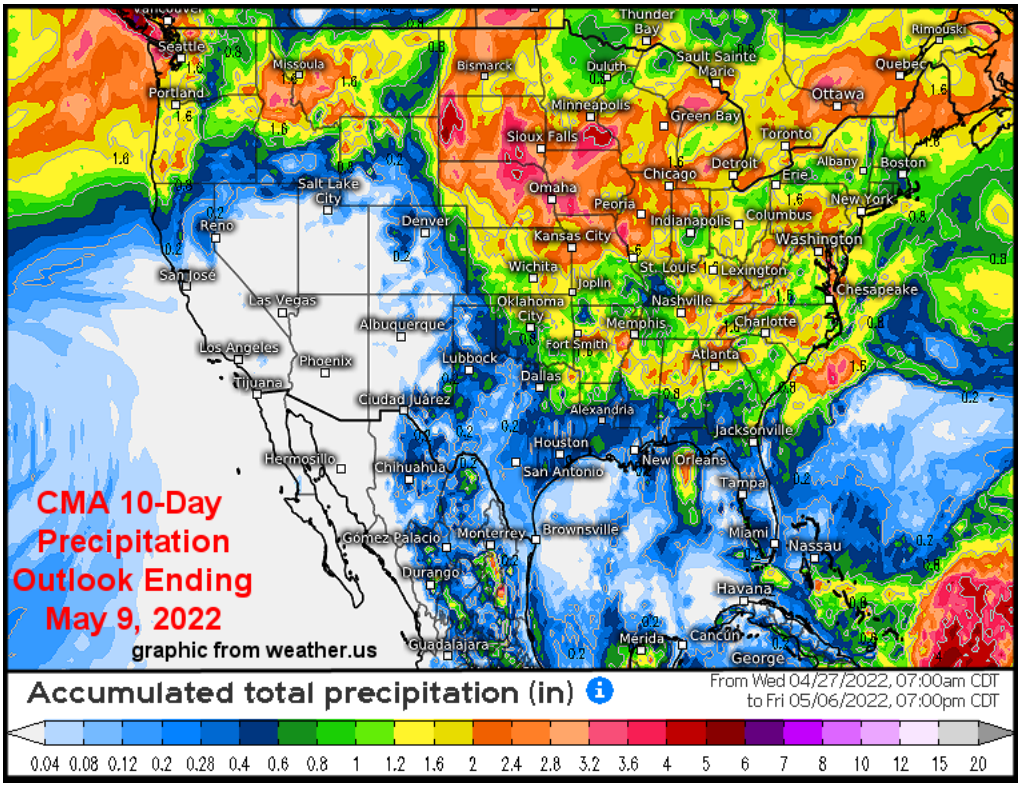
In addition to frequent precipitation in recent weeks, temperatures were often colder than normal. The cool weather and precipitation limited drying and kept producers from getting into the fields aggressively. Early-season corn and soybean planting is generally behind normal for this time of year due to the poor fieldwork conditions. There is still plenty of time to get planting completed in the next few weeks, but optimum planting dates may disappear if the planting delays last too much longer than then middle of May. The next ten days will be abundantly wet and temperatures will be mild to cool at times perpetuating the same conditions that are present today.

# U.S. Planting Outlook Remains Poor (Continued from page 7)

In the meantime, drier weather is also needed for winter wheat produced in the Midwest. Some of the rain may have reduced crop quality and drier weather is needed to limit any additional impacts. Drier weather would also promote more aggressive development in areas with standing water or excessive topsoil moisture.

## WEATHER OUTLOOK

Both the Midwest and northern Plains will initially be drier biased today. However, the drier weather will not last long as the next disturbance promotes erratic precipitation when slowly tracking over central North America Thursday into the weekend. Scattered showers and isolated thunderstorms will initially evolve in the northern Plains and western Corn and Soybean Belt tonight and Thursday before a storm center forms in the north half of the Plains Friday and moves to the Great Lakes region while diminishing Saturday and Sunday. The storm will leave behind quite a bit of rain in the northern Plains and upper Midwest, but only light amounts of moisture will impact other Midwestern locations.




Another disturbance will form in the central Plains Sunday into Monday and move through the lower Midwest early next week. The system is expected to be weak, but rain will still advance across portions of the Midwest to set back farming activity.

Total rainfall from the two disturbances will vary from 0.50 to 1.50 inches in general with several local totals of 1.50 to nearly 3.00 inches possible in the Dakotas and a few immediate neighboring areas. Some 1.00 to 3.00-inch rain totals may also impact the lower Midwest, although most amounts there will be less than 2.25 inches. Michigan and immediate neighboring areas will be driest.

