

Moisture Situation Update – December 19, 2016

Synopsis

November marked a notable shift in Alberta's precipitation patterns, with most of the province experiencing a drying trend over the past 7 weeks (see **map 1**). This is particularly true for those previously wet areas in which harvest was greatly impeded; namely lands lying west of Highway 2, stretching as far south as Sundre and well north, into the Peace Country, and also many areas lying north of the Yellowhead highway. This recent shift stands in stark contrast to the August, September and October precipitation accumulations which ranged into one in 50 year highs across some areas (see **map 2**).

As of December 19, 2016 snow pack accumulations are generally well below normal across most of the province, with many areas north of the Yellowhead Highway seeing snow packs this low on average less than once in 6 to 12 years (see **map 3**). In contrast, snow packs in some parts of the western Peace Region are above normal; likely a result of early snow fall accumulations that occurred during the latter half of October that have never melted out. This was unlike many other areas in the north-half of the province that saw unwanted, mid-October snow disappear gradually over several weeks of above normal temperatures that persisted throughout most of November (see **map 4**).

Perspective: To be normal or not...

Abrupt shifts in weather patterns from below 'normal' to above 'normal' and vice versa are not unusual in Alberta's meteorological record. In fact, the standard practice of those reporting on weather conditions is to compare current weather to 'normal' conditions. This causes confusion. The 'normal' condition is more mathematical than real, since 'normal' is simply defined as a statistical average, or sometimes more broadly as a narrow range either side of the average, a.k.a 'normal'. For example the average ('normal') annual precipitation accumulation for Grande Prairie, is 440 mm. So mathematically, Grand Prairie, or any other area for that matter, has above 'normal' precipitation about 50% of the time and below 'normal' the rest of the time (50%). In reality, weather is dominated by warm air masses that battle with cold air masses for dominance which results in our weather. Thus, the natural tendency is swing from one 'extreme' to another, which ironically is more 'normal' in the real sense of the word. In other words, it's not normal for weather patterns to hang around the 'normal' range.

2016 serves as a very recent example, with many areas of the province worried about an impending drought this spring (see **map 5**). However, by mid-May weather patterns abruptly shifted to a generally wetter cycle that lasted well into October. This culminated in soil moisture reserves that 'shifted' to well above normal in many areas (see **map 6**). And now once again many areas are now seeing a shift to the other side of the spectrum, with the last 7 weeks or so being dominantly in a dry cycle (see **map 1**). How long it will last...is anyone's guess.

2016 should remind us that it's not reliable to assume that the weather patterns experienced over the past several weeks or even months will persist and serve as a good predictor beyond the relatively more reliable local 5-7 day forecast. And even this short range forecast ends up wrong on many occasions. Predicting weather trends over the coming season is even more difficult. For a land mass the size of Alberta to broadly predict that it's generally going to be warmer, wetter colder or drier over the next several weeks, months or season(s), is at best tenuous. Time and time again we see a huge range in weather patterns across the province, and almost always, some areas will have above 'normal' conditions, sharply contrasted with others areas that have below 'normal' conditions.

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Real Time Radar can be used to track and monitor thunderstorms at:

<http://www.agric.gov.ab.ca/acis/weather-radar.jsp>

Additional maps can be found at www.agriculture.alberta.ca/maps

Near-real-time hourly station data can be viewed/downloaded at

www.agriculture.alberta.ca/stations

Note: Data has about a two hour lag and is displayed in MST.

