



Agricultural Moisture Situation Update

February 28, 2024

Synopsis

Since the January 30, 2024 report, temperatures generally remained above normal across most of the province (**Map 1**), and fortunately for most lands from Grande Prairie down to the US border, precipitation was at least near normal (**Map 2**). During February, above average moisture was received across most of the foothill areas from Edson to the US border, including the plains around Lethbridge, along with parts of the Special Areas. Note that February is typically the driest month of the year so, this in itself was not enough to erase long running moisture deficits, but it does mark a promising shift in recent moisture patterns. In sharp contrast, most of the forested lands from the Swan Hills to Alberta's northern border remained in a drying trend.

Over the past 30-days, total precipitation accumulations (**Map 3**), ranged from well over 100 mm at some of the mountain stations west of Lethbridge, with the greatest amounts measured at the Spionkop Creek station (170mm), located about 25 km northwest of the town of Waterton. During the 60-days since January 1, 2024, the Spionkop creek station has recorded 252 mm of precipitation, followed closely by Gardiner Headwaters (234 mm), Akimina 2 (195.5mm) and South Racehorse Creek (197mm). To put this into perspective, [snow pillow readings](#) are currently below normal through most of the mountain areas and at the height of the season (late April) the snow pillow sites (Gardiner Creek and South Racehorse creek) average roughly 600 and 400 mm of water equivalent in the snowpacks, respectively. So, the moisture gap does appear to be narrowing in some areas, and hopefully this trend continues well into the spring and summer. Farther east, many of the lands along the foot hills received well over 40 mm of moisture and upwards of 20 mm in and around Lethbridge, along with some lands in each of the four agricultural regions (**Map 3**). In contrast, the northern parts of the province received in the range of 1 to 10 mm and snow packs are still critically low here, which is a serious concern heading into the fire season.

60-day Precipitation Accumulations

The trend in near normal precipitation accumulations extends back to about the start of January for roughly 80% of the lands, lying between the Yellowhead Highway and the US border (**Map 4**). North of this, a long running drying trend has continued, with large areas in the north-central parts of the province, trending to near once in 50-year lows.

Snow pack Accumulations

Due to above average temperatures and below normal over winter precipitation, most of the province's agricultural areas have snow packs that are currently well below normal, with the exception of much of the Southern Region (**Map 5**). However, the Southern Region is often snow free at this time of year, so a "near normal" designation on these maps is simply a mathematical derivation, and snow currently on the ground in these areas is still relatively light, and in some areas absent, which is "normal" (frequent) at this time of year. For the most part, few of our agricultural lands have more than 20 mm of water contained in the snow pack (**Map 6**), with the greatest amounts estimated to only be in the 30-40 mm range, across relatively small areas in each of the four agricultural regions. In comparison, most of the lands north of Olds in an average year have at least 60 mm of moisture in the snowpacks, and this grades to well over 100 mm across the Peace Region (**Map 7**). However, winter is not over yet and as we head into spring, and this seasons strong El Niño event wanes, there is still ample opportunity to receive some significant moisture events ahead of the spring melt.

Perspective (Graphs 1-4)

Alberta's dry season typically extends from November to the end of March. So, the wet season still lies ahead and it's impossible to predict with certainty how much moisture we will receive. To illustrate the expected or normal moisture patterns that we typically receive over the coming months, a running 5-day average precipitation accumulation chart is useful. For example, on April 5th, the 5 day average would be taken from the 1991-2020 period for all the April 1 to April 5th periods in that time frame. Each day in the year is thus plotted, yielding detailed seasonal moisture patterns, that many not surprisingly, show a wet spell centered on the May long weekend.

For southern Alberta, Lethbridge's 5-day rolling average chart (**Graph 1**) shows the wet season typically begins in early April, and peaks during the June 6th to June 20th period, with a sharp decline in moisture beginning on or about July 6th.

