Agricultural Moisture Situation Update
April 7, 2024

Synopsis (Map1, 2 and 3)

Since the last report (March 24, 2024), most of the Southern Region, along with western portions of the province from the USA border and up as far as Grande Cache have continued to receive meaningful moisture. Most agricultural lands south of the TransCanada Highway received over 15 mm, grading to over 25 mm in and around Lethbridge (**Map 1**). This is significant at this time of year and marks a good start to April which historically marks the very start of the wet season in this part of the province (**Map 2**). In contrast, throughout much of the North East and Peace Regions, conditions have remained relatively dry, with less than 3 mm being recorded across large areas (**Map 1**). These areas are exceptionally dry following a warm dry fall and winter. They are in need of moisture now, but their wet season typically does not arrive till later in May (**Map 2** and **Map 3**)

Many of the surveyed areas for mountain snowpacks still appear to be below the period of record averages for March. However, since the start of 2024, conditions have generally improved, and now five high elevation stations in southwestern Alberta have recorded over 300 mm of precipitation, since January 1, 2024. With the highest amounts recorded at the Spionkop Creek station (405 mm) followed by the Gardiner Head Waters station (385 mm). In the 14-days since the last report was issued on March 24th, both of these sites have recorded more than 50 mm each.

For perspective, the Gardiner Creek snow survey, released in early March (measured mid-February), reported 501 mm of snow water equivalent which was 100 mm below average at that time. The lowest measured values (1983-2024) for that time of year occurred in 2001 (283 mm) and the highest in 1991 (1008 mm). For those interested in the surface water supplies, please visit Alberta River Basins for the latest information.

30-day Precipitation Accumulations (Map 4, 5)

Recent precipitation trends have been near to above normal through much of the Southern and Central Regions, and hopefully this continues into the foreseeable future (**map 4**). Elsewhere, most of the North East and Peace Regions have remained in a drying trend that has persisted since at least September 2023.

Precipitation over the past 30-days ranges from well over 40 mm in parts of the Southern Region, to less than 5 mm across large areas in the North East and Peace Regions (**Map 5**).

180-day Precipitation Accumulations (Map 6, and 7)

Looking back over the past 180-days, most of southern Alberta and the western portions of the Central Region have been experiencing at least near normal moisture and some areas are approaching once in 6 to 12 year highs (**Map 6**). In sharp contrast, large parts of the north-half of the province are facing at least once in 50 year lows. Many of these lands have seen less than 50 mm over the past 6 months (**Map 7**), with only 20 mm recorded in the Lloydminster Area and just 25 mm recorded at Fort McMurray.

Perspective (Map 3 and Graph 1)

