

*ISO 19131 Canada's First Fall Frost
Normals (1981-2010) – Data Product
Specifications*

Revision: A

Data product specifications: Canada's First Fall Frost Normals (1981-2010)

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1. Overview

1. Informal description

2. Data product specification - metadata

This section provides metadata about the creation of this data product specification

Data product specification – title:	Canada's First Fall Frost Normals (1981-2010)
Data product specification - reference date:	June 2, 2014
Data product specification - responsible party:	Agriculture and Agri-Food Canada/Science and Technology Branch
Data product specification – language:	english
Data product specification - topic category:	climatologyMeteorologyAtmosphere

3. Terms and definitions

- Feature attribute
characteristic of a feature
- Class
description of a set of objects that share the same attributes, operations, methods, relationships, and semantics [UML Semantics]
NOTE: A class does not always have an associated geometry (e.g. the metadata class).
- Feature
abstraction of real world phenomena
- Object
entity with a well-defined boundary and identity that encapsulates state and behaviour [UML Semantics]
NOTE: An object is an instance of a class.
- Package
grouping of a set of classes, relationships, and even other packages with a view to organizing the model into more abstract structures

4. Abbreviations

AAFC Agriculture and Agri-Food Canada

2. SPECIFICATION SCOPE

This data specification has only one scope, the general scope.

NOTE: The term 'specification scope' originates from the International Standard ISO19131. 'Specification scope' does not express the purpose for the creation of a data specification or the potential use of data, but identifies partitions of the data specification where specific requirements apply.

3. DATA PRODUCT IDENTIFICATION

1. Data product identification

1. Canada’s First Fall Frost Normals (1981-2010)

Title	<i>Canada’s First Fall Frost Normals (1981-2010)</i>
Alternate Title	
Abstract	<i>The “Canada’s First Fall Frost Normals (1981-2010)” dataset contains the Mean and Median First Fall Frost Julian day calculated from the ANUSPLIN gridded data set using the date range from January 1, 1981 – December 31, 2010. The dataset also includes the Mean and Median Frost Free Period (given as a count of calendar days). For the purposes of this dataset a Frost Free day is defined as a day where the minimum daily temperature is greater than 0.0 Celsius.</i>
Purpose	
Topic Category	climatologyMeteorologyAtmosphere
Spatial Representation Type	<i>vector</i>
Spatial Resolution	
Geographic Description	<i>Canada</i>
Supplemental Information	
Constraints	<i>Government of Canada Core Subject Thesaurus</i>
Keywords	<i>NE Nature and Environment > Air temperature</i>
Scope Identification	dataset
Feature Attribute Names	Node ID, Longitude, Latitude, Elevation, Mean First Fall Frost, Median First Fall Frost, Mean Frost Free Period, Median Frost Free Period

4. DATA CONTENT AND STRUCTURE

1. Feature-based application schema

Canada's First Fall Frost Normals (1981-2010)
-Node ID (NodeID): Long Integer
-Longitude (LONGITUDE_WGS84): Double
-Latitude (LATITUDE_WGS84): Double
-Elevation (ELEVATION_METRE): Long Integer
-Mean First Fall Frost (FIRST_FALL_FROST_MEAN_JULIAN_DAY): Double
-Median First Fall Frost (FIRST_FALL_FROST_MEDIAN_JULIAN_DAY): Double
-Mean Frost Free Period (FROST_FREE_PERIOD_MEAN_DAY): Double
-Median Frost Free Period (FROST_FREE_PERIOD_MEDIAN_DAY): Double

2. Feature catalogue – *Canada's First Fall Frost Normals (1981-2010)*

Title	<i>Canada's First Fall Frost Normals (1981-2010)</i>
Scope	<i>dataset</i>
Version Number	<i>1.0</i>
Version Date	<i>June 2, 2014</i>
Producer	Agriculture and Agri-Food Canada

System-generated attributes (for example, OBJECTID, Shape, Shape Length and Area) are not defined in the feature catalog.

