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The Canadian Agriculture Weather Prognosticator

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WORLD WEATHER ISSUES

Concern Grows For Prairies Spring

Despite the Australian Bureau of Meteorology predicting the demise of El Nino conditions in the next few weeks there is evidence that their forecast may not verify. El Nino has never fully evolved—at least not to satisfy the rigorous definition of El Nino set up by the U.S. National Oceanic and Atmospheric Administration (NOAA) many years ago. However, the event has been significant enough to contribute to dryness in Central America, northern South America, Australia, New Zealand and South Africa.

El Nino has not lived up to its reputation in Brazil or Indonesia and Malaysia. Brazil is normally wet during an El Nino event and Indonesia and Malaysia are normally dry. There are other discrepancies in this year's event relative to those of the past, but we can debate that another time. The true question is whether El Nino or El Nino-like conditions are going to prevail during the spring and summer seasons in the Northern Hemisphere this year.

If El Nino does manage to survive and prevail over the next few months its influence on the Canadian Prairies may not be welcome and could pose a threat to the spring season more than summer.

There is a strong association with El Nino events in the past and below average spring precipitation in the central and southwestern Prairies . At the same time, there is an association with near to above average precipitation in northern Alberta—mostly to the north of Highway 16.

Most producers in the central and western Prairies should cringe at the thought of having El Nino this spring because it could perpetuate the trends already in place. Those trends include dryness in the central and southwestern Prairies and too much moisture in the north-central and northwestern Prairies.

El Nino, if it prevails and behalves like past events, will limit the potential for soil moisture restoration across the drier biased areas in central and southwestern Saskatchewan and southern and some central Alberta locations. If these anomalies do prevail this spring the potential for getting a full recovery from two years of poor rainfall is quite low. Significant moisture deficits are still prevailing in the central and southwest and having El Nino around will not prevent precipitation from falling, but it will prevent adequate amounts from occurring to take away some of the worry over moisture deficits.

Summer weather associated with El Nino this year would prove to be a boon for northern Alberta where the past three autumn harvest seasons were plagued by excess moisture and wet harvest conditions. El Nino events of significance can produce below-average summer and autumn rainfall in northwestern parts of the Prairies.

The El Nino event is not influencing the Prairies by itself. Both the negative phase of Arctic Oscillation (AO) and a warm pool of ocean water in the Gulf of Alaska are contributing to a weak ridge of high pressure aloft over western North America. That ridge has been just strong enough to minimize precipitation in the central and southern Prairies while perpetuating precipitation frequently in north of Highway 16 in

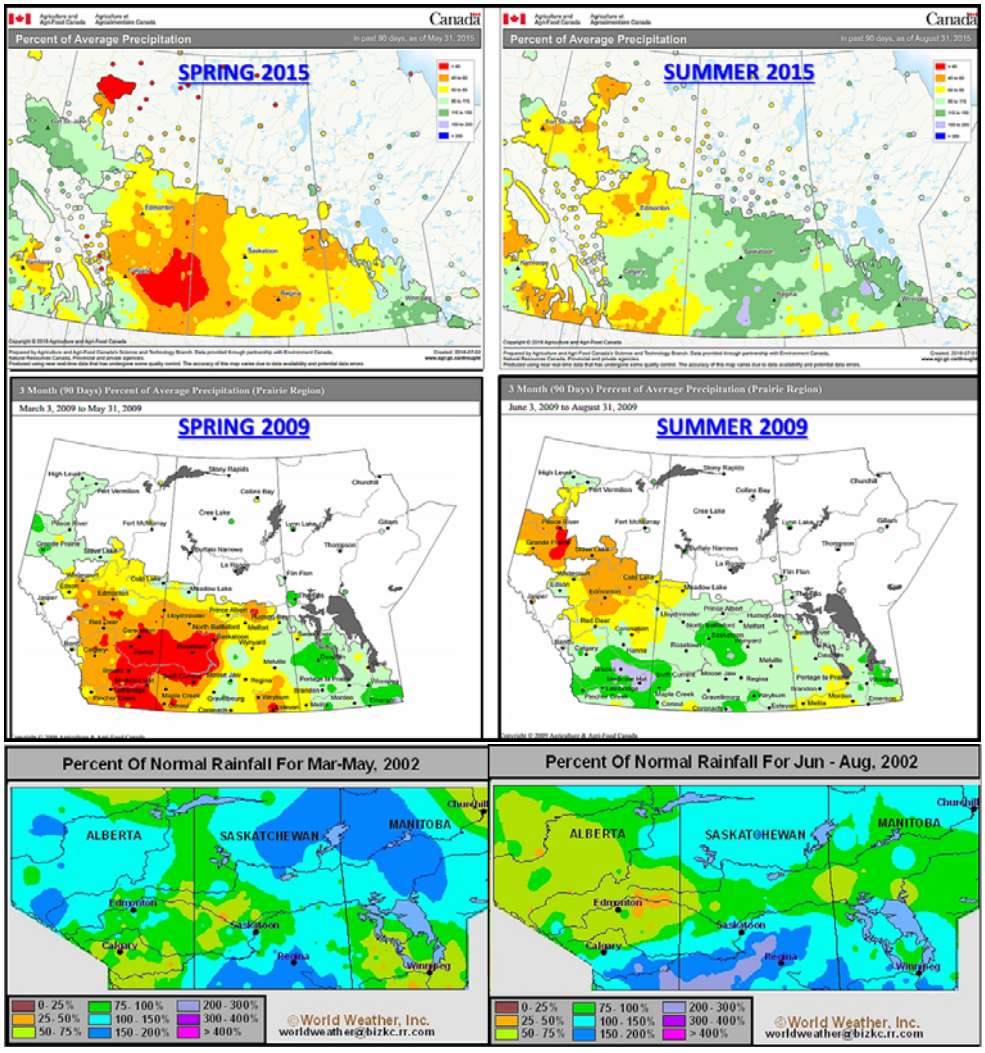
Concern Grows For Prairies Spring (continued from page 1)

Alberta and in a part of northern Saskatchewan. The wetter bias has been far more significant in northern Alberta than in northern Saskatchewan.

