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The Canadian Agriculture Weather Prognosticator

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WORLD WEATHER ISSUES

- Argentina received timely rain earlier this month, but more drying is expected
- Brazil second season corn has been planted, but faces some moisture challenges later in the year
- India winter crops have performed well with high yields likely for pulses, grains and oilseeds
- China crops are posed to perform well this year with favorable moisture
- Eastern Australia is drying out again; All of southern Australia needs rain prior to late April and May planting season for canola and wheat
- North Africa will get rain next ten days, but some of it will fall much too late in Morocco
- Spain will get improving rain while Romania stays dry along with Kazakhstan and eastern parts of Russia's Southern Region
- U.S. planting delays to become more significant
- SE Asia rainfall has been erratic

Moisture Needs Vary Greatly In Prairies

A broad area in Saskatchewan and portions of west-central and southwestern Manitoba are snow free and much of the region has reported below to well below normal precipitation during the winter. Many areas surrounding this region have snow depths of 2-4 inches and the moisture content in that snow is just enough to moisten the topsoil in the driest areas for a brief period of time this early spring, but more precipitation will be needed with warmer temperatures before planting begins.

Some areas in far southern Alberta and southwestern Saskatchewan have received enough rain and snow recently to improve the planting prospects in that region. Most other areas still have a significant amount of snow on the ground and soil conditions vary greatly. A big part of central, northern and western Alberta still need to dry out in a big way to get farmers into their fields to get unharvested crops collected and to prepare for planting.

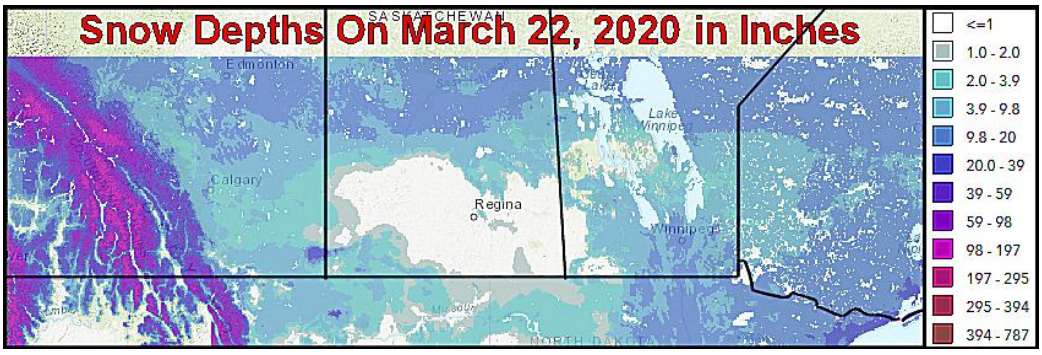
The greatest snow present today is in northern crop areas in the Prairies, as well as in a few central and far western Alberta locations . Some northern Saskatchewan locations are deeply buried in snow and the same is true for the northern Interlake region of Manitoba and in the southeastern corner of Manitoba.

Flood potentials are still high for the Red River Basin in southern Manitoba, although the situation may be a little better than advertised earlier this year because of recent below average precipitation and some minor snow melt in the upper portions of the basin in the United States.

A very small portion of the unharvested summer crops from 2019 have been harvested recently, but there is still quite a bit of crop that will need to be dealt with before spring planting can take place.

Soil moisture remains limited in portions of southern Alberta and in various locations across Saskatchewan. Many of these areas received some needed moisture last autumn which makes the dryness situation of a lesser concern than in recent past years and the odds are very good that timely precipitation will arrive before planting begins.

The bigger worry in the Prairies is in western, some central and northern portions of Alberta where some of the wettest conditions remain from last summer and where the snowpack is greatest. Delays in fieldwork are most



