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The Canadian Agriculture Weather Prognosticator

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WORLD WEATHER ISSUES

Cold Weather Abating, But For How Long

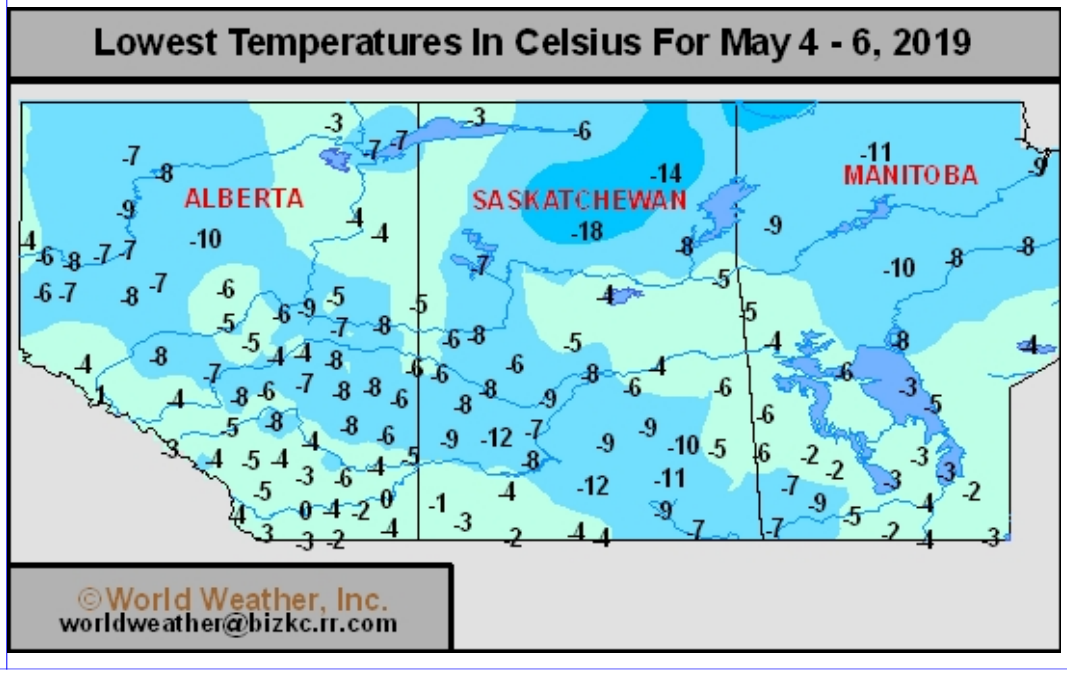
Very cold conditions occurred in the Prairies this past weekend with most low temperatures in the negative single digits Celsius. However, Rosetown and Moose Jaw each reported extremes to –12 and that is in the cities. Cooler readings may have occurred in some of the outlying areas.

The cold weather was just one more blow to the Prairies that have been dealing with all kinds of weather adversity in the past couple of years, let alone the past few months.

The sudden and dramatic fall in temperatures was the crescendo to the past week to ten days of steady cooling. The cool off may have helped slow evaporation rates and helped to conserve soil moisture after recent precipitation, but enough is enough. Early emerged crops like canola and some others were likely seriously hurt by the cold.

It is easy to believe with all of the talk from the media that climate change has guaranteed us a seat by the tropical ocean in time and that our land will eventually be a utopia for crops, but recent weather suggests that may be way off in time. Our extended years of early springs and late autumns could be at risk of change—at least temporarily. This year's 18-year cycle has been aggressive and warm ocean water in the Gulf of Alaska has prevailed for months and that has played a big role in sending cold waves into the region periodically.

Recently we entered the negative phase of both Arctic and North Atlantic Oscillation both of which promote cool weather from central through eastern parts of North America. The anomalies are strongest during the winter and early spring, but drought in the central Prairies helped quite a bit in exacerbating the intensity of



Cold Weather Abating, But For How Long? (continued from Page 1)

this past weekend's cold temperatures. Low relative humidity across the heart of the Prairies helped the temperatures plummet just like a few weeks ago when the dry air helped some areas soar well into the 20s.

Unfortunately, for some producers that warm weather was incentive enough to begin seeding and some of the early frost sensitive crops were hurt by the recent cold . Now the big question is with warming coming up late this week and into next week will there be any more threatening cold?

The waves of cold that have hit the Prairies periodically since late last autumn have occurred in part from the 18-year cycle and partially because of the warm Gulf of Alaska ocean water. Both of these features are still in place, plus we are moving into the solar minimum which tends to promote a cooler bias in Prairies weather at times in the late spring and early summer. On top of all this there is new evidence that El Nino is going to strengthen again for a little while late this month and into early June.

The fact that each of these weather controlling patterns is still in place strongly suggests that we have not seen an end to the cool weather. More waves of coolness are likely and we shall feel some of that in ten days after a brief bout of warming.

The eastern Prairies are not likely to experience much of the warming trend that Alberta and western Saskatchewan feel late this week and into next week. Manitoba and eastern Saskatchewan may experience some warming, but it may be more abbreviated. That may leave eastern Prairies soil temperatures below optimum levels for a while which may delay seed germination and some planting .

That delay in planting in the eastern Prairies might be a Godsend if there is going to be additional shots of cold weather late this month and/or in early June.

World Weather, Inc. believes the eastern Prairies (Manitoba and eastern Saskatchewan) will likely deal with a higher degree of cloudiness and light precipitation periodically over the next few weeks. That should help hold up nighttime temperatures. Warmer weather is expected briefly next week and when that occurs there will be a boost in planting.

Late May and June weather is expected to bring greater precipitation events to the eastern and southern Prairies each of the succeeding low pressure systems will bring warm air into the eastern Prairies and considerable cloudiness along with some precipitation. Farther to the northwest of these low pressure centers will be a region of drier air.