World Weather, Inc. sees no change coming in the next few weeks in El Nino conditions, the warm ocean water in the Gulf of Alaska or periodic negative AO. The Arctic Oscillation is the only one of the three influences on the Prairies that may waver for a while this late winter and early spring and that may not be enough to change the precipitation bias from that described above.

In the meantime, a persistent southwesterly wind flow aloft over the United States is expected to evolve and prevail during the late winter and spring this year. Storms for the next few weeks will be most significant from the southwestern U.S. Plains through the central Midwest to the northeastern states. However, this pattern will shift to the northwest during the spring so that storms move from the southwestern U.S. desert region to the upper Midwest and western Great Lakes region.

The U.S. weather pattern will bring frequent storms to Minnesota, Wisconsin and Michigan this spring. If the forecast is correct the moisture that wraps around low pressure systems that move through these U.S. locations will frequently impact Manitoba. That implies a wet spring for central and southeastern Manitoba. Such conditions could lead to a delay in spring planting.



Each of these weather patterns will contribute to some concern over the Prairies spring weather. Moisture deficits will prevail in the central and southwestern Prairies while both the northwest and southeast are wetter biased. The northwest has little room to tolerate additional moisture and could be faced with farming delays and the lack of moisture in the central and southwest may not hurt planting, but could raise a stronger level of consciousness over the need for greater moisture since this will be the third spring season of limited or declining soil moisture.

The accompanying charts are three El Nino events of the past. 2015 was a strong El Nino event and 2009 and 2002 were moderate El Nino events that were stronger than this current event. However, notice how in each of these images the spring season has at least some drier biased tendencies in the southwestern Prairies and a wetter bias in northwestern parts of the Prairies. Summer is then followed by more abundant rain in the central and southern Prairies during summer with the exception of 2015 which was still dry biased in southern Alberta.

Not shown here is a very meager El Nino event from 2004. It may be the most closely aligned El Nino event to this year and it had a wetter biased spring in the northern and eastern Prairies while the southwest had near to below average precipitation. The summer was wet in most areas in the Prairies. In each of these years dryness was eased in the central and southern Prairies during summer

February Precipitation Unlikely To Have Much Benefit

February weather across the Prairies will be similar to that of last November. Temperatures will be well below average in the east and more near to above average in the west,

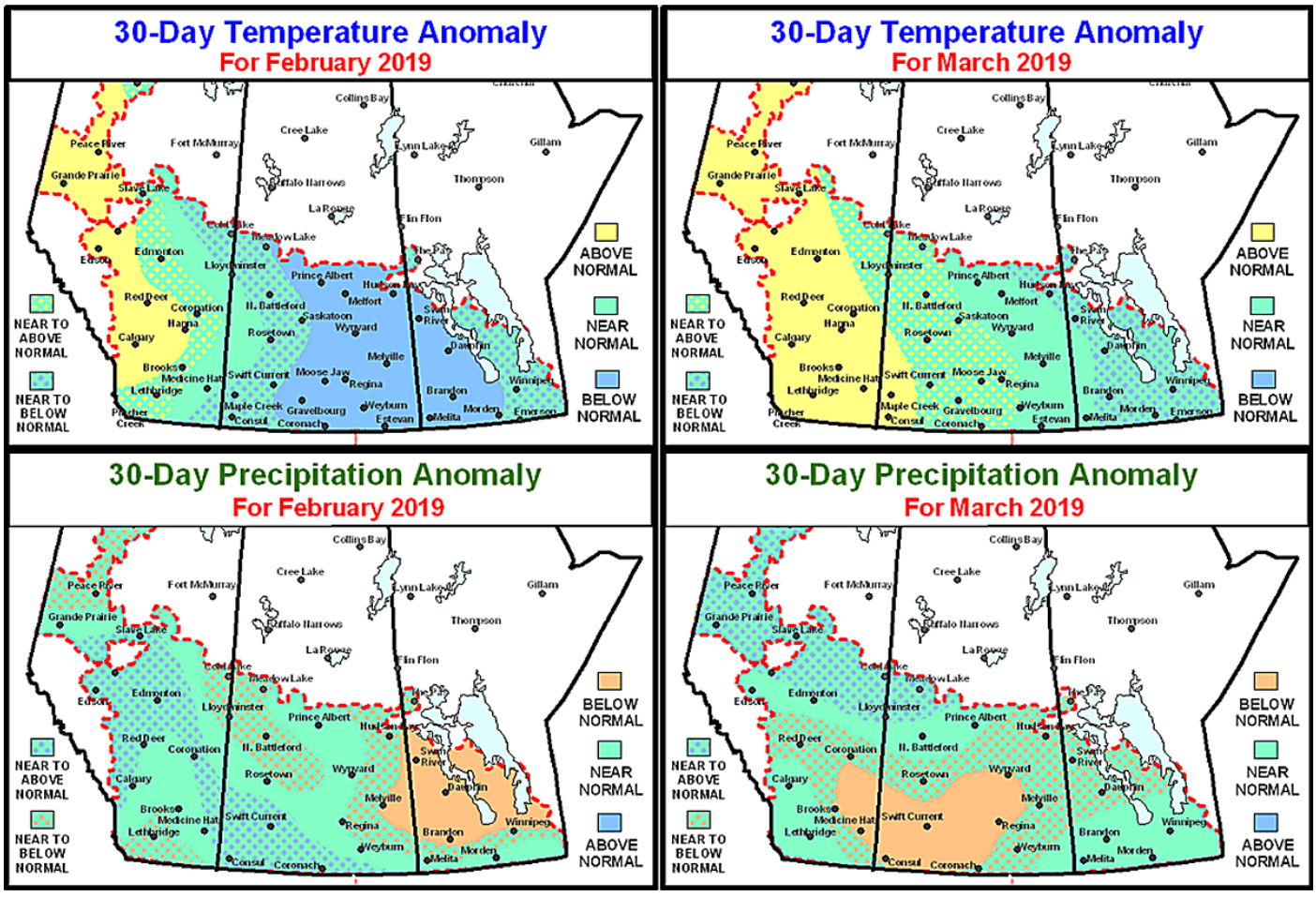
Precipitation in February will be near to above average in many areas across the Prairies and as good as that might sound for the drier biased areas of the region it really will not have much impact on moisture deficits.

