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The Canadian Agriculture Weather Prognosticator

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World Weather At A Glance

- North Africa and Spain weather has improved this year supporting better production than in 2023, but there is still some notable dryness.
- Russia may experience a summer high pressure ridge this year that might cut into spring summer crop production
- India's monsoon is expected to perform well this year after a slow start in the central and north
- China weather looks quite favorable for rapeseed and winter wheat production; summer crop performance is also expected to be good.
- Southeastern Australia may have a drier biased late autumn and early winter while other areas experience good weather
- U.S. summer heat and dryness may threaten crops in the Plains and western Corn Belt

Another Challenging Year Is About To Begin

April marks the beginning of spring for the Prairies. This season, like the past few will present a few challenges to producers across various parts of the Prairies. The overwhelming best news for the year is that 2024 should mark the end of this series of broad-based drought years; however, some parts of the Prairies will certainly be challenged by the weather once again.

Spring is going to bring more frustration to some of the driest areas from Alberta through south-central parts of Saskatchewan. Southern Alberta is not likely to get enough moisture to break from drought, but it is hoped for at least a few better timed and more significant rain/snow events than what occurred in 2023.

Support for the long term high pressure ridge over western Canada remains for the spring months, although the rapid decline of El Nino opens the door of opportunity for a few "rogue" storms to move across portions of the Prairies similar that early March event that changed the moisture profile for many areas. Unfortunately, losing El Nino only partially fixes the problem with dominating high pressure over the Prairies. The 18-year cycle (lunar cycle) has a similar weather pattern and losing El Nino may not be enough to end drought for many of the driest areas. There will still be periods of dry and warm biased conditions especially in the Peace country and from east-central and interior southern Alberta to south-central Saskatchewan.

The area most favored for some timely rain from the "rogue" storms will be the eastern Prairies. The first potential period for one of these larger storms will be in the second half of April and there may be a couple of weather systems to watch for that will bring above normal moisture to parts of Manitoba and eastern Saskatchewan. These systems will likely miss the some of the drier areas in the western Prairies returning more serious dryness for areas as seasonal warming becomes more significant.

Last spring there were some timely bouts of precipitation in the western Prairies that supported planting, but the distribution of rain was not ideal and some areas received enough moisture to support planting and early crop development and then it got too warm and rain frequency was reduced leading to a more threatening environment and one that ultimately led to some failings in the production year.

This spring should be a little better than last year, but it will feel much like déjà vu. Frustration over the poor distribution in rainfall is once again expected in central and southern Alberta and some areas in west-central, south-central and southwestern Saskatchewan, but relief is expected in June and possibly a little late in May.

The eastern Prairies will not have a super wet spring , but the frequency of precipitation events will eventually be great enough to bolster soil moisture favorably. The problem with the eastern Prairies comes in the summer as a high pressure ridge building in the central U.S. lifts to the north into Manitoba and southeastern Saskatchewan possibly cutting into production potential during the reproductive process in mid-summer.

Parallels To 2006, Shadows Of 1988

It may not have felt like it, but March precipitation was a little better than some folks may have imagined. Had it not been for that large rogue storm that occurred in early March, though, there would not have been as many producers thinking the month was not too bad.

The Peace country and areas extending from just east of Swan Hills and south of Slave Lake into east-central Alberta experienced the greatest moisture deficits for the month of March and some of the Peace region and north-central Alberta crop areas experienced one of the driest winters on record. That was a concern all by itself, let alone when considering the huge moisture deficits from recent past years in east-central Alberta crop areas where there is some serious concern over another very poor spring season.

There is hope for north-central, and eastern Alberta and western and north-central Saskatchewan to have a better summer. Many of the 18-year cycle member years and La Nina years promote rain in these areas during June and periodically in the summer. Unfortunately, the Peace River region does not get as much relief during the spring and there is some debate over how much relief will come in the summer.

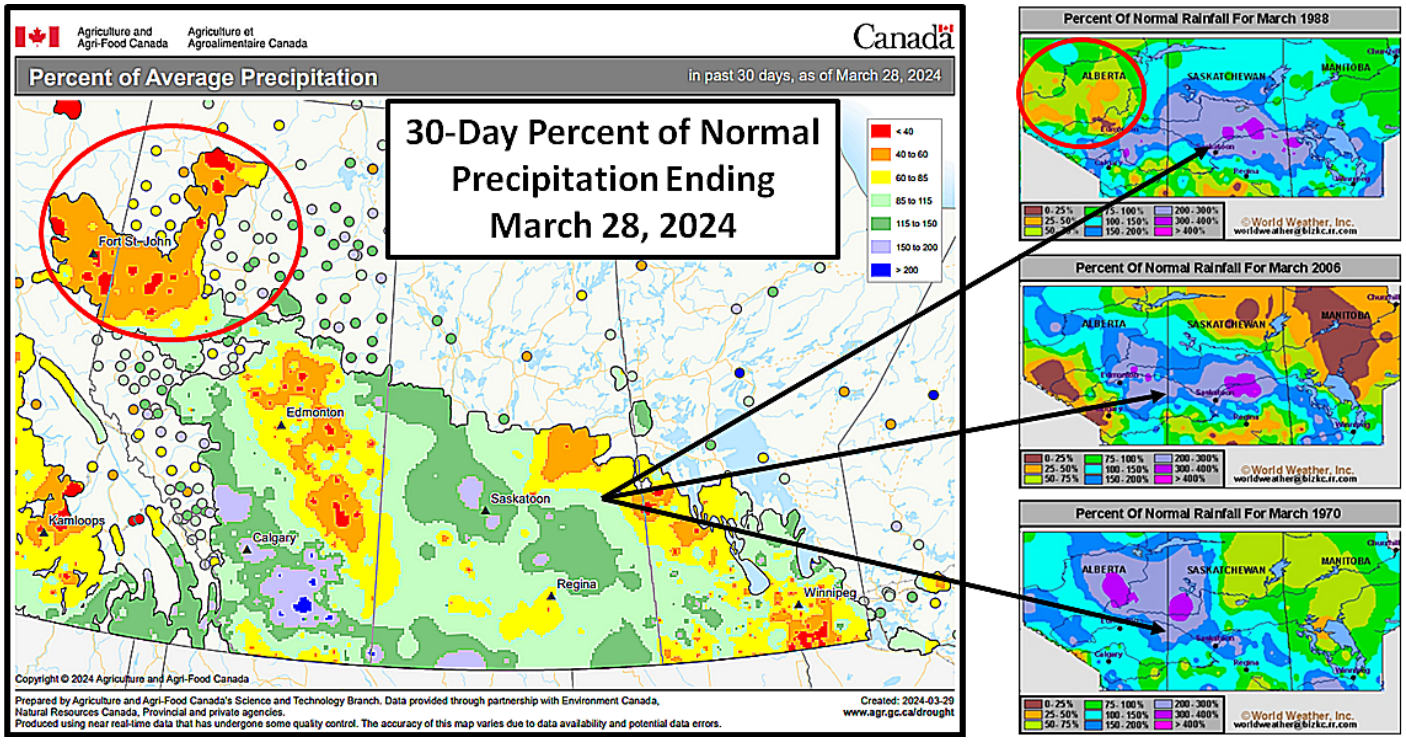
March weather was still just a little too dry for the stomach of many a farmer. Those areas reporting less than usual precipitation and a huge void in snow cover are most worried and rightly so. The one encouraging sign in March, though was the early month storm in portions of Saskatchewan and Manitoba and the late month snows that occurred along the front range in southwestern Alberta and across the interior south.

