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The Canadian Agriculture Weather Prognosticator

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World Weather At A Glance

- U.S. crop weather will be wetter biased for a while this month, but drying is expected in June for the western Midwest, Central Plains
- Argentina still needs generalized rain for wheat planting that begins late this month
- Brazil's Safrinha corn is in good shape while the soil begins firming
- China has had well distributed rainfall this spring and more of the same is likely
- India was little too wet in early May, but weather conditions have since improved
- Australia's winter crop planting is off to a favorable start, but more rain is needed
- Spain, Portugal and North Africa durum wheat production will be down this year due to dryness
- Ontario and Quebec need to warm up a bit after a cool start to spring.

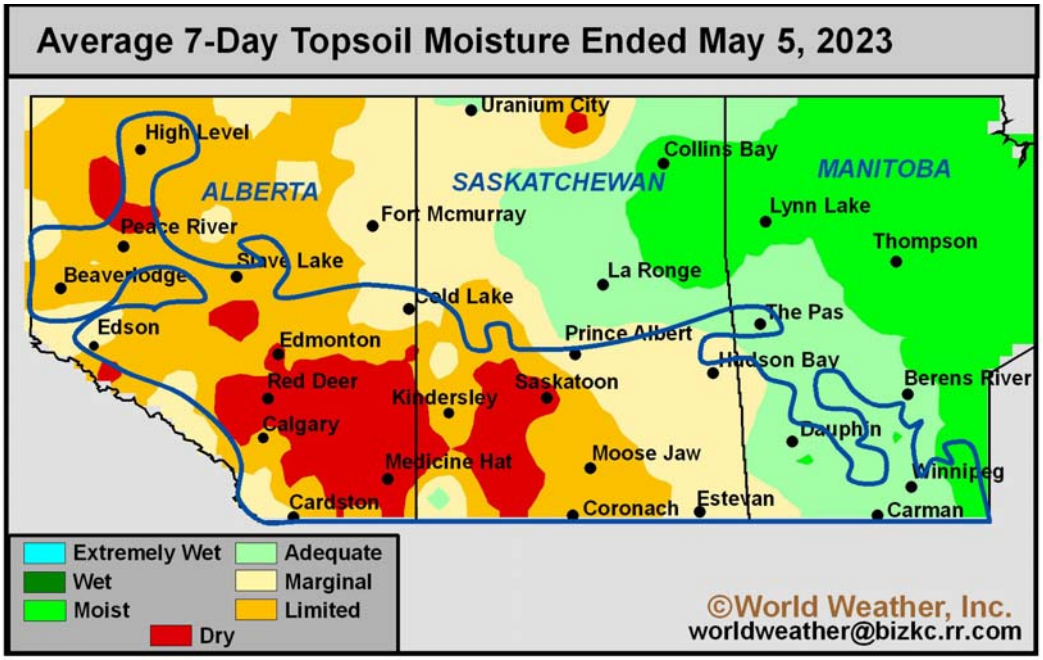
May Starts Hot, Dry And More Expected

Soil moisture plunged in western Canada during the first week of May due to a high pressure ridge bringing on unseasonably hot temperatures and minimal precipitation. The month stood out in this year's research to be an extreme with its expected warmth and dryness looking to be (hopefully) the worst of the season. Once we get through this month conditions should get better—at least in a broad sense.

There has already been a little relief to some areas and a little more is expected, but May is not done with us and there will be additional warm and dry days coming up. The hope is that enough moisture will either fall in a timely manner or there will be enough moisture in the topsoil to sustain crops in the driest areas until a more meaningful trend change comes along.

Topsoil moisture plummeted during the first week of this month and is rated short to very short in nearly all of the central and western Prairies. Some of the moisture shortage is much more significant than that in other areas because of either better snow cover that only recently melted or because of some timely rainfall earlier this year. Manitoba and eastern Saskatchewan crop areas are still in mostly good condition as are some crop areas across northern Saskatchewan and a few areas in northern and western Alberta. However, that situation is changing nearly every day and there will have to be a generalized rain event soon to restore topsoil moisture so that planting, germination and emergence can advance normally.

The worst case scenario would allow crops to germinate and emerge without good subsoil moisture



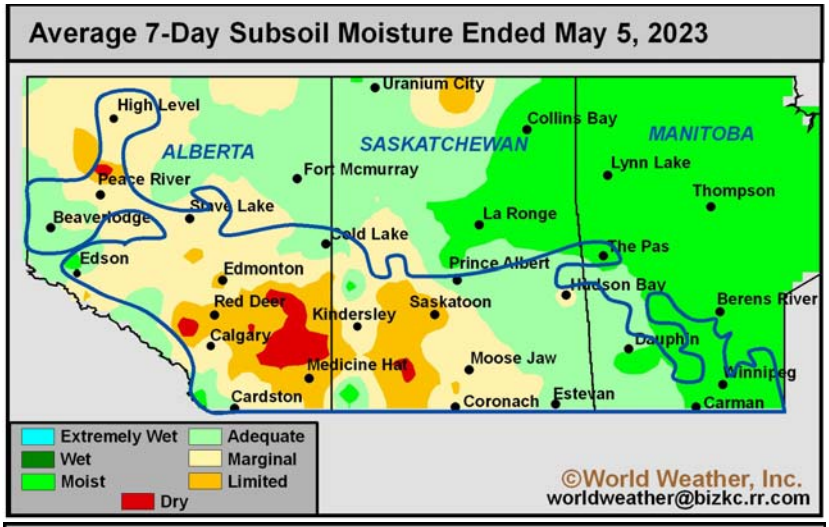
May Starts Hot, Dry And More Expected (continued from page 1)