Ralph Wright

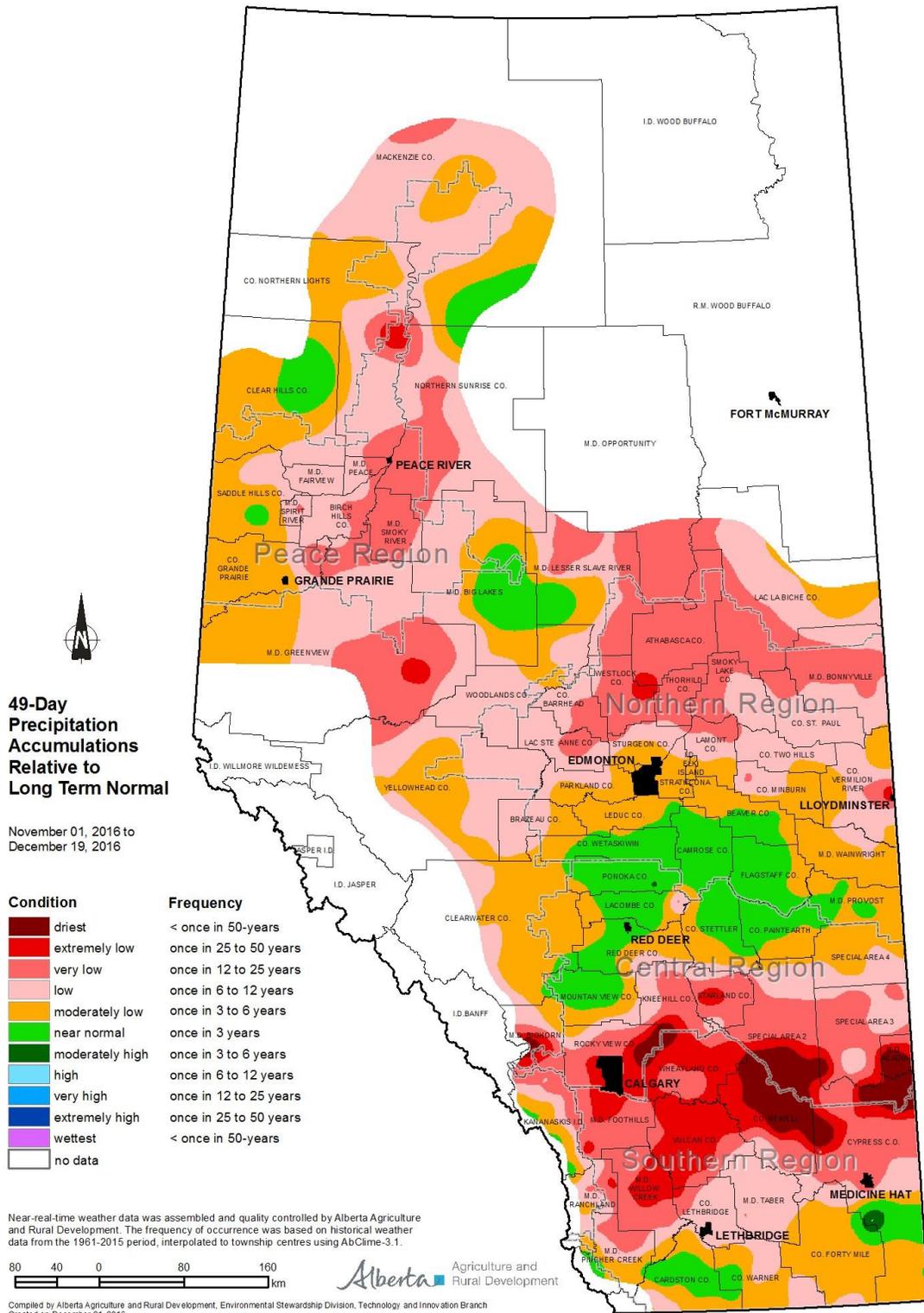
