

Update on soil moisture conditions and precipitation patterns

Daniel Itenfisu, ARD

Soil Moisture Reserves (modeled)

Current Root zone (1.2 m)

- Soil moisture levels vary from very low (less than 1 in 12 years) to extremely low (less than 1 in 25 years) in
 - central and western part of the Northern region
 - western part of the Central Region
 - southern part of the Peace Region

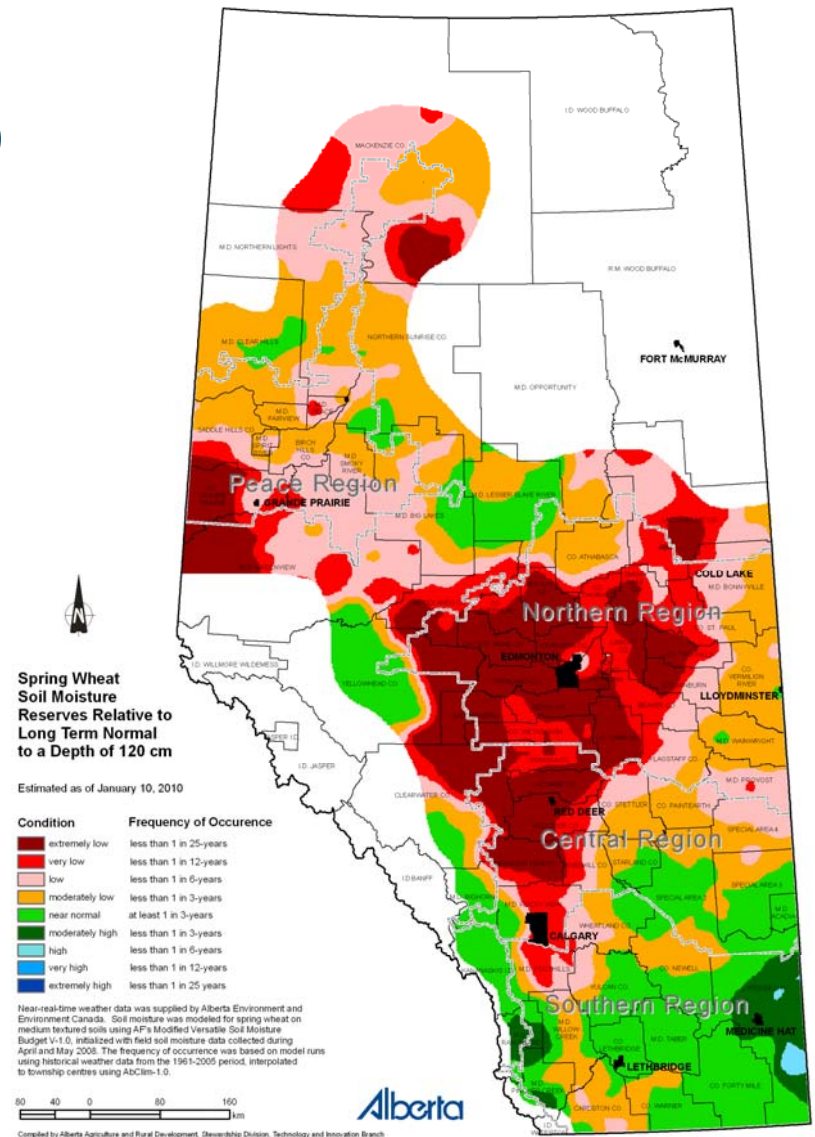
Soil Moisture Reserves as of January 10, 2010 (Wheat)

Condition

	extremely low
	very low
	low
	moderately low
	near normal
	moderately high
	high
	very high
	extremely high










Frequency of Occurrence

less than 1 in 25-years
less than 1 in 12-years
less than 1 in 6-years
less than 1 in 3-years
at least 1 in 3-years
less than 1 in 3-years
less than 1 in 6-years
less than 1 in 12-years
less than 1 in 25 years