First of all, February "normal" precipitation is not usually very much. It is easy to get more than the usual amount of precipitation during the month, but it is quite difficult to get enough moisture to change long term soil moisture. The reason for this is that the ground is usually frozen in February. Snow that accumulates during the winter and melts in the spring can only increase top-soil moisture so much because the ground is usually frozen and will not thaw until after most of the snow is gone. For that reason, a boost in February precipitation rarely benefits long term moisture deficits.

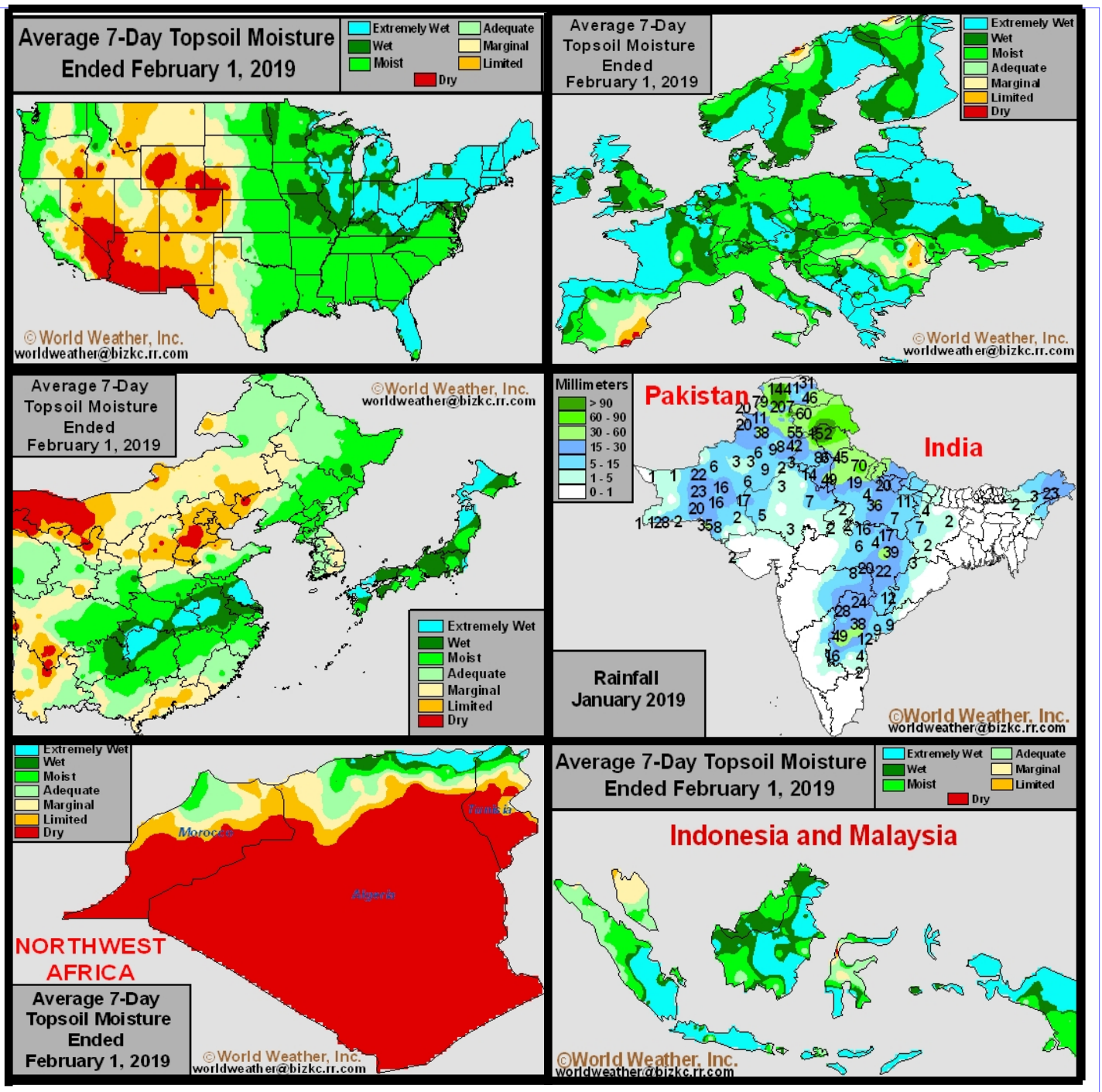
March weather is expected to be more influenced by El Nino or El Nino-like conditions once again. The weak El Nino that is present today is expected to strengthen slightly once again and that should put its influence on the Prairies back to where it was in December and January. The 60-day period ending January 31 was notably dry biased in the Prairies, especially in the central and southwest. That anomaly is expected to return.

In the meantime, northern parts of Alberta will continue to receive periodic weather systems maintaining the wetter bias in that particular region and a few weather systems in the United States impacting the upper Midwest will bring some significant moisture to parts of Manitoba. The wetter bias in both northern Alberta and southern Manitoba could set the stage for spring planting issues if the same weather pattern is perpetuated into April.

