

Agricultural Moisture Situation Update

February 3, 2022

Synopsis

The cold spell that dominated that latter part of December finally broke during the second week of January. Since that time, temperatures have generally been above normal with many areas (with the exception of the extreme north) experiencing several days where daytime temperatures moved above the freezing mark.

Since the start of winter season (November 1), precipitation accumulations have generally been near normal or above across most lands lying north of Wetaskiwin and all through the foothill areas down as far as the US border. In contrast, dry weather has persisted throughout most of the plains areas south of Wetaskiwin with some parts of southern Alberta still experiencing once in 50-year lows.

Winter Season Precipitation - November 1, 2021 to February 3, 2022

Most of the agricultural areas south of Wetaskiwin all the way to the US border are still in a pattern of below normal precipitation accumulations (**Map 1**), a condition that has persisted for more than a year. Parts of southern Alberta are experiencing once in 12 to 25 year lows, with small pockets trending to once in 50 year lows. Some of these lands have received less than 10 mm of moisture since November 1st (**Map 2**). However, it's important to put this into context since this area is usually quite dry, on average only receiving 30 to 40 mm over this time frame. Thus this winter's moisture deficits could be alleviated with a single large storm system moving through delivering only 30 cm of fresh snow. There is still ample time ahead of planting and spring regrowth to see the moisture situation improve.

Historical Perspective

Winter (November to March) is a normally a relatively dry time of year, and February is the driest month of the year with average accumulations ranging from only 10 to 15 mm through much of the east-half of the province, to upwards of 20 to 30 mm through the Peace Region (**Map 3**). As well, March is still generally a very dry month, but across the southwest corner of the province it marks the start of a

wetter weather pattern with agricultural lands along the eastern slopes on average, receiving 30 to 40 mm. During April, the wetter weather trends expand across the southern parts of the province with many more lands receiving at least 30 to 40 mm. Elsewhere it's not until the latter-half of May that we typically see appreciable moisture returning after the long winter dry season.

Looking back over the years we see many abrupt and unexpected shifts from wet weather to dry weather and vice versa. The droughts of 2001 and 2002 are perfect examples of this (**Map 4**). Across southern Alberta, 2001 was a very notable drought year, only to be abruptly broken by an extremely wet year in 2002. Across the south in 2002 wetter than normal weather arrived in February, breaking the dry spell (**Map 5**). The trend generally continued to at least June, with some lands south of the TransCanada Highway recording well over 150 mm in this month alone.