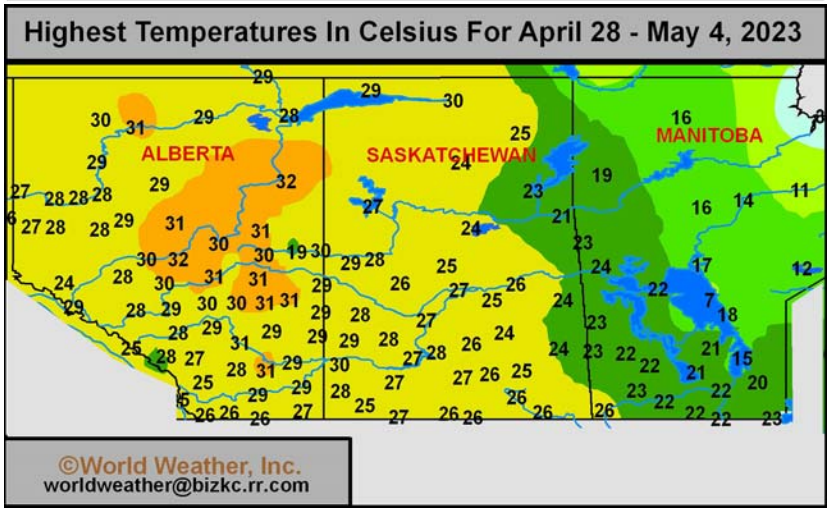
and then enough heat and dryness would evolve to create stress for the young seedlings. Timely precipitation is necessary to keep the young plants viable. The month of May will continue to be harsh on some crops, but there is likely to be just enough moisture to support some of the crops, but follow up moisture will be imperative to induce the best overall crop emergence and establishment.

Temperatures in the first week of May soared to the range of 30-35 Celsius in parts of central Alberta. Many areas across the province reported upper 20s to 31, but there were a few areas of hotter readings. Very few locations in western Saskatchewan got warmer than 32 and most readings were in the upper 20s to 31. Manitoba was not nearly as hot, but it did manage to get into the 20s briefly. Since then a short term bout of milder weather has evolved and it will prevail for a little while.

Another round of dry and warm weather is expected during the middle part of this month. Hopefully, a little moisture will fall in the driest areas before the second round of hot and dry conditions evolves. Stress is expected to resume or continue and not all areas will escape the stressful environment.

May is still expected to be the toughest month of the 2023 growing season—at least for many areas in terms of heat and dryness. Changes should occur as summer arrives, but there is still some debate over the summer pattern. World Weather, Inc. is waiting for a more definitive sign as to where the exact position of the summer high pressure ridge will be. This month's heat and dryness has been the result of a ridge of high pressure in the western Prairies. The ridge should shift to the east later this month, but it will remain a feature to watch because of its control over North America and specifically the Prairies.





The negative phase of Pacific Decadal Oscillation remains in place. The monthly PDO index from the U.S. National Oceanic and Atmospheric Administration peaked around –3.05 in April. That was the strongest negative index value seen since October of 2021 when it was as low as –3.11. Prior to this set of drought years the last time the negative PDO index was this low was in the drought years of 1955, 1950 and 1949. Such an extreme value was also seen in 1933 and a number of times in the late 1800s.

Weakening in the PDO index is likely to begin soon and it should weaken additionally this summer, but World Weather, Inc. believes the influence will still be around most of summer especially if the index stays strongly negative (despite some weakening) into early June. The negative PDO has already set a record for the longest stretch of months so strongly negative.

Negative PDO will influence our summer weather until El Nino kicks in and becomes a significant event. A trough of low pressure is expected this summer in the U.S. Pacific Northwest and storms passing or evolving through that region should bring rain to the Prairies especially Saskatchewan, but probably in portions of Manitoba and southeastern Alberta as well. However, it will take a while for this pattern to evolve.

June should provide the change many are waiting for, but getting rain into parts of the driest areas of Alberta and western Saskatchewan will be a bit challenging, although at least some periodic rain is expected. The wetter bias should be farther to the east and south. Temperatures are expected to cool with the rain.

Western Prairies Planting Prospects Improve

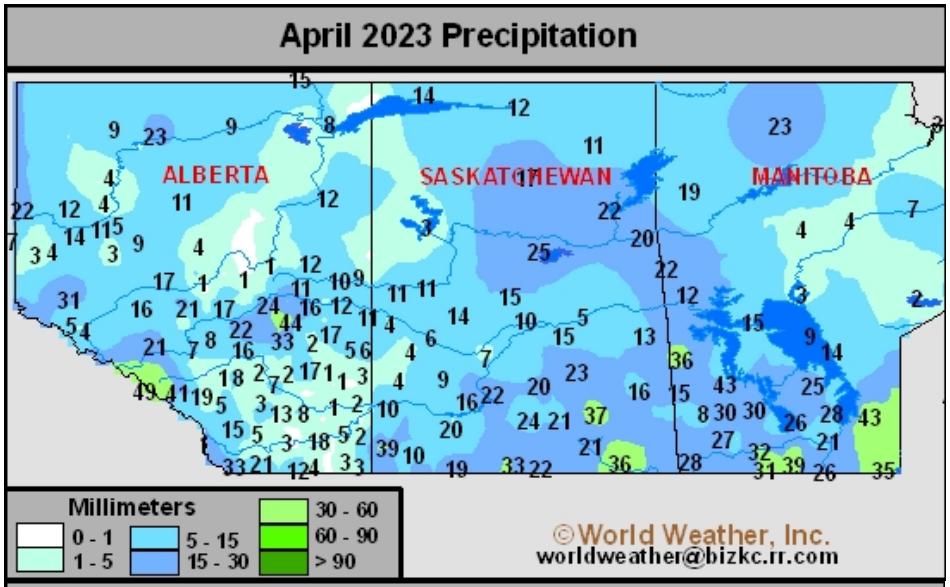
Until the heat evolved recently, there had been enough residual moisture in the topsoil to support fieldwork and crop development, but there were a number of areas suffering from drought in the southwest that were already struggling with dryness.

