

# **CCRN AGM: Data Management Perspective**

**Branko Zdravkovic**  
**GIWS, University of Saskatchewan**

- 9:10-9:30 Update on CCRN's data management system and activities Branko Zdravkovic
- 9:30-10:00 Open discussion Alan Barr

# Overview

- CCRN Data Management framework
- Status of the CCRN data submissions
- CCRN data accessibility
- WISKI training plan
- Next steps
- Summary

# CCRN Data Management Framework

## Requirements

- Archive data from CCRN Observatories in the standardized way
- Use uniform protocols for naming, organization, data processing, quality assurance, and dissemination
- Use uniform protocols for metadata submission and CCRN data documentation

# CCRN Data Management Framework

## Implementation: Naming Conventions

Type	Name	Optional Locations	Optional Adjectives	Example
<b>TA</b>	AirTemp	[Descriptors][#m] or [#cm] Descriptors: AbvCnpy, Cnpy, BlwCnpy, UndrStry	[Instrument]	<b>AirTemp_AbvCnpy 37mHMP45</b>
<b>TS</b>	SoilTemp	[#cm][ProfileXX]		<b>SoilTemp_5cmNW</b>

Alan Barr: CCRN Data Management in WISKI

# CCRN Data Management Framework

## Implementation: Data Information System (DIS)

**WISKI - [WISKI-Explorer]**

File Edit View Tools Windows Help

Sites BERMS / S000 Fen Meteorological / BER\_FEN\_00 Parameter of station

Sites

- / 0
- Baker Creek / CCRN003
- BERMS / S000
  - Reports
  - Map [BERMS / S000]
  - Fen Aux / BER\_FEN\_03
  - Fen Flux / BER\_FEN\_02
  - Fen Flux Aux / BER\_FEN\_08
  - Fen Flux Calc / BER\_FEN\_05
  - Fen Meteorological / BER\_FEN\_00**
  - Fen Meteorological Calc / BER\_FEN\_04
  - Fen Meteorological Snow / BER\_FEN\_01
  - Old Aspen Aux / BER\_OAS\_03
  - Old Aspen Flux / BER\_OAS\_02
  - Old Aspen Flux Calc / BER\_OAS\_05

Fen Meteorological / BER\_FEN\_00 X

Name	Unit
AirTemp_AbvCnpy15m	degree Celsius (°C)
AirTemp_AbvCnpy2m	degree Celsius (°C)
AirTemp_AbvCnpy4m	degree Celsius (°C)
AirTemp_AbvCnpy8m	degree Celsius (°C)
AirTemp_AbvSoilVeg10cm25mN	degree Celsius (°C)
AirTemp_AbvSoilVeg10cm75mNW	degree Celsius (°C)

WISKI Database

Central Repository

Browser

CCRN Repository

- CANGRD
  - Mackenzie GEWEX Study
    - Dataset CDs
    - Reports
    - Workshop Proceedings and Other Documents
  - Research Observatories
  - The Interactive Multisensor Snow and Ice Data
    - 04km**
    - 24km
    - GIS

Display 100 elements

	Title	Last modified	Type
	2005	10/16/2014 11:15:00	zip
	2004	10/16/2014 10:46:00	zip
	2006	10/16/2014 10:46:00	zip
	2007	10/16/2014 10:46:00	zip
	2008	10/16/2014 10:46:00	zip
	2009	10/16/2014 10:46:00	zip
	2010	10/16/2014 10:46:00	zip
	2011	10/16/2014 10:46:00	zip
	2012	10/16/2014 10:46:00	zip

# CCRN Data Management Framework

## Implementation: Data Organization and Templates

Sites

- Auxiliary Templates / WISKI\_AUX\_TMP
- Calculation Templates / WISKI\_MTC\_TMP
- Meteorological Snow Templates / WISKI\_MTS\_TMP
- Meteorological Templates / WISKI\_MET\_TMP
  - Map [Meteorological Templates / WISKI\_MET\_TMP]
    - Basic data
    - Reports
    - Station documents
    - Standard graph groups
    - AirTemp\_Template
    - BarometricPressure\_Template
    - BiomassHeatStorageFlux\_Template
    - BoleTemp\_Template
    - DiffusePPFD\_Template
    - EcosystemRespiration\_Template
    - FrictionVelocity\_Template
    - GrossEcosystemPhotosynthesis\_Template
    - IncomingLongwaveRad\_Template
    - IncomingPPFD\_Template
    - IncomingPPFD\_Template5min
    - IncomingShortwaveRad\_Template
    - LatentHeatFlux\_Template
    - NetEcosystemProduction\_Template
    - NetRad\_Template
    - OutgoingLongwaveRad\_Template

AirTemp\_Template X

Name	Data from	Data until	Short name
01.Original			01.O.0030
02.Cleaned1			02.C1
03.Cleaned2			03.C2
04.Cleaned3			04.C.0030
05.Filled			05.F.0030
07.CleanedOutside			07.C.0030
08.FilledOutside			08.F.0030
09.MovingAvg			09.M.0030
11.DailyMean			11.DMean
12.DailyMax			12.DMax
13.DailyMin			13.DMin
15.DailyNumQCed			15.DNQC
16.DailyNumFilled			16.DNFill
17.DailyNumMissing			17.DNMiss
21.MonthlyMean			21.MMean
23.MonthlyNumQCed			23.MNQC
24.MonthlyNumFilled			24.MNFill
25.MonthlyNumMissing			25.MNMiss
31.AnnualMean			31.AMean
33.AnnualNumQCed			33.ANQC
34.AnnualNumFilled			34.ANFill
35.AnnualNumMissing			35.ANMiss

