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The Canadian Agriculture Weather Prognosticator

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World Weather At A Glance

- Argentina is quickly turning too dry and needs significant moisture
- Argentina should get rain periodically Feb. 7-10
- Brazil weather has continued to be favorably mixed since mid-December, despite pockets of dry and wet conditions
- Northwestern Algeria, Morocco and southern and eastern Spain remain too dry, but should get some beneficial late winter and early spring rainfall
- China rapeseed and wheat areas are in good shape
- India needs rain to support dryland winter crops; pulse crops may be most at risk of lower yields
- Northwest U.S. Plains wheat may have been damaged in early January cold
- Russia still faces spring flood risk

February, March Promise More Moisture

Early last month a stratospheric warming event took place and dropped temperatures down across most of North America. The event enhanced the northwesterly flow pattern that was prevailing aloft and further restricted precipitation across the Prairies. That event is now over and weather patterns have returned to those that dominated December, but more change is coming.

El Nino is steadily weakening and as it does there will be opportunity for more weather systems to reach across the Prairies producing periodic rain and snow events. There will be some "potential" for a larger storm to evolve, although that may not occur until March. Regardless, the prospects have improved for periodic rain and snow events over the next couple of months and very few producers will find a good reason to complain about that.

This week's incredible warmth is nothing more than a resumption of that which dominated December. Both the 18-year cycle data and El Nino are promoting the warmer than usual conditions. However, as El Nino abates later this year the 18-year cycle will have a greater influence on the atmosphere along with ocean surface temperatures in the eastern Pacific Ocean. That is the reason why World Weather, Inc. believes improved precipitation is going to occur in February and March.

Now, do not read too much into that! The trends are not suggesting above normal precipitation—at least not in the most seriously drought stricken areas of the Prairies. A full restoration in the moisture profile is certainly not expected and the precipitation that impacts southern and eastern Alberta and western, central and southwestern Saskatchewan will be far too light for a serious change in the moisture profile, but any precipitation will be better than none. The trend change will provide greater hope for changes in 2024.

Model data for the driest areas in the southwestern Prairies handicaps the region limiting the amount of moisture that falls and temperatures may continue too warm for snow accumulations to last very long. The warmth will ensure that when it does snow the snow will melt and moisture should seep into the soil because of the lack of ground frost.

There is good news for parts of Alberta and western Saskatchewan for the summer. Weather pattern changes should push a high pressure ridge far enough to the east in the Prairies and U.S. Plains to bring moisture in from the Pacific Ocean and possibly from the southwest monsoon in the United States.

Some of the lingering effects of the Hunga Tonga Volcano remain in the upper atmosphere and that may promote another warm biased summer and could limit monsoon moisture from evolving normally in the southwestern United States. Both features could impact the western Prairies summer outlook leaving a drier and warmer scenario behind, but it should still rain more than in recent past years.

The eastern Prairies may have the greatest risk of a warm and drier biased summer after timely spring precipitation. More on that will be provided later in this prognosticator.

Mid-Winter Prairies Moisture Situation

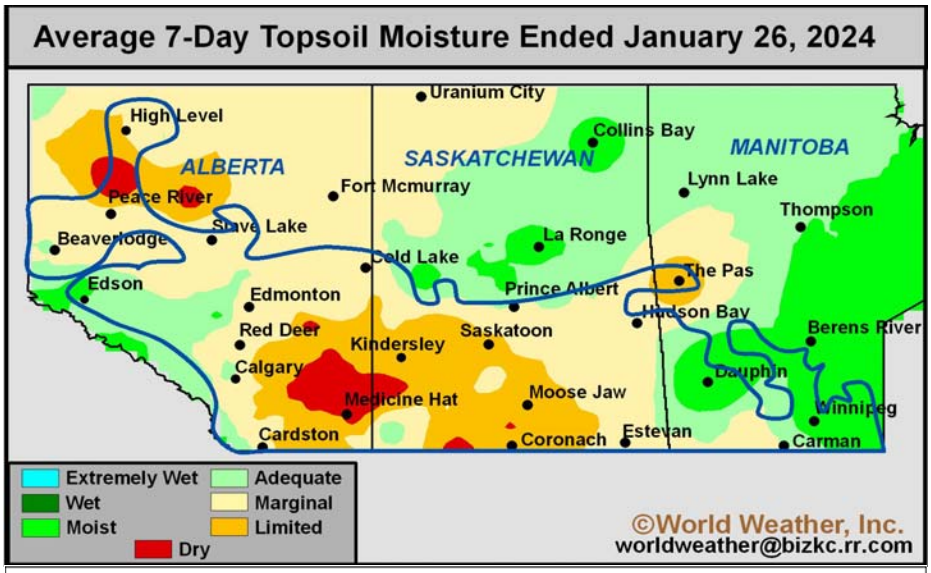
Soil moisture at the end of the growing season and just prior to the cold season arrival was quite limited in the top and subsoil across most of southern and east-central parts of Alberta, in parts of the Peace River region and from west-central through central to south-central and some southwestern Saskatchewan locations. There was also a lack of moisture noted recently around the Pas, Manitoba.

