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The Canadian Agriculture Weather Prognosticator

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Ontario And Quebec

Mild to cool temperatures in southeastern Canada recently has slowed crop development rates and maintained moisture abundance throughout corn, soybeans and wheat production areas. Drier and warmer weather is badly needed.

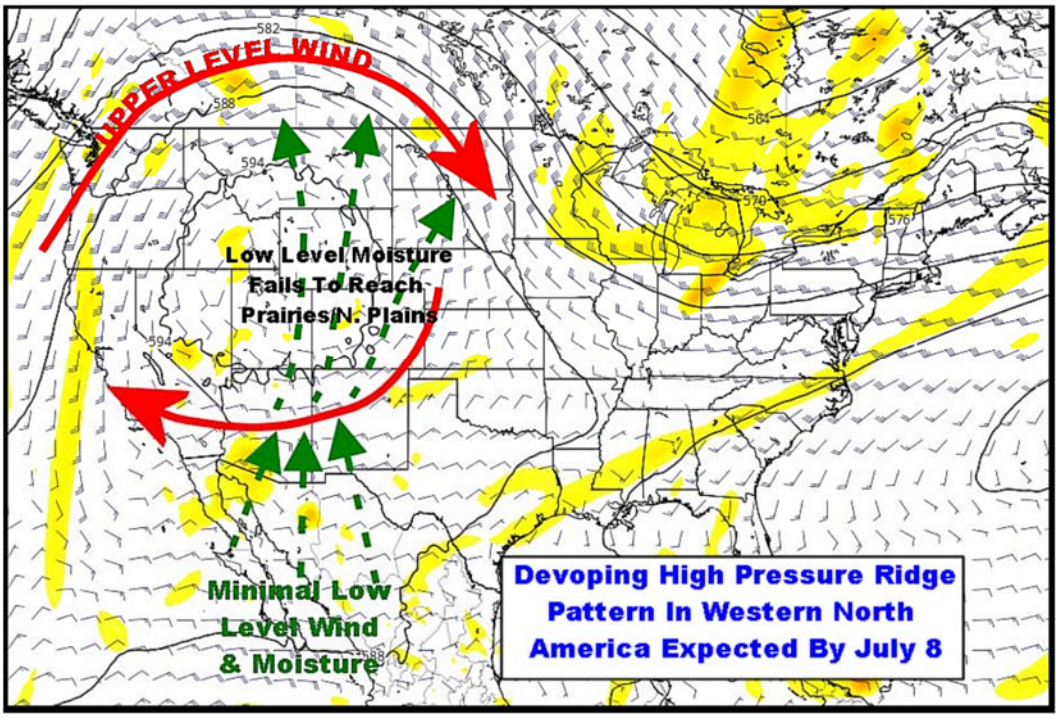
WORLD WEATHER ISSUES

- Ukraine And Areas From Hungary To The Lower Danube River Basin Are Too Dry
- Western Europe Trending Wetter And Milder
- Western And South Australia Need Moisture
- India's Monsoon Generating Greater Rainfall In North Next Two Weeks
- China Needs Rain In Parts Of The North China Plain While Drying Needed In Southeast
- U.S. Midwest Weather Will Remain Very Good Into First Half Of July
- Drought In U.S. NW Plains And Saskatchewan Will Expand And Deepen
- Great Harvest Weather In Brazil Second Season Corn Area

Prairies Outlook Turns Dry, Warm

Weather in North America has stagnated, in case you had not noticed. The 18-year cycle charts all continue to suggest better rain chances for the dry areas in the northern U.S. Plains and Canada's Prairies in the weeks ahead. However, there are a couple of disturbing trends that will limit the success of any improvement for a while. First and most important is a very poor performance in the SW U.S. monsoon pattern so far. The pattern is normally a Mexico phenomenon during June, but rainfall in Mexico has been well below average in recent weeks and even though precipitation in northern Mexico and the southwestern U.S. is expected to improve over the next two weeks it will still be a weak flow pattern. Why should we care about this in Canada? Mostly because this year's 18-year cycle pattern suggests an excellent opportunity for the moisture from Mexico to work its way into the northern U.S. Plains and a part of the southern and eastern Prairies. If, however, this monsoon flow is weak or limited the odds of getting the moisture this far north will be reduced.