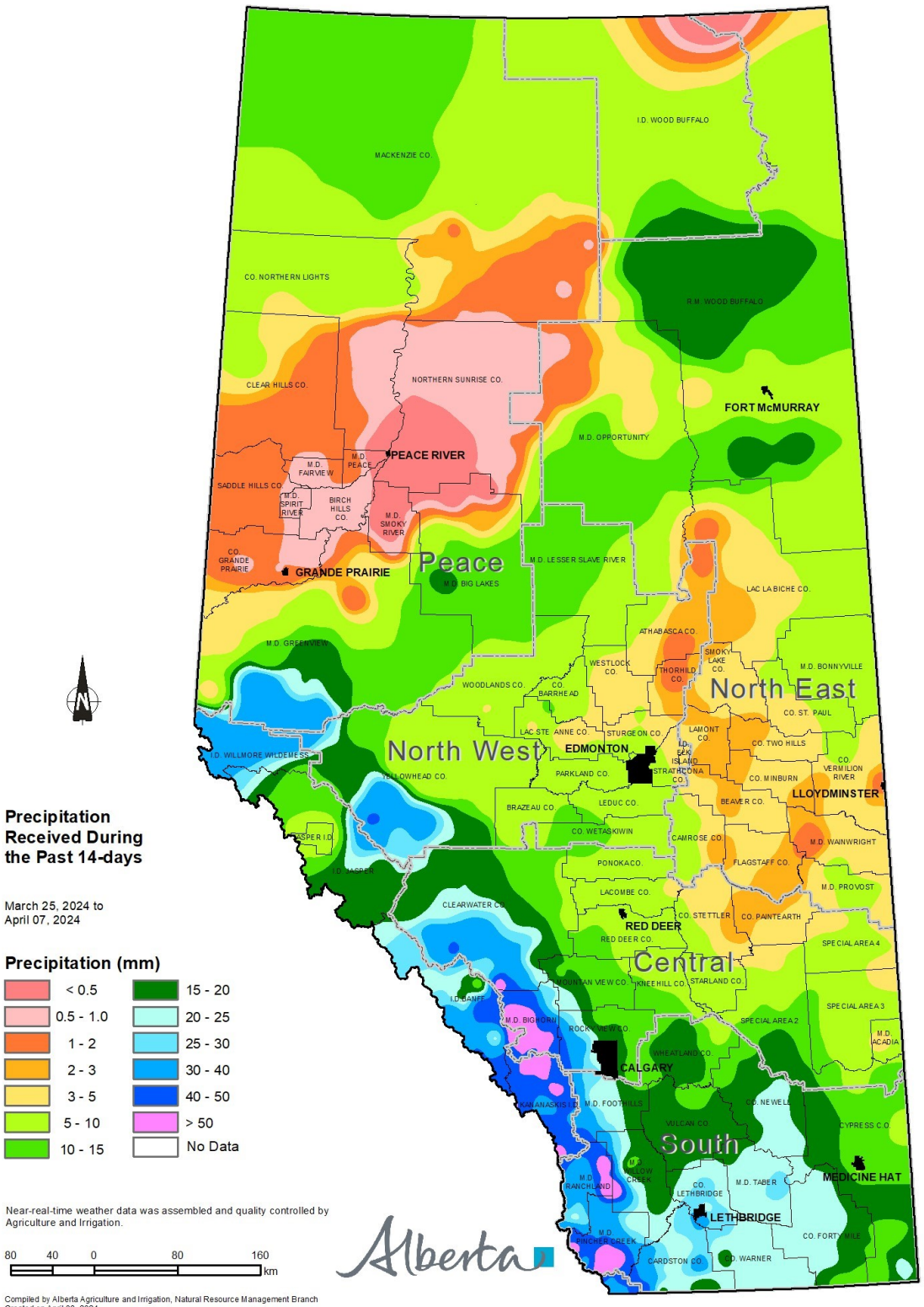
While we have seen a marked turn around in moisture conditions across the southern parts of the province, the north remains very dry. The lack of winter precipitation, along with warm spells and episodes of melting, left many areas virtually snow free most of March. This is particularly concerning for the Peace Region and Alberta's northern forested areas, as historically the winter period (October to March) accounts for over 30% of the annual precipitation. Overwinter most of this moisture is stored in the snowpack and then released in April as melting gets underway. This provides an abundance of moisture that tends to replenish surface water supplies and gets plant growth off to a good start, once they break dormancy.

Unfortunately, across the north, historically March and April are amongst the driest months of the year and it's usually not until mid-May that the wet season begins (**Map 3**). So even with a return to near normal precipitation over the next 5 weeks, it could still be relatively dry. If you super impose a rolling 7-day, 30-year average precipitation chart, for Lethbridge (blue bars) over Manning (black bars), It's clear that on average, the south tends to get is moisture early, roughly in mid-March, with an abrupt end occurring at the start of July. This is why early seeding and irrigation are so important here. In contrast the Peace Region stays dry until mid-May, averaging less than 4 mm of precipitation per week from March 1st to the end of April and this highlights the

importance of healthy snow packs. The wet season finally gets underway late May, peaks from mid-June through to the end of July, and generally persists until early September.

Head over the Alberta Climate Information service and look at the Climate normals viewer if you're interested in generating similar charts for your area.