Temperatures in March are still expected to be warmer biased in the western Prairies and a little cooler biased in the east. However, there will be a few more opportunities for warmer than usual conditions to impact the east in March relative to that of February which should result in temperatures averaging closer to normal for the entire Month. <u>If El Nino does not prevail and strengthen in March then weather could be more favorable with rainfall occurring more normally across the region.</u> However, with the solar minimum approaching, El Nino may prevail.



Selected Weather Images From Around The World



Soil conditions have improved in North Africa recently after a big rainfall boost evolved. Dryness remains a concern in southwestern Morocco and along the Morocco/Algeria border as well as central and southern production areas in Tunisia. Rain will continue to come and go over the next few weeks. In Southeast Asia, Indonesia and Malaysia continued to report frequent rainfall in January that left the region plenty moist at the end of the month except possibly in a part of Peninsular Malaysia, northern Sumatra and central Sulawesi where some net drying was under way as the month drew to a close. There is potential for additional drying in Indonesia and Malaysia during February. Soil moisture in Europe, the western Commonwealth of Independent States and much of the U.S. east of the Great Plains was abundant on February 1. The situation will be closely monitored into the first days of spring because of the potential for flooding in many areas during the spring that might delay planting. India's rainfall increased in late January and it will be above average in February for many grain and oilseed areas benefiting winter crop yield potentials.

Central, SW Prairies: Dry Spring, Wetter Summer

April and May could be notably influenced by El Nino or El Nino like conditions, but seasonal changes in the atmosphere could lead to some beneficial changes in the pattern allowing some relief to occur. That relief will include a break from dryness in the central and southwestern Prairies that may bring just enough planting moisture to get crops seeded. Once the crops are in the ground there may be a period of dry biased weather for a little while, but as late April moves into May there will likely be some increase in rainfall. No big soakings are expected, but some very well timed precipitation will evolve to benefit planting, emergence and establishment.

Northern Alberta's battle with wet biased early spring weather may begin to break up a bit especially in late April and May, but the improving conditions will be all about timing. Some areas will need drier weather sooner rather than later to firm up the ground for planting while others may have infrequent enough precipitation to get aggressive with spring fieldwork.

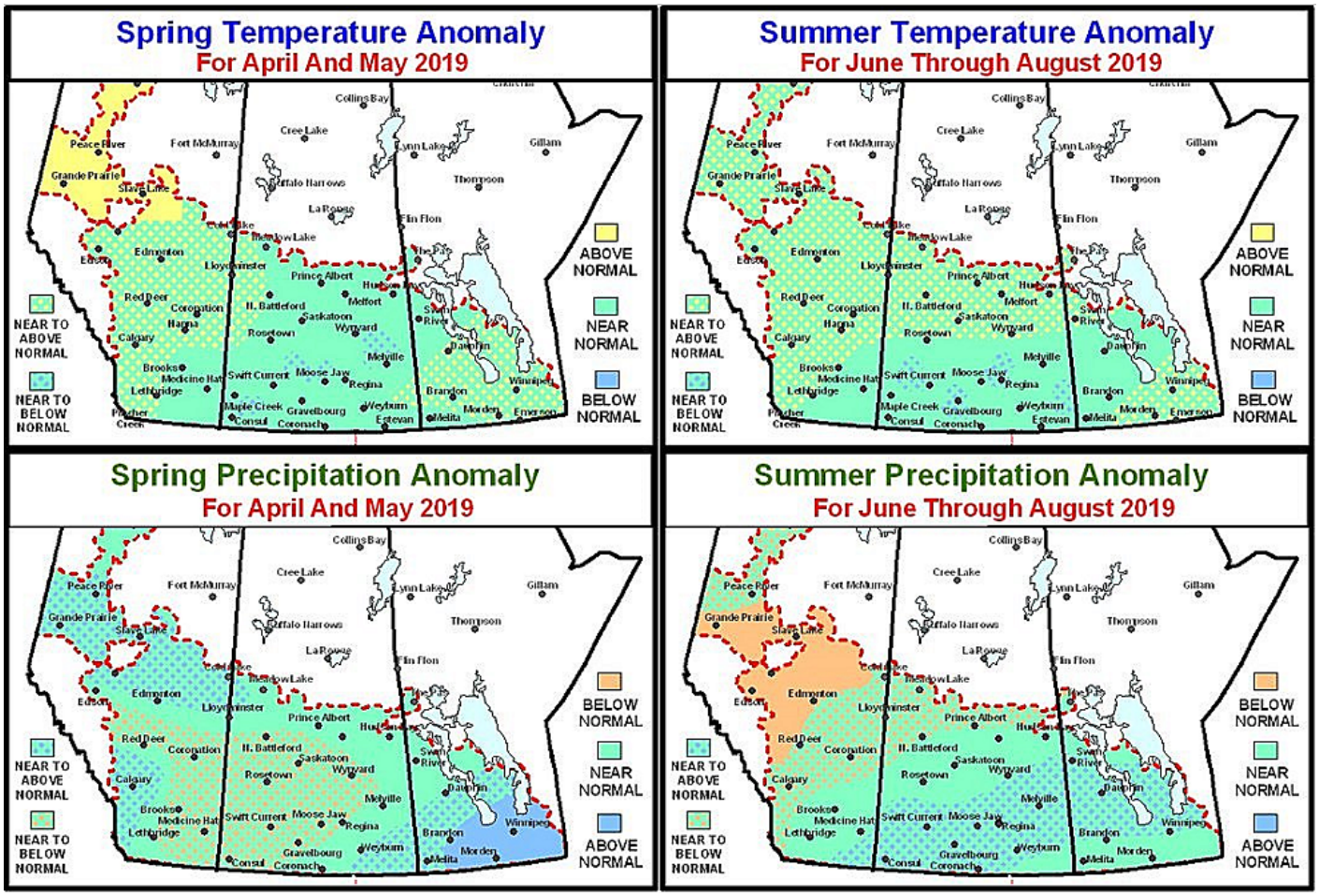
The temperature bias during spring will be above average in the western Prairies with the Peace River Region warmest relative to normal. That warmth will play a critical role in getting producers into the fields this spring. Faster drying rates than usual may occur between rain events which may lead to firmer topsoil over time and that should get producers into their fields just in time to avoid significant field working delays.

