SOIL MOISTURE

What Are The Agronomic Implications

BATTLE RIVER IMPLEMENTS

AGRONOMY UPDATE

JANUARY 2019

Back in 2013, the Alberta Biodiversity Monitoring Institute for the Climate Change Emissions Management Corporation (there's a name only a bureaucrat could come up with!) issued a report on the impact that climate change will have on our province over the next 50 years. They predicted, among other things, that "Alberta will generally see an earlier spring, increased precipitation, warmer temperatures, and an overall drier climate, which could eliminate nearly all of the boreal forest." While the increased precipitation may sound good for us, their modeling also projects that precipitation will decrease in July and August while temperatures will continue to climb in those months.

So why do I bring this up? Because I believe that in dryland farming in Alberta, we spend a lot of time talking about plant nutrition, soil health and agronomy in terms of weed, insect and disease control, but we spend almost no time talking about, or even thinking about how much moisture we have in our soils. If rain from the sky is going to get more sporadic during our growing season than it already is, understanding crop available soil moisture starts to become more important to a successful farm. Our ability to measure soil moisture and understand the agronomic implications of that moisture will become a key component in controlling costs on one hand, and being able to recognize and take advantage of opportunities to maximize yield and profit on the other. As Dr. Les Henry (Dept. of Soil Science at the University of Saskatchewan – retired) has said in his Grainews column; "Water in the ground is a fact not a probability. In farming we deal mostly with probabilities so we should grab a fact when it comes along."