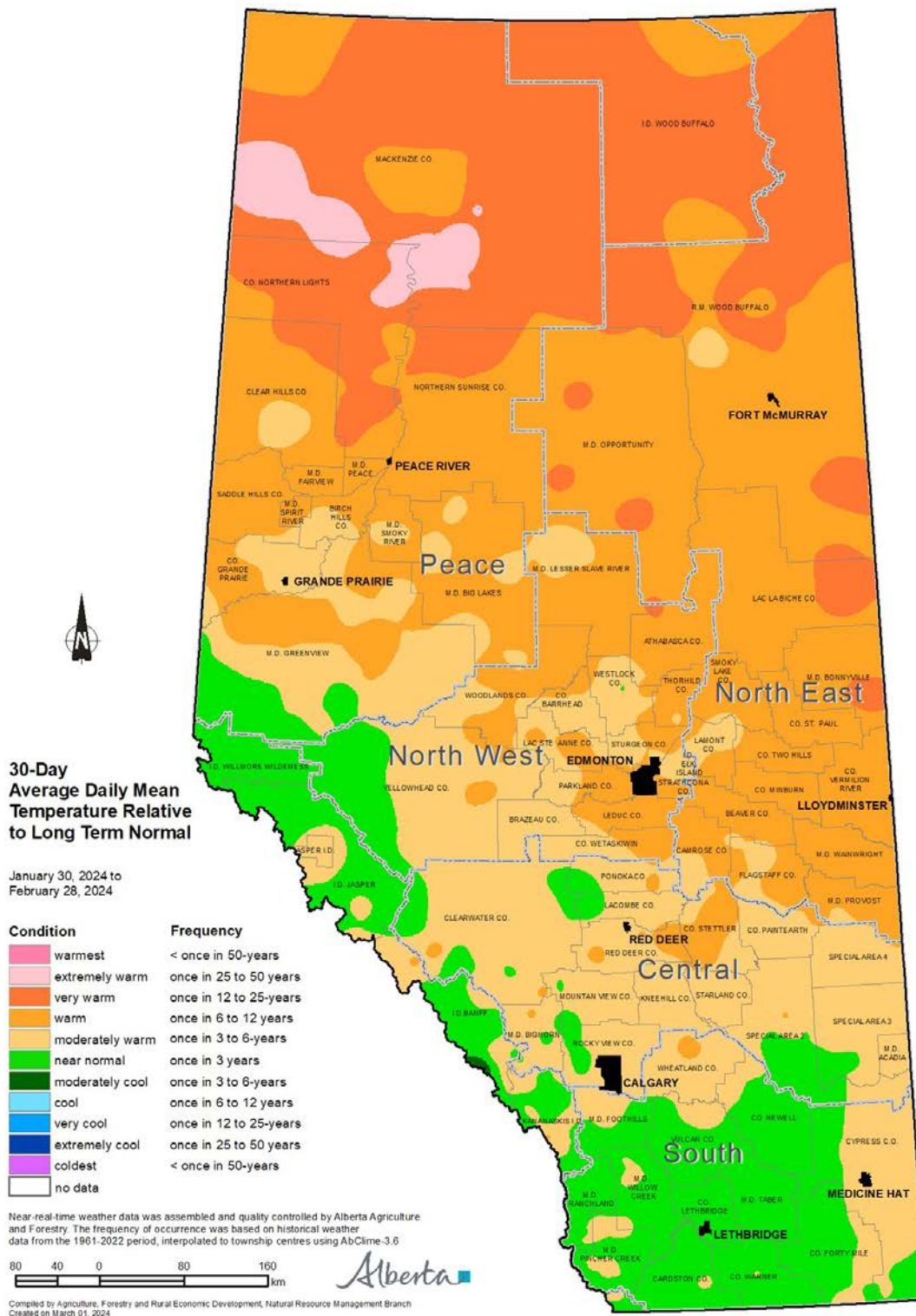
For east-central Alberta, Youngstown's rolling average chart (**Graph 2**) shows a drier trend than Lethbridge between now and the start of the wet season, which then begins a little later, (April 20th), and peaks between June 5th and July 20th. With generally more moisture extending in to late August.

For north-central Alberta, Vegreville's (**Graph 3**) wet season begins around April 14th and has a broad peak from June 1st to August 15th.

For the Peace Region, the town of Peace River's (**Graph 4**) wet season doesn't begin until early May and peaks June 5th to July 12, with several wet episodes persisting well into August and early September.

These charts can be generated for most of Alberta's 500 meteorological stations [here](#). They are very useful for understanding when moisture is due and at this time of year remind us that the wet season still lies ahead of us and we still stand a good statistical chance of seeing reasonable moisture for the cropping season ahead. Alberta is in need of a long overdue wet cycle that finally puts an end to the widespread dry spell that has lasted for many months and in some areas, several years. Forecasts over the next several days are promising further moisture, particularly across the southern-half of the province.

