

# Agricultural Moisture Situation Update

## June 20, 2024

### Synopsis

Since the last report (June 13, 2024), rainfall has been highly variable across the province (**Map 1**) and temperatures have continued to remain below normal with many lands receiving overnight frosts between June 15<sup>th</sup> and June 20<sup>th</sup>. Thankfully last week, much of the Peace Region received upwards of 40 mm of moisture along with the northwestern parts of the Southern Region. In contrast, previously dry areas around Grande Prairie and the extreme northern portions of the Peace Region only received between 5 to 10 mm and are still in need of meaningful moisture following several months of below normal precipitation. Elsewhere, dry areas are beginning to emerge through parts of the other agricultural regions and many stations have recorded less than 5 mm over the past 7-days.

Cool weather and relatively young crops have likely helped to some extent to stave off acute moisture stress in the drier areas and at the same time has also limited evaporation and soil drying in the wetter areas. Unfortunately, since June 15<sup>th</sup>, persistent and unseasonably cold weather has led to several overnight frosts that may have caused some localized damage to crops.

### Frost June 15<sup>th</sup> to June 20<sup>th</sup>

A mid-June frost appeared throughout many widely scattered areas with temperatures dipping below the freezing mark, affecting each of the agricultural areas (**Map 2**). Light coverings of snow on the ground were reported as far south as the Lethbridge area. Many lands saw frost appearing in the early morning, over several days with total hours at below the zero mark, indicated on **Map 3**. Note these are not consecutive hours but rather total hours over the 5-day period that were at or below the freezing mark. Locally, low lying lands and frost prone areas may have seen colder temperatures for longer periods of time than are otherwise depicted on these maps.

### Recent Precipitation Trends

Over the past 30-days, it's been relatively dry across many lands lying between Slave Lake in the north and the US border in the south (**Map 4**). Along the Milk River Ridge, relatively large areas are trending to once in 12-to-25-year lows. Similarly, there are a few dry pockets developing south and east of the city of Red Deer. For those lands lying south of the Trans-Canada Highway, this may be significant as the typically wet month of June grades into a sudden drying trend that usually emerges in July. However, Mother Nature

is full of surprises and the growing season is still far from over. Early season moisture and cool weather has likely helped reduce moisture stress across the drier areas but may also be hampering field activities and crop growth in the wetter areas. Looking forward, near normal rains and adequate heat will be needed to sustain promising looking crops. Reports of lush green hills across normally dry landscapes in the southern parts of the province is fueling optimism at this point.

Over the last 30-days much of the Peace Region has received at least 80 mm of rain and some lands receiving more than 150 mm (**Map 5**). Thus, in this area, drought conditions are currently being held at bay, following several months of dry weather and very disappointing snowpack development over the winter. Elsewhere another dry area is emerging northeast of Red Deer, affecting parts of counties of Camrose, Flagstaff, Steller and Paintearth, where less than 20 mm has fallen since May 21<sup>st</sup>.