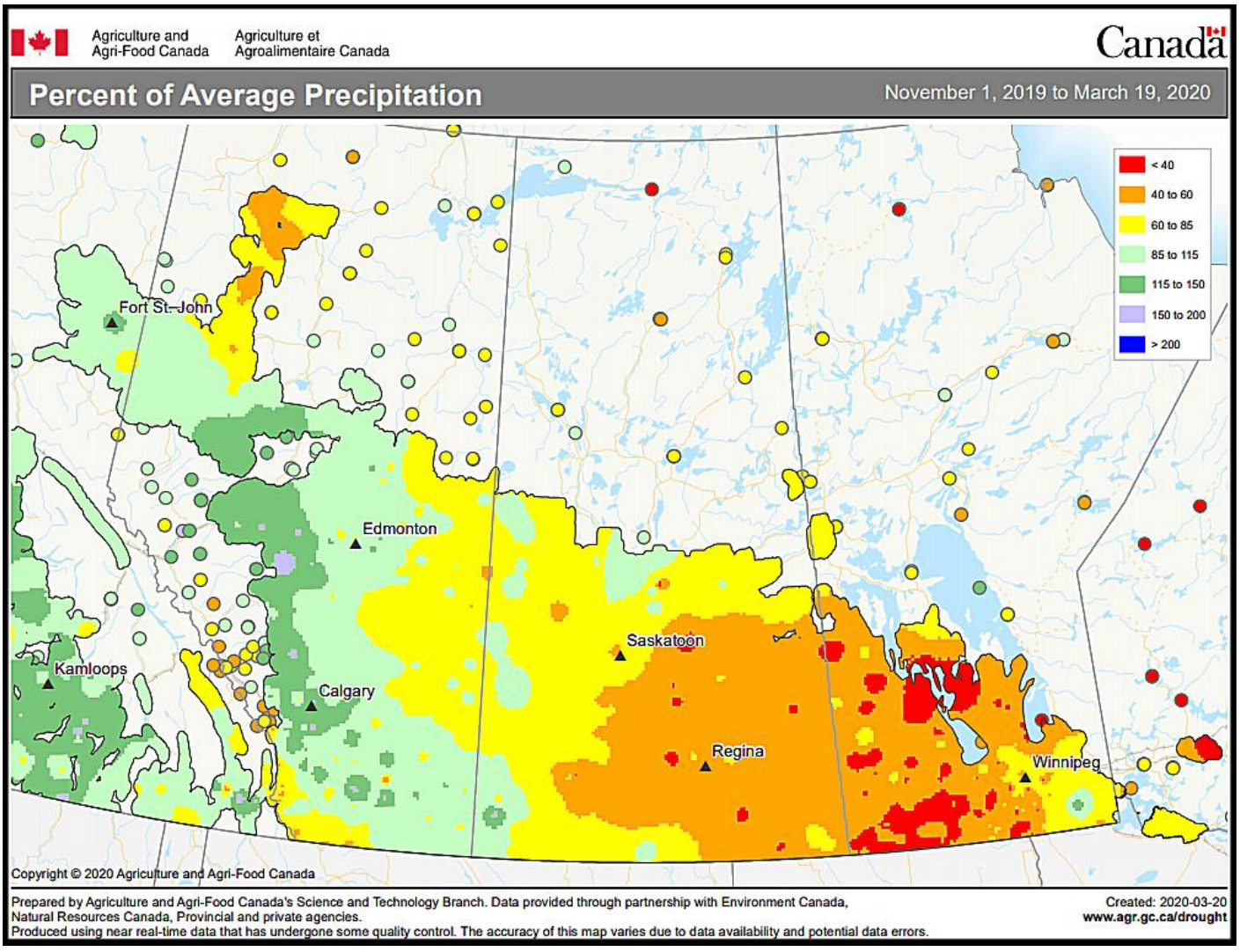
Moisture Needs Vary Greatly In Prairies (continued from page 1)

likely in this region because of soggy field conditions and the same is true for a few northernmost fringe production areas in Saskatchewan. Another region that could be impacted by surplus moisture in the spring is northern Manitoba and in a few southeastern portions of the province where there is some potential for flooding depending on the distribution of rain.

Manitoba and the eastern half of Saskatchewan have been drier biased for much of the winter season. Precipitation has been 40-85% of normal with several drier pockets in Manitoba since November 1. Western Saskatchewan into eastern Alberta and northern sections of the Peace River region received near to below normal precipitation while other portions of Alberta received near to above normal precipitation. The wetter bias in western Alberta has been mostly confined to the front range of mountains and a small portion of the agricultural region that butts up against the mountains.

A series of weather disturbances will promote periods of erratic precipitation across the Prairies during the balance of this month. Waves of snow and a little rain will impact many areas, but the greatest precipitation and snowfall is slated for the northern and western parts of the Prairies where an additional bolstering of snowpack is expected. Any snow that falls across the central and southern parts of the Prairies should be light this week and the farther south one travels in the region the less significant precipitation will be. That leaves much of the region south of Highway One in Saskatchewan and Manitoba with the least significant precipitation while western and northern Alberta are facing multiple inches of new snowfall along with areas in northeastern Saskatchewan and northern Manitoba.

Conditions in early April will trend drier and warmer, but only briefly with precipitation and cooling expected later in the month. The warm up in early April will occur in much of the Prairies and some snow melt is likely during that period, but the trend might reverse in some areas during the middle to latter part of the month as cooling returns.



