

The CCRN Data Management Overview 2015

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CCRN Observatories

- Data coming from 14 CCRN Observatories
 - Seven telemetry points for meteo data
 - Seven sites with manual collection

- | | |
|----------------------|--------------------------------|
| 1. BERMS | 8. Columbia Icefield |
| 2. StDenis | 9. Baker Creek |
| 3. Brightwater Creek | 10. Scotty Creek |
| 4. West Nose Creek | 11. Brintnell-Bologna Icefield |
| 5. Marmot Creek | 12. Wolf Creek |
| 6. Lake O'Hara | 13. Havikpak Creek |
| 7. Peyto Glacier | 14. Trail Valley Creek |

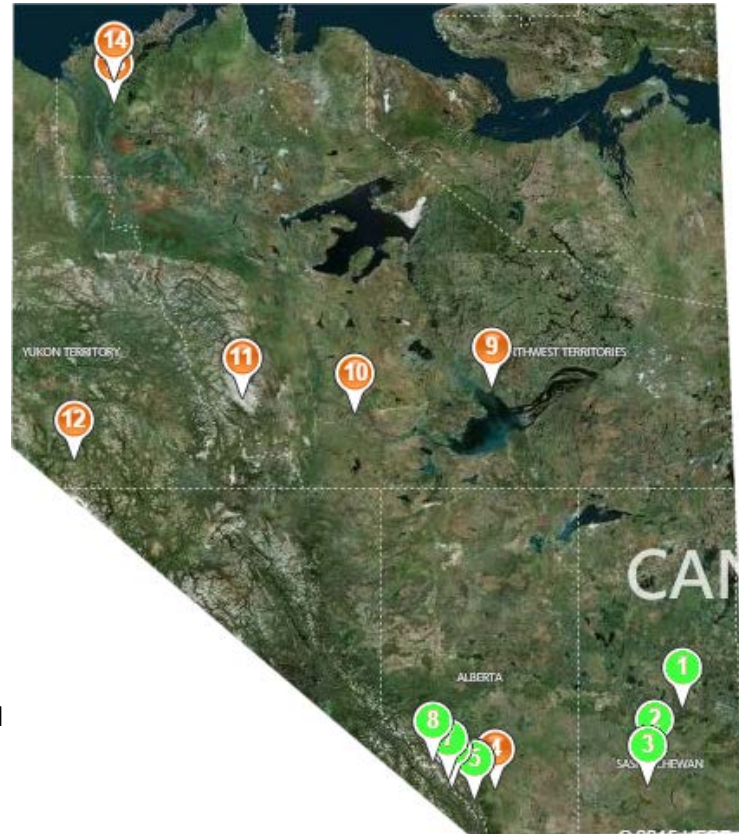


Figure: CCRN Observatories

CCRN Observatories

- And four additional real-time collecting sites

1. Fortress Mountain
2. Burstall Pass
3. Helen Lake
4. Bow Hut

All managed by Centre for Hydrology



Figure: Additional CCRN sites

CCRN Observatories

- Over 50 separate monitoring stations
- Values from 1800 variables imported and controlled on a daily basis
- Frequency of the time series data between 15 minutes and 1 day
- Eddy covariance data for processed to 30 minute intervals
- Standardized protocols and processing implemented in WISKI database
- Ongoing support in the design and implementation of the CCRN data management plan provided by Alan Barr, Warren Helgason, Kevin Shook, Laleh Moradi and others

- Minimum CCRN data archive time span:
2013-2018
- Special Observation and Analysis Period:
2014-2015