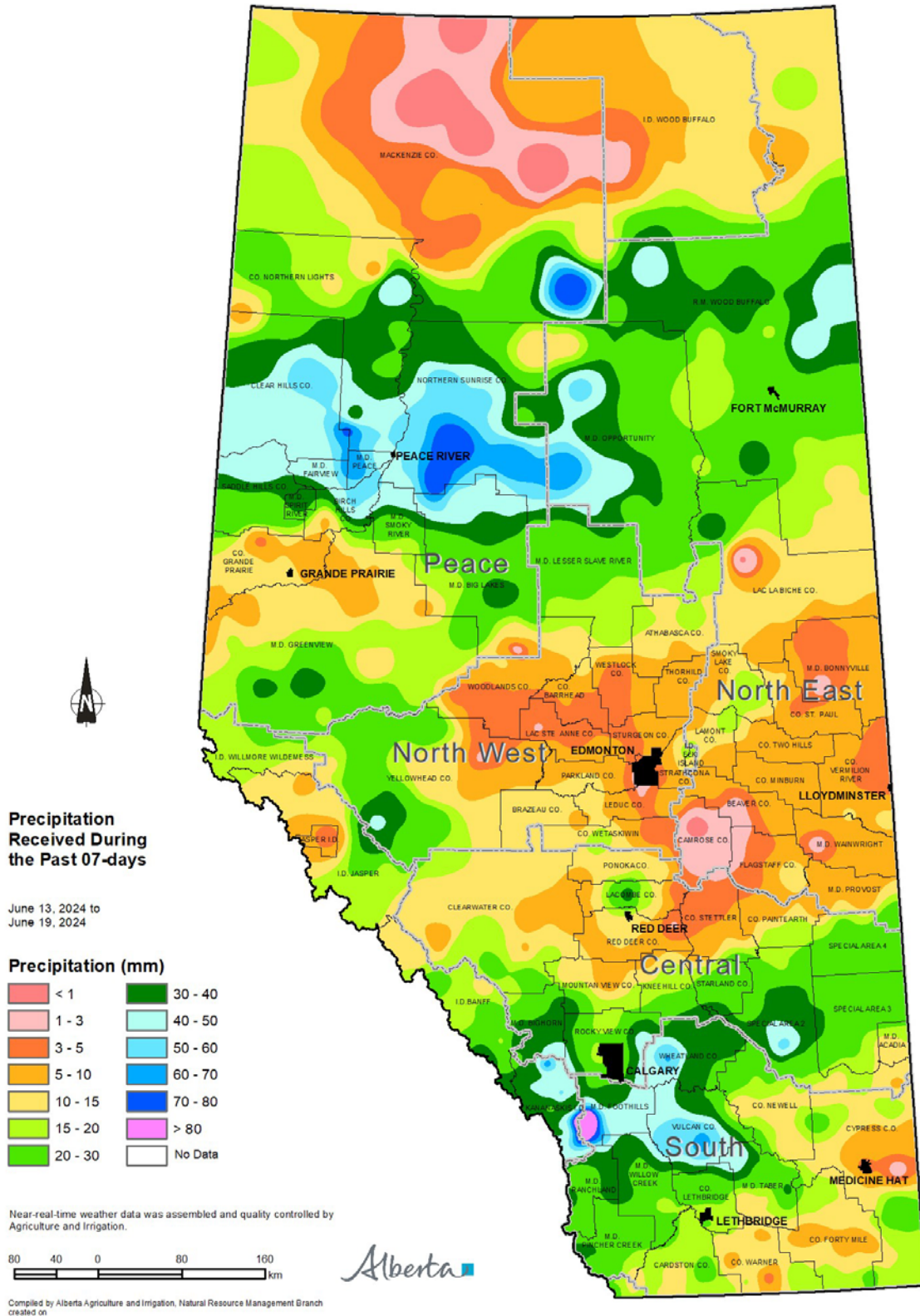
Since the start of the growing season (April 1<sup>st</sup>), most of the province has received at least near normal moisture, with notable exceptions in each of the four agricultural regions (**Map 6**). Grande Prairie and the surrounding lands to the west are quite dry and La Glace AGCM has recorded 55 mm since the beginning of April (**Map 7**) compared to the average which is 105 mm. Similarly, a relatively large pocket in the North West has received less than 100 mm with only 82 mm being recorded at Evansburg compared to the average which is 150 mm. In and around Red Deer, two small pockets received less than 75 mm, with only 66 mm recorded at Dickson Dam relative to the 150 mm which is normal. However, unlike southern Alberta, July and August in these areas tend to be relatively wet (**Map 8**) and there is still time to see adequate moisture ahead of the fall harvest.

### Perspective

Mid-June frosts are relatively rare events, particularly if one is only looking back as far as the mid-20th century. Today there are more than 500 weather stations across Alberta that report hourly information and define the occurrence, extent and severity of frost, or for that matter any unusual weather events. This is a much easier task than it was in the past when station density was much lower. In fact, you need to go back to the early part of the 20<sup>th</sup> century to readily find similar examples of mid-June frosts and they were apparently quite common over a three-decade period from 1900-1930. This coincidentally occurred during Alberta's driest and most extreme period in our meteorological record. For example, in

the Edmonton area between 1901 and 1931, there were six years where temperatures dropped below 0°C between June 13<sup>th</sup> and June 20<sup>th</sup>. These years were 1902, 1910, 1920, 1924, 1926 and 1931. For comparison, in 1902 there were only 17 stations operating in the province and by 1930 there were 101 stations. None of these stations recorded hourly information. Coincidentally during this last frost event, the Edmonton area did not dip below freezing, with the coldest hourly temperatures hovering around +2°C. This was likely at least in part, due to the urban heat island effect moderating overnight lows.