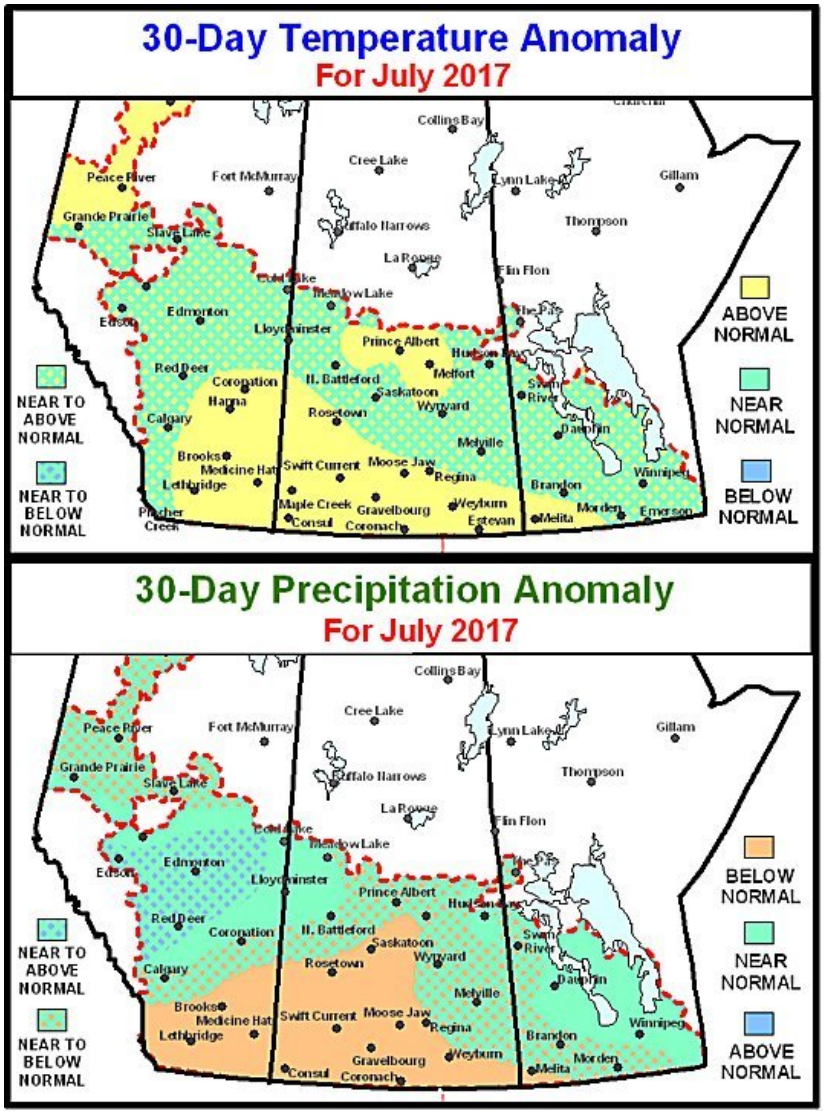
The combination of severe drought in the northern U.S. Plains and a limited monsoon flow will not bode well for the drier areas of Saskatchewan. Weather systems moving into the Prairies will continue to lose moisture as they move across the drought region. The loss of moisture and energy as weather systems move across the northern Plains will limit rainfall in Canada's Prairies for a while longer raising the potential for 1) ongoing dryness and an expansion of



Prairies Outlook Turns Dry, Warm (continued from page 1)

drought conditions and 2) the development of hotter temperatures when ridge building takes place across North America. There is still time for improvement in the monsoon flow which usually does not get under full swing until the second week of July, but its early season behavior is a growing concern.

Recent computer forecast model runs continue to advertise an active jet stream across North America over the coming week with frequent disturbances bringing of "opportunities" for rain to the Prairies. However, the lack of moisture availability and presence of drought will limit the amount of rain that can fall. Temperatures will be trending warmer which will increase evaporation rates and prolong dryness making it more and more difficult for significant rain to fall without a major storm system or a serious influx of moisture coming north from the western United States. As a result of this situation drought is expected to deepen and expand over the next few weeks across portions of both the northern U.S. Plains and Canada's Prairies. The region of greatest concern will be central through south-central and southwestern Saskatchewan, although it is becoming more obvious that drought will begin to expand into southern and east-central Alberta over the next few weeks. Rain systems will continue to have greater meaning for Manitoba and easternmost Saskatchewan, although no big rain events are expected.



Production cuts have already occurred and more will be coming over the next few weeks. Relief to the dryness might still occur, but it may come a little too late for some of the crops across Saskatchewan that have already suffered the most.