Two other low pressure centers and associated frontal systems will move across the Midwest and Great Plains during the second week of the outlook. Each of these weather systems will produce additional rain by the end of the second week of May; however, rainfall with the last system is expected to be lighter than the other three.

Temperatures will also trend near to below normal in much of the Midwest and northern Plains this weekend through much of next week. Daytime high temperatures will be in the upper 40s and 50s in the north and in the 50s and 60s in the south. A few 70-degree highs will occur near the Ohio River, but it will not be much warmer than that and nighttime lows will be in the 30s and 40s most often with a few lower 50s in the south.

Additional precipitation and periods of cooler weather will keep soil moisture at adequate to excessive levels across the Midwest and northern Plains through all of next week. Planting and general fieldwork will either be on hold or advance slowly. Overall, the need for drier and warmer weather will increase greatly in May. Minor winter wheat quality declines will also be possible in the wetter areas of the Midwest.

# N. America Weather Being Swayed By Many Features

Canada's Prairies weather and the United States have been dealing with drought since 2020. The influences on this pattern have been multi-faceted; including La Nina, the negative phase of Pacific Decadal Oscillation, the 22-year solar cycle and an 18-year upper air wind flow pattern Each of these features are working together to the same end which is why the forecast has been so strong in recent months.

However, the long term outlook for the summer of 2022 may not be as simple as it has been implied. Some forecasters insist that another drought year is instore for the Prairies in 2022 while World Weather, Inc. sees the potential for change. Weather has already been different in the past six months relative to that of 2020-2021, so, why should the pattern be stagnant in the summer of 2022?

La Nina is very strong today. The closely associated Southern Oscillation Index has been steadily rising for an extended period of time and remains strongly positive reflecting the strength in this year's La Nina event. The strong La Nina influence has been partially responsible for the northwesterly flow of air aloft and the colder and drier bias in parts of the Prairies during the winter and now spring.

In more recent weeks the pattern of weather in North America has been complicated by a stratospheric warming event that occurred in March forcing greater cold air to the higher latitudes in North America and Europe. The phenomenon then relocated and split the polar vortex into two pieces creating colder than usual weather across North America and in Europe.

The stratospheric warming event was unplanned and has interrupted some of the expectations on April weather, but its influence on North America should be waning and that will help remove some of the colder bias very soon.

La Nina is also expected to reach its peak intensity in the next week to ten days. Once the peak has been reached, the event is expected to steadily weaken and should do that during much of May and into June. La Nina will not dissipate, but its greatly weakened condition should translate into a less influential pattern on North America weather.

The weakening of La Nina and the absence of an anomalous polar vortex over eastern Canada should allow warming to take place in Canada and some neighboring areas of the United States during the first half of May and it could prevail throughout the month. The return of warmer temperatures will accelerate drying and melt what is left of the snowpack.

Warming temperatures in the drought stricken areas of Alberta and Saskatchewan will only exacerbate dryness and raise greater concern about the fate of this year's crops. However, these changes do not take into account the lingering negative phase of Pacific Decadal Oscillation (PDO)). As La Nina weakens and the influence of the polar vortex abates there will be a much higher potential for PDO to have more influence on North America than it has in recent past weeks. What that should lead to is the relocation of the high pressure ridge over western North America to central parts of the continent.

Shifting the high pressure ridge to the east will place a trough of low pressure in the western United States and that will be further reinforced by the presence of negative PDO. Once the trough of low pressure is in the U.S. Pacific Northwest it will begin to send weather disturbances from the Pacific Northwest through Montana and into the Prairies. That is how the rain pattern evolves in the Prairies. However, the intensity of PDO and the strength of the central North America high pressure ridge will still have much to say about the distribution of temperatures and precipitation in June, July and August and that unknown will leave the forecast vulnerable to some variations in the rainfall distribution and impact on crops.

There is still plenty of time for the forecast to change. The drought outlook some forecasters are touting is still a viable possibility, but World Weather, Inc. believes the combined impact of La Nina, PDO, the solar cycle and the 18-year cycle should produce similar results to that of past similar years. Each of those years produced a good mix of weather across the Prairies from one month to the next and it was rare that any part of the Prairies experienced persisting weather patterns from one month to the next . That implies that if the weather was too wet or too dry during one part of the growing season the odds are very high that a different weather pattern will occur in the following month.

The first test of the variation in weather will be made during May. Southern Manitoba, southeastern Saskatchewan and North Dakota were exceptionally wet in April. If the trend is correct they will see better weather in this coming month and if that is true then most of the Prairies will see a favorable variety in weather this summer.