Manitoba, on the other hand will be trending wetter and that will lead to some spring planting delays. There may be some potential for flooding in southern Manitoba in April .

If summer weather is influenced by the presence of El Nino there should be a welcome shift toward drier biased conditions in the northwestern Prairies and a wetter biased pattern from southeastern Alberta through southwestern and central Saskatchewan to west-central and northwestern Manitoba. The change should bring an end to surplus topsoil moisture in the northwestern Prairies while bringing the larger moisture deficits in the central and southwestern Prairies to an end—at least for a little while.

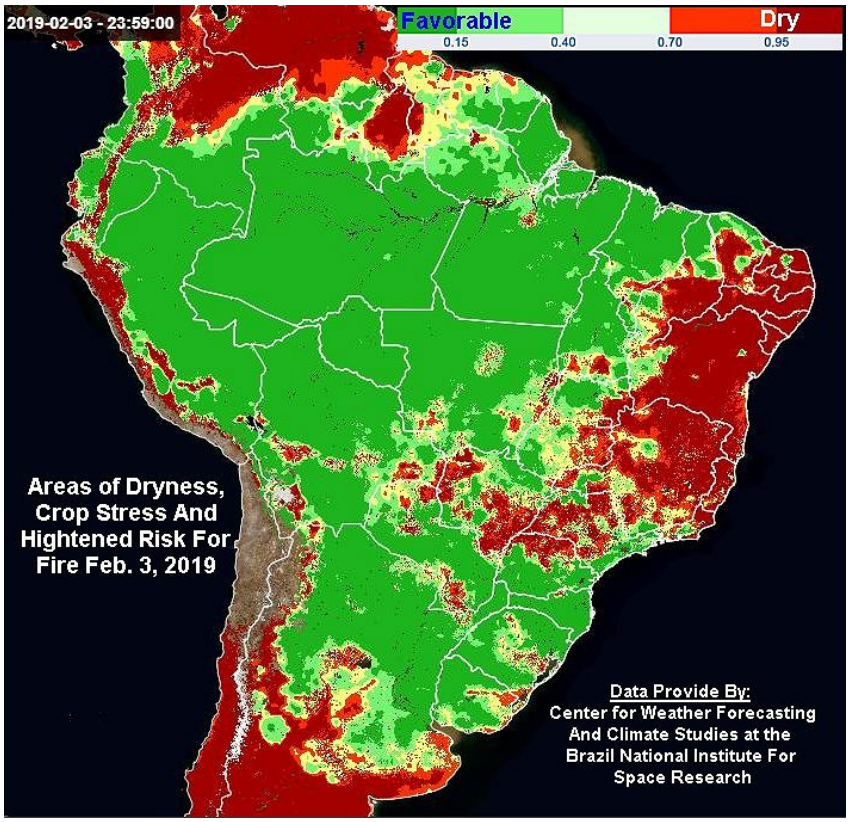
Southern Manitoba will dry down in the summer, but there should still be enough timely rainfall to support crops and farming activity.

The summer should end with this same pattern in place supporting better harvest conditions northwest, but keeping the south a little moist.



Interior NE Brazil To Get Needed Rain; Drying South

Very little rain fell over the past week from Mato Grosso do Sul through portions of Sao Paulo and from Espirito Santo and much of central and northern Minas Gerais to interior Bahia. The ground continued to firm in most of this region and enough crop and vegetative stress has evolved recently to raise production issues and the risk of fire. Unirrigated grain, oilseed and cotton conditions have deteriorated in recent weeks as the ground dried. However, a more frequent rain pattern is slated for interior Bahia, Minas Gerais, Goias, Tocantins and Piaui during the next two weeks. Rain will help reverse moisture deficits and improve crop conditions in many locations. Some production losses are still expected due to the extended period of dryness in January and this is not a "fix-all" rain, but a start toward improvement. In the meantime, portions of Mato Grosso do Sul, Paraguay other southern Brazil locations are expected to dry down for a while this week.



Precipitation was variable across Brazil during the past week. Portions of Parana, Santa Catarina, and Rio Grande do Sul reported 0.59 to 2.76 inches of rain for the seven-day period ending this morning. However, portions of central Rio Grande do Sul only received up to 0.24 inch of rain. Mato Grosso and Mato Grosso do Sul received 0.32 to 1.02 inches of rain with a local amount of 1.89 inches in southeast Mato Grosso. Goias received 1.22 to 1.69 inches of moisture, although many areas in the east were mostly dry. Sao Paulo and southern Minas Gerais received a trace to 0.55 inch of rain with a local total of 2.13 inches in southern Minas Gerais. Bahia and northern Minas Gerais received little to no rain.

Temperatures were near to above average across Brazil during the past week. Highest readings peaked into the upper 90s Fahrenheit with pockets in Mato Grosso, Mato Grosso do Sul, northeast Minas Gerais, and Rio de Janeiro warming above 100 degrees. The warm weather and spotty rainfall promoted aggressive drying in many locations.

Northeast Brazil has short to very short soil moisture. Bahia, northern Minas Gerais, and neighboring areas generally reported less than 25% of normal precipitation for the month of January. Temperatures were also seasonably warm with highs often peaking into the 90s. Crop conditions deteriorated in recent weeks as the ground continued to firm. Although northeast Brazil does not produce a large amount of corn and soybeans, significant production losses will be possible for several areas this year. Some of the unirrigated cotton, sugarcane, coffee and cocoa produced in northeastern Brazil have also been negatively impacted by dryness. Rain could still help to improve late season crops, but some of the early maturing grain and oilseeds are probably a little too far advanced for a dramatic recovery.

