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The Canadian Agriculture Weather Prognosticator

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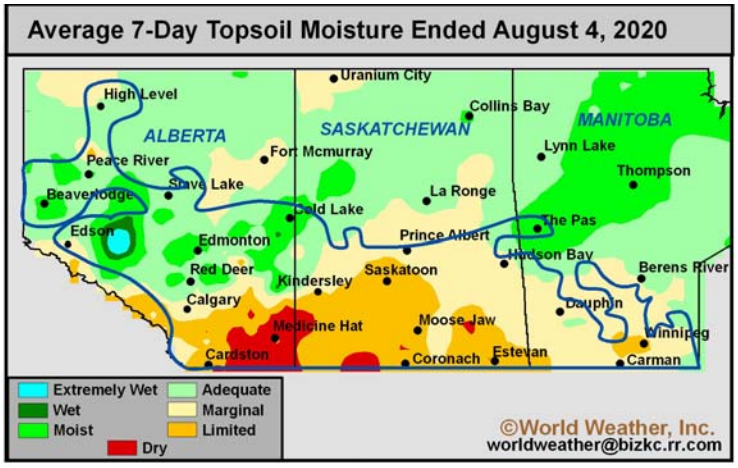
WORLD WEATHER ISSUES

- China flooding has finally begun to recede after some of the worst flooding in the 40-80 years
- France remains much too dry and may get some rain next week, but it comes too late to save most crops
- Dryness remains in southeastern Europe, eastern Ukraine into Russia's Southern Region and in a part of Russia's eastern New Lands
- Australia rainfall is expected to increase in a highly favorable manner over the next ten days offering rain to most wheat, barley and canola production areas
- Queensland and South Australia will experience enough rain to improve winter crop establishment
- Western Argentina remains in a drought that will cut into wheat production
- Southern Brazil rain next week will improve soil moisture for early corn planting
- Ontario and Quebec get significant rain from Tropical Storm Isaias

Drying Accelerates In Central Prairies

Drought never went away this summer in eastern Saskatchewan, although some very timely rainfall in July helped to boost topsoil moisture just enough to support some crop improvements in the driest areas of the Prairies. Unfortunately, the fix was superficial and the past three weeks of drying has depleted soil moisture and the trend will continue for another ten days to two weeks.



The driest areas should look very familiar. The pattern that has dominated the Prairies over the past two weeks is the very same one that impacted the region early in the growing season. That pattern restricted rain in the southwestern Prairies through the heart of Saskatchewan creating a big struggle for early season moisture. At that time temperatures were much cooler than they are now and the impact of dryness on agriculture was lower back in those days.

Recent temperatures have been ebbing warmer and rainfall has been notably lacking. The U.S. monsoon flow was expected to bring some needed moisture north into North America to help with midsummer rainfall, but that moisture influx has nearly dried up in recent weeks and it has certainly not reached as far north as advertised.

The high pressure ridge in the U.S. has been a little stronger than expected at times this summer forcing all of the greatest rain into western and northern Alberta and limiting precipitation in other parts of the Prairies. Earlier this summer there were some timely rain events in southeastern parts of the Prairies and we will soon be seeing that pattern return as well. Portions of southern and eastern Manitoba will start seeing a little more thunderstorm activity.

The limited amount of moisture available to the Prairies right now will likely restrict the rainfall expected in Manitoba in such a manner that the greatest rainfall will become more clustered. Pockets of significant rain are expected, but the widespread rain event that is needed is not expected for the next couple of weeks.

A huge area of drought continues to dominate western North America. The region extends north from the northeast part of Mexico, the southwestern U.S. Plains and areas west into the U.S. Great Basin to the interior Pacific Northwest, Rocky Mountains and northwestern U.S. Plains. The drought

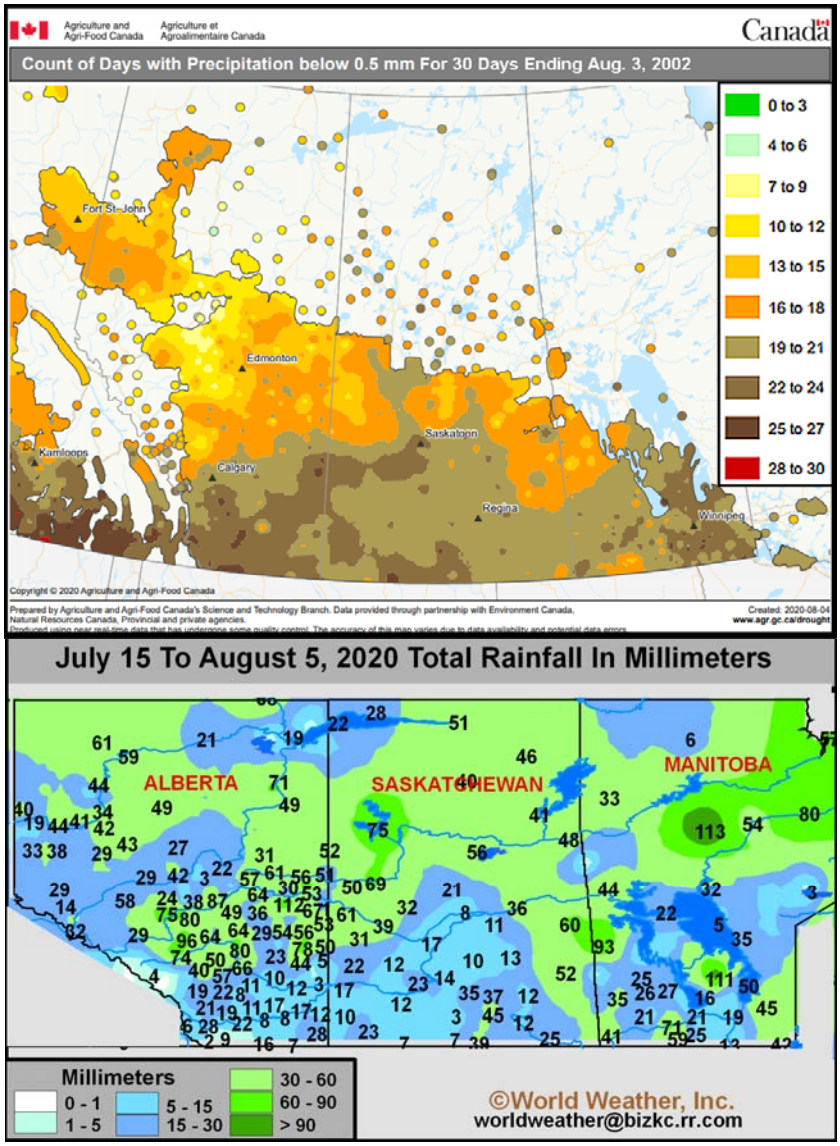
Drying Accelerates In Central Prairies (continued from page 1)