Ridge building is expected to evolve in July over part of the Prairies and the northern U.S. Plains which may worsen the situation rather quickly. Recent conditions in the Prairies have not been extreme because of cool temperatures and brief showers of limited significance. ***But, these past cooler days were our best opportunity to move ahead of the drought with periodic rain of significance and that has failed to occur. We have missed our opportunity to receive significant moisture while temperatures were low.*** Now we will struggle with higher evaporation rates and a continuation of low soil moisture and poor rainfall potentials, the result of which will be more threats to our struggling crops. Relief may still occur later this summer, but it may arrive a little late for some areas, especially early reproducing crops like canola, peas and wheat.

Good subsoil moisture is present in much of the Prairies which has been supportive of crops during this extended period of restricted rain amounts and mild temperatures. However there are some areas in the south-central Prairies that have been much too dry for too long and the subsoil moisture is not of much help without some kind of stimulus to get crops to develop more aggressively toward the moisture deeper in the ground. Time is running out for these driest areas and most everyone has already acknowledged the loss in yield across many of the driest areas. The wetter outlook for this summer is waning and the July forecast has been dramatically changed because of the failing monsoon pattern in the U.S. and recent forecast model predictions for significant ridge building across the Prairies.

August Weather May Be Drier, Warmer Too

Drought patterns always have a mind of their own. It is amazing how a drought can override every weather pattern in the atmosphere once it gets under way. It really does not matter that the 18-year cycle promotes rain across parts of the Prairies. Without a good source of moisture and with very low humidity in and surrounding the dry region it will be very difficult generating significant rain events.

The change in our official July outlook is based on some fundamental changes in our atmosphere that will not allow rain to develop. The situation is guaranteed to prevail through the first half of July. The second half of July offers some potential for change, but it will take some special circumstances to make it rain sufficiently enough to change decreasing soil moisture and stop crop stress.

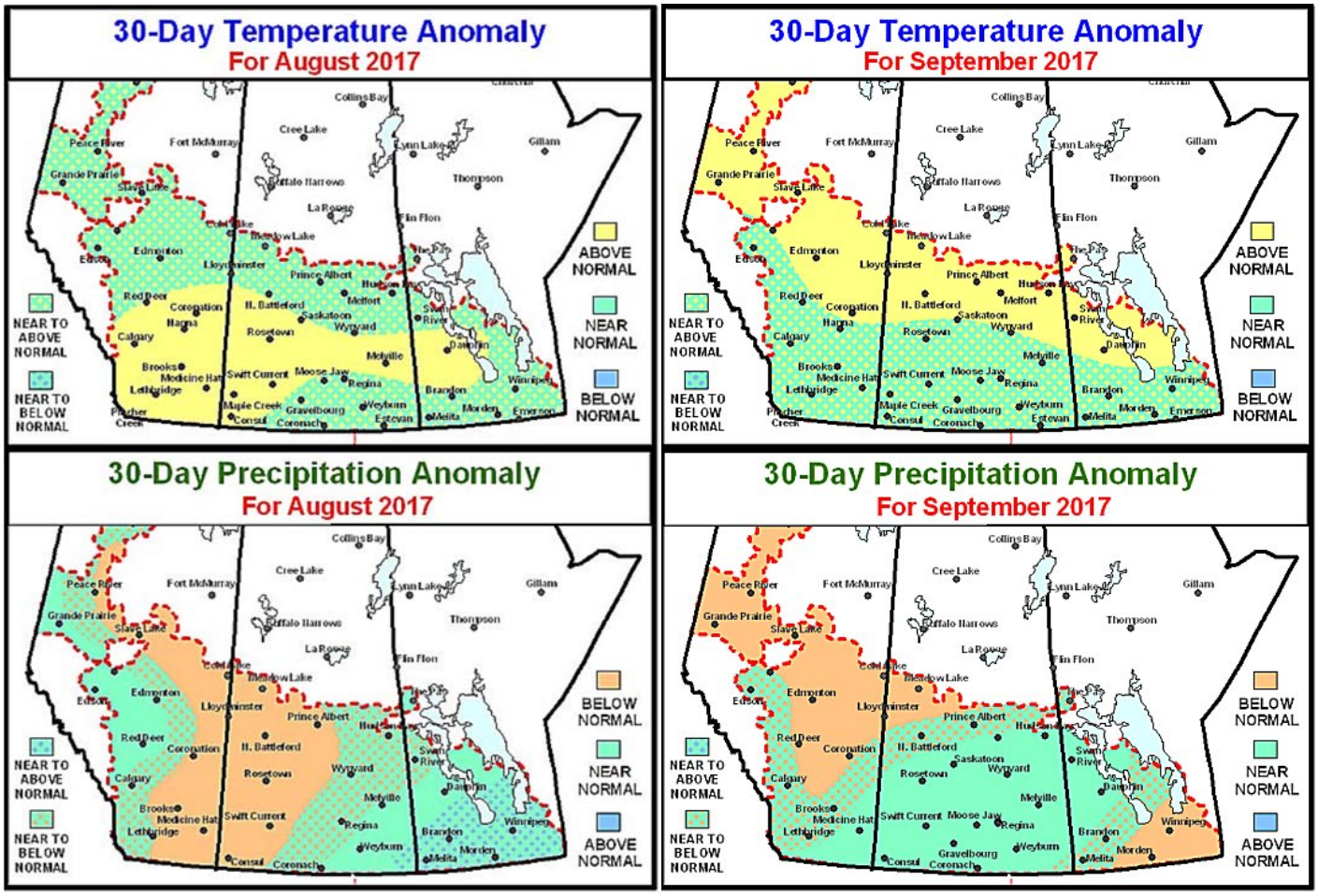
There is "potential" for some rain to evolve in the drier biased areas of the Prairies during the second half of July, but there is no guarantee that the moisture will be enough to seriously reduce drought.