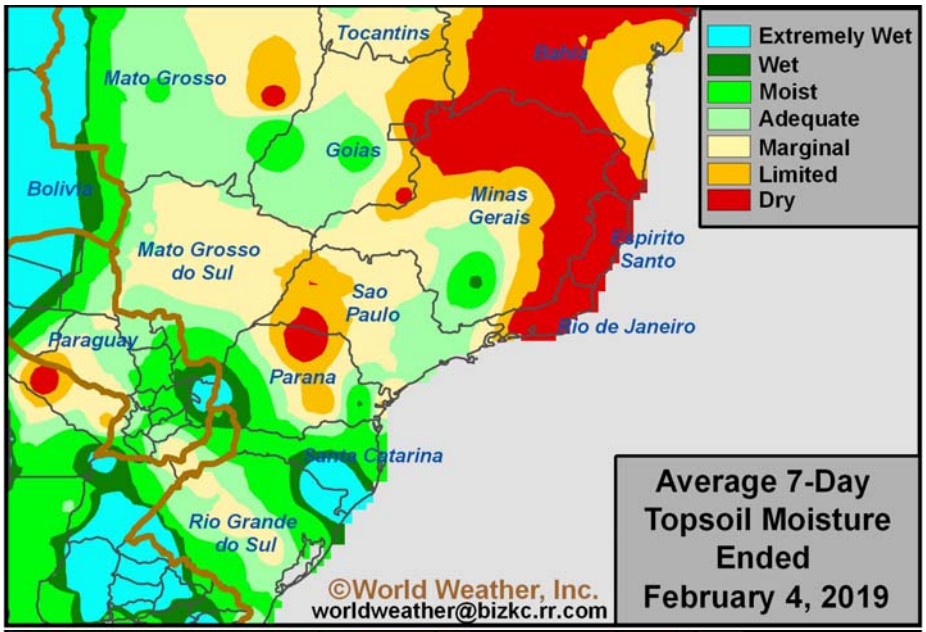
The moisture profile varies in the remaining production areas in Brazil. Several areas in center-south and center-west have marginal moisture while a large portion of southern Brazil has mostly adequate moisture. Precipitation has been spotty in recent weeks and many areas have become too dry to support ideal growth. Crop stress has been a problem especially in the sandier soil where production cuts are going to be most significant. Crops in the heavier soils have not been as seriously impacted by dry weather and may still yield favorably, although not necessarily ideally. Timely precipitation is still very important.

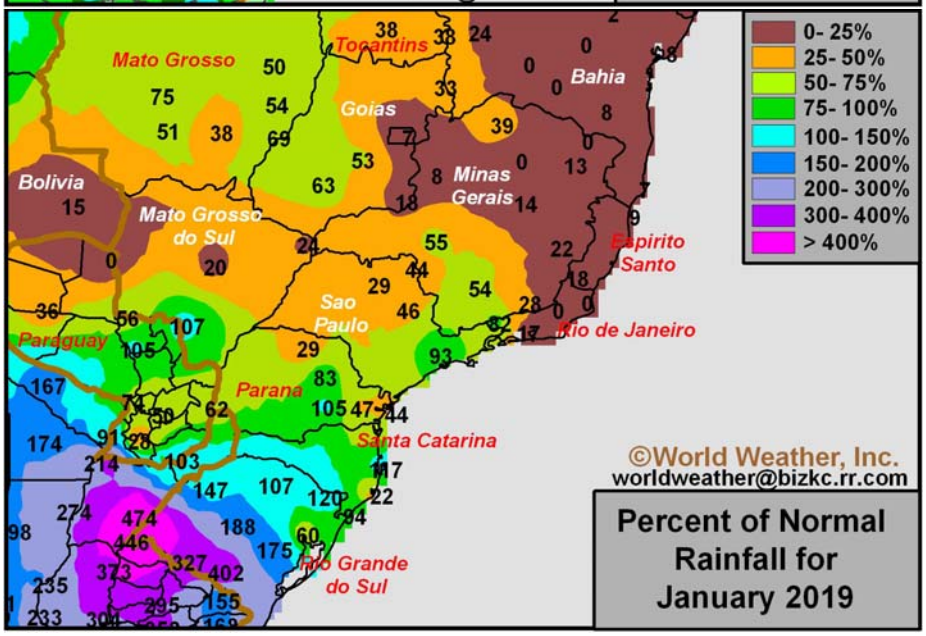
Scattered showers and isolated thunderstorms will evolve on a frequent basis from northeast Brazil into Goias and Mato Grosso this week. Moisture totals by next Monday morning will range from 1.00 to 4.00 inches with locally greater amounts in Bahia, Minas Gerais, Goias, Mato Grosso, and neighboring areas. Several waves of erratic rain will be possible for these areas February 12 – 18 as well. The rain will help bolster soil moisture and slowly improve development conditions in most locations. Some areas may not receive enough

NE Brazil To Get Rain; Drying South (continued from Page 6)

precipitation to completely reverse the moisture deficits, though the environment will be much more favorable compared to January. Production losses from the January adverse weather are still expected, but the coming moisture will help to curb some of the stress and potential production cuts.

The remaining production areas in center-south, center-west, and southern Brazil will see a mix of light rain and sunshine this week. Pockets in Parana and portions of Sao Paulo will receive 0.50 to 1.50 inches of rain by next Monday morning, though rainfall in most other areas will be too light to impact long-term soil conditions. The spotty rain pattern may continue into the second week of the outlook as well. Many areas from Mato Grosso and western Parana into Rio Grande do Sul will continue to dry down during the next two weeks. Stress will gradually increase and there may be some concern for potential production losses.