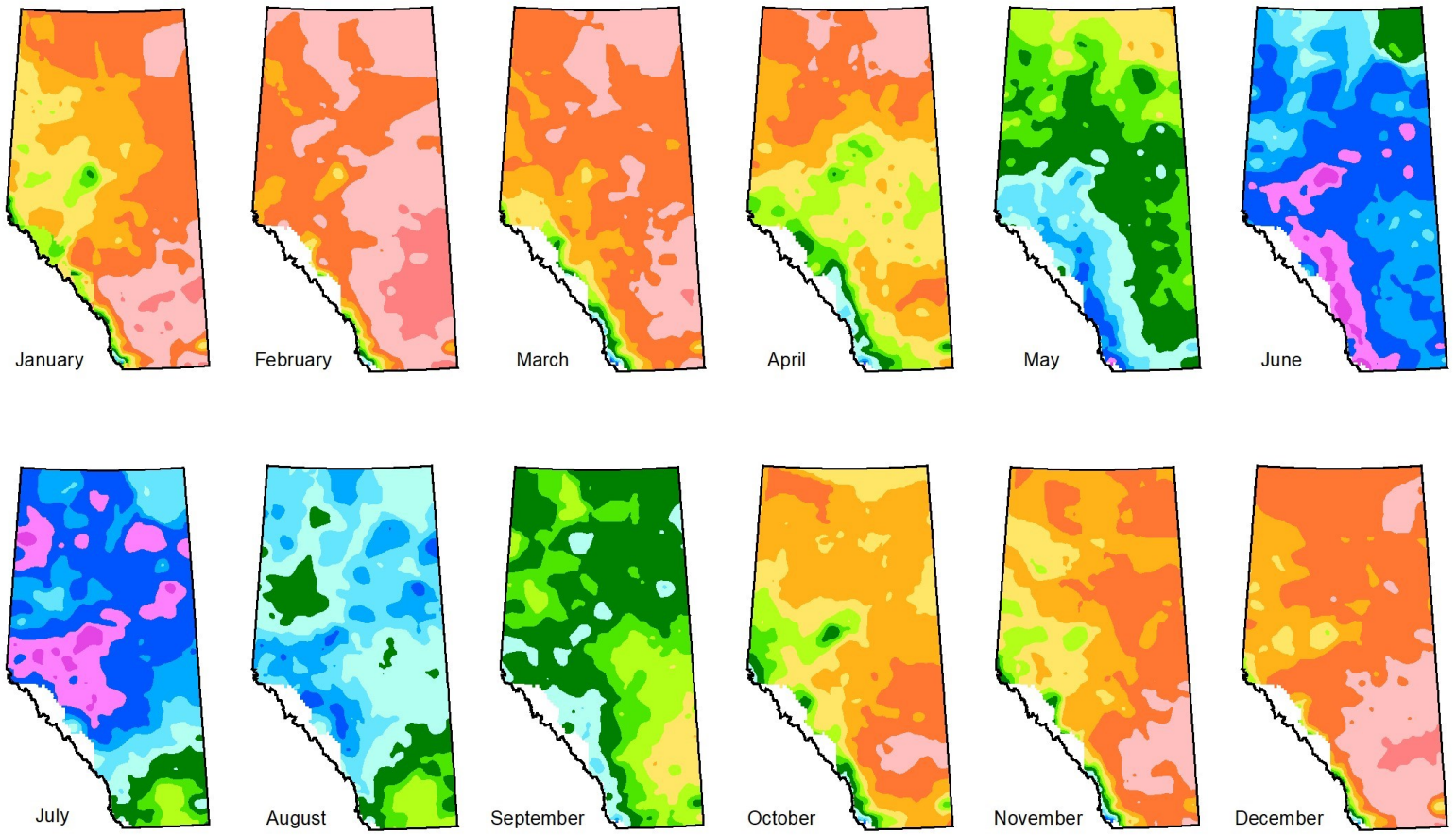
Map 1



Visit weatherdata.ca for additional maps and meteorological data

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

Map 2



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)

< 10	30 to 35	70 to 80
10 to 15	35 to 40	80 to 100
15 to 20	40 to 50	100 to 120
20 to 25	50 to 60	> 120
25 to 30	60 to 70	no data