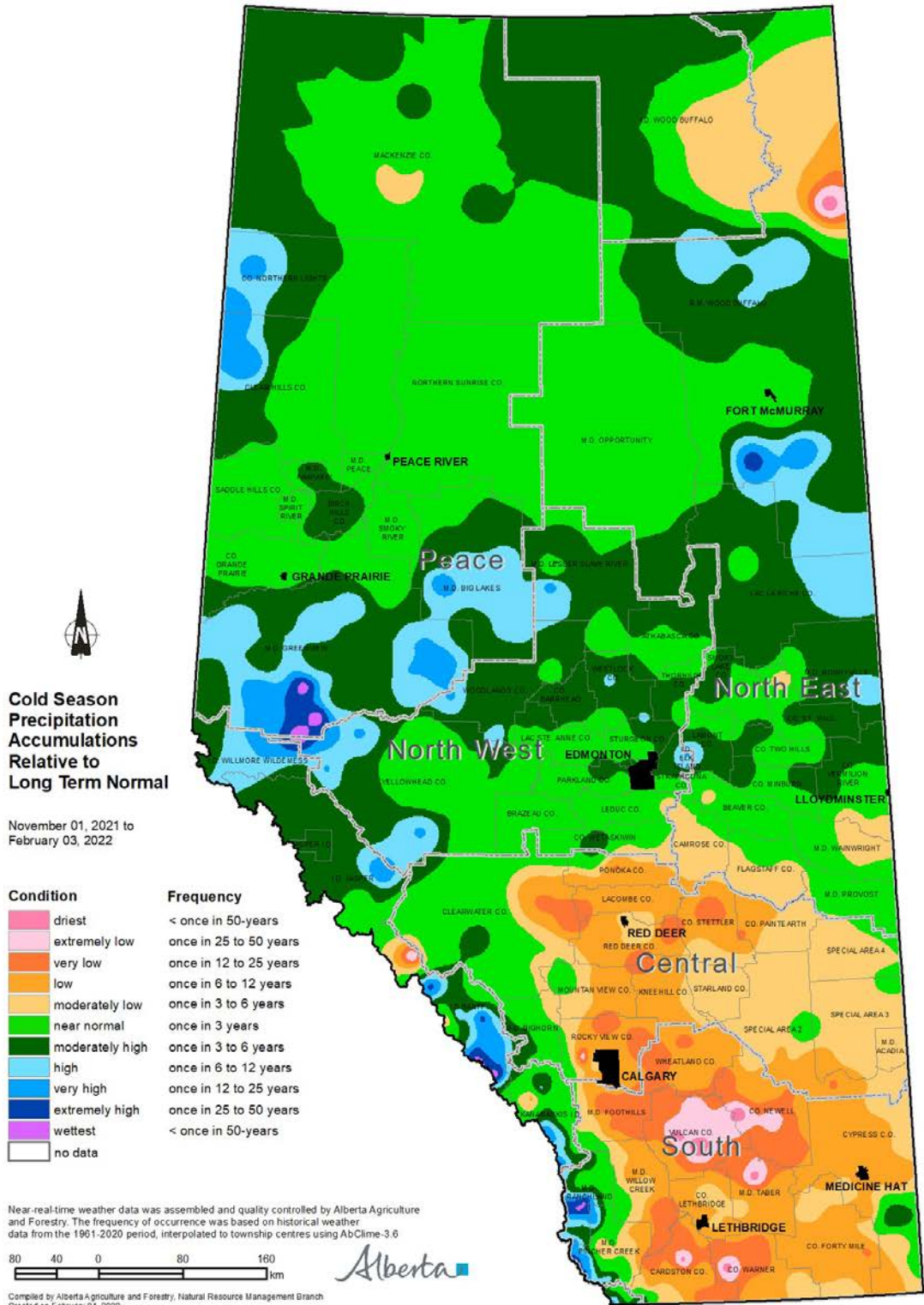
In sharp contrast to the wet weather the south was enjoying in 2002, much of the province north of this was plunged into exceptionally dry conditions (**Map 3**) with 1 in 50-year lows experienced through parts of the North East Region that in fact extended eastward across most of the Prairie Provinces. By 2003, pockets of dry areas lingered through east central areas, but some of the hardest hit lands in the North East Region had returned to near or above normal moisture patterns. By 2004 most areas were near normal, and by 2005 much of the south-half of the province was much wetter than normal.

The meteorological record is replete with examples that demonstrate that the weather we've had is a very poor predictor of the weather that we'll receive. Weather and moisture patterns across Alberta are extremely variable in space and time and at this point it's simply far too early to predict what next year's cropping season will bring.

For a complete historical perspective of moisture patterns and trends from 1961 to 2021 go to <http://agriculture.alberta.ca/acis/climate-maps.jsp>. Look under the "Precipitation" folder for "Historical Summaries from 1961".