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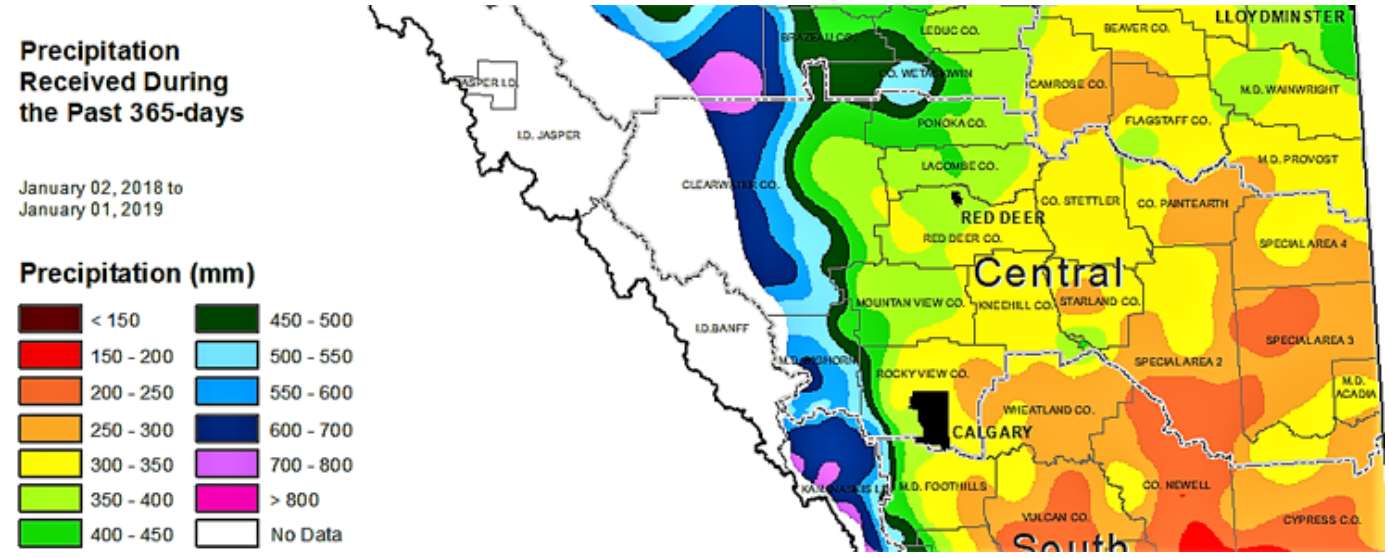
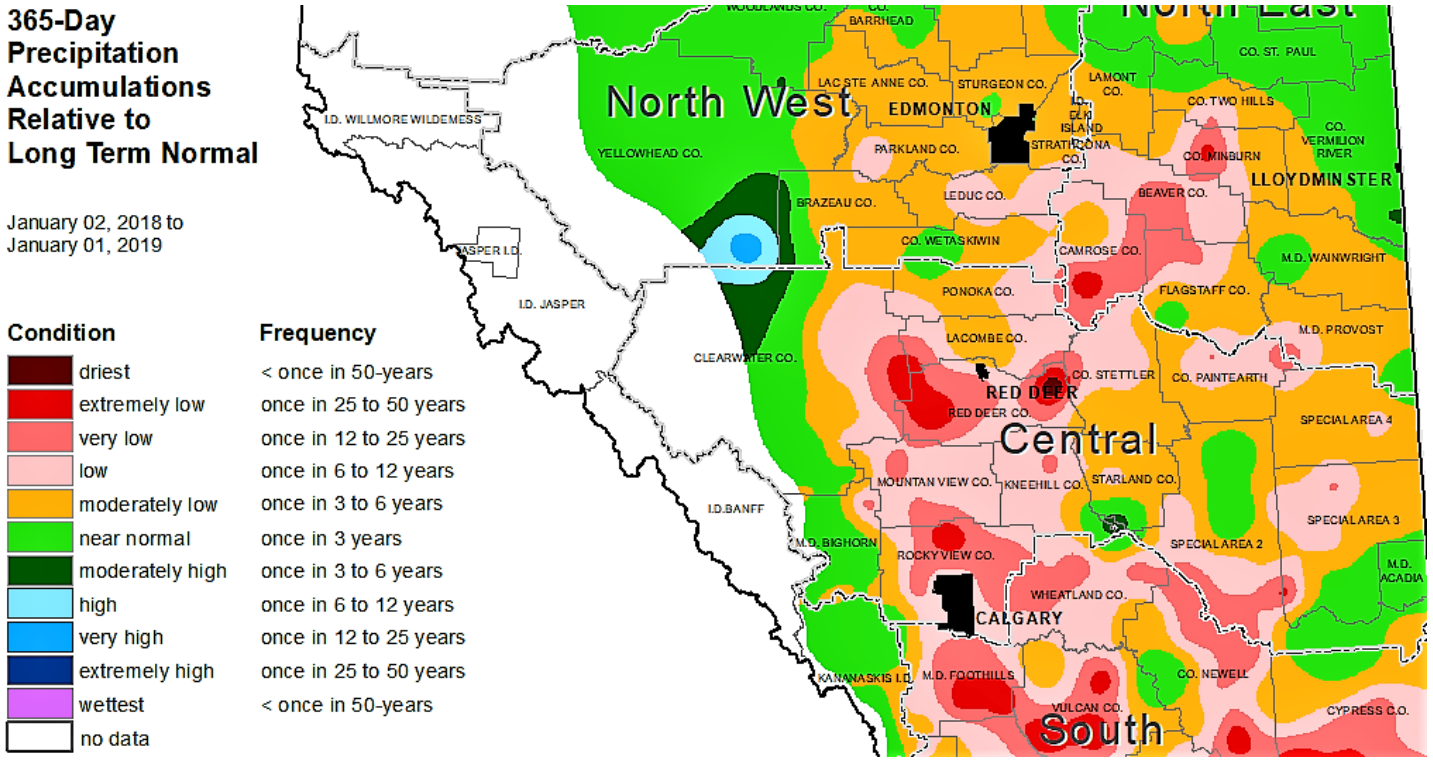
So if you do want to "grab a fact", what resources are available to you? Where do you go when you want to monitor what is happening with precipitation trends and soil moisture levels? A good place to start is with Alberta Agriculture and Forestry. They have a website called the **Alberta Climate Information Service** (http://agriculture.alberta.ca/acis/) that has an amazing amount of current and historical weather information, as well as access to all of the 250 plus weather stations that they operate in the province. Today, I went on the site, and found among other things, what our total precipitation was in 2018 as compared to the averages compiled between 1961 and 2012, as well as the precipitation received over the last 90 days and current soil moisture conditions. I've added some maps so you can see the type of information you can get with a click of the mouse.