then extends farther north to eastern Saskatchewan and recent weather trends have suggested dryness in the northwestern U.S. Plains is expanding into southeastern Alberta and southwestern Saskatchewan once again as well.

Late season dryness is not a big issue for early season crops. Peas, lentils and early small grains are far enough advanced in their development that warm and dry weather now will be ideal in speeding along crop maturation and allowing for a quick and early harvest.

The favorable early season harvest conditions contrast with not so good weather for late season crop development. Late planted canola, flax, corn and soybeans all have a strong need for greater rainfall and the sooner that it falls the better production potentials are likely to be. Some of the drier areas have good subsoil moisture and late season crops have had a good opportunity to dig down into the subsoil moisture this summer to tap into that moisture reserve. Crops produced in the heavier soil and in areas that have only been a couple of weeks without good rainfall are likely still developing well. However, too much heat and decreasing soil moisture is certainly raising the need for a drink of water. The next couple of weeks will be very important for many crops in the eastern Prairies where much of the late season coarse grain and oilseeds are produced. Getting scattered showers and thunderstorms in this time period could still win back some of the production potential that is feared lost or drifting away because of recent dryness.

And then, of course there is the other side of the Prairies . Most of the crops in western and northern Alberta have been quite wet this growing season. The environment actually improved for a while in July as warmer temperatures and less rainfall began to favor a firming soil. That helped improved many of the western Prairies crops that had been much too wet.



The worry in Alberta is over the prospects that the wet weather pattern, which is returning now, will prevail long enough to create many more headaches over getting this year's harvest complete before snow flies. Even through there is not much sign of change in the near term forecast there will be some potential for western Alberta to see better crop maturation and harvest conditions a little later this year. Much will be determined by the position of the North American high pressure ridge.

That high pressure ridge is not likely to shift far enough west to shut off Alberta's rainfall entirely. The best producers can hope for this autumn is that the jet stream will become active enough to bring alternating periods of rain and sunshine to the Prairies. In that scenario fieldwork would progress around the periods of rain, but enough drying will be needed to get the ground firmed up so that farm equipment can operated efficiently.

The current weather bias in the Prairies with wet conditions in the west and north of Alberta and drier biased conditions in many other areas will linger into early September and then changes will occur that will bring some needed drying to the west and a little more rain to southern and eastern parts of the Prairies. Manitoba weather will finish summer with alternating periods of rain and sunshine.

Late Summer Weather To Stagnate

Weather conditions over the balance of August and early September will not likely deviate much from those of this first week of August. There will be some increasing rainfall in Manitoba, but the biases elsewhere may not change much. That implies more rain for western, north-central and east-central Alberta as well as northwestern Saskatchewan where near to above average precipitation biases are expected to continue.