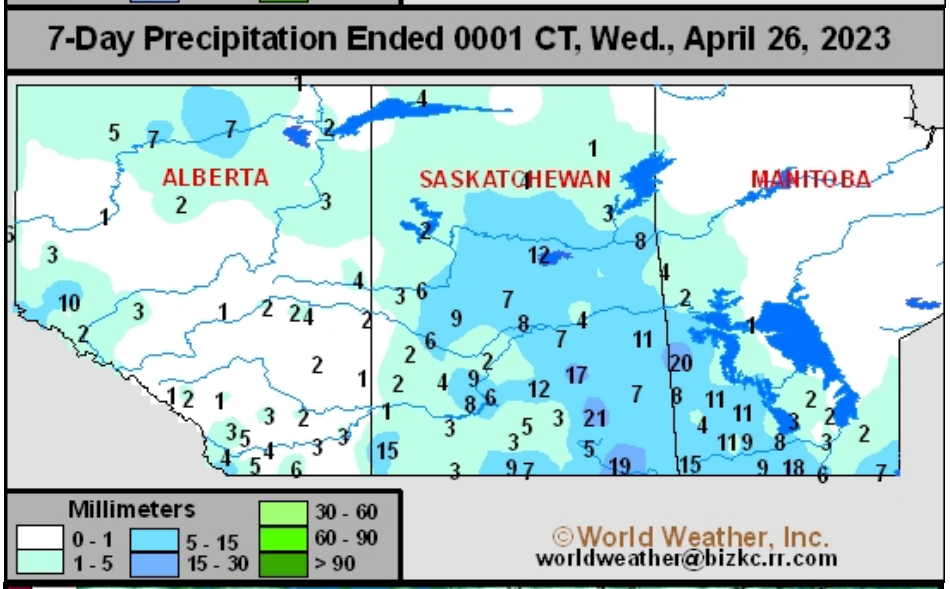
Some of the driest areas failed to get more than 0.30 inch or 8 millimeters during the past five weeks and subsoil moisture was already critically low in those areas. Sufficient rain had fallen in the eastern Prairies to support crops for a while and there were areas in the far western and northern parts of Alberta doing well with moisture because of showers in April and recent melting snow, but with more dry and warm weather coming greater rain is needed.

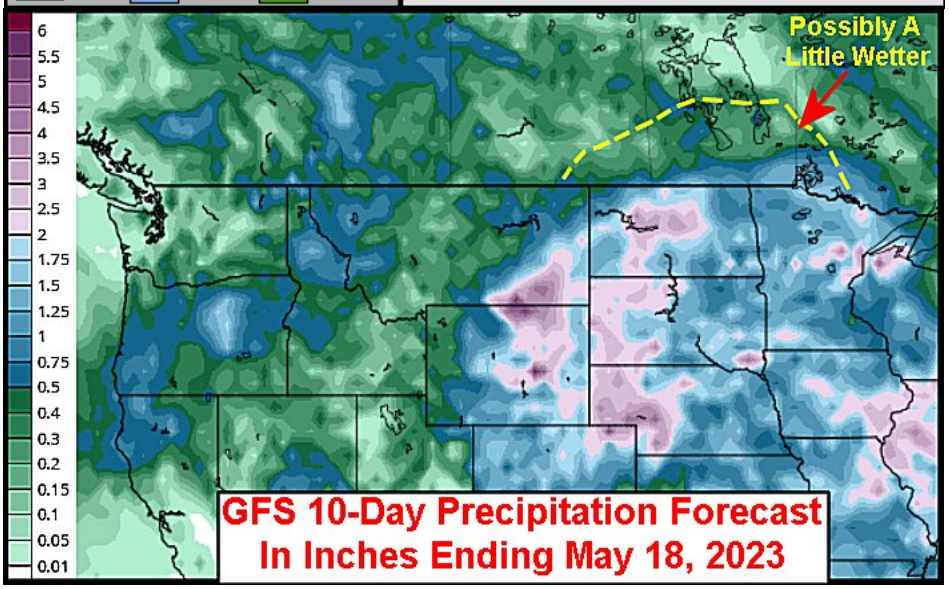
The coming ten days do not promise much hope for generalized rainfall. Another bout of very warm to hot temperatures will occur near midmonth and that will be followed by less heat, but continued lighter than usual precipitation. That makes the coming week of rain very important. The models are generous with rain in western and northern Alberta and some of that moisture predicted is overdone.

There is potential for greater rain than advertised, but only in the southeastern Prairies which is an area that does not need much more moisture. Most likely the advertised precipitation in the eastern Prairies over the next ten days will be concentrated over the coming week and it will be as light as advertised, but there is some potential for a little more rain in southeastern Saskatchewan and southern Manitoba than advertised. The difference would not be dramatic.