The drier and cooler air in late May will be a frequent occurrence in east-central and northeastern Alberta, west-central central and northwestern Saskatchewan. Any surface high pressure system that moves into those areas behind the weak low pressure centers that impact the southeastern Prairies will bring a risk of frost and freezes for a while. The last ten days in May and the first week in June will be one such period in which this tendency for cool shots of air may be greatest.

Now with that said, it is extremely important to note that we will not likely see another night like that during the weekend when temperatures were so far below zero. Negative upper single digits will be hard to come by again for a while. Negative lower single digits is an entirely different matter and the odds are relatively good that such readings will appear again.

If canola gets planted this weekend or next week the earliest the threatening cold air will be back again will be ten days later—not prior to May 20. The following ten days to two weeks may bring some shots of cool air to the Prairies, but it will not likely be potent or threatening cold air at least not initially.

Low temperatures in late May will come down to the frost level multiple times, but the difference between a zero degree morning and extreme lows of –3 or –2 will be determined by the size and intensity of surface high pressure systems. This past weekend was the first time in quite a while that such a large high pressure system reached into the Prairies. Weather patterns in the next two weeks should not be very supportive of that kind of situation again. By the time conditions do become more favorable for a larger surface high pressure center to evolve our average low temperatures will be warmer than they are today and that will also help reduce the risk of seriously cold air.

Unlike that of a few years ago when World Weather, Inc. warned of late season freezes that verified nicely, this situation is not as cut and dry. The atmosphere is complicated by the presence of El Nino, the warm ocean temperatures in the Gulf of Alaska, the negative Arctic Oscillation and the overly active 18-year cycle. Each of these weather patterns can pull cool air out of the arctic without much notice, but getting the atmosphere to stabilize in a significant manner with the 18-year cycle so hyperactive will be difficult.

Unfortunately the situation is what it is and there is not much we can do about it except do our due diligence and pray. The bottom line is that we are probably not done with frost and freezes especially not in the drier areas of Saskatchewan and Alberta, but all areas could run into more coolness. Manitoba will see it into next week and other areas at the end of May, but there is no guarantee of a damaging freeze.

Southern Manitoba may be one of the few areas that will have a low risk of significant freezes in late May and early June because of cloudiness and some rainfall.

Rest Of May Weather Unlikely To Change Greatly

Eastern parts of the Prairies failed to get their advertised greater rainfall in the past few weeks because of the cold air that turned out to be more intense than expected. The greater cold pushed the jet stream too far to the south removing the potential for greater rain in Manitoba and eastern Saskatchewan.

The next three weeks will bring mixed conditions to the Prairies. First, a welcome warming trend will occur in the western and central parts of the region. Manitoba and extreme eastern Saskatchewan will not warm well because of cool shots of air coming into the region from the north perpetuating the cooler bias.

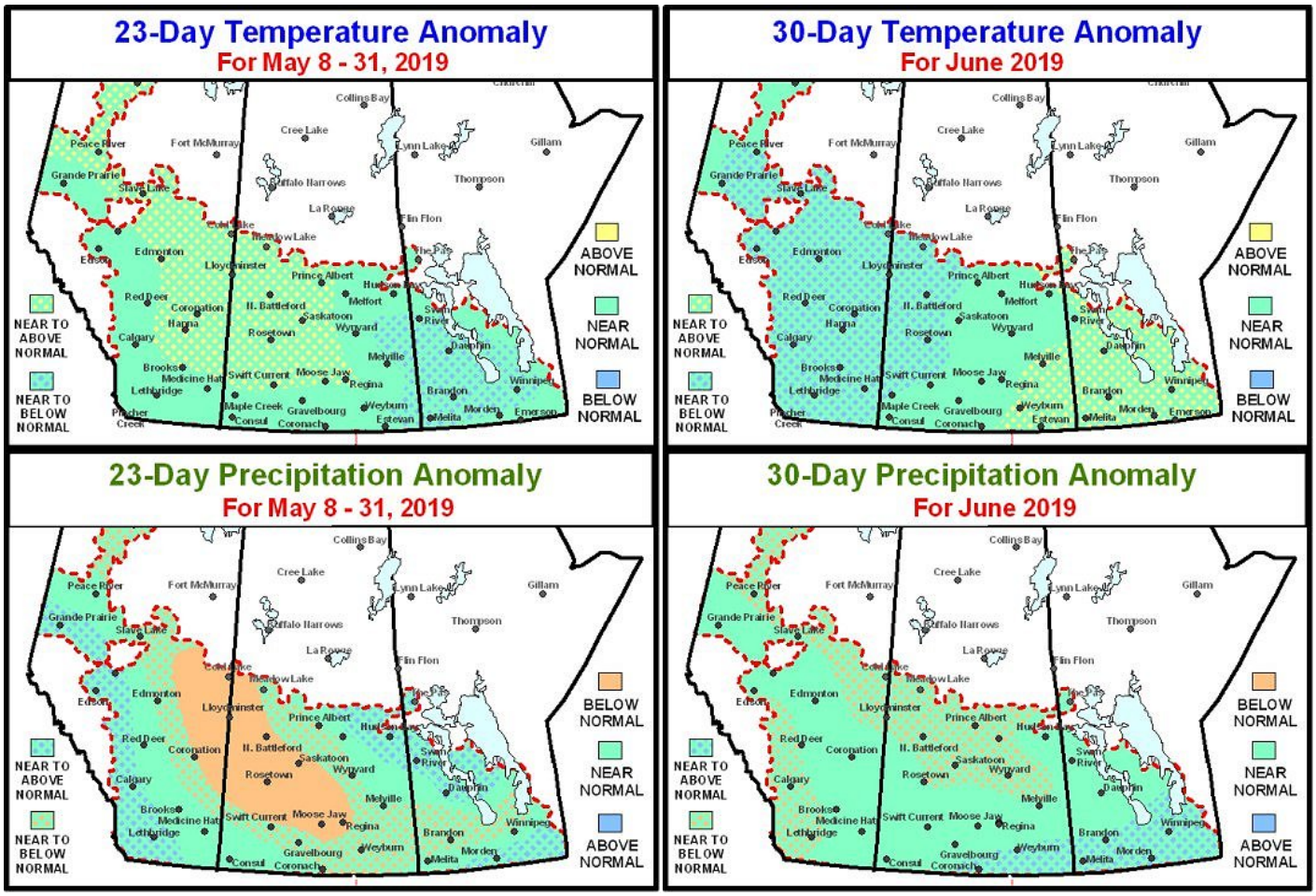
Frequent bouts of light rain and drizzle will accompany the cool air into the eastern Prairies over the next week resulting in some greater than usual precipitation, but mostly in northeastern Saskatchewan and northern Manitoba.