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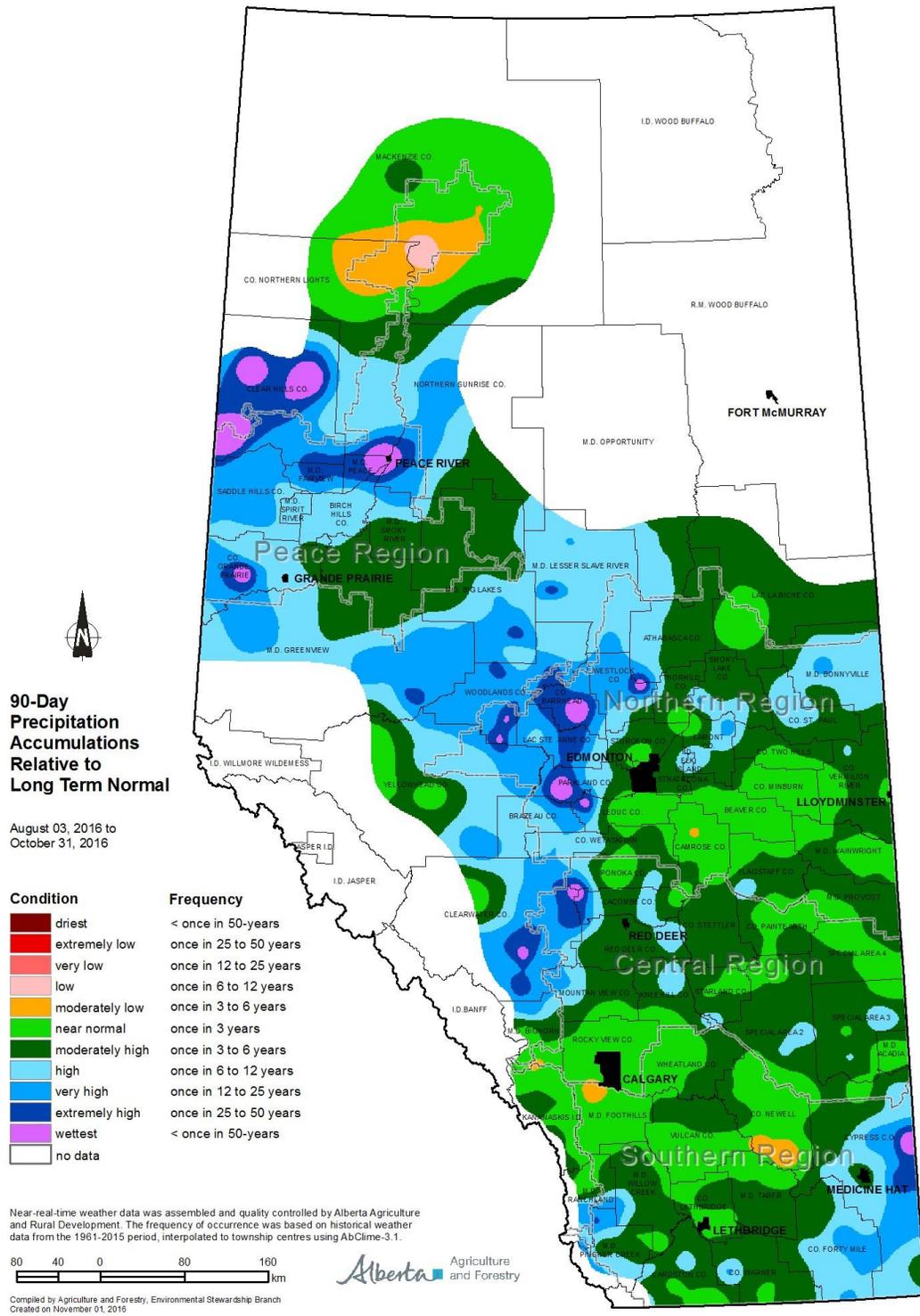
Map 1



