

## Moisture Situation Update – December 4, 2013

### Synopsis:

On about November 30th yet another large winter storm system moved into Alberta. This particular storm was accompanied by high winds, blowing snow and poor visibility. The storm was so wide spread, that few areas escaped with no measurable precipitation accumulations. By December 4th the system had moved off, leaving in its wake cold arctic air and precipitation accumulations ranging from a few cm of new snow in through the Oyen areas to upwards of 40 cm of new snow along the Milk River Ridge. High in the mountains that feed the South Saskatchewan River, some stations saw nearly three feet of new snow.

### New Snow Accumulations, November 30th to December 4th, 2013 -see map

- The map depicted here represents the amount of precipitation that fell (snow water equivalent mm). Generally, these values can be multiplied approximately 15 times to estimate cm of new snow that fell. Note, new snow fall totals observed on the ground may be higher or lower than depicted on the map due to localized shifting of the snow packs as a result of redistribution by winds.
- The brunt of the storm hit areas west of Highway 2, extending across more than 1000 km of Alberta, ranging from the Canada/US border, to High Level.
- Upwards of a foot of new snow was estimated to have fallen between Nordegg and Pincher Creek, with the Milk River Ridge station, about 25 km south of Magrath, recording over 35 mm of precipitation or about two feet of new snow.

### Snow Pack Accumulations Relative to Long Term Normal as of December 4th, 2013

- Province wide snowpack's for this time of year are at least near normal, with several pockets in and around Red Deer estimated to be the deepest over the entire period of observations 1961-2013.
- Snow packs are estimated to contain up to 120 mm of water in through the Pigeon Lake area, and may in places be on the order of four feet deep.
- Snow packs between Edmonton and Calgary range from once in 6 to 12 year highs to less than once in 50 years highs.

### Interesting Facts

- Two agricultural areas stand out above the rest as having the deepest snow-packs so far this year. They are in and around Pigeon Lake where it is estimated there is 120 mm of water in the snow pack, and near Magee lake, some 20 km southeast of Ponoka where there is estimated to be 100 mm of water in the snow. Note that average precipitation for the winter (November 1 to March 31) is about 100 mm.
- Looking back as far as 1961, in the Pigeon Lake area, the next deepest snow packs occurred in 1970, 1996 and 1991 (all less than 80 mm), and for Magee lake 1996, 1991 and 2006 (all with less than 84 mm).
- Following this storm on December 4th, many areas recorded overnight lows of -30°C or more, with the coldest temperature -36.1°C recorded near Thorsby at 11:00 pm, just outside the City of Edmonton.

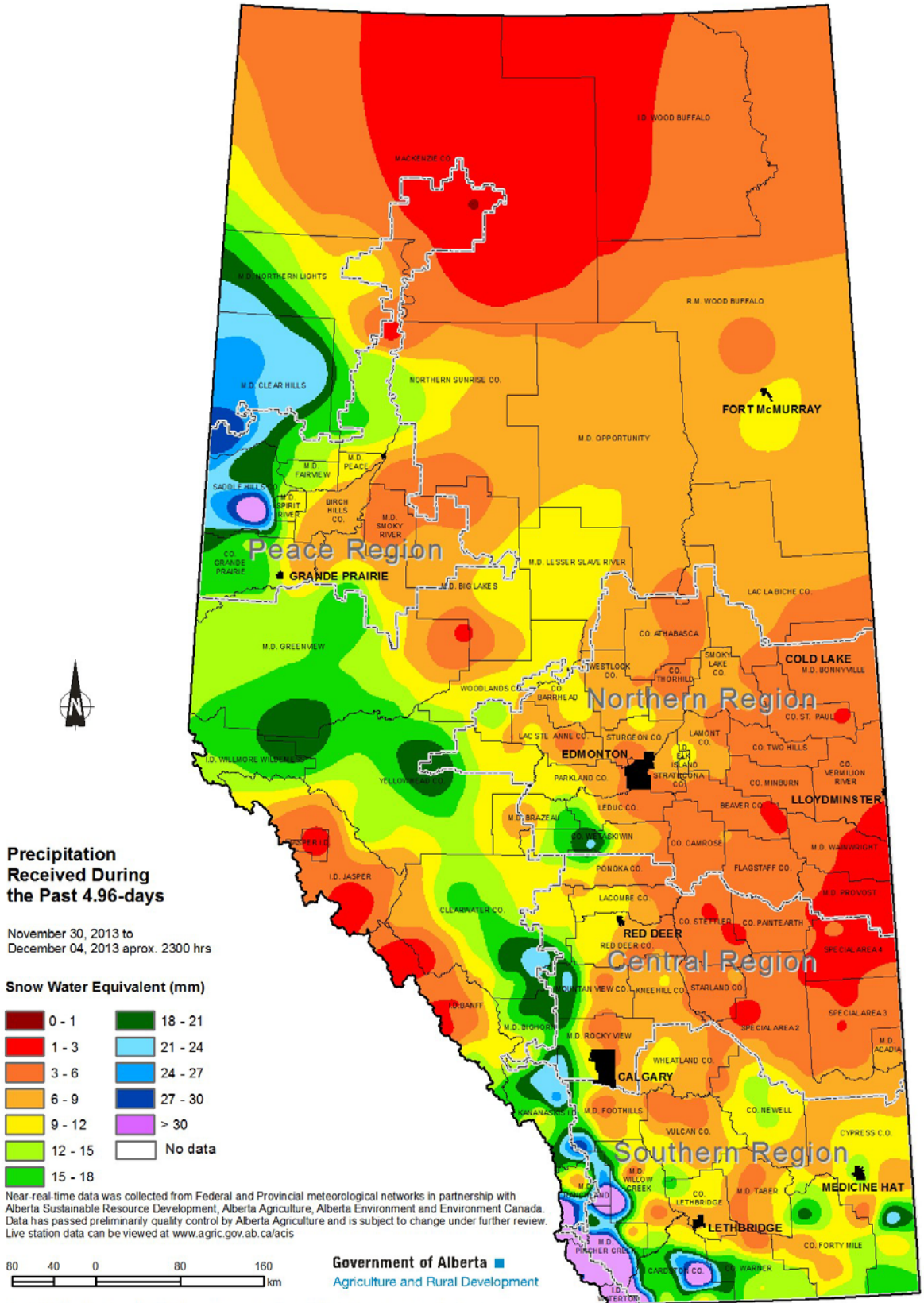
**Additional Maps** can be found at [www.agriculture.alberta.ca/maps](http://www.agriculture.alberta.ca/maps)

**Near-real-time hourly station data** can be viewed/downloaded at [www.agriculture.alberta.ca/stations](http://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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