# CCRN Data Management Framework

## Implementation: Quality Assurance

Quality Code		Processing Level								Quality
		01 raw	02	03	04 cln	05 fill	07	08	09	
255	M	●			●	●				<i>Missing</i> data
80	I					●			●	<i>In</i> filled using WISKI agents
70	F					●		●		<i>in</i> Filled outside of WISKI
55	X		●							Auto-flagged by WISKI and e <i>X</i> cluded
50	R	●	●	●	●	●				original ( <i>R</i> ecorded or logged) data
45	D		●							to be <i>D</i> ropped, flagged manually
40	E		●	●	●	●				manually <i>E</i> dit <i>ed</i> (in 02.Cleaned1)
30	C				●	●	●			Externally <i>C</i> orrected, imported as 07
25	Z						●			Flagged externally to be excluded

Imported Manual QC Populated automatically

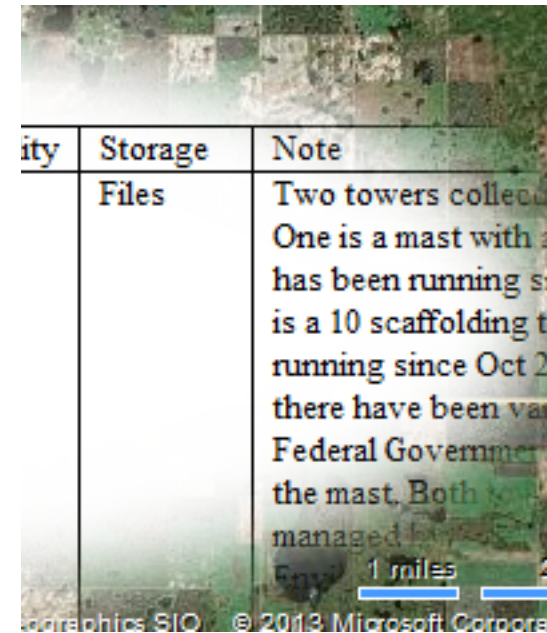
[www.usask.ca](http://www.usask.ca)



# CCRN Data Management Framework

## Implementation: Data Documentation Guidelines

- 2) **Contact Information** - *Give sufficient detail (name, affiliation, full address, telephone and fax numbers, e-mail, etc.) to contact those most knowledgeable about the dataset.*
- 3) **Site Description** - *including the following:*
  - a) **Data Period(s) and Location(s)**
  - b) **Equipment Used** - *including manufacturer and model numbers.*
  - c) **Methods/Software Used** - *in acquiring the data.*
  - d) **Data Format** - *including examples.*
- 4) **Data Processing/Quality Control** - *including the following:*
  - a) **Methods/Software Used** - *in acquiring and processing the data*
  - b) **Post-Collection Data Processing** - *description of any processing done on the data.*
  - c) **Quality Control Methods** - *give an indication as to the degree of quality control.*
  - d) **Datasets Archived** - *original "raw" data should be one of the archived datasets in addition to any processed or QCed data.*



ity	Storage	Note
	Files	Two towers collected One is a mast with a has been running since is a 10 scaffolding tower running since Oct 2 there have been various Federal Government the mast. Both managed by 1 miles

