Moisture Situation Update – April 7, 2013

Synopsis:

Generally north of Red Deer, cooler than normal temperatures over the past month, combined with late October snows, above normal winter snow accumulations and recent snow storms, have resulted in a slow start to spring and deep lingering snow packs. Looking back over 52 years, current snow packs as of April 7th generally range from 1 in 3-6 year highs north of the TransCanada highway, grading to 1 in 6-12 year highs through the eastern parts of the Special Areas, in and around the City of Edmonton, and as well, through many parts of the Peace Region. Snow packs are estimated to be near 1 in 50 year highs in and around the Swan Hills and also in parts of the MD of Clear Hills. Province wide, soil moisture reserves under the snow packs are tend to be normal to below normal, however; soil temperatures at the surface are generally near the freezing mark, suggesting that these soils are ready to absorb more snow melt water than they would normally take in during a typical spring melt.

Snow pack accumulations relative to long term normal as April 7, 2013 (see map)

- Current snow packs across many areas are albeit high relative to average, but when compared to snow packs over the past 50 years, are not unprecedented. For example, looking at a few of the high snowfall areas, through the Special Areas snow packs on April 7th were deeper in 1985, 1982, 1975, 1974, 1971, 1969, 1967 and 1965. Currently, it is estimated that more than 40 mm of water is present in the snows in this area, with 1974 being the highest snow year (120 mm water), followed by 1967, 1971 and 1975 all having more than 100 mm of water in the snow packs. Similarly around Edmonton, another high snow fall area, the current snow pack is estimated to contain about 125 mm of water, making it the 8th deepest snow pack looking as far back as 1961. In comparison, over this same period 1974 was the biggest snow year, containing approximately 220 mm of water.
- A slow start to spring melt has resulted in moderately high snow packs across most of the province, north of the TransCanada highway. Several of these areas experience snowpack this deep at this time of year, on average only 1 in 6-12 years, including Edmonton and surrounds, parts of the Special Areas, and parts of the central Peace Region.
- Unusually deep snow packs are persisting throughout the Swan Hills (1 in 50 year highs) and throughout the M.D of Clear Hills (1 in 25-50 year highs).

Perspective

- Many may be thinking that snow packs of this magnitude, lingering this long are highly unusual. In fact, while they are abnormal, they are not unprecedented. Looking back over the past 50 years, several years rank higher that the current year for most areas, with the exception of the Swan Hills and parts of the MD of Clear Hills.
- Over the past several years, above average temperatures and in many cases below average snow packs have clouded our memories with respect to what we are seeing today. That being said, there is still a lot of snow to melt and we are still only in April.
- Snow storms during this month are not uncommon and it's still very much a wait and see situation.

Interesting facts:

- On April 5th, several stations throughout southern Alberta recorded air temperatures in excess of +15 C. In contrast, on this same day some areas in the northern Peace Region saw the mercury dip to well below -25 C.

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 (add one hour for daylight savings time)

