

The Canadian Agriculture Weather Prognosticator

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World Weather

- China rapeseed areas finally received some needed rain and more is coming
- Russia's Southern Region and western Kazakhstan continues to receive limited precipitation, although crops are dormant and there has been no winter-kill
- U.S. bitter cold damaged some wheat and sugarcane, but the impact should be low
- Morocco remains too dry, despite showers
- Algeria and Tunisia rain brings improvement to wheat and barley
- Argentina dryness cutting into production
- Brazil soybean harvest to improve in second week of February
- India receives a little more rain in northern production areas
- SE Asia stays wet

Spring, Summer Bias Is Well Mixed For 2025

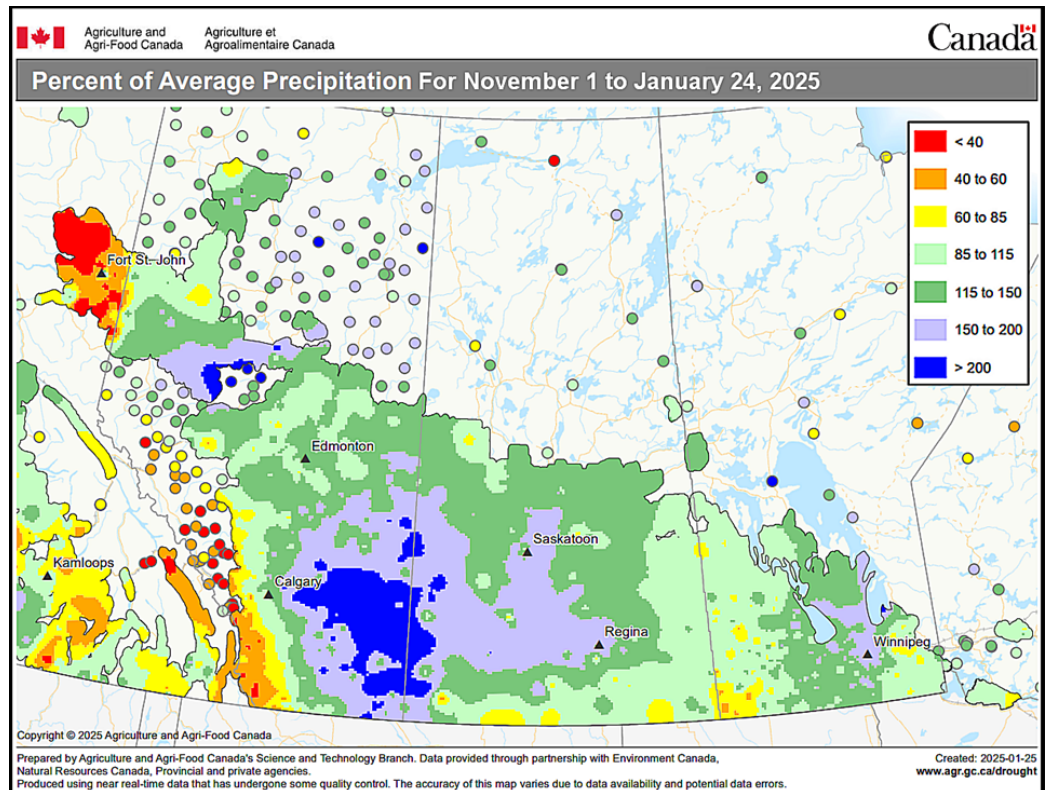
Winter 2024-25 in the Prairies has been much closer to what used to be called "normal". Precipitation has been favorably distributed across much of the region, although some of the Front Range area of Alberta has been drier than usual and certainly warm this year – so far. A few areas in eastern and southern Saskatchewan and western Manitoba have also seen some lighter than usual precipitation at times, although moisture did fall favorably in

the autumn.

The greatest precipitation in the Prairies occurred in November and a part of December when cold air finally arrived after a very warm and dry biased autumn. The change in weather was not greatly unlike that of 8-10 years ago when the most significant cold season precipitation occurred when the Prairies transferred from the warm season into the cold season. Some of those wetter

weeks and months occurred in September and many occurred in October and November. This year it was a little later with November and December wettest.

The autumn weather, as dry and warm as it was, proved to be ideal for getting the year's harvest complete before the wetter and colder bias settled in. Not only was the harvest season favorable, but soil temperatures stayed warm until the first snow



Spring, Summer Bias Is Well Mixed For 2025 (from page 1)

fell and that reduced frost in the ground. Some areas in the Prairies still have a limited amount of frost in the soil and that could help winter snow melt directly into the ground instead of running off. That is great news for those areas that failed to get good precipitation in the autumn.

More recent precipitation has dropped off with many areas reporting lighter than usual snowfall, but at this time of year that does not usually have much impact on spring moisture. March and April are, by far, most important for getting moisture across the Prairies before the ground warms and before the bulk of planting begins.

World Weather, Inc. is looking at numerous signals of influence on the spring and summer this year. Some are in good agreement while others are running contradictory. This raises a considerable amount of debate over the outcome of the 2025 growing season. The number one most important feature to the outlook this year is the fact that sunspot numbers are running near the 11-year cycle peak.

The peak in sunspot numbers appears to have occurred in August of 2024. The official peak of the cycle will not be known until a steady declining trend in the numbers begins to occur. If, however, we speculate that August 2024 was the peak of this solar