# Map 1



Visit [weatherdata.ca](https://weatherdata.ca) for additional maps and meteorological data

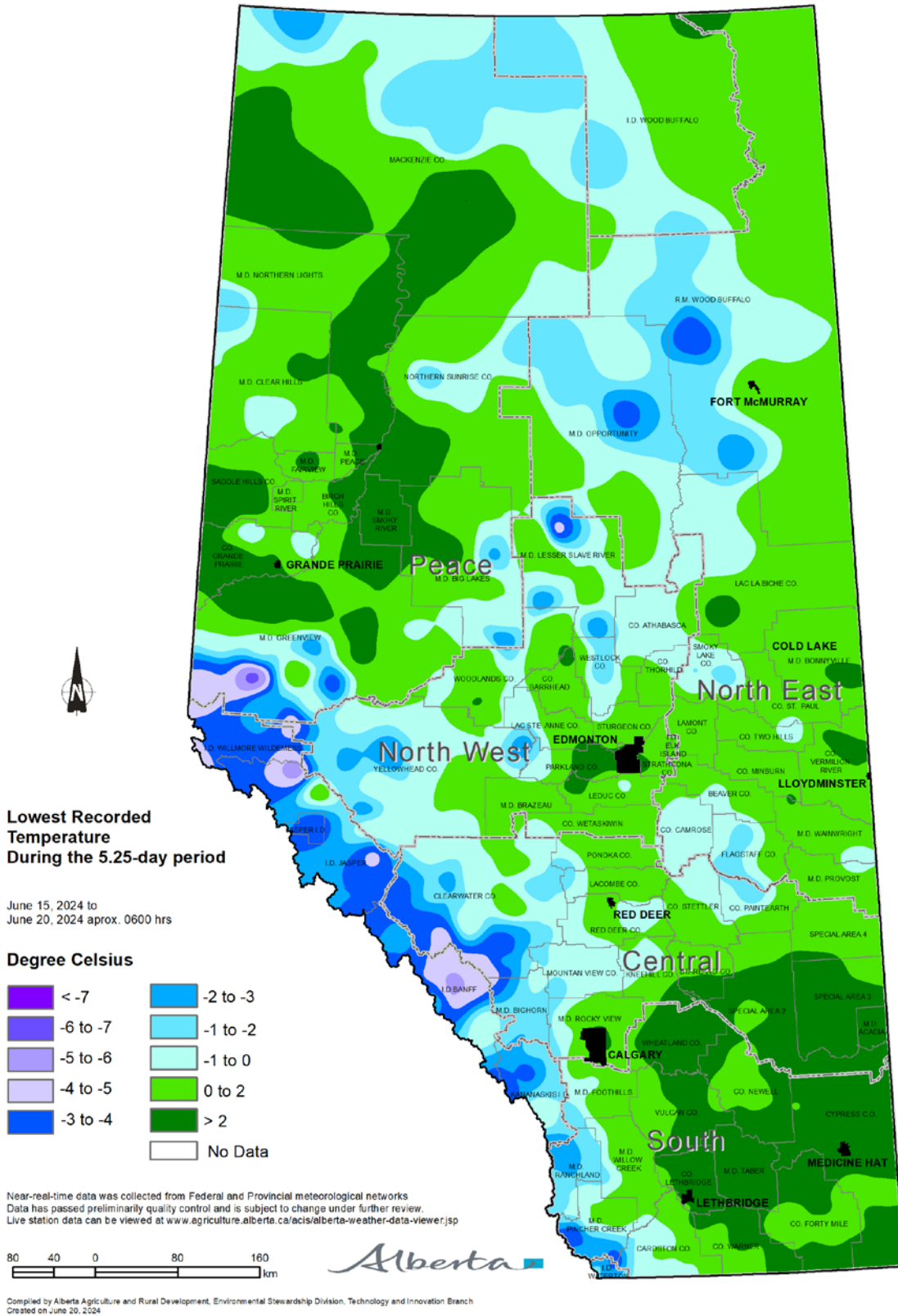