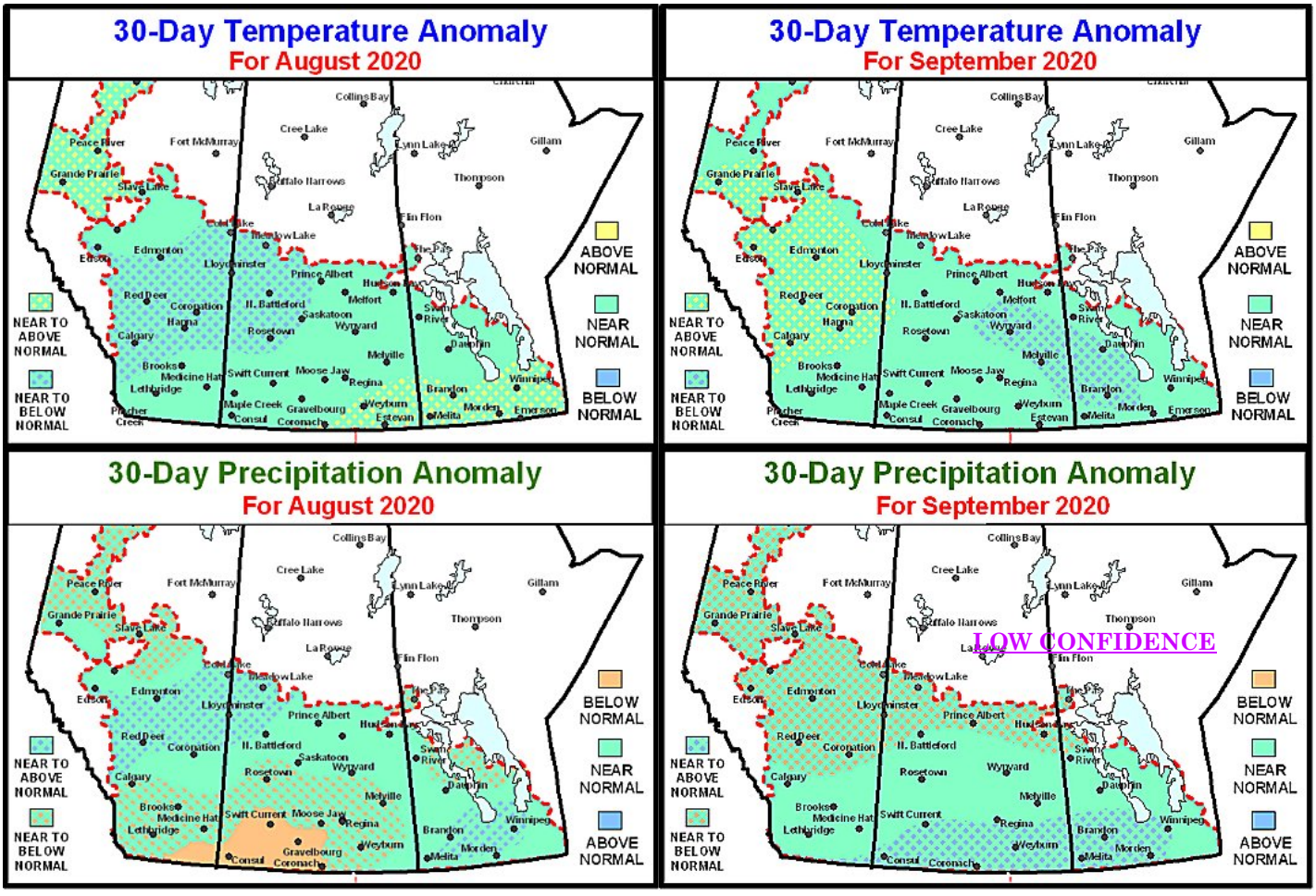
Less than usual rain is predicted for southern Alberta and across much of central and southern Saskatchewan through early September. The driest conditions will be in south-central into southwestern Saskatchewan including the southeastern corner of Alberta. There is some potential for this driest region to extend a little farther to the east and north in Saskatchewan depending on the exact position of the North America high pressure ridge over the next few weeks.

August and early September rainfall will be closer to normal in northern and extreme eastern Saskatchewan and across parts of Manitoba. The most erratic rainfall in the Prairies is expected in Manitoba where locally strong to severe thunderstorms are expected periodically that will produce some hail, damaging wind and localized flooding. However, the limited atmospheric moisture will keep most of the wildest thunderstorms limited to highly localized areas. That implies crop damaging conditions may occur in one region of Manitoba while many surrounding areas get little to no rain, let alone any hail or damaging wind.

Temperatures during the balance of August and early September may be slightly cooler biased in the wetter areas of Alberta and northwestern Saskatchewan. There will be at least one and probably two significant shots of cool air that will move across the Prairies later this month and in early September, but the prospects for freezes will be low through the first ten days of September, despite the cooler shots of air.

The North American high pressure ridge will see to it that temperatures are warm biased at most other times when the coolest air is not around and that will keep temperatures for the period relatively close to normal.

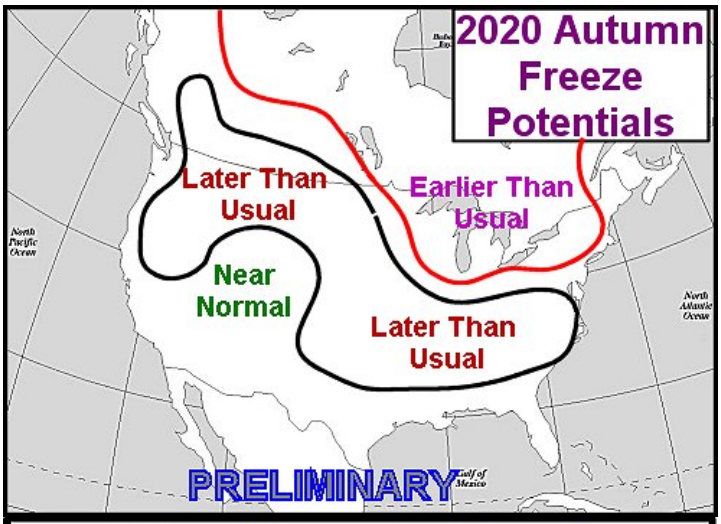
Late September weather is expected to trend wetter in southern parts of the Prairies while the north sees a decrease in rain frequency and amounts. Temperatures will be warm in the west and near to just slightly below average in the east.