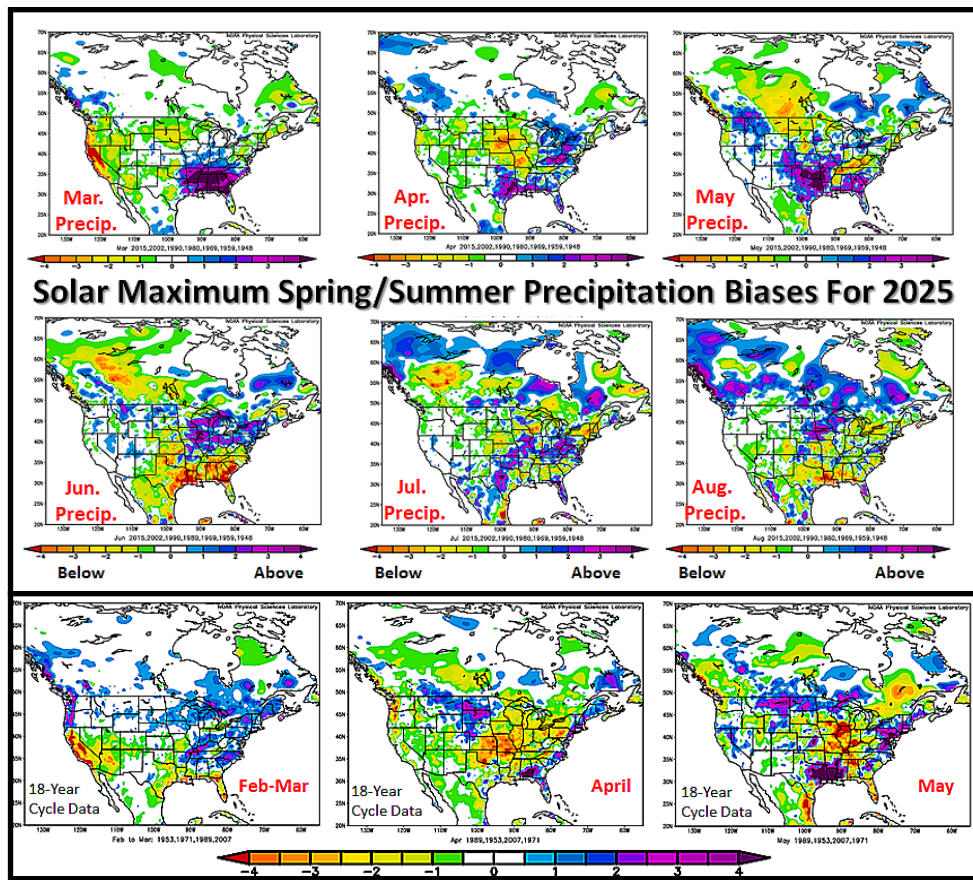
cycle the following winter (2024-25) is usually colder biased and precipitation tends to be near to above normal. That should sound familiar since that is more or less where we are in the winter season so far. That does not mean the solar cycle is the only controlling feature to the Prairies weather for 2025, though it is an impressive parallel.

Another parallel that occurs with the solar cycle maximum that occurs

negative Pacific Decadal Oscillator and warmer than usual ocean water in the Gulf of Alaska. Each of these trends will have some influence on the Prairies in the coming growing season and the “art” of long range forecasting will be illustrated by blending these influences together in such a manner as to get the forecast right. Good luck with that, this year!

Out of all the weather influences on the Prairies this year the 18-year cycle will be of greatest interest because it is usually the greatest influence on the region and this year’s data suggests some notable alternating periods of wet and dry weather.

World Weather, Inc. looked at four analog years for 2025 coming from the lunar cycle. Each of the four years, 2007, 1971, 1989 and 1953 have some notable wet weather in them; however, the occurrence of the wet bias is a little different from one year to the



next. The area most favored for rain of significance seemed to be the southern and western parts of the production region. Southern areas were wettest most often in the spring with western areas wettest in the summer.

The solar cycle is not the only game in town, though. Weather in the Prairies is also being impacted by the 18-year (lunar) cycle, ENSO (weak La Nina conditions), a strongly

Another feature of the 18-year cycle years includes a pattern of alternating wet and dry months. The dry months are not dramatically dry, **(continued on page 5)**

January And February To Bring More Moisture

February and March weather will continue to carry some colder than usual weather across the Prairies. The exception will be in the western parts of the region where warming is expected periodically in both the second half of February and especially in March because of a ridge of high pressure that will be a semi-permanent structure during the two months. The warm bias will be greatest in British Columbia and Alberta during March and may help to limit precipitation in a part of the Prairies at that time. February will be colder biased in most of the Prairies, although readings in the west will be less punishingly cold compared to other areas especially in the second half of the month.

Precipitation during February is expected to fall in most of the Prairies at one time or another. Some of the greater amounts may occur along the

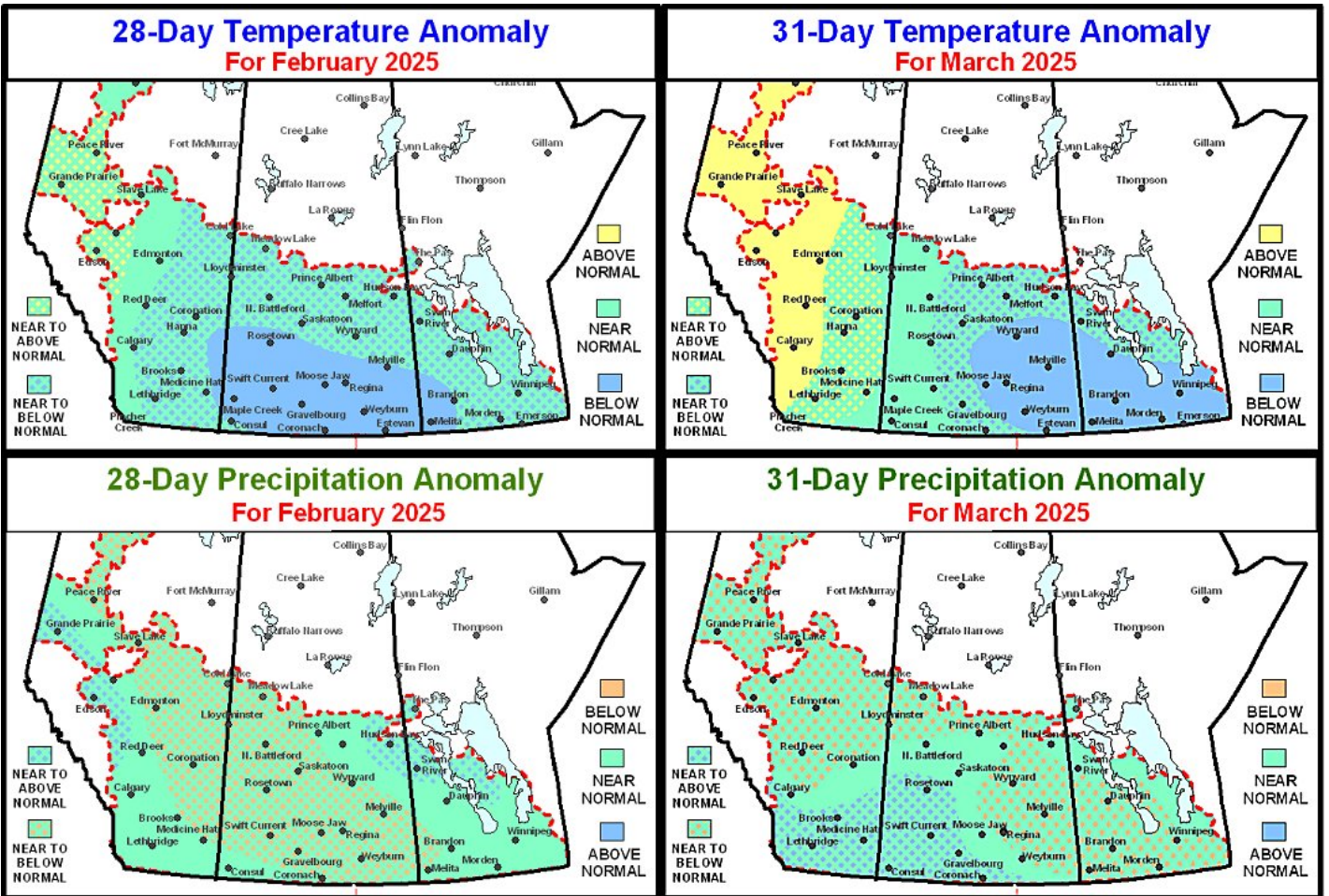
Front Range of mountains in Alberta as well as in northeastern Saskatchewan and northern Manitoba. Precipitation in other areas may be a little lighter than usual at times, but new snow will accumulate.