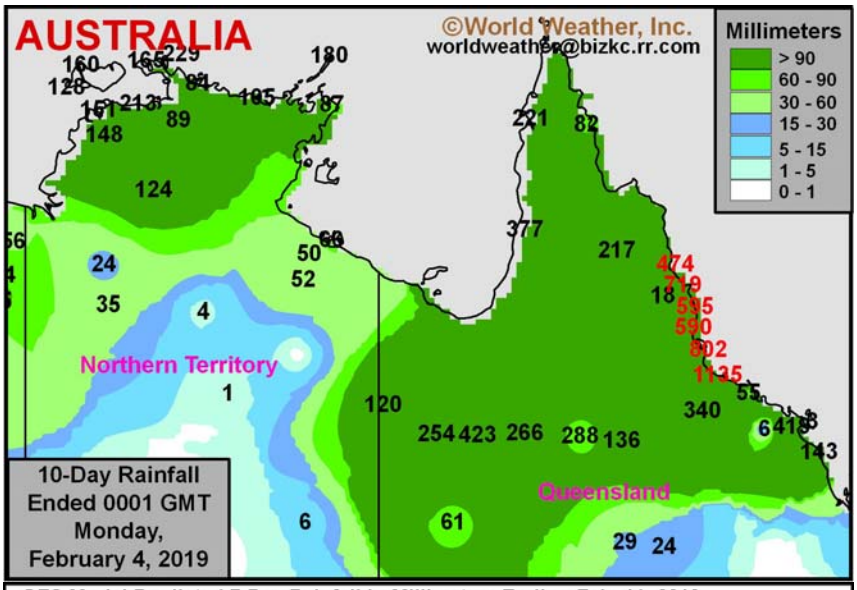
Much of the recent dryness in Brazil has occurred from a general lack of soaking rainfall. Showers and thunderstorms have still managed to impact many areas at one time or another during the past few weeks, but resulting rainfall was mostly light and often failed to counter evaporation with temperatures running in the 80s and 90s so often. This trend will continue in southern parts of the nation over the coming week and a close watch on advertised rainfall for this weekend into next week is warranted. If the proposed rainfall turns out to be erratic and light the region may dry down faster raising more concern over production potentials.

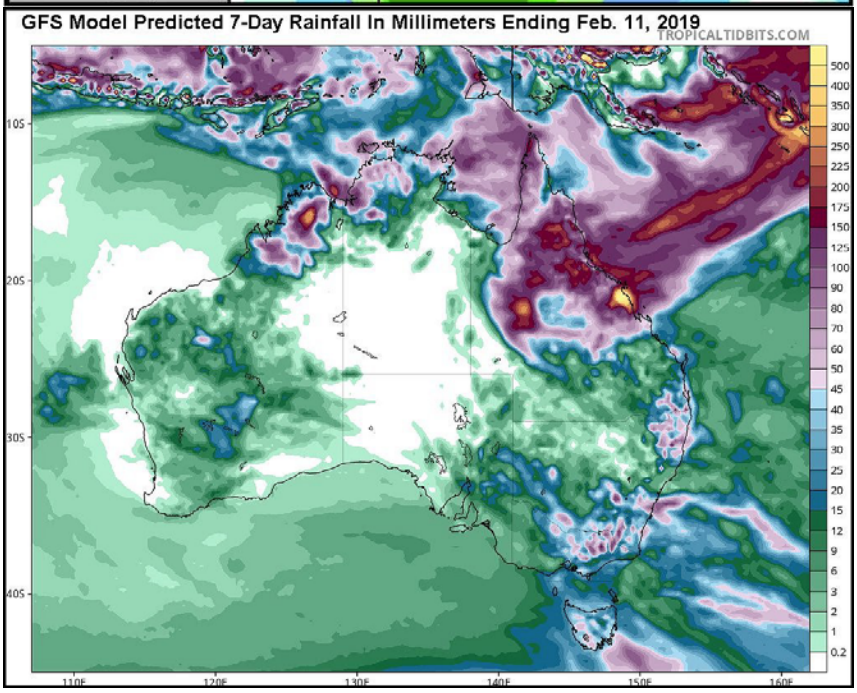
Some of the greatest relief expected over the next week to ten days will occur in coffee production areas in Minas Gerais, northeastern Sao Paulo, Rio de Janeiro and parts of Espirito Santo. Some citrus and sugarcane improvement is expected along with late season soybean and second season corn crops. Second season cotton will also benefit from the anticipated rainfall boost.

As of January 30, soybean harvesting was done on 21% of the total acreage compared to 6% last year and 8.6% average. The harvest was most advanced in Mato Grosso with 44% complete, Parana with 24% done and Goias with 15% in the bin.

NE Australia Sugarcane, Livestock Impacted By Flood

Sugarcane damage and livestock losses have occurred along the upper Queensland coast from ten days of torrential monsoonal rainfall. Damage to infrastructure and many homes and businesses have also occurred. The torrential rain will slowly diminish this week, but rain will still fall most days in the impacted area.





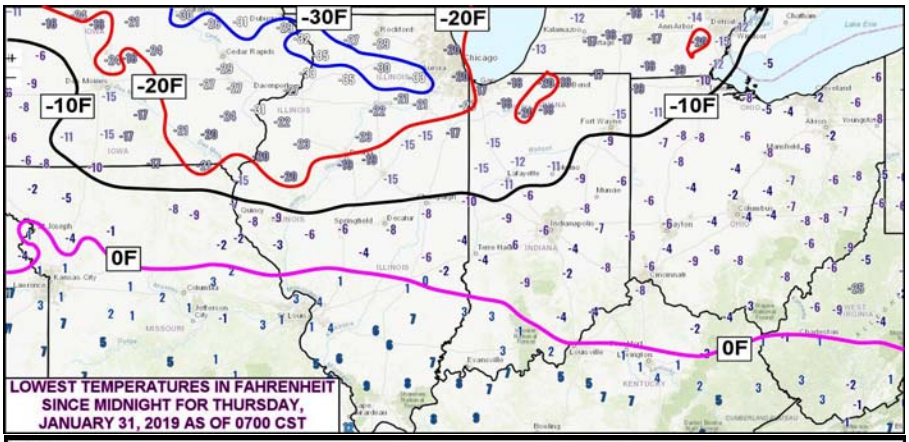
The greatest rainfall has occurred from Low Isles (just north of Cairns) southward through the Townsville area to Proserpine and near the MacKay areas along the upper Queensland coast. Rainfall in the region ranged from 18.66 to 31.57 inches with the Townsville area reporting 44.69 inches of rain all of which occurred since January 25. Rain has also occurred heavily in interior northern parts of Queensland where totals for the same period have varied from 3.00 to more than 10.00 inches. One location in interior northwestern Queensland received 16.65 inches of rain. The extent of flooding has been very significant and some rivers near the coast have experienced the worst flooding since 1901.