Spring 2020 Weather Outlook Tips A Little Wetter

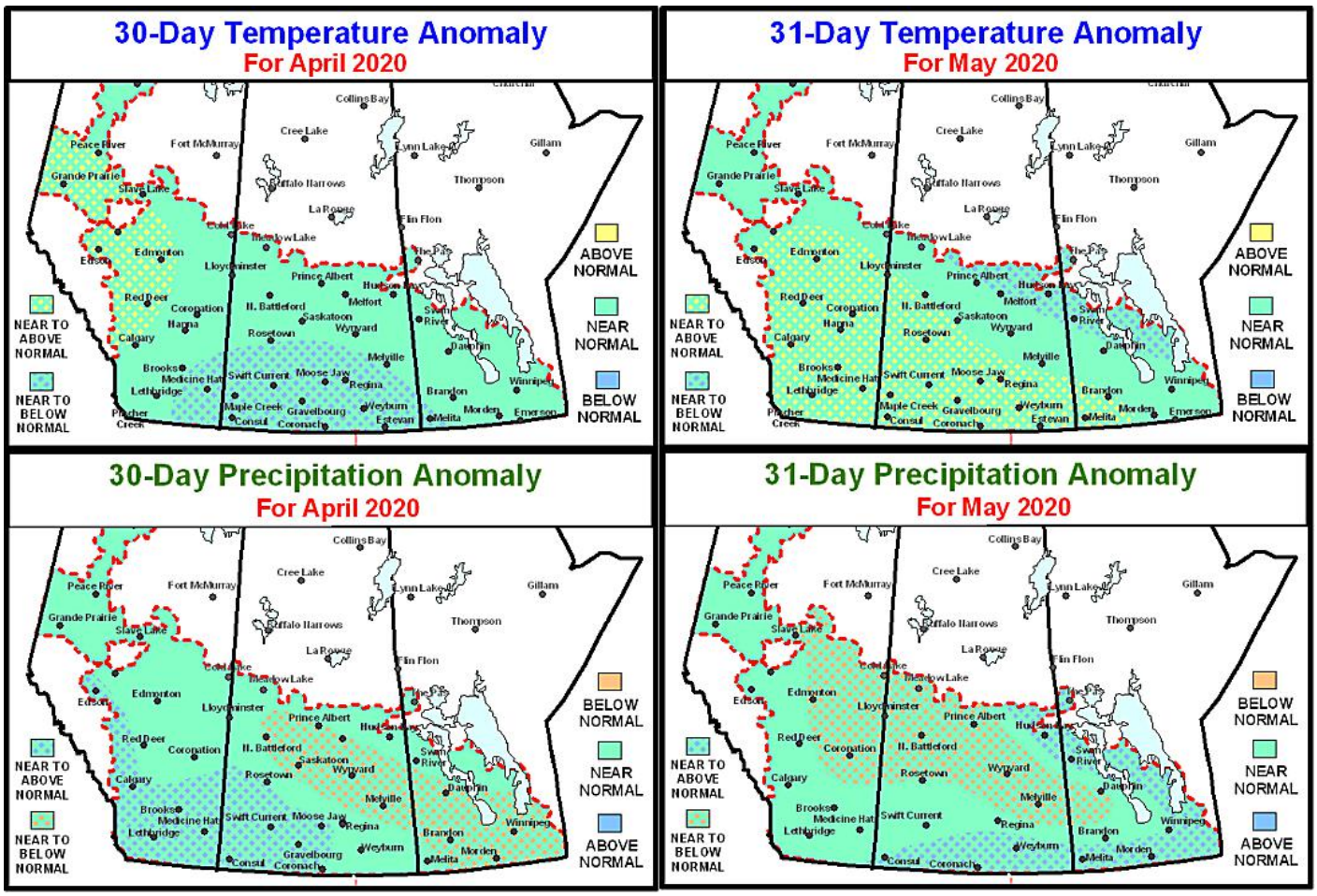
A complex spring weather outlook this year promises a little of bit of everything from some periods of drier and warmer weather to additional rain and snow and colder biased conditions. The planting season could be more of a challenge than hoped for because of the need for greater drying in the west and north, but the areas that have been driest in years past are expected to experience some improvement.

April is expected to start out with some warmer than usual weather and a short period of drier biased conditions. The situation may not last long, but some snowmelt is expected and rising soil temperatures will occur, but much of that will be early in the month and the tendency will change toward cooling later in the month. Alberta will have the best chance of seeing more warm weather than cool conditions especially in the west and north. The majority of the Prairies will experience relatively normal temperatures for the month, but that hides the realty that temperatures will be quite warm for a little while and then quite cool again.