March precipitation will be a bit more mixed. A small region of greater than usual precipitation may evolve in the southwestern Prairies as a rare storm system evolves in part of the northern Plains and Prairies; however, the ridge of high pressure mentioned above for the western Prairies will eventually suppress precipitation while warming up the western Prairies.

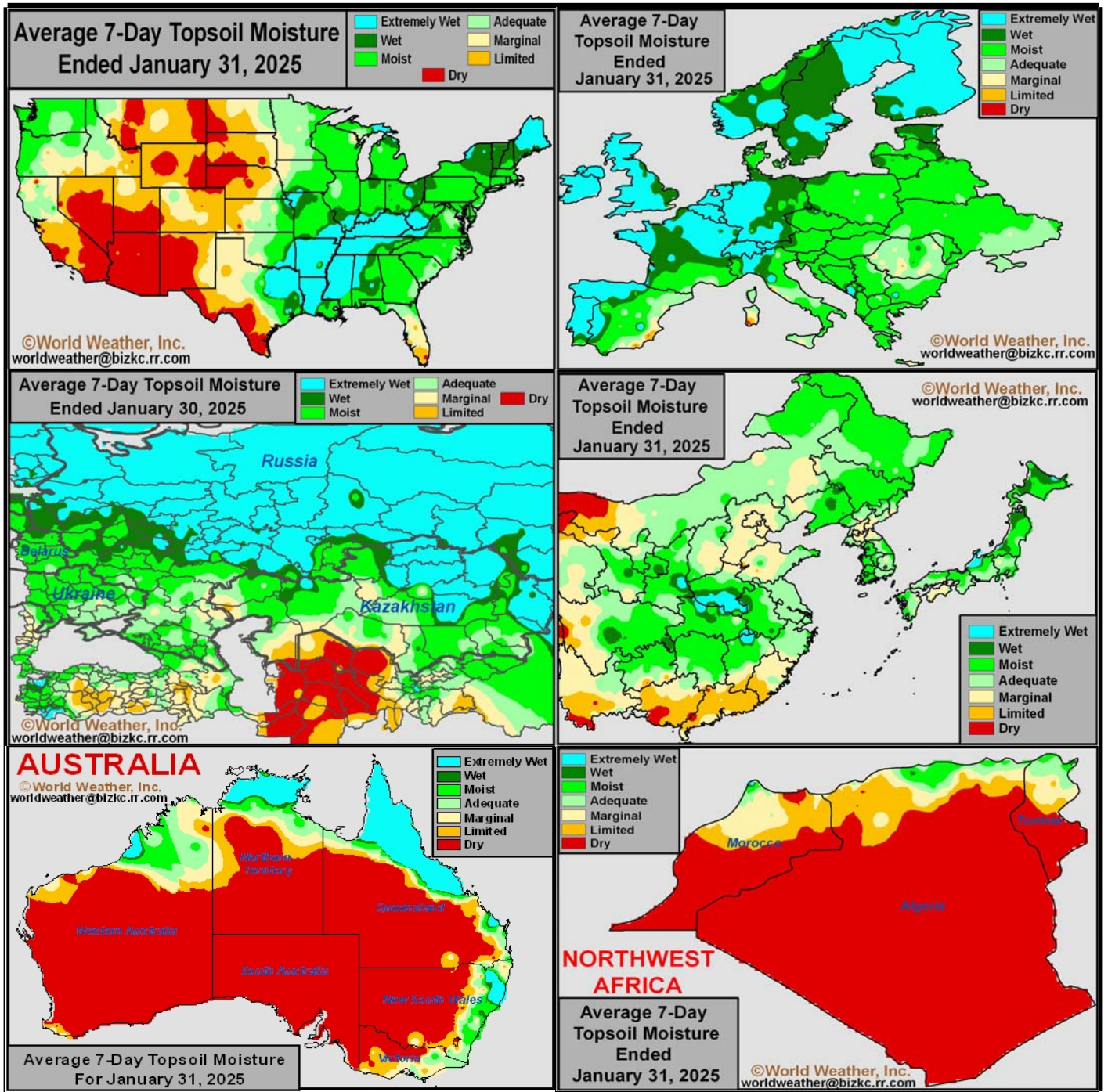
Weather in the next two months will not likely provide a huge change to the spring moisture outlook. Snow will be present in many areas when spring arrives and its depth will vary greatly across the region. Northeast-

ern Saskatchewan and parts of northern Manitoba may be one area that has a great amount of snow to melt. There will other pocketed areas that will have much snow to melt, though the majority if it will not be much more than usual with some central areas dealing with less than usual snow. The area currently with the least amount of snow is southern Alberta near the mountains and that region will need some well timed precipitation in the next few weeks.

The outlook for April should bring a little more precipitation into the northern U.S. Plains and southern Prairies with temperatures bouncing around from slightly below to above normal. The month could be quite fruitful with moisture in the south and if that occurs there could be some early season farming delays, but relief from dryness may occur in the south.



