

Agricultural Moisture Situation Update

March 24, 2024

Synopsis

Since the beginning of March, further moisture has fallen across much of the south-half of the province, with much of this fell over the past week. So far in March, most of southern Alberta and parts of the western portions of the Central Region have received over 20 mm of moisture, grading to upwards of 30 mm in some areas (**Map 1**).

Since January 1st, seven high elevation stations in southwestern Alberta have recorded over 250 mm of precipitation, with the highest amounts recorded at the Spionkop Creek station (340 mm), followed Gardiner Head Waters (333 mm). For these stations, 30-year averages for this time frame are estimated to be 250 mm and 190 mm, respectively. This is a good start to replenishing water supplies in these critical headwater areas of the South Saskatchewan River Basin and winter is not yet over.

Additionally, dry forested areas in the Fort McMurray area have also seen modest, but much needed moisture, with 15-20 mm falling across large parts of the RM of Wood Buffalo (**Map 1**). In contrast, many parts of the North West, North East and Peace Regions have remained relatively dry, with most lands receiving between 5 to 10 mm and within these regions several stations have recorded less than 5 mm.

Over all precipitation accumulations for the month of March to date, have been near normal or above for roughly about half of the province while most other areas are still in the grip of drying trend (**Map 2**).

90-day Precipitation Accumulations

The near to above normal trend for those parts of the province extending roughly south of Red Deer has persisted for at least 90-days with some areas within this, trending to above normal (**Map 3**). However, for most lands north of this, drier than normal weather has persisted and has, in fact, been quite intense across the north-central parts of the province, with large areas of at least once in 25-year lows existing through parts of the Peace Region along with a large pocket of at least once in 50-year lows, evident across the forested areas extending east of Slave Lake. Since the beginning of January, several stations in this region have reported less than 20 mm (**Map 4**), which is less than 30% of normal for this time frame (**Map 5**).

180-day Precipitation Accumulations

Looking back over the past 180-days, most of southern Alberta and the western portions of the Central Region have experienced 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 once in 50 year lows, a drying trend that has persisted since September. However, some of these lands across the north were quite wet in June, July and August (**Map 7**). However, note that the extreme northern parts of the province largely missed out on much of this ample summer moisture and precipitation deficits are intensifying.

365-day Precipitation Accumulations

While 90-day trends are pointing to a near normal moisture regime across at least the southern third of the province (**Map 3**), serious moisture deficits still remain (**Map 8**). Across the southern parts of the province only about 20-25% of the total average yearly accumulations fall during the November to March period. The recent 90 and 180-day trends are not enough to overcome the deep moisture deficits (at least once in 50-year lows) that have been developing over the longer term, but for many the recent moisture is, at the very least, a promising trend that we all hope will continue.