Visit weatherdata.ca for additional maps and meteorological data

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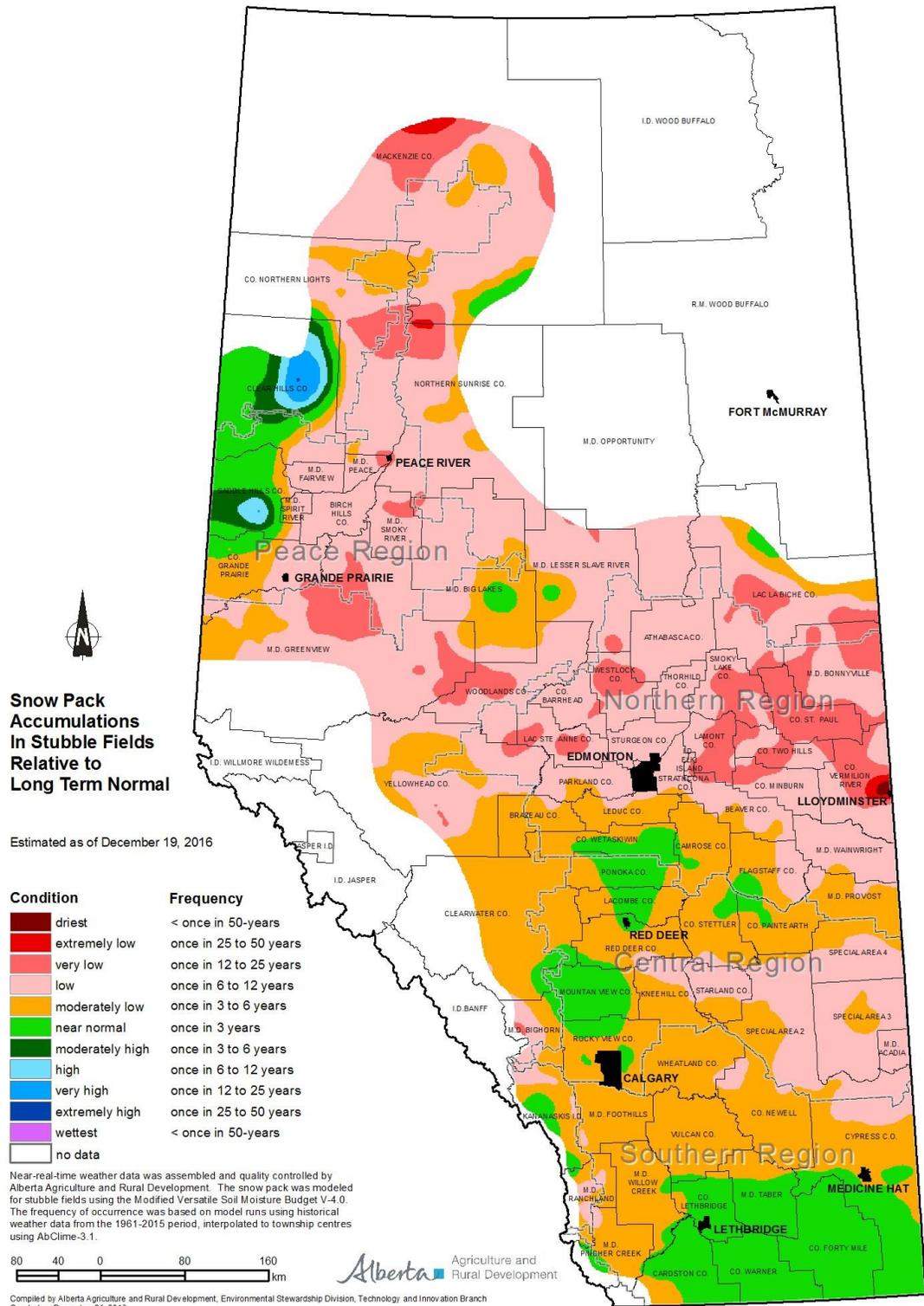
Map 2