Selected Weather Images From Around The World



U.S. moisture across the Midwest, Delta and interior portions of the southeast is quite abundant and poised for a favorable start to spring fieldwork. The upper U.S. Midwest, northern U.S. Plains and southern Canada Prairies, though, still have a large need for moisture and much hope is being placed on April and May for relief. In the meantime, western Europe is a bit too wet while most other areas in Europe are rated mostly well for the start of spring. A little rain is needed in eastern and southern Spain and in Morocco and northwestern Algeria. Northeastern Algeria and northern Tunisia have recently dried down, although weather in January was mostly quite beneficial for crop development in the spring. China has recently received significant rain in its rapeseed region greatly improving the outlook for early spring development after being dry previously. Areas from Eastern Ukraine through southern Russia to western Kazakhstan are also in better moisture shape than last autumn and there has been no winterkill.

Spring, Summer Bias Is Well Mixed For 2025 (continued from page 2)

but significant enough to firm up the soil. This pattern has been subtly seen this winter, although some caution is needed in the interpretation of the drier January after wetter November and December weather.

The 18-year cycle member of 1953 is of great interest due to the fact that North America weather followed that year closely in the autumn of 2024 until La Nina kicked in and washed out the trend. 1952-53 was a neutral ENSO year as was 2024. The dryness seen in the autumn across most of North America was very similar to that of 1952. That year was much closer to the beginning of the solar cycle (near the minimum) rather than near the maximum as we are today. That is a very important difference and could have had a big influence on the wet bias that occurred in Canada's western and southern Prairies in the spring and summer of 1953.

Despite the differences between 1952-53 and 2024-25, World Weather, Inc. believes some of the wetter bias will appear in this coming growing season. It will not likely be as wet as it was in 1953, but the bias may be there at times. To confirm this suspicion, World Weather, Inc. looked at the other 18-year cycle member years and found some of the same wet and dry biases playing out

that occurred in 1953. This has had a great amount of influence on the spring and summer outlook, although adjustments in the rainfall must be made to accommodate the solar cycle.

ENSO will have the lowest influence on the Prairies this spring and

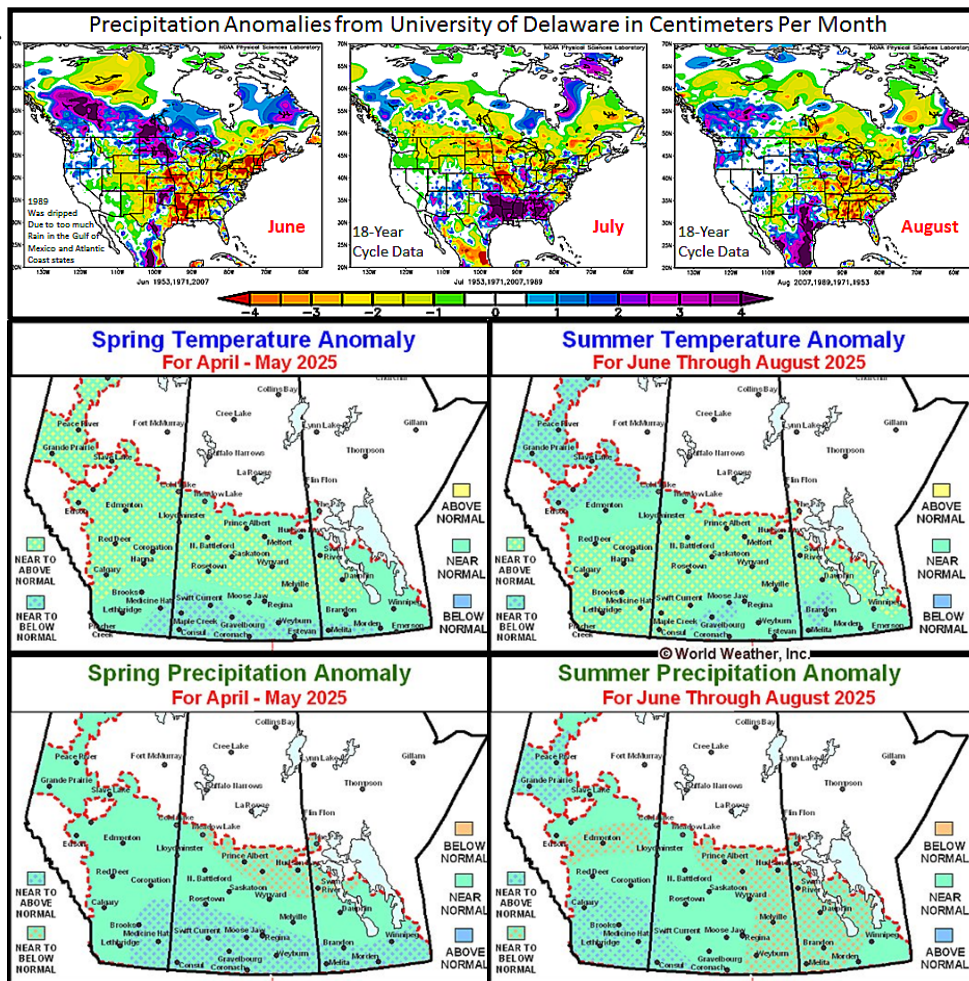
influence.

Studies in the past have suggested that the influence of precipitation in North America from La Nina and the negative Pacific Decadal Oscillation (PDO) tends to be similar. Both influences tend to make the Prairies slightly wetter biased. Now, be careful here, it is very important to note that moderate to strong La Nina events that occur over multiple years will dry down the mid-latitudes, which is what happened in 2020 to 2023. This is entirely different. Those drought years resulting from multiple La Nina years also occurred coming out of the solar minimum which nearly always results in dryness and at least some drought.

This year's La Nina influence should be gone by mid-March and only started in December. Its influence on Prairie weather will be long gone by the time the growing season gets started unless something unusual happens.

The last influence on the Prairies weather is the Gulf of Alaska ocean surface temperatures. A warm bias in ocean water can and does add water vapor to the air as the winds aloft blow inland across Canada from the Pacific Ocean. The warmer ocean water becomes the greater rainfall

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summer because La Nina, as weak as it is, is expected to dissipate during the spring and neutral ENSO conditions should prevail during the summer. Neutral ENSO conditions usually allow other weather patterns like the 18-year cycle to have greater influence on anticipated weather. Weak La Nina events are inconsistent and it is very difficult to identify the influence from weak La Nina events, although some of this winter's cold is likely coming from that

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Spring, Summer Bias Is Well Mixed For 2025 (continued from page 5)

can become in the Prairies depending upon wind direction.