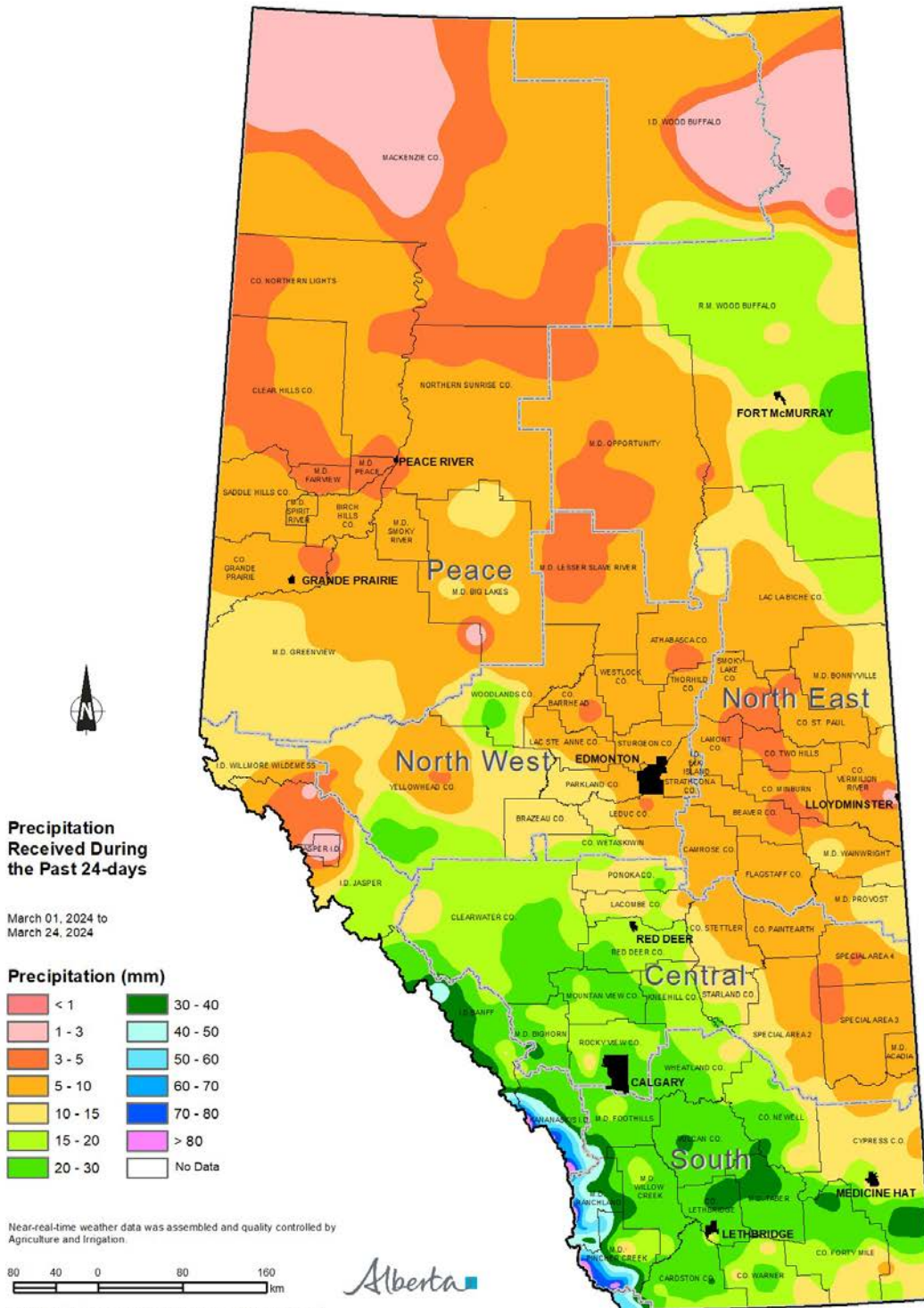
Elsewhere, year over year deficits are present across most of the province's growing areas and throughout most of the northern forests, with large areas in the extreme northwest and northeast approaching once in 50-year lows (**Map 7**). This is of great concern to the province's fire fighters as evidenced by an early, official start to the fire season.

Perspective

The National Oceanic and Atmospheric Administration (NOAA) is observing that the current El Niño event, sometimes responsible for warm/ dry winters, appears to be weakening with ENSO neutral conditions to potentially develop by April-June. By June-August there is a 55% chance that we may see a shift to a La Niña, sometimes responsible for cool and wet conditions. It's very difficult to predict with certainty what this impact will be on moisture and temperature regimes across Alberta; however, many do surmise that it is likely to lead to instability in the Jet Stream

that may reduce the likely hood of a deeply entrenched long duration hot and dry spell. As we break out of March and head into the wetter months of the year ahead, near to above normal moisture will be required to sustain crop growth. A long stretch of above normal moisture and/or an extreme wet spell will be needed to help replenish dwindling surface water supplies.