Map 1



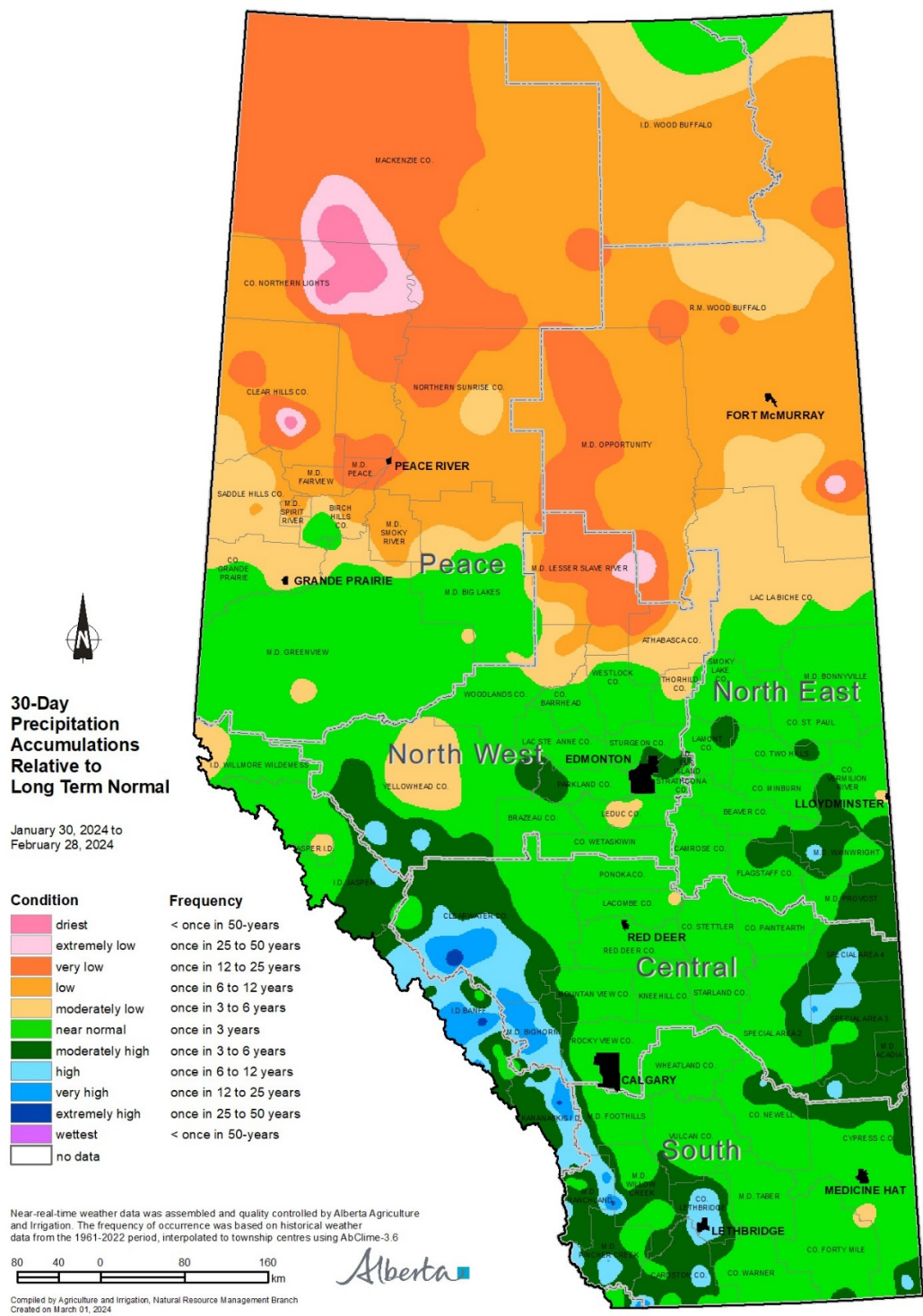
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Map 2



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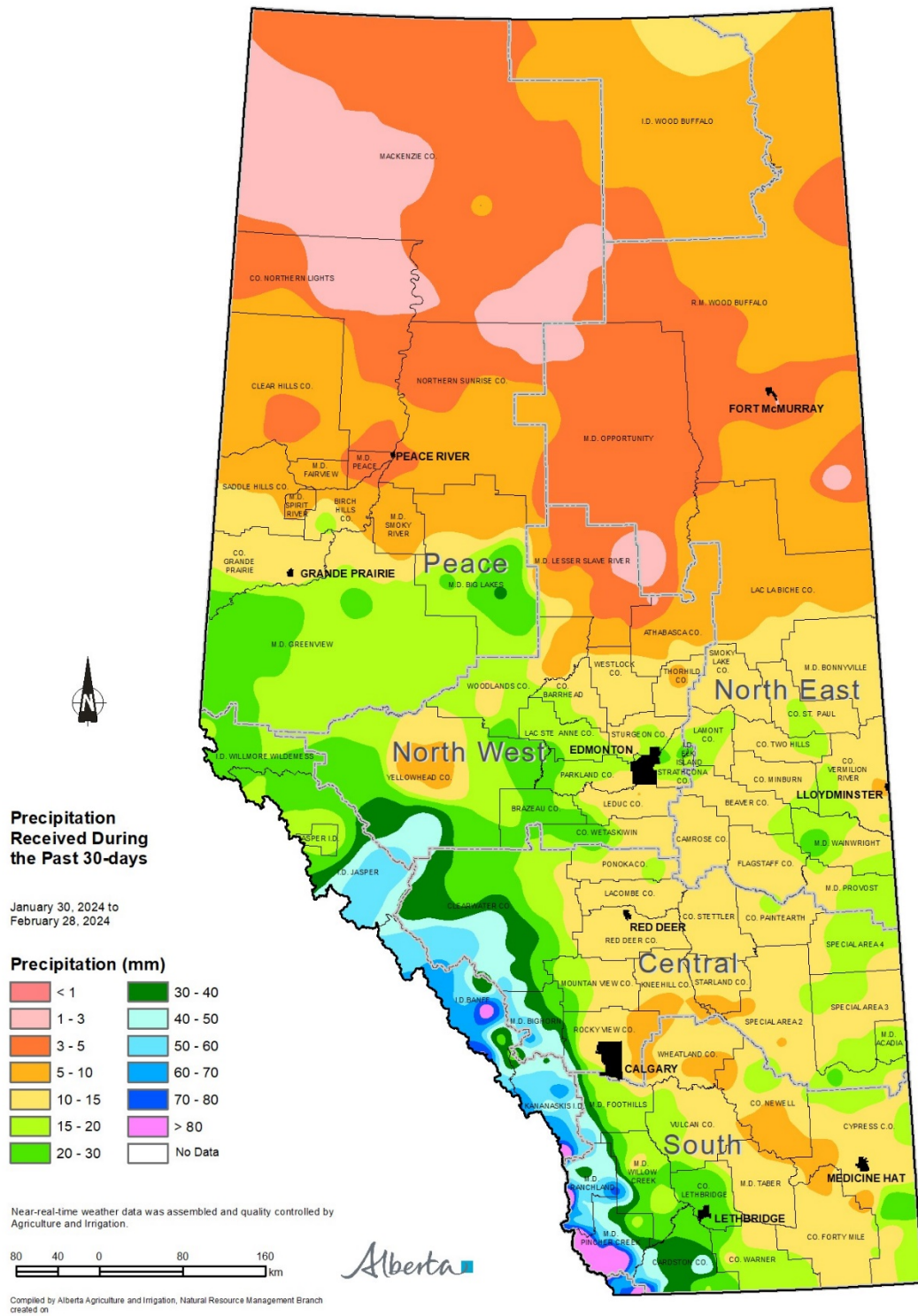
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Map 3