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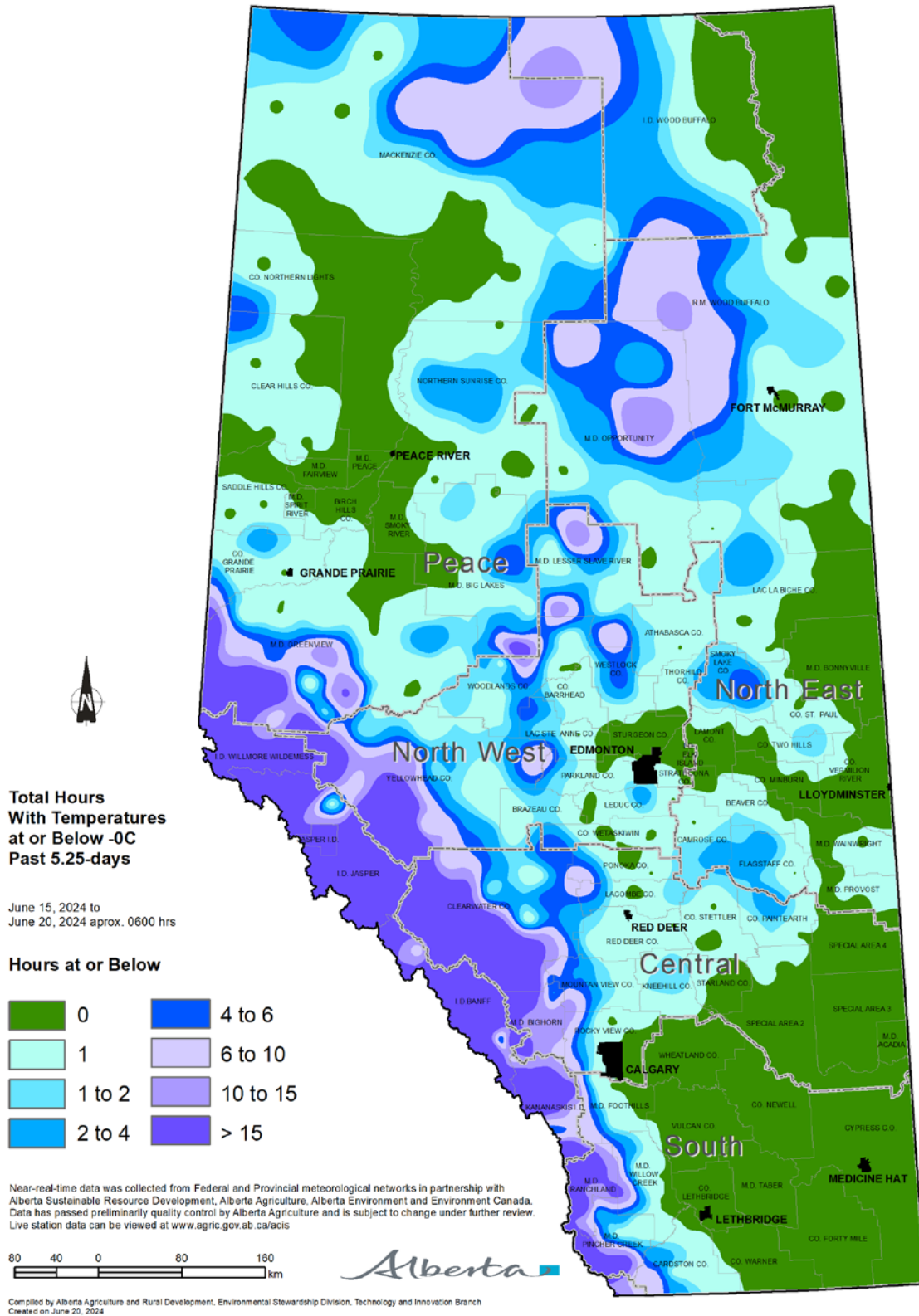
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# Map 2