Map 1



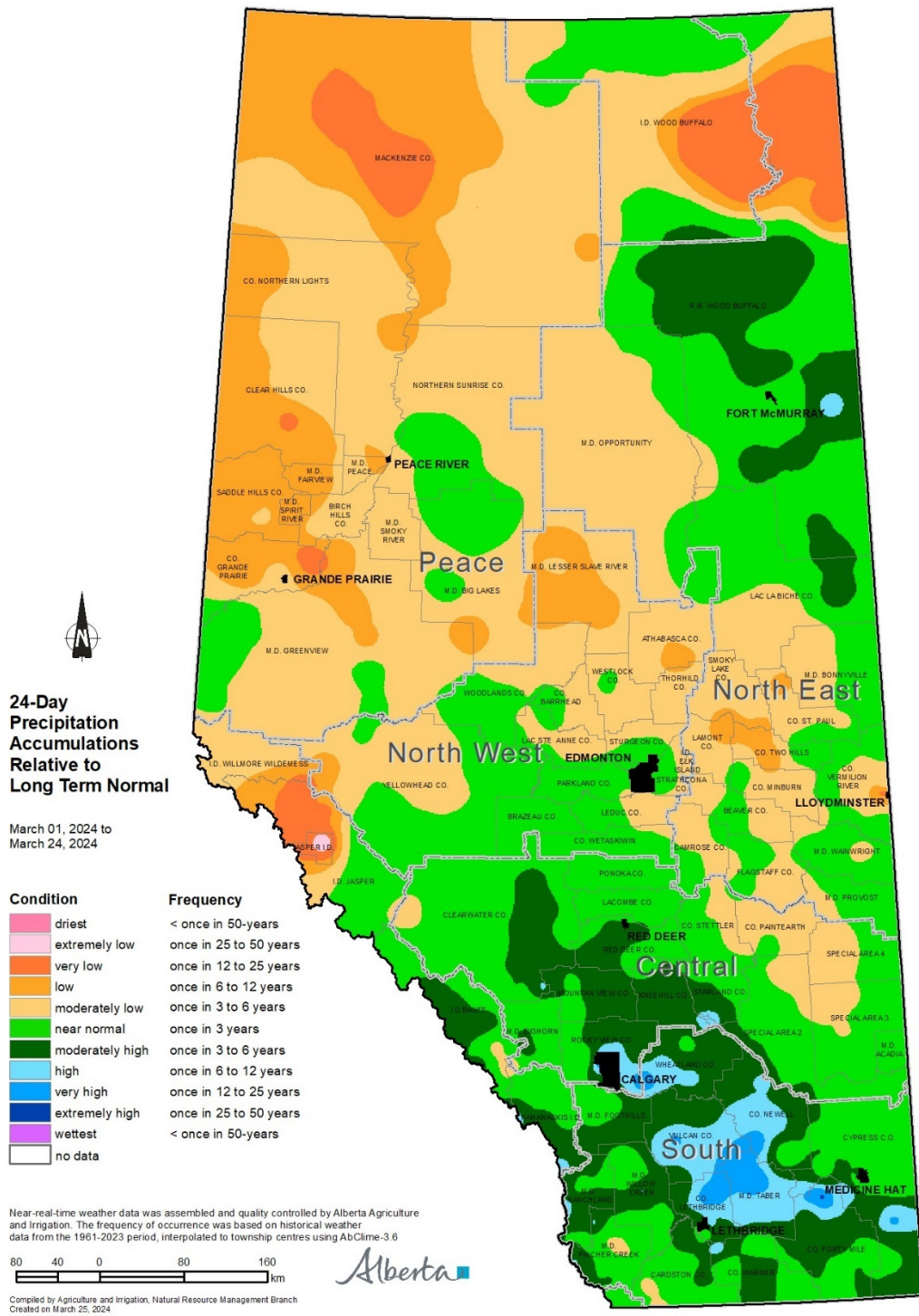
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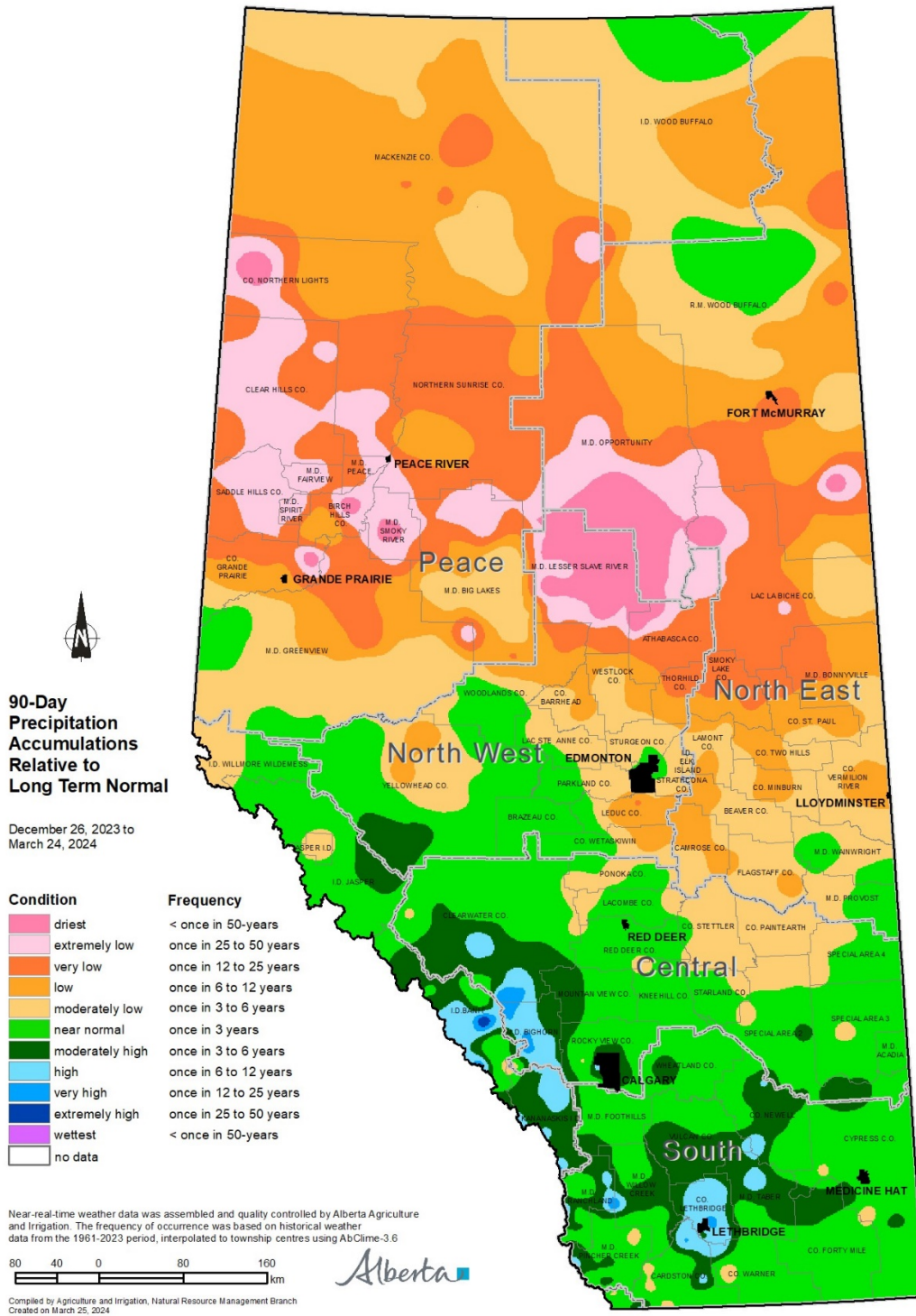


