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The Canadian Agriculture Weather Prognosticator

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World Weather At A Glance

- Russia's southern New Lands and northern Kazakhstan are too dry for spring wheat and sunseed
- Flooding has returned to southern China, but good crop weather is prevailing elsewhere
- India's tropical cyclone last week benefited future summer crop planting and may have slowed winter crop harvesting
- Some of Brazil's Safrinha corn getting rain for the first time in weeks; relief comes too late
- Australia winter crop areas need rain
- U.S. Midwest crops in good shape
- Southeast U.S. is drying out
- Northern U.S. dryness is being partially eased
- Europe weather is mostly good
- North Africa wheat and barley are maturing and the harvest has begun

FINALLY!!!!! SOME DROUGHT RELIEF

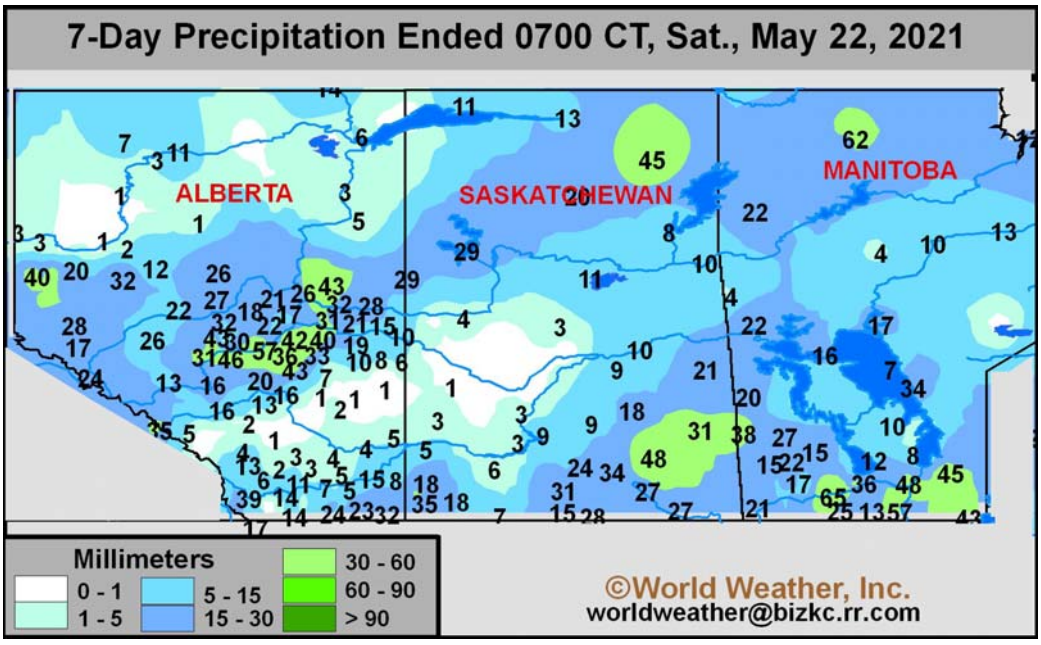
Several weeks later than expected, the Prairies driest areas have finally received some much needed relief from dryness. Those areas that have not received rain at the time of this report will have relief before the middle part of this coming week.

Once again it has been proven to this meteorologist that the Canadian farmers are a blessed people. This is the third year in a row in which rain has been provided at the last minute before all hope was lost. The drought is certainly not over, but many areas from central and southern Alberta through a huge portion of Saskatchewan into Manitoba were facing some desperate times prior to this week's rain and that which is yet to come. Crops will now be able to move forward with germination, emergence and establishment with a little more potential than they had a week ago.

Perhaps it was the power of prayer, but the jet stream which had been so far to the south in recent months finally came northward this week and is providing the necessary break from drought that many areas needed in order to proceed with planting and the growing season. Follow up rain is expected, but portions of the Prairies still have some challenges ahead and it is a little too soon to buy into the "plant in the dust and your bins will bust" adage.

World Weather, Inc. is still anticipating a dry July and August in the southeastern parts of the region leaving much pressure for follow up rain over the next few weeks so that crops have some subsoil moisture to use during the drier days that may lie ahead.

This week's relief occurred as the jet stream came northward. One of the primary reasons the



FINALLY!!!!! SOME DROUGHT RELIEF (continued from Page 1)

Prairies have had such a difficult time getting good precipitation has been the jet stream's delayed northward advancement. The jet stream has spent most of the spring season in the U.S.—too far to the south to allow storm systems to reach the Prairies. The jet stream was also split with two distinct branches, one moving through the U.S. Plains and Midwest and the other through Canada. The split jet stream hurt the Prairies by restricting moisture from the Gulf of Mexico from flowing far enough to the north to be of use. Each time a storm system would come across the Prairies it was moisture starved because of some storm system moving through the central United States trapping our moisture from coming across the international border.

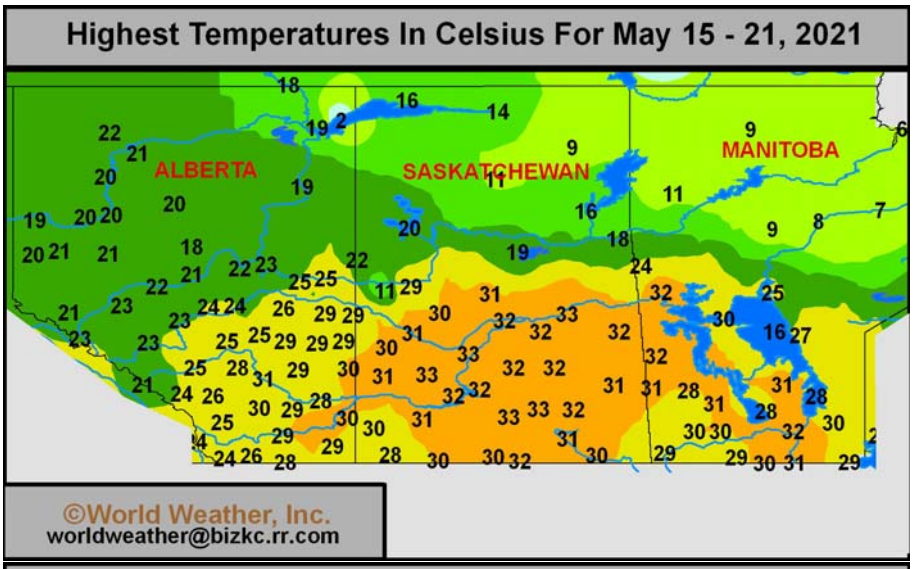
There were also times in which cold high pressure systems were centered over the U.S. Plains and Midwest also blocking moisture from flowing northward. We can blame much of the jet streams more southerly track this spring on waves of cold air that kept flowing across the Prairies and into the central U.S. Sure we had a few weeks of warm weather too, but that is when the split jet stream was preventing moisture from flowing northward. Had it not been for these two factors our spring would have been much different.