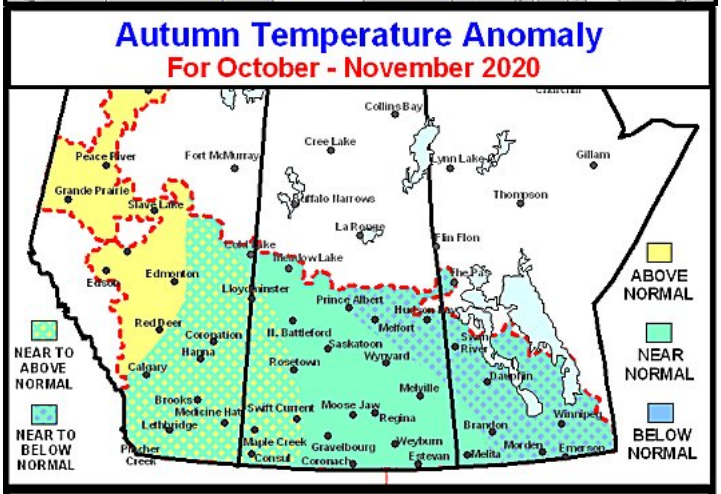


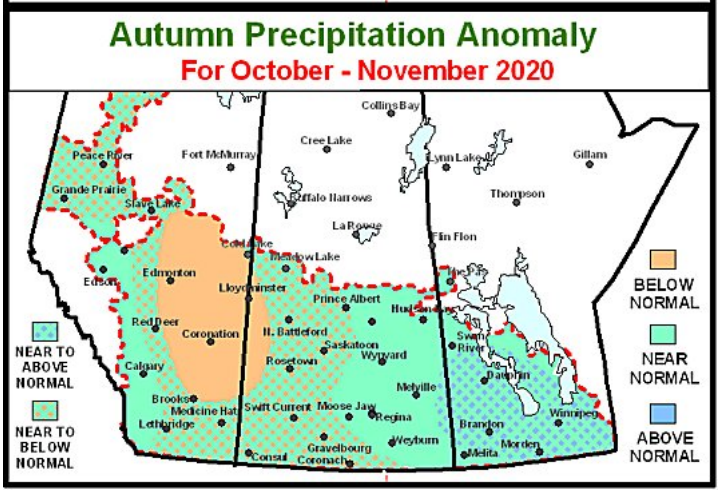
Early Season Cool Shots; Good Harvest Season

An unusually active tropical cyclone season in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico during the next two months will help greatly in reducing the risk of early season freezes in Canada's Prairies. There will be a couple of notable cool air masses similar to those seen in recent weeks, but they will likely stop short of inducing serious freezes in the Prairies prior to the normal first freeze date. World Weather, Inc. does believe that some soft frost may impact a part of the Prairies in early to mid–September briefly, but a killing freeze seems a little unlikely.

A northwesterly wind flow of air aloft is expected in late August and September, but it is more likely to be shifted a little more to the east allowing the coolest conditions to occur in eastern Canada and the Great Lakes region. Some of the cool conditions may reach into eastern Manitoba, but not many other areas to the west will be vulnerable to the cold early season air unless some other significant shift in weather takes place.







HARVEST SEASON OUTLOOK

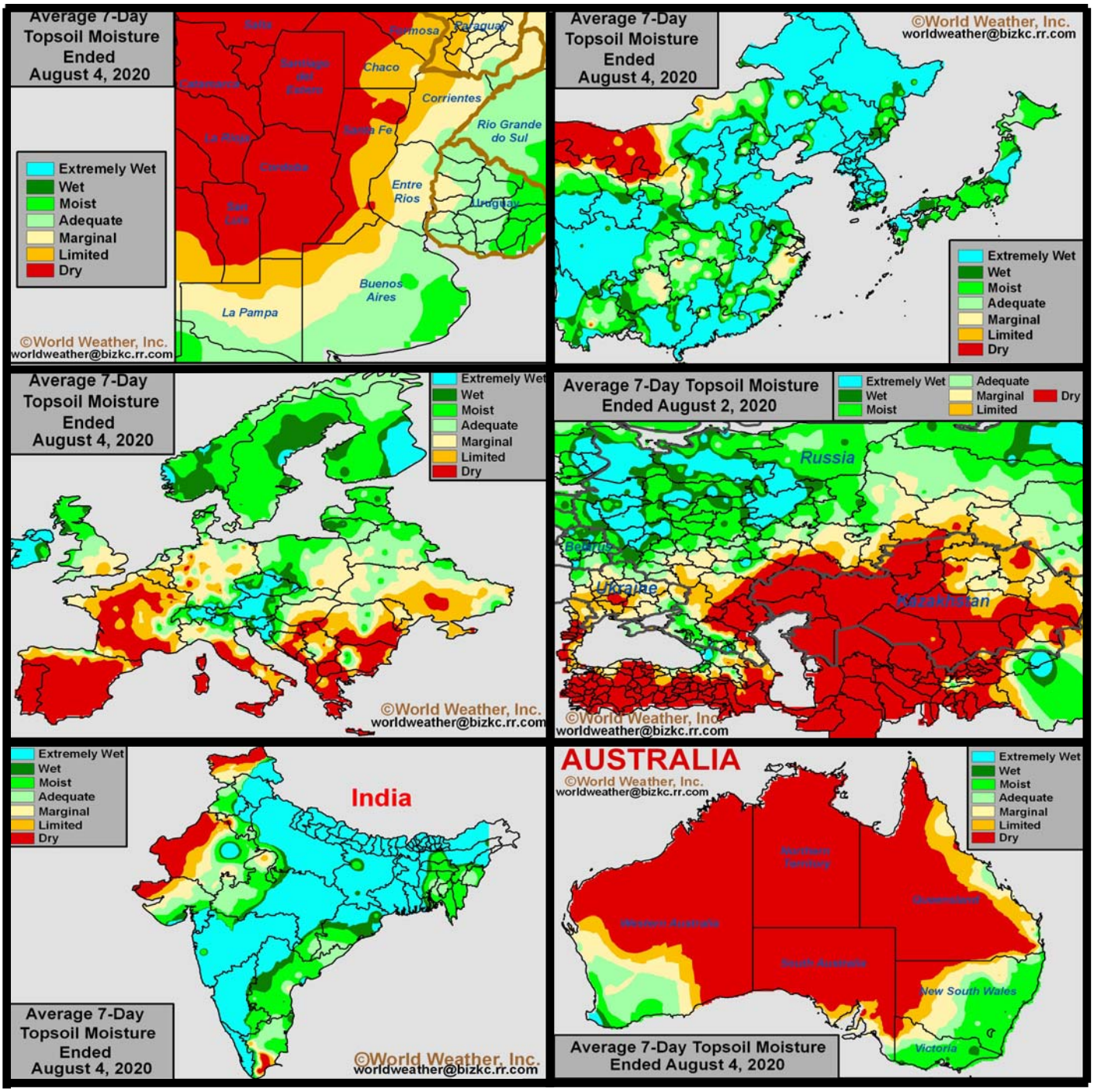
Late August and early September weather may briefly trend wetter across the Prairies inducing some greater topsoil moisture and bringing about some worry that last year's dismal harvest environment would return again. However, the transition from summer to autumn weather will bring about this precipitation and once the atmosphere has adapted to the new season weather conditions should improve.