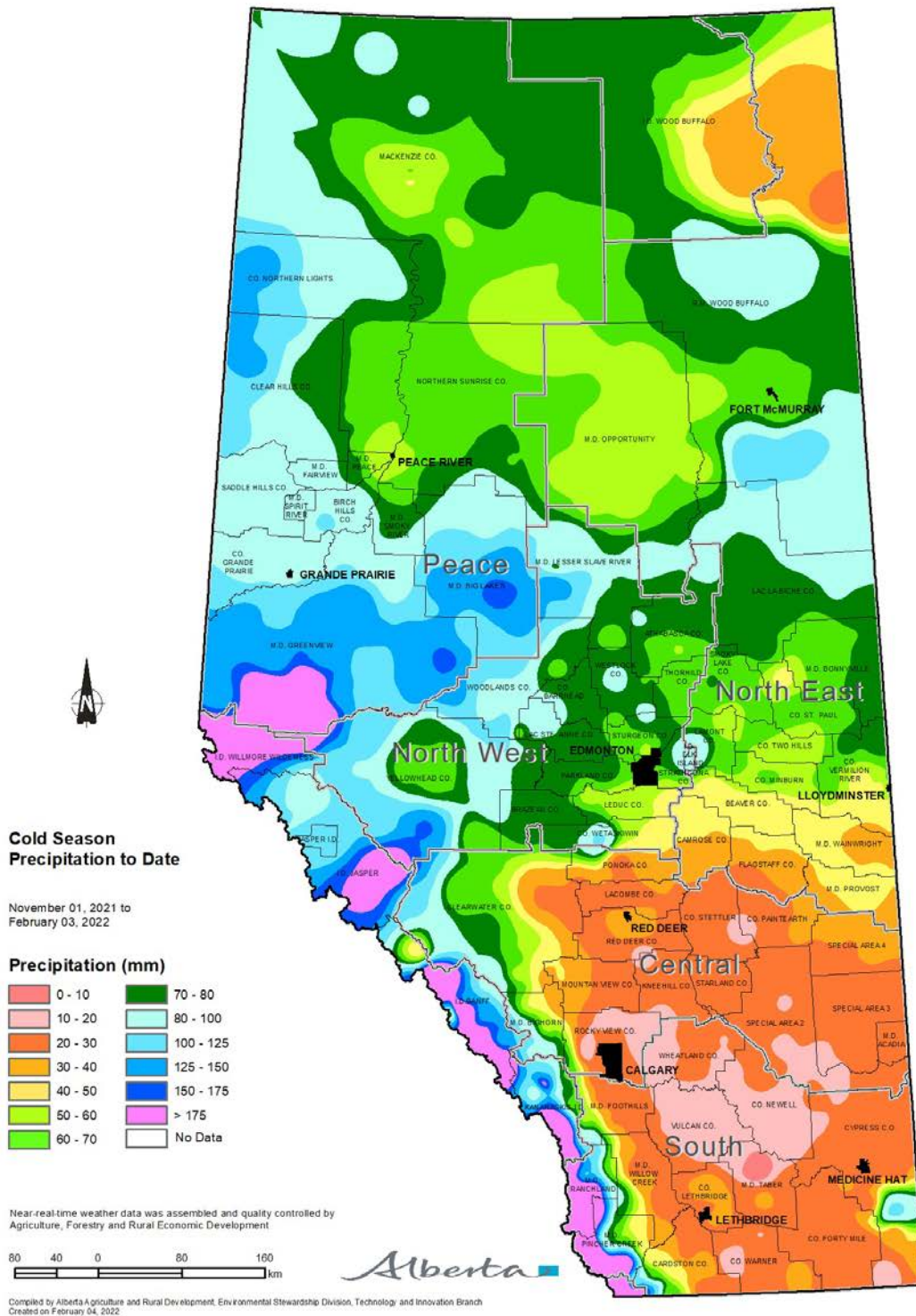
<https://open.alberta.ca/publications/moisture-situation-update>