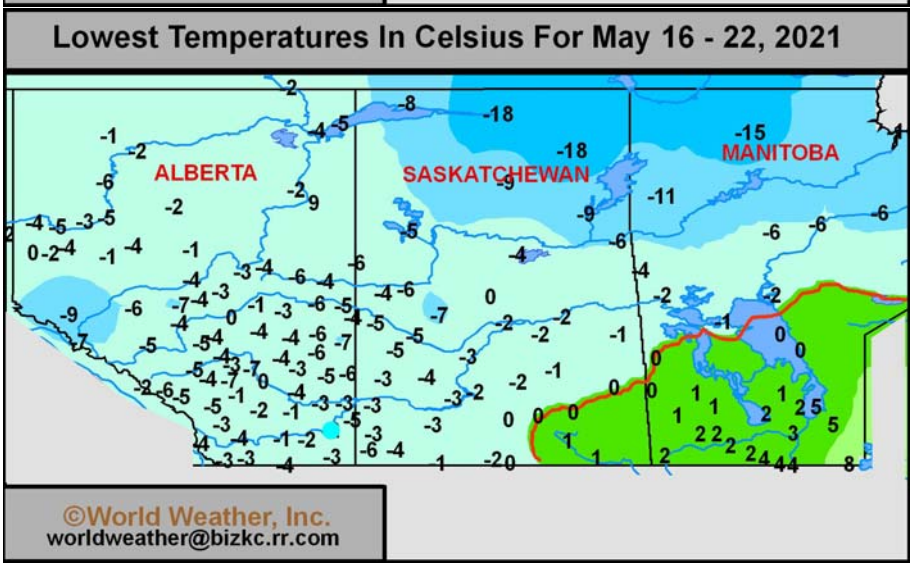
The good news is that the weather has finally changed, we have our more consolidated jet stream back and the Gulf of Mexico has opened for service to the Prairies. Now the question is for how long will this improvement last?

More relief is coming almost immediately and those areas missed by this week's rain will get it in the coming week. For more on that read further into this issue of the prognosticator. In the meantime, lets take a look at the week's extreme weather.

Drought can have a huge influence on weather. Once a serious drought begins to fester it makes all of the weather events much more dramatic and few places on earth saw more extreme conditions than the Prairies during this past week ahead of the drought easing rainfall.

For weeks the relative humidity across the Prairies had been running extremely low which is the primary reason why it was cold for so long and why we had such extreme heat early in the spring and again during this past week.





Temperatures peaked in the lower 30s across the heart of Saskatchewan where four years of drought depleted soil moisture in some areas down a huge distance into the ground. The combination of dry soil and warmer biased temperatures this week with no moisture flux into the region resulted in huge temperature swing. The 20– and 30-degree temperatures early in the week occurred as our first storm system was developing off to the southwest.

Part of the reason why rain finally fell across the Prairies this week was due to a large cold airmass sinking southward into the Prairies while a ridge of high pressure in the U.S. Midwest started pumping moisture into the region.

There were two large storm systems that were moving into the U.S. (continued on page 5)

Timely Rain In June, But Lighter Than Usual

Recent rain and that expected in the last week of May will prove to be tremendous for the Prairies and for crops that will be dealing with some lighter than usual rainfall tendencies in coming weeks. The June forecast has a drier bias to it for many areas, but do not misinterpret the map. The coming month will have some timely rainfall in it, but the amounts may be a little less than usual. The hatched colors on the maps shown here represent near to below average precipitation. That should not be interpreted as below average or drought conditions, but the rainfall is expected to be a little lighter than usual.

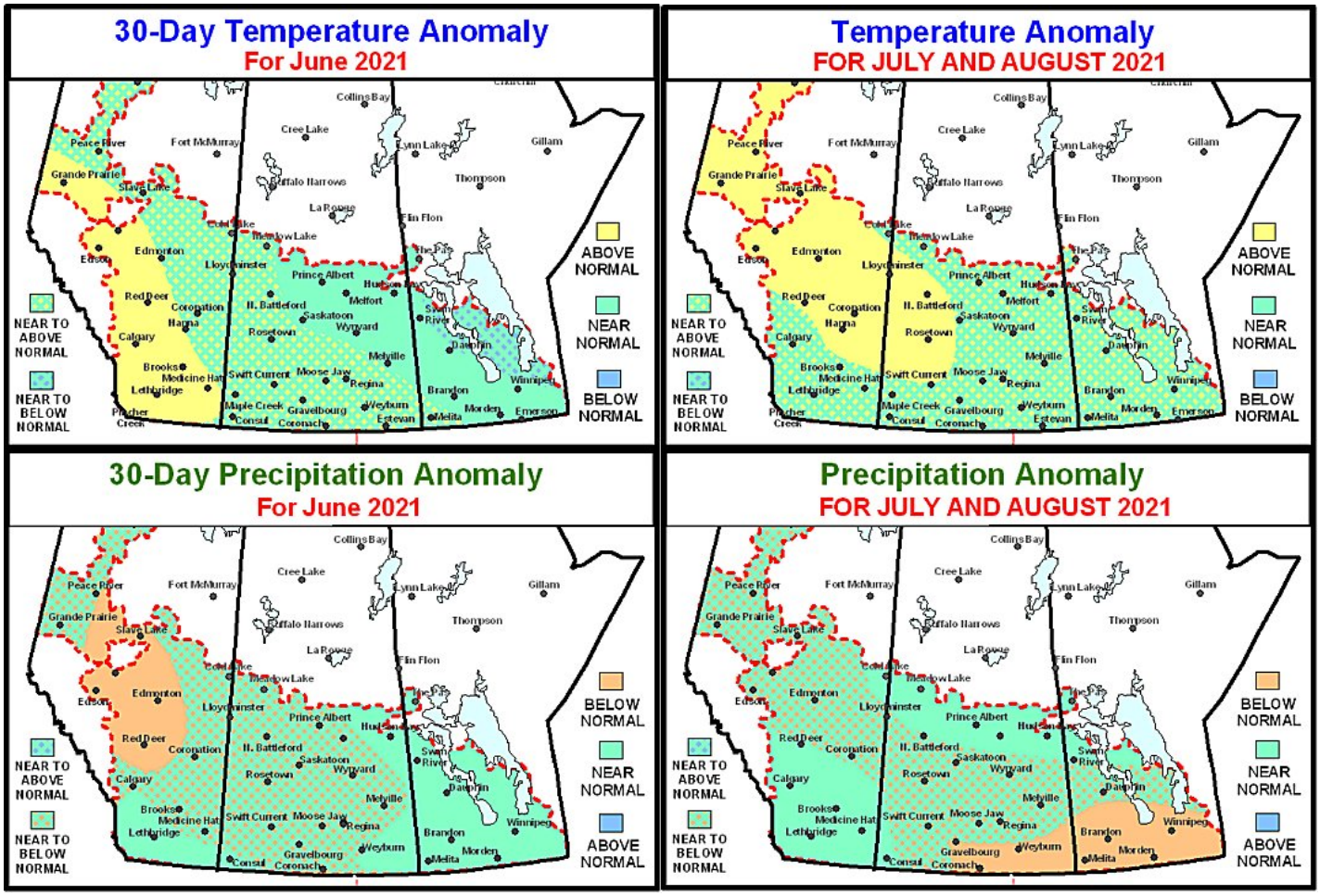
June precipitation will be closest to normal in Manitoba, southeastern Saskatchewan and possibly in southern Alberta. The area most likely to see the poorest rainfall will be from the Red Deer area to Edson and then northward to Peace River and Slave Lake, AB; including the Edmonton area. This region will likely experience a high pressure ridge developing over the region during June and that should reduce rainfall in the region. Other areas in the Prairies will experience a west to northwesterly flow pattern aloft resulting in some light precipitation periodically, but as time moves along during the month the precipitation is expected to become lighter.