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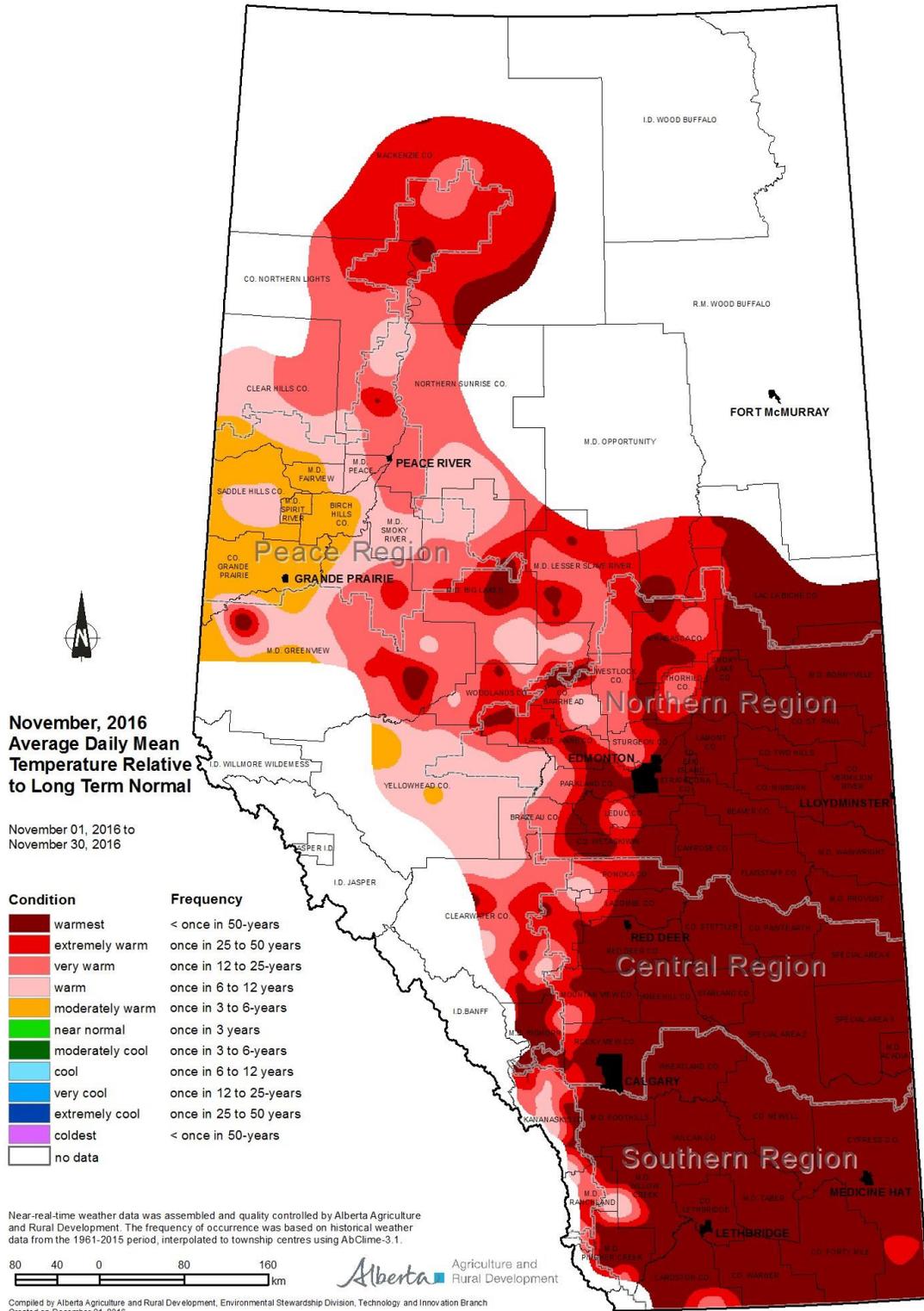
Map 3