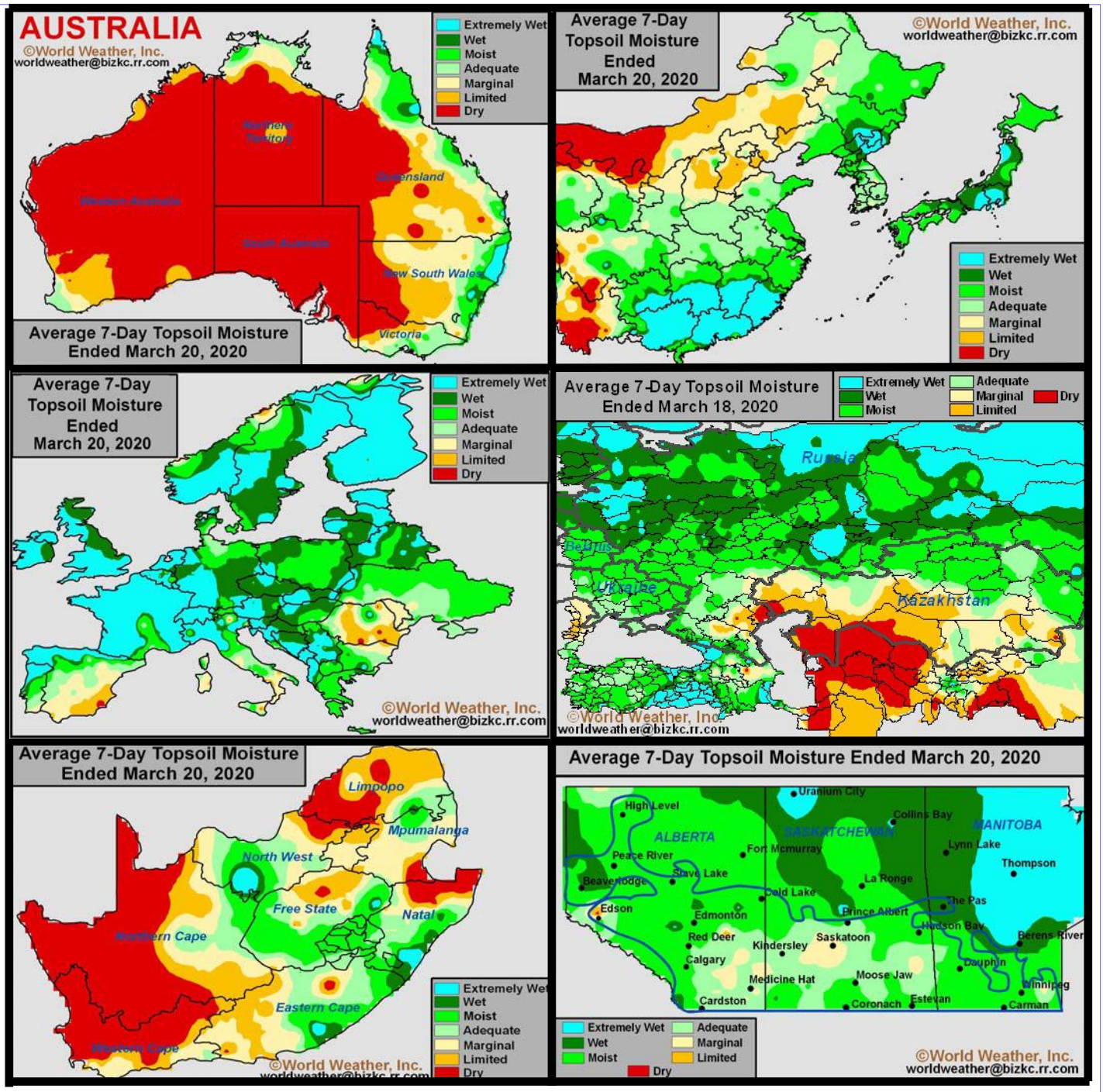
Since the cooler conditions in April are likely later in the month rather than at the beginning the environment may not be ideal for early season fieldwork, although conditions should support at least a little field progress in a few southern areas. The areas least likely to see abundant precipitation in April will be from southern Manitoba to the interior northern parts of Saskatchewan. Most of the wetter areas relative to normal should be in the southwest portions of the Prairies where it might be welcome, although it could interfere with some fieldwork as well. The wetter bias in April will not occur during the entire month. There will be opportunities for fieldwork, but progress will be slow.

May is expected to be a warmer month in general, although there may still be a few shots of colder air moving through northeastern Saskatchewan and Manitoba that will need to be closely monitored. Most likely that region will not have an opportunity to plant early which will help to reduce the risk of May frost and freezes from impacting crops, but producers should at least be aware that some shots of cold are likely in the east during the month.

May precipitation will be varied across the Prairies with the best field working conditions in northeastern and east-central Alberta into west-central Manitoba, although melting snow may have some of the northern areas a little slow getting started. Rain in the southern Prairies will be greatest in late May.



Selected Weather Images From Around The World



Eastern Australia has been drying out again recently after favorable rainfall in eastern parts of the nation earlier this month and last. The drying was needed to protect the region's cotton crop and to support summer crop maturation, but there is a great need for moisture throughout the south beginning in late April and May as the wheat, barley and canola planting season arrives. Europe has become wetter in many areas, but dryness remains a concern in Romania and neighboring areas. Spain will receive significant rain in the coming week to ten days to improve soil moisture. Morocco and northwestern Algeria will also get rain in the coming week which will improve dryness for them as well, although durum wheat production is not expected to improve much. Dryness is also a concern in Kazakhstan and eastern parts of Russia's Southern Region and not much precipitation is expected in the region for a while. Europe and the western CIS will trend cooler this week. South Africa summer crop areas have been drying out recently, but it is late enough in the growing season to minimize the impact. South America weather has been good.