CCRN Data Submissions 2015

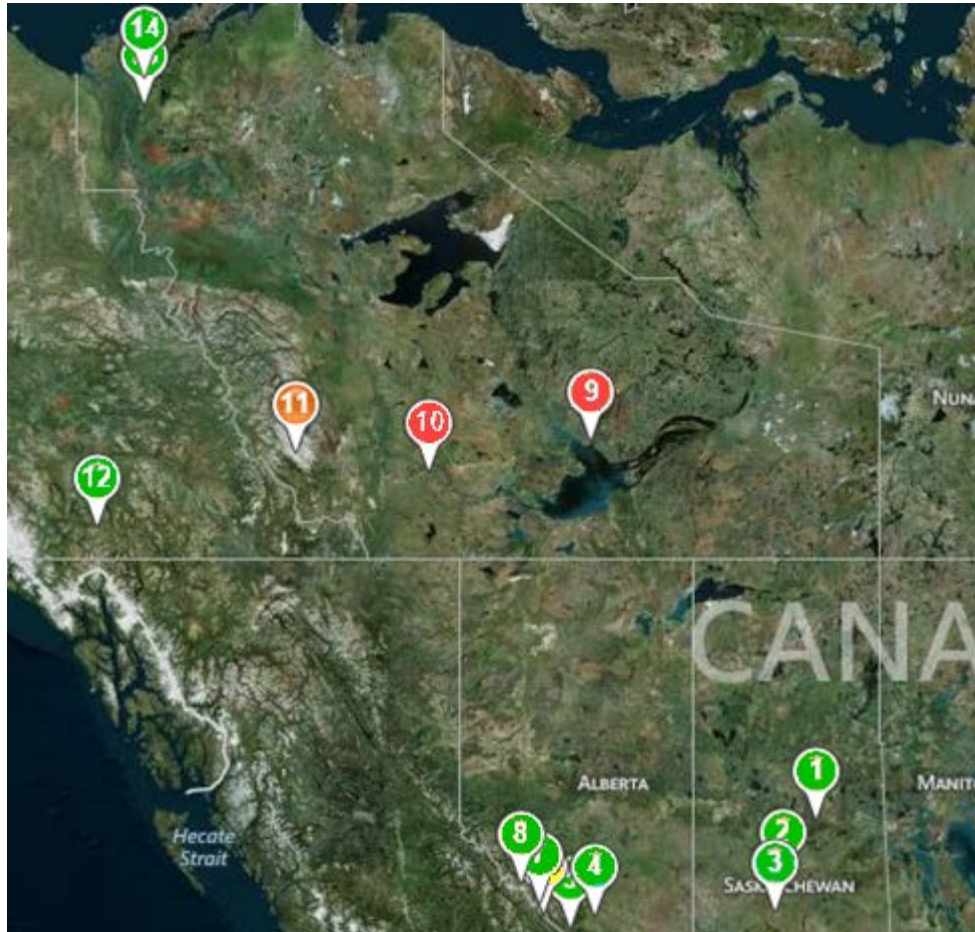


Figure: CCRN data submission - Meteo

Meteo / Flux / Soil data

- Good (75-100%)
- Medium (50-75%)
- Low (25-50%)
- Missing (0%)

CCRN Data Submissions 2015

Hydrometric data

- Most of the data available through WSC
- Are those records going to be transferred to the CCRN database?