Wet weather that has been plaguing the front range area of Alberta in recent weeks will linger into late this week and then dissipate for a while, but it will return later this month. Unfortunately, the heart of the Prairies will continue to deal with restricted precipitation. The region from north-central through east-central and northeastern Alberta to central and southeastern Saskatchewan will receive near to below average precipitation. The driest areas will be from the Saskatchewan Highway One Corridor to northeastern Alberta.

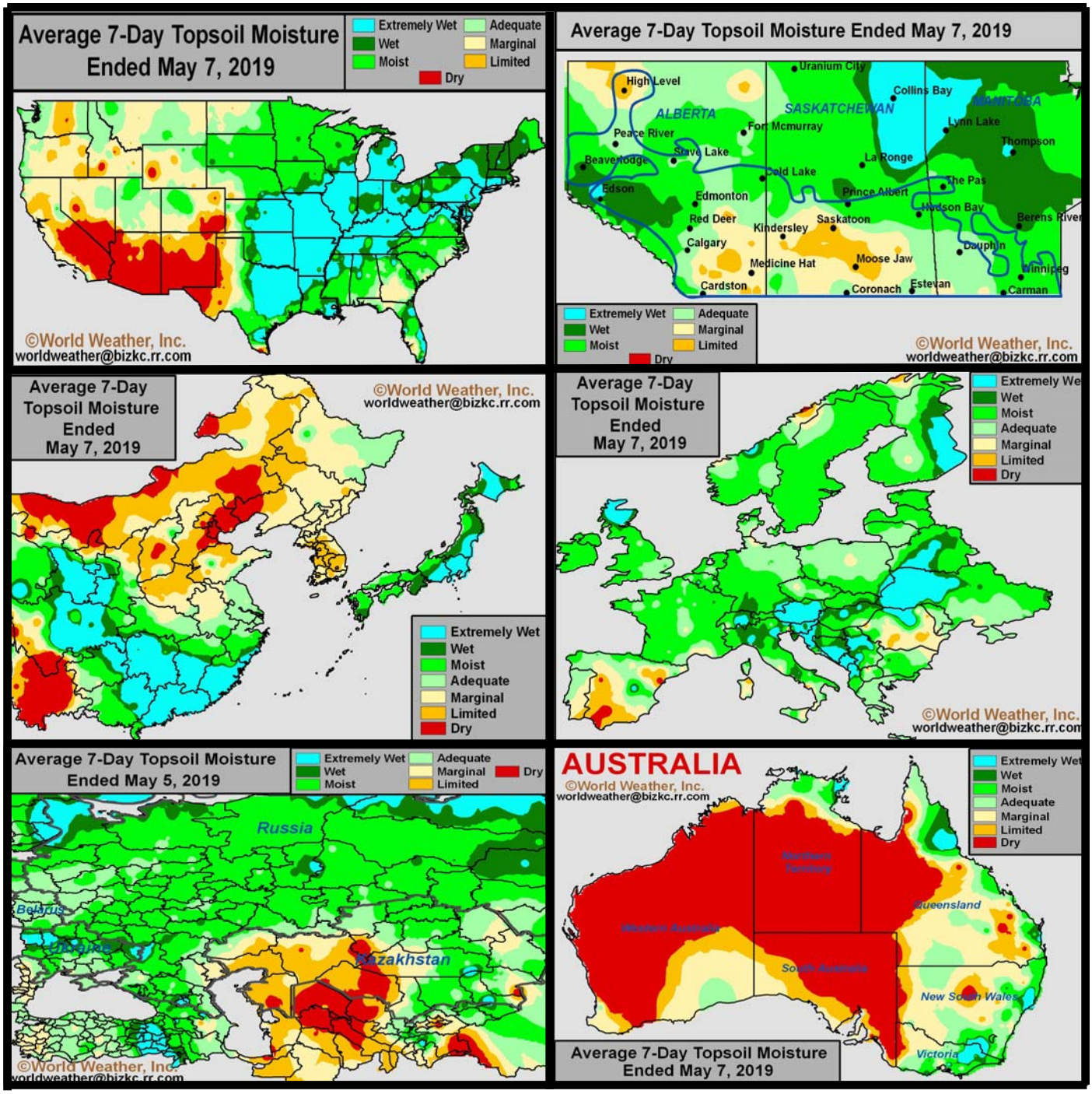
Many other areas will receive some sporadic precipitation in the next three weeks, but it will not likely have much impact on soil moisture or field operations. Temperatures through the end of May will be warmer than usual in many of the drier biased areas and near normal in many other areas. Manitoba and extreme eastern Saskatchewan will be a little cooler biased mostly in the coming week and then near normal.