No serious drought relief resulted from these precipitation events, but there was a restricted amount of frost in the ground and, unlike years in the past, the melting snow may reach into the soil much faster and more beneficially for those that received significant snow. Other areas that have been dry are a big concern.

The pattern in December, January February had a notable bias paralleling 2006. That parallel was a bit harder to find in March, but if one holds their head at the right angle they might see at least the fact that 2006, 1988 and 1970 all had a tendency to be wetter in northern and eastern Saskatchewan , but then there was the problem with dryness in the Peace country which draws the parallel closer to 1988 once again.

No one likes to think about 1988 because it was such a bad drought year for North America (mostly the U.S. and southern parts of the Prairies). World Weather, Inc. believes the parallels are stronger for a year more like 2006 than that of 1988, but no one should turn their backs on 1988.

One of the strongest arguments against another year like 1988 is the fact that ocean surface temperatures in the Gulf of Alaska are not nearly as cold as they were in 1988. World Weather, Inc. believes cold water in the Gulf is quite often associated with drought years in the Prairies. The water temperatures this year show no tendency to turn cold like that. 2006 may still be the better analog year.



Late April, Early May Precipitation So Very Important

The early March weather pattern that brought the rogue storm to the eastern Prairies may have been associated with a 47-50 day repeating pattern. Unlike, last year's 60-day cycle this pattern does not seem to be as strong or as reliable of a predictor for pattern changes. Nonetheless, it has helped to suggest times of potential change and the next favored period for possible change (however brief it might be) is in the second half of April.

The second half of April may allow the jet stream to drop southward over the western United States creating a southwesterly wind flow pattern aloft that would bring weather systems into central and eastern Canada's Prairies. A similar pattern change was partially responsible for the early March storm that brought needed moisture to northern and eastern Saskatchewan and some Manitoba locations.

At the time of this writing, there was a similar southwesterly flow pattern advertised to set up late in the first week of April. If that pattern evolves a boost in precipitation would be possible for the central and eastern Prairies during the April 6-8 period. This potential storm has just recently showed up in the model data and confidence is not high that it will verify, but if it does that will raise the potential for more rain later in April as described earlier in this article.

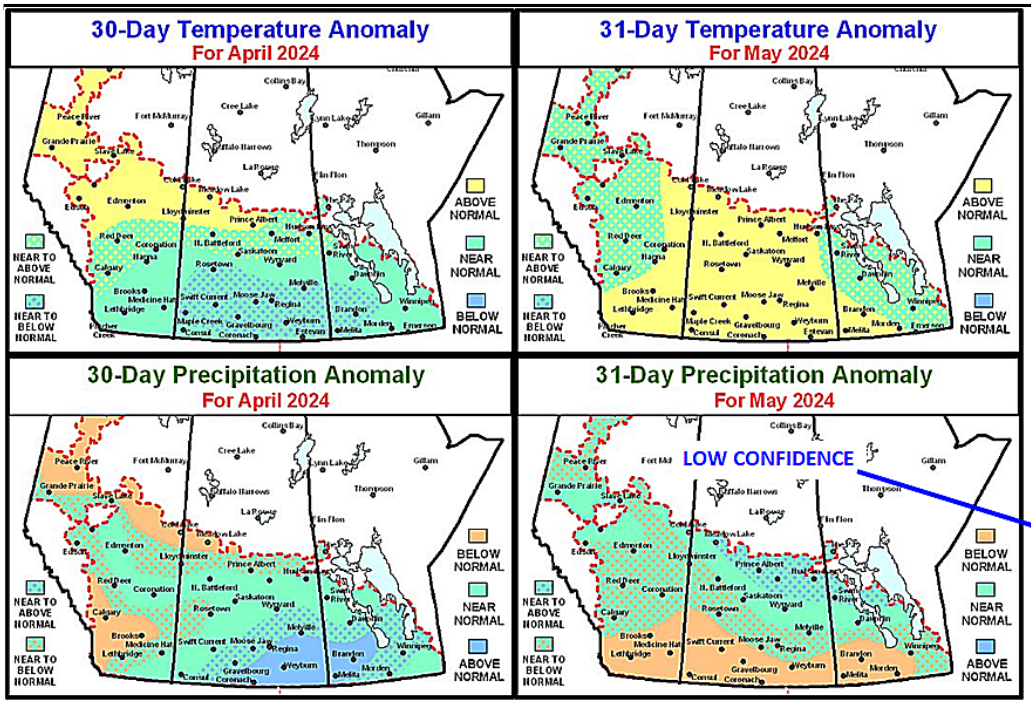
Since the repeating weather cycle is not well defined this year, there is potential that rain/snow events could come a little before or after the noted time interval. The recent advertised storm for late next week does not fit the cycle.

May is expected to be a month of transition. That is when the ridge of high pressure, which has been largely over western Canada in recent months, will attempt to relocate over the U.S. Plains. This transition will take a few weeks and it may get started and then fall back to the older ridge position before trying again. Eventually (by late May) the ridge will fall into its new position. During the transitionary period much of the Prairies could experience dry and warmer than usual weather similar to that of May 2023.

