

Alberta's AgroClimatic Information Service (ACIS)



Agro-Meteorological Applications and Modelling Unit
Environmental Stewardship Division
Alberta Agriculture and Forestry (AF)

www.weatherdata.ca

Climate Normals

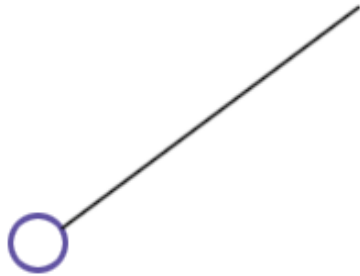
- Reference point to compare current trends/conditions to past
- Useful for comparing locations/regions
- Typically an arithmetic average of a 30-year period
 - 1961-1991
 - 1971-2000
 - 1981-2010
- Updated every decade...if your lucky!!!

What is Normal?

- Its a setting on your drier?
- The number you get as you pass from one extreme to the other?

Dry
Hot

Wet
Cold



Normal

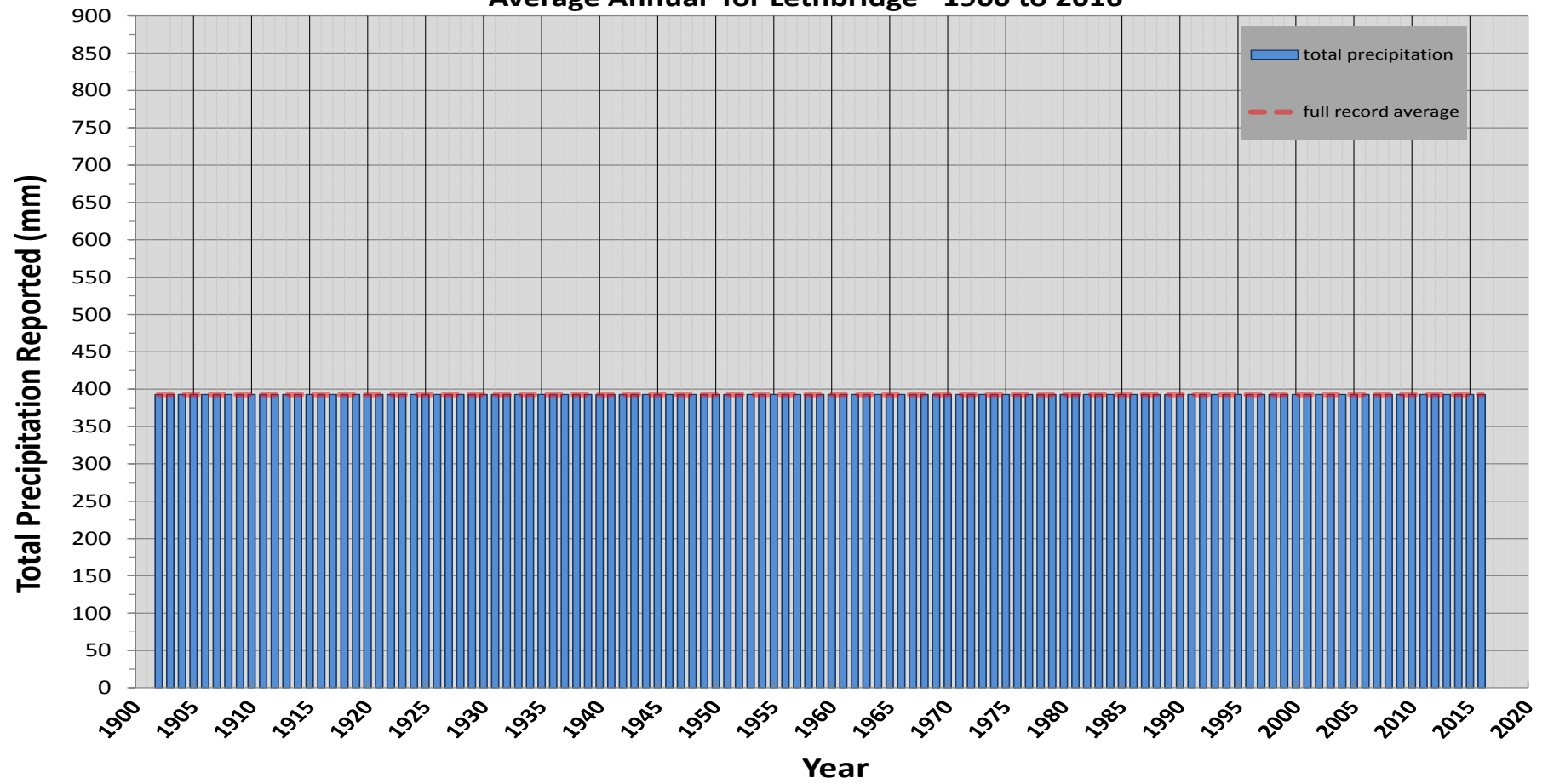
Dry
Hot

Wet
Cold



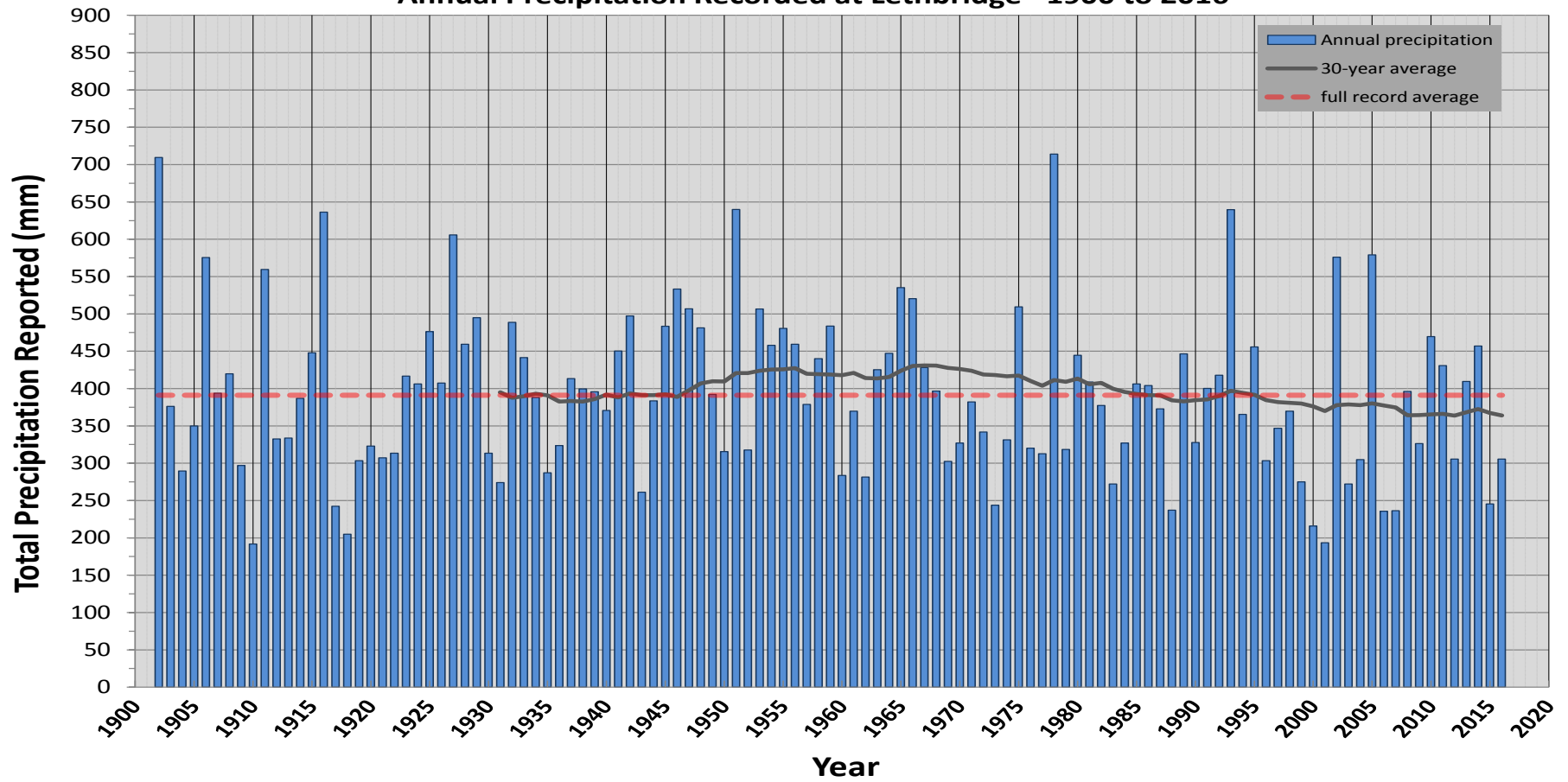
Normal

Average Annual for Lethbridge* 1900 to 2016

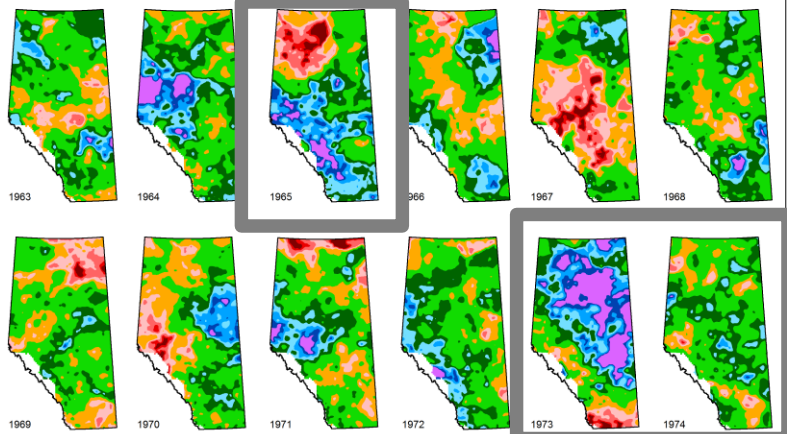


*Reconstructed from Lethbridge (1902 to 1921), Lethbridge CDA (1918 to 2007), Lethbridge A (1987 to 2007) , Lethbridge CDA-ACIS (2006-2016)