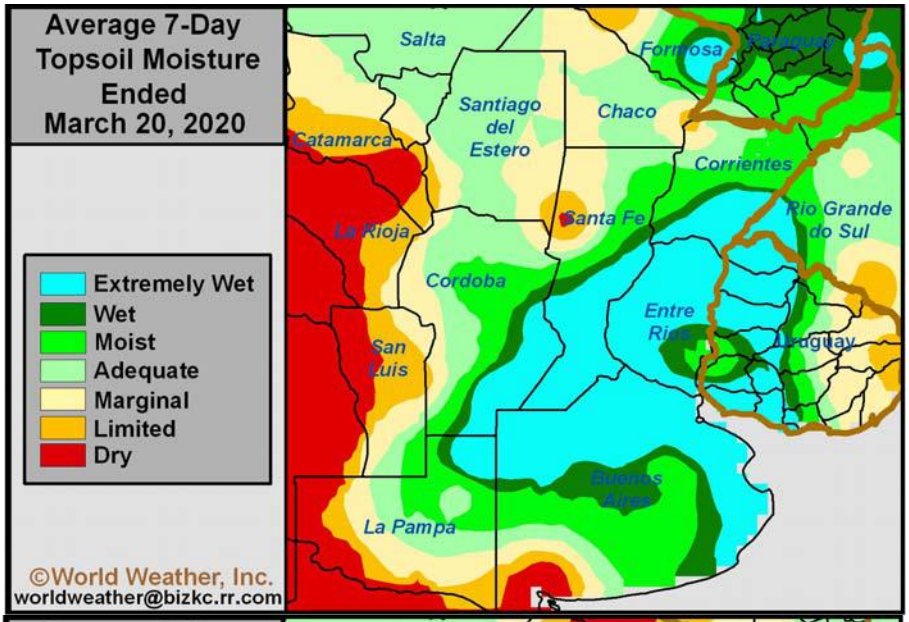
Argentina Gets Rain To Stop Late Season Crop Decline

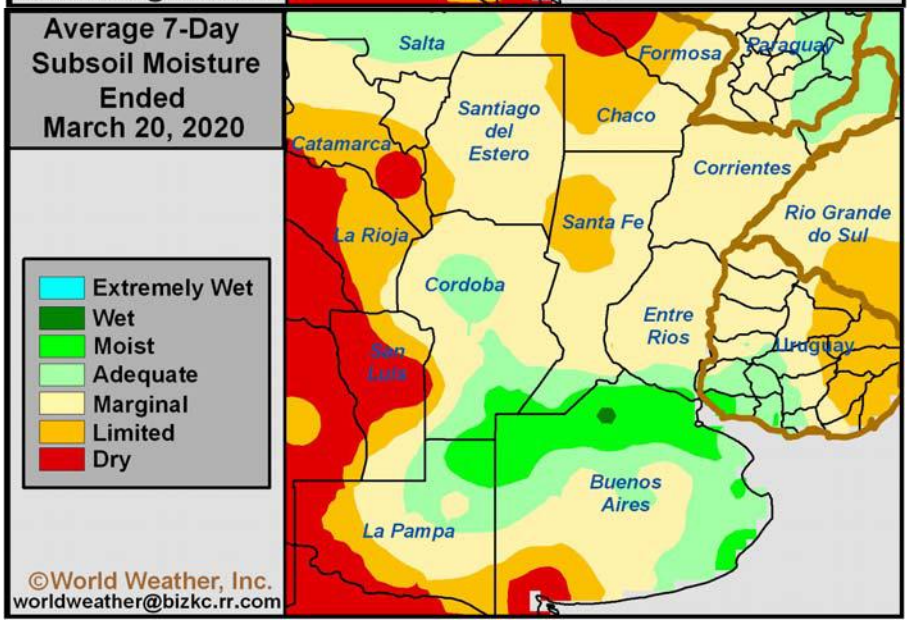
Argentina has had some wild swings in weather this year. Dryness in western crop areas during the spring negatively impacted early corn and sunseed production. Conditions during the heart of summer got much better with rainfall in February sufficient enough to bolster soil moisture for many of the main season crops during reproduction.

However, in late February and early March the nation trended much drier with three to four weeks of little to no rain and some very warm to hot temperatures in the fourth week of the dry spell. Had it not been for the late January and early February rainfall abundance Argentina's late season crops would have been ruined. But, rainfall during the first half of February was great enough to saturate the topsoil and improve subsoil moisture sufficiently to carry crops through three of the four weeks of dryness that followed.

Crop moisture stress in that final week of the dry spell was serious enough to harm late season crops that were still reproducing. Those crops were late double cropped soybeans, late corn and perhaps a few peanut and sorghum crops. Rain resumed in Argentina during the mid-March and sufficient rain fell to restore abundant topsoil moisture. The environment saved late season crops from a disastrous finish.

Argentina has moved back into another period of extended dryness, but sufficient soil moisture is present in the topsoil to allow many of the late season crops to fill with a limited amount of stress. Crop yields might drift slightly lower during the filling stages of late season development, but the losses are not expected to be very dramatic. Nevertheless, some timely rainfall is needed over the next few weeks to ensure that late season crops are not seriously stressed.





The most likely period for crop stress in Argentina is going to be in the last days of March and early April. Most of its summer crops should be finished enough to experience only a slight decline in yield and quality, although there will be some late season crops that still need at least one and possibly two bouts of significant rain to lock in yields.

Some rain is expected late Tuesday and Wednesday of this week in western and southern Cordoba and in a few areas of both San Luis and Buenos Aires to slow the drying trend and benefit a few crops. A little more rain is possible in Buenos Aires late this week and during the weekend to also help curb some of the moisture stress. A few more showers and thunderstorms may occur next week. The bottom line is that there may be just enough precipitation to protect late season crop development.

Temperatures will be warmer than usual this week in Argentina and that may accelerate the drying rates when it is not raining making what little precipitation does fall all the more important. Temperatures are advertised to trend cooler next week which will provide some additional relief.