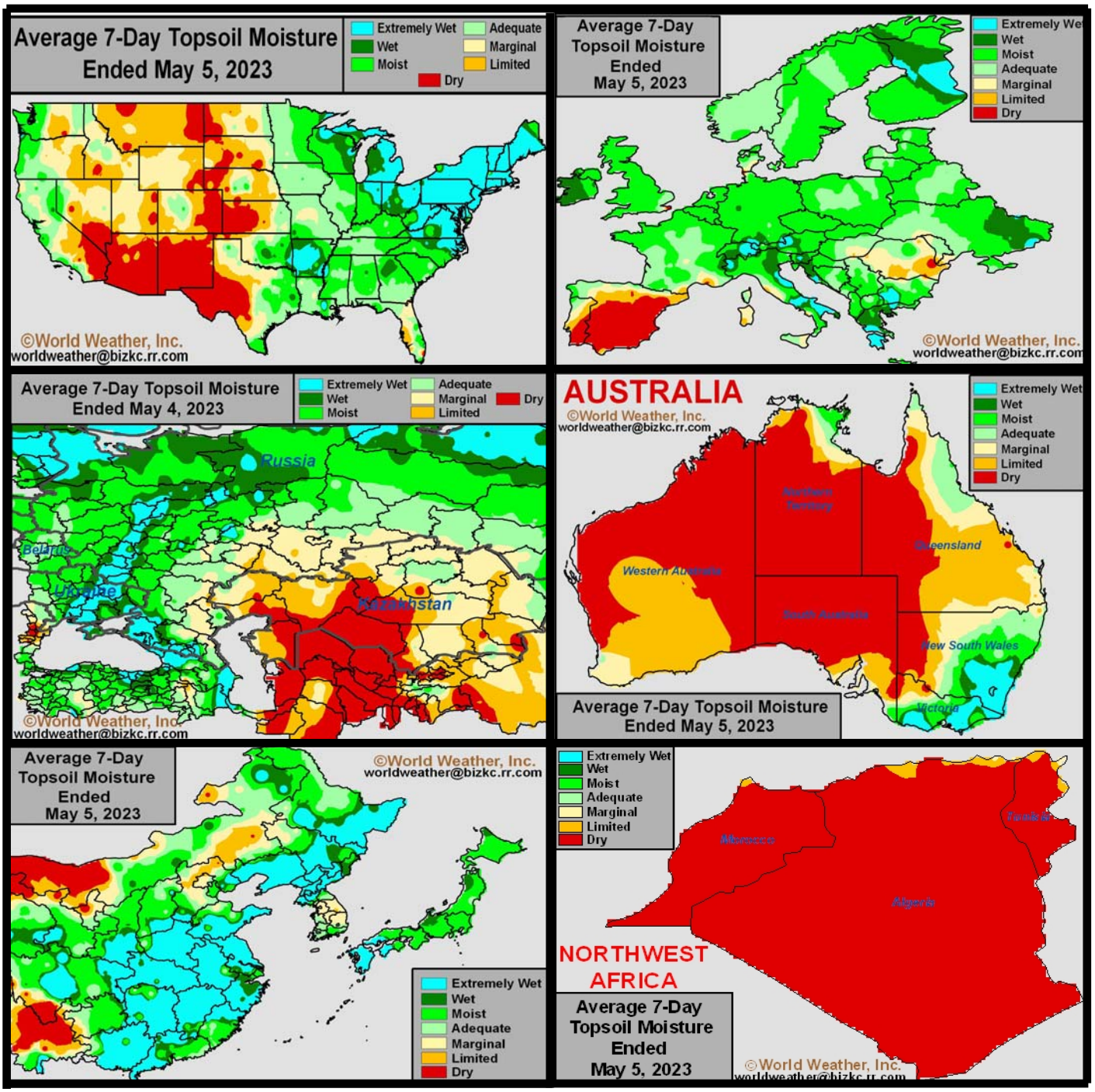
In the meantime, rainfall in western Alberta from the Highway Two corridor to the Swan Hills may be a little overdone. Showers in the drought areas will be welcome, but mostly a disappointment leaving the region too dry.







Selected Weather Images From Around The World



North Africa, Spain and Portugal are all continuing to deal with dryness. Unirrigated winter and spring crops in Spain are stressed while most crops in Morocco, Algeria and Tunisia are not performing well and production cuts are likely. Australia has begun planting wheat, barley and canola and soil moisture has been best in Victoria and New South Wales most recently. Western Australia, South Australia and Queensland need rain along with northwestern Victoria. The planting season is still very young leaving plenty of time for improvement. China's soil moisture and crop conditions are rated very well and the situation should remain favorable for a while longer. Wheat and rapeseed are performing well, although drier weather is needed for the rapeseed harvest. Most of Russia, Ukraine and Kazakhstan weather is favorable, though a little drying has occurred recently in the. U.S. drought remains in the Great Plains, but recent rain has brought some relief. Soil moisture elsewhere in the U.S. is rated favorably.

May Offers Limited Relief To Dry Areas; Some Drying East

May is only one third over and its beginning has been great for field-work, but hard on soil moisture and one's psyche. After a short term bout of relief for "some" areas the month is expected to fall back into another round of warm and dry biased weather. That will leave much concern about the fate of crops in the drought areas of Alberta and Saskatchewan running very high.

Temperatures this month will be warmer than usual for most of the Prairies, but especially in the central and west. Temperatures will be a little warmer biased in the east, as well, but some bouts of cooler air at times will help keep readings a little closer to normal.

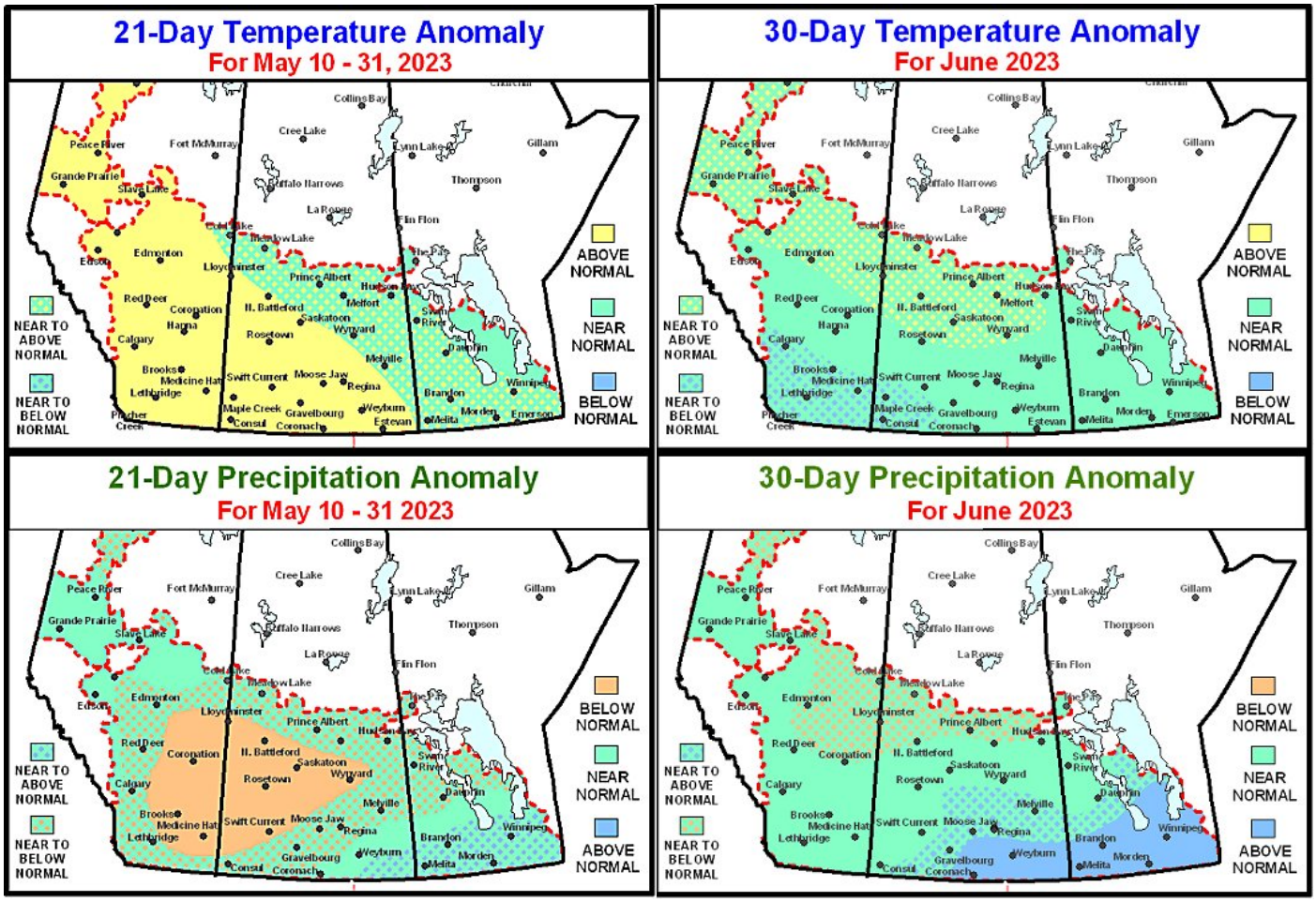
Rainfall during the balance of May is likely to be near to above average in Manitoba and southeastern Saskatchewan. It will be a reach for the southeastern Prairies to end the month wetter than usual, but the region is expected to be much closer to normal than areas to the west.