CCRN Data Submissions 2015

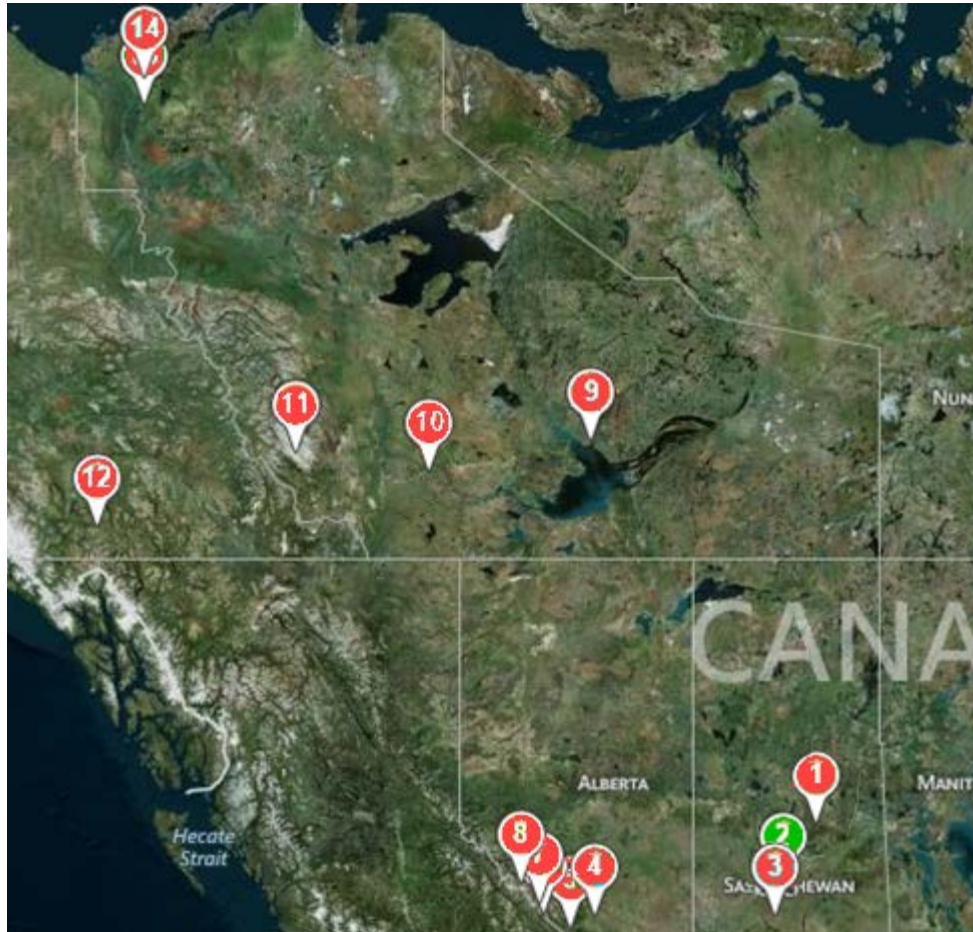


Figure: CCRN data submission – Snow surveys

Snow survey data

- Good (75-100%)
- Medium (50-75%)
- Low (25-50%)
- Missing (0%)

Summary for 2015

- Keeping up with the imports for meteo / flux /soil data
- Behind with hydrometric data for various sites (but available through WSC)
- No snow survey data transferred into the CCRN repository (many sites have the data in good shape)
- Also, it is critical that we acquire the SOAP data 2014-2015 including snow, isotope, energy balance, hydro-meteo and other data sets

Summary for 2015

	Site	Data type	Period	Transfer	Complete %
1	BERMS	Meteo/ flux/ soil /vegetation	1997-present	A / M	75-100
		Snow surveys	1997-2009	M	0
2	St.Denis	Meteo/ flux/ soil	1992-present	A	75-100
3	Brightwater Creek	Hydrometric, isotope, snow, GIS Meteo/ flux/ soil	Various-2014 2007-present	M A	75-100 75-100
4	West Nose Creek	Meteo/ flux/ soil	2006-2014	M	75-100
5	Marmot Creek	Meteo/ flux/ soil	2011-present	A	75-100
		Hydrometric, GW, vegetation	Various	M	0
		Snow surveys	Various	M	0
6	Lake O'Hara	Meteo / flux	2014-present	A / M	50-75
		Hydrometric	2008-2014	M	75-100
		Snow surveys	2006-2013	M	0
7	Peyto Glacier	Meteo / flux	2010-2014	M	75-100
		Hydrometric, glaciological	Various	M	0
8	Columbia Icefield	Meteo	2014-2015	A / M	75-100
		Hydrometric, glaciological	Various	M	0
9	Baker Creek	Meteo / flux	2005-2013	M	0-25
		Hydrometric	2005-2014	M	0-25
10	Scotty Creek	Meteo / flux /soil /hydro /snow	Various	M	0
11	Brintnell-Bologna Icefield	Meteo /hydro /glaciological	Various	M	0
12	Wolf Creek	Meteo/ flux/ soil	1993-2013	M	75-100
		Hydrometric, snow, GW, other	Various	M	0
13	Havikpak Creek	Meteo/flux/soil (multi-position)	1998-2014	M	75-100
		Hydrometric	Various	M	0
		Snow surveys	Various	M	0
14	Trail Valley Creek	Meteo/flux/soil (multi-position)	1998-2014	M	75-100
		Hydrometric	Various	M	0
		Snow surveys	Various	M	0