N W E S

0 155 310 620 Km

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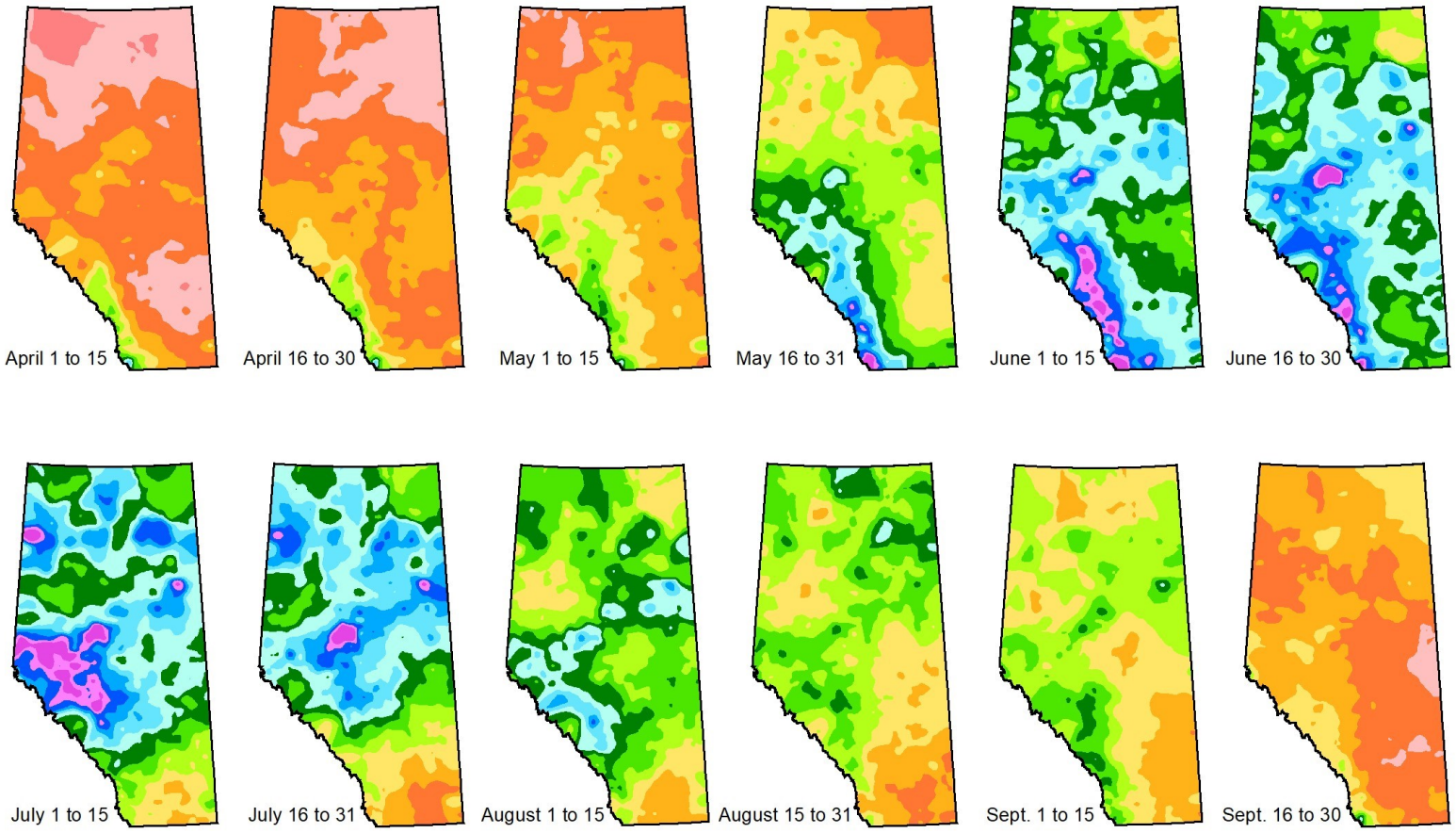
Map 3