June's preliminary outlook suggest a little better distribution of rain across the Prairies. Some areas in the southeast will see a little more than the usual amount of rain while most other areas receive normal to slightly below normal amounts.

Temperatures in June may trend cooler biased in the west half of the region while readings in the east trend a little warmer. This temperature bias may eventually give way to a more active rainfall pattern as expected during the heart of summer (July and August).



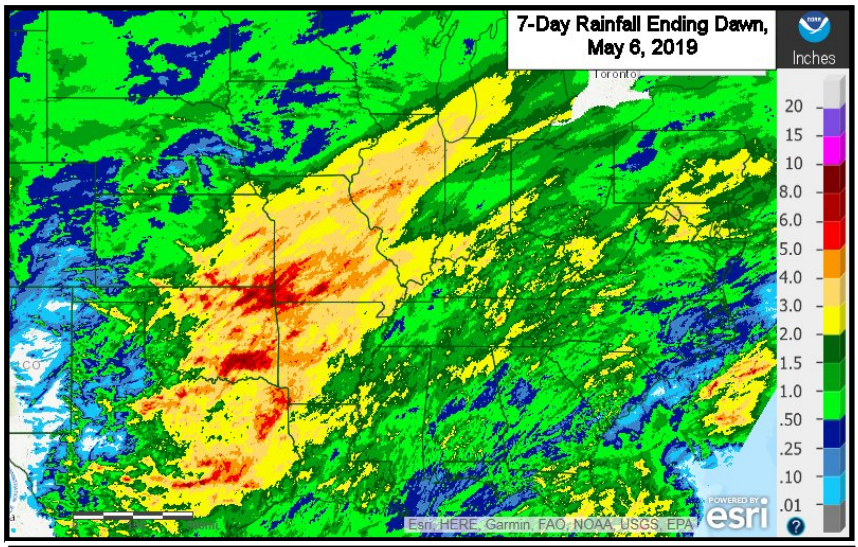
Selected Weather Images From Around The World

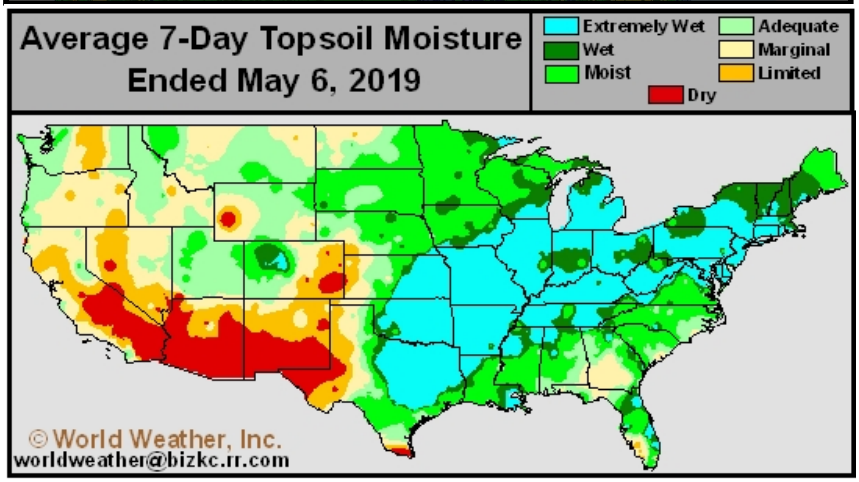


China has swooned to the top of the list of drought threatened countries in the world recently. Much of the North China Plain and northeastern provinces are drying out and the coming ten days will not likely get much better off . The region needs to be closely monitored since it produces a large amount of soybeans, corn, sugarbeets spring wheat and other crops. Europe and the western Commonwealth of Independent States have experienced a decline in dryness in recent weeks, but a persistent region of low soil moisture remains in Romania that will have to be closely monitored as June arrives since it may be a drier and warmer biased month. Dryness in Kazakhstan will also be closely monitored because of a ridge of high pressure that will evolve over that area and expand northward during the next ten days suppressing rainfall and allowing temperatures to rise well above average. Eastern Australia has recently received some relief from dryness, but the west and south-central crop areas are still dry and need rain. In contrast, the United States is still much too wet in its Midwest, Delta and southern Great Plains production areas.

Next Week Most Important For 2019 U.S. Planting

Rain fell throughout key U.S. crop areas east of the Rocky Mountain region during the past week and many areas in the Midwest, Delta and southeastern Great Plains are completely saturated. Flooding occurred at one time or another during the past week in many of these wetter areas. Fieldwork progressed poorly in many areas during the latter part of last week and into the weekend when rainfall was most frequent and significant. Planting of spring crops continues well behind the usual pace and there is potential that some winter cereals will suffer from wet weather disease. Another round of significant rain and thunderstorms will produce additional rain through Thursday that will extend fieldwork delays into the weekend and possibly next week for much of the described region. Drier biased conditions are expected this weekend and next week that will help to dry down parts of the region, but a few days of warm dry weather will be needed before some farmers can enter their fields. That makes next week the most important week for planting in the 2019 spring season.





Flooding was noted at times during periods of heavy rain as well with the most severe flooding often occurring near rivers and streams.

Corn and soybean planting progress is behind the five-year average in much of the U.S. Midwest and neighboring areas. Abundant precipitation over the winter coupled with periods of additional precipitation in recent weeks left the ground too wet for many producers to get into the fields on a consistent basis. There will be plenty of moisture for the crops to develop with once planting ends, but for now dry weather is needed to get planting completed before optimum potential yield dates pass. Continued rain will further delay planting and general fieldwork.

There are also concerns for winter wheat production and grain quality losses in the Midwest and a part of the southeastern Plains due to excessive moisture. Growth has been sluggish in the wettest areas and some wet weather disease is beginning to show because of the constant wet conditions.