Any dryness relief that comes to the Palliser Triangle area is expected to occur briefly around the time of this writing and again in the last ten days of this month. The middle part of the month is expected to be warm and dry biased once again.

Changes in June will place a weak to moderate ridge of high pressure in the central United States that may extend north into Canada's Prairies periodically. A trough of low pressure is also expected to continue showing up often in the U.S. Pacific Northwest and once in a while in northern California and in southern British Columbia as well. The environment should lead to a higher potential for rain to evolve in the southern and eastern Prairies. Some of the rain may be moderate to heavy at times especially in the southeastern Prairies, although the timing of this rain is not of high confidence yet. The forecast will likely be adjusted as we get closer to the month.

There is reason to be hopeful for enough moisture in the drought stricken areas to support crops better than in the month of May. However, the rain may hold off until late June and that would leave a bigger window for potential crop stress. World Weather, Inc. believes at least some rain will fall sooner than that and there will be some welcome relief, but the situation must be closely monitored.

The driest bias in the Prairies may be in the north-central and northwest where temperatures will be warm as well.



Brazil's Safrinha Corn Rated Favorably, Despite Drying

Brazil's Vegetative Health Index at the end of April revealed very good Safrinha crop conditions. The overall health of crops in Brazil this year versus that of 2022 was suggested by satellite imagery to be notably better. If the environment remains favorable well into June production of Safrinha corn and cotton is destined to be quite good. However, the potential problem for this year's production has not been early season crop development, but how well soil moisture will be conserved over the next several weeks as late planted crops move through reproduction. Soil moisture is in a seasonal decline and as this trend continues crop moisture stress is likely to evolve and that could shave off a little yield if dryness prevails throughout the reproductive and filling stages of development. Some timely rain will be needed later this month.

Recent rainfall in northern Minas Gerais and southern Bahia helped improve the moisture profile, though many areas still have a shortage of moisture. The moisture profile in the remaining production areas remains adequate with portions of Mato Grosso do Sul excessively wet. The bulk of Safrinha crop production comes from Mato Grosso So Sul, Parana, Sao Paulo, Mato Grosso and Goias making future rainfall in Mato Grosso, Goias and northern Mato Grosso do Sul a concern about future crop development.

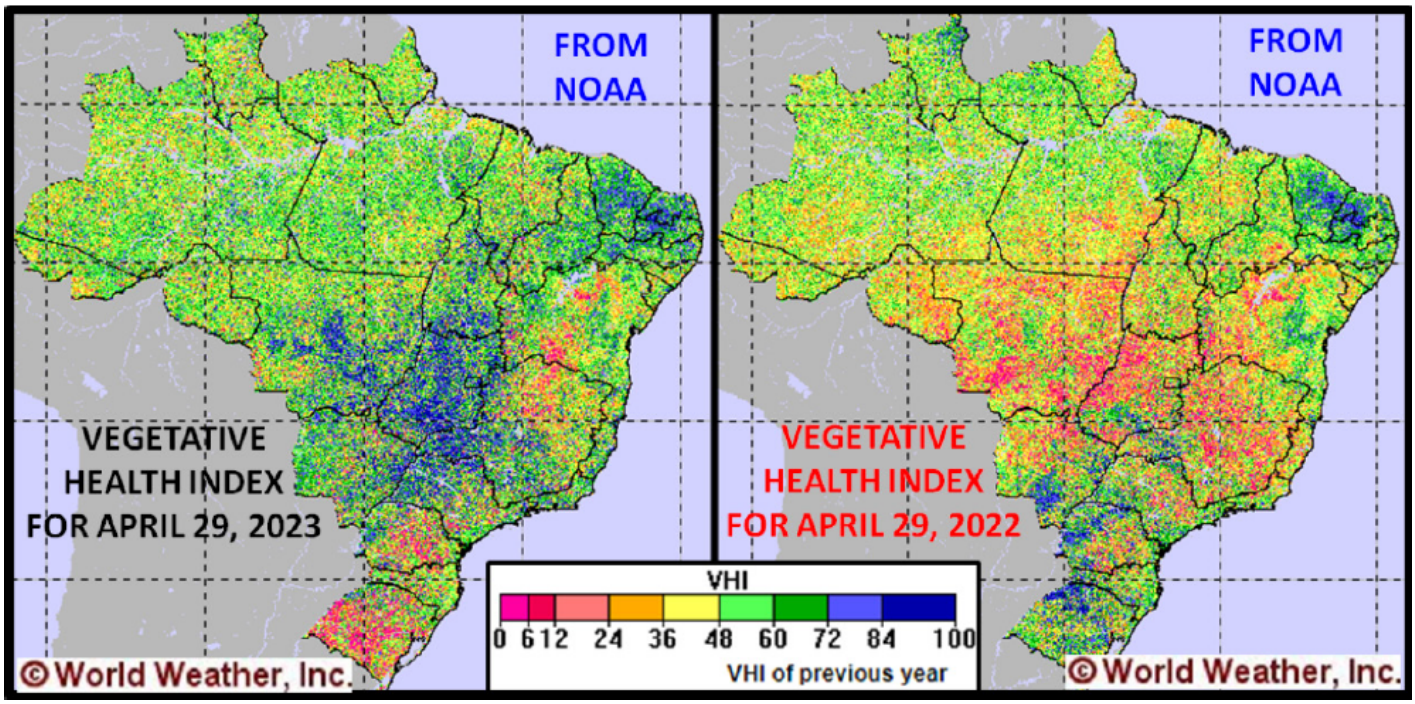
As of April 29, soybean harvesting was approximately 94% complete across Brazil, up nearly 5 percentage points from the previous week. Harvesting should wrap up in the coming days as long as the weather allows.