Annual Precipitation Recorded at Lethbridge* 1900 to 2016



*Reconstructed from Lethbridge (1902 to 1921), Lethbridge CDA (1918 to 2007), Lethbridge A (1987 to 2007) , Lethbridge CDA-ACIS (2006-2016)



Precipitation Accumulations Relative to Long Term Normal

Years 1963 to 1974

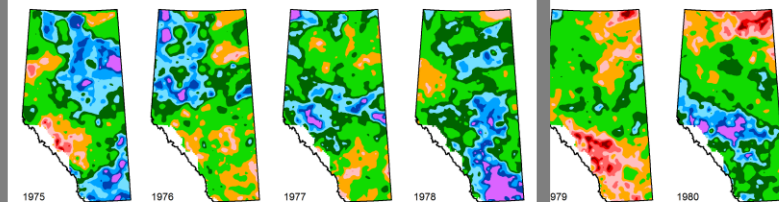
The frequency of occurrence was calculated using historical weather data from the 1961-2010 period, interpolated to township centres using AbClim-3.1.



Government of Alberta
Agriculture and Rural Development

Compiled by Alberta Agriculture and Rural Development, Environmental Stewardship Division, Technology and Innovation Branch
Updated on January 17, 2012

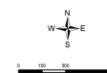
1963-1974



Precipitation Accumulations Relative to Long Term Normal

Years 1975 to 1986

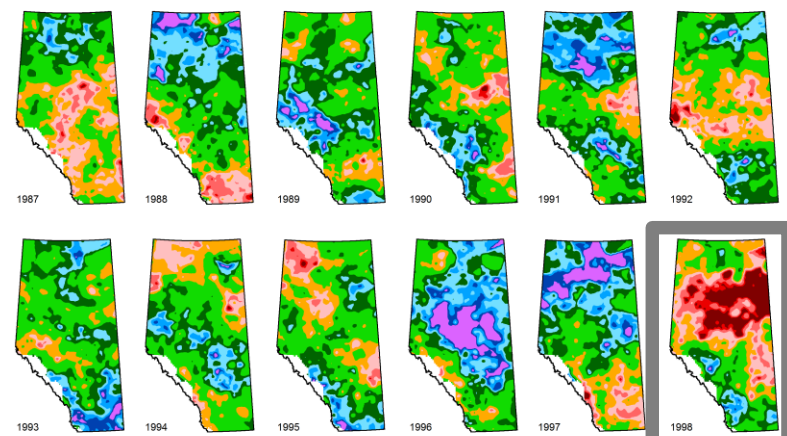
The frequency of occurrence was calculated using historical weather data from the 1961-2010 period, interpolated to township centres using AbClim-3.1.



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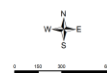
1975-1986



Precipitation Accumulations Relative to Long Term Normal

Years 1987 to 1998

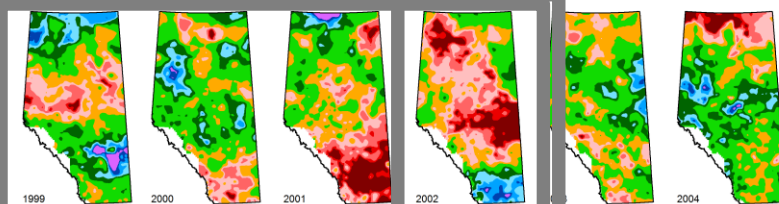
The frequency of occurrence was calculated using historical weather data from the 1961-2010 period, interpolated to township centres using AbClim-3.1.



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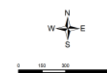
1987-1998



Precipitation Accumulations Relative to Long Term Normal

Years 1999 to 2010

The frequency of occurrence was calculated using historical weather data from the 1961-2010 period, interpolated to township centres using AbClim-3.1.