There should be another opportunity for a storm or two to come into the southern and eastern Prairies during June similar to that of this week and if that materializes there is a chance this forecast is too dry, but as noted in other prognosticators we are concerned about returning dry and warm weather later this summer and it could begin in late June, but will certainly be in place during July and August.

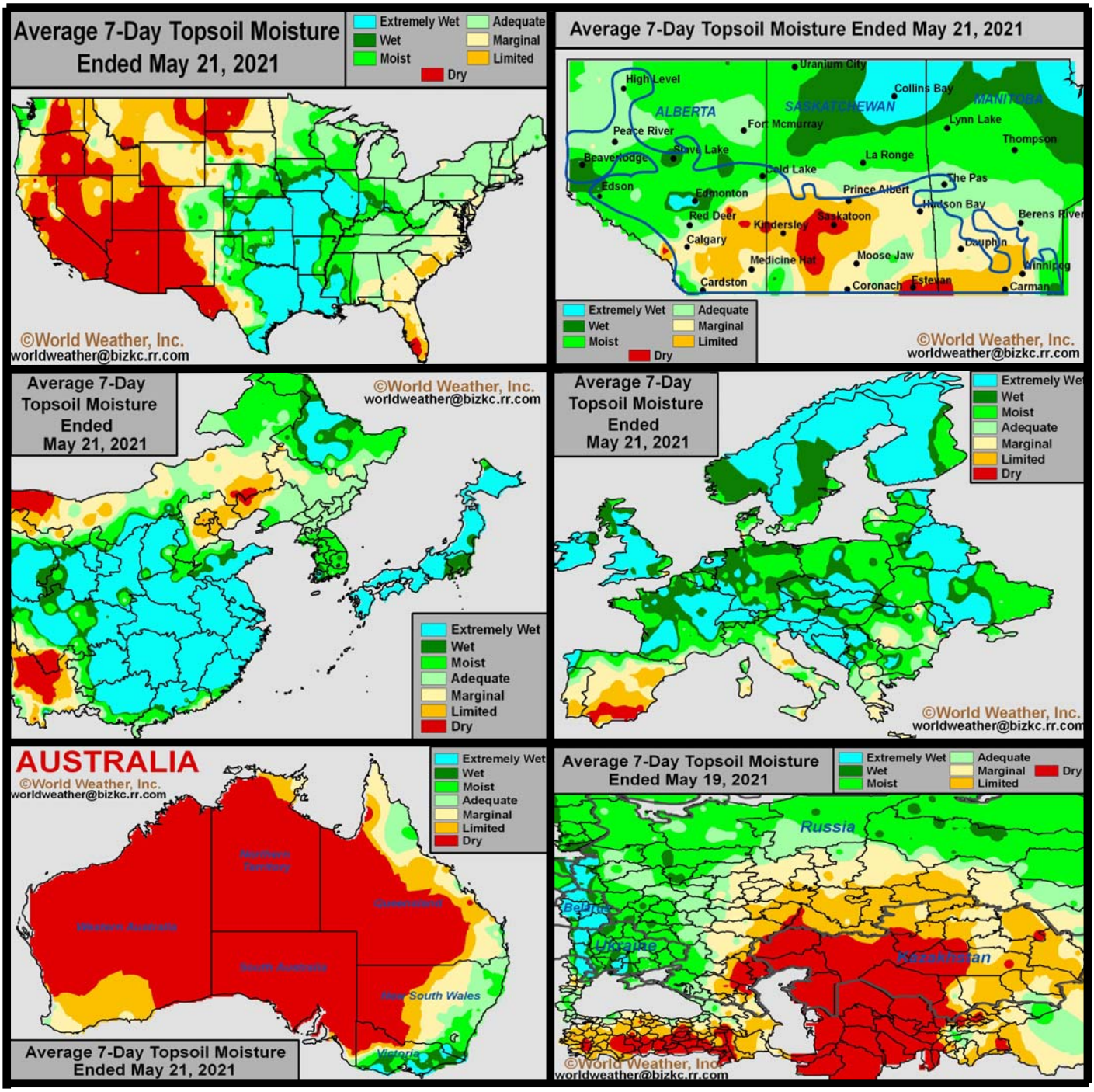
The summer weather outlook remains drier biased for the southeastern Prairies. Confidence in the drier than usual bias is high, but the exact positioning of the expected high pressure ridge is not known which leaves a little "wiggle" room in the forecast for exactly where the driest conditions will be. For now, southern Manitoba and southeastern Saskatchewan are still expected to be driest.

Rainfall elsewhere is likely to be near to below average which should bring some rain to the Prairies, but not necessarily high volumes of it. A close watch on the summer outlook will be warranted in future prognosticators.

Temperatures will be near to above average in much of the Prairies this summer, but June might be a little cooler biased in the northeastern corner of the region.