Geographics SIO © 2013 Microsoft Corporation

# CCRN Data Management Framework

## **in the short term:**

- Facilitate the efficient sharing of data and information across the network

## **and long term:**

- Produce a quality data archive which will serve as a legacy of the network

# CCRN Data Submissions

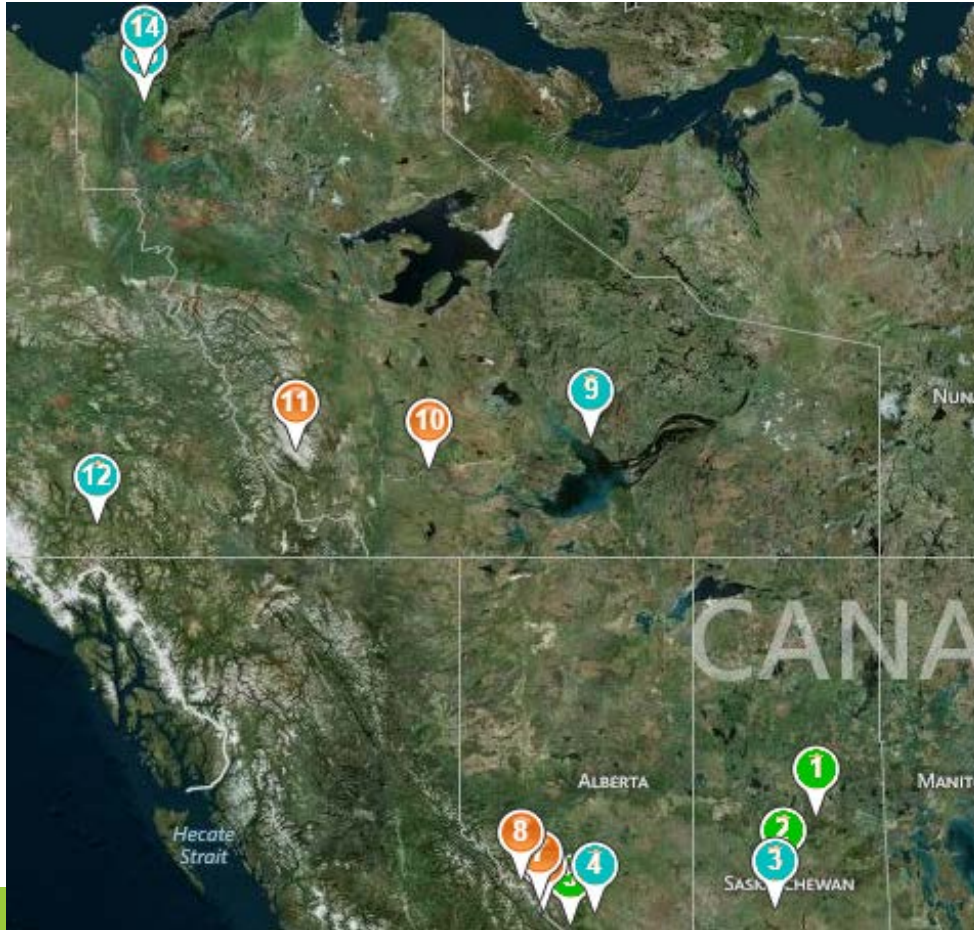
- Near real time data collection and reporting
  - a) BERMS OJP, FEN
  - b) St Denis
  - c) Marmot Creek
  - d) Burstall Pass
  - e) Fortress Mountain (in progress)

# CCRN Data Submissions

- Historical time series data collection (in progress)
  - a) Baker Creek
  - b) Brightwater Creek
  - c) BERMS OA, OBS
  - d) West Nose Creek
  - e) Wolf Creek
  - f) Trail Valley, Havikpak Creek (winter 2015)

Missing: Brintnell-Bologna, Scotty Creek, Columbia, Wapta, Lake O'Hara

# CCRN Data Submissions



- Real time
- Historical
- Missing

# CCRN Parameter Statistics

## PARAMETER: AIR TEMPERATURE

Site	Station	Location/Instrument	Unit	Interval	Chart	1995%	1996%	1997%		2010%	2011%	2012%	2013%	2014%
01.BERMS	FEN	AbvCnpy15m	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	100.00	0.01	0.00	88.20	73.43
01.BERMS	OldAspen	Cnpy18m	degC	30	<a href="#">raw</a>	0.00	0.00	98.93	...	99.01	97.04	0.01	0.00	0.00
01.BERMS	OldJackPine	AbvCnpy16.8m	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	0.00	0.53	100.00	76.14
02.StDenis	MastTower	2mHMP	degC	30	<a href="#">raw</a>	24.28	50.00	49.97	...	60.86	89.95	99.83	71.96	27.24
02.StDenis	ScaffoldingTower	1.5mHMP	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	21.39	99.22	72.83	28.67
03.BrightwaterCreek	AnniesWell	Cnpy1m	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	99.99	100.00	100.00	95.82	61.27
03.BrightwaterCreek	MainPasture	AbvCnpy3.0m	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	99.73	99.93	92.47	99.94	68.88
04.WestNoseCreek	SpyHillGrassland	164cmHMP45C	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	97.58	99.54	100.00	100.00	0.08
04.WestNoseCreek	WooliamsFarm	220cmHMP45	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	99.98	99.93	99.96	94.21	0.00
05.MarmotCreek	CentennialRidge	1.93m	degC	15	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	52.79	100.00	98.94	55.37
05.MarmotCreek	FiseraRidge	2.30m	degC	15	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	94.20	100.00	100.00	73.46
05.MarmotCreek	HayMeadow	1.86m	degC	15	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	29.65	100.00	100.00	77.01
05.MarmotCreek	UpperClearing	2.20mHC2S3	degC	15	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	0.00	19.16	100.00	76.97
05.MarmotCreek	VistaView	2.62m	degC	15	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	99.80	100.00	99.98	70.18
09.BakerCreek	VitalTower	NotProvided	degC	1440	<a href="#">raw</a>	0.00	0.00	0.00	...	47.40	73.97	56.01	48.22	0.00
12.WolfCreek	Alpine	NotProvided	degC	30	<a href="#">raw</a>	99.99	96.04	73.49	...	78.46	90.91	90.99	97.55	0.10
12.WolfCreek	Buckbrush	NotProvided	degC	30	<a href="#">raw</a>	99.99	92.12	76.93	...	91.67	99.38	87.88	80.45	0.00
12.WolfCreek	Forest	AbvCnpy	degC	30	<a href="#">raw</a>	100.00	94.02	96.70	...	100.00	100.00	72.33	27.36	0.00
12.WolfCreek	Granger2	3.6mHMP35CF	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	0.00	0.00	0.00	0.00
12.WolfCreek	Granger3	HMP	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	0.00	0.00	0.00	0.00
12.WolfCreek	Granger4	HMP35C	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	0.00	0.00	0.00	0.00
12.WolfCreek	Granger5	HMP35CF	degC	30	<a href="#">raw</a>	0.00	0.00	0.00	...	0.00	0.00	0.00	0.00	0.00

Representative parameters: air temperature, barometric pressure, incoming & outgoing radiations, precipitation, relative humidity, soil moisture, soil temperature, wind speed & dir.