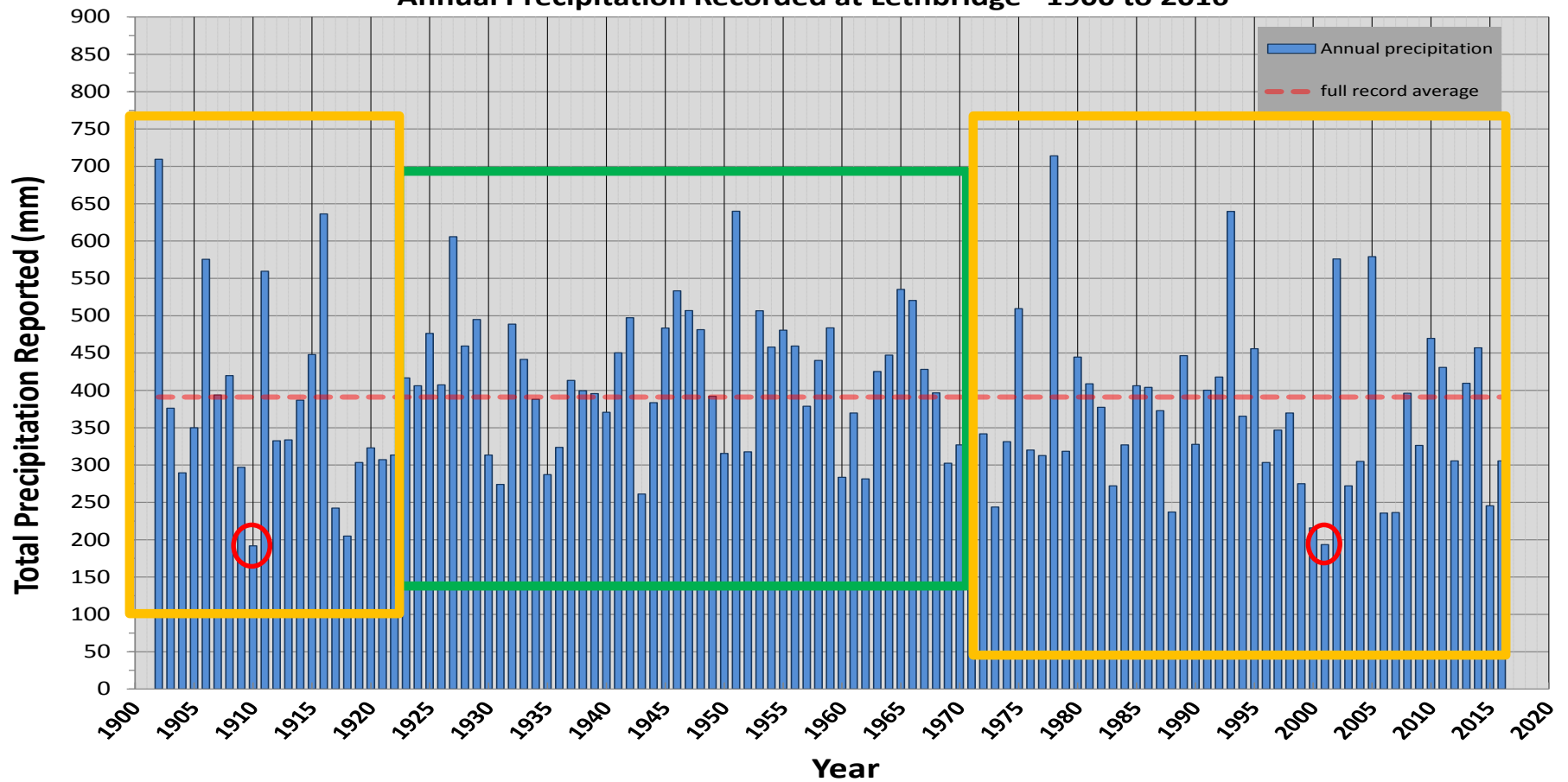


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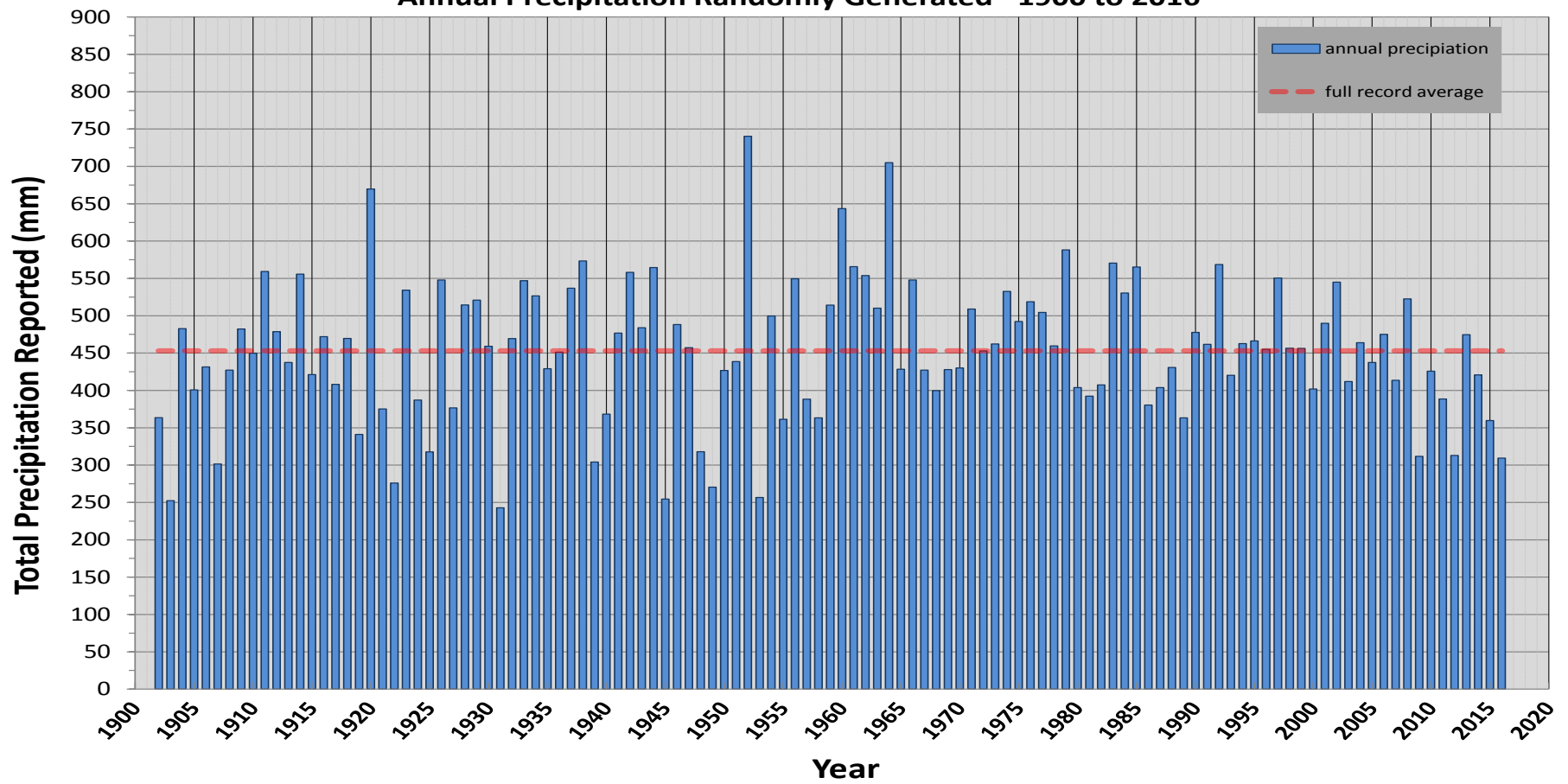
1999-2010

Annual Precipitation Recorded at Lethbridge* 1900 to 2016



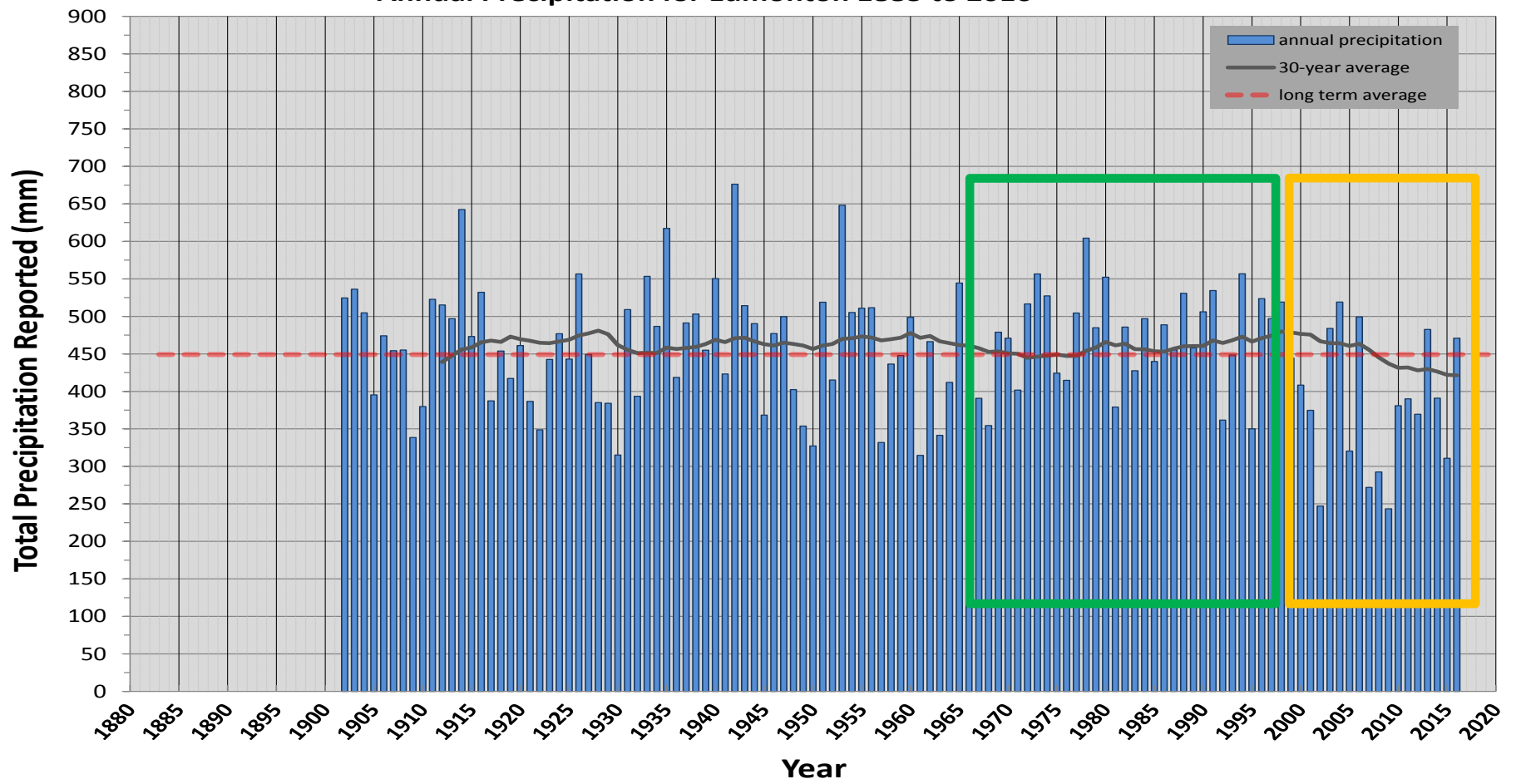
*Reconstructed from Lethbridge (1902 to 1921), Lethbridge CDA (1918 to 2007), Lethbridge A (1987 to 2007) , Lethbridge CDA-ACIS (2006-2013)