A – Automated, M - Manual

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CCRN, GIWS Data Archive

- GEM-LAM and GEM Regional model outputs translated to GRIB2 format with 2.5km and 10km resolution for Western Canada, 2010-present
- WATCH Forcing Data methodology applied to ERA-Interim data (WFDEI): 1979-2012, 3hr/0.5x0.5 deg resolution
- WATCH Forcing Data methodology applied to crop evaporation over land (WCH FD): 1901-2001, 3hr,6hr / 0.5x0.5 deg resolution
- Hydrological Data, Princeton University: 1901-2012 3hr/0.5x0.5deg resolution
- Interactive Multisensor Snow and Ice Data: 2004-2013, 4km and 1997-2013, 24km resolution
- Canadian Gridded (CANGRD) Temperature and Precipitation data: 1971-2000, 50km resolution
- Mackenzie climate data from GEWEX study: 1997-1999
- North American Regional Climate Change Assessment Program (NARCCAP) data: 1968-1996 and future predictions
- Snow Water Equivalent (Globsnow) data: daily, 1979-2013, 25km resolution
- Gridded ANUSPLIN daily Temperature and Precipitation: 1950-2013, 10km resolution, Canada

CCRN, GIWS Data Archive

- WRF historic simulation: 2000-2009, 1hr (surface) and 3 hrs time resolution, 4km spatial resolution, McKenzie and SK river basins
- WRF PGW (pseudo-global warming) simulation: 2000-2005, 1hr (surface) and 3 hrs time resolution, 4km spatial resolution, McKenzie and SK river basins