# CCRN Data Accessibility

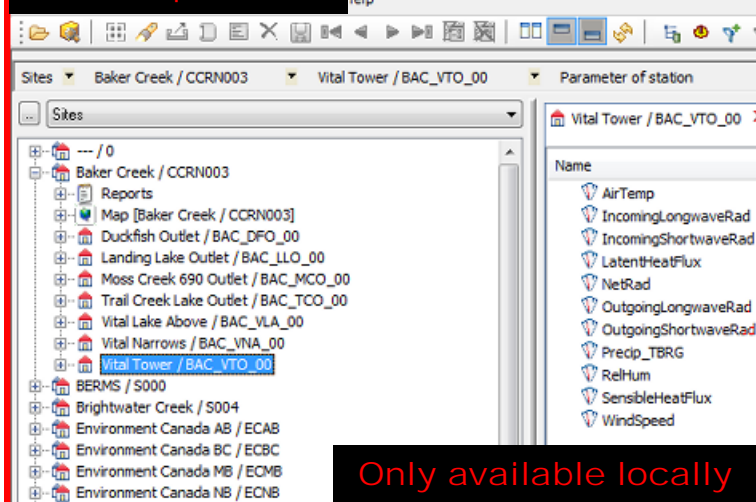
## **Four ways to access WISKI time series data**

- WISKI desktop client: USASK network and VPN access
- WISKI Web Pro: chart and export individual parameters
- KiWIS: custom HTTP requests to query the database
- FTP: multicolumn files with representative parameters

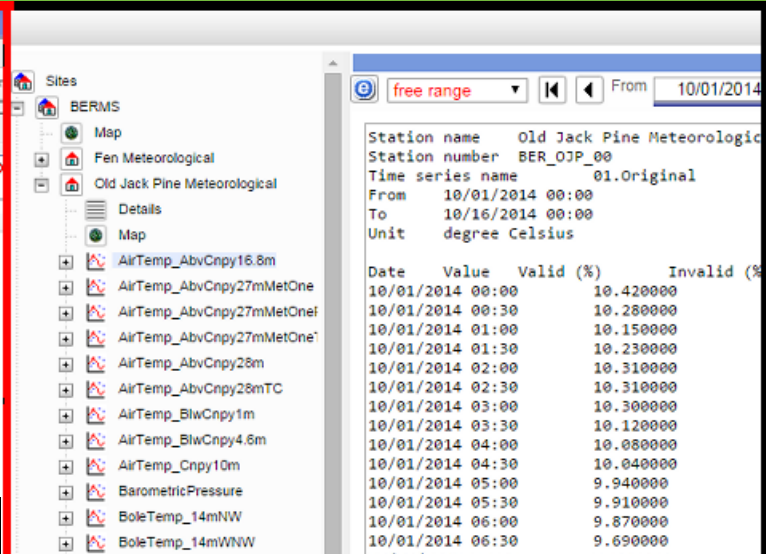
## **One way to access other CCRN data**

- CCRN central repository

## Desktop Client

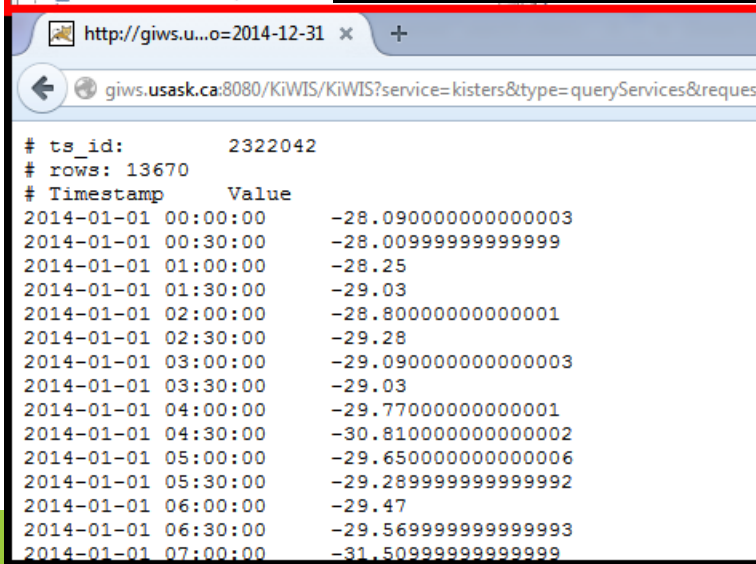


Only available locally



Station name	Station number	Time series name	From	To	Unit
Old Jack Pine Meteorological	BER_03P_00	01.Original	10/01/2014 00:00	10/16/2014 00:00	degree Celsius