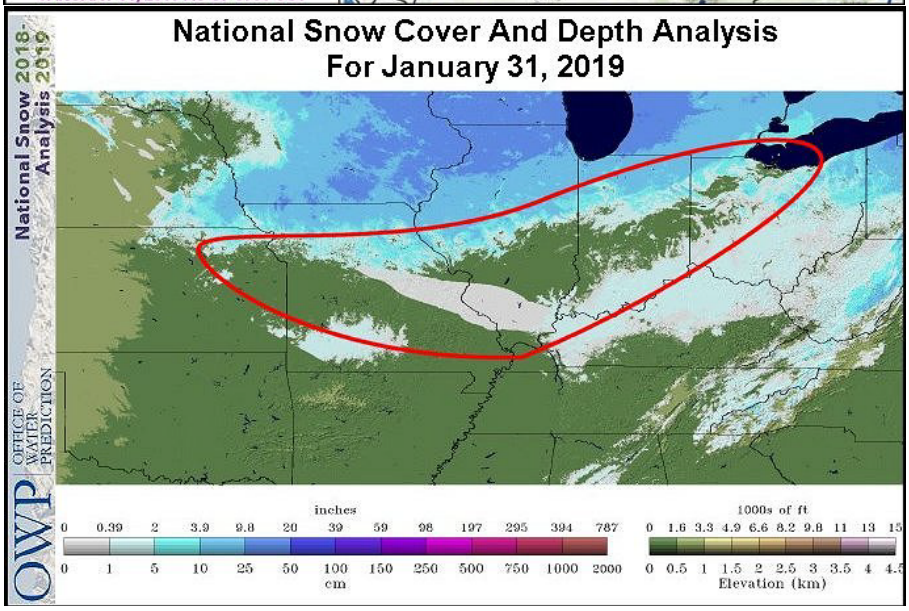
Flooding has been so persistent and expansive in recent days that a true understanding of the damage is not fully known. However, there have been reports of widespread damage to personal and public property as well as to agriculture. Sugarcane damage has likely been significant in the region and there is an important dairy production region in the area that has also been significantly impacted. Some news reports have suggested livestock losses have occurred as some animals have been caught up in the flooding and drowned. The extent of all the damage is not known, but all of this calamitous weather has occurred in the same year that record setting heat and dryness has persisted across southern parts of Australia. This has been one of the hottest summers ever recorded in some areas with five to six weeks of above average temperatures and at least three weeks in which extreme highs have varied from 110 to 120 degrees in at least a significant amount of the nation's beef and lamb livestock country.

Weather conditions are expected to gradually change this month bringing an end to the heat wave and an end to the excessive moisture and flood problem. However, for the next week there is not likely to be much change except some of the extremes in both the heavy rainfall and hot temperatures will be reduced as time moves along.

Lower U.S. Wheat Exposed To Potentially Damaging Cold

A brutally cold morning occurred Thursday, Jan. 31, across the Midwest. Extreme lows slipped below -30 degrees Fahrenheit as far to the south as northern Illinois and northeastern Iowa while below -20F over a larger part of northwestern Illinois and Iowa. Subzero degree Fahrenheit (-18C) temperatures occurred southward into southern Illinois, southern Indiana and northern Kentucky. Snow cover was restricted from portions of Missouri through southern Illinois and portions of central and interior southern Indiana to parts of Ohio possibly resulting in winterkill conditions of the region's wheat crop. Assessing the crop damage will not be possible before the spring greening season.





Temperatures in the snow free areas of the Midwest were certainly cold enough to induce damage to crops, but there was much debate over how significant that may or may not have been. An assessment of the damage cannot be made prior to the green up season in late winter or early spring. Some crops may green up, but will not have much production potential because sometimes the cold does not kill the plants, but it damages their reproductive systems.

Snow cover helps to protect wheat from damage in cases like this when temperatures turn bitterly cold. Most of the snow covered areas in the lower Midwest probably will not encounter much damage, but some of the temperatures did get into the negative teens and negative 20s in some production regions which might have induced some damage even with a thin layer of snow on the ground. World Weather, is not very concerned about crops that have snow on the ground even in the case of negative 20s and negative teens, but concern does exist for areas that slipped to the negative single digits with little to no snow cover. Some of the snow cover in eastern and southern Ohio and southern Indiana was a little thin and sometimes spotty which may have left crops in that region vulnerable to damage.

Last week's unusually cold weather in the U.S. has raised the potential for some crop damage, but traders, analysts and meteorologists can only speculate on the impact for this year's production. A true understanding of the scope of this event will not be known until spring and for many of the impacted fields the bottom line may not be known until the harvest is complete. Some of the lower Midwest wheat was not well established last autumn because of delayed planting due to too much rain and then temperatures in November turned quite cool earlier than usual limiting the time for adequate emergence and establishment. Some of the poorly established crops might have been more adversely impacted by this week's cold than crops that developed normal root and tiller systems prior to dormancy.