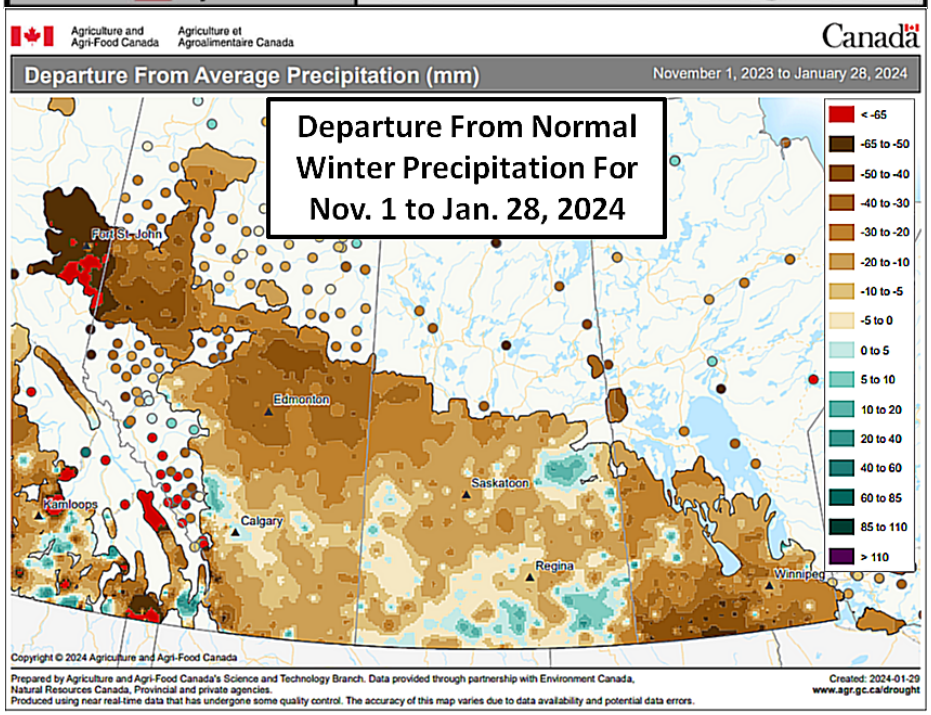
Winter precipitation (November 1 through the end of January) has so far been well below normal in many areas across the Prairies. However a few pockets in the northeast of Saskatchewan and from the interior south-central through southeastern parts of Saskatchewan have received greater than usual moisture. Most of the wetter biased areas received their moisture abundance in November and not so much in recent weeks.

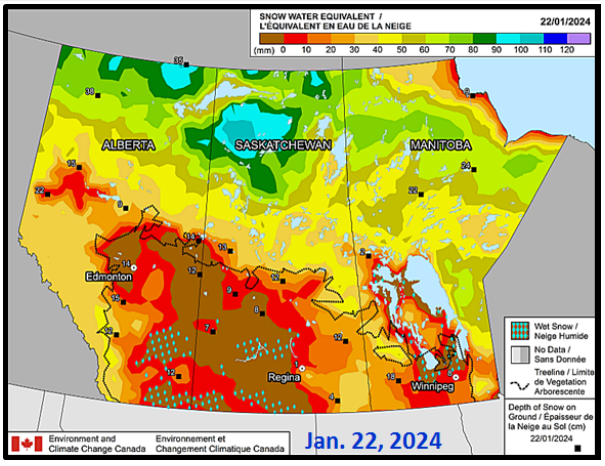
Snow cover across the Prairies remains well below normal. Some areas are snow free and others have accumulations that are notably less than most winters. This lack of snow is the byproduct of this moderately strong El Nino and the 18-year cycle melding together to produce well below normal precipitation. This combined influence, though is expected to weaken enough to allow for some improved precipitation in February and March.

In the meantime, what little snow is present across the Prairies is not holding a very significant amount of moisture. Most of the central and western parts of Saskatchewan and western and some central Alberta locations are noting less than 20 millimeters of moisture as we get closer to spring. A fair amount of Manitoba is also reporting similar conditions. That is not enough moisture to fix the deficits across the Prairies and certainly raises the importance of timely late winter and spring precipitation to support planting, emergence and establishment in the driest areas.

The next few weeks will be of critical importance for providing enough moisture to start planting and to support early season crop development in April and May. Changes are coming, but some of the change will include a rising potential for drier and warmer biased conditions in the eastern Prairies during the summer months.







APRIL/MAY 2024; Wettest Southeast

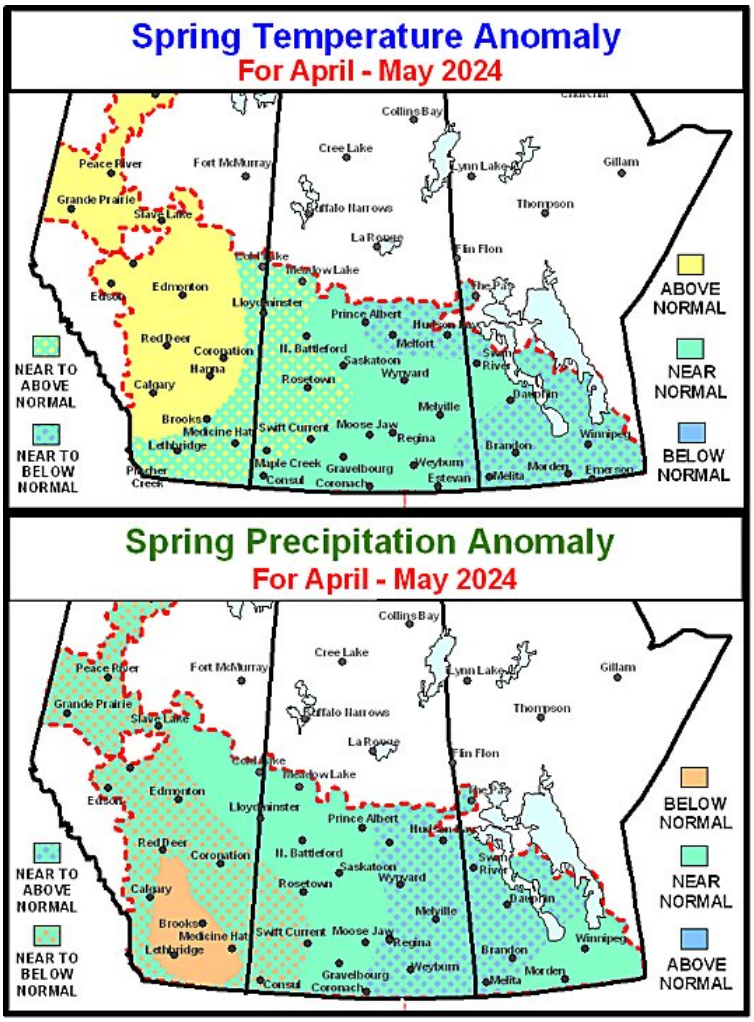
Spring weather is expected to improve across the Prairies. Relief from dryness is expected in all areas; including the chronically dry areas in the southwestern Prairies. However, there will be some lingering dryness and at this point in the winter it is very difficult to determine how much relief will occur during the March through May period.