Soil Moisture Reserves as of January 10, 2010 (Pasture)










Condition Frequency of Occurrence

	extremely low	less than 1 in 25-years
	very low	less than 1 in 12-years
	low	less than 1 in 6-years
	moderately low	less than 1 in 3-years
	near normal	at least 1 in 3-years
	moderately high	less than 1 in 3-years
	high	less than 1 in 6-years
	very high	less than 1 in 12-years
	extremely high	less than 1 in 25 years

EXPERIMENTAL

Pasture Soil Moisture Reserves Relative to Long Term Normal to a Depth of 60 cm

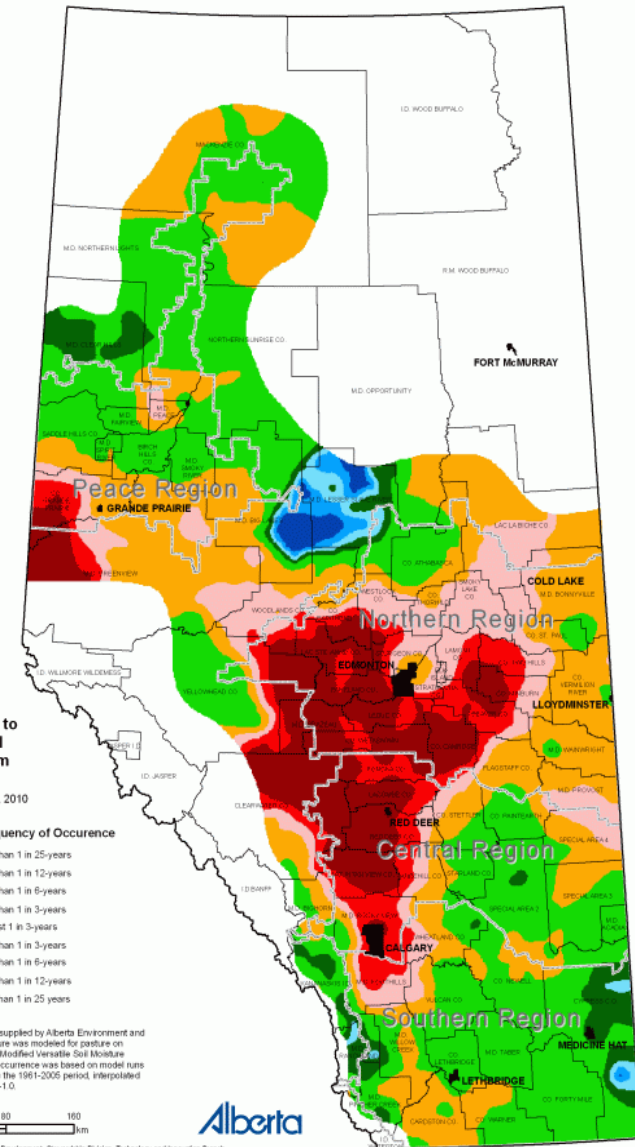
Estimated as of January 10, 2010

Condition	Frequency of Occurrence
	extremely low less than 1 in 25-years
	very low less than 1 in 12-years
	low less than 1 in 6-years
	moderately low less than 1 in 3-years
	near normal at least 1 in 3-years
	moderately high less than 1 in 3-years
	high less than 1 in 6-years
	very high less than 1 in 12-years
	extremely high less than 1 in 25 years

Near-real-time weather data was supplied by Alberta Environment and Environment Canada. Soil moisture was modeled for pasture on medium textured soils using AP's Modified Versatile Soil Moisture Budget V-1.0. The frequency of occurrence was based on model runs using historical weather data from the 1961-2005 period, interpolated to township centres using ABCdes-1.0.