# Map 3



Visit [weatherdata.ca](http://weatherdata.ca) for additional maps and meteorological data

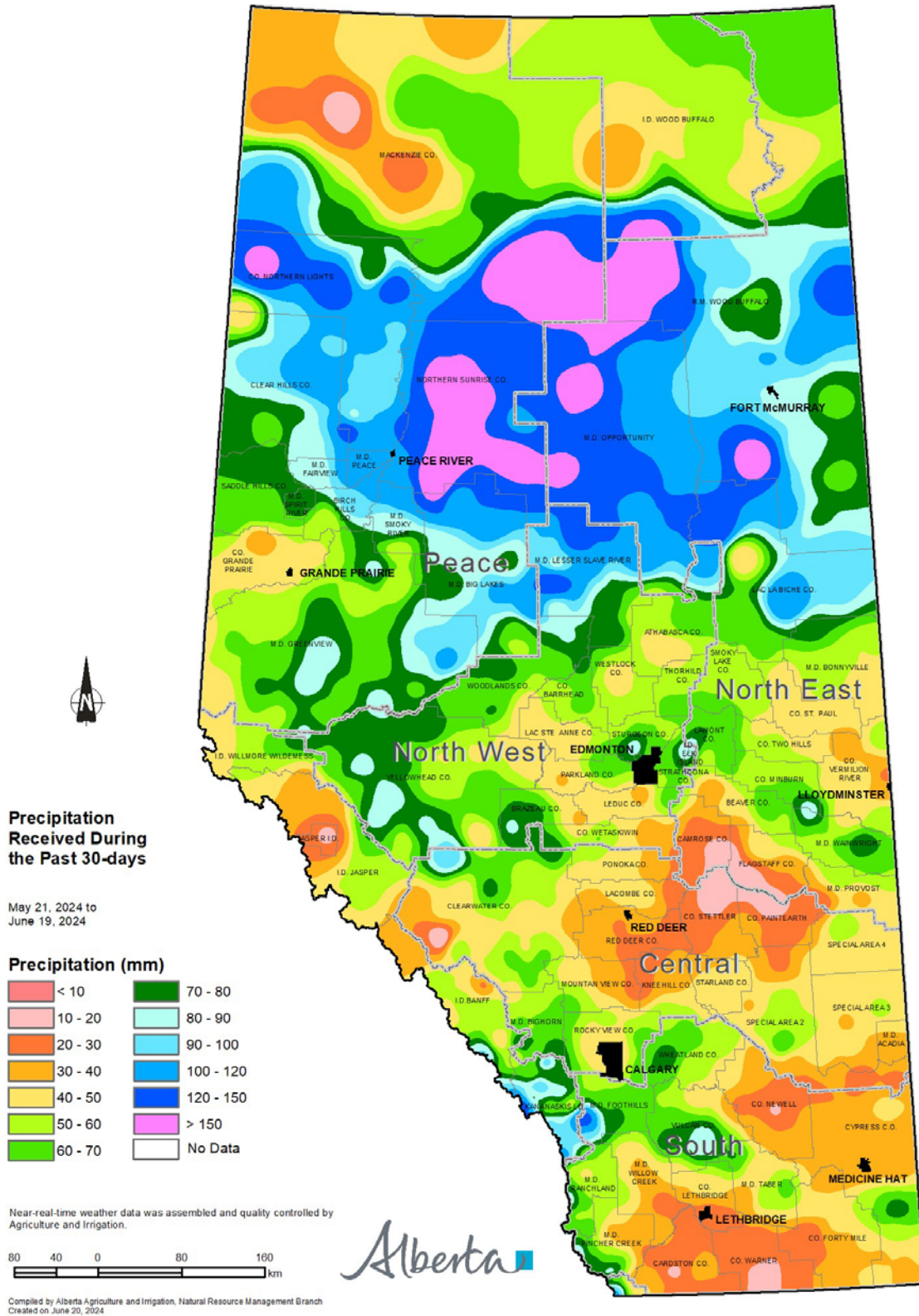
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# Map 4