Some of the climatic trend data has suggested sufficient March precipitation will occur to support planting and early season crop development in the previously driest areas in the Prairies. World Weather, Inc. is doubtful that soil moisture will be restored to normal, but confidence is rising that spring planting moisture will be favorable in many areas.

Moisture totals in the southwestern Prairies for spring are still expected to be lighter than usual especially near the U.S. border in southern Alberta. A drier bias may continue in the soil for a longer period of time, but planting moisture should be sufficient to get started with 2024 crops

There is potential for a few weather disturbances to impact central and western Saskatchewan and parts of Manitoba to greatly improve the moisture profile. There may be some delay in getting into a few fields, but concern about dryness should be greatly reduced by the end of spring and probably by the end of April.

Ridge building is expected to begin in the central parts of North America during May. That may begin to influence the eastern Prairies with less precipitation and some warmer biased conditions, but planting should not be impacted. The importance of late winter and early spring precipitation will be high in both the southeastern and southwestern parts of the Prairies for different reasons. Moisture is needed in the southwest because without it planting will not be possible. Moisture in the southeastern Prairies is needed to build up the moisture profile so that when drier and warmer biased conditions evolve in summer there will be a better potential for crops to handle the situation without serious stress.



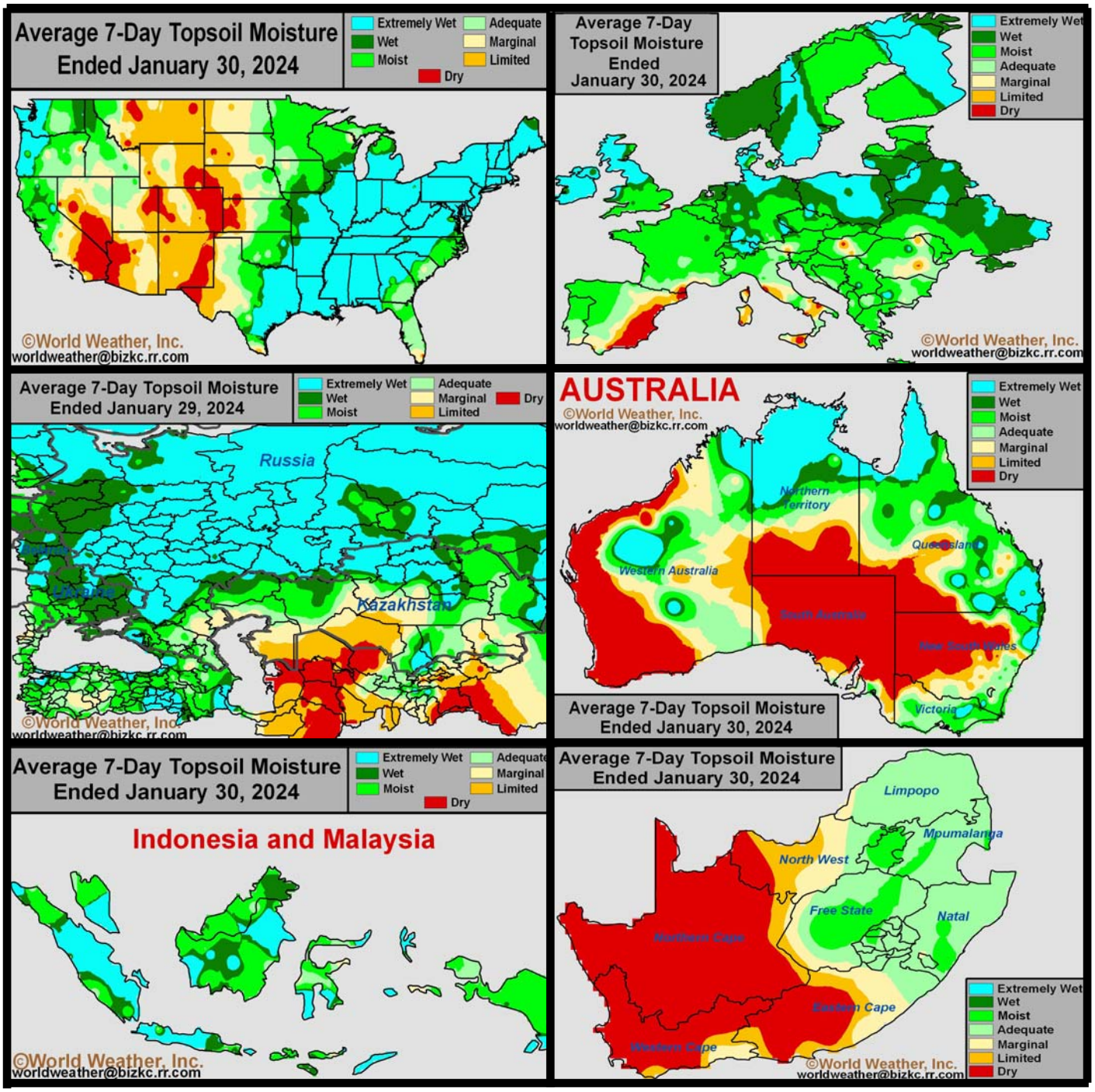
Spring weather will be determined by the 18-year cycle and potential for La Nina to evolve. Some computer forecast models have suggested that a transition from El Nino to La Nina will be occurring in the spring this year and if that evolves there may be some further complications to the official forecast. World Weather, Inc. believes that La Nina may be a little slower evolving this year than advertised by some computer forecast models and that will have implications for the Prairies.