The outlook map for May 2024 is shown below, but confidence is not high due to a timing problem. We are confident the ridge will be over the U.S. Plains and western Corn Belt during June and probably in late May, but the exact time in which the new position kicks in is up for debate. It will be a period possible surprises. There is some potential that late April rainfall in the eastern Prairies could bleed over into early May. By late May and especially June, though, the pattern will be different with increasing potentials for rain in north-central and eastern Alberta and western and northern Saskatchewan and drying for at least southern Manitoba and southeastern Saskatchewan.

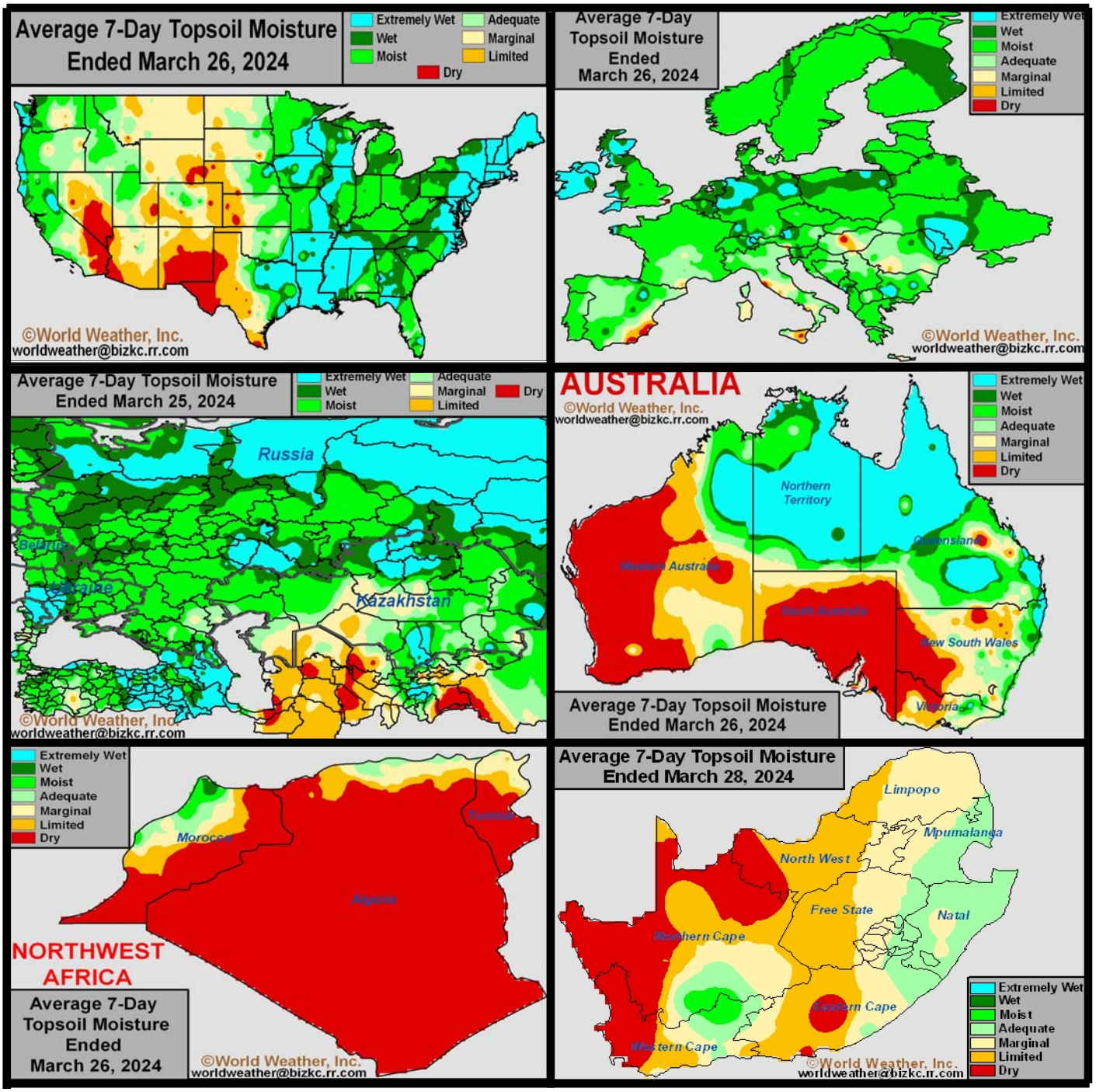
The pattern change coming in late May and June will dominate July and at least early August. That is when the ridge of high pressure will dominate the central United States and induce drier and warmer biased weather there and in the southeastern Prairies. It will also be a good time for some greater relief to finally come to some of the western Prairies.

The Peace country may get some relief from dryness during the summer, but above normal rainfall is not likely and some areas may keep their moisture deficits and stress for a while.



World Weather, Inc. believes precipitation will become greater than usual in the eastern Prairies during late April and even though not shown here there is potential for the wetter bias to linger into early May. Dryness in Alberta may not be seriously reduced, although some timely rain is possible. May is a transition month that could still change greatly in the next few weeks as more data is collected.

Selected Weather Images From Around The World



Recent snow and rain in the U.S. upper Midwest has improved topsoil moisture while the eastern Midwest, Delta and southeastern states remain favorably moist. Dryness remains in he high Plains region of the U.S., but there is time for improved moisture before the warm season fully kicks in. Europe soil moisture was good on March 26, but at the time of this writing France, Spain, Portugal and Italy were getting slammed by frequent rain and strong wind speeds. North Africa crop conditions are still better than last year, but far from ideal. North-central Morocco will yield much better and yields in Tunisia and northeastern Algeria should be better than in 2023 as well. Other areas in North Africa are drier than last year. South Africa has dried out greatly since mid-February and needs moisture for the late maturing crops. Australia will need greater rainfall in the south soon to support autumn planting and most of the CIS has favorable moisture today, but drying is occurring in Russia's Southern Region and eastern Ukraine.

Holding The Line On Summer With Heat, Dryness East

Despite the inclusion of 1988 in the group of 18-year cycle analog years, World Weather, Inc. still does not look for the same level of extremes to occur in the Prairies, especially not in the west. It is disturbing when we look at six different 18-year cycle years for June through August and they all have the same bias toward below-normal rainfall and above normal temperatures for the Central United States and much of Manitoba. Southeastern Saskatchewan also seems to have a drier and warmer tendency.