Visit [weatherdata.ca](https://weatherdata.ca) for additional maps and meteorological data

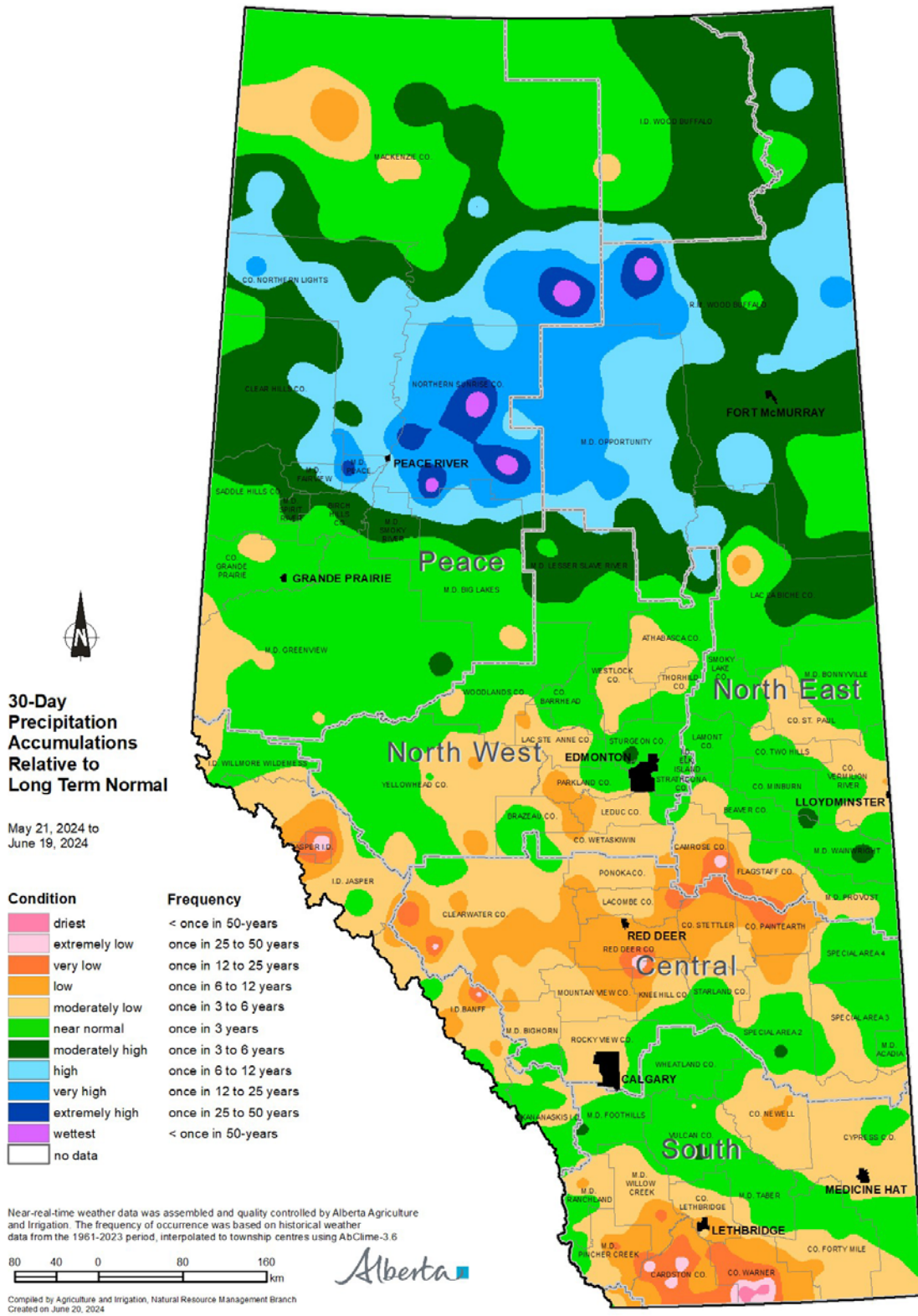
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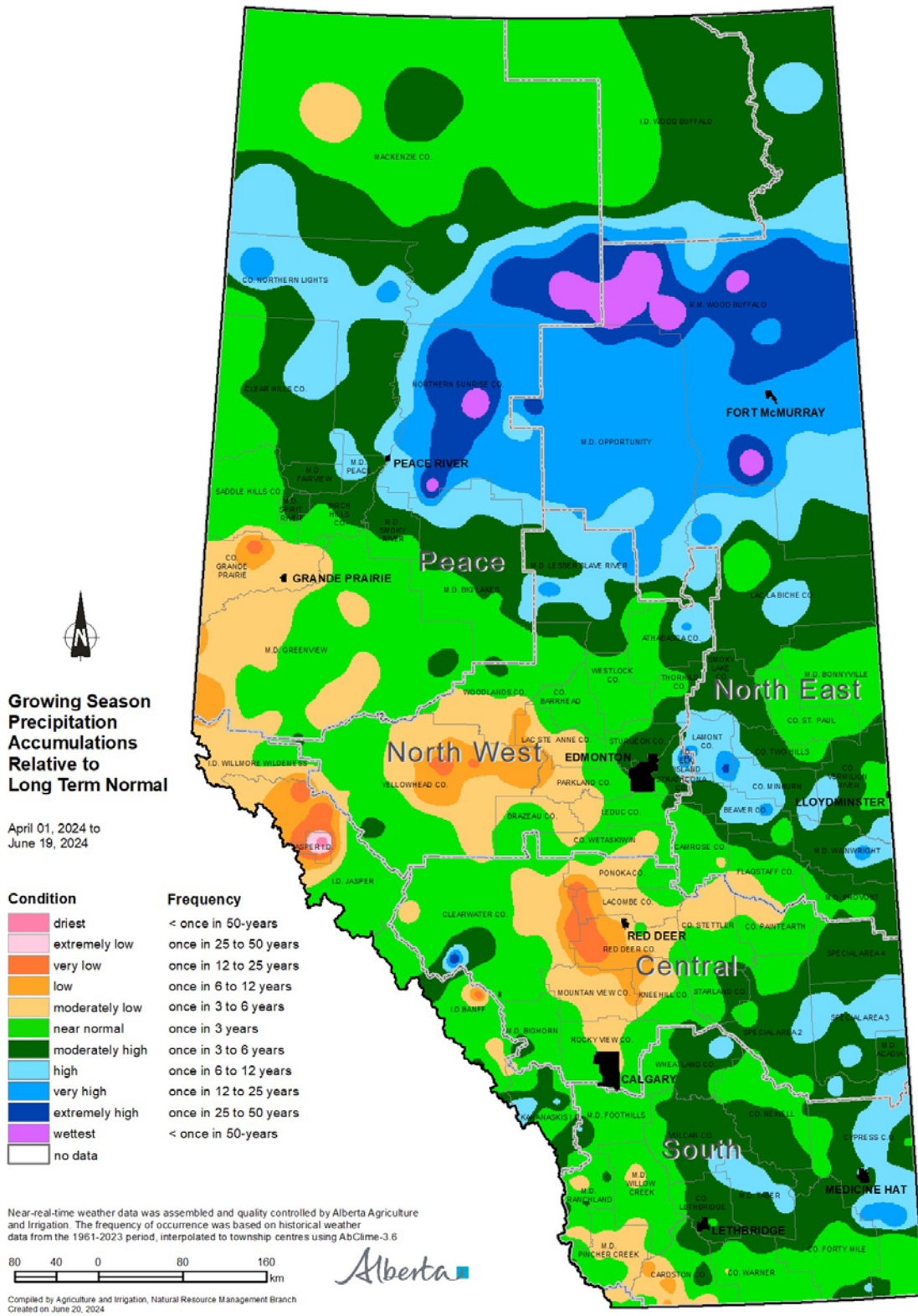