World Weather, Inc. believes the autumn harvest season will be dominated by some disruptive weather briefly in September and then a bias toward drier and warmer weather will evolve in the western half to two-thirds of the Prairies during the October and November period suggesting a much more favorable harvest pattern relative to that of recent past years. It is very important to note that the weather is not going to be perfectly dry and warm, but it will not have the kind of wild rain and snow events and colder than usual weather that occurred in recent past years. This is especially true for western parts of the Prairies where maybe, just maybe, the four year jinx of rotten harvest weather will come to an end.

There is a little concern about too much rain and wet-biased conditions in Manitoba during the autumn harvest season and a close watch on that area will be warranted. Again, the situation does not look like it will be one of those years where there is one storm after another. However, there will be one or two events that sets back fieldwork briefly making the harvest advance a little more slowly, but not like last year.

Worry over late season yields for corn, soybeans, flax and late canola may continue because of persistent warmer and drier biased conditions in the heart of the Prairies during the balance of this month. The moisture that comes in September will help to replenish the fields with at least a little moisture, but drier conditions will come to support harvesting later.

Selected Weather Images From Around The World



India's monsoon has performed relatively well this year, but recent trends have been showing a decline in rainfall for central through northern and northwestern parts of the nation. Some dryness in Rajasthan and northwestern Gujarat is becoming significant. China weather has been much too wet this summer in the Yangtze River Basin, but that area is now drying out and clean up from some record and near record flooding has begun. Northern China crop conditions are still rated more favorably, although local flooding has occurred there as well. Europe dryness has only intensified since the last prognosticator with France critically dry along with some areas in southeastern Europe. Rain is expected in France and the U.K. next week to offer some "temporary" relief. Dryness is also still ongoing in Ukraine and some areas southeast into Russia's Southern Region where no significant rain is likely. Australia's winter crops are rated favorably and more rain this week will likely improve crop and soil moisture significantly.

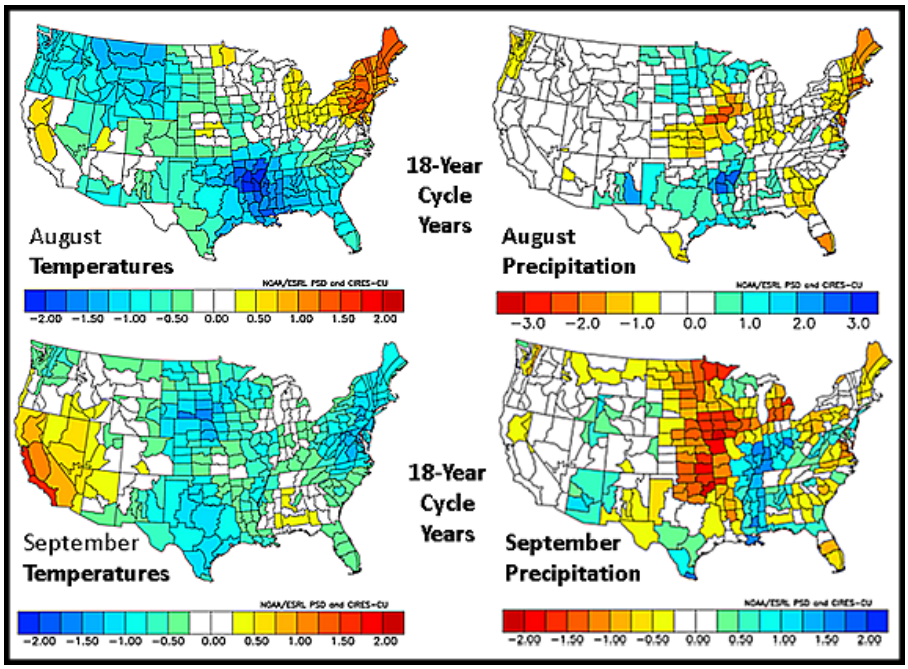
U.S. Midwest High Pressure Ridge To Be Short-Lived

Mother Nature will induce a knee-jerk reaction to recent unusual cold and the deep trough of low pressure pushing to the Atlantic Coast States will be replaced by a building ridge of high pressure and much warmer temperatures. The prospects for warmer temperatures and a little less rainfall has many traders, producers and forecasters stirring in their respective domains. Speculation about August finally providing the hot, dry, weather that so many were once convinced would occur this summer. However, the reality is that the warming may be of short duration and one that may benefit late season crops more than harm them.

Recent rainfall has been sporadic across the Midwest, but still helpful in minimizing the number of areas suffering from dryness. Outside of Iowa and a few other smaller pockets of dryness, most of the U.S. summer crops have endured mostly fine summer weather. The recent cool off will chill some of the crops and slow development while conserving soil moisture. The short term development of warmer temperatures and less rainfall might be exactly what some crops might want and need.

Soybeans like a little heat and moisture stress during the summer especially after a period of cool weather. Adding a few heat units to the outlook during the next ten days could really accelerate soybean development and for those areas that have had timely rain and continue to report favorable soil moisture the environment will only be good for production and crop development. This will be especially true if there is another bout of rainfall and slight cooling a little later in the month.