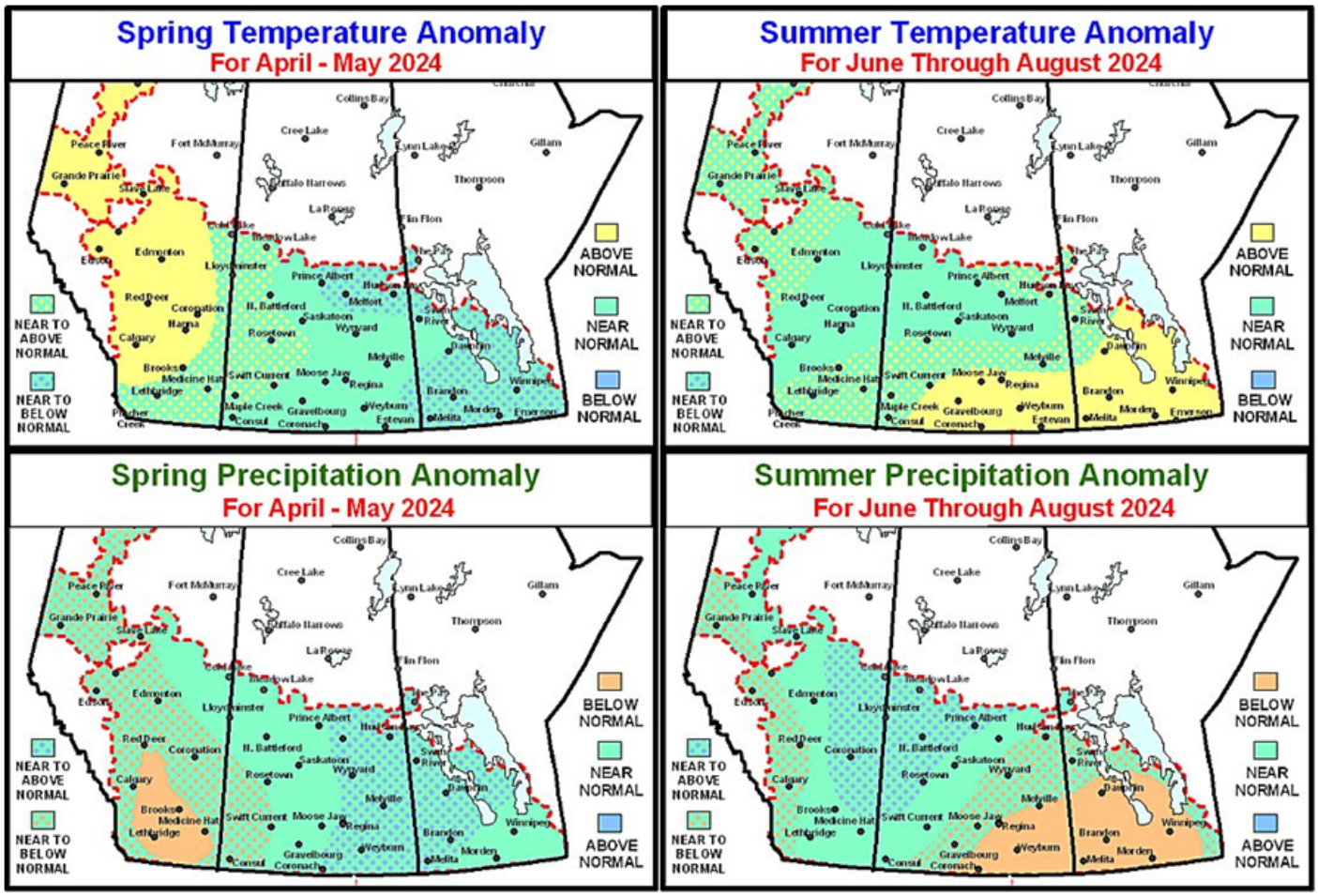
At least if the 18-year cycle data verifies again, the eastern Prairies may be wetter biased during a period in April and May. That new moisture combined with the more favorable soil moisture profile already present in the eastern Prairies may help crops in the east deal with the pending drier and warmer weather days of summer with a little less negative impact—at least initially.

La Nina will be the Prairies friend this year unlike that of 2020-22. La Nina earlier this decade was too persistent and many areas around the world lost some very important moisture resulting in mid-latitude dryness in both the Northern and Southern Hemispheres. This La Nina event coming up will be of shorter duration and follows an El Nino event which usually helps generate more rain rather than less rain.

For this summer, both the 18-year cycle data and La Nina are going to work together to induce some timely rainfall for central and western Saskatchewan and eastern and north-central Alberta. Rain is also expected periodically in southern Alberta, though the odds are not in favor of moisture surpluses coming into the region. Moisture surpluses could develop in eastern and north-central Alberta and western and north-central Saskatchewan, although let's not get too focused on that. Drought is much too serious in many areas in the Prairies to be so quick to bring it to an end.

Drought continues from Mexico through portions of the central United States to most of the Canada Prairies. Drought conditions are not likely to break down easily, but we do not need the drought busted to grow a good crop. We just need timely rainfall and no excessive heat.

The western Prairies may be warm biased this spring at times while the eastern Prairies may see some periods of cool weather. That trend should reverse with the east trending warmer and the west trending cooler during the summer.