# Map 5



Visit [weatherdata.ca](https://weatherdata.ca) for additional maps and meteorological data

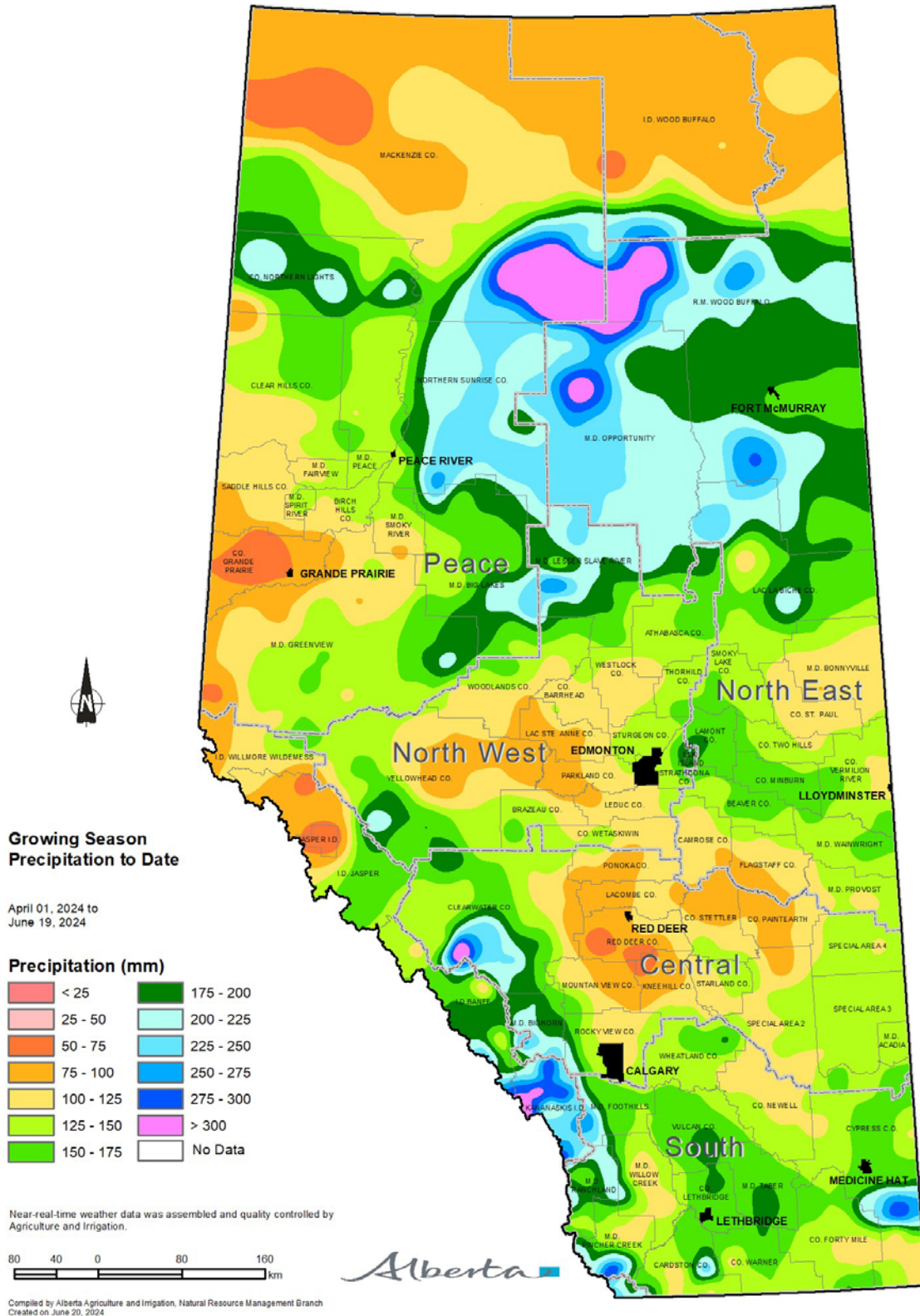
# Map 6



Visit [weatherdata.ca](http://weatherdata.ca) for additional maps and meteorological data