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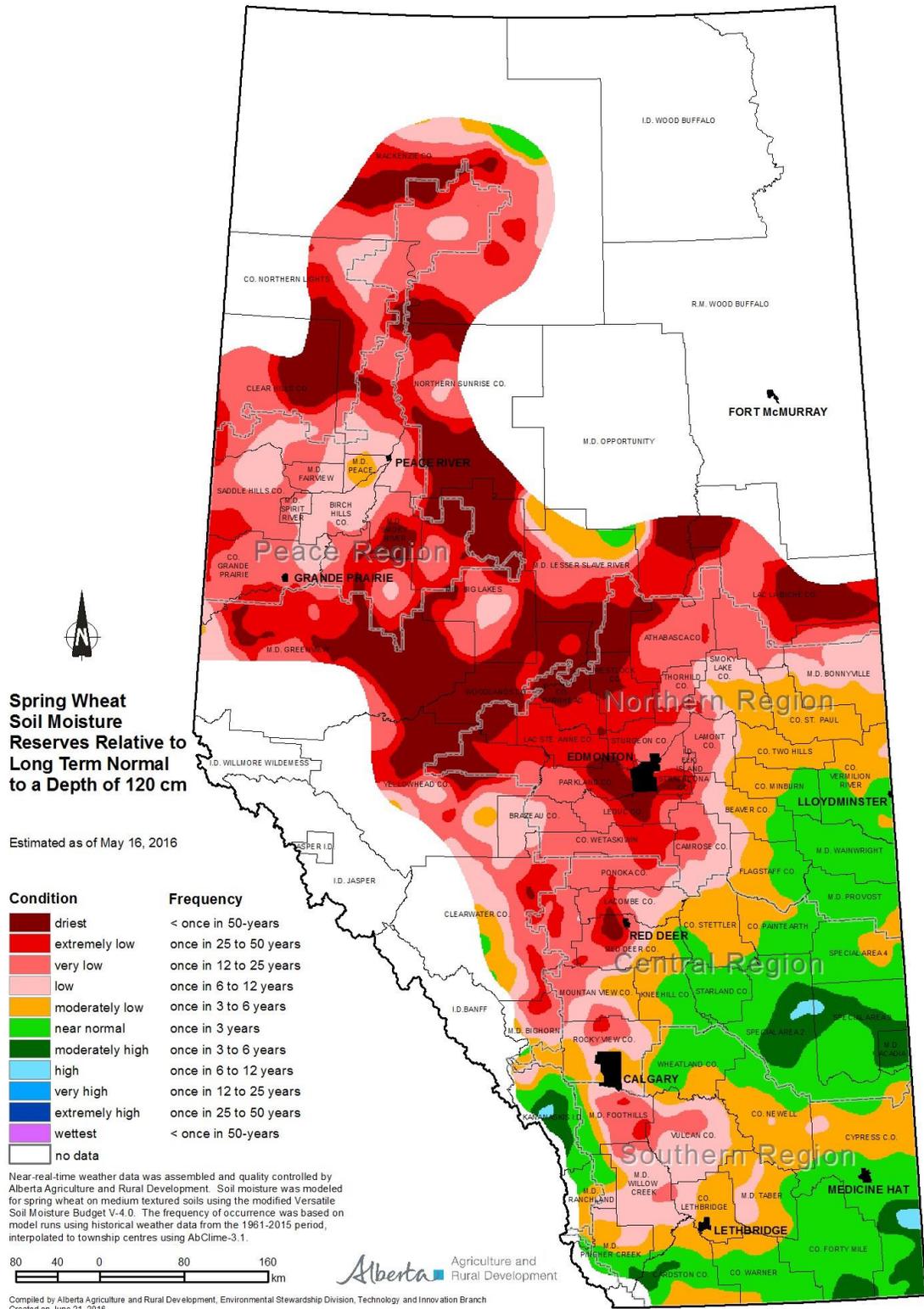
Map 4