La Nina events tend to enhance summer rainfall across the Prairies with northern areas wetter biased. In the spring, though the influence of La Nina can be more varied depending on how aggressive the event is evolving and what other weather patterns are present playing out in the background. For now, World Weather, Inc. will limit the involvement of La Nina during the spring season and leave most of the forecast influence up to ocean temperatures in the eastern Pacific and the 18-year cycle, although the situation will be closely monitored.

The bottom line for spring this year should be encouraging for the Prairies farmers. Even though there is some potential for lingering dryness in the southwest, there should be enough precipitation at one time or another support spring planting , emergence and establishment.

Temperatures will be warmer biased in the Prairies this spring. Confidence in that is moderately high. El Nino to neutral ENSO years are usually cooler than El Nino to La Nina years, but it is too soon to determine which influence will we see in 2024. Therefore, the temperature outlook is mostly derived from the 18-year cycle data and confidence in the forecast based on that data is moderately high.

Selected Weather Images From Around The World



Australia received some much needed rain in its sorghum and cotton production areas of Queensland and far northeastern New South Wales this past week moistening the topsoil for improved summer crop conditions. South Africa has been drying down for a little while, but timely rain is forthcoming and should bolster soil moisture for improved crop conditions once again in the next ten days. Western parts of the CIS are very wet and there is a significant amount of snow on the ground in western Russia. Flood potentials are rising above average in the western CIS for the spring because of wet soil beneath the heavy snowpack. Malaysia and Indonesia along with the southern and eastern Philippines are favorably moist for palm oil and other crop production. U.S. soil conditions have become wet in the Midwest, Delta and southeastern states recently which is going to be supportive of spring planting in a few weeks. Spain, Portugal and northwestern Africa are all too dry and need significant rain for winter and spring crops.

30– and 60-Day Outlooks For Prairies Improving

As suggested in the previous prognosticator, the decline in El Nino will improve the prospects for rain and snow across the Prairies. This will be evident almost immediately in this coming week as waves of rain and snow begin to impact the Prairies.

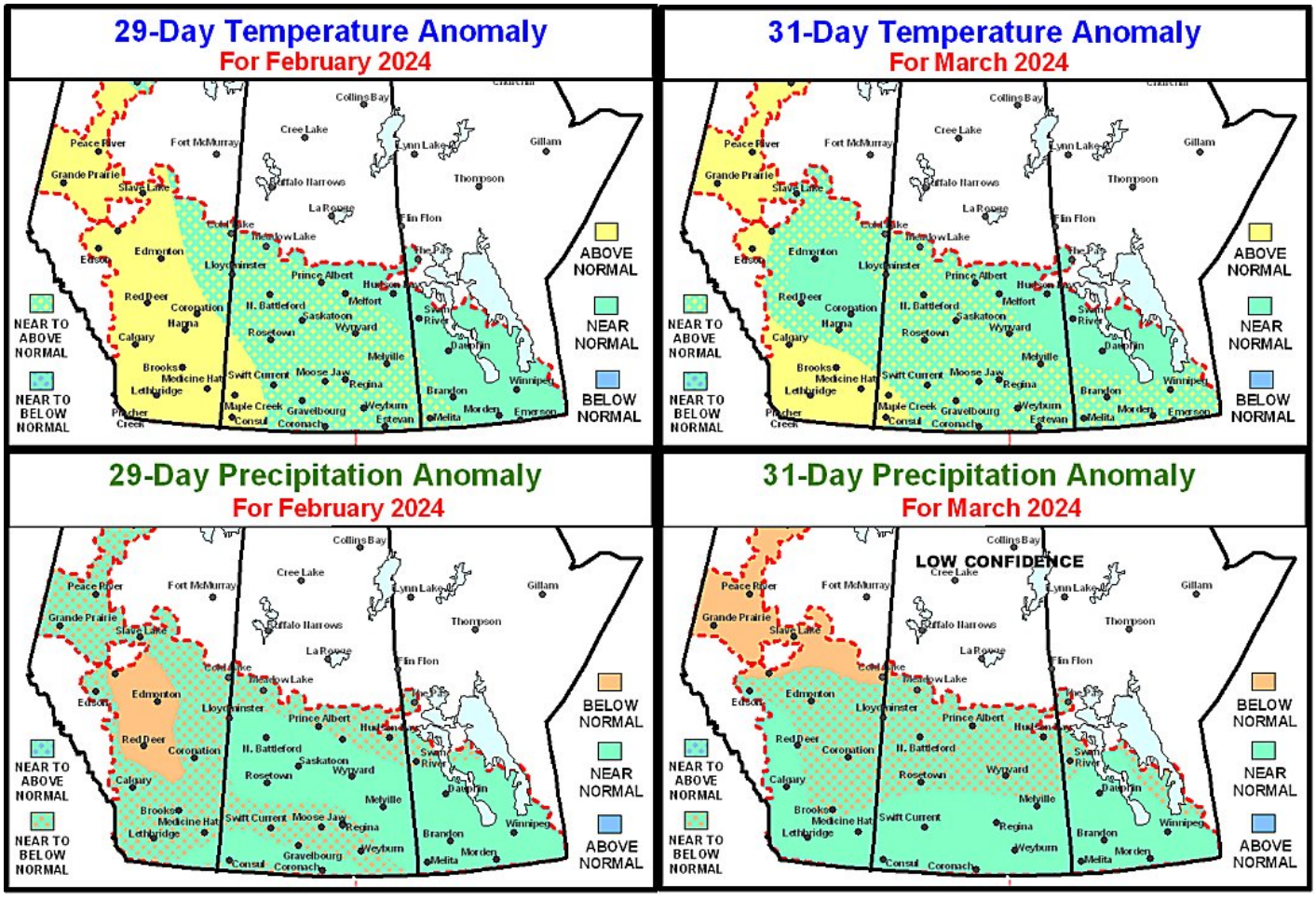
Looking back at other member years in this 18-year cycle, World Weather Inc. cannot ignore the year 2005. In that year ocean temperatures in the Gulf of Alaska were similar to those present now and precipitation in both December and January was very similar to that of this year along with a warmer than usual temperature bias in the same two months. For that reason, the correlation factor is relatively high and confidence has risen over the prospects for precipitation occasionally in February and March.