Hard red winter wheat prospects are generally favorable this year. However, too much rain from Kansas into northern Texas in this coming week may lead to a general decline in crop conditions that can only be fixed by an extended period of warmer and drier weather. Protein levels in this year's wheat may also be below average because of too much moisture.

A strong low-pressure center will slowly advance across North America during mid- to late-week this week. Rain and scattered thunderstorms will be associated with the system that will initially evolve in portions of the Plains later today and Tuesday before shifting into the Midwest Wednesday and Thursday. Much of the rain will be restricted to eastern North America Friday as the disturbance shifts into eastern Canada. A follow-up disturbance will bring erratic rain to portions of the Midwest Friday and this weekend, though much of the precipitation that occurs during this time will be light.

Moisture totals by next Monday morning will range from 0.75 to 3.00 inches most often from Kansas, Oklahoma, and eastern Texas into much of the central and eastern Corn Belt and Delta. Local amounts over 4.00 inches are also expected in Kansas, western Missouri, and southern sections of the Delta. The western Corn Belt will receive 0.50 to 2.00 inches of rain, though North Dakota and northern Minnesota will only receive

Next Week Important For U.S. Planting (continued from Page 5)

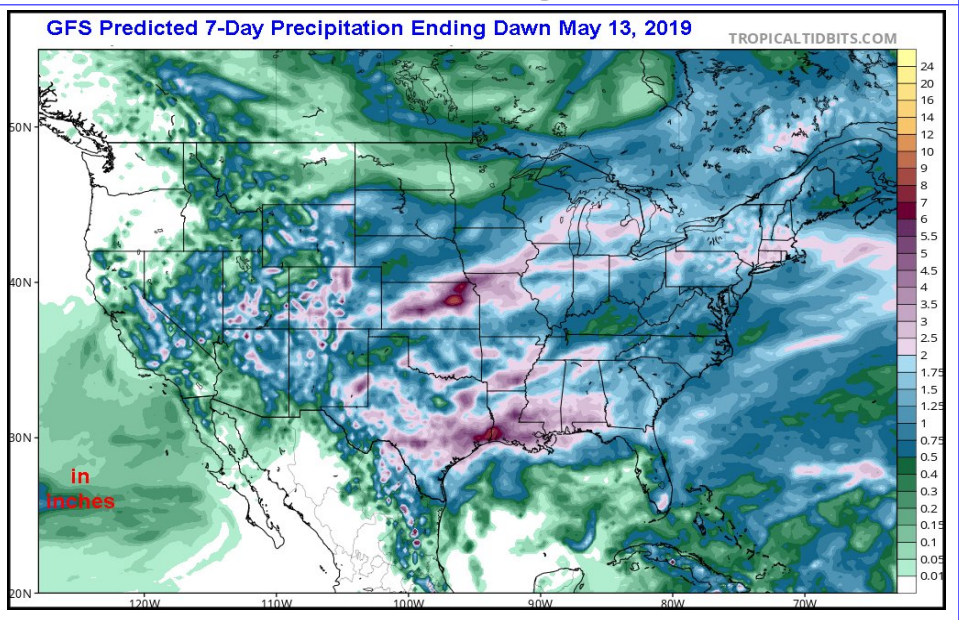
a trace to 0.35 inch of rain most often.

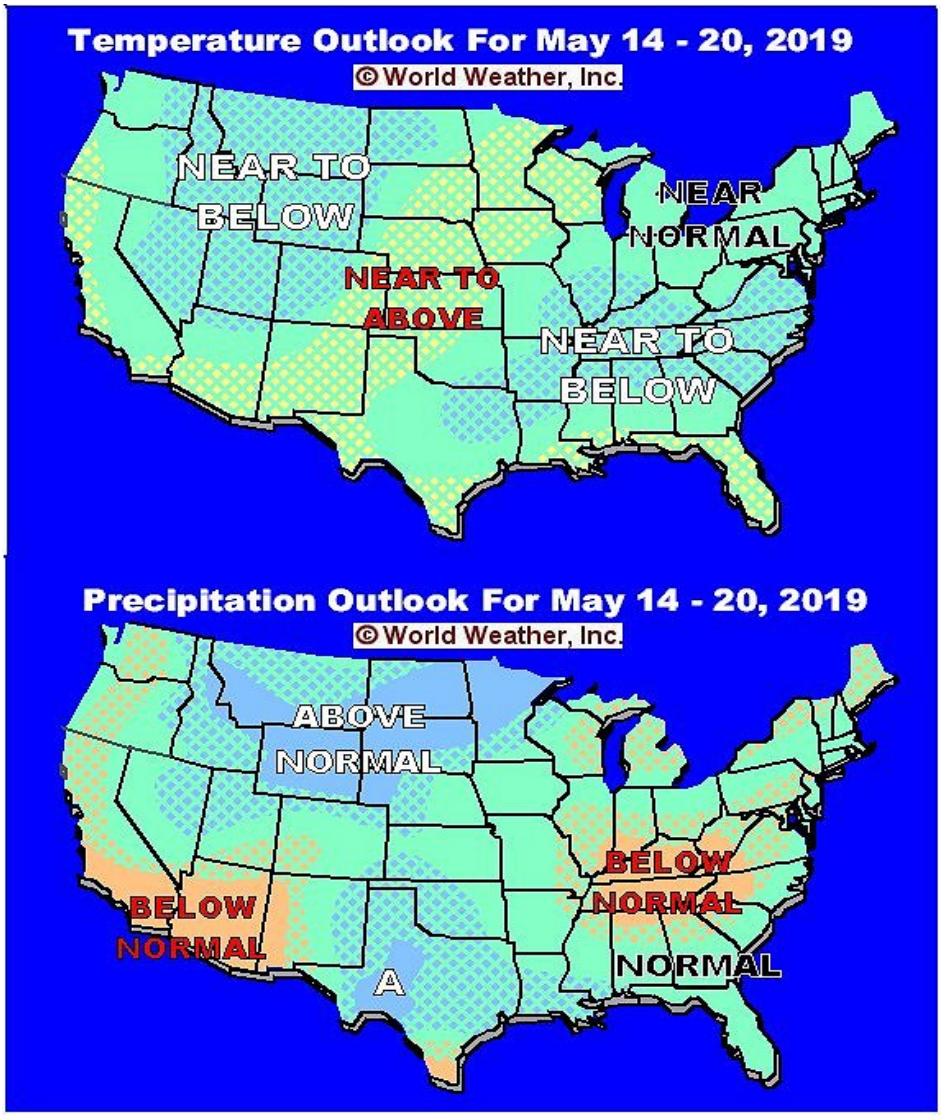
Rainfall in the coming days will keep the ground abundantly wet from eastern Texas, Oklahoma, and Kansas into portions of the eastern and central Corn Belt. Flooding will again be possible at times as well and promote damage some of the more established crops. The lack of follow-up rain late this week into early next week will help firm up the topsoil, though temperatures will be slightly cooler than normal during this time. Overall, planting and general fieldwork will continue to progress slowly for at least another five to seven days in the wettest areas.