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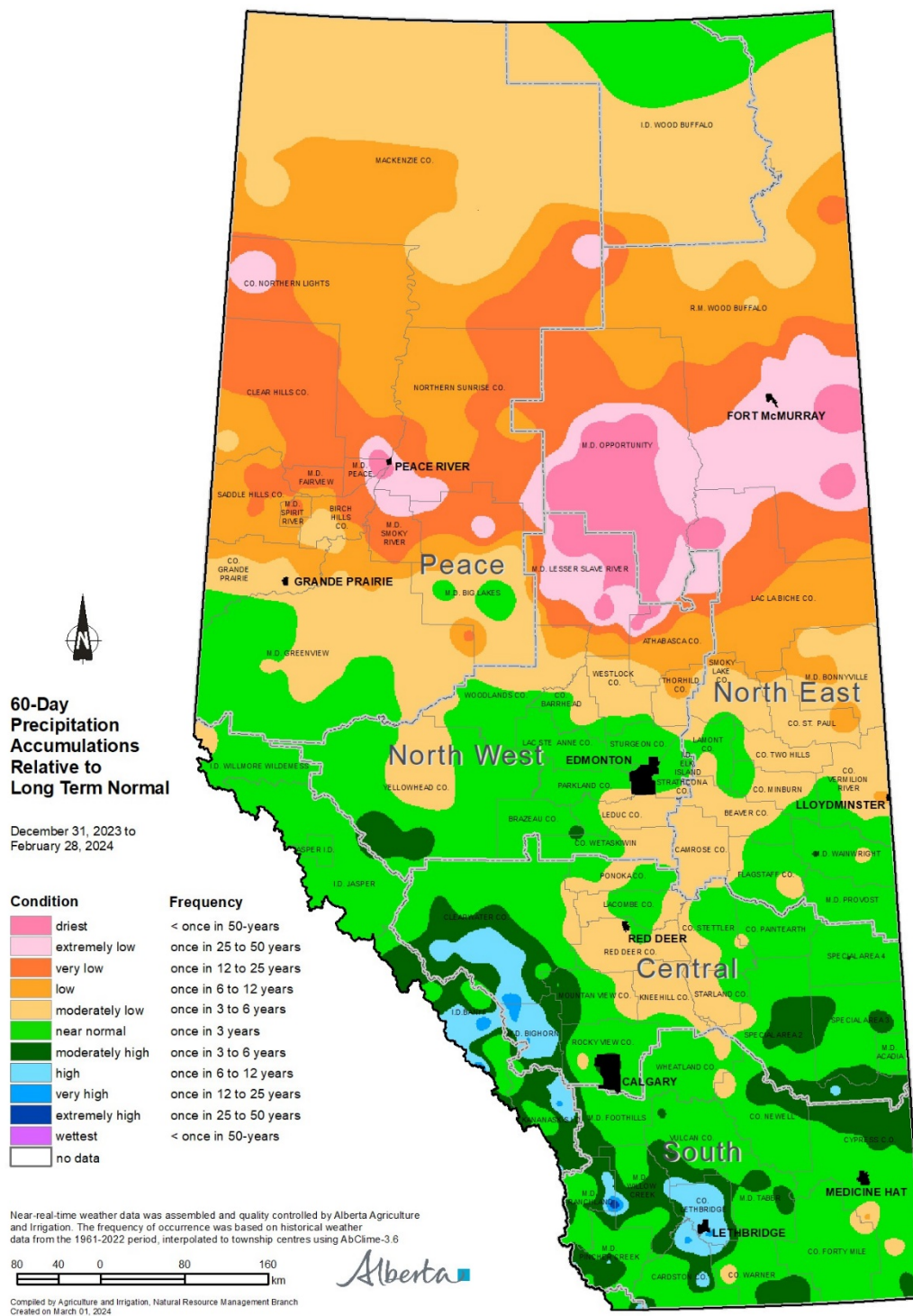
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Map 4