Map 2



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Map 3



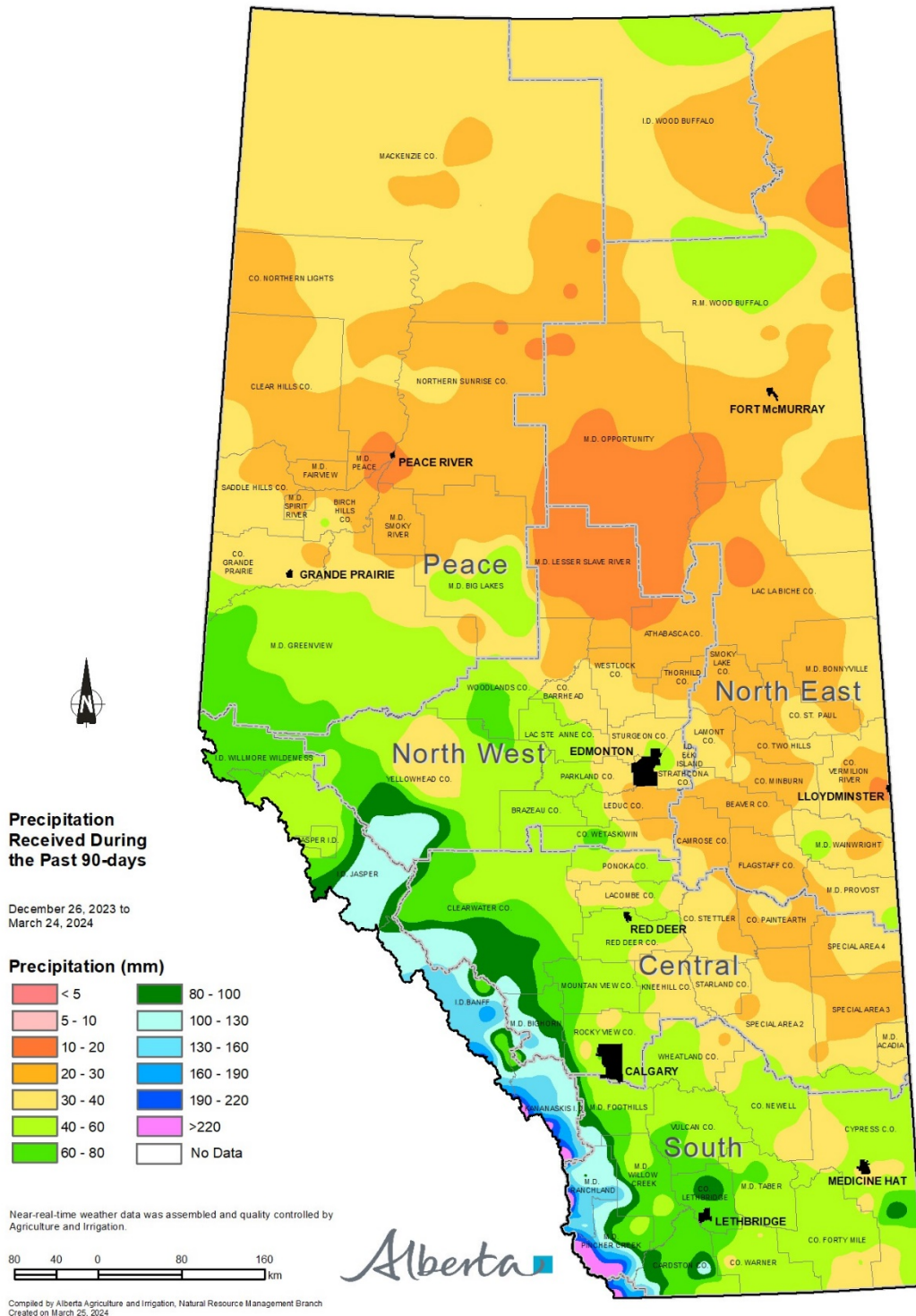
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Map 4