Safrinha corn conditions remained favorable across the main production areas during the past week, although topsoil moisture was slipping into the marginally adequate to slightly short categories in Mato Grosso and Goias. Subsoil moisture was still rated more favorably. This is normally a time of year in which rainfall is minimal and it usually lasts through the winter and early spring. If weather continues "normally" over the next few weeks the topsoil will eventually become short to very short of moisture and crops will have to evolve on subsoil moisture and it will not likely take more than two to three weeks of drying before crop stress becomes more significant.

Weekend weather was dry across most of center south and center west Brazil and that was after only a limited amount of rain fell in late April and early May. The drier bias is normal for this time of year, but with 20-25% of the corn crop planted late there is concern over the fate of this year's crop.

Rainfall in the coming ten days will be minimal and that will bring more drying and raise the potential that late planted crops will reproduce with short to very short soil moisture unless another rain event comes along. That rain event is needed in late May and/or early June and as of this writing on May 7 there is not much sign of rain.

The GFS forecast model is the only one that offers some potential for rain after May 22. World Weather, Inc. is not confident, but if the rain falls as advertised it would be perfectly timed to bring a little relief for the drier areas and to better support reproduction, though more rain may still be needed.



Australia Winter Planting To Continue With "Some" Rain

Planting of the winter wheat, barley, and canola is underway across the main production areas in Australia. Periodic rain has promoted generally favorable planting and establishment conditions with exceptions for Queensland and some interior parts of Western Australia. Portions of Western Australia, South Australia, Victoria, and southeastern New South Wales will have opportunities for rain during the coming week that will continue to promote good short-term outlooks for the winter crops. Queensland and other areas in New South Wales will continue to dry down. El Nino and a positive phase of the Indian Ocean Dipole are still expected to impact weather later in the growing season and that might impact production somewhat.

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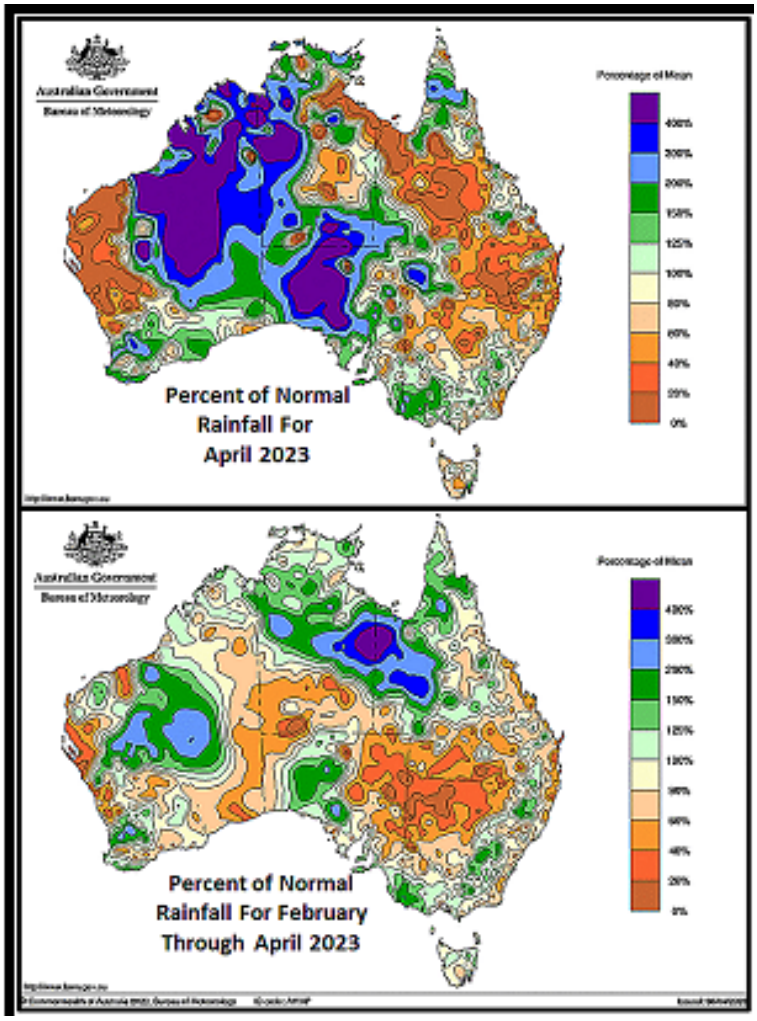
Soil moisture is rated favorably in most of the key wheat, barley and canola production areas of New South Wales and Victoria as well as far southeastern South Australia. Most other areas away from the coast are a little dry and there is need for rain. Interior portions of both Western and South Australia are among the driest areas as well as a few Queensland locations. Each of these areas will have to receive some significant rain in the next few weeks to support the best planting, emergence and establishment conditions.