Without any consideration of tropical activity, there are reasons to believe that some cooler weather will return to parts of the Midwest a little later this month and in September. For what it is worth, the 18-year cycle data dictates a cooler bias – or at least that is what has occurred in the past during August and September across parts of the nation. It is also interesting to note that precipitation had a tendency to be below average in the western Corn Belt during these years in both August and September. That does not mean the same thing will happen this year, but some of this same data is woven into our Trend Model that has done relatively well predicting this summer's weather. World Weather, Inc. does not believe the cool bias will be as dominating as it has been in the past, but it will be a tempering factor in August and September 2020 weather and help prevent temperatures from being as warm as they might have otherwise been.



The tropics will play a huge role in August and September weather. The more active the tropics become in the next six to eight weeks the more influence they will have on the prevailing weather pattern. Not only will the active tropical weather pattern have impact on North America weather, but the influence could be quite significant if storms come toward the United States in such a manner to induce lengthy periods of higher pressure aloft. That could take the milder and drier biased conditions and turn them into a warmer and even drier outlook. An active tropical season is already under way and there is not much reason to expect a big slow down later this season. So, a close watch on the movement of tropical systems will be warranted in determining weather across the Plains, Midwest, Delta and southeastern states during the next two months. ENSO conditions and the solar cycle will also play a role.

It is interesting to note that in the summers of the solar minimum there was also a tendency for temperatures to be a little cooler than usual. A similar solution was noted for the summers that followed the official solar minimum date. The cooler tendencies were more-broad based across the nation in years near the solar minimum during August while the September anomalies seem to stay away from the Midwest, Delta and southeastern states. This year's solar minimum seems to have passed so this year may qualify more for the August and September temperature anomalies that occur following the minimum. When these years are applied to the

U.S. Pressure Ridge To Be Short-Lived (continued from page 6)

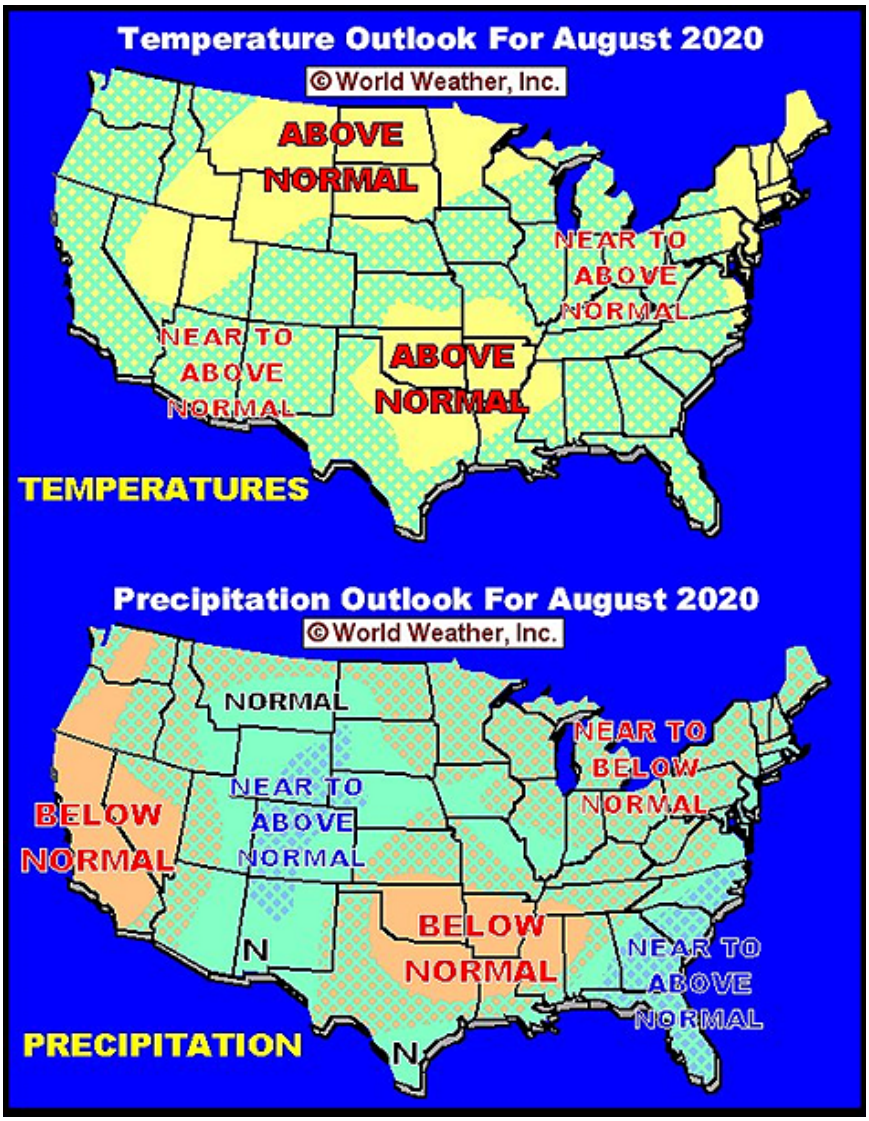
18-year cycle years we get a reinforcing cooler temperature regime in a part of the United States.

The change in climate must be accounted for when using these years in the past and most sources show that recent years are warmer than those of the past which implies that some of these temperature anomalies are probably a little too cool for the environment that we live in today.

In addition to the temperature statistics, it is very important that we address the upper air wind flow pattern for these years as well. Most of the 18-year cycle years kept the mean ridge position over the Rocky Mountains or Great Plains during the late summer. That provided a northwesterly flow pattern aloft at times which reinforced the cooler tendency periodically as air was drawn southward from the Prairies.