Most droughts prevail without much obvious reason for suppressing rainfall. The more severe droughts usually last several months and since this one will be getting under full swing during the heart of summer, the odds are not very good that a significant weather pattern change will come along prior to the autumn cooling season. For that reason and because of limited soil and atmospheric moisture, the odds of seeing a serious change in weather patterns across the Prairies will be low through the first half of September.

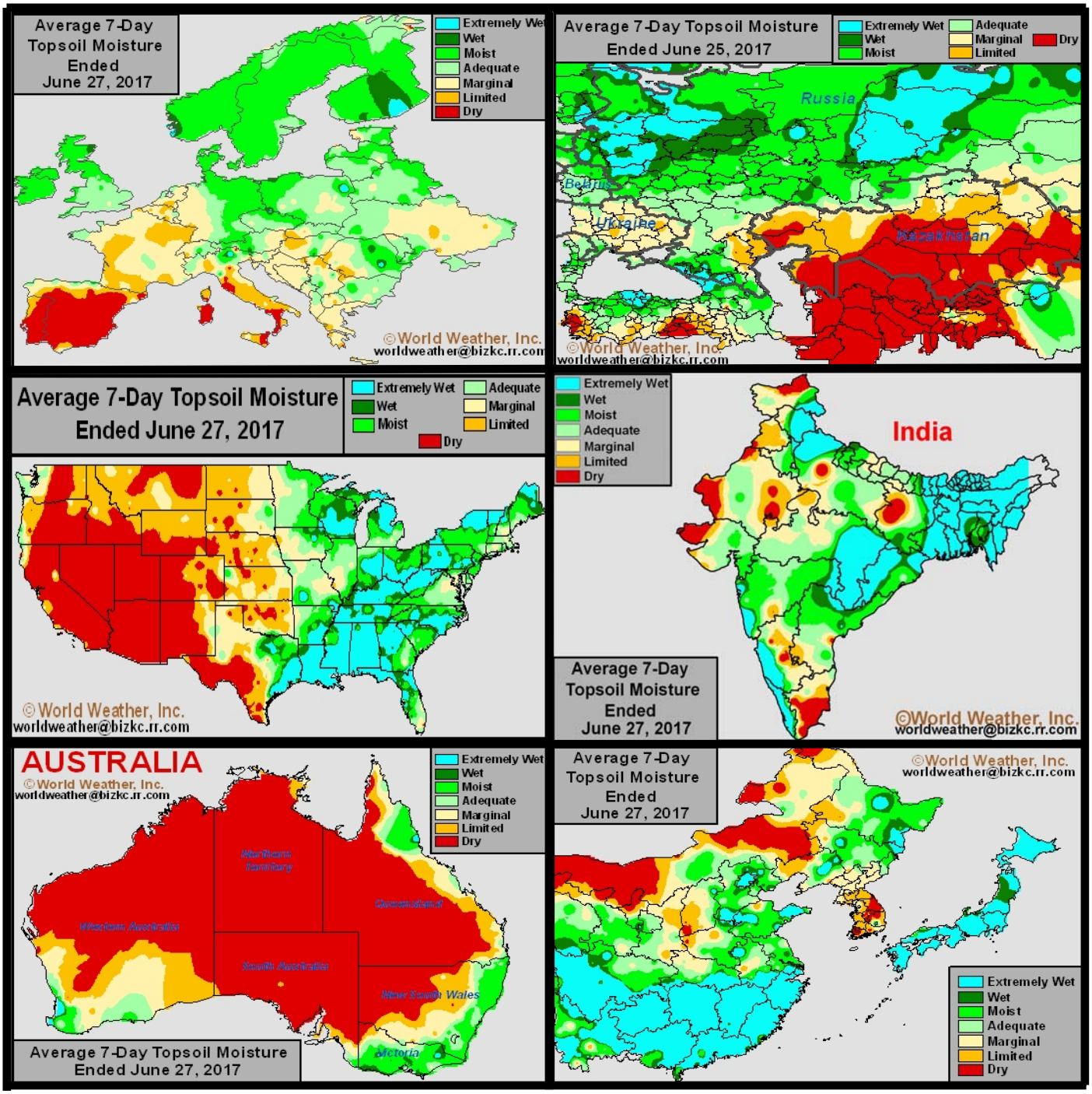
Precipitation in September will trend a little more normal like, but the previous few weeks of net drying will be reinforcing a surface high pressure system and ridge aloft that could easily prevail through the first half of the autumn cooling season.