Next week's weather "may" trend much better thanks to the negative phase of North Atlantic Oscillation, the negative Arctic Oscillation and a temporary upper air weather pattern shift that will place a cooler and drier airmass over the eastern United States for a while. The change offers a short term break from rainy weather and will call for some temporary drying.

Farmers will have to wait a few days for the topsoil to firm enough to support fieldwork and then they will likely go strongly with planting. Western Corn Belt weather may deteriorate faster than that in the eastern Midwest with returning rainfall, but the temporary break in the east will likely have huge implications toward improving planting progress. If the forecast verifies there is a good chance that next week will be the most aggressive week for planting so far this spring. The outlook may be a little too dry, but with that said there is very good chance that at least a fair amount of the eastern Midwest will experience at least a few days of improvement that could easily be capitalized upon for the best field progress of the season.

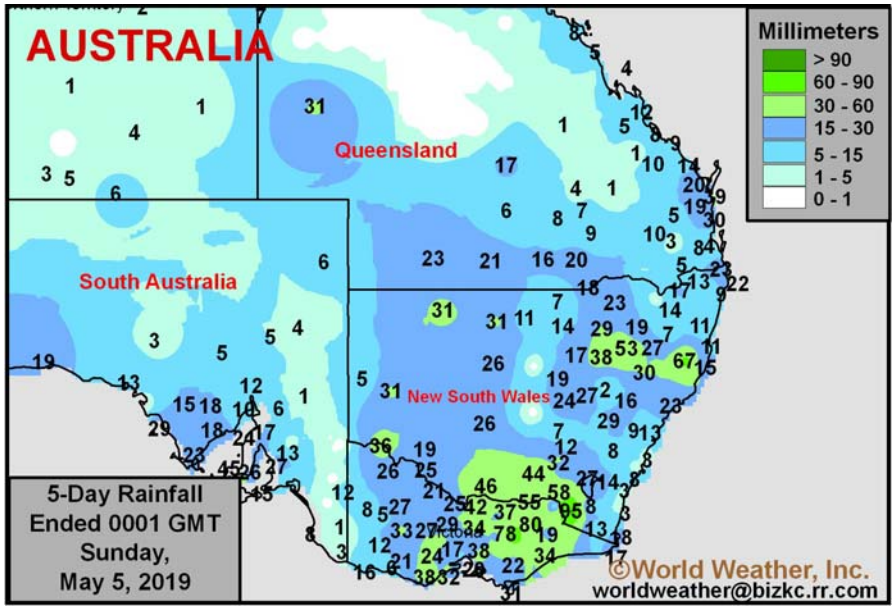
Late May weather is expected to trend wetter again and that may extend into June making next week very important for field progress.





Southeastern Australia Rain Bolsters Planting Moisture

Much of the winter wheat, barley, and canola areas in Victoria and New South Wales recently received significant rainfall to bolster soil moisture for improved planting potentials. Follow up precipitation is needed for all of these areas and some will occur later this week in Victoria and southern New South Wales while the remaining areas will have to wait for at least ten days for another opportunity for rain. Western Australia's winter crop areas remain a little too dry for much autumn fieldwork, although rain fell in a part of the region in late April. Western Australia and parts of Queensland and South Australia are expected to be driest over the next ten days.



Rainfall during the first few days in May was greatest in western and southern New South Wales, in much of Victoria and in a part of northeastern New South Wales. Each of these areas reported 0.75 to 1.25 inches with local totals getting to 2.00 inches near the mountains in northeastern New South Wales and over 3.00 inches in non-agricultural areas of northeastern Victoria. Rainfall in southernmost Queensland varied from 0.20 to 0.80 inch with a few amounts to 0.92 inch. The remainder of Queensland, South Australia, extreme western Victoria and a small part of east-central crop areas in New South Wales received 0.05 to 0.71 inch of moisture while Western Australia was mostly dry.

Last week's rain was the most generalized and significant of the autumn planting season which began in the second half of April and will last through June and possibly into July if necessary. Sufficient amounts of moisture occurred to improve topsoil moisture in many important crop regions and fieldwork has likely already begun following the rain during the weekend. Most of the nation's winter crop areas were considered too dry for planting prior to last week's rain.