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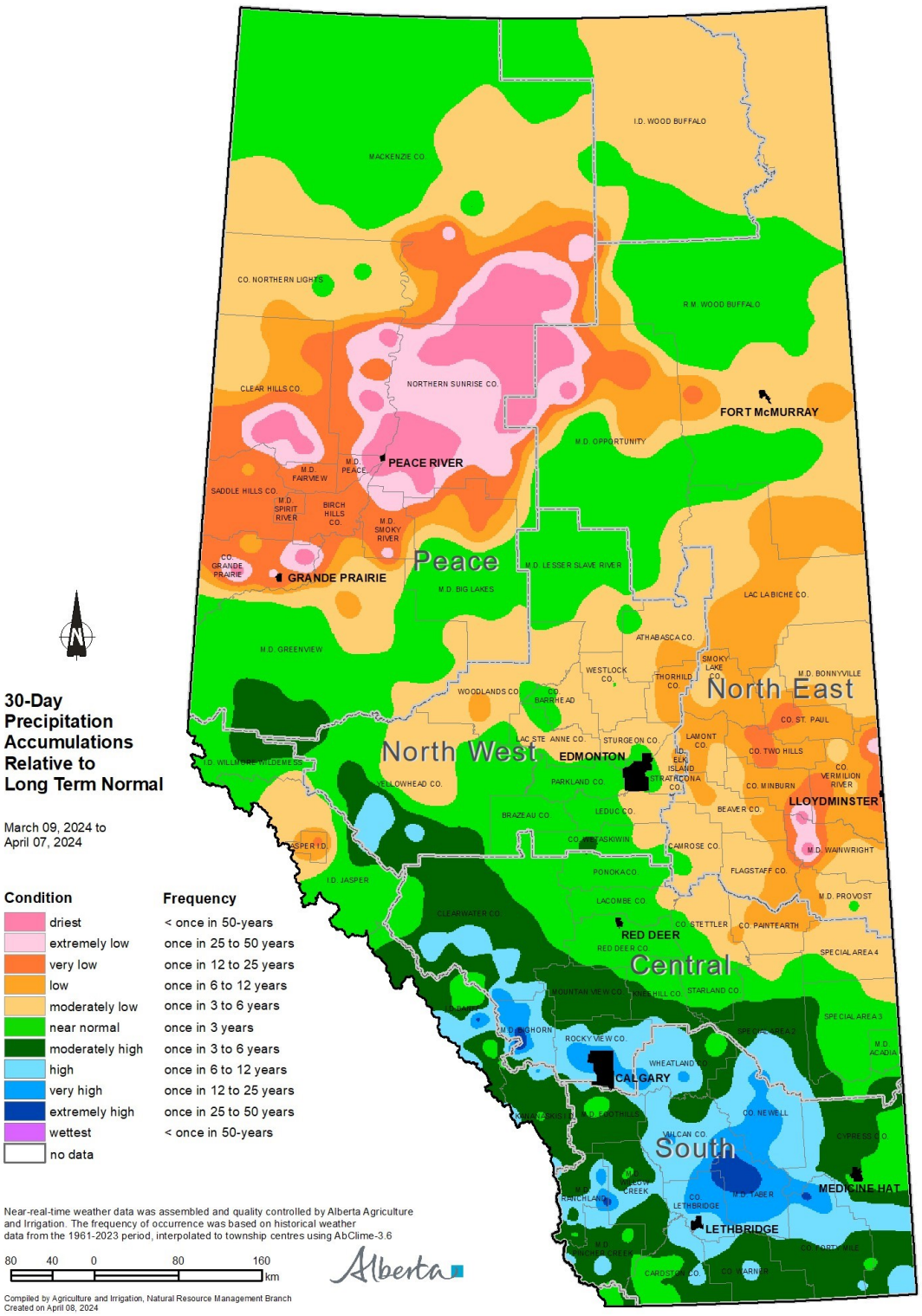
Map 4



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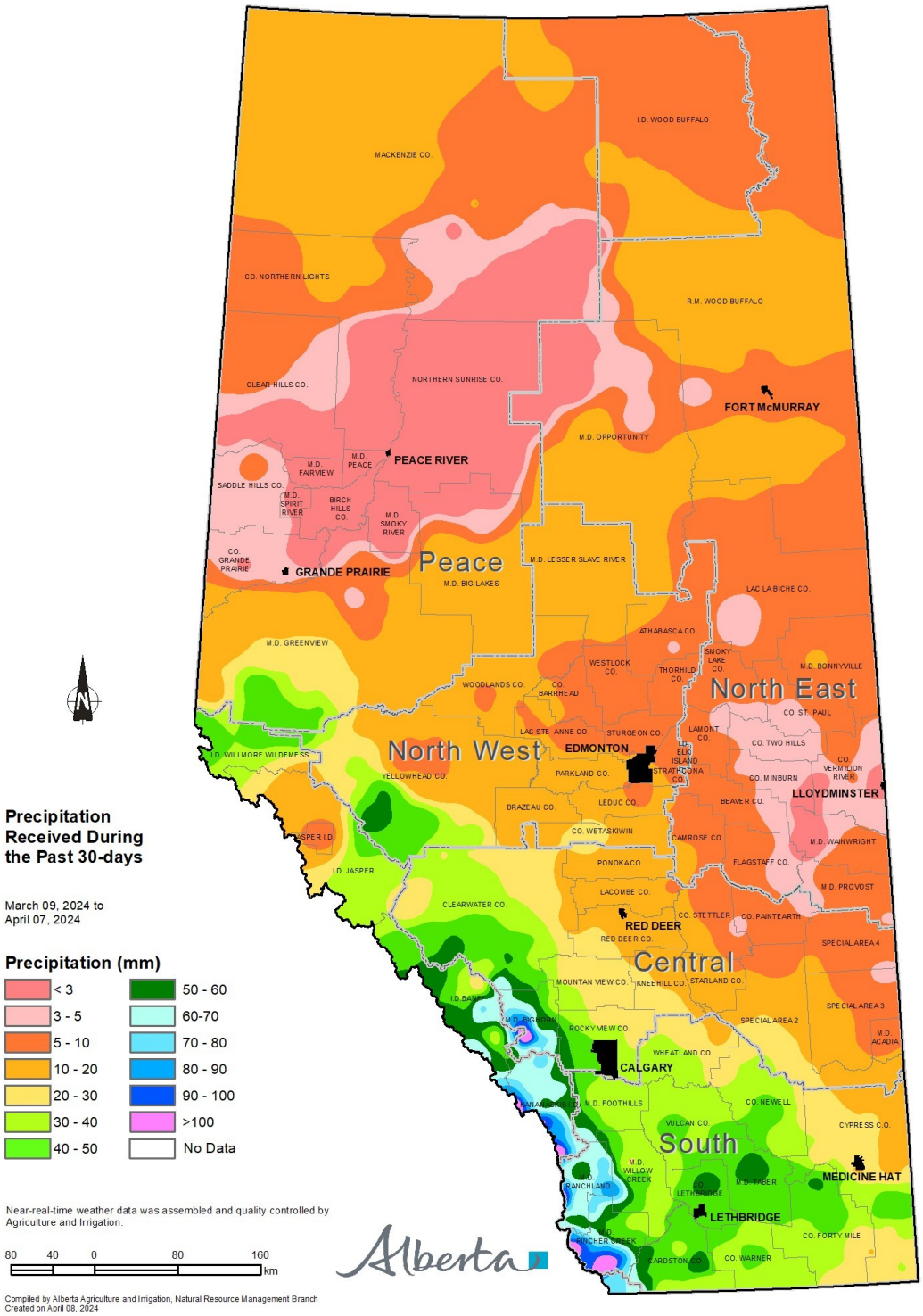
Map 5