One of the benefits of prolonging drought conditions into September will be for the maturation and harvest of crops. Both processes will occur swiftly. There will also be a small reduction in the early frost/freeze potential for the Prairies and that is extremely important since so many crops were planted late and then experienced poor growing conditions into early summer.

As a reminder, do not forget that just because September is advertised to be warmer than usual does not mean frost and freezes cannot occur. All it takes is one potent airmass coming along on one morning to induce damage.



Selected Weather Images From Around The World



Rain was developing across western Europe at the time of this writing. The moisture was needed to restore favorable topsoil moisture after a week to ten days of net drying that occurred while temperatures were warm to hot and rainfall minimal. India's monsoon was also increasing at the time of this writing. Northern and parts of central India will be wetter than usual during much of July and the moisture will help assure a great summer crop development season. In contrast, far southern India will experience net drying conditions. Improvements have occurred recently to portions of China's North China Plain where needed rain occurred in Hebei, Shandong, parts of Henan and a few locations in the far Northeast Provinces. Portions of China's upper Yellow River Basin and eastern Inner Mongolia remain a little dry. Ukraine continues to dry out and very warm temperatures in this coming week will induce some greater crop stress in unirrigated areas of the east. U.S. crop weather has been mostly good. Dry pockets in the western Corn Belt should be relieved by July 10 due to periodic showers and thunderstorms.

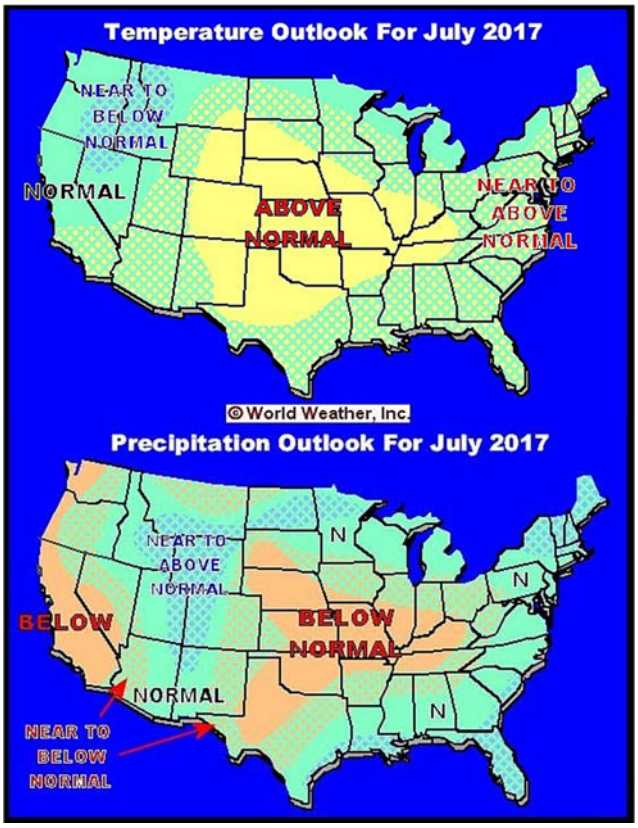
U.S. Midwest July Weather Warmer, Drier For Some

Weather conditions this spring across the U.S. Midwest were mostly good except for the abundance of moisture and cooler bias that was present during planting. That issue created some stress for crops when conditions warmed up and dried down in early June. Since then many areas have seen improving weather again, but the cycle will change in July with warmer temperatures accelerating drying rates across portions of the Midwest raising the potential for pockets of moisture shortages again. The drier areas in July will come while a warmer bias is in place and that may translate into a little more stress while early season crops move into reproduction. However, favorable subsoil moisture will likely support the early crops and more concern may evolve for late season crops in at least portions of the Midwest.