Planting of winter wheat, barley, and canola is ongoing across Australia. Planting normally begins in late April and continues into June. The periodic rainfall in recent weeks has helped promote good planting, emergence and establishment conditions, through follow up rain will be imperative for the best established crops. Authorities have suggested the total planted acreage this season will be lower than that of the three previous seasons since La Nina has dissipated and El Nino is expected later in the year.

Rainfall is expected to be minimal during the next ten days. Some showers of light intensity will occur in the perimeter of the nation including some crop areas, but resulting precipitation by May 18 will be less than 0.59 inch in Western Australia, Victoria and eastern parts of both Queensland and New South Wales.

That should not be enough moisture to seriously change the moisture profile especially with temperatures in the west warmer than usual. Eastern Australia temperatures are expected to be closer to normal. Through May 18.

Planting and general fieldwork will advance around periods of rain during the next two weeks. Victoria, southeastern South Australia, southwestern parts of Western Aus-

Australia Winter Crop Planting Continues (from page 7)

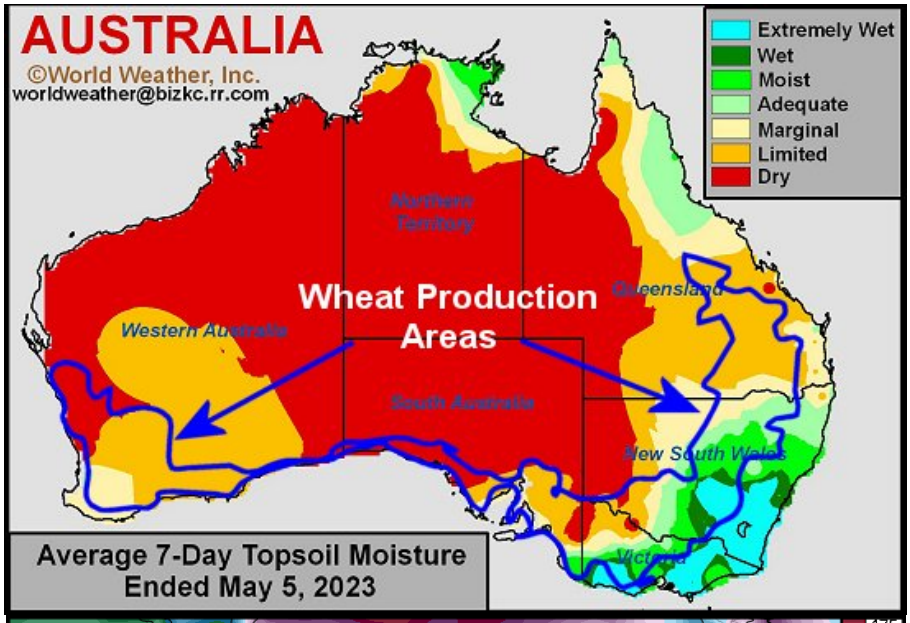
tralia, and a few southern and eastern New South Wales locations will have enough moisture to maintain support for planting, emergence and establishment. All other areas will have need for greater rain to offset the drying that is predicted during this next ten days.

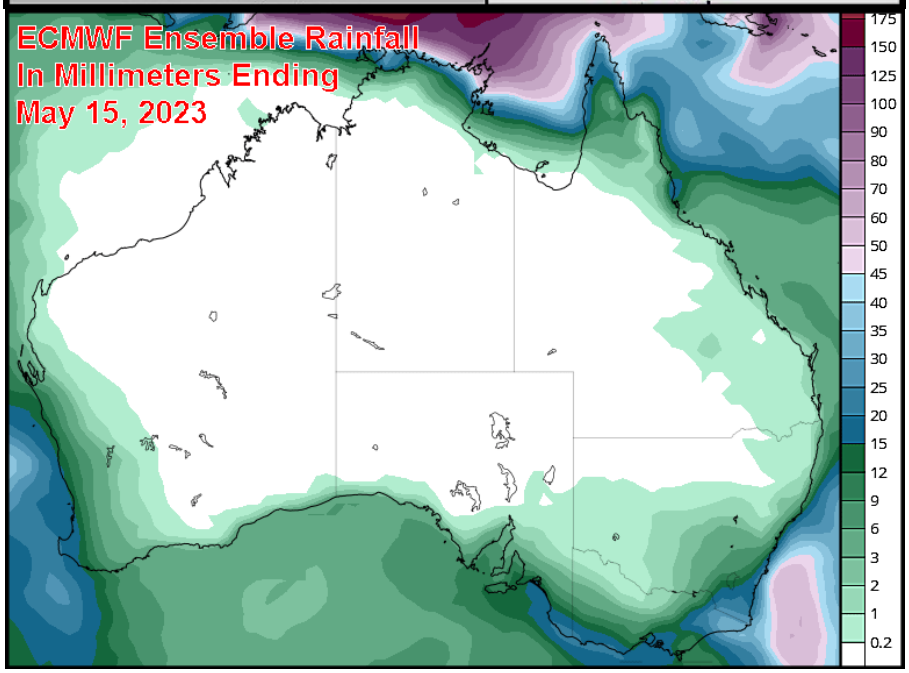
EL NINO CONSIDERATIONS

The main concern for this season will be the onset of El Nino and a positive phase in the Indian Ocean Dipole. This environment tends to promote below average precipitation during the June through August period in Queensland and New South Wales. Victoria and southeastern South Australia may also be drier than usual because of the positive phase of Indian Ocean Dipole. Below-average rainfall does not necessarily mean drought. Normally, rainfall in the winter months of a developing El Nino tends to be lighter than usual, but sometimes there will be sufficient timeliness in the rain to support well established winter crops. Sometimes in those developing El Nino winters there is also a tendency for lighter than usual rain in Western Australia. The true test for Australia's wheat, barley and canola production will come in the spring and summer when it continues drier than usual, but usually temperatures are much warmer leading to faster drying rates and a more dramatic loss in soil moisture.