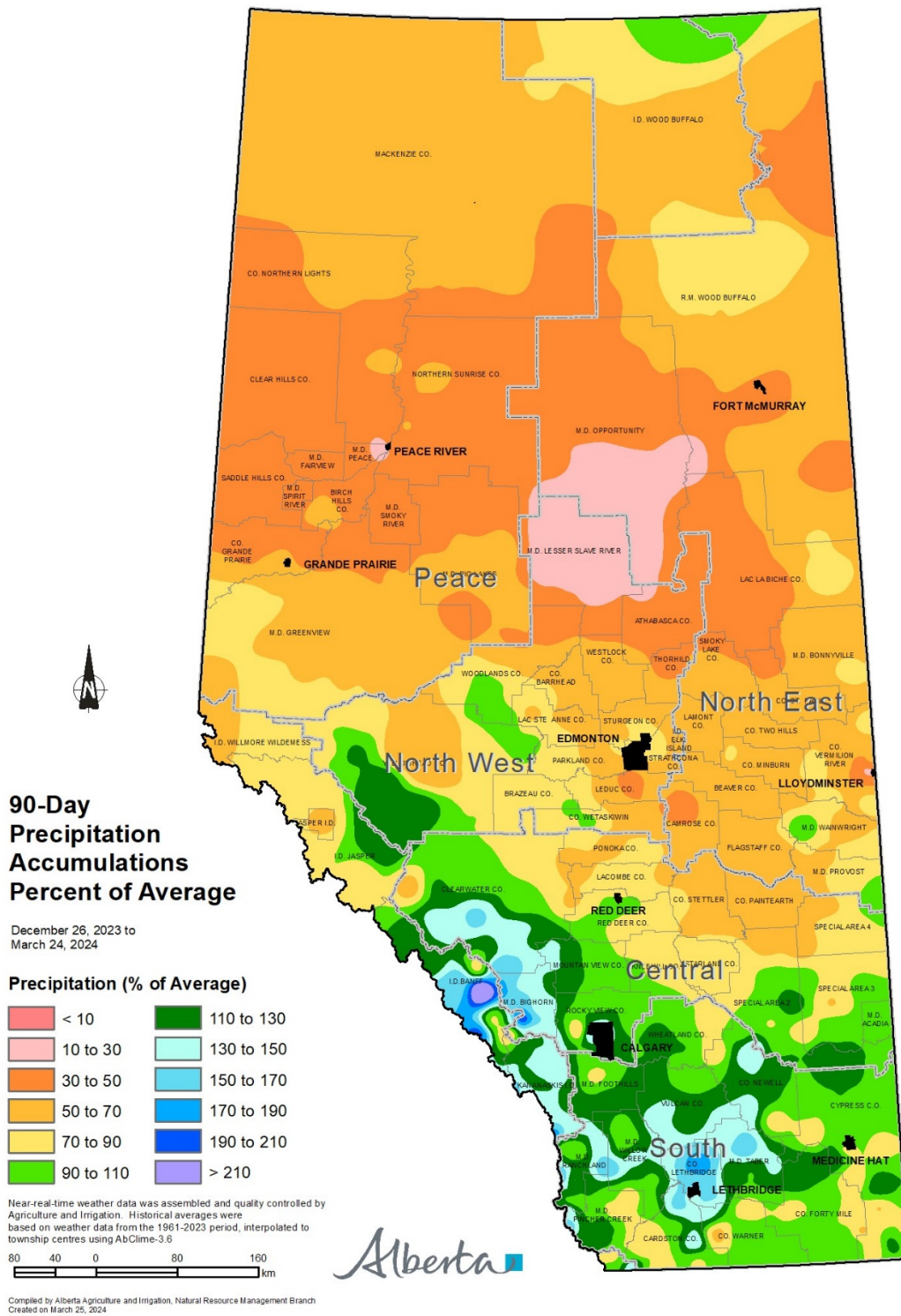
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Map 5