Annual Precipitation Randomly Generated* 1900 to 2016

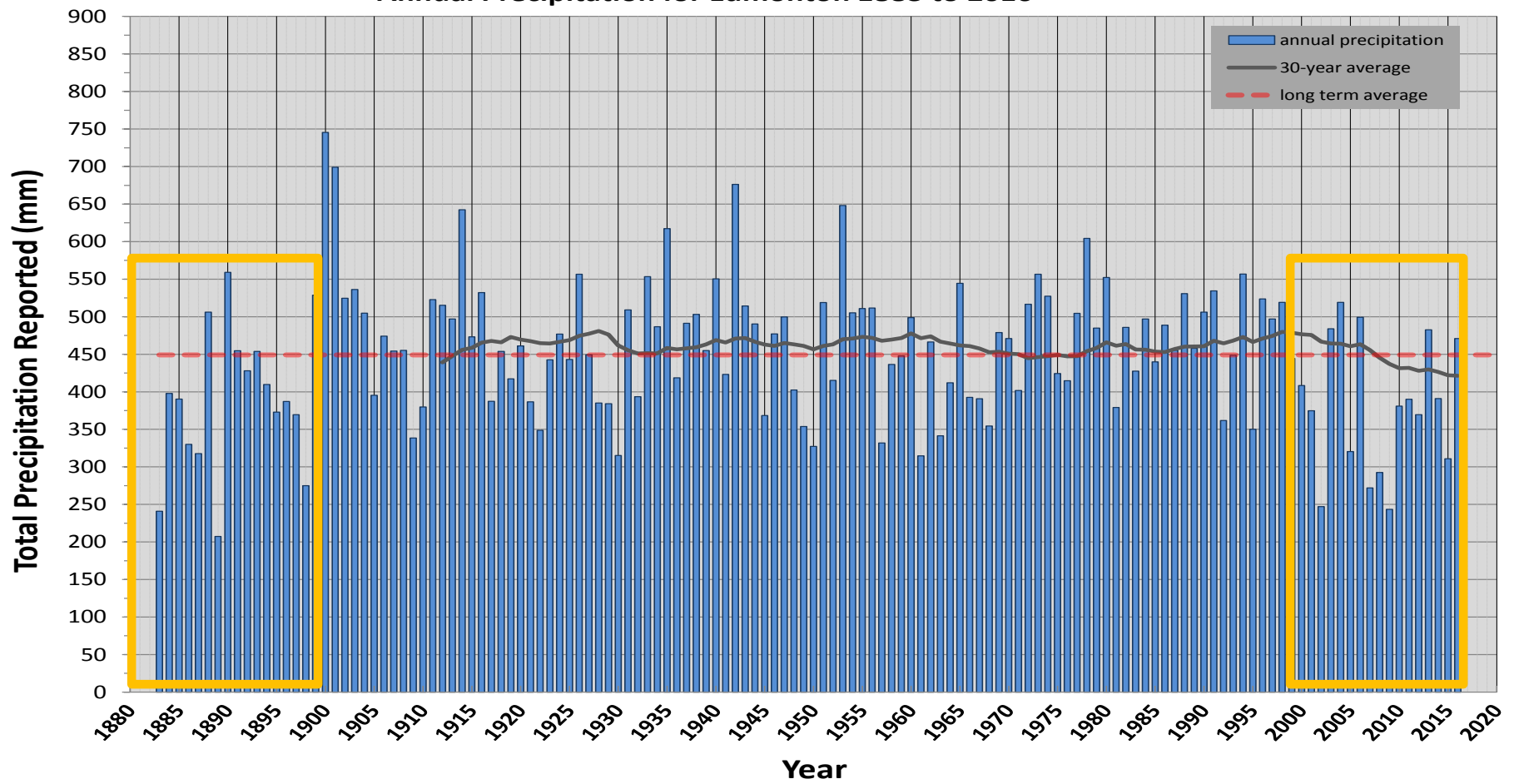


*Generated using Excel's `NORMINV(RAND(),449,93)` function

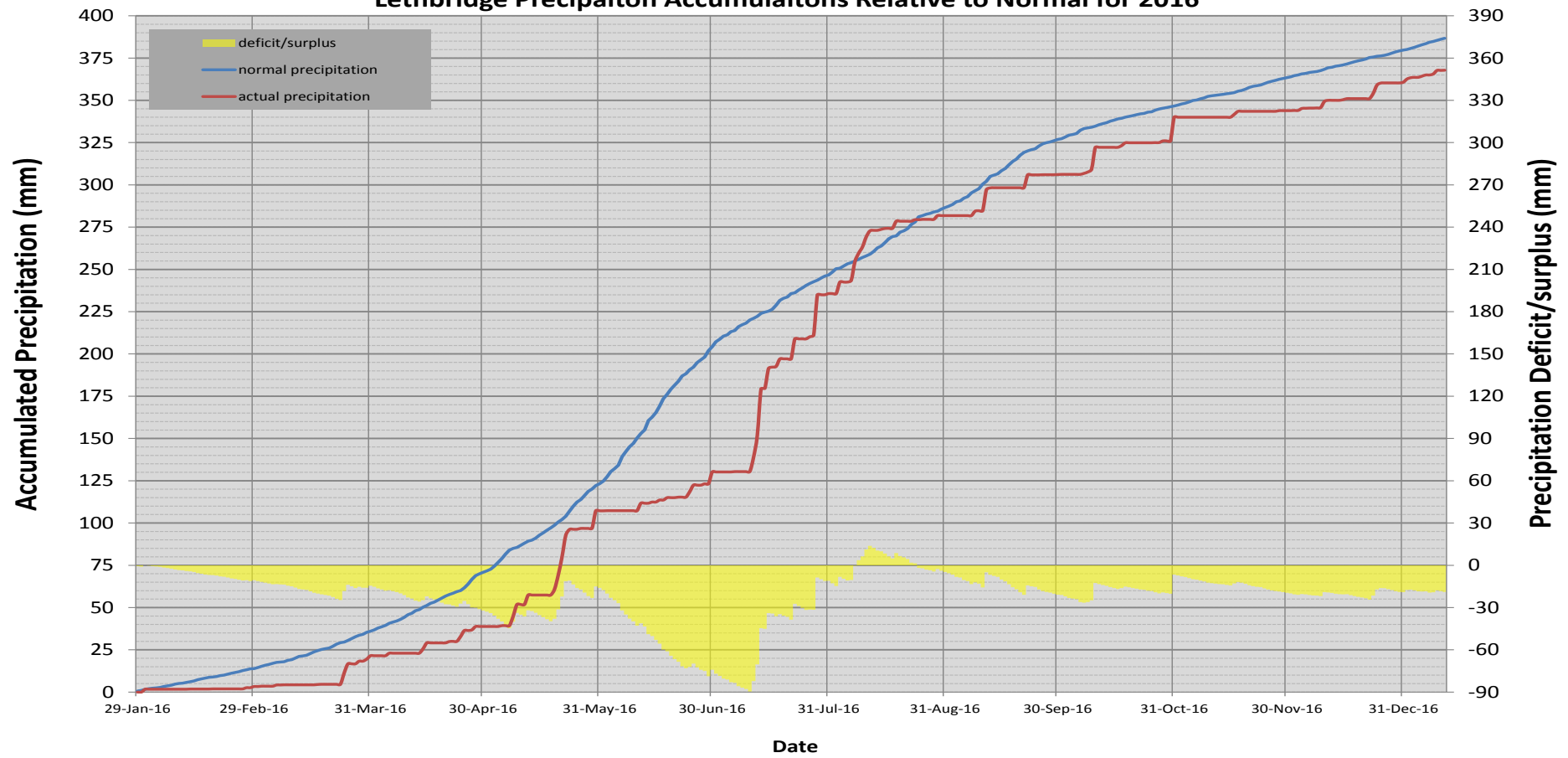
Annual Precipitation for Edmonton 1883 to 2016



Annual Precipitation for Edmonton 1883 to 2016



Lethbridge Precipaiton Accumulaitons Relative to Normal for 2016



What Does all this Mean?

- Climate variability is more important than climate normal's
- Meteorological records are relatively short
- Abrupt unpredictable changes from wet-dry-wet.
- Last weeks, months, seasons, years, weather is a very poor predictor for what's ahead
- The pattern is there is no **bankable** pattern

Alberta Climate Information Service

Investigating your weather and climate



www.weatherdata.ca



Welcome User

ralph.wright

[About ACIS](#)

[Data Disclaimer](#)

[News](#)

[Glossary](#)

[Reference Documents](#)

Weather Data

[Weather Station Data Viewer](#)

[Historical Weather Data](#)

[Weather Station Summary](#)

[Almanac](#)

Maps

[Weather Conditions Map](#)

[Climate and Atlas Maps](#)

[Weather Radar Imagery](#)

Irrigation (IMCIN)

[About IMCIN](#)

[IRRI-Cast](#)

[AIMM Software](#)

[AIMM Climate Files](#)

[AIMM Crop ET Data](#)

Forecasts

[Weather Forecast](#)

[Disease Forecasting](#)

Reports

[Moisture Situation Updates](#)

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Alberta Climate Information Service (ACIS)

Bringing you up-to-date Alberta weather and climate data

Welcome to ACIS, an interactive tool that helps producers, farm consultants, and researchers to see Alberta weather forecasts, browse over 10000 maps of Alberta weather and Alberta climate related information, and access near real time station data from over 350 meteorological stations operating in the province of Alberta. The maps and weather data describe Alberta's weather, climate and related agriculture features to help with your long-term planning and decision-making throughout the growing season.

Alberta Weather Station Conditions Summary



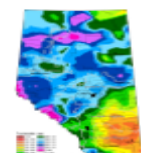
Obtain up-to-date current weather conditions measured by the weather station of your choice. Interact with dynamic graphs that resize to the time period that you select. Additionally, view at-a-glance weather derivatives for the current growing season to make more informed operational decisions.