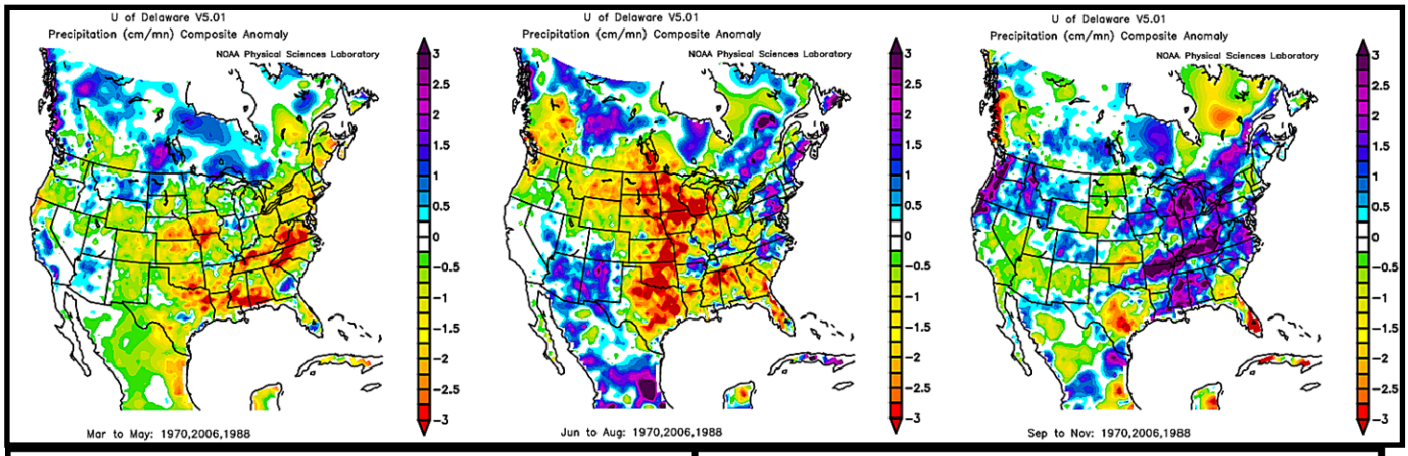


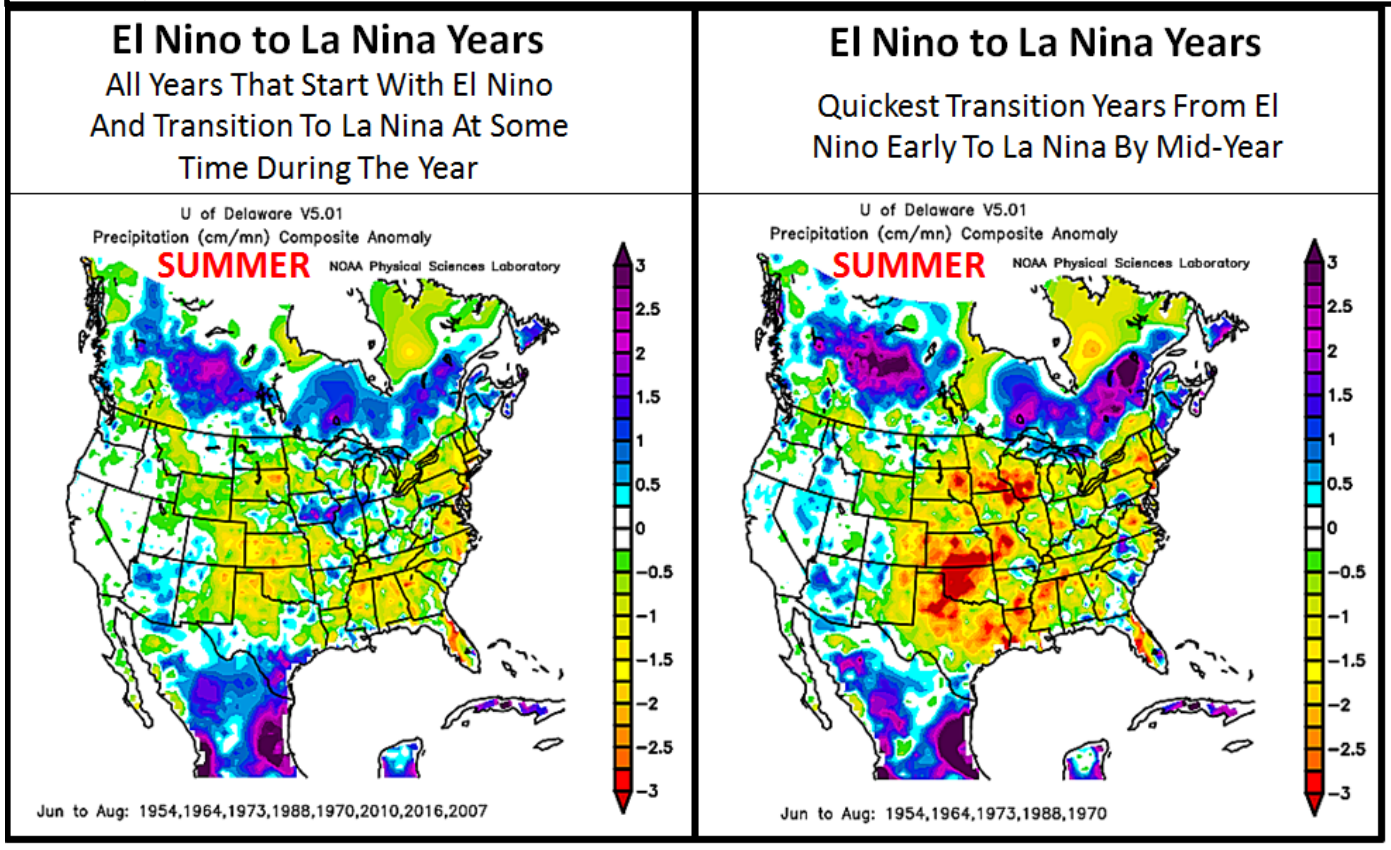
Images For Prayer; A Snapshot From The Past

The images below should be complementary to the page 5 article looking at the spring and summer. These images provide some hope and some fear depending on location. First, the spring precipitation in North America does not look too bad relative to the past few years, although clearly southern and western Alberta and a few areas in southwestern Saskatchewan do not get much rain. These departure from normal rain maps suggest the below normal precipitation anomalies are not that high for spring. Just remember while you pray over this implication you remember that coming out of a severe drought will be harder than what some of these charts would imply.

Notice the dry bias for the summer in the central United States, Manitoba and southeastern Saskatchewan as well as dryness in the Peace River Region. Then be sure to note the wetter bias for harvest in the U.S. and a part of the Prairies.

Lastly, be sure to notice the La Nina rainfall anomalies. La Nina has the potential to reduce moisture deficits advertised for the eastern and southern Prairies that might occur without La Nina. Also, note that the faster we move into La Nina, the more stressed U.S. crops become.