Brazil Safrinha Corn Areas Will Need Timely Rain

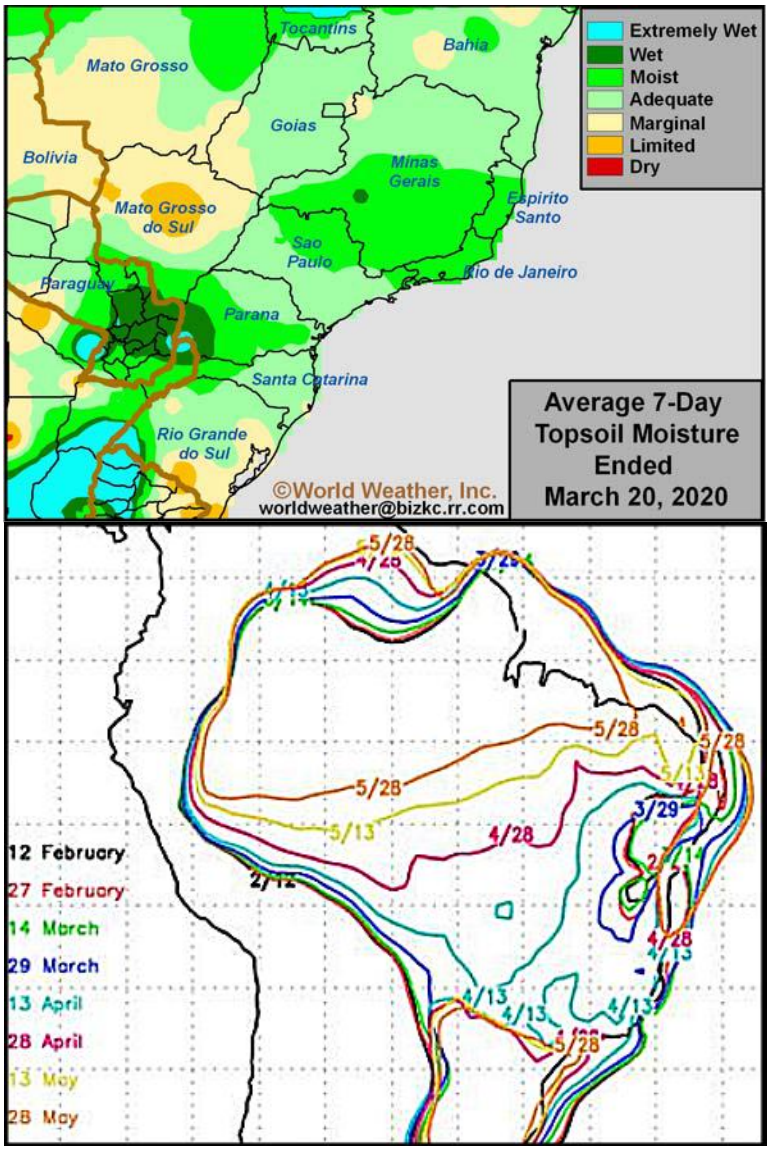
Second season corn called the Safrinha crop is all planted. However, 20% of the crop was planted much later than usual and another 30% was planted late, but not as late. That leaves up to half of the crop vulnerable to some yield reduction this year. Second season crops follow early season soybeans and are very much dependent upon the annual rainy season lasting into April.

Seasonal rainfall in Brazil usually ends in some of the second season corn production areas during the second week of April. Some years the monsoon lasts longer than others. Farmers are hoping for an extended rainy season this year, but World Weather, Inc. believes that may be a difficult accomplishment.

The best Brazilian farmers can hope for in late April and early May is a couple of timely rain events that might slow the drying rates down. Typically, second season corn production areas need to be saturated with moist when the monsoon ends. That usually buys the crop a few weeks of lingering soil moisture to carry crops through reproduction—"if" the crop is planted normally. Usually, it takes about two weeks for the topsoil to dry out after the monsoon ends depending on temperatures. Then it can take another two to three weeks for subsoil moisture to be exhausted if there is no other rain event after the seasonal rains end.

Under those circumstances, subsoil moisture might be available to second season crops through the balance of April and into the first part of May if temperatures are not excessively warm. Crop moisture stress could begin shortly thereafter with mid– to late-May becoming the most moisture stressed period for crops. Normally, planted corn would be in the ground early enough that reproduction would occur in April and early May. That usually leads to good yields and it is only the grain fill stage that sometimes gets too dry to harm yields. As long as moisture stress occurs after reproduction the losses are not usually very great.

However, some of this year's crop was planted in early March. Reproduction for those crops is not likely to occur before mid-May an if there is no timely rain event after the monsoon season ends some production loss would result. The 20% of this year's corn that was planted very late has a high potential to reproduce in the midst of a dry environment which could drag down yields and quality. The other 30% of the crop that was planted late, but not quite as late could get by on the moisture that remains after the monsoon ends. The normally planted half of this year's crop should perform favorably unless rain stops immediately and does not resume.



Today's soil moisture is not as abundant as desired and net drying will occur from Mato Grosso do Sul to Parana and Sao Paulo through Friday of this week. Rain will resume in these areas for a little while this weekend and early next week and the distribution of rain will be very important for late season crops because another period of drying is expected in the first few days of April.