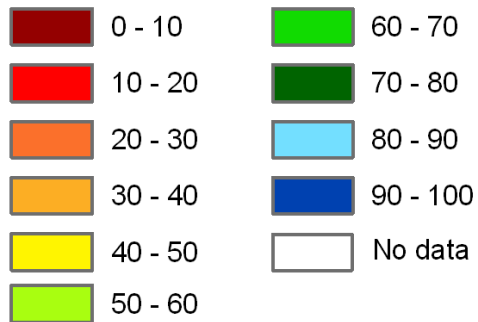
80 40 0 80 160
km

Compiled by Alberta Agriculture and Rural Development, Stewardship Division, Technology and Innovation Branch



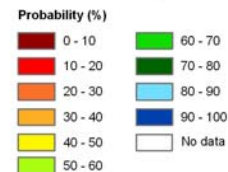
Probability of returning to normal soil moisture level by May 1, 2010 (modeled)

Probability (%)



Probability of Returning to Normal Spring (May 1) Spring Wheat Soil Moisture Conditions

Estimated as of October 29, 2009



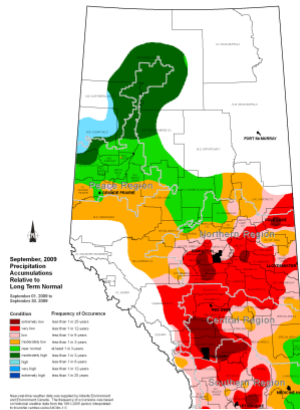
Near-real-time weather data was supplied by Alberta Environment and Environment Canada. Soil moisture was modeled for spring wheat on medium textured soils using AP's Modified Versatile Soil Moisture Budget V-1.0, initialized with field soil moisture data collected during April and May 2008. The probability of returning to normal was based on model runs using historical weather data from the 1961-2005 period, interpolated to township centres using ABClim-1.0.



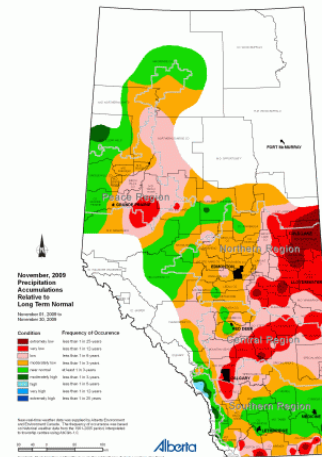
Compiled by Alberta Agriculture and Rural Development, Stewardship Division, Technology and Innovation Branch
Created on November 02, 2009

Alberta

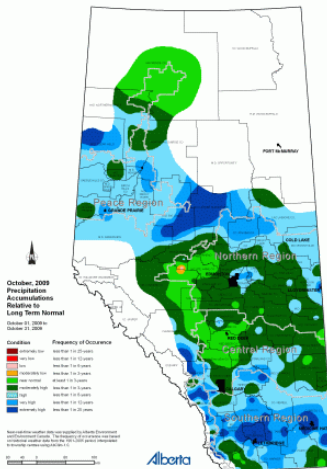
Monthly Precipitation relative to long term normal Fall, 2009