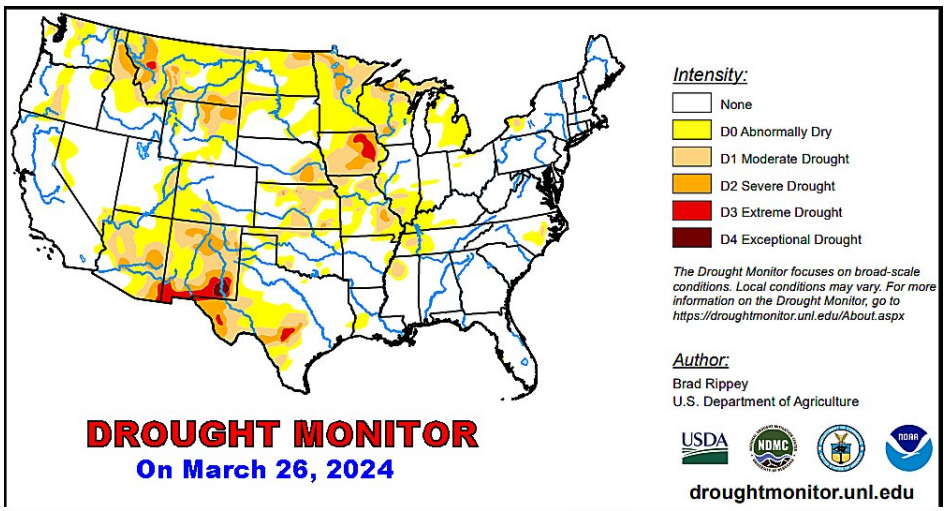


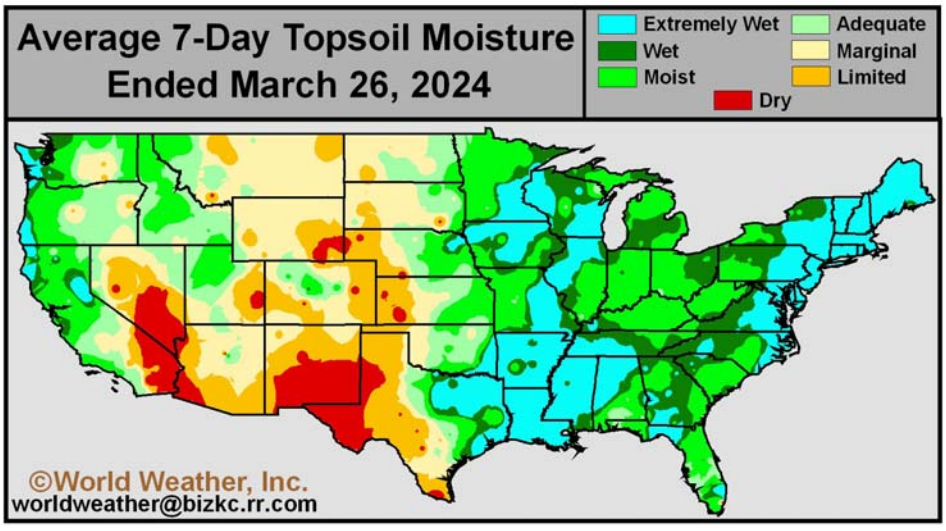


A transition to La Nina this year could have a positive impact on the Prairies

Relief Occurs To Upper U.S. Midwest Crop Region

Much-needed rain and snow evolved for the western U.S. Corn and Soybean Belt early in this past week resulting in drought relief. The precipitation has already improved the moisture profile and will continue to improve soil moisture in the coming days as the snow melts. Some of the driest locations in Iowa, Minnesota, and neighboring areas may need additional precipitation to completely restore soil moisture to normal.





Moisture totals for the single greatest precipitation event of the calendar year varied from 1.00 to 3.00 inches and locally more from interior eastern Nebraska through the northwestern two-thirds of Iowa into Wisconsin and the southern half to two-thirds of Minnesota. Many of these same areas were either reporting well below normal precipitation or were in various stages of drought prior to the storm's arrival. The drought assessment late in the same week showed relief for many areas, but drought continued to prevail in parts of the western Corn and Soybean Belt.

Lingering dryness is hidden deeper in the soil. The latest soil assessment clearly shows a boost in soil moisture for the western Corn Belt and a part of the northeastern Plains and some of that moisture was still tied up in the snow that remains on the ground.

Soil conditions across the Midwest are rated quite favorably as of March 26, but follow up precipitation will be very important since there is still dryness down deep in the soil.

Spring still looks to be favorably moist across key U.S. crop areas east of the Great Plains. Sufficient moisture will occur periodically through early May to support a good environment for spring planting and early season crop development. The region may deal with a few bouts of colder biased conditions, but a more definitive warming trend will come in May that will not only accelerate crop growth rates, but increase evaporation as well.

Some of the 18-year cycle years noted on page 6 of this prognosticator suggests that heat and dryness may return to the Great Plains and western Midwest during the late spring and summer. That adds importance to the recent precipitation and that which is likely to evolve in the next few weeks. Despite favorable soil moisture today and the good prospects for additional moisture in coming weeks the odds are still good that drying and warming will become significant in late May, June and July that could reverse this recent improving moisture trend and that might lead to crop stress and pressure on potential yields. That combined with better Prairies Weather could give the Prairie Producers bigger crops and better prices.

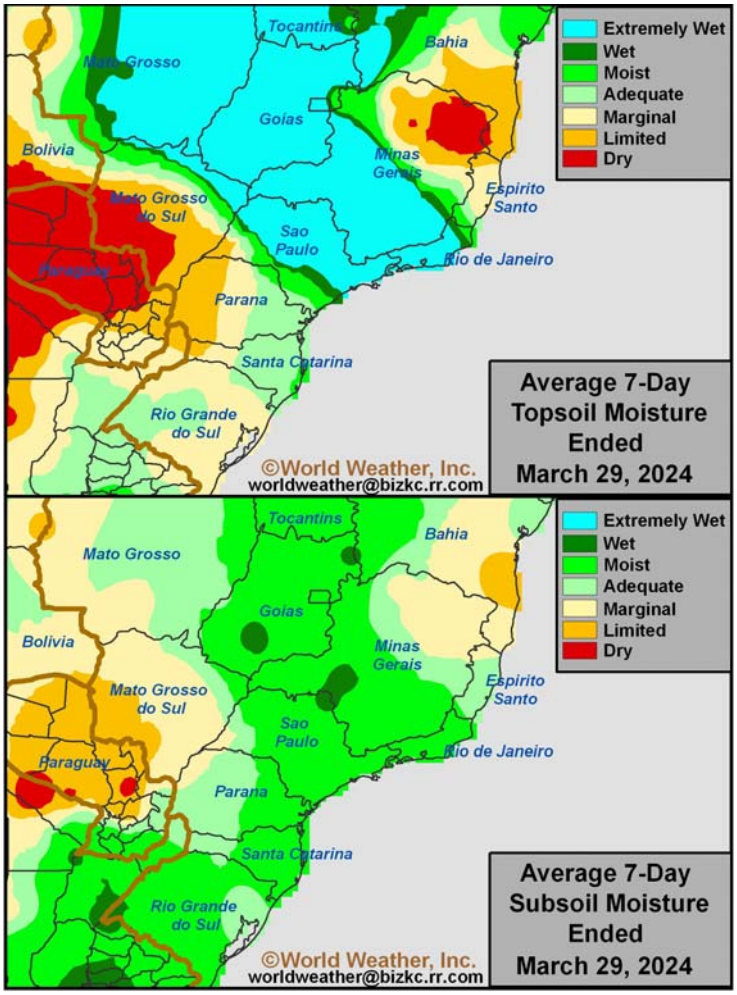
Brazil Moisture Profile Improves For Some, But Not All

Brazil weather since mid-December has not been ideal, but it also has not been as bad as perceived. Nonetheless, the nation's Safrinha crop was planted late and at least 20% of the crop very late. The late planted corn will reproduce in May and be harvested late June and July.