The combination of the solar and lunar cycles, ENSO and ocean surface temperatures in the Gulf of Alaska all point to the potential for timely rainfall across the Prairies. A few areas may experience too much rain for a while and others will experience some dryness, but another broad-based drought year seems unlikely. As long as there is no excessive moisture over an extended period of time the resulting weather for 2025 should prove to be favorable for the Prairies as a whole. There will be some pockets of adverse weather that will harm production, but in general the Prairies should be successful with production potentials.

Due to the conflicting timing of the wetter and drier biased periods coming from the various influences on weather in the Prairies this year

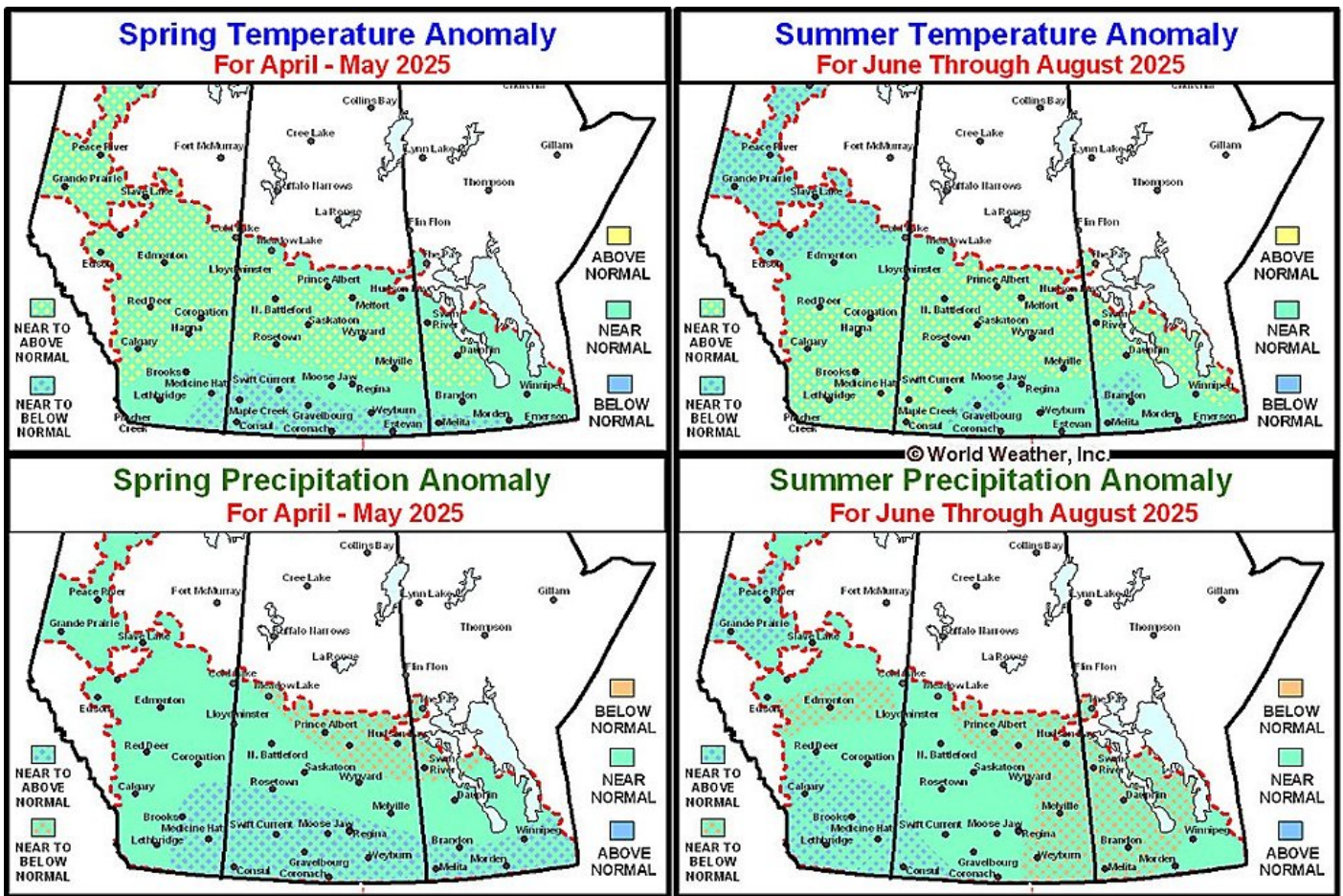
it was decided that a near to above normal precipitation bias would dominate the Prairies in spring. The only drier biased region is expected in northeastern parts of the Prairies in northeastern Saskatchewan and northern and eastern Manitoba.

Temperatures during the spring are expected to be a little cooler biased near the U.S. border due to frequent bouts of precipitation. Just to the north of the wettest region will be a bias for slightly warmer than usual conditions.

Summer weather confidence is still a little low due to some conflicting weather anomalies. For instance the solar cycle suggests rainfall will be limited in May and June and a little better in July and August whereas the 18-year cycle data suggests a much larger portion of the Prairies will experience some wetter biases.

There is a dry bias that comes from an association between dry September/October periods and dryness in the following July; however, the 18-year cycle data suggests rainfall will be near to above normal in July. Influence from the solar cycle suggests near to above normal precipitation and the warm water in the Gulf of Alaska supports greater rain and not less of it. Neutral ENSO also promotes precipitation.

Temperatures in the summer should be near to above normal except in the southeastern Prairies and both Northern Alberta and the Peace River Region where a cooler bias evolves. There is potential for hotter weather this summer, but only if the negative phase of Pacific Decadal Oscillation builds a strong ridge of high pressure in the central United States that builds farther north than expected.



US Hard Red Wheat Needs Cool, Moist Weather to Recover

Strongly negative Pacific Decadal Oscillation and La Nina like conditions do not usually provide a good environment for serious precipitation in the central or southwestern Plains during the winter months and that has certainly been the case this winter. However, it is extremely important to note that hard red winter wheat areas received significant rain during November that bolstered soil moisture down deep into the ground and led most crops to good establishment. Drying since that time has created some apprehension, but crops have no moisture demand at this time of year. Another concern is extreme cold that occurred earlier this month, though if the wheat plant did not die it will have a chance to recover in the spring "if" sufficient rain and mild temperatures are prevalent prior to the warmer days of spring.

Precipitation in the most recent 60-day period ending January 31 in the central United States has been well below normal and that has raised a considerable amount of concern over long term weather for the spring and early summer. Dryness has been substantial in the upper Midwest and most of the central and southwestern Plains. Many areas have reported less than half of normal precipitation especially in hard red winter wheat production areas.