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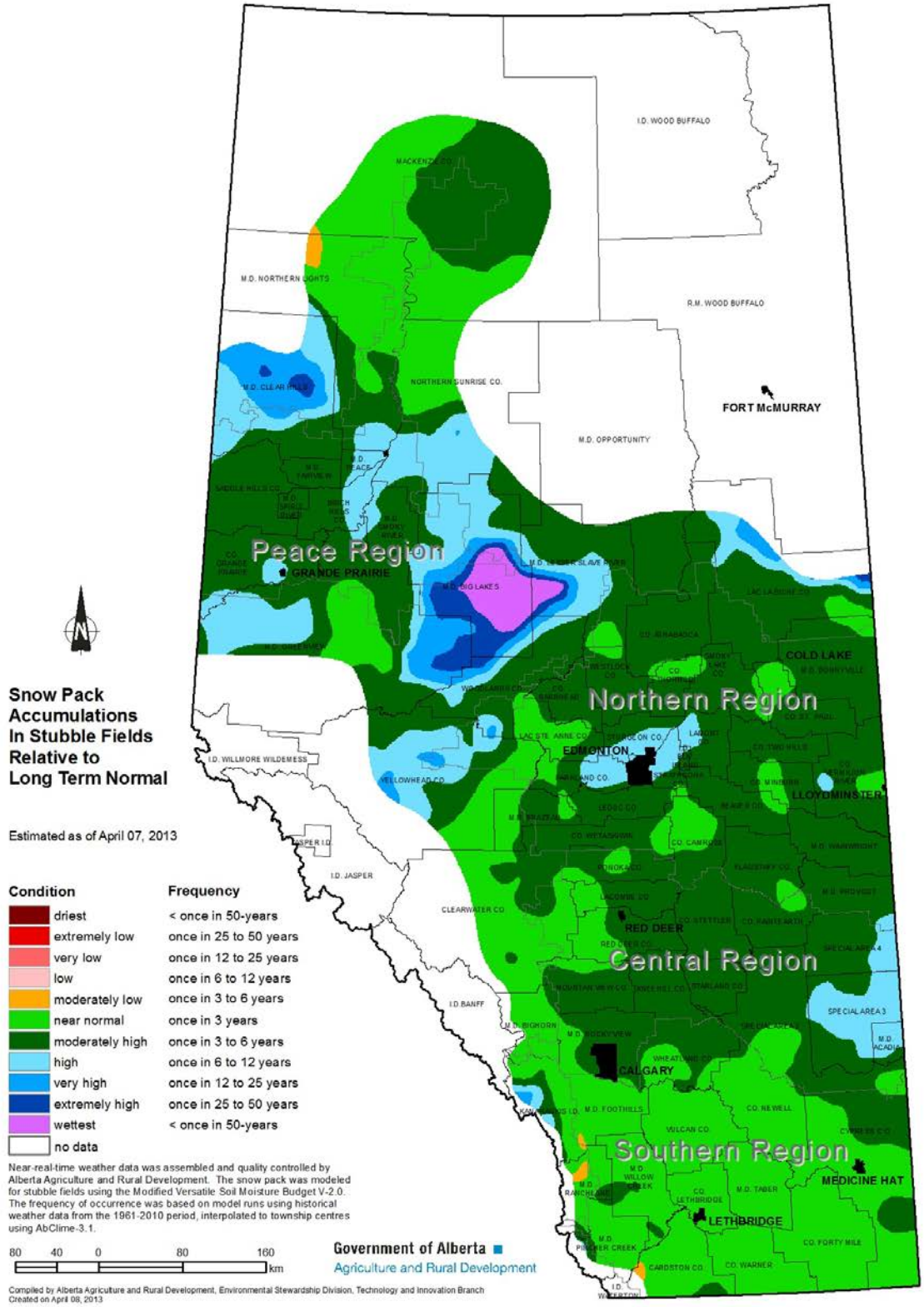

Snow Pack Accumulations In Stubble Fields Relative to Long Term Normal

Estimated as of April 07, 2013

Condition	Frequency
driest	< once in 50-years
extremely low	once in 25 to 50 years
very low	once in 12 to 25 years
low	once in 6 to 12 years
moderately low	once in 3 to 6 years
near normal	once in 3 years
moderately high	once in 3 to 6 years
high	once in 6 to 12 years
very high	once in 12 to 25 years
extremely high	once in 25 to 50 years
wettest	< once in 50-years
no data	

Near-real-time weather data was assembled and quality controlled by Alberta Agriculture and Rural Development. The snow pack was modeled for stubble fields using the Modified Versatile Soil Moisture Budget V-2.0. The frequency of occurrence was based on model runs using historical weather data from the 1961-2010 period, interpolated to township centres using AbClime-3.1.

80 40 0 80 160 km

Government of Alberta
Agriculture and Rural Development

Compiled by Alberta Agriculture and Rural Development, Environmental Stewardship Division, Technology and Innovation Branch
Created on April 08, 2013