Selected Weather Images From Around The World



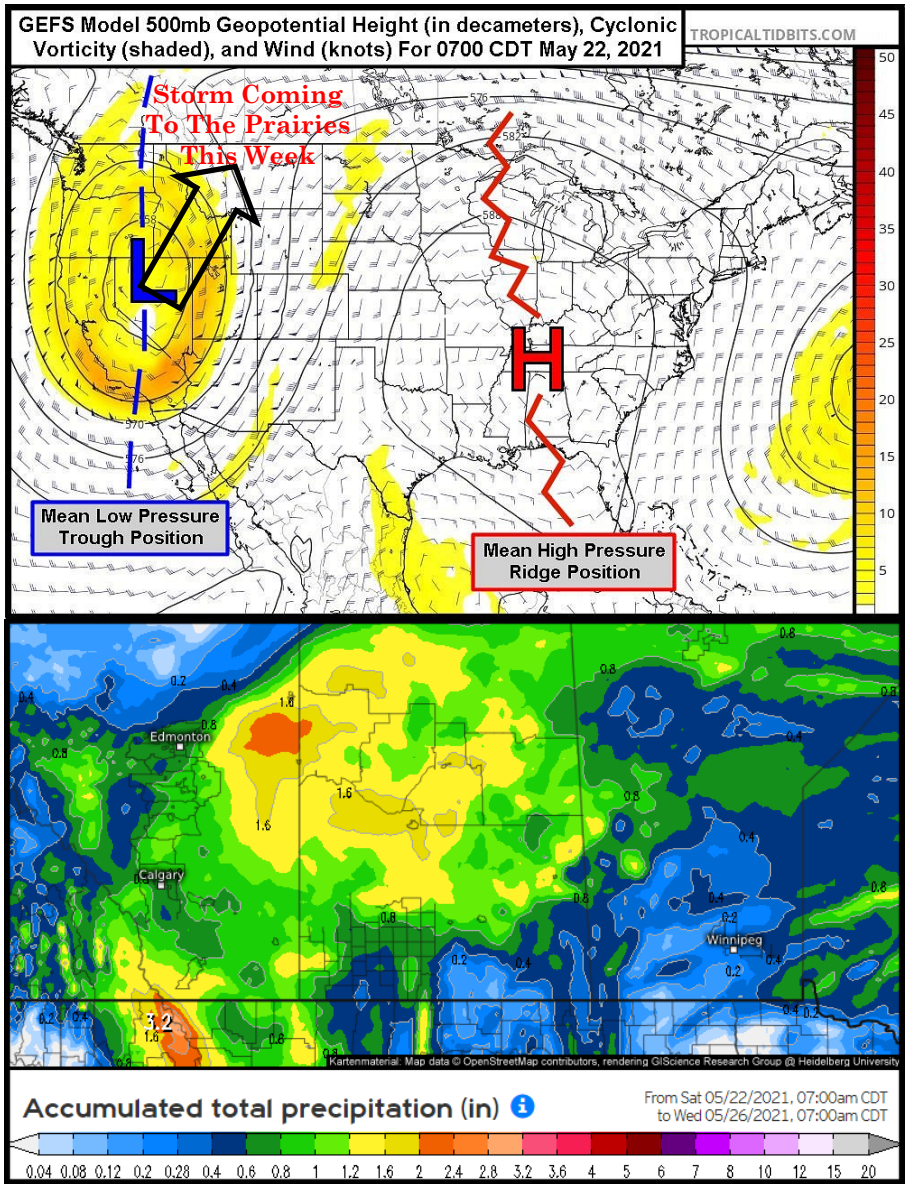
Drying is occurring in the southern Russia New Lands and neighboring areas of Kazakhstan. This region produces spring wheat and sunseed and both crops were planted swiftly, but are now running low on moisture resulting in possible stress. Relief is expected over the coming ten days. China, on the other hand, is quite wet and needs some drier and warmer conditions especially in the south where flooding has become significant recently. A highly favorable outlook is seen for northern China in the next couple of weeks. Australia is waiting on seasonal rainfall to support better wheat, barley and canola planting conditions. Some rain will be coming to southern Australia soon, though. Europe soil conditions are rated quite favorably as they are in the heart of the U.S. Midwest. The U.S. southeastern states and a few areas in southern Europe are drying, but some relief is coming to these areas in early June. Canada's Prairies have only seen partial relief from drought and more rain is needed to improve soil conditions in many areas.

FINALLY!!!!! SOME DROUGHT RELIEF (continued from Page 2)

Plains this week producing frequent rain across that part of North America that were unable to move east across the United States because of the blocking high pressure ridge intensifying over the Midwest and building to the west. That high pressure ridge then forced the two rain events in the Plains to move northward bringing much needed moisture into the northern Plains and upper Midwest.

A weak low pressure center evolved over Montana in response to the cooler airmass pressing southward from northwestern Canada and the lingering heat present in the eastern Prairies. As that low pressure center evolved it started tapping into the northern Plains moisture and pulled it northwest into the Prairies. For the next two days the low pressure center was able to intensify enough to bring much needed precipitation to the eastern and southern Prairies.

The week's wild weather was preceded by another storm system that impacted Alberta only and it was not allowed to move eastward either because of a different high pressure system that was over the Prairies and that allowed heavy rain to fall in central parts of the province resulting in some 1.00 to 2.25-inch amounts of rain to fall in and around the Edmonton area.



In the meantime, rain totals for the week were most impressive in central and some western Alberta, locations and from south-central through the interior southeastern parts of Saskatchewan into western and southern Manitoba.

Unfortunately for a part of interior southern and east-central Alberta and a large part of northwestern Saskatchewan, dryness prevailed. The two storm systems noted above failed to bring relief into the region and worry over long term dryness remains at the time of this writing.

However, more relief is coming as yet another storm begins to brew in the western United States. That high pressure ridge noted in the U.S. Midwest is still in place and it will force the coming storm from the northwestern U.S. up and into the Prairies Sunday through Tuesday of this week. Early indications suggest that most of the areas missed by this past week's storm will be impacted by this new storm system.

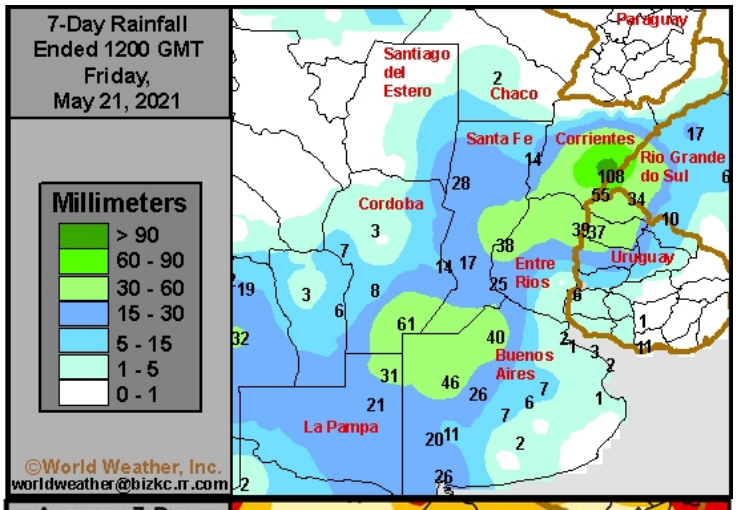
Rain amounts will vary from 0.50 to 1.50 inches across western, northern and east-central Saskatchewan and in portions of northeastern and east-central Alberta with this next storm system. Relief is quite likely for the areas missed by rain in this past week, but some areas will still have need for more moisture when drier weather resumes.