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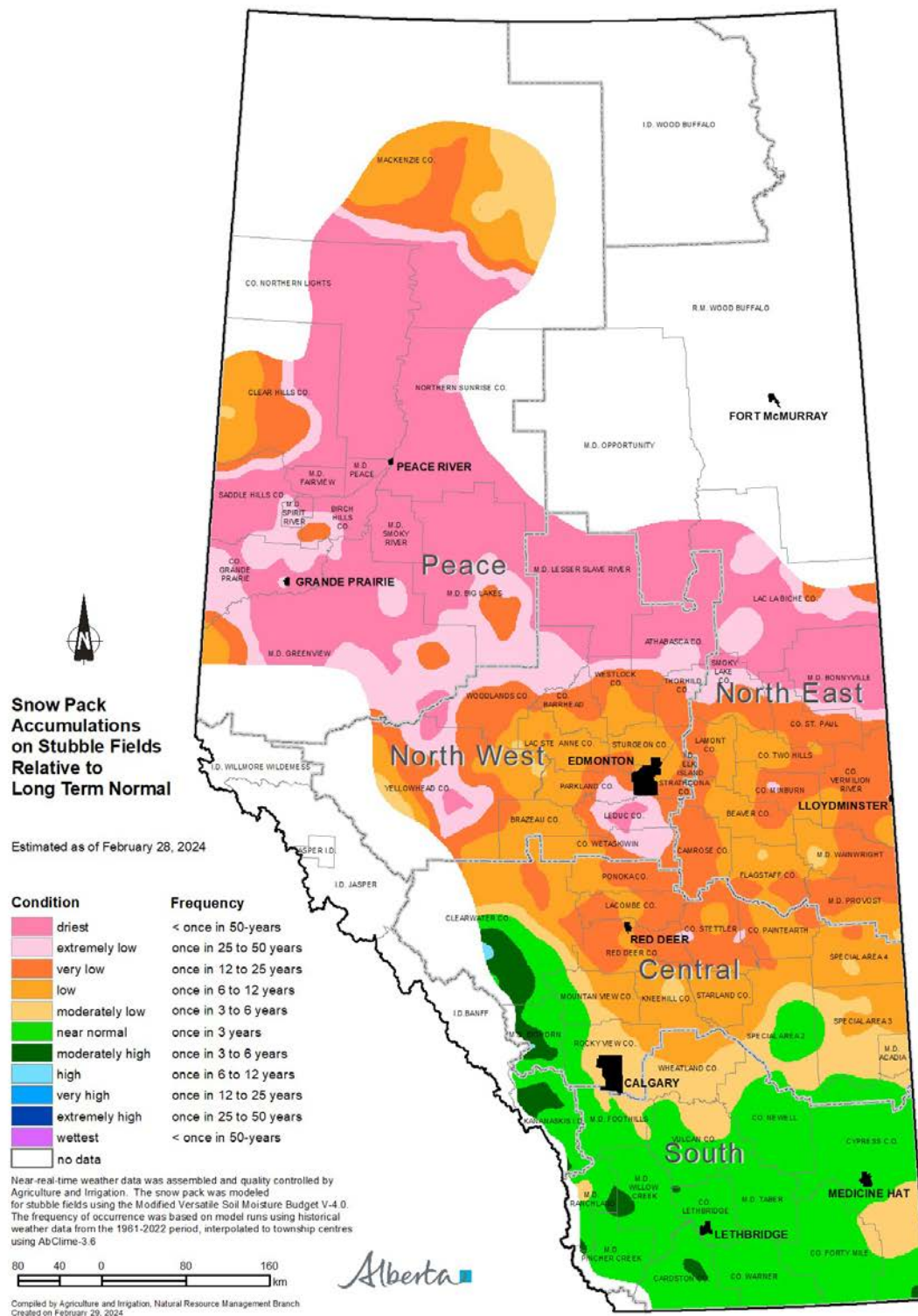
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Map 5



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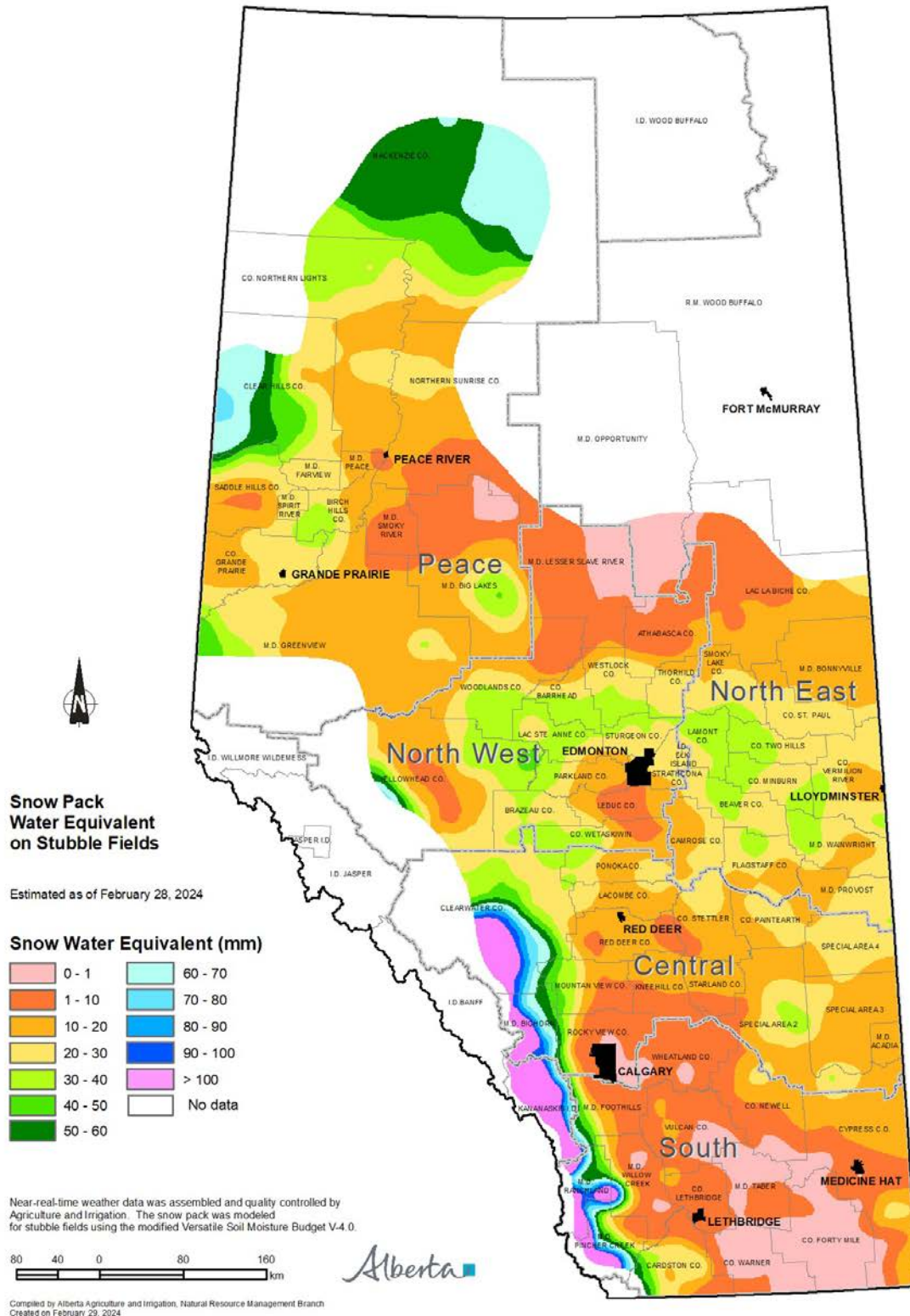
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Map 6