Alberta Weather Station Data and Graphs



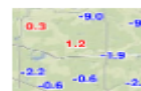
Find out where the meteorological stations are in Alberta and download, graph and compare near-real-time data from more than [350 stations](#). Both hourly and daily data is available with the hourly data usually only about 2 hours old and daily data current as of yesterday. The data has been quality controlled and missing or erroneous data values have been filled and flagged. Data flags that are included with the downloaded data indicate if the data is actual, computed or missing.

Alberta Climate and Atlas Maps



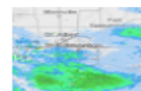
As of February 2013, there were over 12,000 maps in the archive. Many of these maps date as far back as 1961. Each week about 40 new maps are added to the viewer, describing current conditions and trends. Explore Alberta's current and historical climate trends and extremes. Currently map categories include precipitation, temperature, soil moisture, snowpack, drought indices and others. AF is committed to adding new categories all the time. Give us some feedback and if we can benefit a wide enough audience, you may see a brand new set of maps.

Alberta Weather Conditions Map



View a map of current weather conditions near any location or across the province. See values for a variety of weather elements plotted on an interactive map interface. You can also go through historical records and see how the weather conditions were spatially distributed in the past.

Alberta Weather Radar Imagery



View current weather radar imagery on an easy-to-use, interactive map interface. You can zoom the radar map right to any location to see if it received precipitation in the last few hours or if a storm system is headed in its direction. You can also view the entire province at a glance to get the big picture. The radar viewer also lets you display the most recent radar image, automatically fetching new data as it becomes available.

Alberta Weather Forecast



View a week-long forecast for several locations as issued by the Environment Canada Weather Office.

Weather Station Data viewer

- Hourly, daily, monthly yearly
- Frost probabilities
- Growing Degree days
- Corn Heat Units
- Normals

PopularElementsDerivativesNormalsAlmanac

Clear SelectionClear All TabsDefinitions

	Observed	Normal
Precipitation (mm)	<input type="checkbox"/>	
Accumulated Precipitation (mm)	<input type="checkbox"/>	<input type="checkbox"/>
Temperature (°C)	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Temperature (°C)	<input type="checkbox"/>	<input type="checkbox"/>
Maximum Temperature (°C)	<input type="checkbox"/>	<input type="checkbox"/>
Relative Humidity at 2m (%)	<input type="checkbox"/>	
Wind Speed at 2m (km/h)	<input type="checkbox"/>	
Wind Direction at 2m (deg)	<input type="checkbox"/>	
Wind Speed at 10m (km/h)	<input type="checkbox"/>	
Wind Direction at 10m (deg)	<input type="checkbox"/>	
Corn Heat Units	<input type="checkbox"/>	<input type="checkbox"/>
Potato Heat Units	<input type="checkbox"/>	<input type="checkbox"/>
Growing Degree Days (5°C)	<input type="checkbox"/>	<input type="checkbox"/>
Reference Evapotranspiration (mm)	<input type="checkbox"/>	
Frost Probability 0°C (%)		<input type="checkbox"/>

Please select station and element

Include Flags: ☒ Completeness ☒ Source ☒ Comments

Period: Daily Precip Unit: mm


View

Graph

Download

Data has been quality controlled up until Jan 1, 2017, inclusive.

By retrieving data, you agree to the [ACIS Data Disclaimer & Terms of Use](#)

 Start Date: 2016-12-27 End Date: 2017-01-10

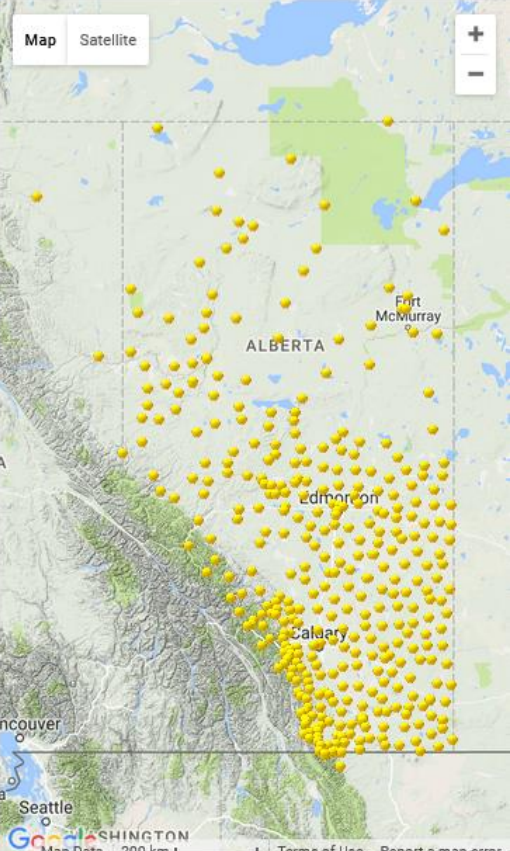
Today Yesterday Week Two Weeks Three Weeks Month