# Map 7



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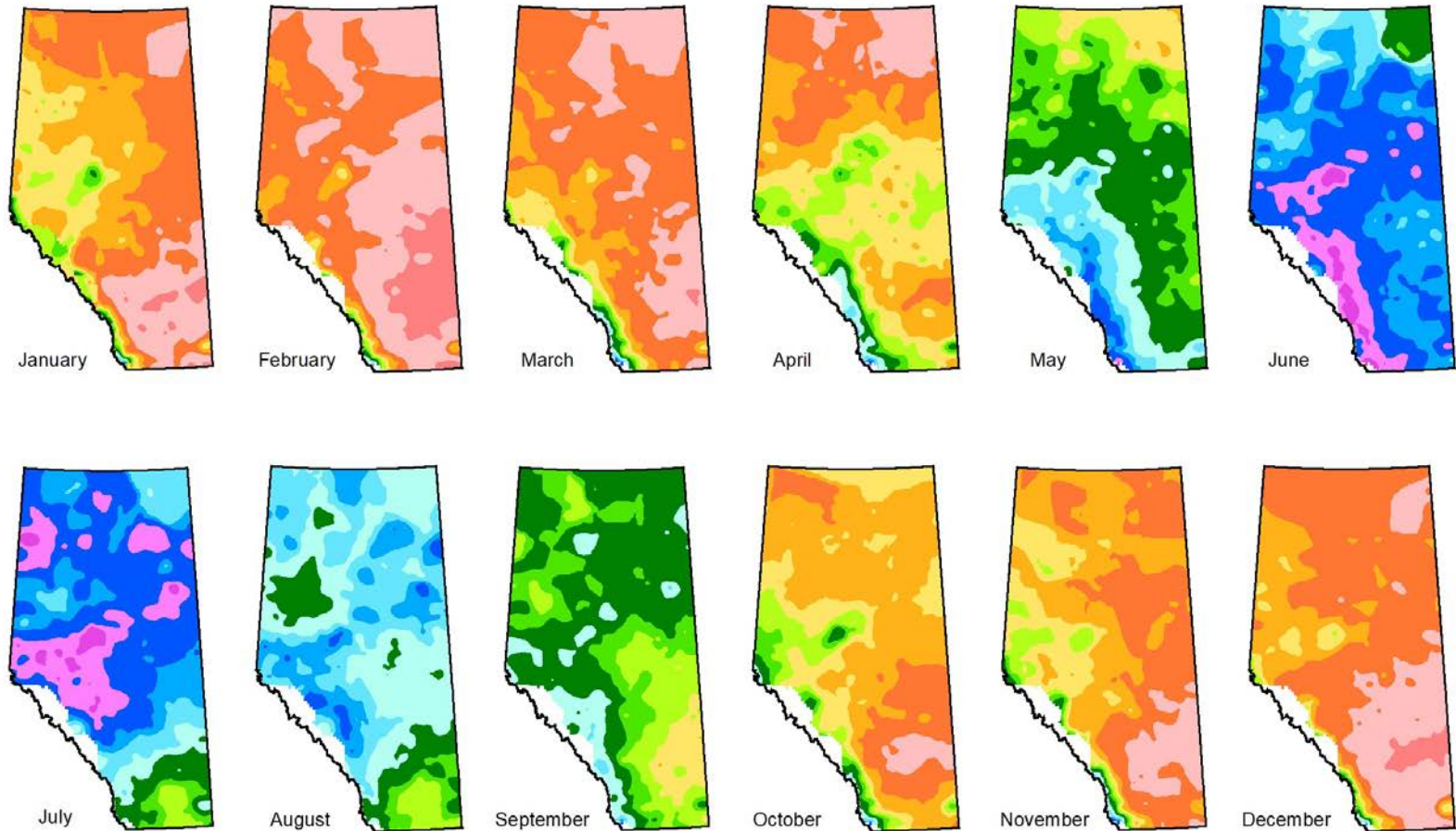
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# Map 8



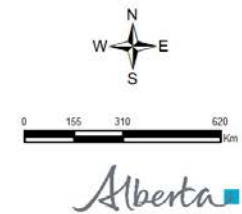
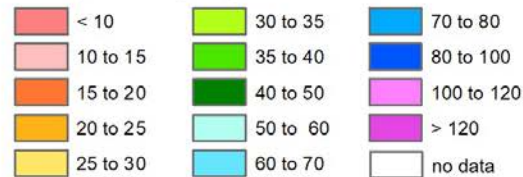
## Normal Monthly Precipitation Accumulations

1991-2020

Weather data was assembled and quality controlled by Agriculture Forestry and Rural Economic Development then interpolated to township centres using AbClime-3.6

Compiled by Agriculture, Forestry and Rural Economic Development, Natural Resource Management Branch  
Created on March 29, 2022

### Precipitation (mm)



<https://open.alberta.ca/publications/moisture-situation-update>

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