Date	Value	Valid (%)	Invalid (%)
10/01/2014 00:00		10.420000	
10/01/2014 00:30		10.280000	
10/01/2014 01:00		10.150000	
10/01/2014 01:30		10.230000	
10/01/2014 02:00		10.310000	
10/01/2014 02:30		10.310000	
10/01/2014 03:00		10.300000	
10/01/2014 03:30		10.120000	
10/01/2014 04:00		10.080000	
10/01/2014 04:30		10.040000	
10/01/2014 05:00		9.940000	
10/01/2014 05:30		9.910000	
10/01/2014 06:00		9.870000	
10/01/2014 06:30		9.690000	



ts_id	rows	Timestamp	Value
2322042	13670		
		2014-01-01 00:00:00	-28.090000000000003
		2014-01-01 00:30:00	-28.009999999999999
		2014-01-01 01:00:00	-28.25
		2014-01-01 01:30:00	-29.03
		2014-01-01 02:00:00	-28.800000000000001
		2014-01-01 02:30:00	-29.28
		2014-01-01 03:00:00	-29.090000000000003
		2014-01-01 03:30:00	-29.03
		2014-01-01 04:00:00	-29.770000000000001
		2014-01-01 04:30:00	-30.810000000000002
		2014-01-01 05:00:00	-29.650000000000006
		2014-01-01 05:30:00	-29.289999999999992
		2014-01-01 06:00:00	-29.47
		2014-01-01 06:30:00	-29.569999999999993
		2014-01-01 07:00:00	-31.509999999999999

## Index of /ccrn/scheduledexports/

Name	Size	Date Modified
[parent directory]		
2002_FEN_Summary.csv	1.9 MB	08/10/2014 14:10:00
2003_FEN_Summary.csv	2.3 MB	08/10/2014 14:09:00
2004_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2005_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2006_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2007_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2008_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2009_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2010_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2011_FEN_Summary.csv	1.8 MB	08/10/2014 14:09:00
2012_FEN_Summary.csv	1.8 MB	08/10/2014 14:09:00
2013_FEN_Summary.csv	2.3 MB	08/10/2014 14:08:00
2014_FEN_Summary.csv	2.2 MB	19/09/2014 17:14:00



WISKI - [WISKI-Explorer]

File Edit View Tools Windows Help

Sites Baker Creek / CCRN003 Vital Tower / BAC\_VTO\_00 Parameter of station

Sites

- / 0
- Baker Creek / CCRN003
  - Reports
  - Map [Baker Creek / CCRN003]
  - Duckfish Outlet / BAC\_DFO\_00
  - Landing Lake Outlet / BAC\_LLO\_00
  - Moss Creek 690 Outlet / BAC\_MCO\_00
  - Trail Creek Lake Outlet / BAC\_TCO\_00
  - Vital Lake Above / BAC\_VLA\_00
  - Vital Narrows / BAC\_VNA\_00
  - Vital Tower / BAC\_VTO\_00
- BERMS / S000
  - Brightwater Creek / S004
  - Environment Canada AB / ECAB
  - Environment Canada BC / ECBC
  - Environment Canada MB / ECMB
  - Environment Canada NB / ECNB

Vital Tower / BAC\_VTO\_00

Name

- AirTemp
- IncomingLongwaveRad
- IncomingShortwaveRad
- LatentHeatFlux
- NetRad
- OutgoingLongwaveRad
- OutgoingShortwaveRad
- Precip\_TBGR
- RelHum
- SensibleHeatFlux
- WindSpeed

Web Client

Sites

- BERMS
  - Map
  - Fen Meteorological
  - Old Jack Pine Meteorological
  - Details
  - Map
  - AirTemp\_AbvCnpy16.8m
  - AirTemp\_AbvCnpy27mMetOne
  - AirTemp\_AbvCnpy27mMetOne1
  - AirTemp\_AbvCnpy27mMetOne1
  - AirTemp\_AbvCnpy28m
  - AirTemp\_AbvCnpy28mTC
  - AirTemp\_BlwCnpy1m
  - AirTemp\_BlwCnpy4.6m
  - AirTemp\_Cnpy10m
  - BarometricPressure
  - BoleTemp\_14mNW
  - BoleTemp\_14mWNW

free range From 10/01/2014

Station name Old Jack Pine Meteorologic  
 Station number BER\_OJP\_00  
 Time series name 01.Original  
 From 10/01/2014 00:00  
 To 10/16/2014 00:00  
 Unit degree Celsius

Date	Value	Valid (%)	Invalid (%)
10/01/2014 00:00		10.420000	
10/01/2014 00:30		10.280000	
10/01/2014 01:00		10.150000	
10/01/2014 01:30		10.230000	
10/01/2014 02:00		10.310000	
10/01/2014 02:30		10.310000	
10/01/2014 03:00		10.300000	
10/01/2014 03:30		10.120000	
10/01/2014 04:00		10.080000	
10/01/2014 04:30		10.040000	
10/01/2014 05:00		9.940000	

1 parameter, 1 year

http://giws.usask.ca:8080/KiWIS/KiWIS?service=kisters&type=queryServices&request=

# ts\_id: 2322042  
 # rows: 13670  
 # Timestamp Value

2014-01-01 00:00:00	-28.090000000000003
2014-01-01 00:30:00	-28.009999999999999
2014-01-01 01:00:00	-28.25
2014-01-01 01:30:00	-29.03
2014-01-01 02:00:00	-28.800000000000001
2014-01-01 02:30:00	-29.28
2014-01-01 03:00:00	-29.090000000000003
2014-01-01 03:30:00	-29.03
2014-01-01 04:00:00	-29.770000000000001
2014-01-01 04:30:00	-30.810000000000002
2014-01-01 05:00:00	-29.650000000000006
2014-01-01 05:30:00	-29.289999999999992
2014-01-01 06:00:00	-29.47
2014-01-01 06:30:00	-29.569999999999993
2014-01-01 07:00:00	-31.509999999999999