Retrieve 5-year of daily data or 732-days of hourly data at a time

Pop-ups must be enabled for graphing and downloading data

Select Station(s): Select Station

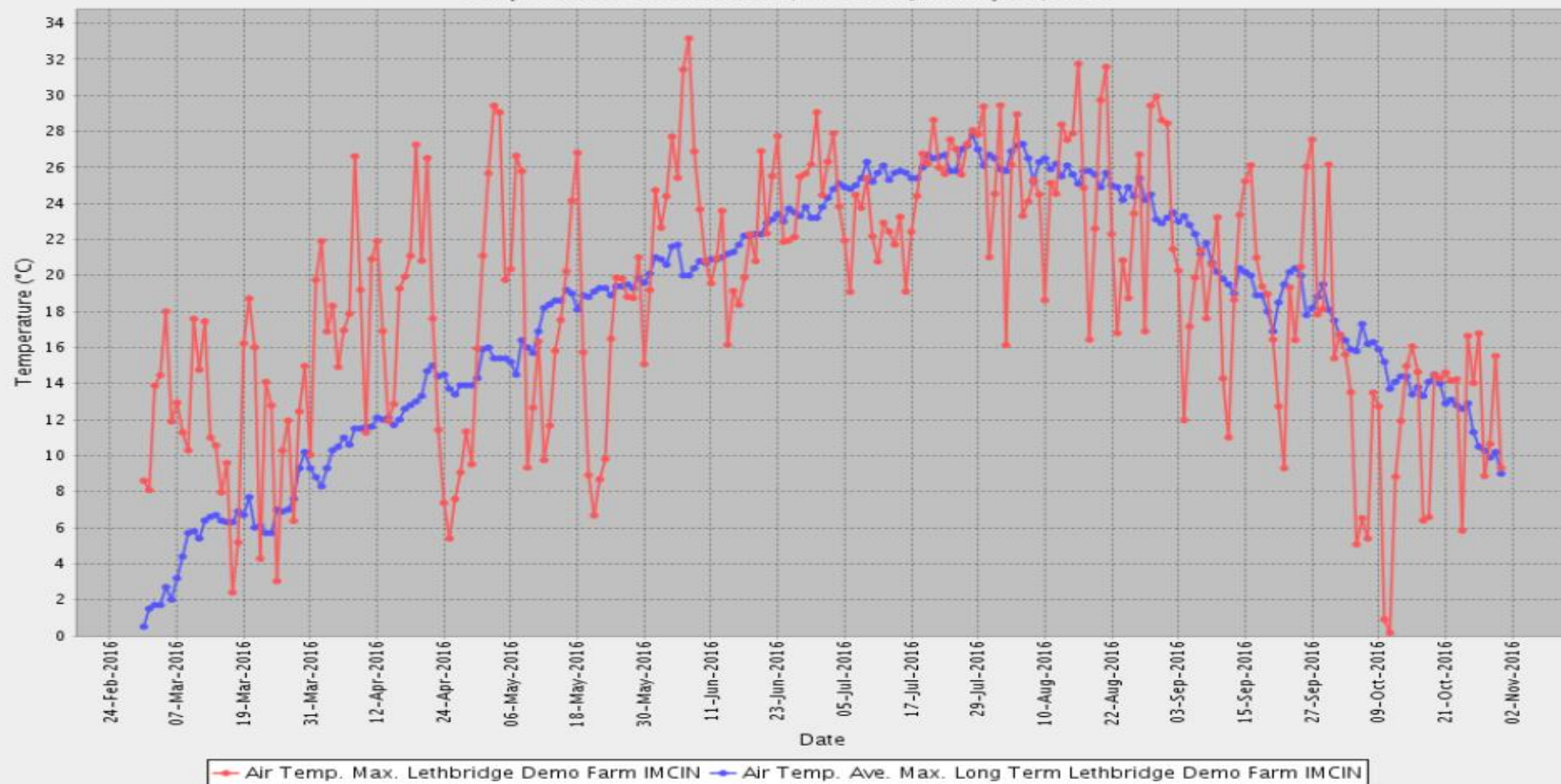
MapSatellite



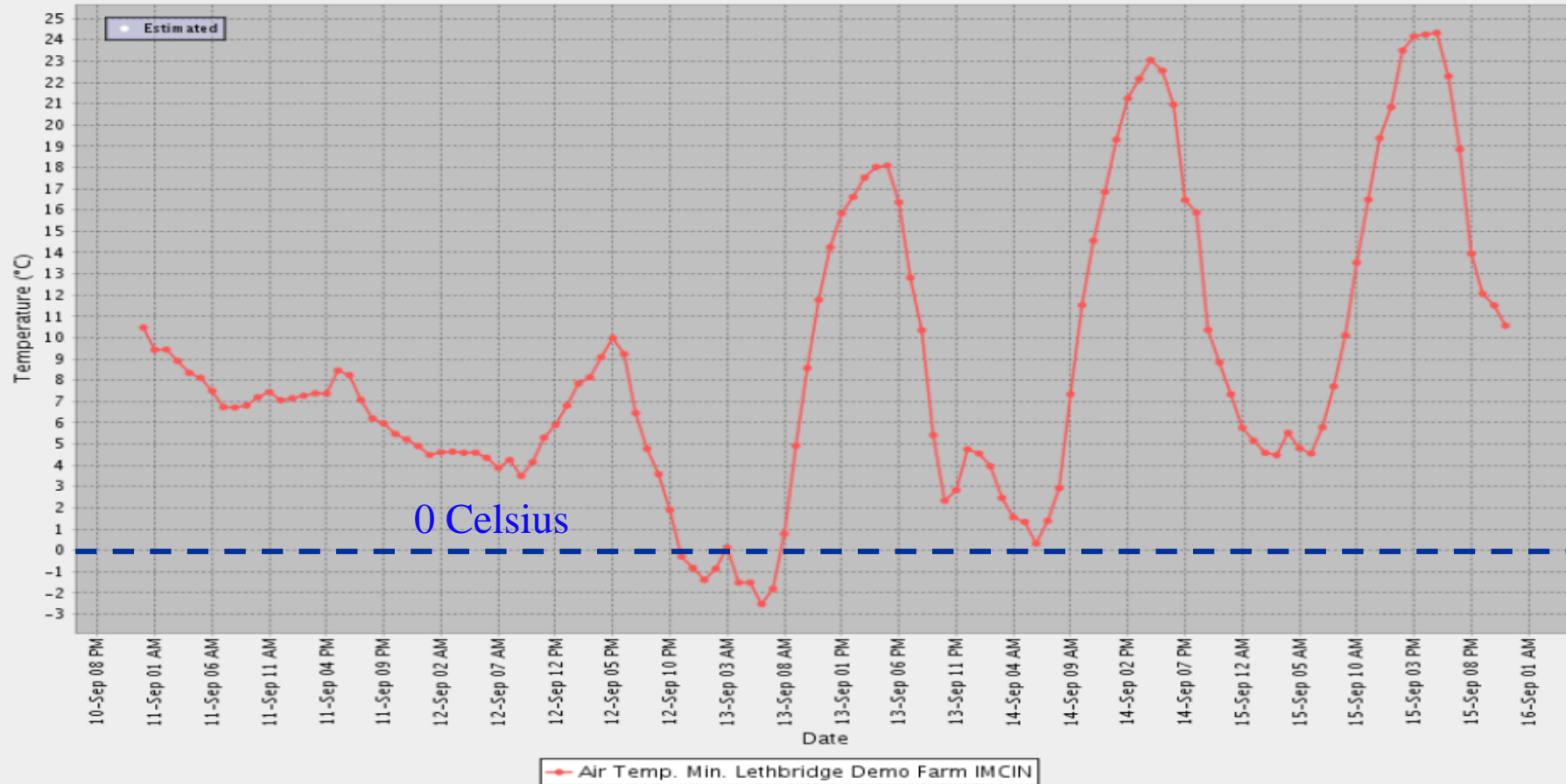
ABPeaceNorthernCentralSouthernIMCIN

Selected Stations (up to 500 max.)

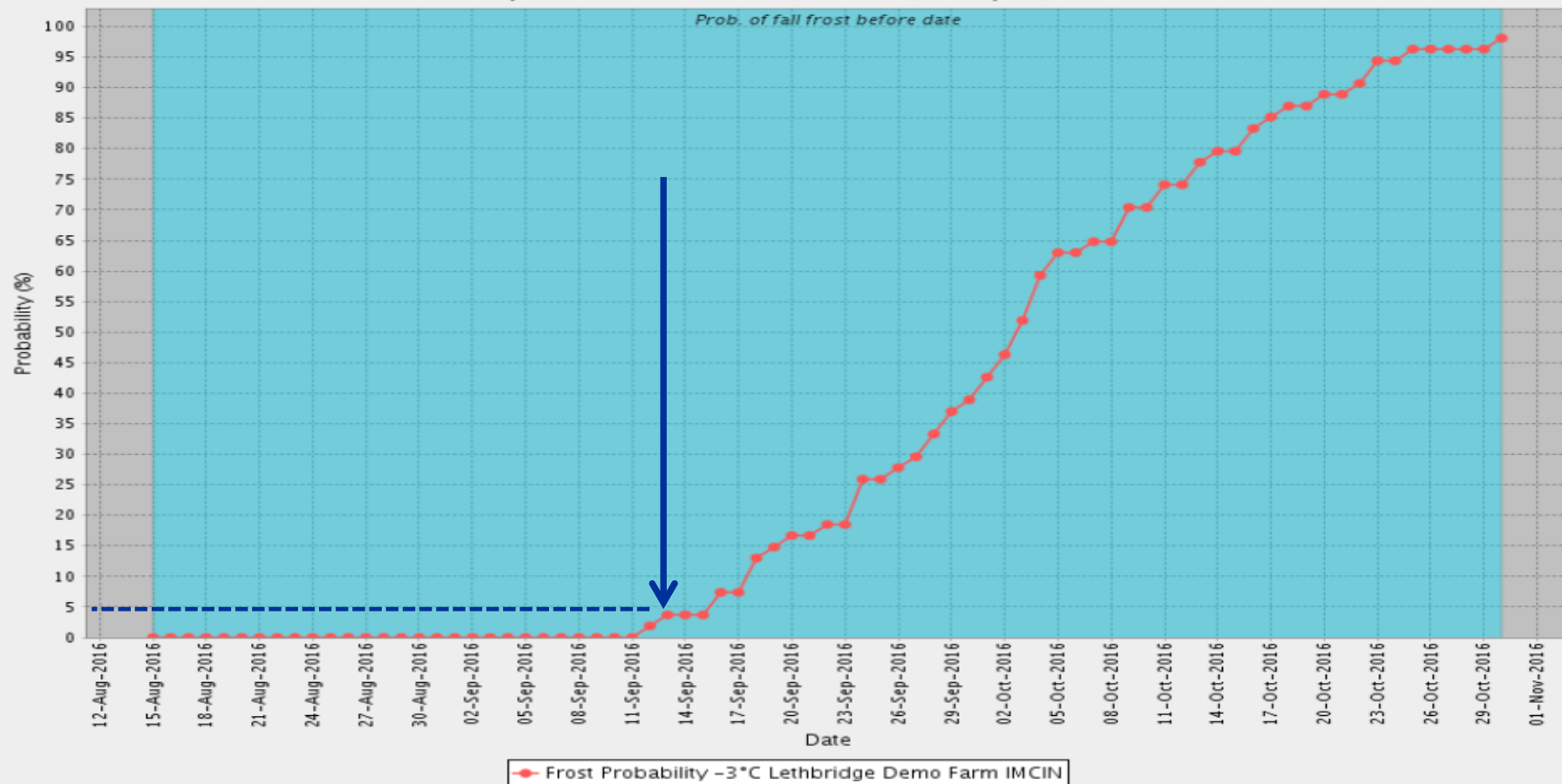
Daily Station Observations; Created January 10, 2017



Hourly Station Observations in Local Standard Time; Created January 10, 2017



Daily Station Observations; Created January 10, 2017



[illegible]

Historical Weather Data

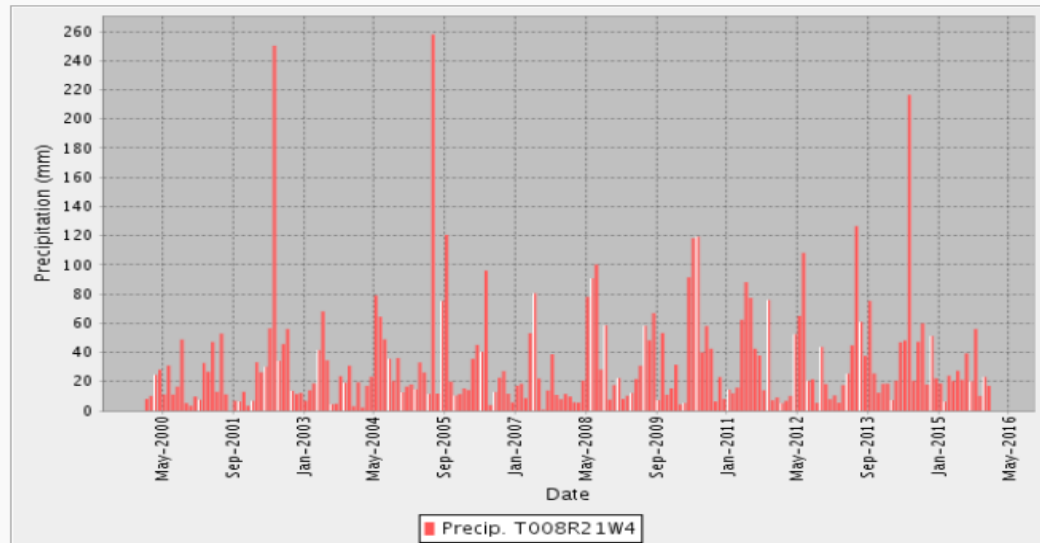
Monthly Precipitation Totals

Interpolated Weather Data Since 1961 for Alberta Townships

Brought to you by the Alberta Climate Information Service (ACIS)