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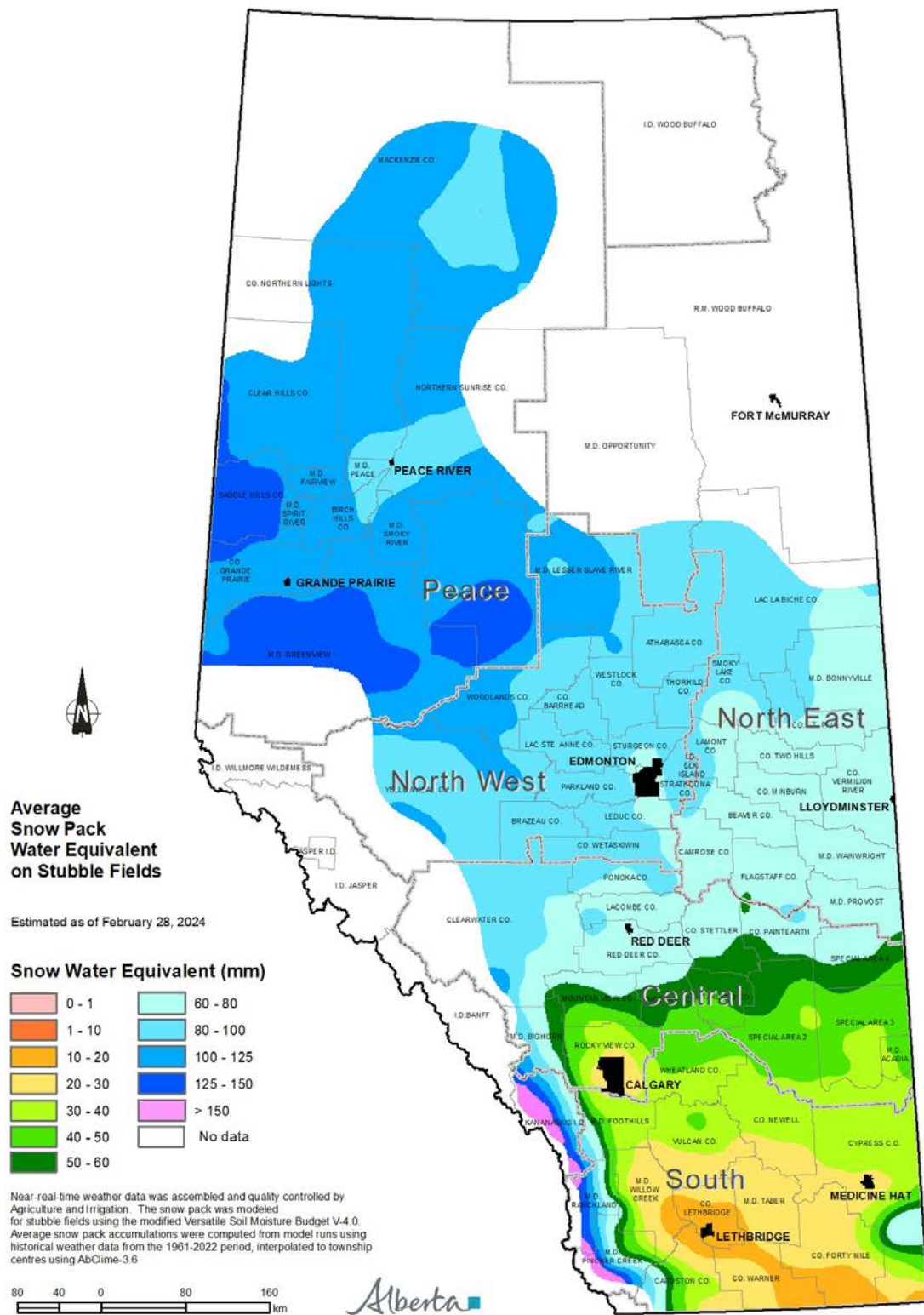
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Map 7