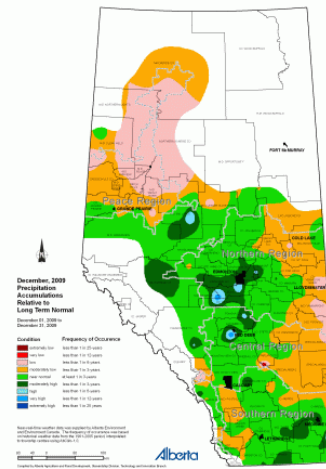
September



November

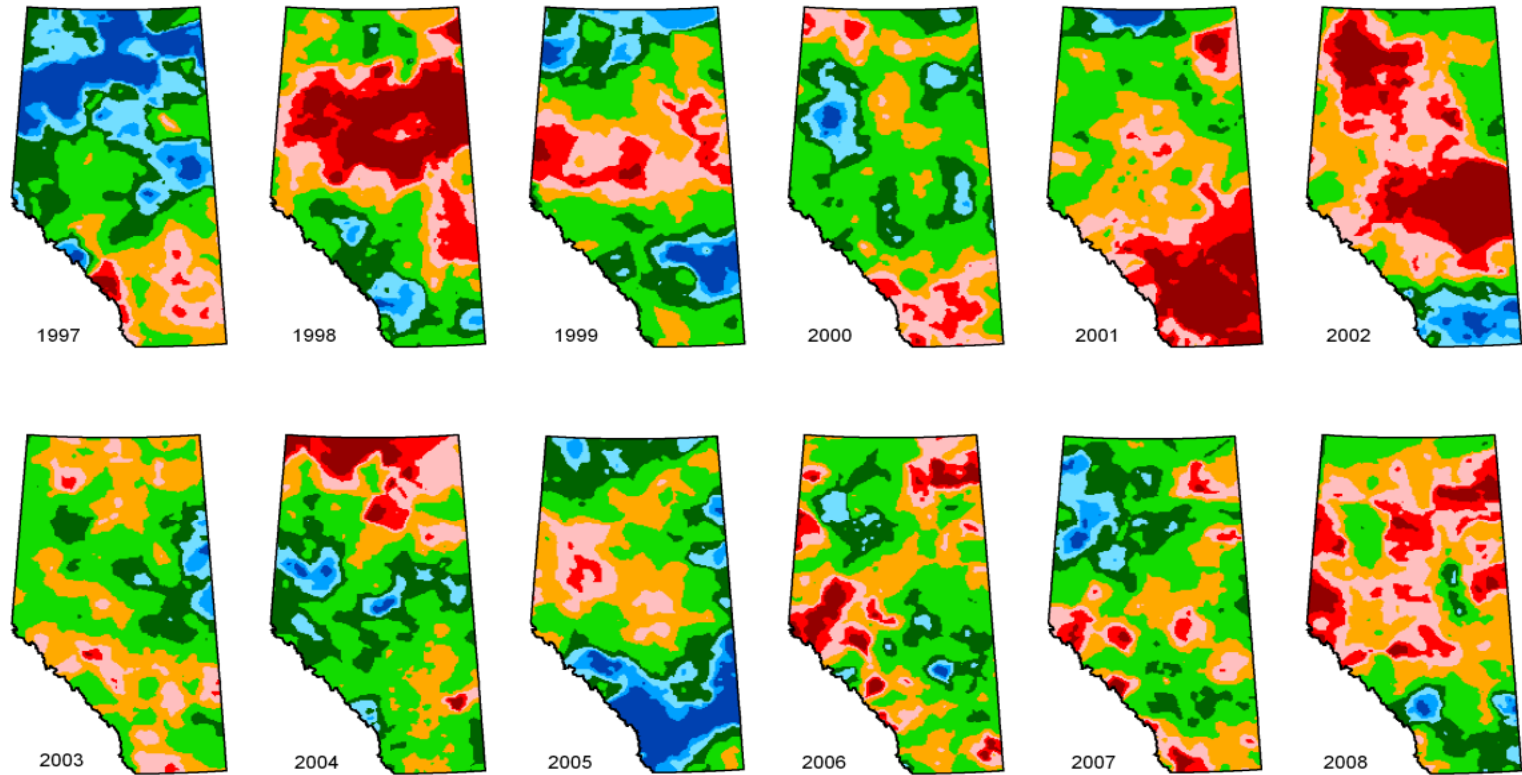


October



December

Variability of annual precipitation



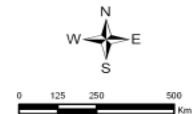
Precipitation Accumulations Relative to Long Term Normal

Years 1997 to 2008

The frequency of occurrence was calculated using historical weather data from the 1961-2007 period, interpolated to township centres using AbClim-1.1.