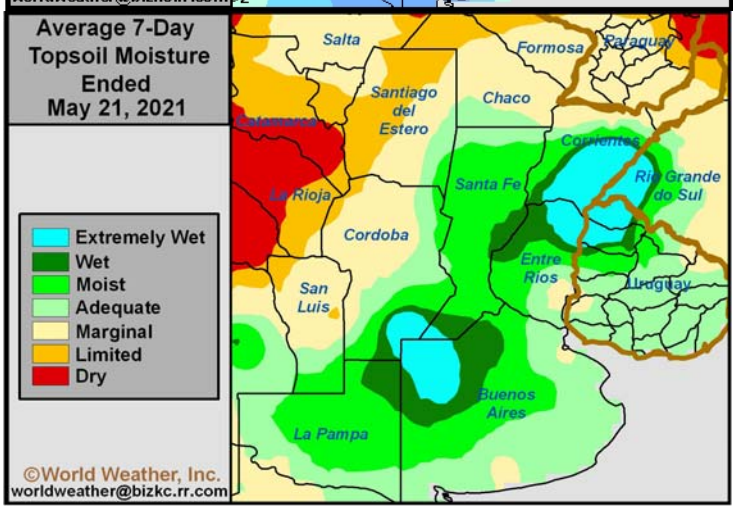
Rainfall into June will be a little less dramatic for a while, but additional moisture is expected and it will be beneficial.

Notice on the forecast map shown to the left that precipitation in the southeastern Prairies is quite limited during the coming storm system. The area that gets the least amount of rain is the area that should struggle with dryness this summer and it will be closely monitored, despite recent rainfall. Totally dry weather is not likely.

Argentina Fieldwork To Improve With Dry Weather

A strong frontal boundary that brought rain to portions of Argentina Thursday will generate more precipitation today. Many areas will receive enough rain to further slow or delay harvesting and general fieldwork. However, little follow-up rain is expected over the weekend into next week. The lack of rain will gradually improve the environment for coarse grain and oilseed harvesting. Today's rainfall will also be beneficial for winter wheat areas that will soon be planted. Southern and western Buenos Aires into Cordoba and southern Santa Fe have received limited rainfall earlier this month and the rain will help support a good environment for planting and establishment.





Rainfall during the past week was greatest Thursday into today, but totals for the seven day period ending this morning ranged from 0.83 inch to 1.81 inches from northeastern La Pampa, southeastern Cordoba and western and northern parts of Buenos Aires into central and southern Santa Fe and western and northern Entre Rios. The greatest rain occurred in southeastern Corrientes where 4.25 inches resulted. Rain most other areas was less than 0.30 inch with the far north, west-central and far southeastern parts of the nation were left dry.

Topsoil moisture is adequate to excessive from La Pampa and southern and eastern Cordoba through Buenos Aires and Santa Fe into Entre Rios and Corrientes due to the recent rainfall. Other production areas have marginally adequate to short topsoil moisture. Subsoil moisture is mostly adequate.

The lack of significant rain during much of the week helped support aggressive harvesting and general fieldwork. As of May 20, cotton harvesting was 45% complete versus 72% last year at the same time. Soybean harvesting was 81% complete compared to 91% last year. Corn harvesting was 40% complete down from 54% in 2020 and peanut harvesting was 24% done which is the same as last year. In the meantime, winter wheat planting was 3.5% complete.

The rain Thursday and today will slow or stall harvesting, but the moisture will be ideal in raising topsoil moisture for future wheat planting, emergence and establishment. None of the rain was heavy or persistent enough to threaten the quality of unharvested summer crops.

A strong disturbance and associated frontal boundary will advance over Argentina today. The band of rain ahead of the front will advance over the main production areas with a few lingering showers continuing in Buenos Aires, Entre Rios, and neighboring areas Saturday. Moisture totals by Sunday morning will range from 0.75 to 3.00 inches and locally greater amounts in Buenos Aires, Entre Rios, La Pampa, and immediate neighboring areas. Santa Fe and Corrientes will receive 0.50 to 2.00 inches of rain. Cordoba and Santiago del Estero into Chaco and southeastern Formosa will otherwise receive 0.10 to 0.75 inch of rain. Dry or mostly dry weather will then evolve late this weekend into next week.

Harvesting of the remaining coarse grains, oilseeds, cotton, and other crops may be sluggish during the next few days due to the rain and moist soil, most notably in Buenos Aires, La Pampa, and Entre Rios. However, the lack of follow-up rain later this weekend and next week will rapidly firm the topsoil. More aggressive harvesting will resume once the ground has a chance to dry.

Planting of winter wheat will also advance swiftly across Argentina later this weekend into next week. The shot of rain will briefly improve or keep planting and establishment conditions generally favorable in the main production areas. However, a good soaking of rain will likely be needed by the end of next week once the ground firms. Cordoba and Santa Fe will be the driest wheat areas and will need timely rain late this month into June.

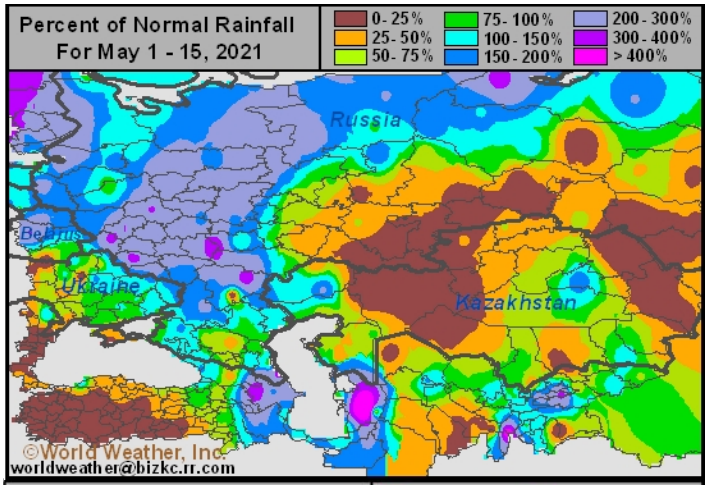
Russia's New Lands Drying, But Only Into Late May