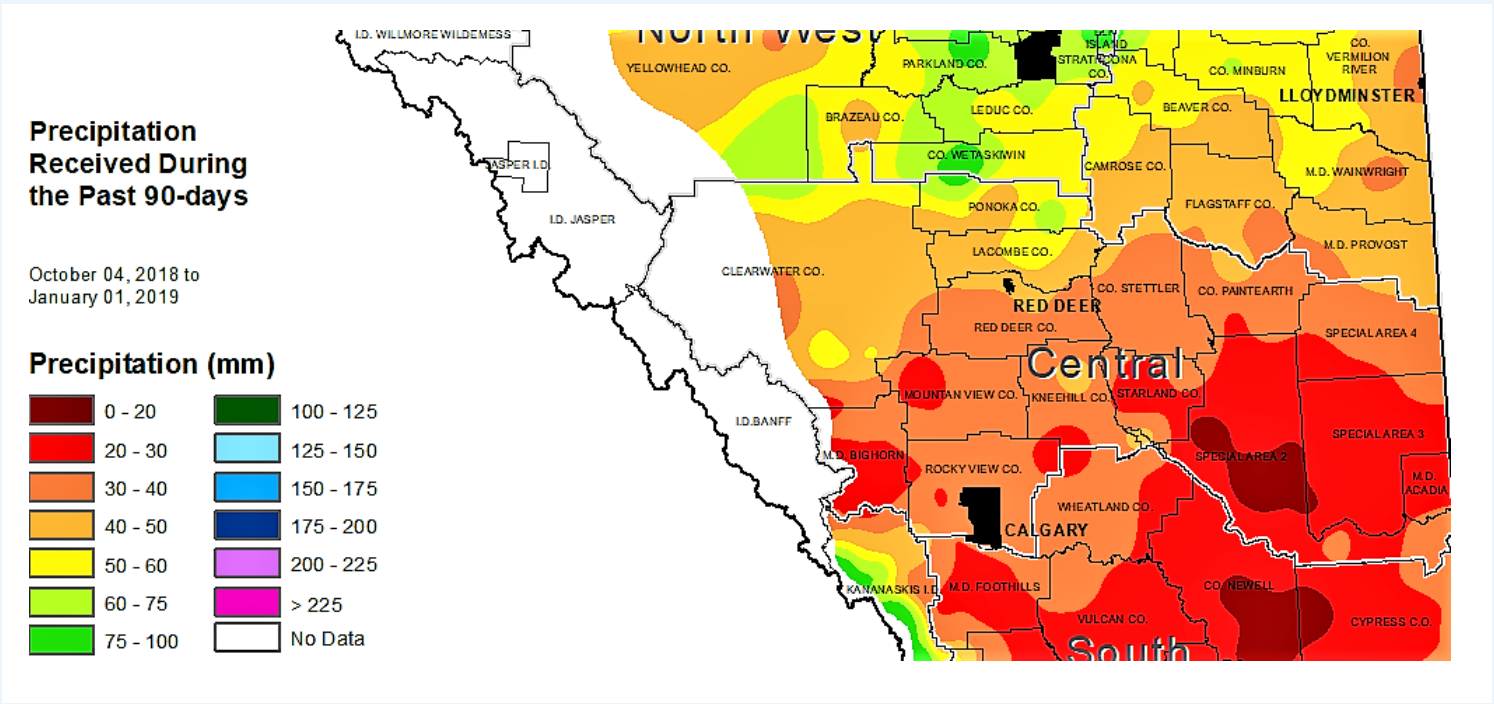
2018 Total Precipitation



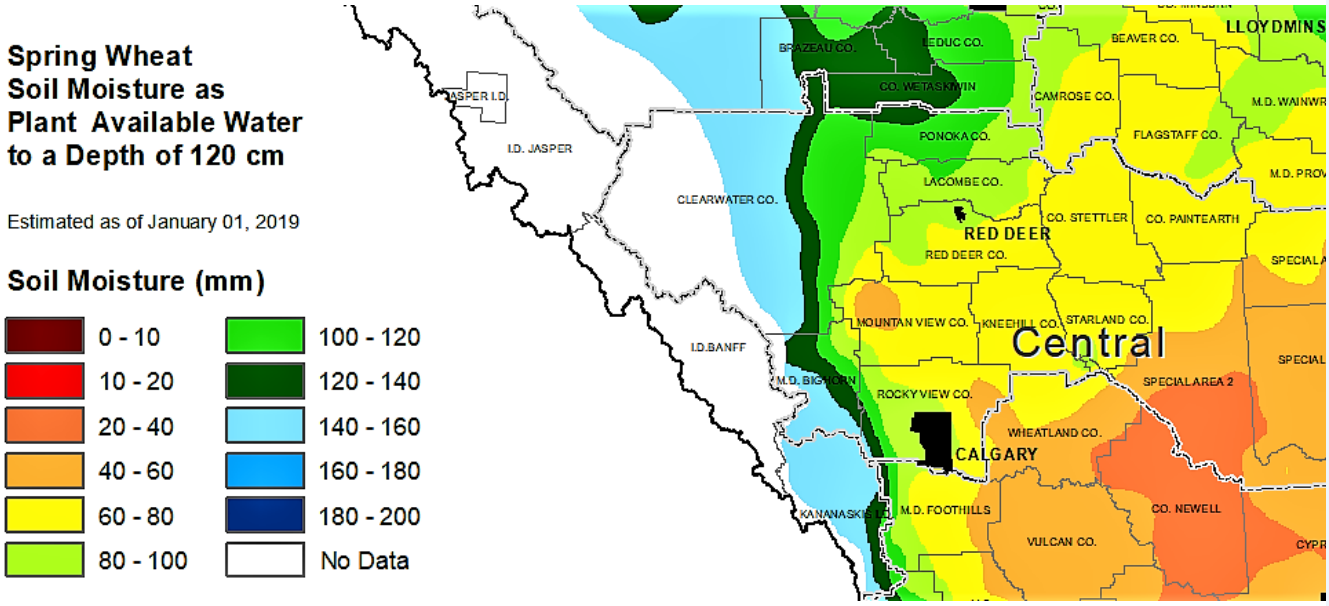
2018 Precipitation as Compared to Normal



Precipitation; the Last 90 Days



Current Soil Moisture Levels



I won't bore you with the rest of the maps I looked at; I just wanted to make the point that there is a LOT of good information on this website. I was very quickly able to determine that while 2018 moisture levels ranged from 70 to 90% of normal across east central Alberta for the whole year, we made up a lot of ground since harvest, with precipitation being normal or higher and more importantly, soil moisture reserves are average to above average for this time of year.

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So why is this important information? Well, for starters it lets me know that I won't need any extraordinary rainfall events to start the crop next year. There will be adequate seedbed moisture to get things started. This kind of information can also help me start to make some reasonable projections about baselines for crop yields and the inputs that will be required to get to those targets. Very general numbers certainly, but at least a start on budgeting.

While there is great general information available on this website, it doesn't exactly bring it down to the local level for me. But that farm level information is quickly becoming available as technology advances in the area of climate monitoring. With today's weather stations, you can not only monitor precipitation and soil moisture, you can have very specific, field level weather forecasts and even disease and insect modeling that can tell you if or when you should spray for a pest. At Battle River Implements Ltd, we have recently taken on a new line of climate monitoring equipment from Pessl Instruments that we will be starting to try out this summer. The Pessl Instrument Weather Stations will allow us to do all of these things. They will also be compatible with our Crop Intelligence program that we launched last year and will be expanding in 2019. This is an App that is easily accessed on your phone or tablet, allowing us to have real time yield projections based on soil moisture and precipitation; allowing us to make timely agronomic decisions that can impact crop yield and quality. This is one of the most interesting concepts that I have come across in years, and I believe it has a lot of potential to help our customers improve their bottom line. But Les Henry tells this story much better than I can, so here's a link to his recent article on soil moisture, Crop Intelligence and a whole lot more!

https://www.grainews.ca/2019/01/15/les-henry-finally-soil-moisture-measuring-meets-new-tech/?utm_source=GFM+Publications&utm_campaign=71cb9d1c25-Grainews+daily+enews+Jan+16%2C+2019&utm_medium=email&utm_term=0_2da8244677-71cb9d1c25-88070841

If you have any questions about this article, or anything agronomic in general, make sure to give me a call!

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