Index of /ccrn/scheduledexports/

Name	Size	Date Modified
[parent directory]		
2002_FEN_Summary.csv	1.9 MB	08/10/2014 14:10:00
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2005_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2006_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2007_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2008_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2009_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2010_FEN_Summary.csv	2.4 MB	08/10/2014 14:09:00
2011_FEN_Summary.csv	1.8 MB	08/10/2014 14:09:00
2012_FEN_Summary.csv	1.8 MB	08/10/2014 14:09:00
2013_FEN_Summary.csv	2.3 MB	08/10/2014 14:08:00
2014_FEN_Summary.csv	2.2 MB	19/09/2014 17:14:00



WISKI - [WISKI-Explorer]

File Edit View Tools Windows Help

Sites Baker Creek / CCRN003 Vital Tower / BAC\_VTO\_00 Parameter of station

Sites

- / 0
- Baker Creek / CCRN003
  - Reports
  - Map [Baker Creek / CCRN003]
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  - Trail Creek Lake Outlet / BAC\_TCO\_00
  - Vital Lake Above / BAC\_VLA\_00
  - Vital Narrows / BAC\_VNA\_00
  - Vital Tower / BAC\_VTO\_00
- BERMS / S000
- Brightwater Creek / S004
- Environment Canada AB / ECAB
- Environment Canada BC / ECBC
- Environment Canada MB / ECMB
- Environment Canada NB / ECNB

Vital Tower / BAC\_VTO\_00

Name

- AirTemp
- IncomingLongwaveRad
- IncomingShortwaveRad
- LatentHeatFlux
- NetRad
- OutgoingLongwaveRad
- OutgoingShortwaveRad
- Precip\_TBGR
- RelHum
- SensibleHeatFlux
- WindSpeed

Sites

- BERMS
- Map
- Fen Meteorological
- Old Jack Pine Meteorological
- Details
- Map

free range

From 10/01/2014

Station name Old Jack Pine Meteorologic  
Station number BER\_OJP\_00  
Time series name 01.Original  
From 10/01/2014 00:00  
To 10/16/2014 00:00  
Unit degree Celsius

Date	Value	Valid (%)	Invalid (%)
10/01/2014 00:00		10.420000	
10/01/2014 00:30		10.280000	
10/01/2014 01:00		10.150000	
10/01/2014 01:30		10.230000	
10/01/2014 02:00		10.310000	
10/01/2014 02:30		10.310000	
10/01/2014 03:00		10.300000	
10/01/2014 03:30		10.120000	
10/01/2014 04:00		10.080000	
10/01/2014 04:30		10.040000	
10/01/2014 05:00		9.940000	
10/01/2014 05:30		9.910000	
10/01/2014 06:00		9.870000	
10/01/2014 06:30		9.690000	