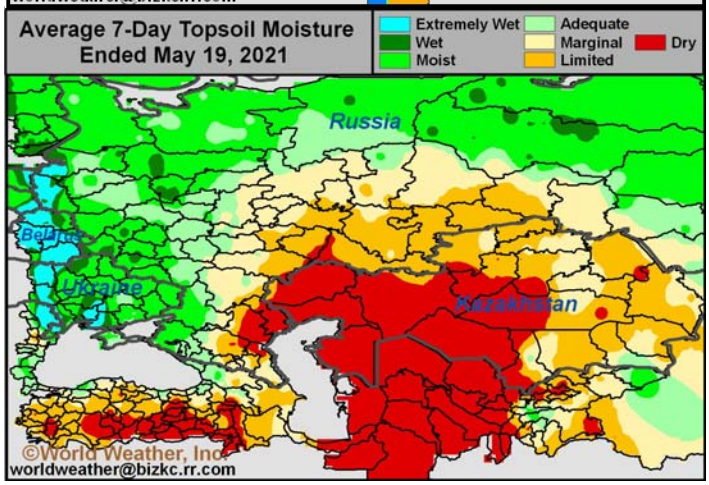
Southern portions of Russia's New Lands and neighboring areas of Kazakhstan have been steadily drying down in recent weeks. Soil conditions are dry enough that spring wheat, sunseed and other spring and summer crops have likely slowed their germination and emergence rates. Moisture stress is suspected in unirrigated crop areas. This trend for warm and dry weather will prevail for another week and then a break is expected with rain likely for a little while. In the meantime, western Russia, Belarus and the Baltic States are still dealing with excessive rainfall.

Virtually, no precipitation fell from the southern Ural Mountains region to southern portions of Russia's eastern New Lands during the past week. Most of Kazakhstan was also dry. The lack of precipitation also impacted a small portion of the middle and lower Volga River Basin, although rainfall of 0.05 to 0.88 inch did occur in a part of the lower Volga Basin.

The lack of rain was significant enough on its own without any regard for temperatures. But temperatures in the region were also exceptionally warm with highs in the upper 20s and lower 30s Celsius . Western portions of Kazakhstan experienced some temperatures in the middle 90s. The heat did extend as far to the west as the lower Volga River Basin and Russia's Southern Region where extreme highs reached up to 93 in several areas.

The heat exacerbated the drying trend in the southern New Lands and Kazakhstan leading to more accelerated loss in soil moisture. The moisture shortage was occurring while spring wheat and sunseed were being planted, emerging and beginning to establish. Fieldwork was suspected of advancing swiftly earlier this month as warming began, but now the planting may be slowing due to soil moisture declines. More likely the planting pace is continuing, but seed germination and plant emergence are slowing as moisture in the soil retreats cedes where young root systems may not be able to reach.





The ridge of high pressure responsible for the dryness and heat reached its peak of intensity today and the area of rain noted above in the lower Volga River Basin is expected to undercut the ridge for a few days bringing some rain into a part of the driest region. Most of the moisture will be lost to evaporation very quickly because the ridge of high pressure will strengthen once again during the late weekend and early part of next week.

The strengthening ridge is expected to block rain and heat up the air over the southern New Lands late this weekend through midweek next week returning dryness and crop moisture stress to the levels of today. However, after that the ridge is expected to break down and the opportunity for cooling and rainfall will return to the region. Producers in the region are hoping that sufficient rainfall will occur late next week and into the first days of June to support spring and summer crops in a more positive manner.

World Weather, Inc. believes the breakdown of the high pressure ridge will bring some relief with the greatest rain late this month occurring north of Kazakhstan. The ridge may return in early to mid-June over some of this same region and Kazakhstan will feel the brunt of the heat and dryness with some areas just north of the border in Russia also experiencing some returning stress.

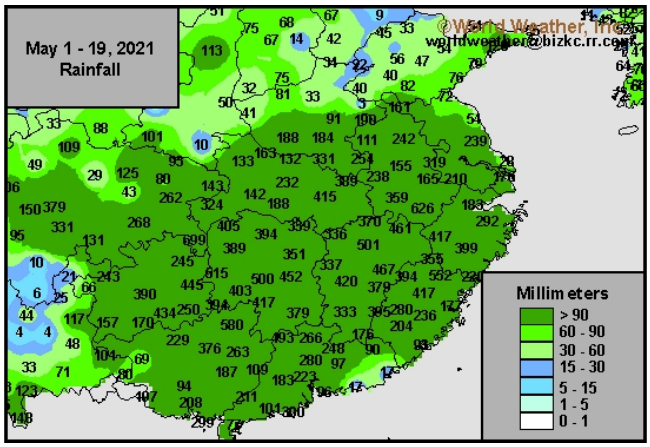
South China Rainfall Nearing Last Year's Pace: Floods Increase

Abundant rainfall since the beginning of May has kept areas near and south of China's Yangtze River excessively wet. Flooding has occurred and potentially damaged winter rapeseed, rice and other summer crops. The situation was somewhat reminiscent of the 2020 floods, although not nearly as severe. Crops may have been reseeded in areas that saw severe flooding earlier this spring, but frequent rainfall has likely left that crop in questionable condition. Periods of significant rain will keep the ground excessively wet for most areas near and south of the Yangtze River through the middle of next week. Additional flooding is likely in Jiangxi, Zhejiang, Hunan and neighboring areas that may damage more crops.

The Yangtze River Basin and much of the southernmost provinces outside central and western Yunnan and southwestern Sichuan have seen rain evolve on a frequent basis so far this month. Moisture totals May 1–19 ranged from 8.00 to 18.39 inches from southeastern Sichuan, Guizhou and northern Guangxi to western and southern Jiangsu, Zhejiang and parts of Fujian. Within this region, as much as 27.52 inches occurred near the southeastern Sichuan/NE Guizhou border and 24.21 inches in southwestern Hunan while 24.64 inches occurred in southern Anhui. Lighter rainfall of 4.00 to 8.00 inches surrounded this region with several areas in Yunnan and southwestern Sichuan receiving 1.00 to 2.80 inches.

The ground remains excessively wet near and south of the Yangtze River outside the areas in Yunnan and southwestern Sichuan that received the least amount of rain. Periods of heavy rain combined with the wet soil likely promoted severe flooding at times, though the extent of the flooding was not known. An extended period of drier and warmer weather is needed to significantly firm up the topsoil and reduce flood potentials.

Damage to winter rapeseed and rice has likely occurred in portions of the Yangtze River Basin this spring due to the flooding and excessively wet soil, though the amount of damage that occurred was not known and probably not nearly as severe as that of 2020. Maturation and harvesting has also advanced slowly. In the meantime, coarse grains, oilseeds, and other crops produced at this time of year near and south of the Yangtze River have likely established and developed poorly due to the wet conditions. Replanting may have already occurred in some areas and may have to occur again. Continued wet weather may further damage or destroy standing winter rapeseed and summer crops. Development will likely be sluggish until the ground has a chance to firm as well.