These changes will change the environment enough to improve the prospects for better topsoil moisture prior to the start of spring. With that said, though, there will not be such a large amount of moisture in the driest areas of the southwest to eliminate long term deficits. The need for timely precipitation in the spring will remain high. However, generating precipitation at times in these two months will give the atmosphere some moisture feedback in the spring when temperatures begin to rise to generate additional rain..

Temperatures will be warmer than usual during the next two months in the western Prairies and near to above normal in the eastern Prairies. Most of the warmth is not expected to be nearly as anomalous as that of December or late January.

A boost in snowfall is expected in February and March, ,although the greatest amounts should occur from northwestern through east-central and interior southeastern Saskatchewan and farther east into Manitoba. Snow may fall in the southwestern Prairies, too, although warm temperatures will frequently melt the snow adding more moisture to the topsoil for use in the spring.

Looking ahead to spring the outlook becomes a little more tenuous depending on the demise of El Nino and the possible development of La Nina, but confidence is moderately high that April precipitation will be good as well with the greatest precipitation shifting to the west in May and June. Much of this will depend upon an anticipated shift in the high pressure ridge to the east during spring raising the potential for drier and warmer summer weather in the southeastern Prairies.



SE Prairies Drying In Summer 2024; Otherwise Wetter

As noted in the early January 2024 prognosticator there is support for improved rainfall across the Prairies this year. The only concern that has been revealed in the extended model data is the tendency for the 18-year cycle years to promote dryness in the U.S. Plains and western Corn and Soybean Belt. Some of that dryness is poised to expand into the southeastern Prairies, but that may be dependent upon the potential development of La Nina and how warm or cool ocean water temperatures are off the west coast of North America.

Early indications suggest a favorable summer of weather for the Prairies. The best news of all is that despite, the 18-year cycle maps all having a drier tendency in the southeastern Prairies La Nina could come along with help to generate greater rain instead of less of it.

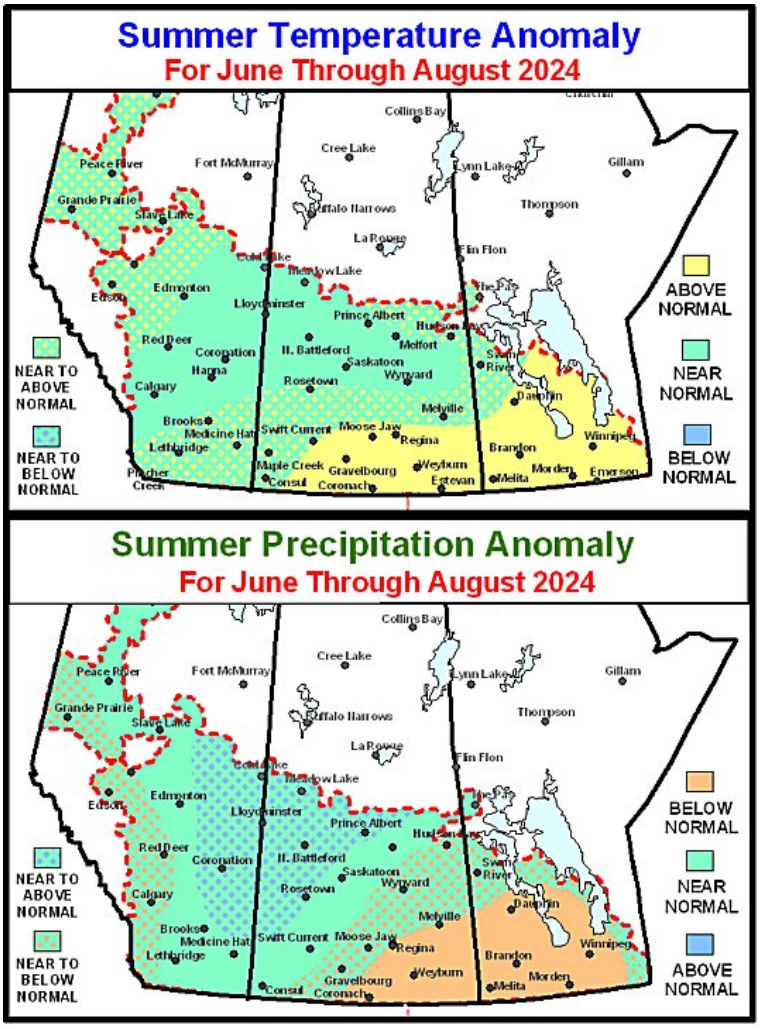
El Nino is still breaking down and is considered to be a moderately strong event that is still under way. However, in the next two months El Nino is expected to completely dissipate and then the debate over possible La Nina will begin.