If the tropics are going to be active in late August and September and storms come toward the southern United States in frequent succession there is some potential that ridge building will be greater than usual in the middle part of the nation and that could negate the influence of the cooler temperature anomalies noted above. If the tropical cyclones come toward the southeastern United States there may be some potential for the northwesterly flow pattern found in the 18-year cycle years to keep a cooler than usual bias flowing into the eastern half of the United States. This latter scenario is most likely to evolve. Storms will come toward the U.S. most frequently from the southeast similar to Tropical Storm Isaias and some may come a little more directly from southeast to northwest. Each of these storms would likely then be followed by shots of cooler air that come in the northwesterly flow pattern and as a result the U.S. may not have much of a warm bias except between tropical cyclones.

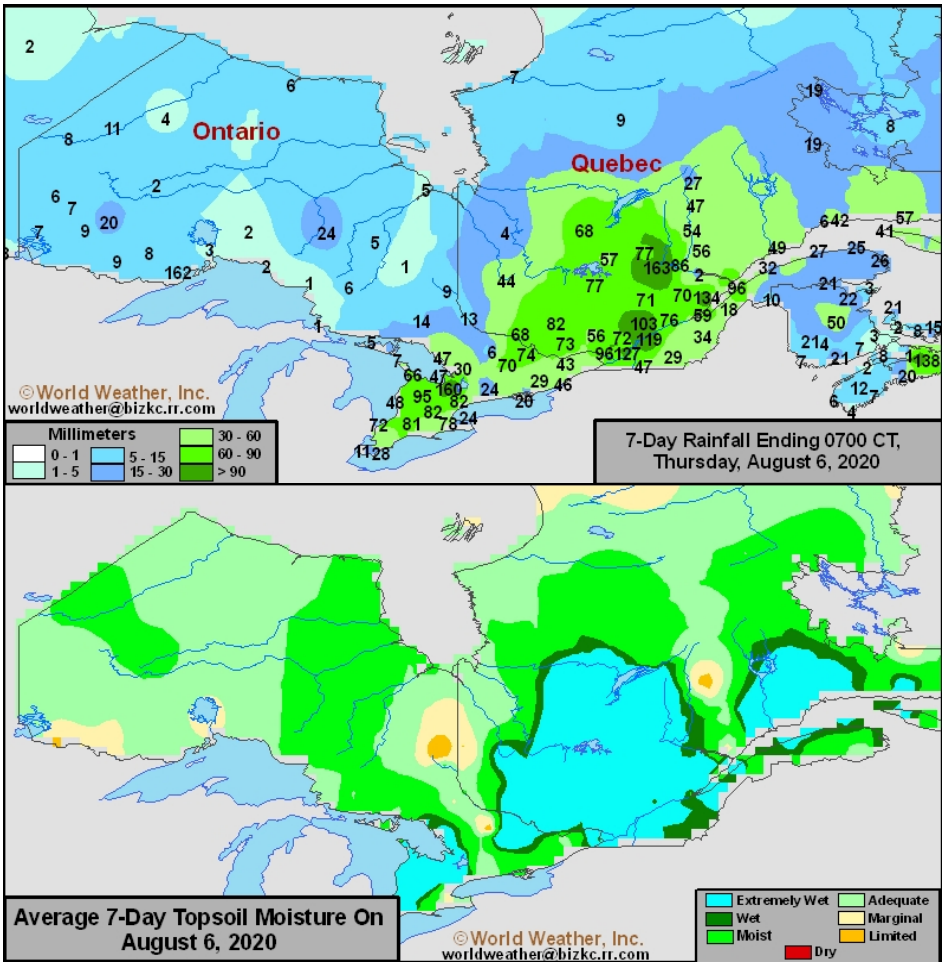
The official forecast of August is shown below and should favor a little warmer bias for much of the contiguous United States with temperatures most above average in the northern Plains and south-central states. The warm up expected late this week out ten days will counter the cool weather of this week and temperatures probably will not trend very cool gain until the last ten days of this month and for that reason we believe temperatures will be slight above average rather than slightly below average. The northeastern states may also have a warmer bias for the month. There is concern that our outlook for temperatures in the north-central states is too warm because of shots of cooler air that may roll out of Canada periodically. However, the most consistent warm air in North America should be in the west and that is the primary reason for the warmth in the northern Plains.



Rainfall in August is expected to be below average in the southern Plains and Delta and near to below average in the Upper Midwest, Great Lakes region and eastern Midwest as well as the northeastern states. Most of the far western U.S. will also experience below average precipitation while the Rocky Mountain region will experience a more normal distribution of rainfall. The southeastern states will have the greatest potential for wet biased conditions with the next round of significant rain just a tropical cyclone away.

SE Canada Benefits From Tropical Storm Isaias

Tropical Storm Isaias tracked over eastern North America earlier this week and brought significant rain to portions of Southeast Canada where dryness was present in a part of Ontario and Quebec previously. The rain helped bolster soil moisture and supported more aggressive crop development. Flooding was possible in a few low-lying areas, though the precipitation was generally too light to support severe flooding in much of the corn and soybean areas. A drier than normal environment is now slated for most locations through the latter part of next week. There will still be plenty of moisture for aggressive crop growth.



Timely rain was noted across Southeast Canada's corn and soybean areas during the past week, in part due to Tropical Storm Isaias tracking over eastern North America earlier this week. Moisture totals for the seven-day period ending this morning ranged from 1.34 to 3.78 inches with a local amount of 6.30 inches in southwestern Ontario. Pockets in south-central Quebec also received up to 5.00 inches of rain. Soil moisture is now rated adequate to excessive in most locations.