June precipitation has improved across much of the Midwest, but there are still notable moisture deficits prevailing after a very dry first half of the month. Many areas from Nebraska and immediate neighboring areas into the heart of the Midwest reported little to no rain through June 14. Temperatures were warmer than usual for a little while, as well, and the combination of dry and warm weather firmed up the ground for a little while. Rain then developed and brought back better soil conditions to the region.

Rainfall for the month to date remains below average in many areas, but the recent bout of unusually cool weather helped to conserve soil moisture through slower evaporation. That has left the Midwest with a favorable soil moisture profile even though there are some areas of notably below average June rain totals. The environment from a crop perspective is really not too bad. With that said, the moisture deficits in the western Corn Belt are a concern as warmer and drier days evolve during July.

A series of weather systems moving through the Midwest during the coming week will further reduce the moisture deficits that have occurred this month, but the wetter bias may begin to diminish during the second half of next week and on out in time to around mid-July. The lighter rainfall will be accompanied by warmer temperatures with the western Corn Belt more influenced by these conditions than eastern areas. Any moisture deficits that remain in the Plains and western Corn Belt next week at this time will become the seedlings to some drying in July that might lead to crop stress.



The first half of July will be dominated by a ridge of high pressure over the Great Plains and western Corn Belt. The ridge is not likely to deviate very far from the region, although it will "inhale" and "exhale" in such a manner that at times it will engulf a larger and smaller portion of the Midwest. The second half of July will allow the ridge to progress across the Midwest for brief periods of time and that will bring some heat across the region periodically. World Weather, Inc. does not expect the ridge to fester over the central or eastern Midwest for any great length of time, but it will be around enough to induce some drying.

When August arrives there may be more incentive for the ridge to be over the Great Plains and western fringes of the Corn Belt a little more often. That should bring back an opportunity for weather systems to move through the northern and eastern Midwest in a more timely manner supporting summer crops in those areas.

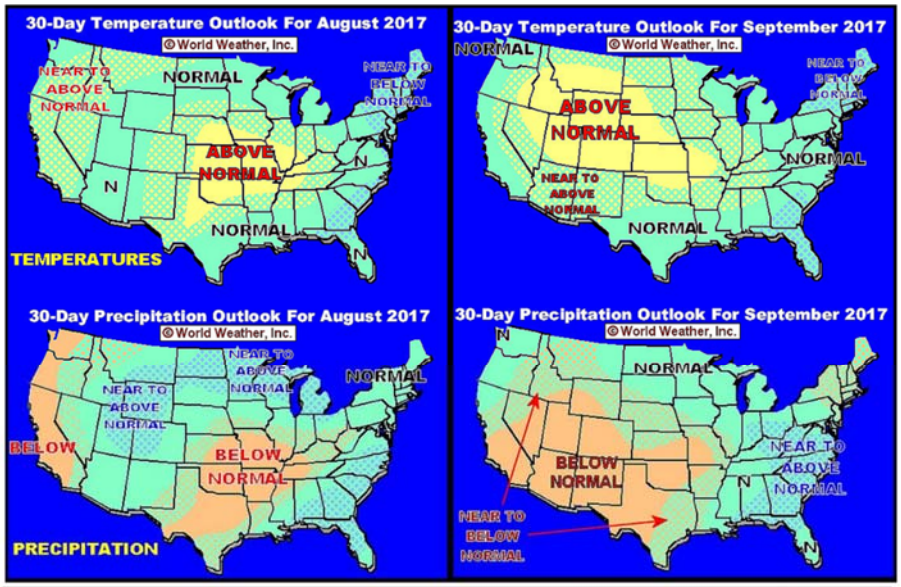
The summer high pressure ridge will be over the Plains and western Corn Belt most often and it is in those areas that dryness and heat is most likely. There has already been a tendency for hot weather to occur in the southwestern Plains this spring and early summer. There has also been a serious drought in the northern Plains. The weather scenario expected over the next few weeks will promote both of these biases and that should translate into an expansion of drought across portions of the Canadian Prairies into southern and eastern Alberta and southward into Nebraska. Another area of heat and dryness should resume again soon in the southwestern Plains.