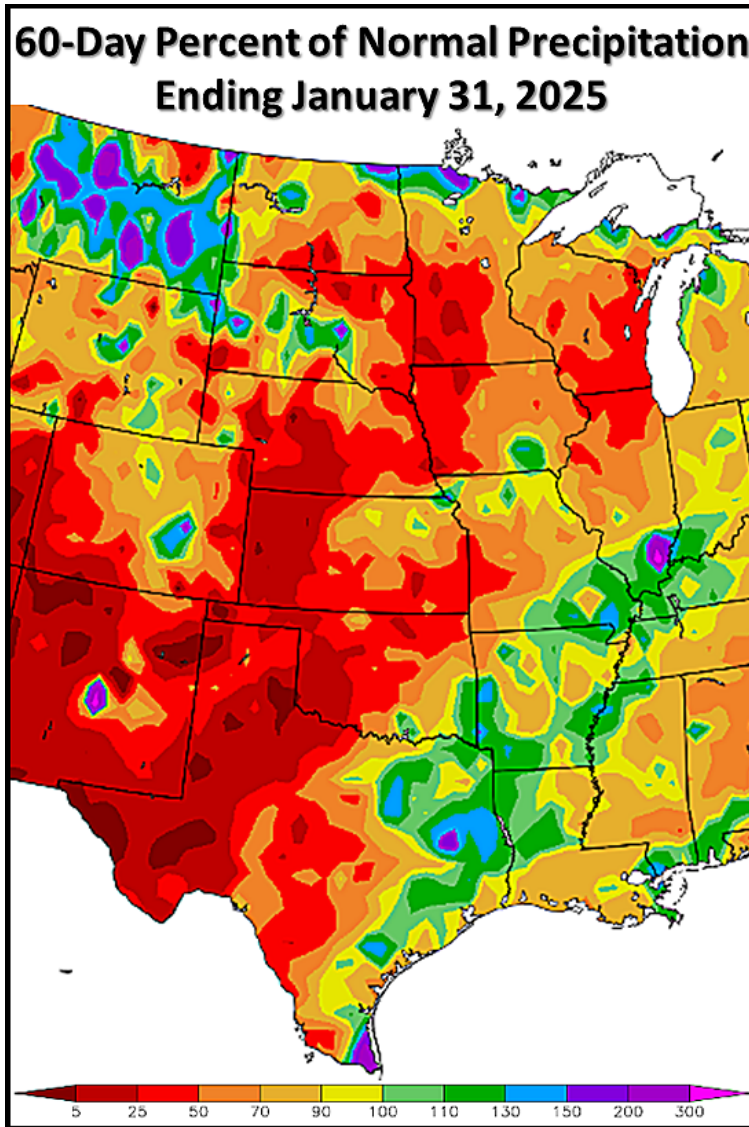
Dryness in the central United States can be largely attributed to the combined impact of strongly negative Pacific Decadal Oscillation (PDO) and the weak La Nina event that is under way. The drier bias has

of the dry bias is that the drier conditions have occurred in the middle of winter when precipitation is not usually very great and (more importantly) the precipitation comes after an unusually wet month of November. The November moisture

surpluses were substantial and actually helped get this year's winter wheat well established prior to dormancy. The dryness that has prevailed since that time has been of interest, but it probably does not mean very much since crop moisture demand is normally quite low at this time of year.

Winter crops in the central and southwestern Plains will need to have some timely rain or snow events as spring approaches to replenish the topsoil with moisture. A single precipitation event could easily accomplish the task of restoring favorable soil moisture to the region. With that said, though, the trend will not likely change much over the next few weeks with continued below normal precipitation in the west-central and southwestern Plains and possibly in the upper Midwest as well.

Temperatures will bounce around quite a bit in the next few weeks. Some warmer temperatures at times may raise evaporation rates and further raise the need for returning precipitation. The warmth might also stimulate some early season crop develop-



made many producers and traders nervous in recent weeks especially with the bitter cold event that took place earlier this month while snow cover was at a minimum.

One of the most misleading parts

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US Hard Red Wheat Needs Cool, Moist Weather (continued from [page 7])

ment, but not prior to March and more likely in April. There will be a few bouts of colder biased weather as well and that should keep crops from awakening from dormancy with a strong moisture demand.

Spring weather will be of great importance, not just to restore topsoil moisture, but to help damaged winter crops recover as much of their production potential as possible. Wheat damage likely occurred during the extreme cold of mid-January when there was no snow on the ground. Temperatures during that period of time were in the negative teens and negative single digits in many wheat production areas in the central Plains. Such conditions can cause significant crop damage especially if the crops were not adequately hardened before the bitter cold arrived.

World Weather, Inc. does not believe there will be much winterkill resulting from the very cold and snow free conditions that occurred earlier this month. However, plant injury may be significant in some areas. Wheat is a smart plant and knows when it has sustained significant damage. The crop can and will set new tillers and induce new root development in the spring if temperatures are mild and

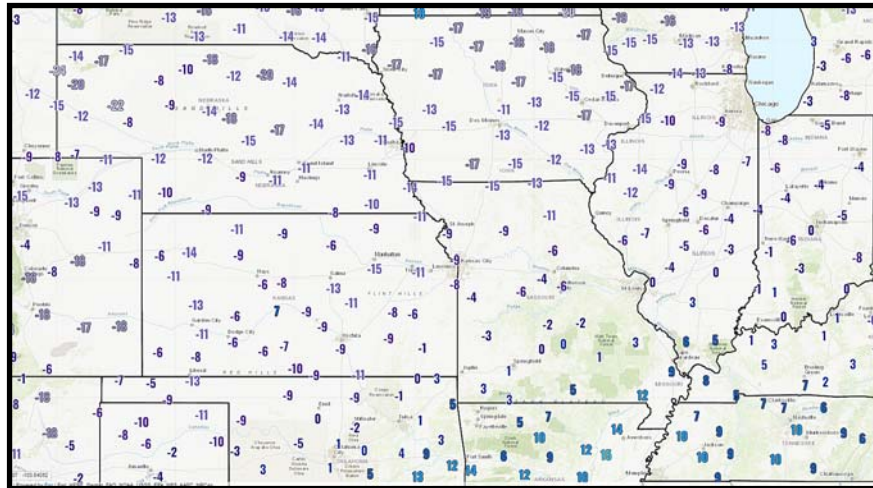
conditions are moist for a few weeks before a more aggressive period of crop development begins. The implications of this is that the crop will have a chance to recover from its damage, but much of that potential for recovery will be wrapped up in the spring weather pattern.