Compiled by Alberta Agriculture and Irrigation, Natural Resource Management Branch
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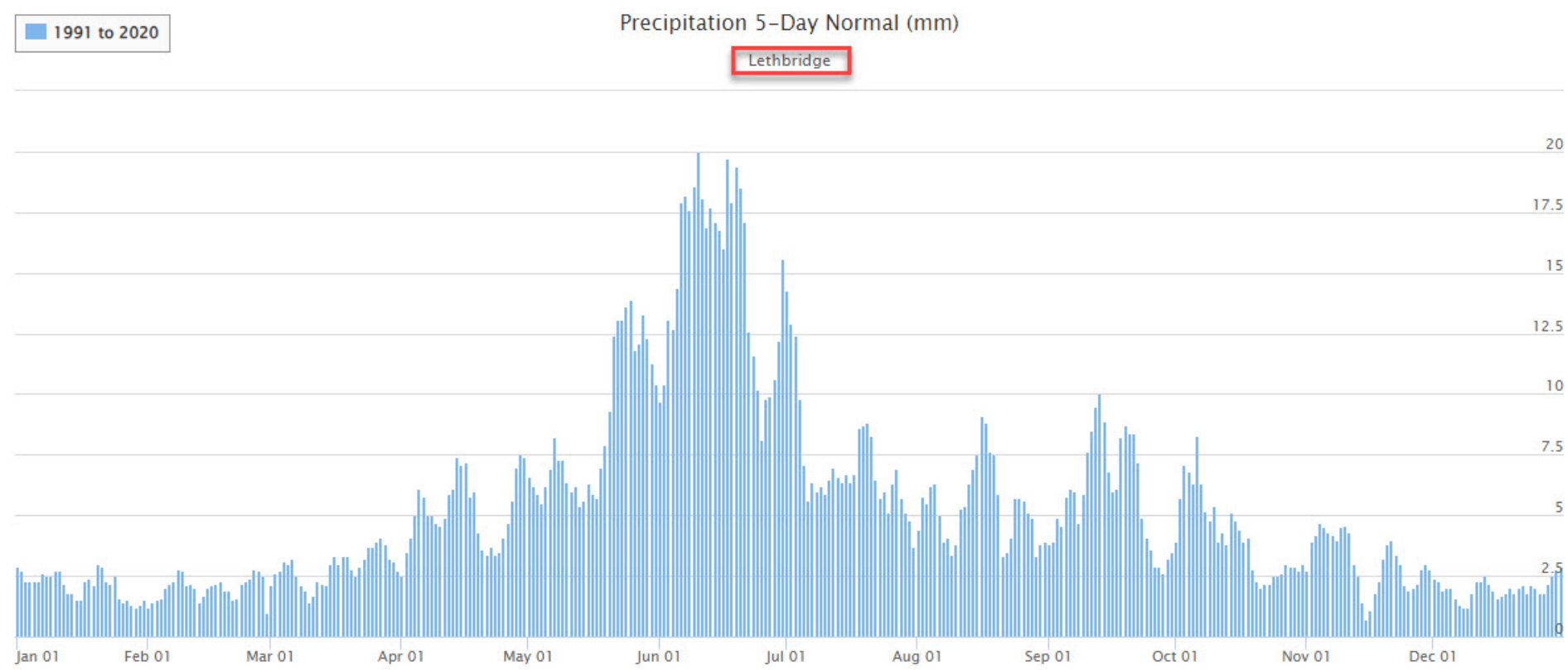