Compiled by Alberta Agriculture and Rural Development,
Environmental Stewardship Division,
Technology and Innovation Branch
Created on April 03, 2009

Condition	Frequency of Occurrence
extremely low	less than 1 in 25-years
very low	less than 1 in 12-years
low	less than 1 in 6-years
moderately low	less than 1 in 3-years
near normal	at least 1 in 3-years
moderately high	less than 1 in 3-years
high	less than 1 in 6-years
very high	less than 1 in 12-years
extremely high	less than 1 in 25-years



Alberta

2009 precipitation relative to long term normal

Condition

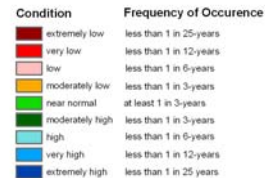


Frequency of Occurrence

less than 1 in 25-years
less than 1 in 12-years
less than 1 in 6-years
less than 1 in 3-years
at least 1 in 3-years
less than 1 in 3-years
less than 1 in 6-years
less than 1 in 12-years
less than 1 in 25 years

365-Day Precipitation Accumulations Relative to Long Term Normal

January 01, 2009 to
December 31, 2009

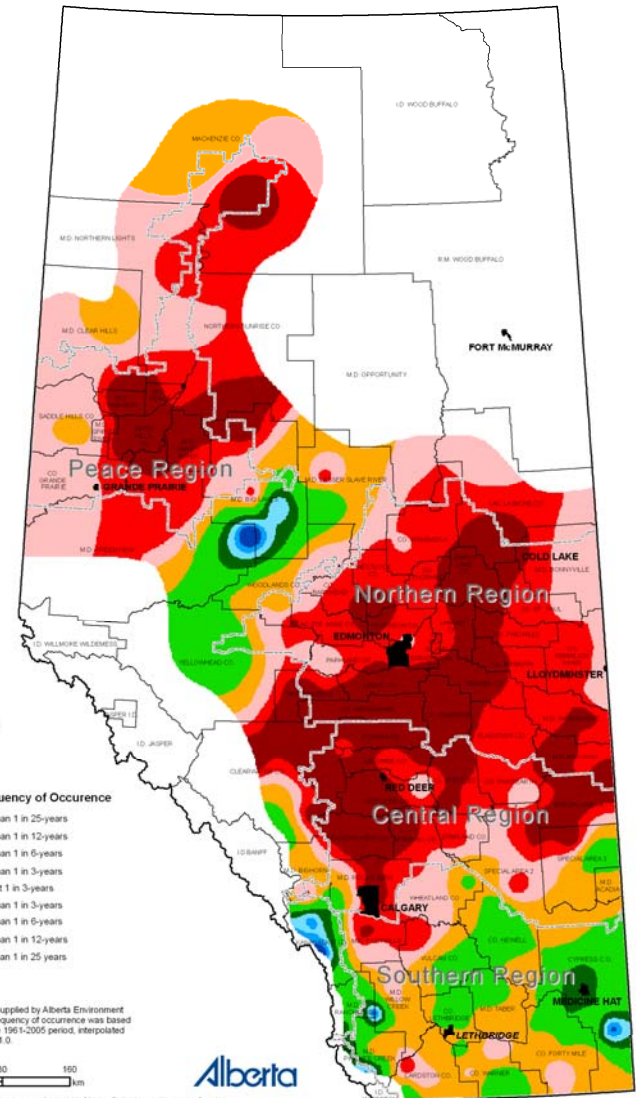


Near-real-time weather data was supplied by Alberta Environment and Environment Canada. The frequency of occurrence was based on historical weather data from the 1961-2005 period, interpolated to township centres using ABClim-1.0.