January freeze will not be recoverable, but if there are a few bouts of precipitation and no excessive heat the crop could recover nicely.

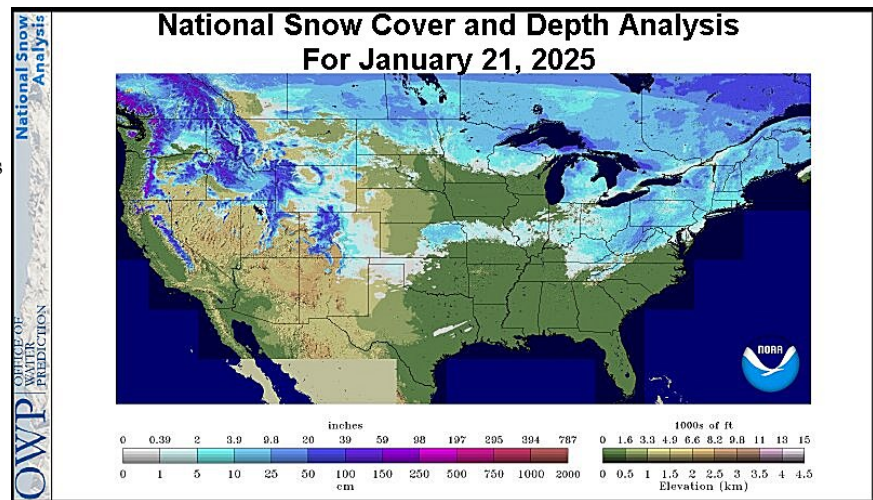
Both negative PDO and La Nina do not favor precipitation during the winter or spring. Both features are expected to weaken, but they

probably will not completely dissipate and that does raise a little concern about the potential for getting sufficient moisture into the region. As stated above, though, it will only take one significant storm system to adequately recharge the soil with moisture for plant improvements and production recovery. Or there could be a succession of weak weather systems that could also provide a good environment for recovery.

The bottom line is that there is reason for concern over the future production of hard red winter wheat in the United States, but be careful not to write off too much of the crop too soon. There is potential for improvement, though much of that potential will be hinged on La Nina and PDO both of which may make the needed moisture a little more challenging to develop than in most late winter and spring seasons.



LOWEST TEMPERATURES ON JANUARY 21, 2025 IN FAHRENHEIT



Weak La Nina conditions will prevail through the next few weeks with a second peak in its development expected by mid-month February. After that, the event is expected to slowly diminish into spring. If the dry bias remains until April some of the damage that may have occurred from the

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Brazil Drying Will Resume Again Next Week

Soil moisture is rated adequate to excessive in much of Brazil's crop country. Rain was spread out enough over time during the past week to limit severe flooding, though the wettest fields in center-west and center-south Brazil would benefit from drier weather to reduce flood potentials. Returning heavier rainfall through Tuesday may lead to more significant flooding and areas of standing water.

Early-season soybean and first-season corn harvest is off to a slow start in portions of Brazil due to wet weather this month. The harvest is just starting and will gradually expand in coming weeks as more crops finish maturing. Despite some abundant to excessive rainfall, soybean production is expected to be very good this season due to timely rain and greater than usual planted acreage. Rainfall has been spread out enough to limit severe flooding and wet weather diseases, though some of the wettest fields are vulnerable to such conditions.

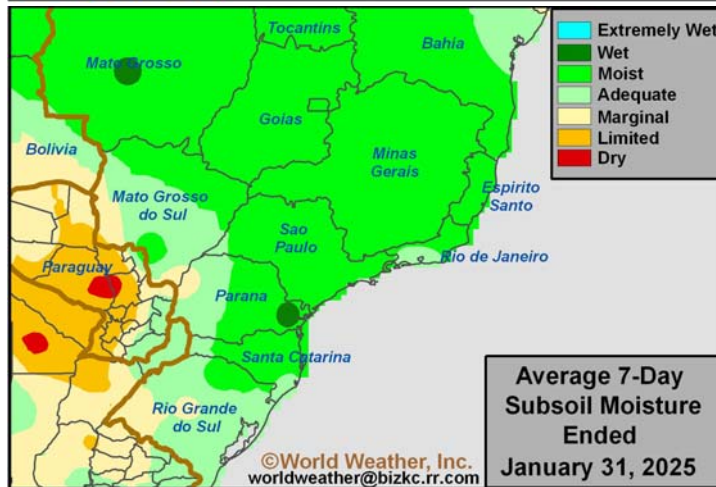
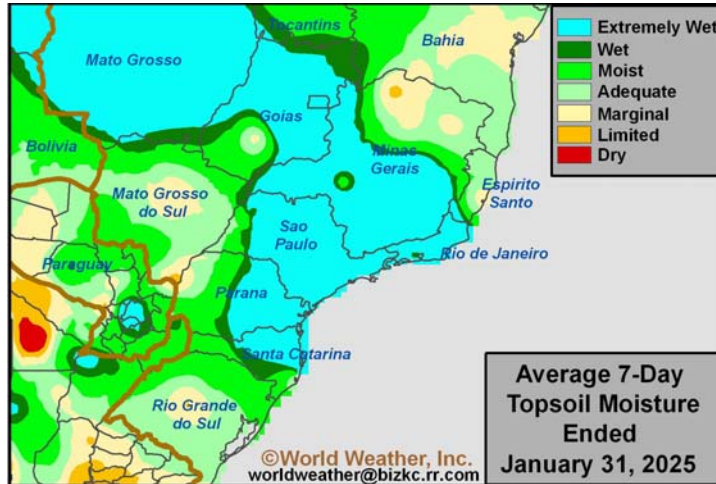
In addition to the sluggish start to the harvest, Safrinha corn planting will expand in the coming weeks once the soybeans come off the fields. The main production areas have ample moisture to support aggressive establishment and early-season growth. Planting will continue to advance poorly if the soybean harvest remains sluggish.

Brazil will receive frequent rain through Tuesday. Scattered showers and thunderstorms will occur most

days, though southern Brazil will experience some brief periods of drier weather, mainly during the week-end. Minas Gerais, Rio de Janeiro, Espirito Santo, Goias, and eastern Sao Paulo will receive 1.50 to 5.00 inches of rain with local amounts of 7.50 inches or more by Tuesday. The remaining production areas will re-

considerably offering some potential for fieldwork after a period of drying.