Make Your Township Selection

Visualize Data



Time Period Selection

January, 2000						
Su	Mo	Tu	We	Th	Fr	Sa
53						1
2	2	3	4	5	6	7
3	9	10	11	12	13	14
4	16	17	18	19	20	21
5	23	24	25	26	27	28
6	30	31				

December, 2015						
Su	Mo	Tu	We	Th	Fr	Sa
49			1	2	3	4
50	6	7	8	9	10	11
51	13	14	15	16	17	18
52	20	21	22	23	24	25
53	27	28	29	30	31	
2						

Start Date: 2000-01-01

End Date: 2015-12-31

Data Aggregation Interval: Monthly

Element Selection

- ☐ Average Minimum Temperature (°C)
- ☐ Lowest Minimum Temperature (°C)
- ☐ Average Maximum Temperature (°C)
- ☐ Highest Maximum Temperature (°C)
- ☒ Precipitation (mm)
- ☐ Accumulated Precipitation (mm)
- ☐ Relative Humidity at 2m (%)
- ☐ Estimated Solar Radiation (MJ/m2) ☼

Interactive Graph

Graph

Data Table

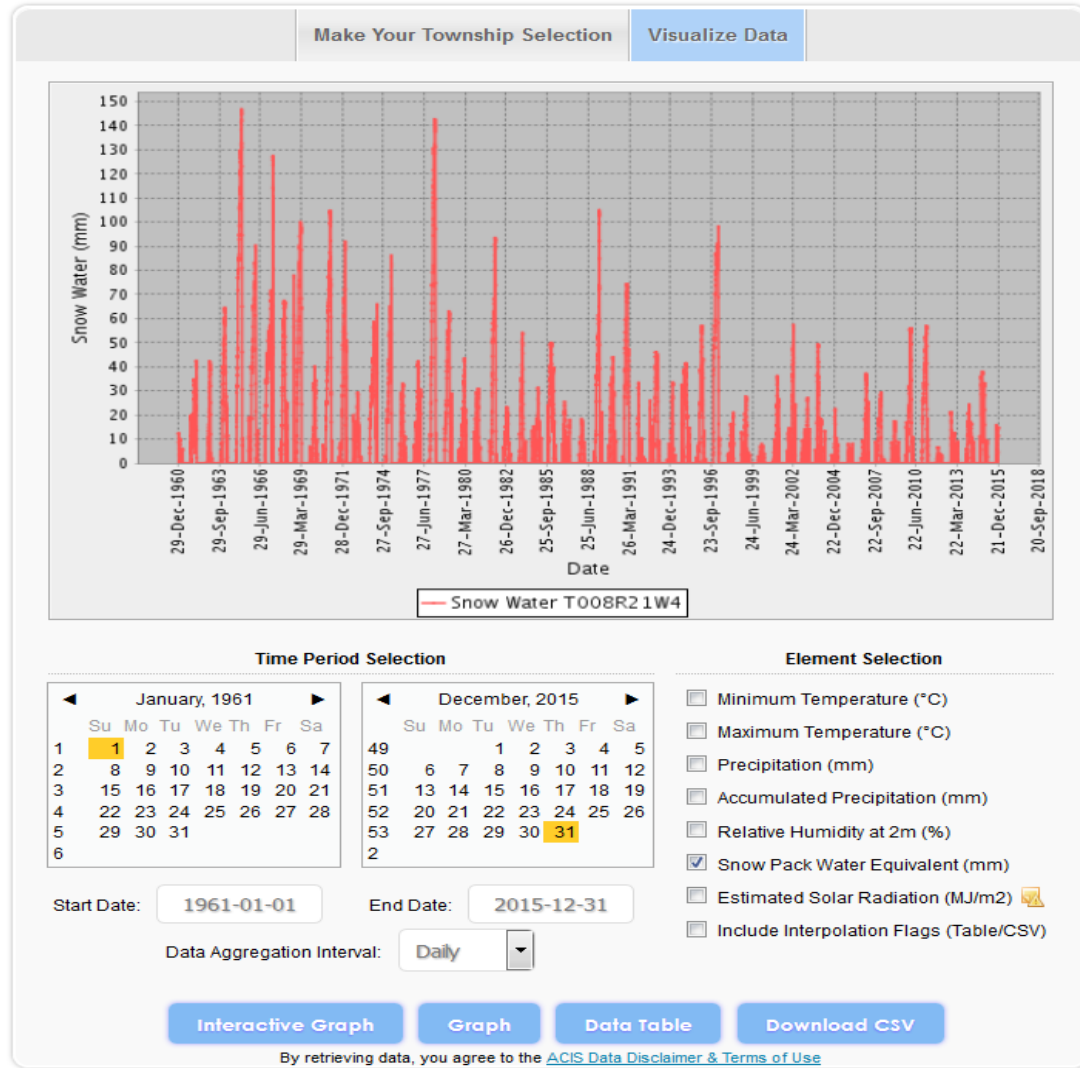
Download CSV

By retrieving data, you agree to the [ACIS Data Disclaimer & Terms of Use](#)

Historical Weather Data Daily Snowpack Accumulations

Interpolated Weather Data Since 1961 for Alberta Townships

Brought to you by the Alberta Climate Information Service (ACIS)



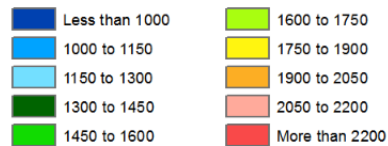
Climate and Atlas Maps

Average Corn Heat Units

Average Corn Heat Unit Accumulations

Corn heat units accumulate after April 15
following 3 consecutive days
where daily average temp $\geq 2.8^{\circ}\text{C}$
and end with the first fall frost (0°C)
Observation Period: 1961-2010

Corn Heat Units

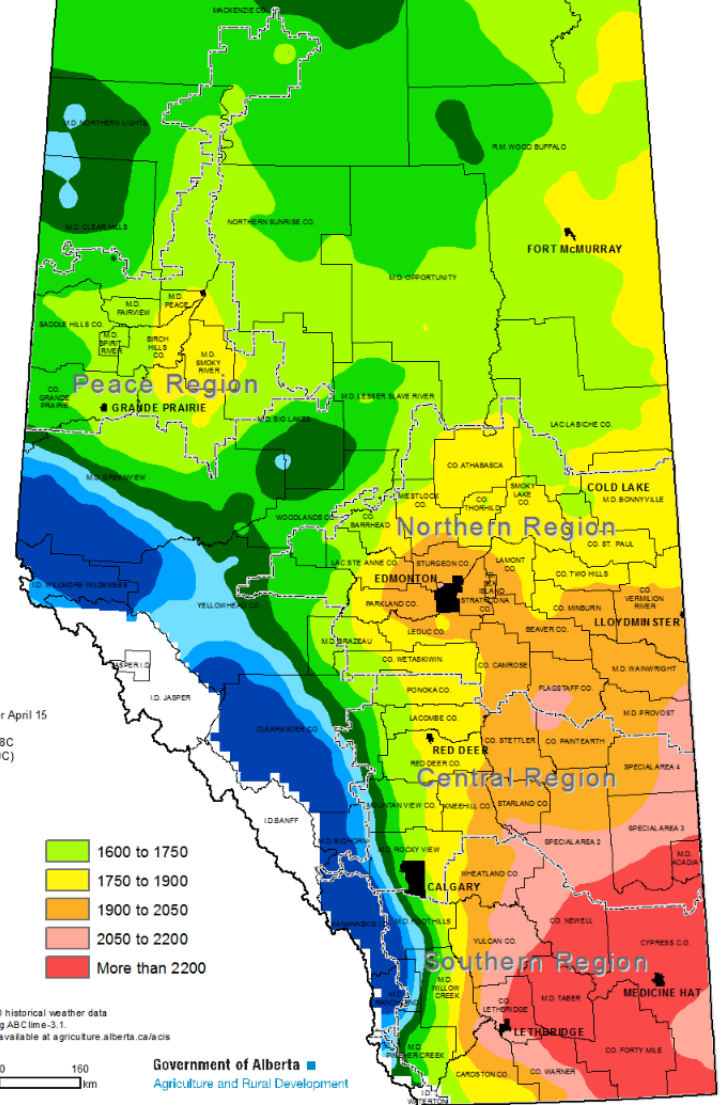


Corn Heat Units based on 1961-2010 historical weather data
interpolated to township centres using ASClim-3.1.
Maps, weather and climate data are available at agriculture.alberta.ca/cic