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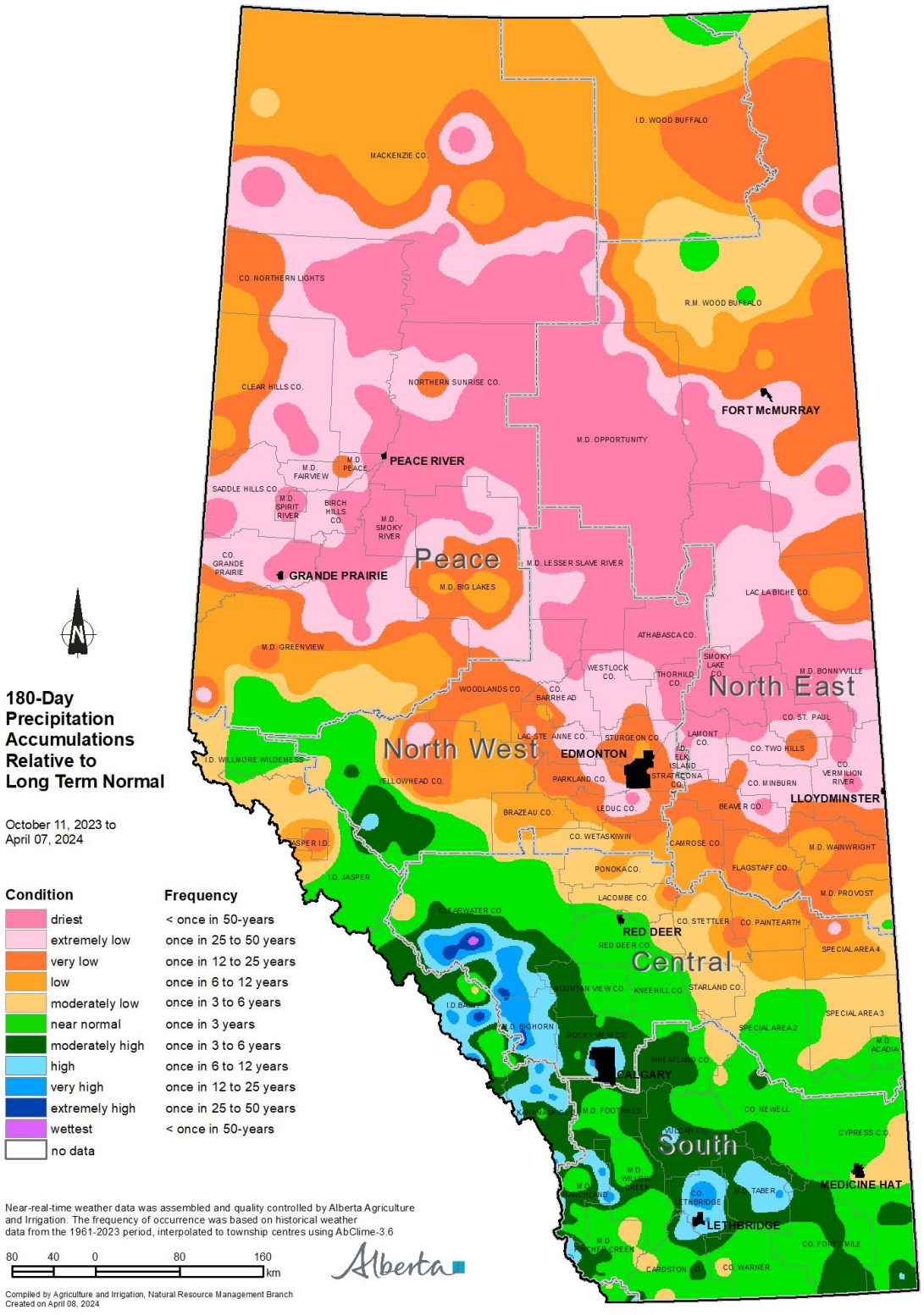
Map 6