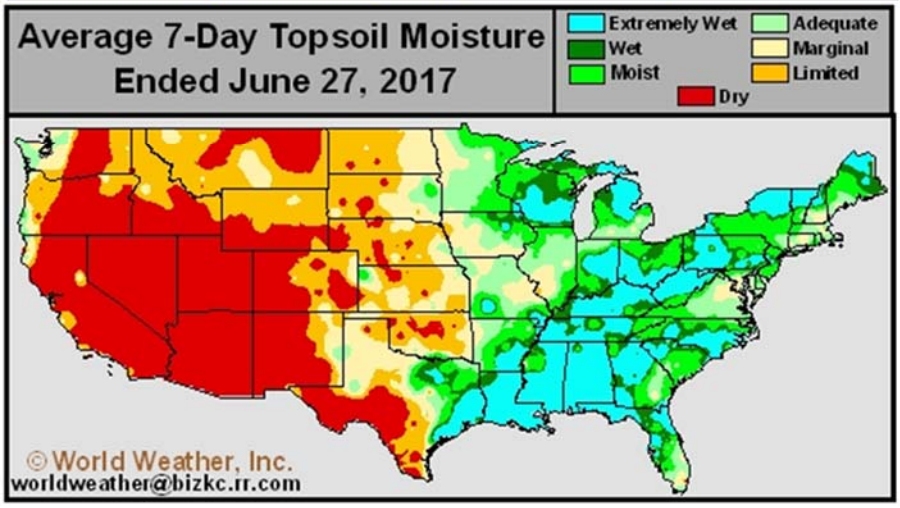
The coming two weeks will be most stressful and damaging to the Canadian Prairies and to the northern U.S. Plains because of crops moving into reproduction. The expected heat and dryness may not last all the way

U.S. Midwest Weather Warmer, Drier (continued from Page 5)

through summer, but hitting during reproduction is not likely to have a good impact on crops even if there is favorable subsoil moisture around.

Monsoon moisture in Mexico and the southwestern United States is expected to be below average during the coming two weeks. The northward flow of moisture will be weak and the presence of high pressure over the U.S. Intermountain West will inhibit the moisture's chances of moving outside of the Rocky Mountain region. That will lead to hotter and drier conditions in both Canada's Prairies and the northern U.S. Plains.





The ridge axis should shift into the Plains by mid-July and that should lead to improved monsoon flow northward from Mexico into the northern U.S. Plains and it is during that period of time there may be "some relief" to dryness. Drought conditions will not fully abate from the region. In the meantime, the eastward shift of the ridge into the Plains will translate into expanding dryness in the Plains and western parts of the Corn Belt.

July will be the harshest month for the U.S. corn and soybean production season, but the pattern is unlikely to fester into a serious drought or larger than life problem seriously impacting production. There will, however, be enough crop moisture stress and production issues to push summer crop yields closer to trend and there is a chance that enough dryness might occur to push yields just a bushel or two below trend. Overall, it should be a good production year.

Weather conditions should improve again in August when the mean position of the high pressure ridge shifts back to the Great Plains. That change will induce better crop conditions for many areas. In August, the troubled monsoon flow in the southwestern U.S. will have straightened out and become a moisture source for the northern Plains and northern and eastern parts of the Midwest. Some relief will also occur to dryness in southern Canada's Prairies dryness.

A northwesterly flow pattern aloft is expected over the Midwest during the latter part of the summer and early autumn and that should stimulate some timely rainfall and some cooler biased conditions in the northern and eastern Midwest. Southwestern areas may continue a little drier and warmer biased.

A boost in rainfall is expected in the U.S. southeastern states during the latter part of summer because of an active subtropical jet stream that will be bringing frequent tropical waves of energy to the region. The tropical waves will produce frequent rainfall and some of it may be heavy. This flow pattern will help promote some tropical cyclone development as well.

In the meantime, soil conditions in the Midwest, Delta and southeastern states are much better than last year at this time. The biggest difference between the two years is that dryness this summer may continue to build into parts of the central and southern Plains, southwestern Corn Belt and northern Delta whereas last year's Midwest weather improved once we got into July. Last year's weather generated a record crop. This year's crop will be large, but no a record.