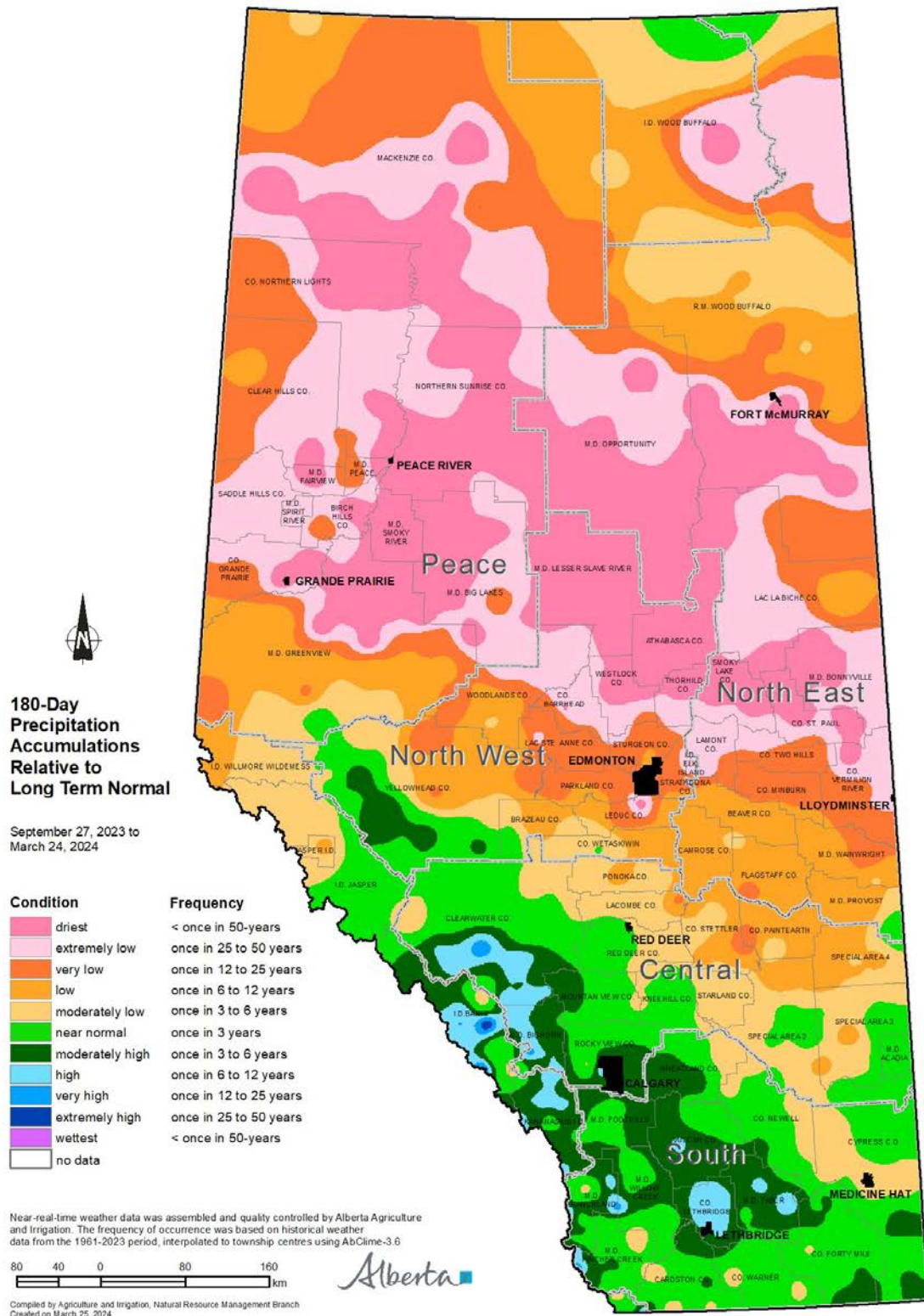
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Map 6