Map 1



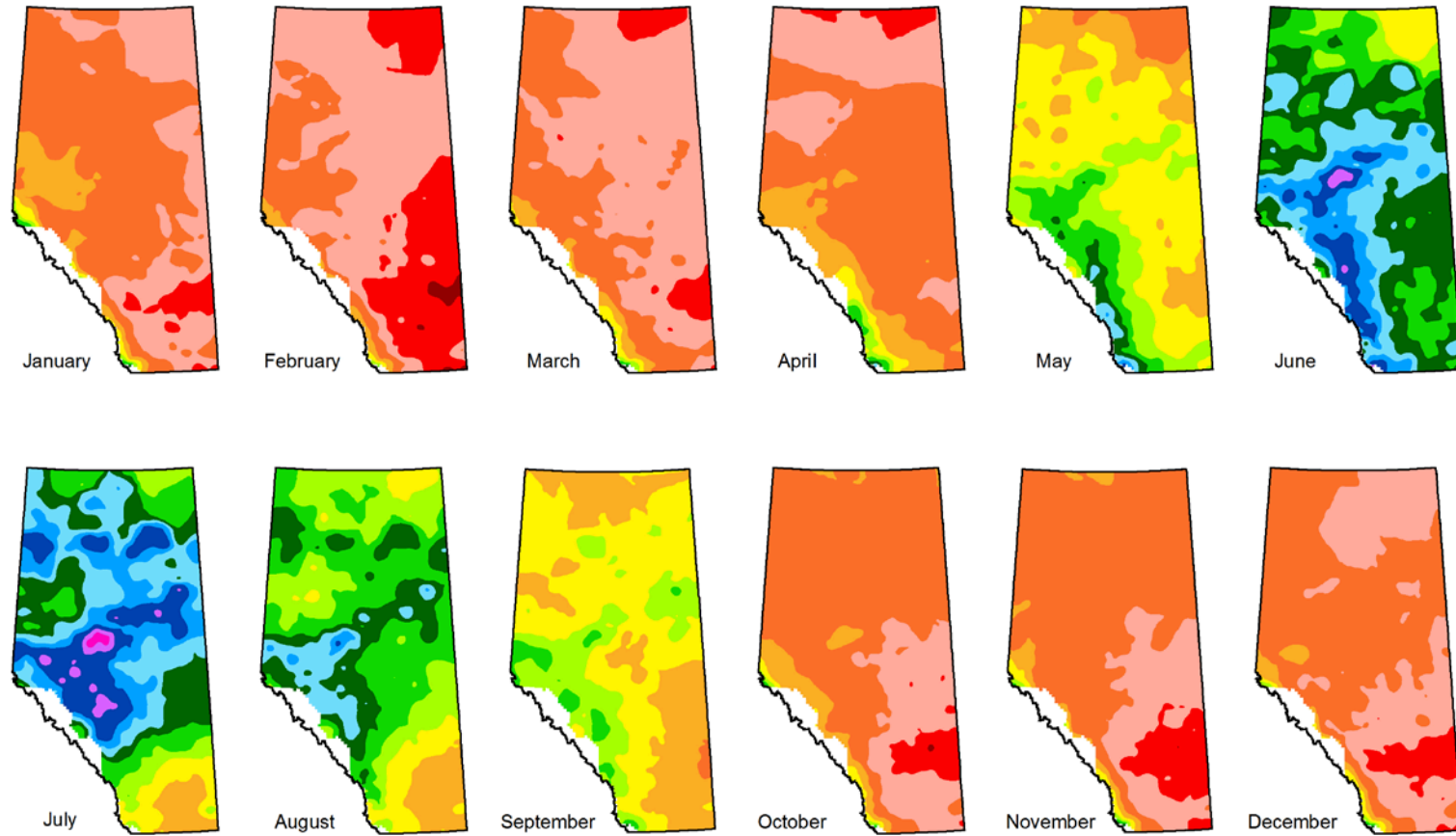
Visit weatherdata.ca for additional maps and meteorological data

Map 2



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

Map 3



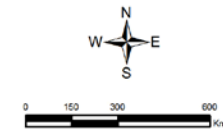
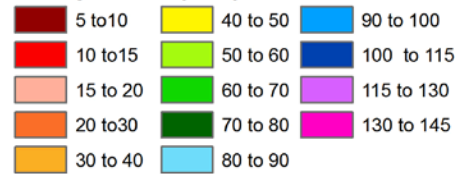
Average Monthly Precipitation in Alberta

for the period 1961-2010

Average based on historical weather data from the 1961-2010 period, interpolated to township centers using AbClim-3.1.