No Change In Severe Storm Or Frost Risk, Despite July Outlook

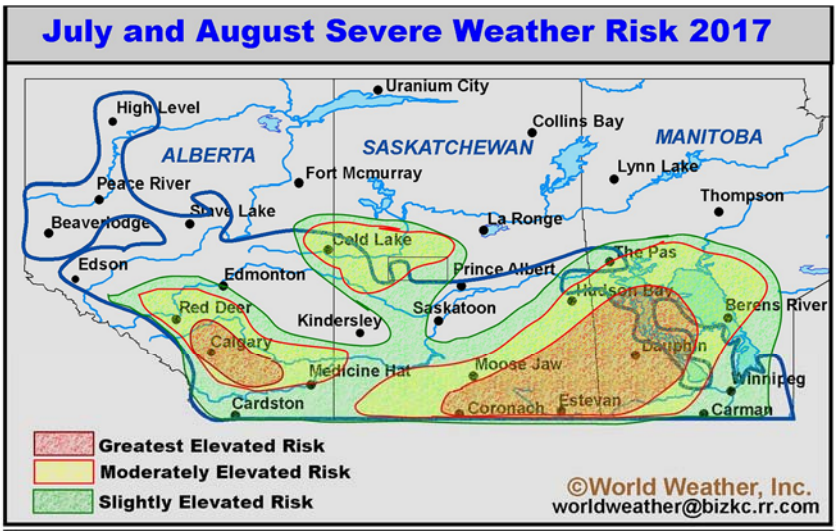
SEVERE STORM RISK

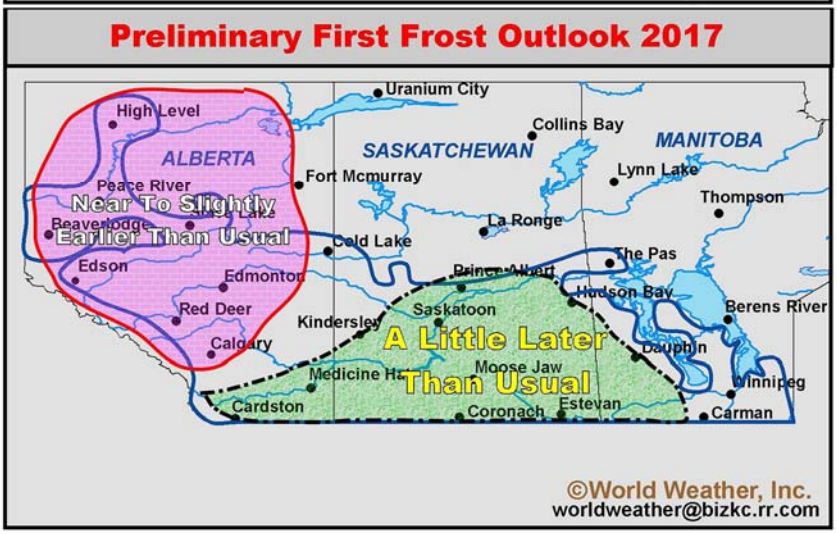
Two very important issues are still unanswered for the Prairies Producers. The first is that of severe thunderstorms. Is the risk of hail greater or lower than usual this year? World Weather, Inc. believes that just because parts of the Prairies are not receiving normal rainfall does not mean the risk of severe thunderstorms is any more or less. Certainly, drought stricken areas would have a lower potential for rainfall and if the rain potential is low then so might be the risk of severe thunderstorms. However, there is still some risk of strong to severe thunderstorms because of the jet stream position and rapidly changing airmass temperatures.

The risk of severe storms producing hail, damaging wind and possible tornadoes will be highest in the southeastern Prairies where moisture sourcing will be favorable and the contrast in airmass temperatures may be greatest from time to time.

The southeastern corner of Saskatchewan and much of Manitoba is most favored, but there will also be a small region in southern Alberta that may also experience a slightly more elevated risk of severe thunderstorms. Another area of moderate risk is in northwestern fringes of crop country in Saskatchewan.

Western central and northern Alberta will have an average to below average risk of severe thunderstorms this summer. Areas not mentioned will have an average risk of severe thunderstorms. In the case of central Saskatchewan, be very cautious that if the rainfall pattern shifts slightly more to the west than advertised there would be potential for more severe thunderstorms.





FROST/FREEZE POTENTIAL

The other issue of concern for the Prairies is that of first frost and freezes. The delayed planting this spring in some areas coupled with wet biased conditions in some areas and drier biased conditions in other areas may leave parts of the prairies in need of a longer growing season. Some producers are looking for up to a month longer than usual before the first freeze occurs.

Most of the preliminary investigation into this potential has revealed a relatively normal first frost and freeze event. Alberta may see its first bouts of cold near or just slightly earlier than usual this year while much of Saskatchewan and southwestern Manitoba may experience a slightly later than usual first freeze.

There is some concern over continued drought conditions this autumn. Drought conditions would allow a wider swing in temperatures during the summer and autumn because of low humidity. That means September cool air masses may be a little more potent than usual. However, the 18-year cycle data does not point out much potential for serious cold bouts. Average temperatures may be warmer than usual, but all it takes is one morning of cold to create a problem.