In the meantime, the precipitation induced harvest delays for cotton, sorghum and a few other crops. There was some concern for cotton quality, but returning dry weather this week will help bleach the crop white once again. A previous rain event of significance occurred April 21-25 from western New South Wales into central Queensland. That event also brought some delay to cotton harvesting and some fiber quality declines. Most of the unharvested cotton needs drier conditions for the next few weeks to bring back the best quality while harvesting resumes.

Many Western and South Australia crop areas are still rated very dry, despite rain that fell in late April and last week respectively. The rain events failed to produce enough moisture to counter evaporation and fieldwork has not likely advanced very well except possibly in a few locations. Significant rain is needed in the coming weeks to reverse the moisture deficits and improve crop prospects and some is expected.

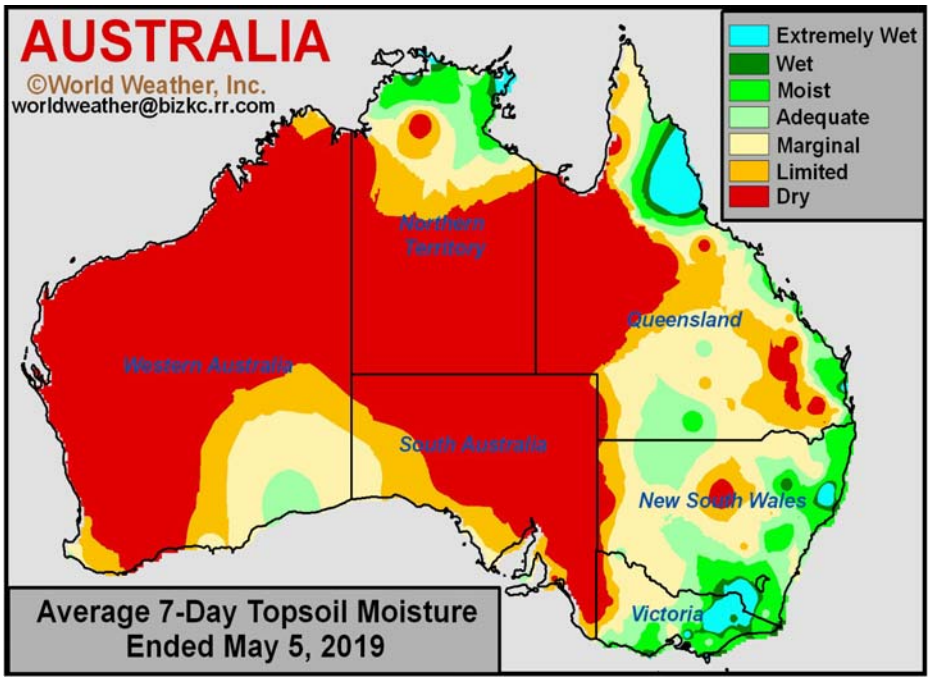
Very little rain will fall in interior portions of Western or South Australia in the next two weeks and most of Queensland will be dry as well. The drier conditions will leave autumn planting on hold while supporting the resumption of summer crop harvesting. Dryness is not unusual for this time of year and there will be plenty of time for improved precipitation since the optimal planting season dates run from now through June. Some rain will fall in coastal areas of both Western and South Australia and a few crop and milk production areas will benefit from the moisture.

Follow up rain is expected this week in Victoria and Southern New South Wales. Victoria will get some rain Monday into Tuesday along with southeastern coastal areas of South Australia. A greater rain event is expected Wednesday and Thursday in Victoria and the southern two-thirds of New South Wales. Between the two weather systems, rain totals by Saturday will have ranged from

SE Australia Rain Bolsters Planting Moisture (continued from

0.05 to 0.65 inch in New South Wales and northwestern Victoria while varying from 0.50 to 1.50 inches from southeastern coastal areas of South Australia through the remainder of Victoria's crop areas. The moisture coupled with that of last week will maintain a very good environment for planting, emergence and establishment of wheat, barley and canola. Any rain that reaches into unharvested cotton areas of New South Wales will not likely have much additional impact on fiber quality and any disruption to fieldwork will be confined to a quick couple of days.

Temperatures in most of southern Australia will bounce around a little bit over the next two weeks, but most readings are expected to be near average.



SE Canada Flood Delaying Spring Fieldwork

Significant rain in southeastern Canada during April combined with melting snow to induce major flooding in parts of both southern Quebec and southwestern Ontario. Several rivers, including those near Montreal, Quebec were in major flood stage as a result of the rain and snow melt. Major flooding has also occurred along the Ottawa River. Topsoil moisture is excessive across most of southeast Canada and that will lead to fieldwork and planting delays for a while this month. Damage to winter wheat in low lying areas has likely occurred as a result of the significant flooding and frequent rounds of rain will likely continue to impact the region this month.

Precipitation in southern Quebec and parts of Ontario, Canada during April was excessive and snowfall during the winter was substantially great. Flooding resulted in the second half of April as warmer temperatures brought on significant snowmelt while frequent storm systems brought on more rain. Flooding became significant. A May 1 report from Floodlist News, a part of Floodlist.com suggested thousands of people evacuated their homes in New Brunswick, Ontario, and Quebec as a result of flooding. Floodlist News also mentions that flooding began around April 19 as rivers and lakes began to overflow from spring snowmelt and rain.