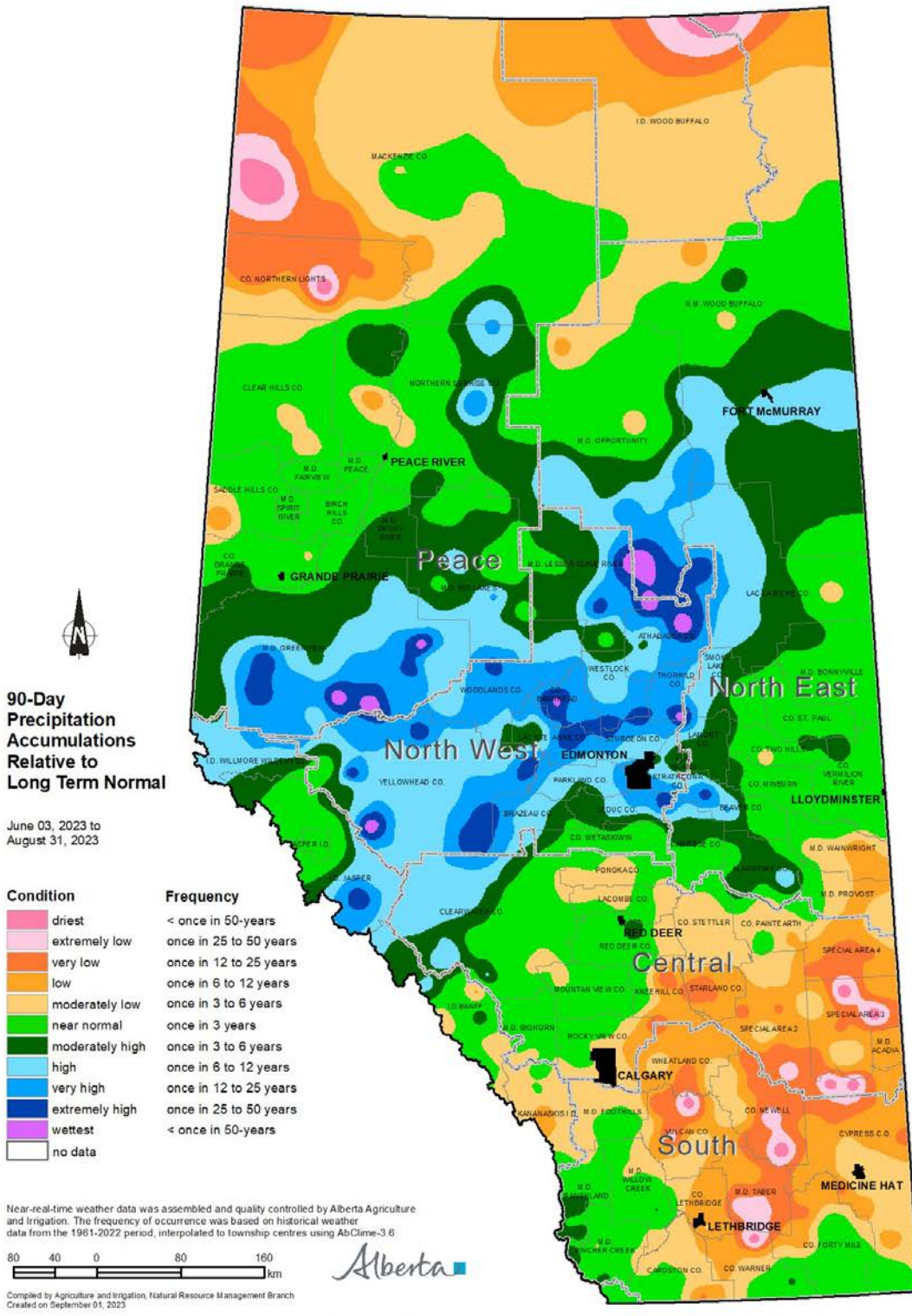
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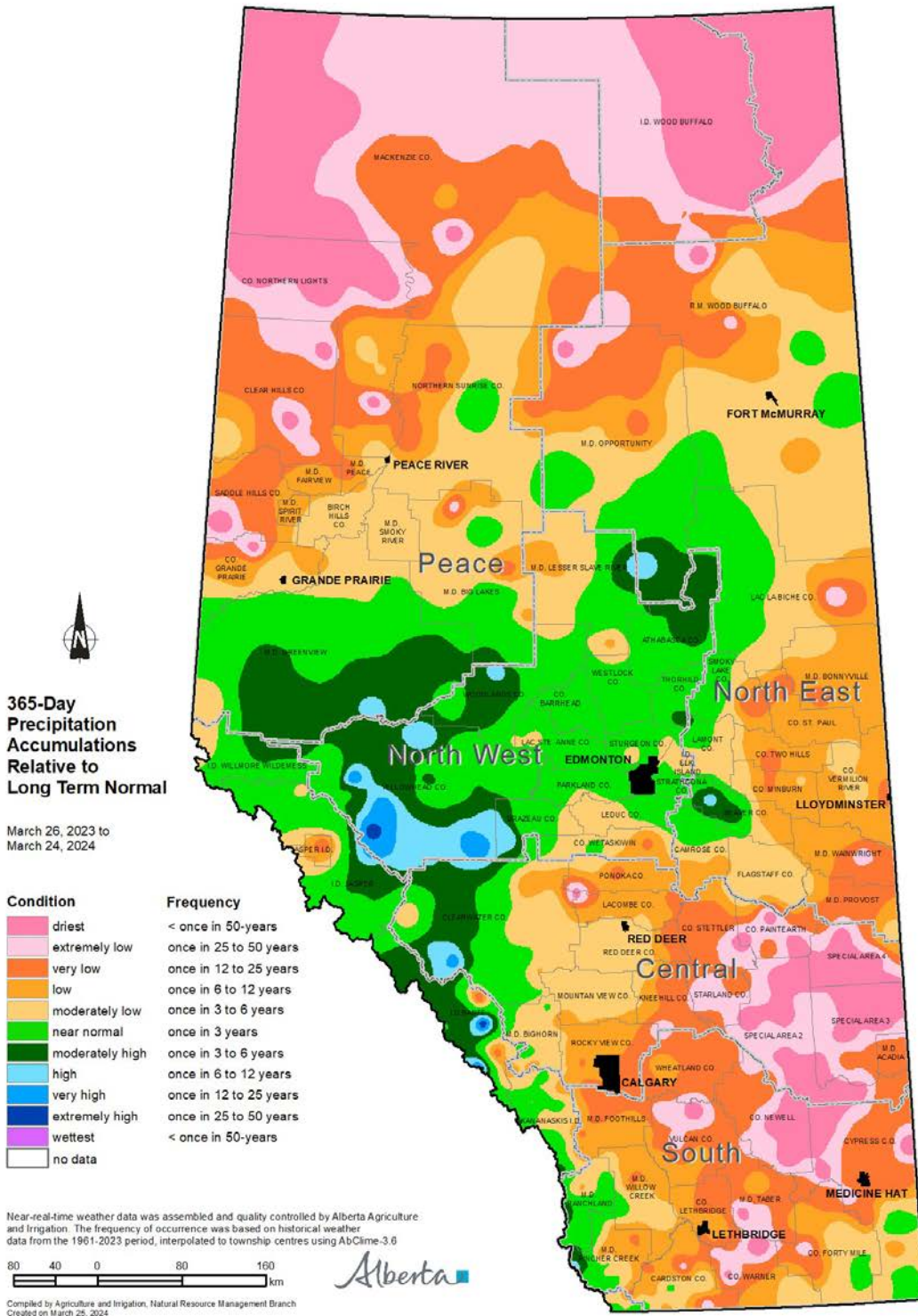


Map 7



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Map 8



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