Corn and soybean development was sluggish at times earlier this summer due to spotty rainfall and warm weather. The ground was not dry enough to significantly impact production potentials, though growth was behind normal for many areas. Wetter than normal conditions during the past month and timely rain in the most recent seven-day period helped promote more aggressive crop development. Yields are still expected to be near normal this year despite some dryness earlier in the growing season.

Southeast Canada will see drier than normal weather during the next seven days. High pressure will limit rainfall in most areas through the end of the weekend, though a few light showers are still expected to reach southern Quebec Friday through Sunday. A frontal boundary will bring light and erratic rain to most areas Monday and Tuesday before mostly dry weather returns Wednesday. Rainfall by next Thursday morning will range from trace amounts to 0.75 inch with locally greater amounts in southern Quebec.

Temperatures through next Thursday will generally be near to slightly above normal. Highs will be in the 70s and lower 80s Fahrenheit most often with some upper 80s possible later this weekend and early next week. Lows will generally be in the 50s and lower 60s.

The warm weather and lack of significant rainfall will promote net drying across Southeast China through the latter part of next week. There will still be enough moisture in the ground to maintain aggressive corn and soybean growth in most locations. Timely rain would still be welcome later this month to support generally favorable crop conditions.

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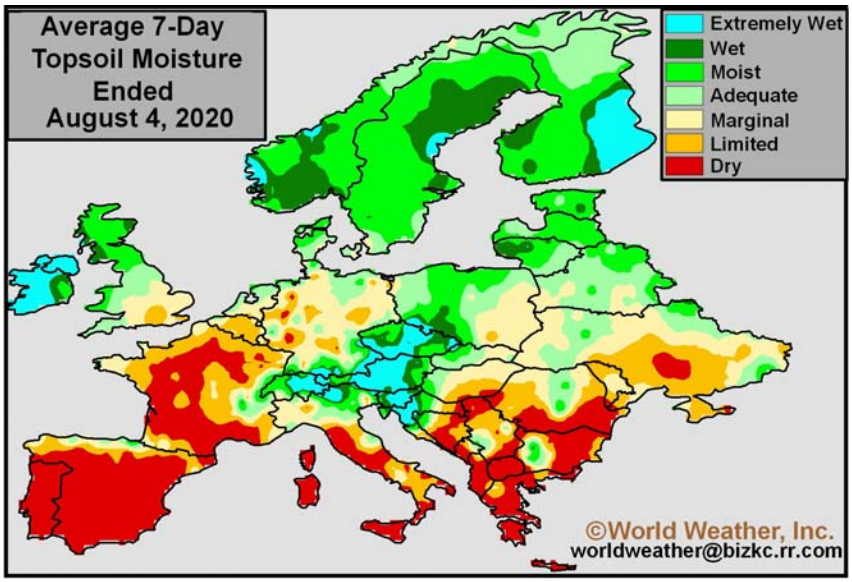
France To See Minor Relief From Dryness Next Week

France continues in a notable drought and weather over the next few days will not offer any meaningful relief. In fact, a new ridge of high pressure is expected to develop over Western Europe for a little while late this week and into the weekend making conditions a little worse with hotter temperatures and no rain. However, the ridge of high pressure is expected to shift into central parts of the continent early next week raising the potential for rain to develop over France and the United Kingdom. Rain will alleviate some of the dryness, but it will be too light to significantly improve long-term soil conditions. Germany and much of Poland will also dry down through the middle of next week.



France reported less than 50% of normal precipitation for the month. Germany and Poland into Ukraine, Belarus, the Baltic States, and eastern sections of Romania and Bulgaria received near to below normal rainfall as well. A large portion of Italy was drier than normal, though a few areas in the north were wet-biased . The U.K. and other areas in the Balkans region received near to above normal rainfall.

The ground remains dry to critically dry in France due an extended period of below average precipitation. A large portion of the Balkans dried down in recent days due to the dry and warm weather as well. Topsoil moisture is also short to very short (outside a few pockets) in Romania. Belarus and the Baltic States into western Poland have mostly adequate moisture while other production areas in Europe generally have short to marginally adequate moisture.

Grain and oilseed conditions remain poor to very poor in much of France due to the drier biased conditions stemming back to last winter. Crop development has been sluggish and production losses have already occurred to most winter and spring crops and the same is expected to the summer grain and oilseeds without significant rain soon.

Crop growth rates have also been low in much of the Balkan Countries, Germany, Ukraine and neighboring areas in recent weeks as the ground firmed. The Balkan countries have often struggled with dryness over the summer and portions of the region have reported a decline in production. Losses in southeastern Europe, however, do not seem to be as great as those in France or those from eastern Ukraine into Russia's Southern Region where dryness has been much more persistent. A general soaking of rain is needed immediately to stop declining production potentials in the driest areas.

Poland, Belarus, and the Baltic States have had enough moisture to support favorable crop development in recent weeks. Portions of eastern Poland have dried a little too much in the past few days and timely rain would be welcome. Crop prospects are generally favorable.

A disorganized disturbance will promote light and erratic rain in France over the weekend. More widespread rain is expected early next week as the disturbance continues tracking over Western Europe. Moisture totals by Aug. 12 will range from 0.35 to 1.50 inches with drier pockets in the south and west. France will fall back to a drier biased environment August 13 – 19 when only a few showers are likely.

Rainfall over the weekend and early next week will generally be too light to significantly bolster topsoil moisture in France. Temperatures during that period may also be very warm to hot causing evaporation to remove much of the precipitation within a short period of its fall. The wetter pockets may see short-term improvements in topsoil moisture, but additional rain will be needed frequently to more fully restore the moisture profile. Crop development may improve marginally by the middle of next week. However, the environment will remain far from ideal for most crops.

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