In a normal year the Safrinha corn crop is planted in late January and early to mid-February. This year's crop was still being planted in the first half of March. Seasonal rains in Brazil usually withdraw in April and that means time is running out for the monsoon season and soil conditions must be saturated before the end of the rainy season to give late planted crops any chance of performing well during reproduction.

The best way for late season crops to produce well in the dry season is for the ground the be fully saturated down deep through the subsoil on the last day of the rainy season. That situation may not be ideal at the beginning of the dry season, though crops will slowly improve as the excess moisture dissipates. Root systems will go down deeper in the soil as the moisture retreats downward and in a good year without excessive heat the short season corn can produce relatively well in this environment. However, if it is hotter than usual or the monsoon ends early the environment can turn out to be rather extreme and crops will not perform well.

The moisture profile on March 29 was moving in the right direction with the topsoil being saturated from Mato Grosso and Tocantins through Goias to southern Minas Gerais and northern Sao Paulo. Subsoil moisture, though, was rated marginally adequate to slightly short in Mato Grosso and adequate in most other areas in that region. Greater rain is still needed in Mato Grosso where the bulk of Safrinha corn is produced.



In the meantime, Mato Grosso do Sul and Parana as well as Paraguay are too dry and not positioned very well for the end of the rainy season which may be just a couple of weeks away. The near term forecast does not suggest a significant amount of rain to fall in these driest areas in southwestern Brazil. Concern about production losses may begin to rise soon when it becomes obvious that the region will not be adequately watered for the best yields.

With that concern in mind, World Weather, Inc. believes there will be a few timely frontal systems that will move from Argentina through southern Brazil during late April and possibly May. That could bring some timely rain into the driest region of Mato Grosso do Sul, Paraguay and Parana saving the crop from the worst potential dryness and heat.

The frontal systems and associated rainfall will help the situation for late planted crops, but it will still not be ideal since heavy rainfall is not very likely and only short term bouts of dryness relief are expected. That leaves concern over the production potential.

Some rain is expected early in this coming week to Mato Grosso do Sul offering some improvement in topsoil moisture, but it will turn dry again for the following ten days. Parana may not get much relief.

The bottom line is that 20% of the Safrinha corn crop is at risk of notably lower production, but that depends on the timeliness of April and May rainfall.

Australia's Autumn Planting Outlook

Australia summer weather in eastern parts of the nation was better than expected for an El Nino year—at least until mid-February. After that El Nino dried the region out, but production was still greater than anticipated for such a year.

Harvesting and maturation of summer crops is under way and now the attention is turning toward the planting of wheat, barley, canola and a number of pulse crops. Planting will begin in the second half of April leaving time for improved soil moisture.

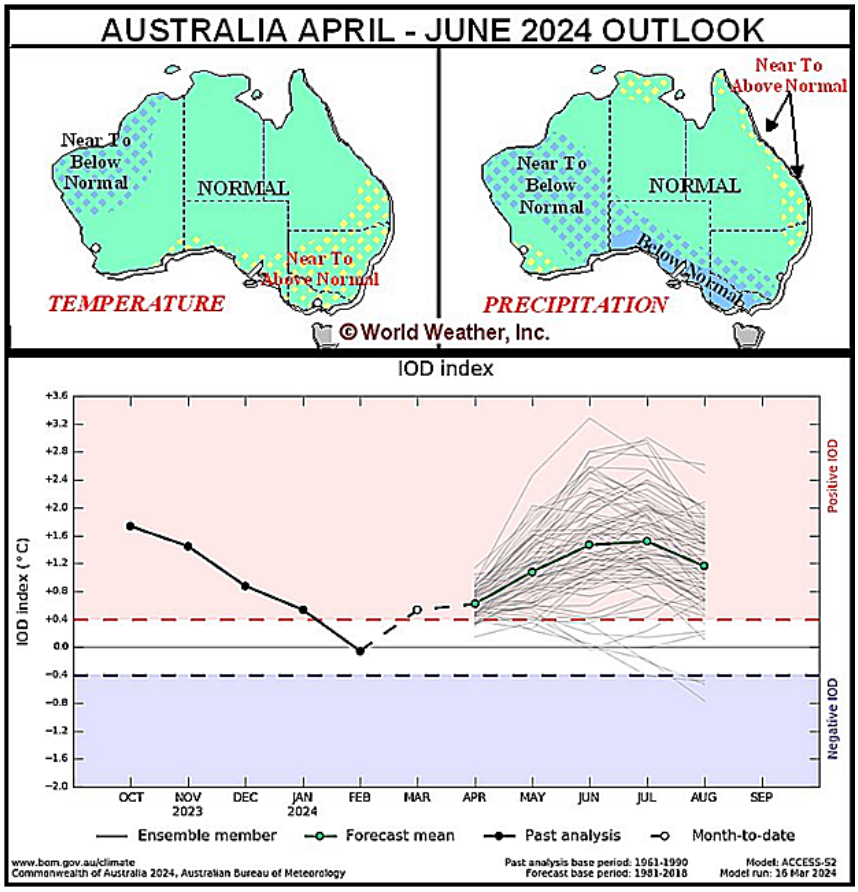
It is normal to come into the autumn season with very little soil moisture throughout Australia's winter crop areas. Normally, seasonal precipitation begins in late April and slowly improves in May and June before diminishing during the late Autumn.

Two weather features will have the most influence on Australia rainfall during the autumn, winter and spring. They are the positive phase of Indian Ocean Dipole (IOD) and the return of La Nina—mostly this winter. These two features will determine much about the rain distribution over the next few months.