80 40 0 40 80 160
km

Compiled by Alberta Agriculture and Rural Development, Stewardship Division, Technology and Innovation Branch

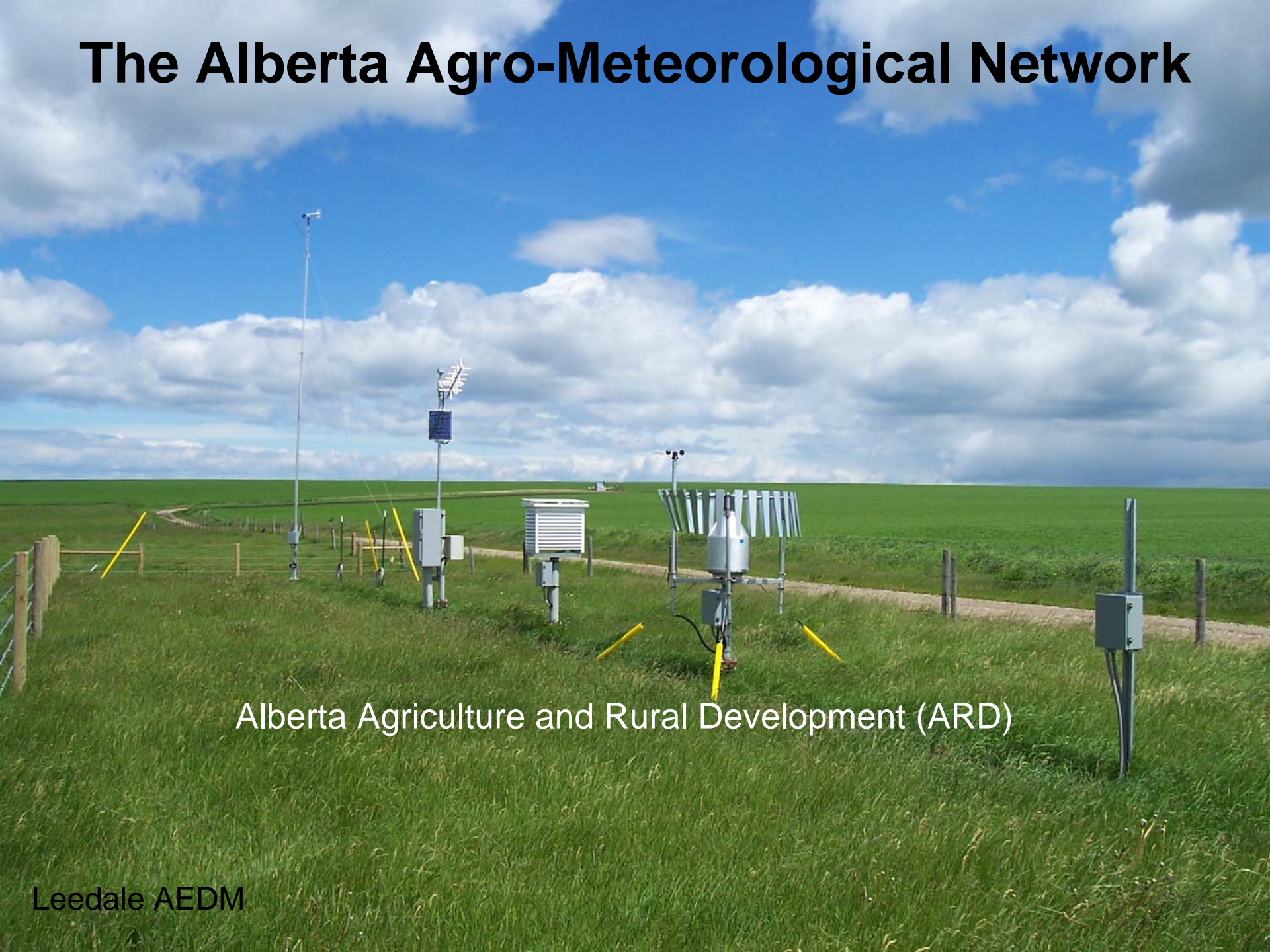
Alberta



Spring 2010 soil moisture conditions

- Sub soil moisture conditions are very low in many parts of the agricultural regions
- Timely and much above normal winter and early spring precipitation is critical to bring soil moisture levels to near normal conditions.