La Nina events of the past have helped to enhance rainfall across the Prairies especially in years when El Nino begins the year. The multi-year La Nina that occurred from 2020 to 2022 was associated with dryness in North America and the western Prairies; so, why is this La Nina supposed to be wetter?

The answer is in the atmospheric makeup when moving from an El Nino into a La Nina. Such a situation is much different than moving from neutral ENSO conditions in 2020 into a La Nina and then prevailing there for the following two years. The combination of the persistent La Nina and the 22-year solar cycle along with the 18-year cycle resulted in a ridge of high pressure that was over the western parts of North America keeping rainfall quite limited.

This year's ridge of high pressure is expected to be farther to the east and unlike 2023, but U.S. monsoon is expected to be a bit more active and water temperatures in the eastern Pacific Ocean should be near to above normal. Such conditions should help to stimulate more routine occurrences of rain.

Dryness advertised in the southeastern Prairies during the summer is mostly coming from the 18-year cycle data. However, considerations of that event were further enhanced by the lingering impact of the Hunga Tonga Volcano that erupted in January 2022 and by warmer biased temperatures resulting from both the 18-year cycle data and the volcano.



The 18-year cycle data already promotes rain for central and eastern Alberta and western Saskatchewan and if L Nina evolves there may be an expansion of the wetter conditions across a larger part of the Prairies; including the southeast where some lighter than usual rain is possible.

Even though there has been some concern about dryness in the southeastern Prairies and areas southward into the United States during the June through August period there is potential for the eastern Prairies to be wetter biased in the spring which may help carry crops into the summer without a huge amount of serious stress. La Nina would reduce the amount of dryness expected and could help to further enhance rainfall and the potential for more improvement.

Autumn weather this year should be at least somewhat wetter than the past few years. Producers should anticipate some delay in harvesting with late August and September being most favored for the start to the trend change.

The official forecast is not excessively wet, but wet enough to slow down field progress relative to that of previous autumns.

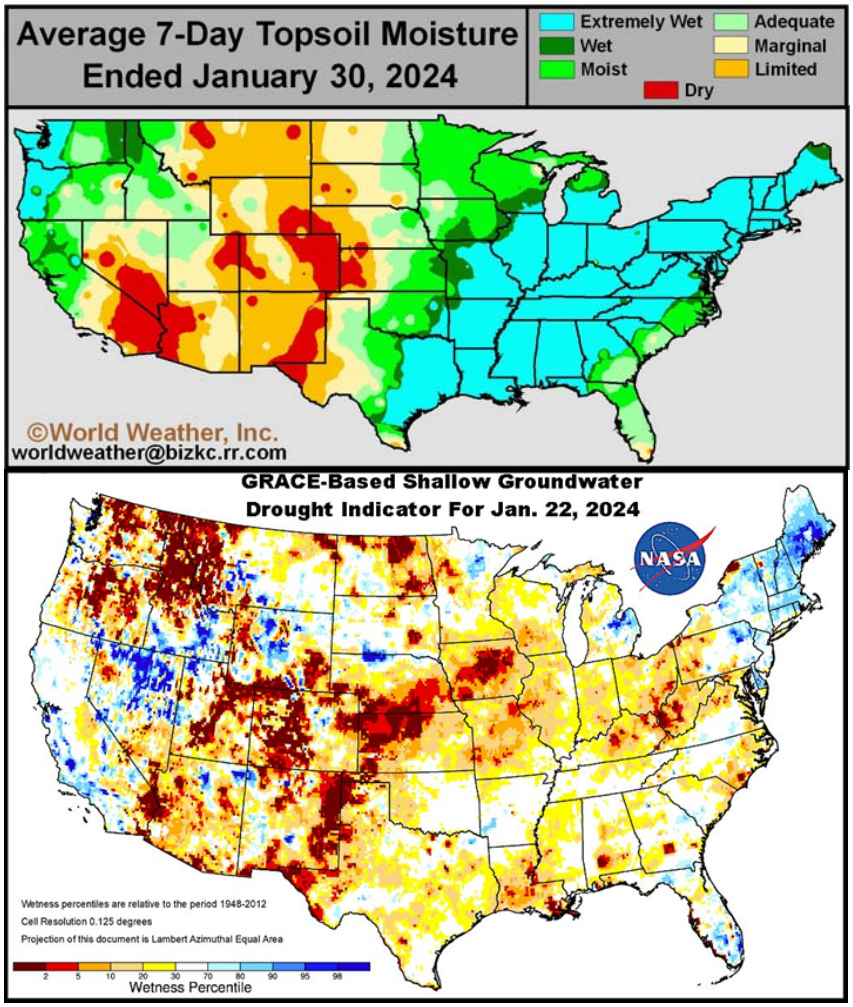
Lower, Eastern U.S. Midwest Moisture Profile Improves

Recent precipitation in the U.S. Midwest has raised soil moisture in a notable manner. This change in weather is contrary to typical El Nino years in which the eastern Midwest tends to be drier than usual. Winter is only half over, but the trend is likely to show up again a little later this winter and/or early spring possibly bringing the spring planting season in with some areas carrying moisture abundances.