Both the IOD and La Nina phenomena will have their greatest influence on Australia during the winter and early spring. That influence will include greater than usual rainfall in Queensland and New South Wales and less than usual rain from northern and eastern Western Australia through South Australia to Victoria and southwestern New South Wales.

Last year's winter season was also dominated by positive IOD, but the ENSO phase was El Nino not La Nina and the impact was dry for many of the winter crop areas. The dryness threatened production in many areas, but the nation experienced an average crop that was certainly smaller than the two previous years at which time La Nina prevailed.

The driest bias for winter crops in South Australia, Victoria and southwestern New South Wales is not likely to kick in significantly until May, June and July and the pattern does not suggest no rain will fall, but that which falls would likely be lighter than usual. Timely precipitation could still occur to support favorable plant establishment and that is what most producers are hoping for.



Dryness in Queensland and the heart of New South Wales recently will give way to improved precipitation later this year, but timely rain will be needed in the next few weeks to get the moisture profile back in ideal condition to support dryland wheat, barley and canola planting and establishment.

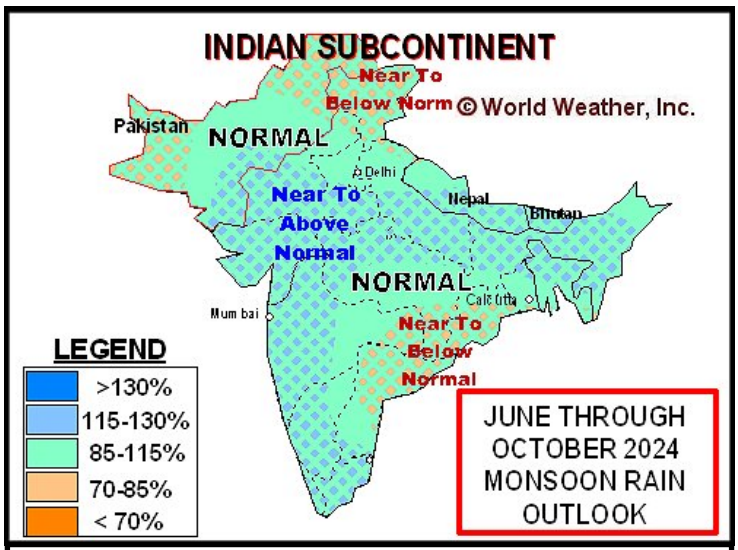
World Weather, Inc. believes the moisture required to establish crops will be present this year. The planting season should advance favorably and crops will be poised to perform relatively well, although South Australia and northwestern Victoria may be a little drier than usual.

Western Australia should see a more favorable environment for its winter crop planting and establishment season this year relative to that of 2023 and that in conjunction with improved rainfall in Queensland and New South Wales later this year should translate into a good production year.

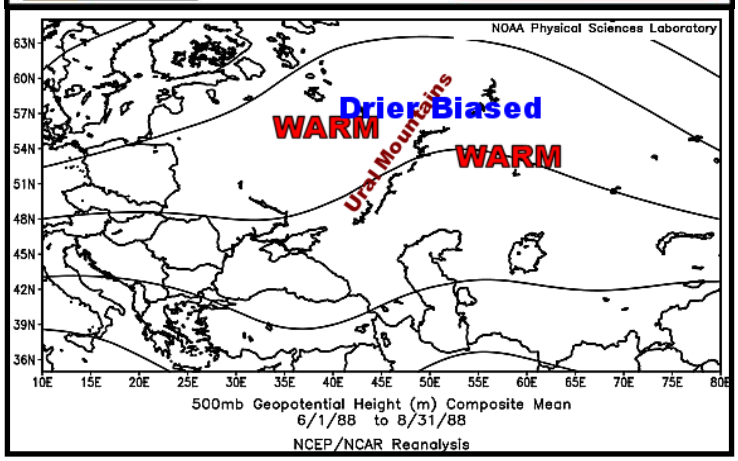
India's 2024 Monsoon, Russia's High Pressure Ridge

Outside of Canada, the United States, Brazil and Australia the only other two regions in the world that will have a great influence on future market prices may be India's summer monsoon and Russian spring and summer weather.

As far as India's 2024 monsoon season is concerned, it looks as though the odds favor a good rainfall distribution. La Nina will kick in during the middle and latter part of the rainy season and will enhance the precipitation expected. At the same time, warm ocean temperatures in the Arabian Sea will further enhance some of the rainfall that impacts India. The two weather phenomena will work together to limit dryness across the nation.



Monsoonal precipitation will start quickly in the southern tip of India this year, but it may be slow evolving in other parts of the nation. By July and August, though, seasonal rains should be well defined and often significant enough to induce flooding. The outlook should prove to be mostly very good for the nation's grain, oilseeds, cotton and pulse crops as well as sugarcane and rice.



Another area of interest in the world marketplace will be Russia. Russia produces large amounts of grain and pulses as well as sugarbeets and oilseeds. Any notable problems in production from that part of the world would obviously gain quite a bit of attention in the futures markets. World commodity futures prices would likely be somewhat influenced by events in Russia just like in the United States and Brazil.

Russia weather has a tendency to turn drier than usual and warmer than usual in years in which there is a transition to La Nina. Sometimes the impact of La Nina is much greater than at other times and the situation needs to be closely monitored. However, similar to the United States, Russia has a tendency to see a high pressure ridge over the heart of its grain and oilseed production region during periods of La Nina and sometimes more significantly when there is a quick transition from El Nino to La Nina.

Russia has already been experiencing restricted precipitation in recent weeks, though that came after an unusually active autumn and early winter weather season. Snow depths were well above normal across key crop areas in Russia and that snow is still melting today. The wet biased autumn and winter weather has the subsoil moisture situation favorably positioned, but the snow free areas have already been slowly drying down.

La Nina associated high pressure ridges in Russia tend to show up in the latter part of spring and summer. The next few weeks will warrant a closer watch to see if a high pressure ridge is going to develop and to determine how impactful it may or may not be. Most likely winter wheat, winter rapeseed as well as barley and rye should all perform relatively well, although a little dryness during reproduction could shave down the crop a small bit. Spring wheat and sunseed in the New Lands would likely be more impacted by a La Nina induced high pressure ridge with some low impact on other summer crops as well.

Some level of dryness is expected to develop, but it is much too soon to predict the impact on production. Nonetheless, this anomaly should be watched for.