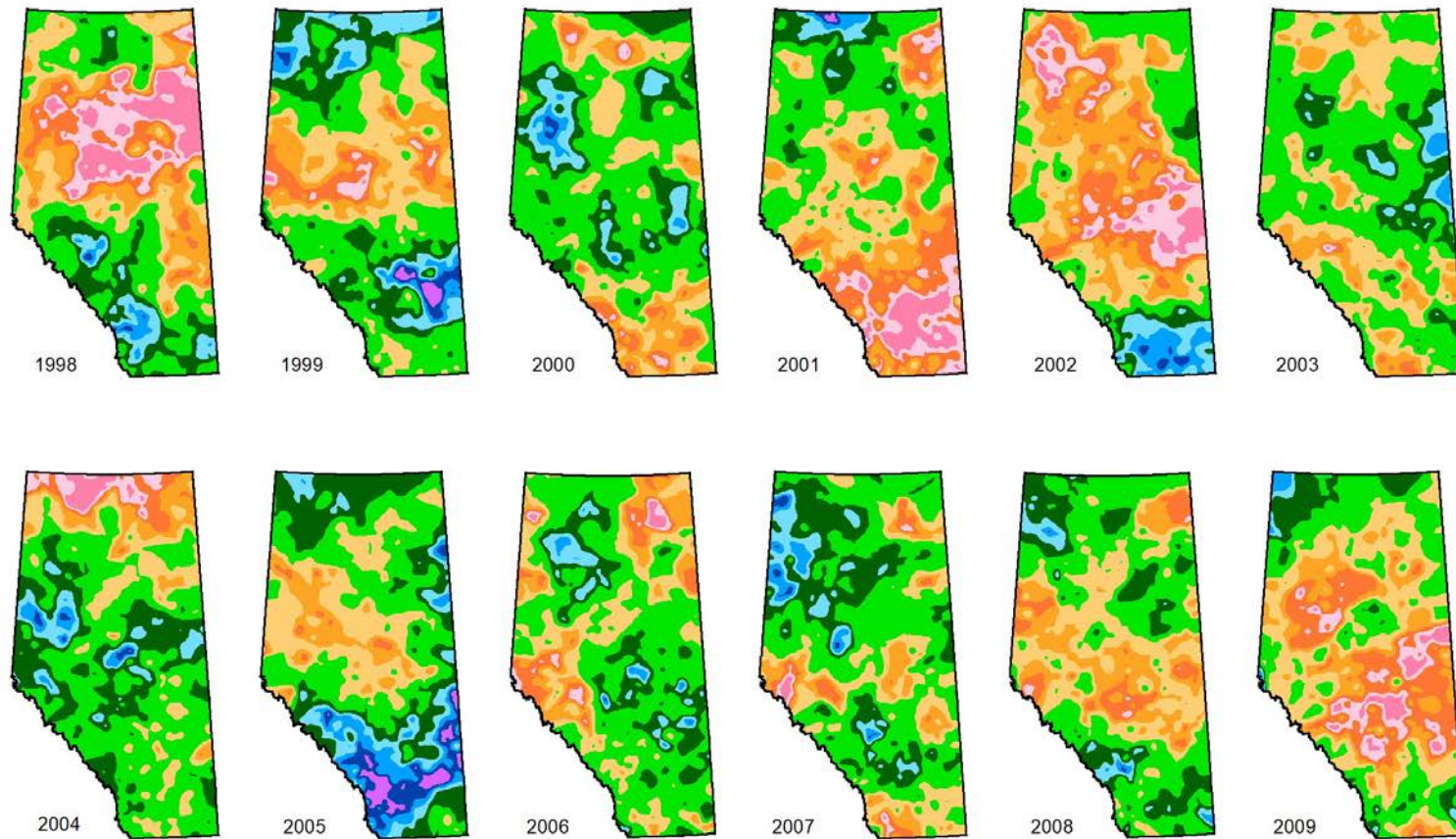
Compiled by Alberta Agriculture and Rural Development, Environmental Stewardship Division, Technology and Innovation Branch
Created on December 09, 2011

Precipitation (mm)



Government of Alberta
Agriculture and Rural Development

Map 4



**Yearly
Precipitation Accumulations
Relative to Long Term Normal**

Years 1998 to 2009

The frequency of occurrence was calculated using historical weather data from the 1961-2021 period, interpolated to township centres using AbClima-3.6.

Compiled by Alberta Agriculture and Forestry, Natural Resource Management Branch
Created on December 23, 2021

Condition

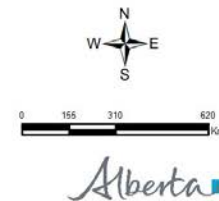
- driest
- extremely low
- very low
- low
- moderately low
- near normal