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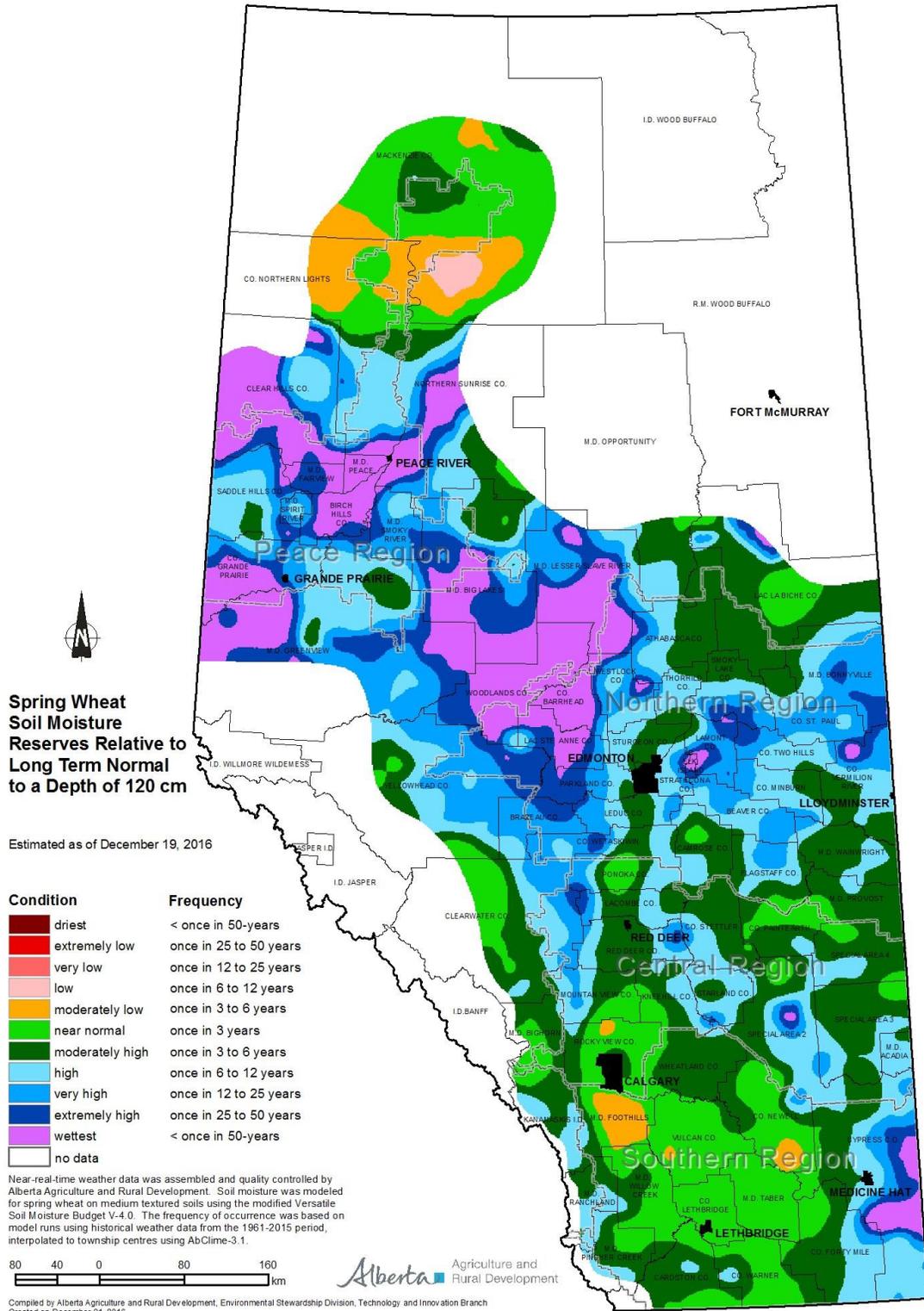
Map 5



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Map 6



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