Concern over lingering moisture deficits in parts of the Great Plains and Midwest during the autumn and early winter was of great interest because of the 18-year cycle data favoring a drier and warmer than usual summer this year. That drier bias is still a possibility, but with recent precipitation some of the worry over how quickly dryness may evolve has—at least temporarily—been eased.

It is still possible that the U.S. Midwest and Delta come into spring wet and then suddenly turn dry and that can lead to some trouble with crop production since planting delays could evolve. It is far too early to speculate over that potential for now, but the situation must be closely monitored.

There are also some ongoing moisture deficits deep into the soil over a part of the Great Plains and the west-central and northwestern Midwest. These areas may not get their moisture profiles fully restored prior to the spring planting season which will also be of great importance. If La Nina does evolve this summer it will attempt to build a ridge of high pressure over the central United States and if it is a strong ridge rainfall could be suppressed and the dryness that lingers down deep in the ground could quickly become a factor for crop development in the first half of summer. These moisture deficits from the west-central high Plains into Iowa need to be eliminated prior to the development of the summer high pressure ridge to avoid a quick start to crop stress.



For now, the moisture profile in the U.S. is favorable enough to keep these concerns over summer dryness to a minimum, but you can expect much interest in this situation later this year if La Nina is still advertised to evolve aggressively by summer.

In the meantime, dry soil in the western Great Plains is being closely monitored. Typically, in an El Nino winter precipitation occurs sufficiently in the west-central and southwestern Plains to improve the moisture profile by spring. However, as noted previously this is not a classic El Nino year and there is potential for some surprises. The moisture profile in the United States must continue to be closely monitored to get a better handle on what may evolve in the summer.

For now, the prospects for U.S. crop development and spring planting potentials are good based on the abundance of moisture in the eastern half of the nation. Some concern may evolve for the western high Plains, but Montana and North Dakota should get rain in the spring—like the Prairies.

Argentina Suddenly Turns Dry

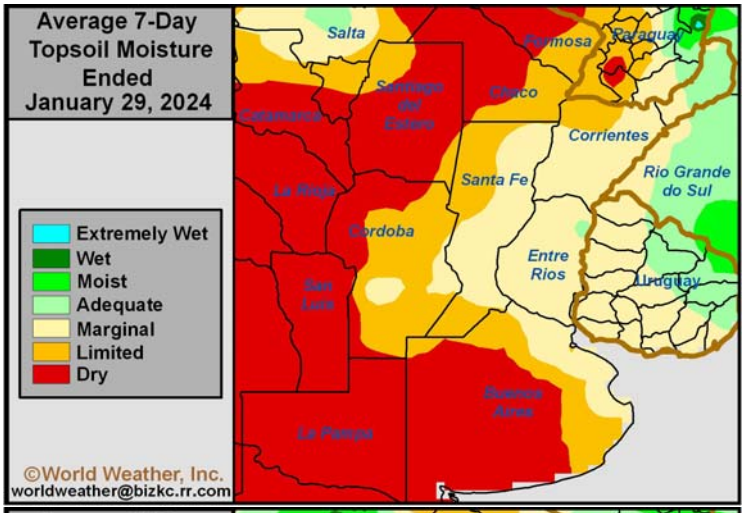
Changing demand for corn and soybeans recently has pressured commodity futures lower. This has impacted wheat and other small grains as well as canola. Weather just has not been bad enough to maintain the higher prices of late and with demand down market weakness has evolved.

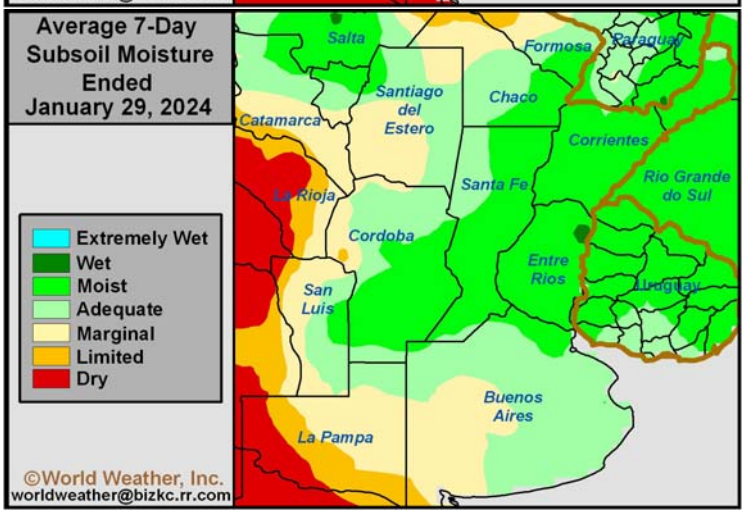
Brazil led the marketplace for a while in November and December with its failing monsoon pattern and lost acreage for soybeans. Safrinha corn area planted was thought to change too, but starting in the middle of December rainfall became timely and temperatures less hot in Brazil leading to improved crop development. The weather since that time has been good enough that some yield improvement has likely begun and the worry over production has turned around or at least leveled off.