Frequency

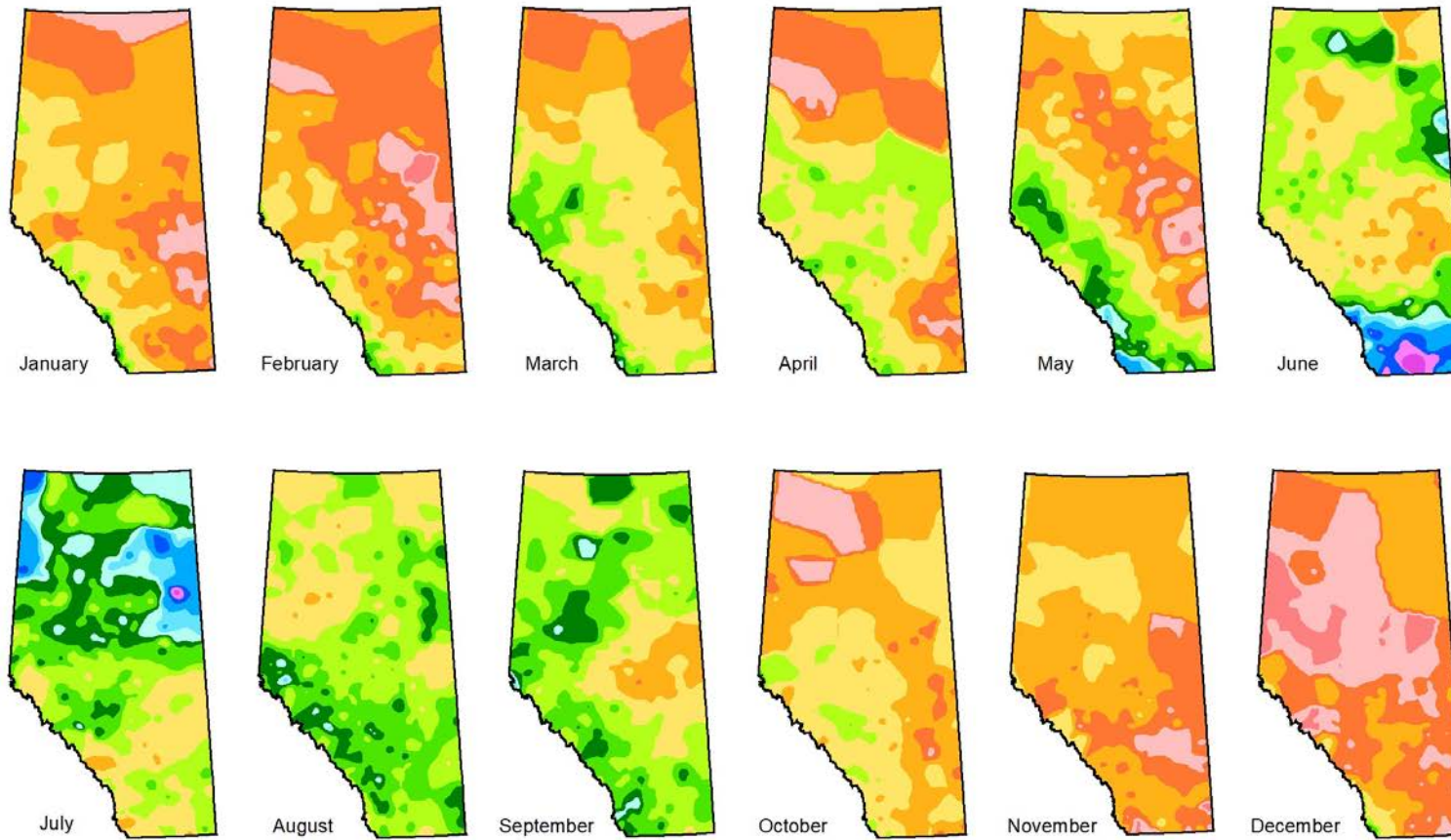
- < once in 50-years
- once in 25 to 50 years
- once in 12 to 25 years
- once in 6 to 12 years
- once in 3 to 6 years
- once in 3 years

- moderately high
- high
- very high
- extremely high
- wettest
- no data

- once in 3 to 6 years
- once in 6 to 12 years
- once in 12 to 25 years
- once in 25 to 50 years
- < once in 50-years



Map 5



**Monthly
Precipitation Accumulations**

Year 2002

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

Compiled by Alberta Agriculture and Forestry Natural Resource Management Branch

Created on January 17, 2022

Precipitation (mm)