## HTTP Queries

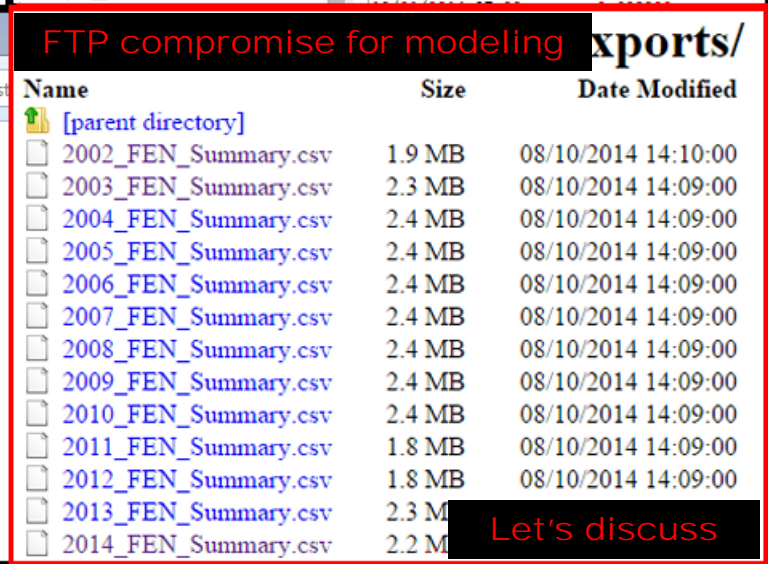
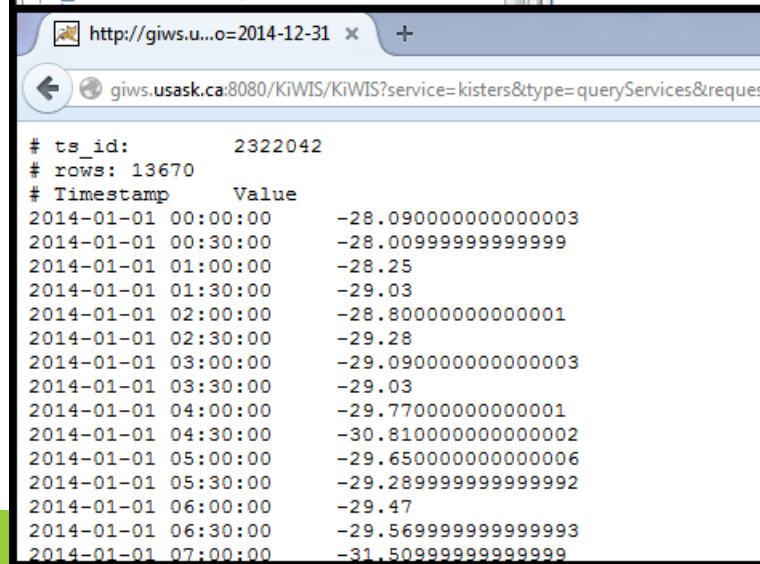
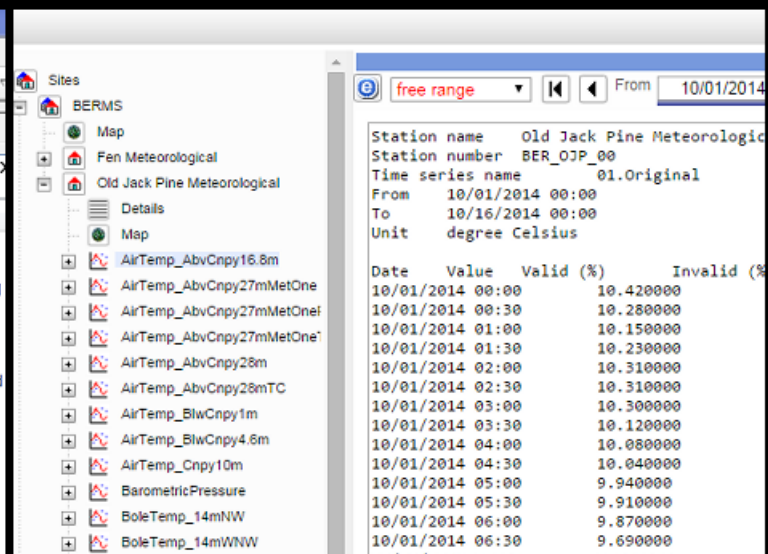
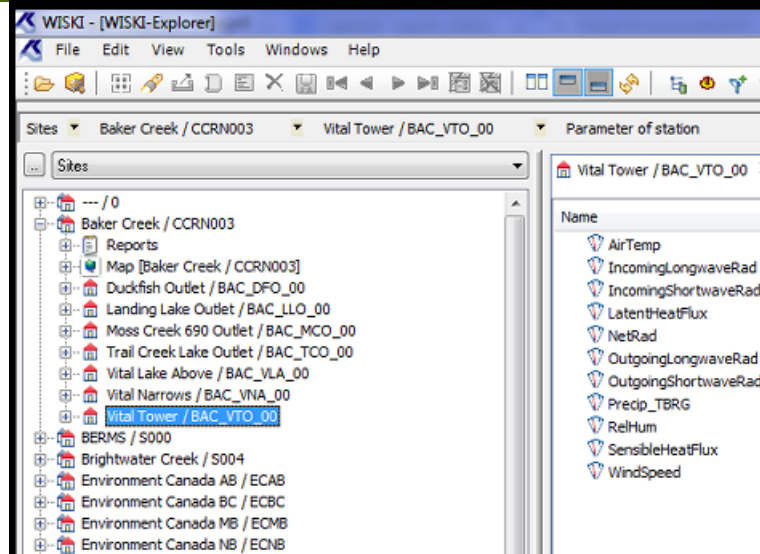
giws.usask.ca:8080/KiWIS/KiWIS?service=kisters&type=queryServices&request=

```
# ts_id: 2322042
# rows: 13670
# Timestamp Value
2014-01-01 00:00:00 -28.090000000000003
2014-01-01 00:30:00 -28.009999999999999
2014-01-01 01:00:00 -28.25
2014-01-01 01:30:00 -29.03
2014-01-01 02:00:00 -28.800000000000001
2014-01-01 02:30:00 -29.28
2014-01-01 03:00:00 -29.090000000000003
2014-01-01 03:30:00 -29.03
2014-01-01 04:00:00 -29.770000000000001
2014-01-01 04:30:00 -30.810000000000002
2014-01-01 05:00:00 -29.650000000000006
2014-01-01 05:30:00 -29.289999999999992
2014-01-01 06:00:00 -29.15
2014-01-01 06:30:00 -29.15
2014-01-01 07:00:00 -29.15
```

Limited SQL resources

## Index of /ccrn/scheduledexports/

Name	Size	Date Modified
<a href="#">[parent directory]</a>		
<a href="#">2002_FEN_Summary.csv</a>	1.9 MB	08/10/2014 14:10:00
<a href="#">2003_FEN_Summary.csv</a>	2.3 MB	08/10/2014 14:09:00
<a href="#">2004_FEN_Summary.csv</a>	2.4 MB	08/10/2014 14:09:00
<a href="#">2005_FEN_Summary.csv</a>	2.4 MB	08/10/2014 14:09:00
<a href="#">2006_FEN_Summary.csv</a>	2.4 MB	08/10/2014 14:09:00
<a href="#">2007_FEN_Summary.csv</a>	2.4 MB	08/10/2014 14:09:00
<a href="#">2008_FEN_Summary.csv</a>	2.4 MB	08/10/2014 14:09:00
<a href="#">2009_FEN_Summary.csv</a>	2.4 MB	08/10/2014 14:09:00
<a href="#">2010_FEN_Summary.csv</a>	2.4 MB	08/10/2014 14:09:00
<a href="#">2011_FEN_Summary.csv</a>	1.8 MB	08/10/2014 14:09:00
<a href="#">2012_FEN_Summary.csv</a>	1.8 MB	08/10/2014 14:09:00
<a href="#">2013_FEN_Summary.csv</a>	2.3 MB	08/10/2014 14:08:00
<a href="#">2014_FEN_Summary.csv</a>	2.2 MB	19/09/2014 17:14:00



# CCRN Data Accessibility

## FTP Summary Files

- Standard format
- Representative parameters
- Cleaned and gap filled versions
- Anything else ?