Planned for 2015 /2016

- Transfer of the CRCM5 simulation data to the CCRN repository

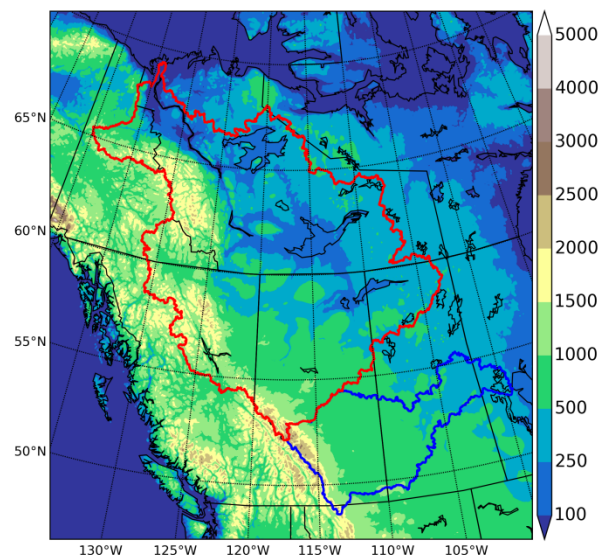


Figure: WRF simulation data coverage

CCRN Metadata Catalogue

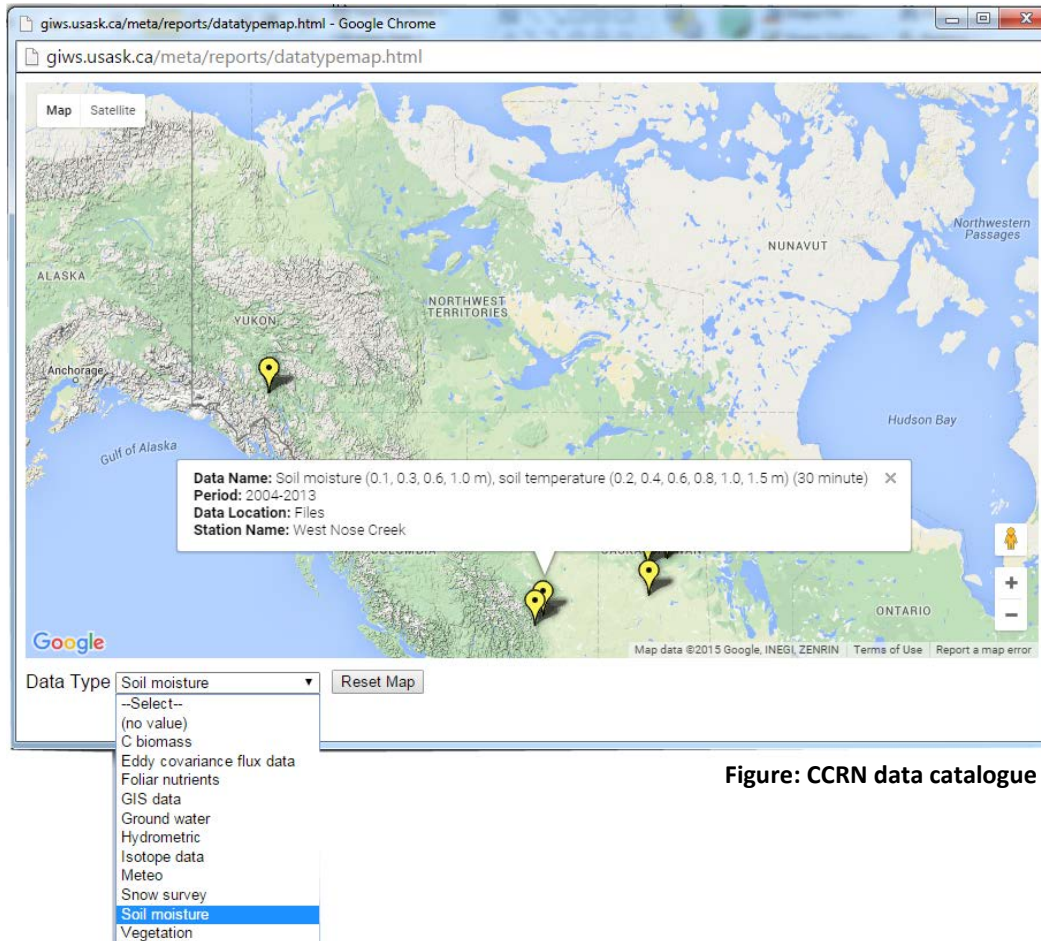


Figure: CCRN data catalogue

- Can show different sites and information based on the data type search criteria
- Search based on the period and other parameters still not available
- Available through:

<http://giws.usask.ca/meta>

Reminder: CCRN Data Access Policy

“CCRN embraces as open an approach as possible ... must respect the rights of the data originators ... ”

Timelines:

- Funded data originators have up to one year to submit to central repository;
- Longer holdbacks can be approved, case-by case;
- After submission, access is limited to network for one year, followed by public release.

Questions to discuss

What other data types should we archive?

- Survey data (soil moisture, vegetation ...)
- Processed high-resolution eddy covariance data
- Hydrometric data from WSC
- Isotope data
- Tree ring data (available for BERMS only)
- Model inputs and outputs, code, versions

How should our legacy data look like?

- Similar to the IP3 legacy or
 - Source that can be queried for specific records and periods
- ...

Thank you!