The temperature profile will trend near to slightly below normal in much of Brazil this week. Daytime highs will peak in the range of 27-34 Celsius with pockets only warming to the 70s during periods of more significant rain. Low temperatures will be in the range of 16-26 with pockets in southern Brazil cooling lower into the teens. Seasonable temperatures are slated for most locations Feb. 4-10. The abundant to excessive rain expected into early next week will bring on some new fear about the success of early soybean harvesting and the planting of Safrinha corn and cotton. This week's boost in rainfall may lead to flooding in portions of Minas Gerais, Goias, southeastern Mato Grosso and parts of Sao Paulo. Other areas will get enough rain to maintain wet field conditions and the need for drying will rise greatly due to delays in fieldwork. There will be some concern over crop quality because of the wet conditions; however, there is great potential for less frequent and less intensive rain Feb. 4-10 and that may bring some much needed relief. As long as rain continues to fall frequently and heavily the potential for more meaningful delays to soybean harvesting and Safrinha corn and cotton planting will rise. Weakening La Nina later in February should bring about a change that will further reduce rain frequency and intensity, although it may be slow coming.



ceive 0.75 to 3.00 inches of rain with local amounts of 4.00 inches or slightly more. Portions of southern Rio Grande do Sul will only receive 0.25 to 0.75 inch of rain. The frequent rain pattern will persist for much of Brazil February 4-10, although its intensity should slacken

and heavily the potential for more meaningful delays to soybean harvesting and Safrinha corn and cotton planting will rise. Weakening La Nina later in February should bring about a change that will further reduce rain frequency and intensity, although it may be slow coming.

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Argentina Still Struggling With Dryness

Despite recent rainfall, a large section of Argentina was drier or much drier than normal during the past month. Rainfall as a percent of normal ranged from 25-80% with pockets that only received 5-25% of normal precipitation for the 30-day period ending January 25.

Santiago del Estero, La Pampa, and northwestern Cordoba received enough rain during the past week to bolster topsoil moisture to adequate or excessive levels. However, moisture shortages persist in much of Argentina due to the lack of significant rain and periods of warmer than normal weather.

Planting was either complete or coming to an end late last week. As of January 23, corn planting was 94% complete while sorghum planting was 88% finished. Producers finished planting most other crops.

Dryness is becoming a significant concern in the main coarse grain, oilseed, cotton, and other crop areas in Argentina. Some of the most significant rain during the past week occurred outside the main production region, though most of the rain that occurred was still welcome. The ground has otherwise dried down too much to support ideal long-term crop development conditions. Continued dryness in the next two weeks would further increase the potential for production cuts.

Precipitation will again vary across Argentina this week. Light rain will initially be scattered across portions of crop country today. A

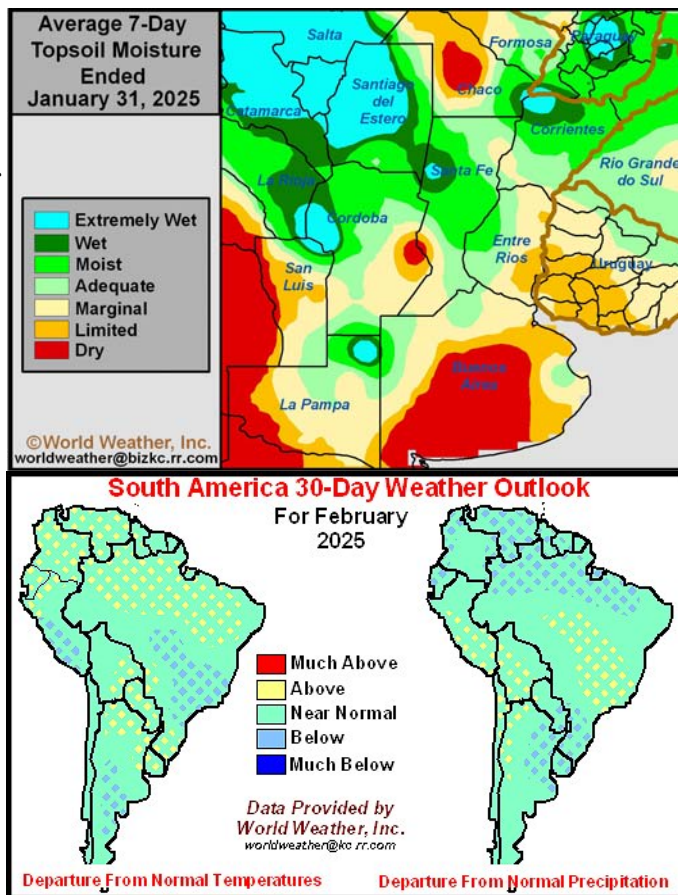
disturbance will promote scattered showers and thunderstorms for portions of northern and central Argentina Tuesday and Wednesday with a few lingering showers Thursday. Precipitation will then be restricted for much of the region Friday and this weekend. Chaco, Formosa, and Corrientes into Santiago del Estero, northern Santa Fe, and much of Cordoba will receive 0.75 to 3.00 inches of

Temperatures will again trend near to above normal in Argentina this week. Daytime highs will peak to the range of 27-35 Celsius most often with pockets only warming to the range of 21-26 through the coming week due to the rain and cloudiness. Pockets in northern and central Argentina could also warm above 38C Sunday into Monday. Low temperatures will be in the range of 16-

26 with pockets in southern Argentina occasionally cooling to the lower teens. Seasonable to seasonably warm weather will persist February 4-10.

Northern Argentina and Cordoba will receive enough rain in the coming days to improve or maintain relatively good short-term development conditions. Some of the rain will be too light to completely fix the moisture deficits and additional precipitation will still be needed, though a few areas will experience improving rainfall. The remaining locations in Argentina will dry down significantly during the next seven days, but rain could develop erratically for a while in the following week. The environment will remain less than favorable for new growth through the coming weekend except in areas that either received significant rain recently or still have favorable subsoil moisture.

For the month of February, Argentina is expecting to see a continuation of below normal precipitation in east-central and southeastern areas while near to slightly greater than usual rain evolves in western and northern parts of the nation.



rain by next Monday morning. Other locations will receive 0.10 to 0.75 inch of rain with locally greater amounts. Argentina will then see a mix of erratic rain and sunshine February 4 – 10, though most locations will not receive enough rain to significantly bolster soil moisture.

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