In the meantime, Argentina experienced timely rain and nearly ideal planting weather in November and December. Sufficient rain fell to support early season crop development and production potentials began to rebound after two to three years of troublesome weather that cut into production.

Argentina's good weather joined in with Brazil's timely rainfall to lift South America summer crop production sufficiently and start a sell off in commodity futures. But in the last couple of weeks in January a sudden rise in the Southern Oscillation Index and a Madden Julian Oscillation (MJO) event occurred to suddenly stifle rainfall in Argentina.

Some areas in central and southern Buenos Aires and La Pampa have already been three weeks without rain and the ground is quickly becoming too dry– at least in the topsoil. Temperatures were frequently cooler than usual during the spring and early summer limiting the impact of drier biased periods, but that is all changing now.





This week's temperatures in Argentina will rise well above normal sending highest afternoon temperatures through the coming weekend and into early next week into the middle and upper 30s to the lower 40s Celsius. That kind of heat with declining soil moisture will raise stress for many crops—especially the late double cropped soybeans that are planted behind the wheat harvest in southern Argentina.

The coming week of weather will be of great interest to the commodity trade. If advertised rain for the second week of February fails to evolve the stress under way in Argentina today will likely translate into lower production potentials because of the coming week of heat and dryness will deplete some of the subsoil moisture reserve leading to greater crop stress, .

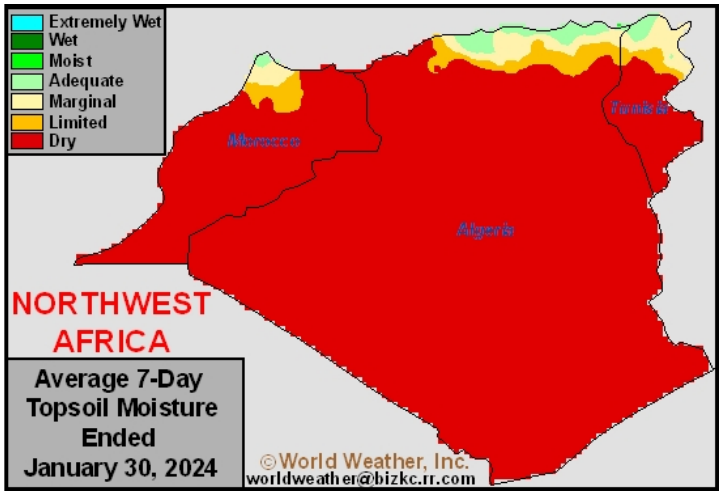
Most computer forecast models are suggesting a return of improved rainfall for Argentina in the second week of February. The MJO event is over and the Southern Oscillation Index is falling. All of that is occurring while El Nino is still in place and yet weakening. This provides a mixed influence on Argentina weather, but (for now) the trend should be toward resuming rainfall in another week, but if that fails to evolve there will be some potential for the market to run futures prices a little higher once again, although much of that will be determined by Brazil weather which should remain good.

Northwest Africa, Spain Continue Too Dry

Warm ocean water temperatures in the eastern Atlantic Ocean off the northwestern African and southwestern European continents were expected to help induce greater rainfall this late winter and early spring in northwestern Africa and the Iberian Peninsula, but that has not evolved yet. El Nino years are usually more supportive of rain in the Mediterranean Sea region.

Dryness this week is being perpetuated by a strong ridge of high pressure over western Europe and northern Africa. The ridge is expected to block precipitation and induce warmer temperatures for another ten days. That gets winter crop areas a little closer to the start of the spring growing season and the need for rain will begin rising sharply. Time is running out for some of these drier crop areas including some very important durum production areas.

World Weather Inc. is still advocating rain for the drier biased region, but changes will have to start occurring soon to prevent additional production cuts. Some cut in production has already occurred because of dryness in Morocco. Southwestern Morocco irrigates most of its winter small grain crop and water supply has been critically low for two to three years preventing any planting from occurring. That has already cut into production. Northwestern Algeria and northeastern Morocco are also quite dry and the water supply in southern Spain is quickly becoming dangerously low as well.



A serious change in weather must evolve soon to save the winter crops in these areas. Not all of the Iberian Peninsula or North Africa are hurting for moisture. Timely rain and good soil moisture has evolved in northern Spain and from north-central through northeastern Algeria into northern Tunisia. These areas should have a favorable production year as long as timely rain evolves soon.

The next few weeks will be of critical importance for the drier biased areas. Without rain production will be future reduced. World Weather, Inc. believes timely rain will begin in the second week of February and occur periodically into the March. If that forecast is verifies, then much of the worry will be put to rest.

Brazil Drying In West More Beneficial Than Detrimental

Western Brazil, like Argentina, has been drying out recently. Subsoil moisture is still favorable, but another week of below normal rainfall and warm-biased temperatures are expected before rain resumes. The environment may seem like a threat to production, but it is actually going to be nearly ideal because the drying will support early season crop maturation and harvest progress as well as the start of Safrinha crop planting.

Resuming rain in the second week of February should prove to be timely and supportive of ongoing crop development. The moisture and seasonable temperatures should also combine to support highly favorable Safrinha seed germination and plant emergence. Brazil production potential will rise.