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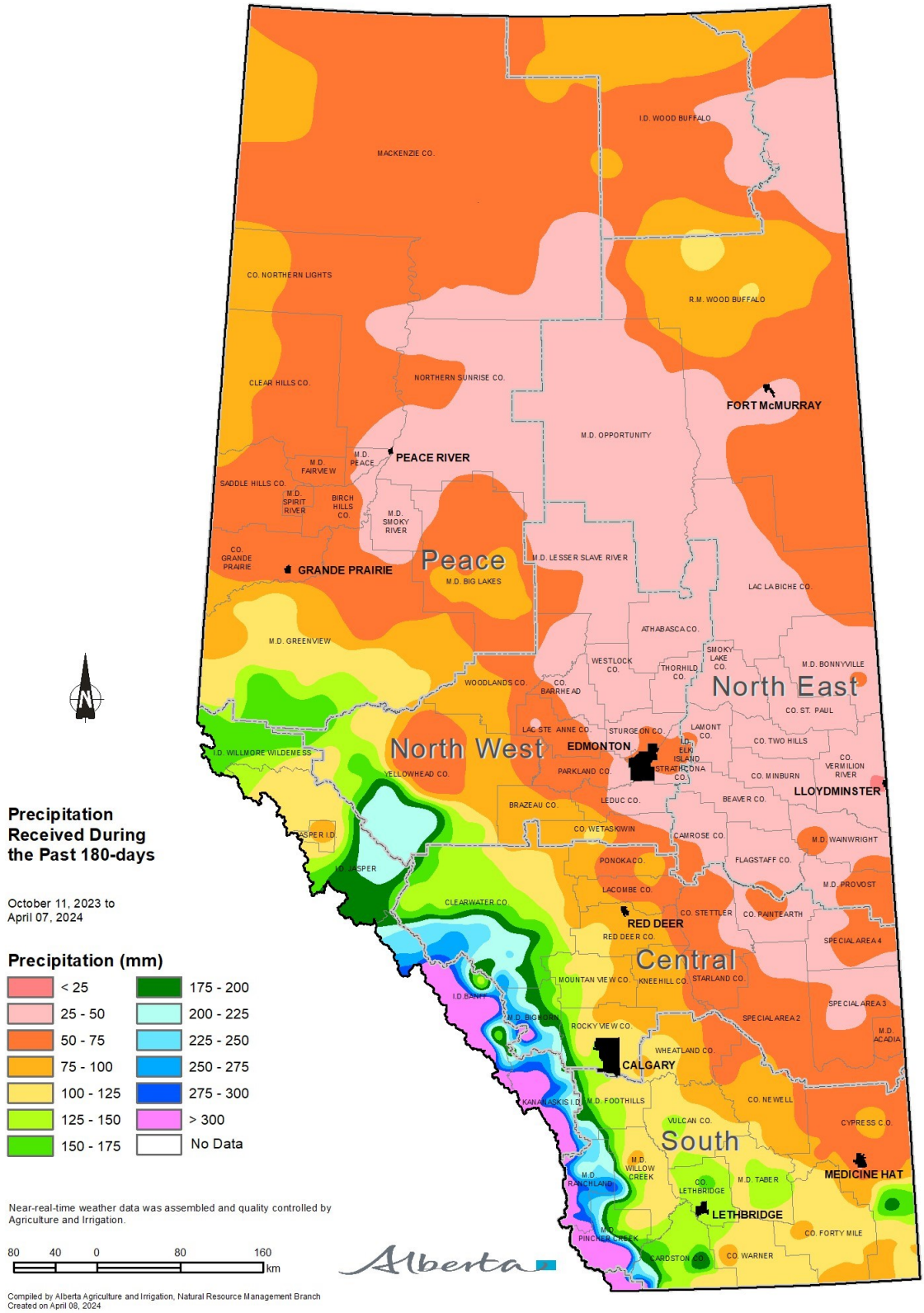
Map 7