The Alberta Agro-Meteorological Network



Alberta Agriculture and Rural Development (ARD)

Weather Forecast

ACIS Maps

Station Data & Graphs

Live Data Feeds (RSS)

About ACIS

Questions and Comments

[Tell us what you think](#)

AgroClimatic Information Service (ACIS)

Directions

1. Choose the hourly or daily option and the items of interest from the tabs below
2. Select up to 5 stations by clicking on the pins in the map or use the drop down station menu above the map
3. Select date range and then graph and/or download your data

Legend

- ☒ Available for all selected stations ☐ Not available for some selected stations
☐ Not available for any selected stations

Option: ☒ Daily ☐ Hourly (after 2008-9-1)

Elements **Long Term Normals** Others

- ☒ Precip. (mm) [Clear Elements](#)
☒ Precip. Accumulated (mm) [Clear All Tabs](#)
☐ Precip. 6-hrly (mm) [Definitions](#)
☐ Precip. 6-hrly Accumulated (mm)

	Inst.	Ave.	Max.	Min.	Total
Air Temp. at 2m (°C)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relative Humidity at 2m (%)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar Rad. at 2m (W/m2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind Speed at 2m (km/hr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind Dir. at 2m (°)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind Speed at 10m (km/hr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind Dir. at 10m (°)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	5-cm	20-cm	50-cm	100-cm
Soil Moisture (%)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil Temperature (°C)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selected Stations (up to 5 max.) [\(Clear List\)](#)

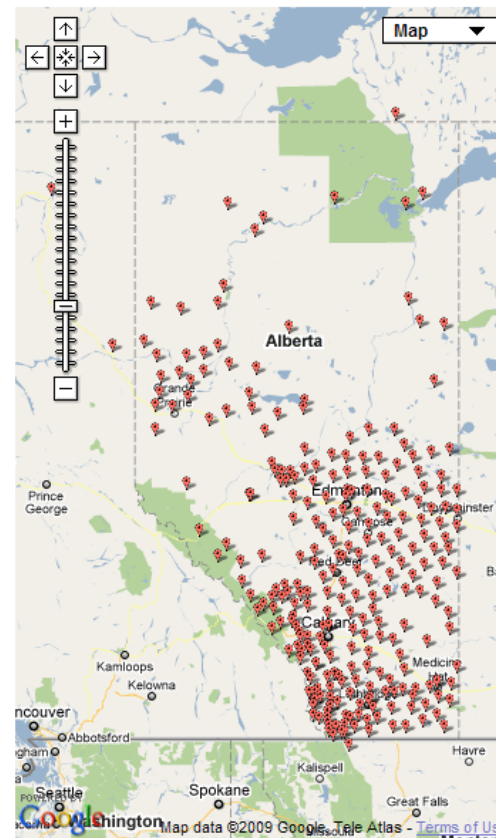
Aug Sep Oct Nov Dec **Jan 10** Feb Mar Apr May Jun

Start Date: 2010-1-4 End Date: 2010-1-18

Graph Data

Download Data

Select Station(s):



The Alberta Agro-Meteorological Network

- Weather Network primarily designed to serve farmers and ranchers
- 118 standard near real time weather stations
-
- Weather data is quality controlled and used in Agricultural and environment models as well as made available to public free of charge via ARD's ACIS web site
- Weather analysis, soil moisture, drought models results and maps are available via ARD's ACIS web site.

**Visit ACIS to get your weather data and
maps**

www.agric.gov.ab.ca/acis

Thank You

**If you have questions call
Ralph Wright 780 427 3556
Daniel Itenfisu 780 415 1355**