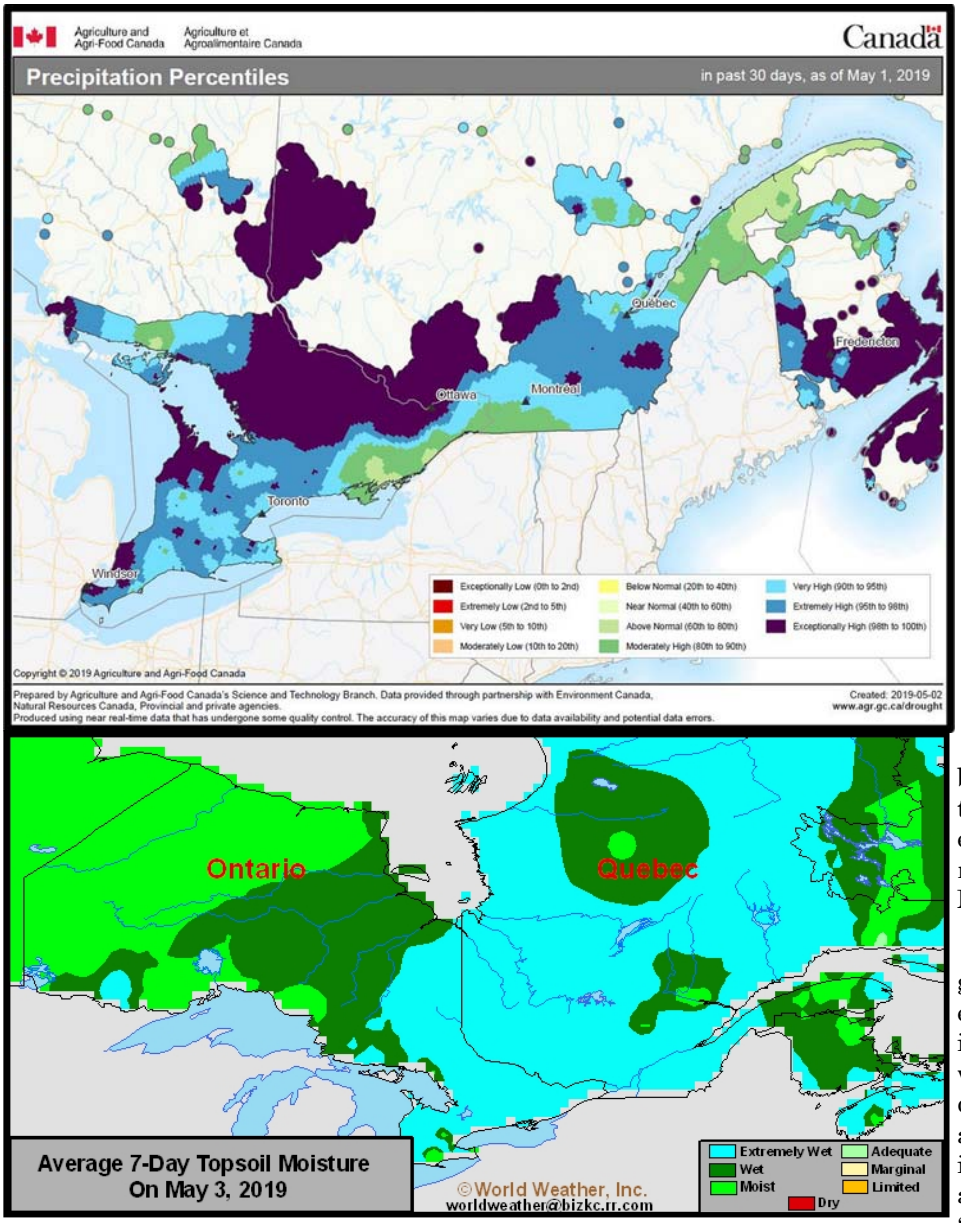
Precipitation during April was notably above average across much of southeast Canada. Many areas received moisture totals of 1.75 to 2.50 inches above average. A spot near the Ontario and Quebec border receive more than 3.90 inches of moisture above the average. This wet-bias combined with the significant snowpack that was melting resulting in some of the more serious flooding.

When shown as a percent of average, a notable portion of southeast Canada received greater than two times' normal precipitation in the last 30 days. Most areas received at least 150 percent of normal precipitation and there were some areas near the United States border that received between 115 and 150 percent of normal moisture. Precipitation in April was notably greater in northern production areas of the region than southern production areas.

Precipitation totals during the month of April were at or very near a record, according to Environment Canada. Even though the departure from normal precipitation amounts were not of "epic" proportion they occurred at a time in which the ground was already saturated or nearly saturated from abundant rain

SE Canada Flood Delaying Fieldwork (continued from Page 8)

last autumn. The combination of melting snow and significant rainfall in recent weeks resulted in the complete saturation of the soil column resulting in widespread significant runoff. With so much area dealing with the same environment of saturated soil, snowmelt and rainfall at the same time the runoff overwhelmed most of the region's rivers and streams resulting in the very serious flooding that has been under way.



Many farms were also flooded and field conditions in areas without standing water are saturated with moisture and too wet and muddy to be worked. Optimum planting dates for corn will begin around May 15 and it will likely take at least that long for the flood water to drain from the region, assuming no more rainfall.

The situation in southeastern Canada has not been much different from that in the U.S. Midwest where flooding has been a big problem this spring. Many areas in both the U.S. and southeastern Canada will not likely see spring fieldwork advance as swiftly as normal, especially if the wet weather bias prevails as expected.

Rainfall during the coming seven days will be sufficient enough to maintain saturated soil conditions in many areas. Amounts by Sunday, May 12, are expected to vary from 0.50 to 1.50 inches. That much additional moisture will keep the ground saturated, but it may not be enough to worsen flood conditions. Some flooding will continue, but many of the region's rivers and streams will have already crested and will continue to recede during this period of time. Flood conditions will prevail in the river flood plains, but the situation on many farms should start to improve.

The coming week of greatest rainfall is expected in Ontario mostly to the south of the worst flooded area. The best drying conditions in southeastern Canada may evolve after May 14.

Once the ground dries enough for planting some farmers will need a few days to fix fields after harvesting in the mud last autumn. A few 2018 crops may also need to be harvested from a few areas. All in all this year's planting will get off to a slow start with more delays each time it rains again.