Most of the computer forecast model runs recently have suggested timely rain would occur through early April, but a close watch on how much rain falls and when the monsoon ends in April is warranted to determine how well late season crops will perform. Most likely, a cut in production will occur and some of that has already been factored into commodity trade, but if expectations are different from reality there could some reaction in futures prices. The situation will need to be closely monitored.

Prairies Still Have Potential For Late Season Coolness

Winter in North America has been dominated by a split jet stream with the northern branch bringing bouts of bitter cold periodically into the Prairies. The cold has been potent at times and the trend is expected to linger a while longer.

Part of the reason for the northwesterly flow pattern aloft across Canada is warm ocean temperature anomalies in the Gulf of Alaska. The water has been cooling recently and the faster that the gulf turns cooler, the higher the potential will be for differing weather patterns to evolve. For now, World Weather, Inc. does not believe the pattern will break down fast enough to reduce some risk of late season frost and freezes in the eastern Prairies.

"Late season" is not a very good term because the frost and freezes suggested to be possible this year may come in mid– to late May, which according to many weather atlases from the late 1900s that would be considered normal . However, recent decades have left the impression that our last season freeze date occurs earlier and that it is okay to plant canola and other crops during periods of warm weather in the early to middle part of spring. That was certainly the case for many years, but frost and freezes occurred more normally in the past two seasons and some crops were damaged in the events.

World Weather, Inc. still sees a potential for the same thing to happen this year in eastern and northern Saskatchewan and Manitoba. The difference between this year and last year is that there will be more rain coming after the late season frost and freezes occur which might bring on some delay to fieldwork. The key to successful planting will be to watch for signs of when the last frost and freeze event will occur and then plant so that the temperature sensitive crops do not emerge until after the risk of frost and freezes passes. That is nothing new, but World Weather, Inc. cautions against planting too early this year because of the potential for late season coolness.

There is a relatively good chance that warming will not occur early enough for a long enough period of time this season to give producers the kind of "itch" that leads to premature planting and a higher potential for damage later. However, should the forecast change an a couple of good weeks of warm and dry weather evolves just remember that there is potential for colder air returning in May.

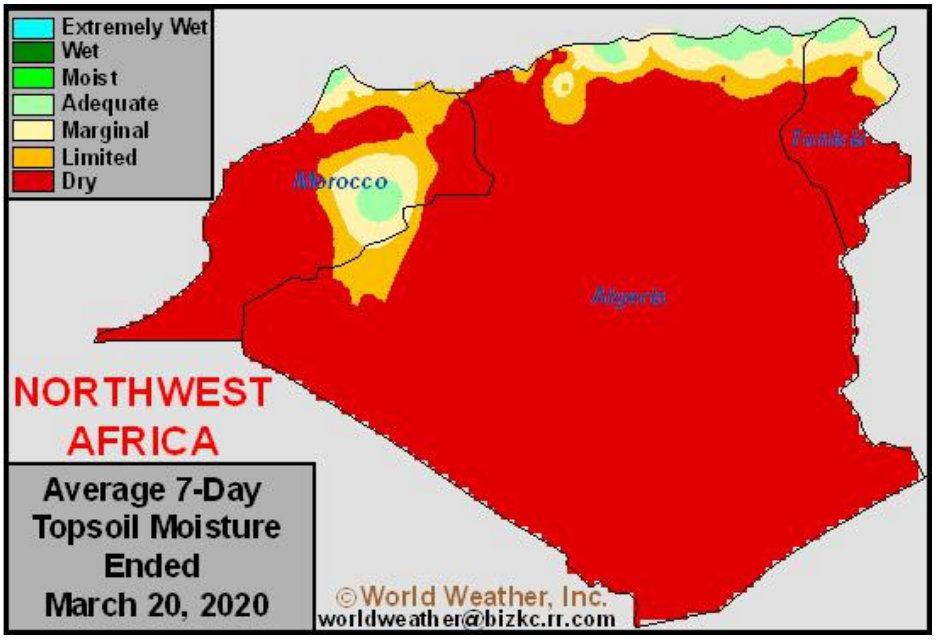
World Weather, Inc. will watch for changes, but last week's bitter cold has been pulsing at 30– and 60-day intervals which suggests mid-April and mid– to late-May might be the next periods of intensive cold.

North Africa Rain Coming Too Late For Morocco

North Africa has been dealing with dryness in recent weeks. For northeastern Algeria and northern Tunisia the dryness has not lasted long enough to seriously hamper wheat or barely production except in a few southern areas. But for Morocco the situation is much different.

Morocco has suffered from dryness most of the growing season. The crop was planted favorably and it established well, too, but conditions have gradually deteriorated since then because of little to no precipitation. Through Friday little to no precipitation had fallen in the nation for months, but some rain developed in northern Morocco during the weekend. The moisture was welcome, but southwestern Morocco produces 60% of the nation's barley and 40% of the wheat and it was not impacted and dryness in that region has been substantially long enough to greatly reduce the nation's production outlook. Dryness pushed reproduction faster than usual and yields cannot turn around.

Other areas in North Africa have received some rain this month and more is coming over the next two weeks to bolster production.