Additional rounds of rain will evolve south of the Yangtze River through the middle of next week. Rain will be scattered across these areas on a frequent basis through Monday before a brief period of drier weather occurs Tuesday. Southern Sichuan and much of Yunnan into southern Hubei, Guizhou, Hunan, Guangxi, Jiangxi, Zhejiang, and northern sections of Guangdong and Fujian will receive 2.00 to 6.00 inches of rain with local amounts approaching 10.00 inches in northern Jiangxi, western Zhejiang, and neighboring areas. Other locations will receive 0.50 to 2.00 inches of rain. Production areas immediately north of the Yangtze River will otherwise only have a few opportunities for light rain. Moisture totals by next Wednesday morning will range from 0.40 to 1.50 inches and local amounts of 2.00 inches or more for areas closest to the Yangtze River.

An improving environment is expected for winter rapeseed and summer crop areas immediately north of the Yangtze River. The ground will still be excessively wet for the next several days and fieldwork may remain sluggish. However, development of the summer crops will slowly improve with the onset of drier and warmer weather in the coming week. Maturation and harvesting of winter rapeseed will improve marginally as well.

Areas near and south of the Yangtze River will remain excessively wet through the end of next week. Additional flooding will be possible, most notably in Jiangxi, Zhejiang, and neighboring areas. The environment will remain poor for winter rapeseed harvesting – if any remains. Summer coarse grain and oilseed development conditions will remain fair to poor in the wettest locations.

U.S. Weather in June To Be Favorable For Crops

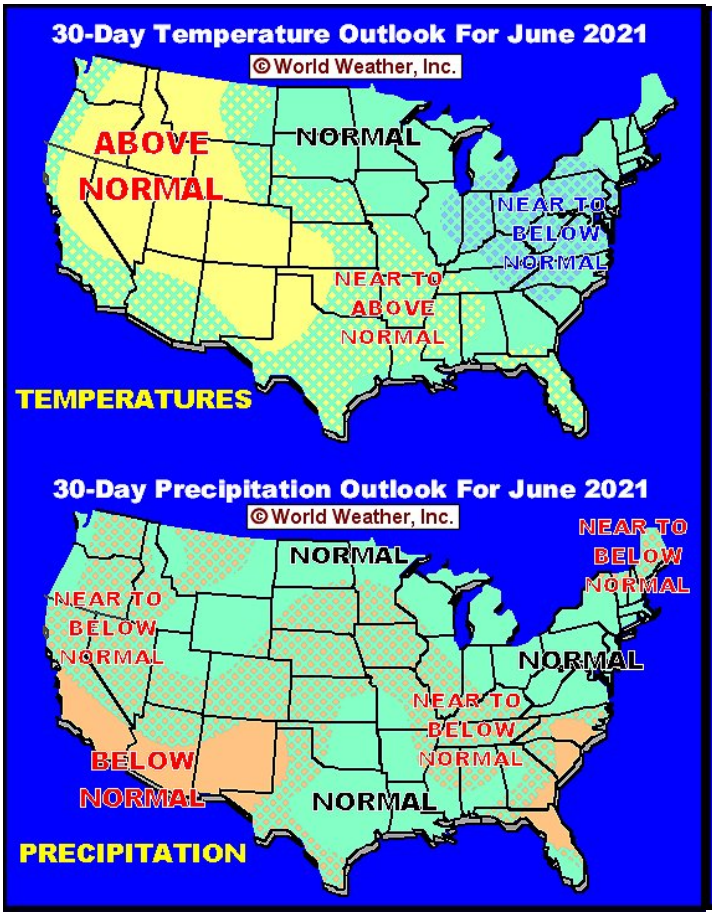
June weather in the United States should be favorable for spring and summer crop development in many areas. No area is expected to be critically dry. Early month rainfall will be greater than that in the latter part of the month, but there will be sufficient rainfall and seasonable temperatures to promote normal crop development and field progress.

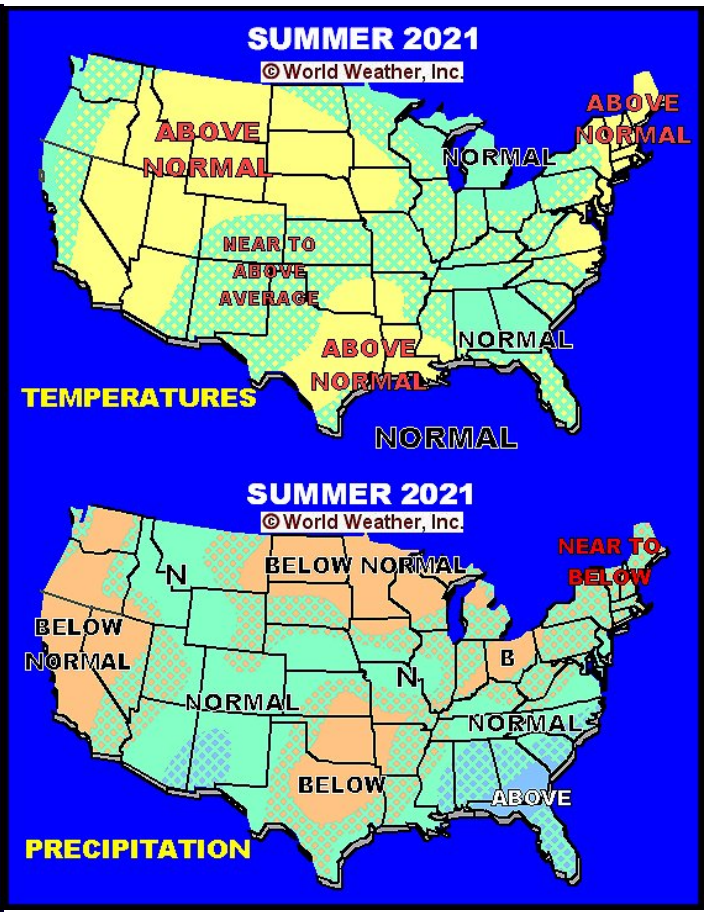
Some ridge building is expected in the western parts of North America during June and that will create a northwesterly wind flow aloft. Some milder than usual weather is expected in the Midwest for a brief period of time while all of the warmer than usual weather occurs in the western and south-central parts of the nation. The northern U.S. Plains will experience near normal temperatures and near to below average rainfall.