Government of Alberta
Agriculture and Rural Development

Compiled by Alberta Agriculture and Rural Development, Environmental Stewardship Division, Technology and Innovation Branch
Created on December 21, 2012



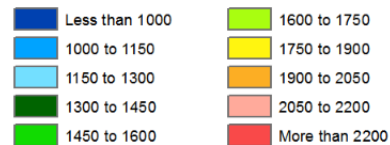
Climate and Atlas Maps

1 in 4 year low Corn Heat Units

1 in 4-Year Lows Corn Heat Unit Accumulations

Corn heat units accumulate after April 15
following 3 consecutive days
where daily average temp $\geq 2.8^{\circ}\text{C}$
and end with the first fall frost (0°C)
Observation Period: 1961-2010

Corn Heat Units

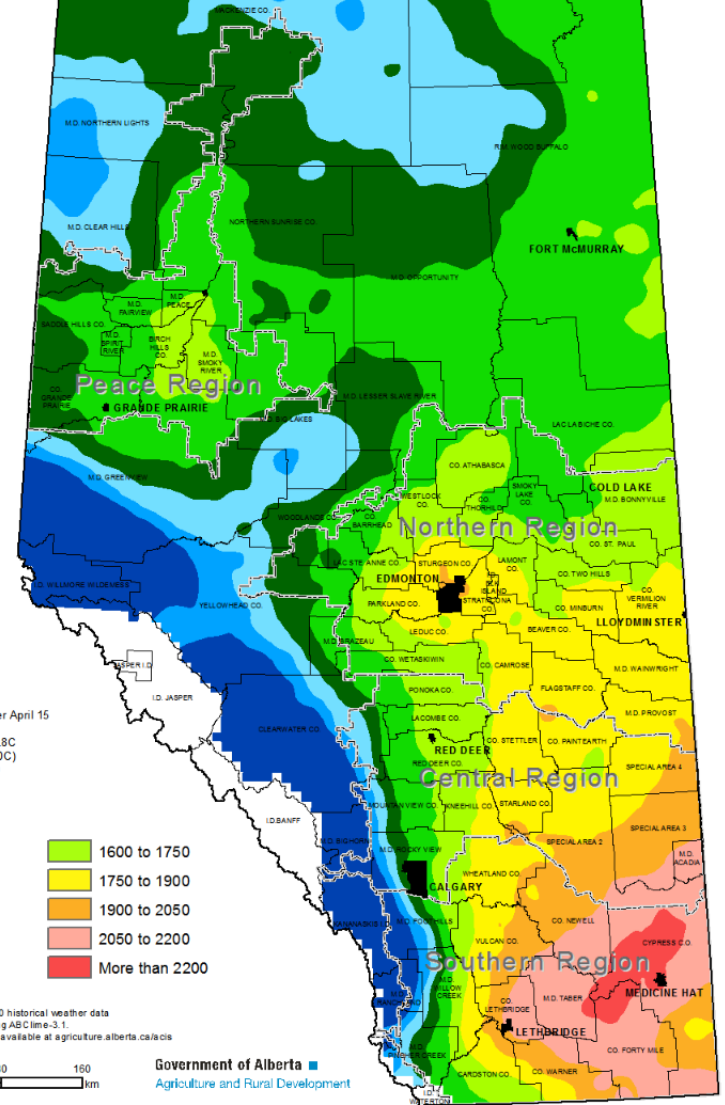


Corn Heat Units based on 1961-2010 historical weather data
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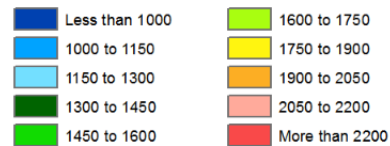
Climate and Atlas Maps

1 in 10 year Low Corn Heat Units

1 in 10-Year Lows Corn Heat Unit Accumulations

Corn heat units accumulate after April 15
following 3 consecutive days
where daily average temp $\geq 2.8^{\circ}\text{C}$
and end with the first fall frost (0°C)
Observation Period: 1961-2010

Corn Heat Units

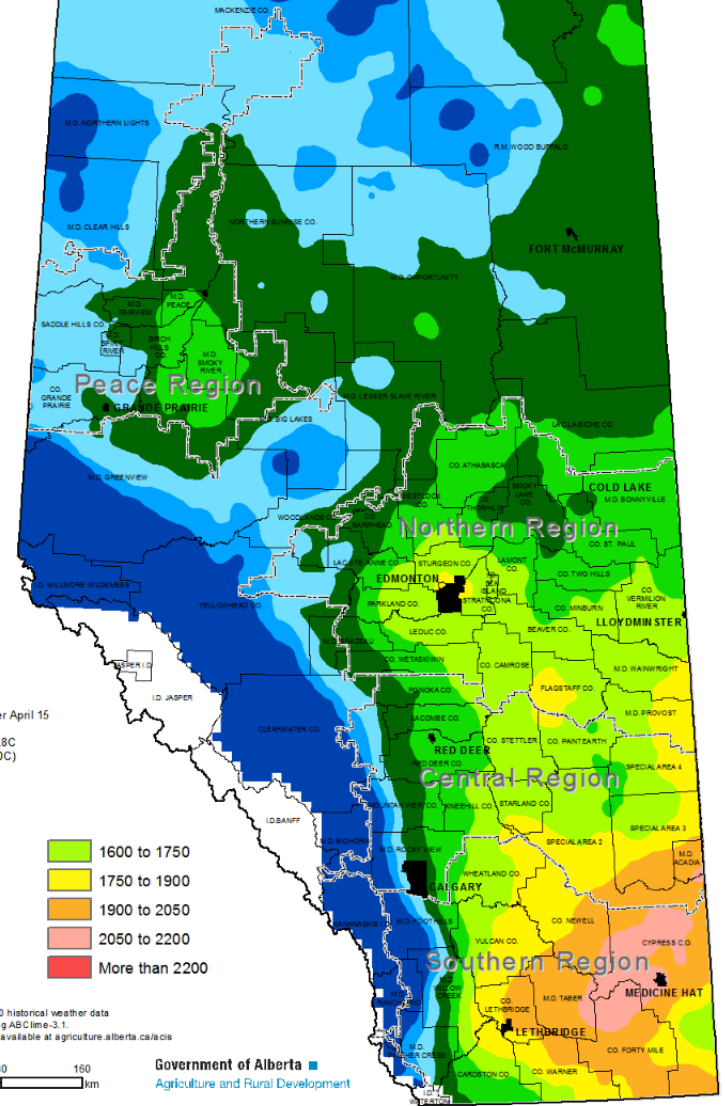


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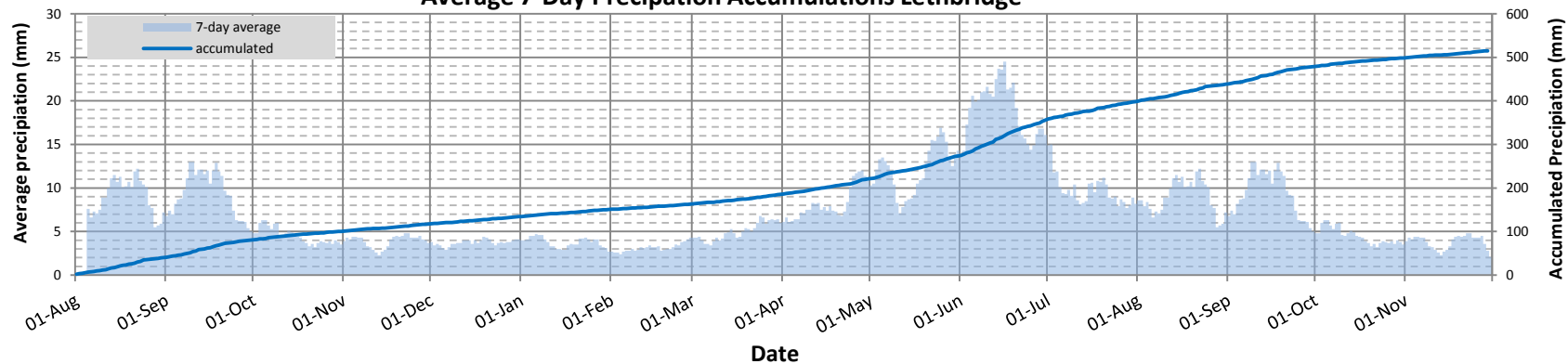
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Average 7-Day Precipitation Accumulations Lethbridge



Average 7-Day Precipitation Accumulations Edmonton