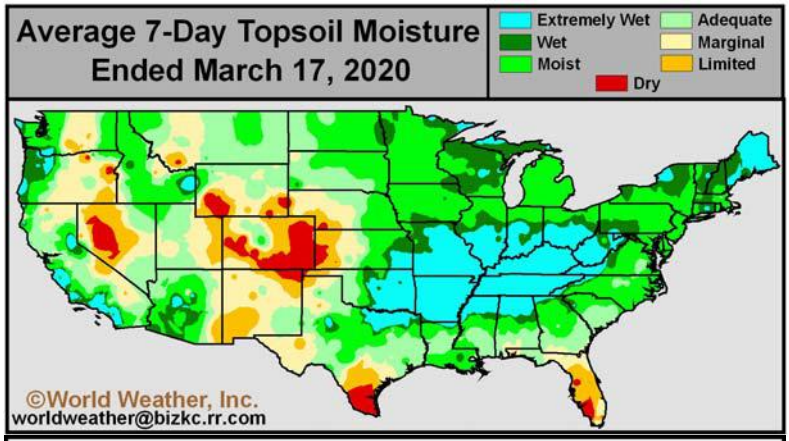
Southern U.S. Planting Delays To Prevail

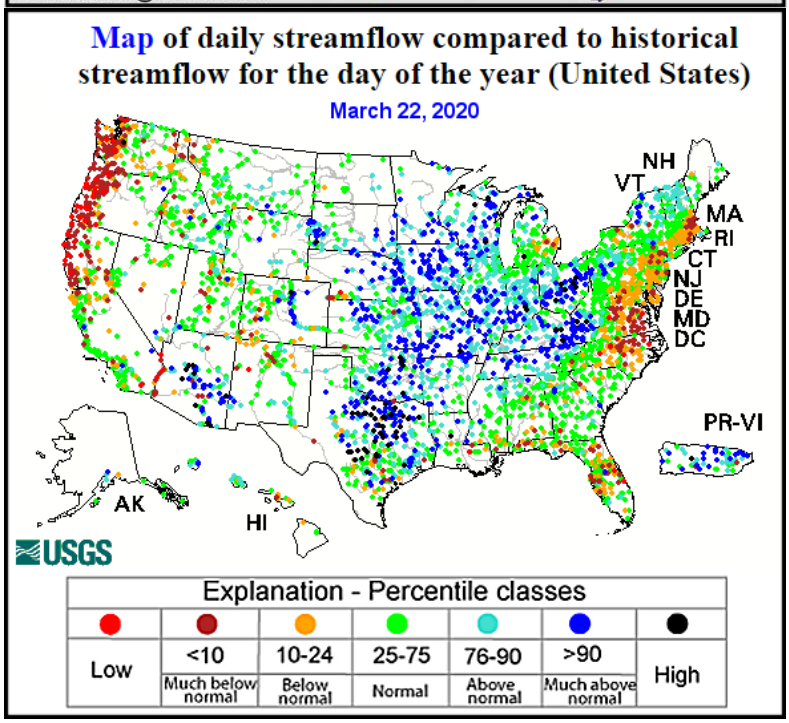
U.S. weather has been and will continue to be active for the next ten days. Some break may occur in early April, but it will be a short-lived break and then more rain is expected. The greatest precipitation has been occurring recently in the southeastern one-third of the nation; including the Delta, Tennessee River Basin and interior portions of the southeastern states. Rain frequency has been much too high for much drying between events.

Soil conditions a little farther to the north in the Ohio River Basin have also been frequently saturated with moisture and some periods of minor flooding have been occurring. The environment will not change through the end of March, but some change is possible in early April that may provide a ten day hiatus in the pattern. That will give flood water a chance to recede and some of the higher ground to firm, but the drying period might not last long enough to get farmers into their fields.

Fieldwork is not advancing in very many places. The most significant planting progress so far this season has been in parts of southern Texas and from Louisiana through southern Georgia and northern Florida. Planting to the north as has been minimal, although that is not usual for the early to middle part of March.

Typically, late March and April brings on aggressive planting of corn and rice in the Delta and corn as far to the north as southern Kentucky and east to the Carolinas. The lower Midwest did not usually get much planting done until mid–April which leaves time for that very important production area to get some drying. If the forecast for April can change a little some of the lower Midwest might get a little fieldwork done in early to mid-April, but World Weather, Inc. is a little doubtful that it will be aggressive without some significant change in the April weather outlook.





In the meantime, weather in the Delta, Tennessee River Basin and remaining southeastern states will not likely see much opportunity for drying except possibly in the same areas that have had the best planting conditions thus far from Louisiana to southern Georgia and Florida.

Soil conditions are excessively wet from the Ohio River Valley southward through the northern Delta. Some flooding is impacting the region as well as in a few other areas. Moderate flooding is only occurring in a few areas along the Mississippi River and in a few locations on the Ohio River. More serious flooding continues on the James River in eastern South Dakota, but that has been ongoing for a while.

By the end of this month, another 1.00 to 3.00 inches of rain will fall with local totals to more than 4.00 inches between the Great lakes region and the Ohio River while 2.00 to 5.00 inches of rain occurs from the Ohio River south into the Tennessee River Basin and northern Delta.