The ridge of high pressure over western North America in June will drift a little farther to the east into the U.S. Great Plains and the south-central Canada Prairies during the remainder of summer drying down the northern Plains, southeastern Prairies as well as the upper U.S. Midwest. Other areas in the Midwest and southern Plains may experience near to below average summer rainfall along with the far western United States. The summer monsoon will perform relatively well bringing a few shows and thunderstorms to the Rocky Mountain region and across a part of the central Plains and west-central Corn Belt.

Temperatures will be near to above normal in most of the United States during the summer months with readings warmest relative to normal over the Rocky Mountain region and the northern Plains. A part of the northern Atlantic coast states may also experience some warmer than usual temperatures while the southeastern states have a little more rainfall and more seasonable temperatures.

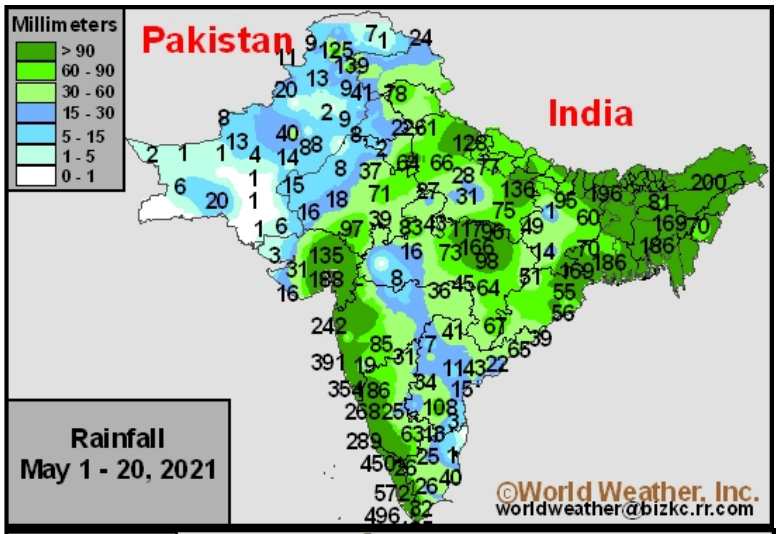
September weather in the United States should be similar to the summer, but up in Canada seasonal cooling is expected to occur normally and frost and freezes will be quick to evolve early in the month.

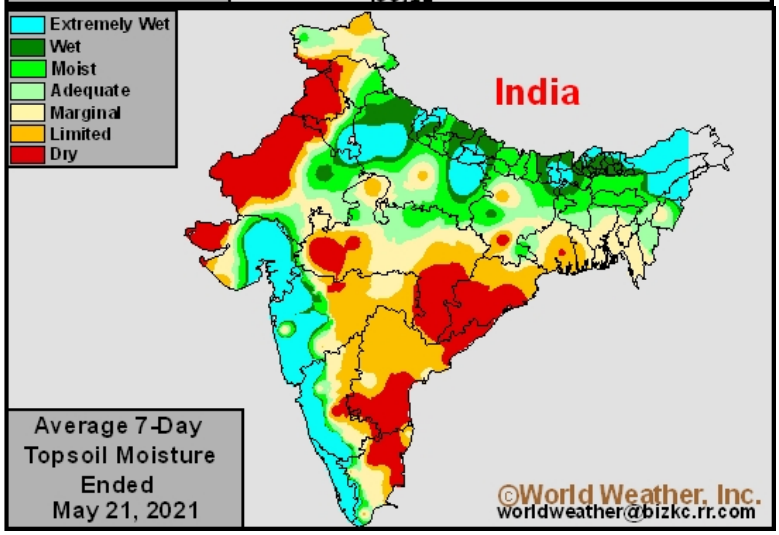




Tropical Cyclone Benefits Some Of India

Tropical Cyclone Tauktae came into India Monday as a Category Three hurricane equivalent storm producing damage to 16,000 homes battering coastal areas, capsizing a large barge and brought many trees and power lines down. The damage was greatest in Gujarat, India. However, a little farther away from the landfall region there may have been more benefit from the storm than detriment as many northern agricultural areas received some early season rainfall that could help improve the long term outlook for crops in this coming growing season. Early season cotton likely benefited most from the storm while some disruption to late season winter crop harvesting was suspected. Early season planting prospects have improved for the wettest locations, though most producers will likely wait for the monsoon season to get underway before putting a significant amount of crop into the ground. In the meantime, a new tropical disturbance may advance into West Bengal or neighboring areas toward the middle of next week.





Rainfall varied significantly across India and Bangladesh during the past week. Gujarat and southern and eastern Rajasthan into eastern Haryana, portions of Uttar Pradesh, and northern and eastern Madhya Pradesh saw periods of significant rain in recent days as Tropical Cyclone Tauktae advanced up the west coast and then from Gujarat to northern Uttar Pradesh. Moisture totals for the seven-day period ending Thursday ranged from 0.63 to 4.72 inches in key crop areas with local amounts up to 7.40 inches in southern and eastern Gujarat. Kerala and areas near and along the Karnataka and Maharashtra coastlines received 8.78 to 17.68 inches of rain. Bangladesh and the Eastern States received 0.43 to 2.87 inches of rain with local totals up to 6.30 inches in the far Eastern States. Other areas in southern, central, and eastern India received 0.28 to 1.77 inches of rain with a local amount of 3.58 inches in southern Andhra Pradesh. Western and northern Rajasthan into Punjab and neighboring areas otherwise received little to no rain.

Areas near and along India's west coast into eastern and central Gujarat are excessively wet due to the recent rain. Eastern Rajasthan and Haryana into portions of Uttar Pradesh, northern Madhya Pradesh, Bangladesh, and the Eastern States have adequate to excessive topsoil moisture. The moisture profile is short to very short in most other locations.

Rain in May is normally not very great in India, although pre-monsoonal precipitation usually occurs in the far south and in the far Eastern states. This week's tropical cyclone was a bit unusual, but a similar storm occurred in May of 1999 that held the record for intensity of a land-falling tropical cyclones impacting Gujarat in May. Now, both storms stand at the record.

The storm increased topsoil moisture in many areas in India. Normally, the soil is critically short of moisture at this time of year, but more than half of the nation has better than usual soil conditions. Improved soil moisture may generate a minor amount of early summer grain, oilseed and cotton planting in Gujarat, but no widespread planting is expected since monsoonal rain does not usually begin in west-central India for a few weeks.

Western and central India will now trend mostly dry during the coming week. A few showers will linger in southern Uttar Pradesh, though much of the rain will be lost to evaporation. A few light showers will evolve in western India through the end of the weekend. Rainfall will generally be lost to evaporation. The ground will rapidly firm as daytime highs peak in the 30s to 43 degrees Celsius.