The positive phase of Indian Ocean Dipole (IOD) will occur during June through August and some lighter rainfall biases will begin later this month. The positive phase of IOD brings cooler than usual ocean water temperatures northwest of Western Australia. The cool water reduces evaporation and limits rainfall that evolves along mid-latitude frontal systems that impact western and southern Australia. The largest rainfall deficits in significantly-positive IOD events are usually in South Australia, Victoria and southwestern New South Wales. The positive phase of IOD should go away early in the spring leaving the fate of crop production in the hands of El Nino.

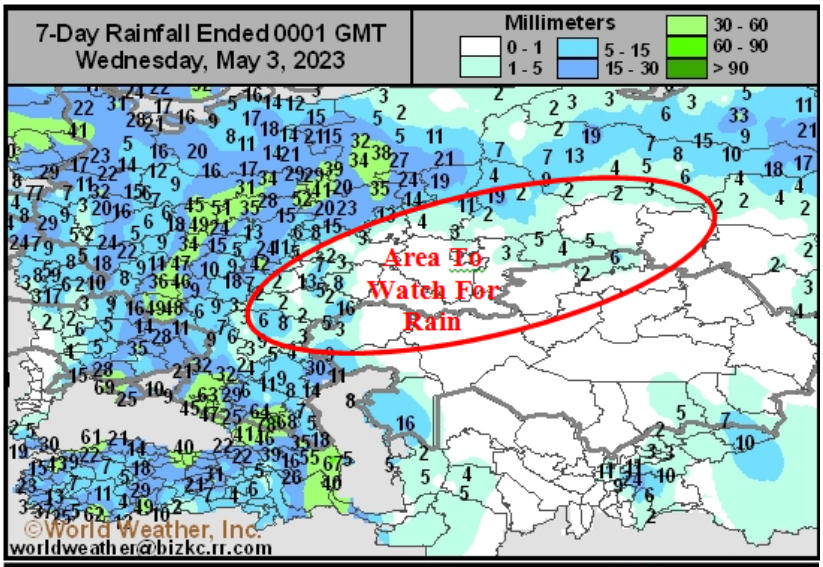
Overall, World Weather, Inc. anticipates a favorable autumn planting season in Australia, despite some lighter than usual rainfall. Trouble will evolve in eastern parts of the nation during the spring and summer as seasonal warming occurs and rainfall becomes more notably below normal.

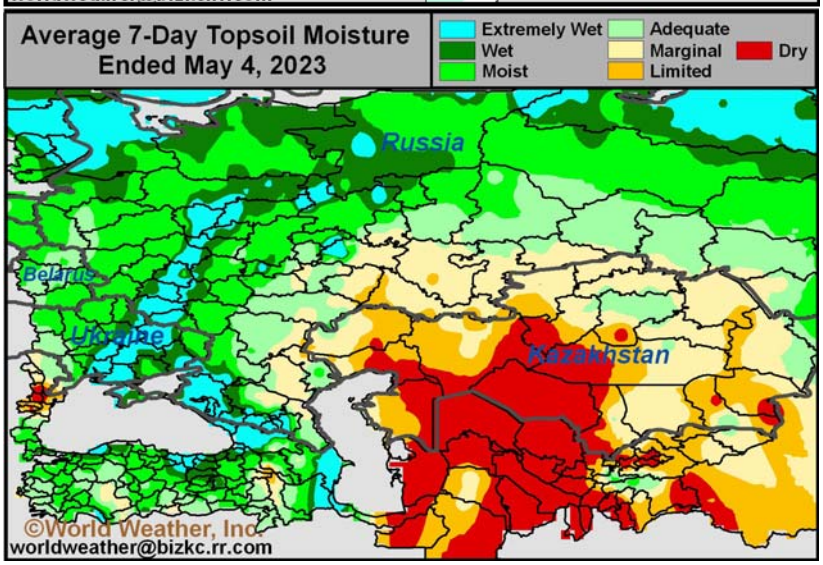




Russia, Ukraine Kazakhstan Weather Good

Western Russia, portions of the USDA defined 'Southern Region', and northern sections of the Ural Mountains region all received rain during the past week. The rain may have slowed early-season planting while winter crop conditions remained favorable. The remaining locations in the western Commonwealth of Independent States received little to no precipitation. The lack of rain was beneficial for planting spring wheat and sunseed in the eastern New Lands and Kazakhstan; however, the need for rain is increasing. Western Russia will trend drier biased through the end of next week and planting prospects will improve. The eastern New Lands should get a little more, but more will be needed.





Western Russia and much of the 'Southern Region', Volga River Basin, and northern Ural Mountains region have adequate to excessive soil moisture. The remaining locations in Russia into northern Kazakhstan have adequate to short topsoil moisture with a few areas very short of moisture. Subsoil moisture is still rated favorably which minimizes the concern for a little while longer.

Soil temperatures across central and southern Russia and Kazakhstan crop areas are warm enough to promote aggressive winter wheat, barley, and rye growth and warm enough for corn germination and emergence. The main production areas have plenty of moisture to support ideal development conditions. Production potentials this season remain favorable, despite some recent drying in Kazakhstan and southernmost portions of Russia's eastern New Lands.

The lack of precipitation in the eastern New Lands, southern Ural Mountains region, and northern Kazakhstan was beneficial for aggressive planting of spring wheat and sunseed as well as other crops. These areas would benefit from a good shot of rain in the near future to keep the ground from drying enough to impact establishment and growth.

Other summer grain and oilseed areas may have received enough rain to slow planting in recent days. The moisture profile is otherwise abundant enough for generally favorable establishment and growth.

Timely rain is expected for much of Russia, Belarus, the Baltic States, Ukraine and Kazakhstan during the next ten days; however, the precipitation in the drier areas of the New Lands and Kazakhstan may continue a little light. The longer range outlook must bring greater rainfall to the region soon because warmer than usual weather is likely again after May 16.

Any rain that falls in the drier biased areas in the next two weeks will have to occur in the coming week and after that a new period of warm and dry weather is expected. This week's rain will prove to be very important in maintaining a favorable crop outlook for the eastern New Lands.