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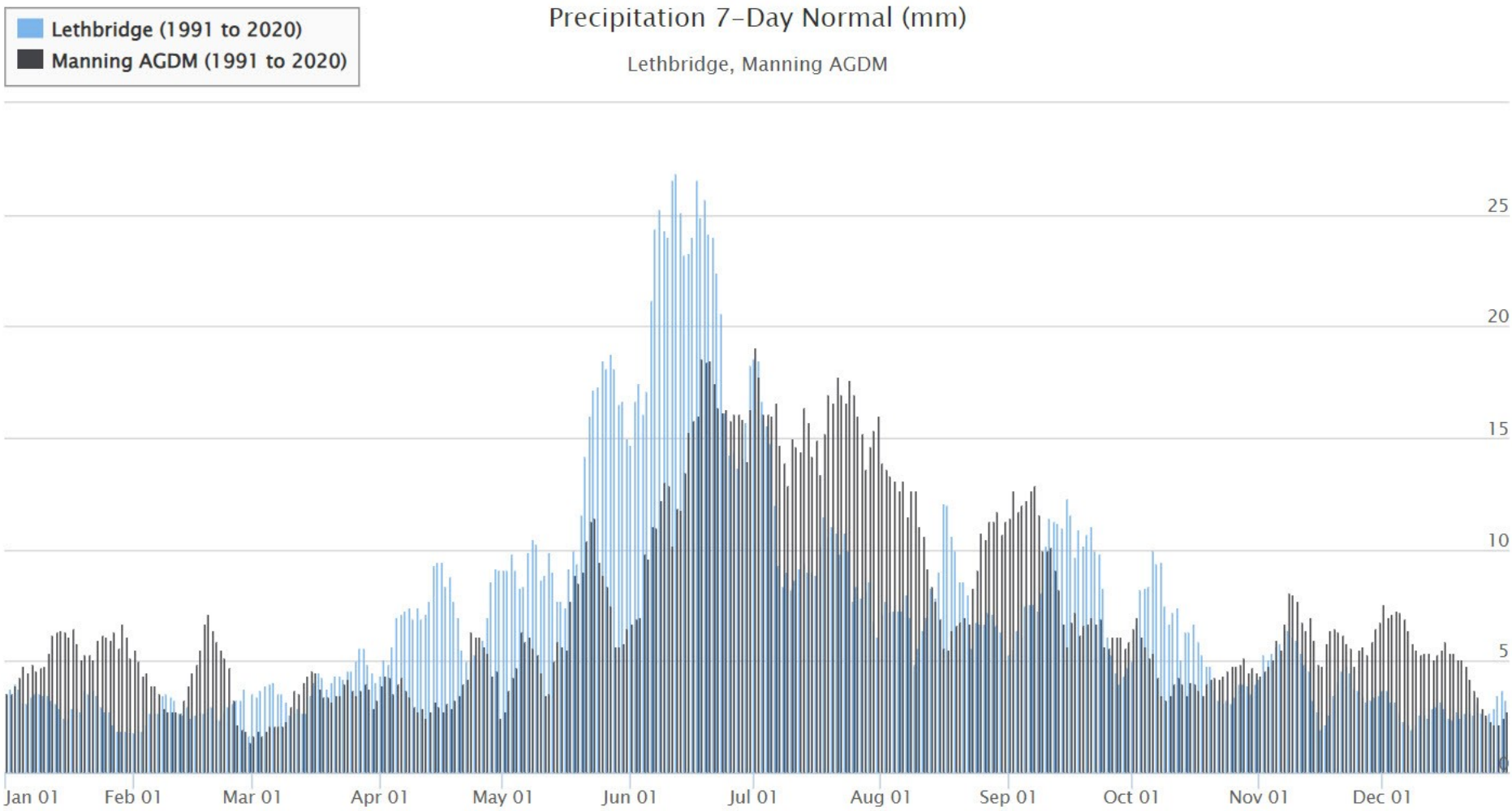
Graph 1



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