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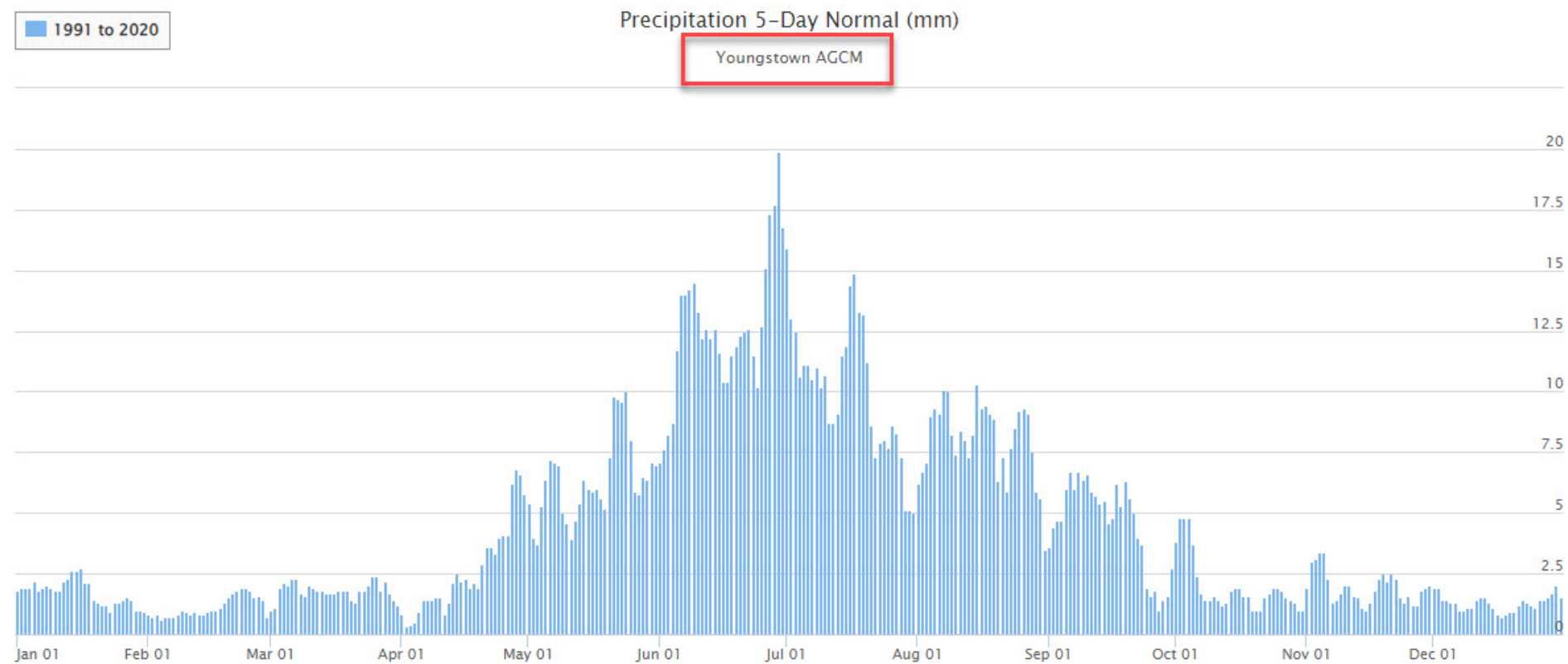
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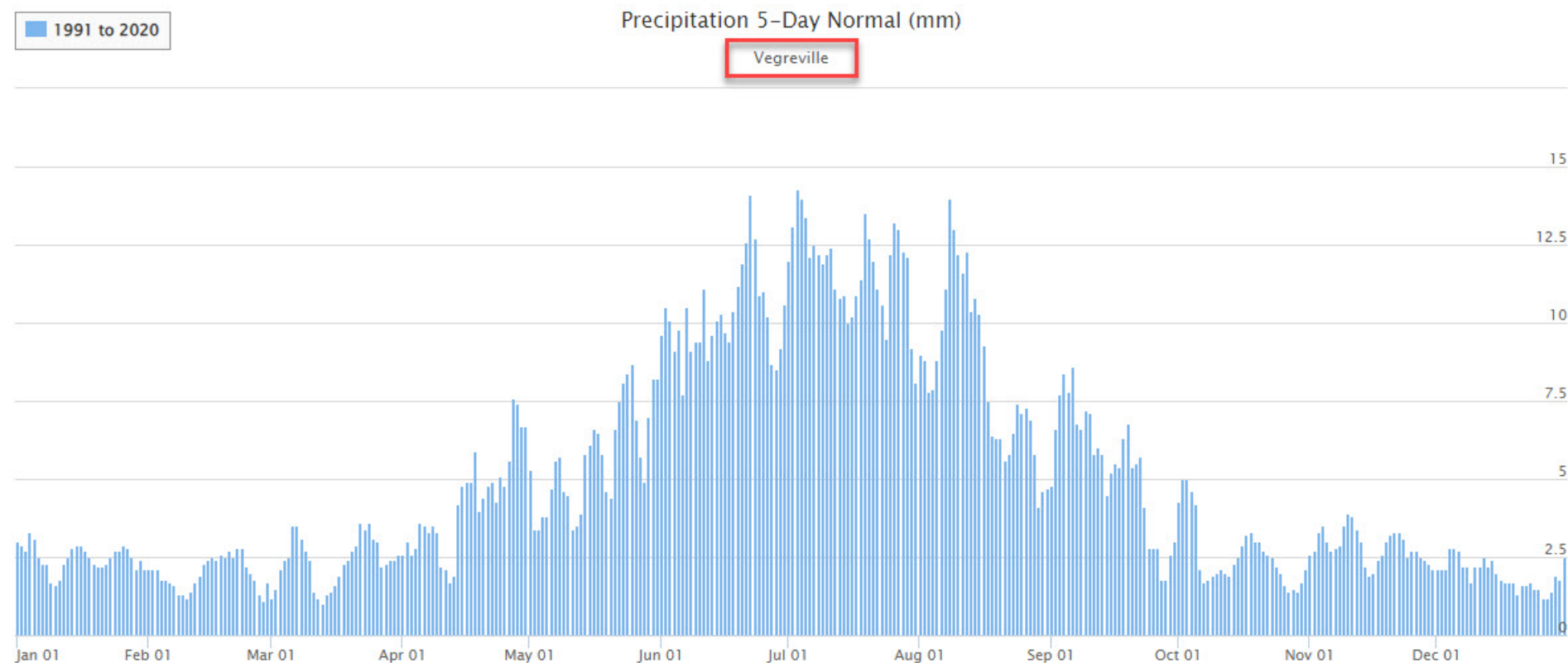
Graph 1



Graph 2



Graph 3



Graph 4