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Timestamp	AirTemp_	Quality	Barometri	Quality	IncomingI	Quality	IncomingS	Quality	OutgoingI	Quality	OutgoingS	Quality	RelHum_	Quality	SoilTemp_	Quality	SoilVWC_	Quality	WindDir_	Quality	WindSpee	Quality
1/1/2014 0:00	-29.893	50	96.556	50	142.02	50	-4.4334	50	167.08	50	-3.3405	50	71.871	50	1.504	50	0.8837	50	249.94	50	0.27277	50
1/1/2014 0:30	-30.981	50	96.574	50	142.25	50	-5.7562	50	166.5	50	-4.5997	50	71.906	50	1.4948	50	0.88368	50	267.02	50	0.15702	50
1/1/2014 1:00	-31.728	50	96.604	50	144.02	50	-5.6554	50	167.01	50	-4.3581	50	72.635	50	1.4894	50	0.8837	50	358.37	50	0.11586	50
1/1/2014 1:30	-32.132	50	96.619	50	139.86	50	-4.4114	50	165.8	50	-3.323	50	72.573	50	1.4804	50	0.8837	50	188.74	50	0.70103	50
1/1/2014 2:00	-30.514	50	96.604	50	135.07	50	-2.9321	50	165.38	50	-1.5761	50	74.817	50	1.4761	50	0.88368	50	204.42	50	1.0541	50
1/1/2014 2:30	-30.734	50	96.607	50	131.06	50	-3.9604	50	162.1	50	-2.2637	50	73.704	50	1.479	50	0.88368	50	227.33	50	0.7123	50

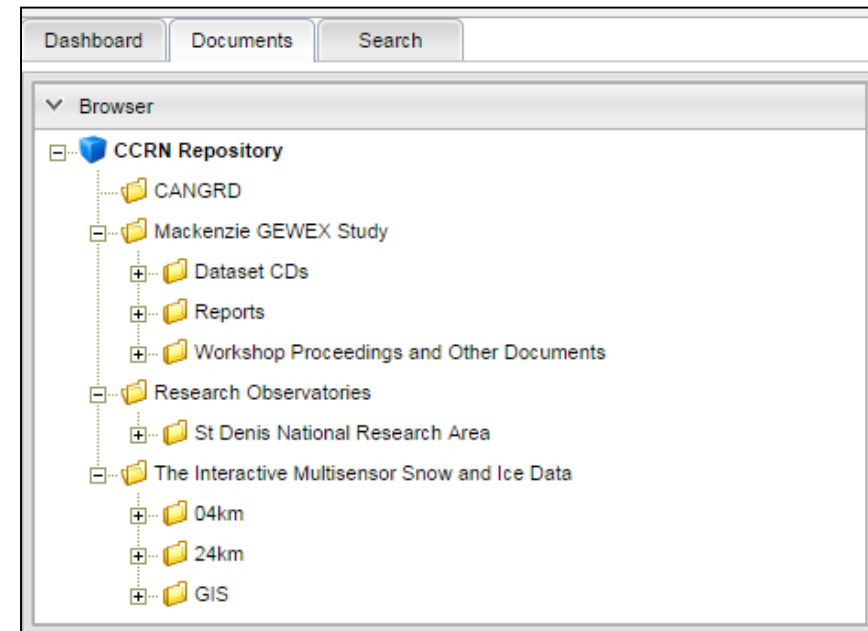


# CCRN Data Accessibility

## CCRN Central Repository

Currently available for CCRN members:

- CANGRD (gridded air temperature and precipitation)
- Mackenzie GEWEX Study
- Interactive Multisensor Snow and Ice Data



# WISKI Training Plan

## **Recent activities:**

- GIWS WISKI introduction for grad students (overview, organization, zrxp files, data access through MATLAB, R, and WISKI modules)
- WISKI use for CCRN data

## **Planned activities:**

- Regular “WISKI Lunch” meetings to discuss database issues with other WISKI users

# Next steps (a slide from 2013 AGM)

- Identify data that will be:
  - a) Stored in the WISKI database (most important time series)
  - b) Stored in the central repository (non critical time series and other data types)
  - c) Linked to the central repository (external databases / archives)

Please move on with submissions for (a) and decisions and submissions for (b) and (c) in 2014/15

# Summary

## ■ Progress

- I. Standardized procedures for acquisition, storage, publishing, and preservation of the data
- II. Uniform protocols for metadata submission and data documentation
- III. Solid inflow of the time series data from the Observatories

## ■ Priorities in 2015

- I. Usable DIS outputs
- II. Collection of the spatial and other non-time series data



# Summary

- Concerns

Allocation of time and resources at the Observatories to continue to work on data organization and submissions

Questions ???