1. Feature attributes

4.2.1.1. Node ID (NodeID)

Name	<i>Node ID (NodeID)</i>		
Definition	ANUSPLIN gridded data set Node ID		
Aliases			
Producer	Agriculture and Agri-Food Canada		
Value Data Type	<i>integer</i>		
Value Domain Type	0 (not enumerated)		
Value Domain			
	Feature Attribute Value		
	Label	Code	Definition

4.2.1.2. Longitude (LONGITUDE_WGS84)

Name	<i>Longitude (LONGITUDE_WGS84)</i>		
Definition	Longitude (WGS 84)		
Aliases			
Producer	Agriculture and Agri-Food Canada		
Value Data Type	<i>Real (double)</i>		
Value Domain Type	0 (not enumerated)		
Value Domain			
	Feature Attribute Value		
	Label	Code	Definition

4.2.1.3. Latitude (LATITUDE_WGS84)

Name	<i>Latitude</i> (LATITUDE_WGS84)		
Definition	Latitude (WGS 84)		
Aliases			
Producer	Agriculture and Agri-Food Canada		
Value Data Type	<i>Real (double)</i>		
Value Domain Type	0 (not enumerated)		
Value Domain			
	Feature Attribute Value		
	Label	Code	Definition

4.2.1.4. Elevation (ELEVATION_METRE)

Name	<i>Elevation</i> (ELEVATION_METRE)		
Definition	Elevation in Meters above Sea Level		
Aliases			
Producer	Agriculture and Agri-Food Canada		
Value Data Type	<i>integer</i>		
Value Domain Type	0 (not enumerated)		
Value Domain			
	Feature Attribute Value		
	Label	Code	Definition

4.2.1.5. Mean First Fall Frost (FIRST_FALL_FROST_MEAN_JULIAN_DAY)

Name	Mean First Fall Frost (FIRST_FALL_FROST_MEAN_JULIAN_DAY)		
Definition	Mean First Fall Frost in Julian Day		
Aliases			
Producer	Agriculture and Agri-Food Canada		
Value Data Type	<i>Real (double)</i>		
Value Domain Type	0 (not enumerated)		
Value Domain			
	Feature Attribute Value		
	Label	Code	Definition

4.2.1.6. Median First Fall Frost (FIRST_FALL_FROST_MEDIAN_JULIAN_DAY)

Name	Median First Fall Frost (FIRST_FALL_FROST_MEDIAN_JULIAN_DAY)		
Definition	Median First Fall Frost in Julian Day		
Aliases			
Producer	Agriculture and Agri-Food Canada		
Value Data Type	<i>Real (double)</i>		
Value Domain Type	0 (not enumerated)		
Value Domain			
	Feature Attribute Value		
	Label	Code	Definition

4.2.1.7. Mean Frost Free Period (FROST_FREE_PERIOD_MEAN_DAY)

Name	<i>Mean Frost Free Period (FROST_FREE_PERIOD_MEAN_DAY)</i>		
Definition	Mean Frost Free Period in Days		
Aliases			
Producer	Agriculture and Agri-Food Canada		
Value Data Type	<i>Real (double)</i>		
Value Domain Type	0 (not enumerated)		
Value Domain			
	Feature Attribute Value		
	Label	Code	Definition

4.2.1.8. Median Frost Free Period (FROST_FREE_PERIOD_MEDIAN_DAY)

Name	<i>Median Frost Free Period (FROST_FREE_PERIOD_MEDIAN_DAY)</i>		
Definition	Median Frost Free Period in Days		
Aliases			
Producer	Agriculture and Agri-Food Canada		
Value Data Type	<i>Real (double)</i>		
Value Domain Type	0 (not enumerated)		
Value Domain			
	Feature Attribute Value		
	Label	Code	Definition

5. REFERENCE SYSTEMS

1. Spatial reference system

Horizontal coordinate reference system: WGS 84

Map projection: Web Mercator Auxiliary Sphere; EPSG: 3857; Version 8.1.4

2. Temporal reference system

Gregorian calendar

6. DATA QUALITY

Measure not defined at this time

1. Completeness

2. Logical consistency

3. Positional accuracy

4. Temporal accuracy

5. Thematic accuracy

6. Lineage statement

Lineage Statement	<i>Data was derived from the latest release of the ANUSPLIN gridded data set.</i>
Scope	<i>Dataset (Canada's First Fall Frost Normals (1981-2010))</i>

7. DATA CAPTURE

ANUSPLIN Data from January 1, 1981 – December 31, 2010 used in analysis for all of Canada. A Frost Free day is defined as a day where the minimum daily temperature is greater than 0.0 Celsius. For each calendar year;

1. Determine the longest Frost Free Period event.
 1. In the event of a tie (i.e. 2 event of the same period) use the last chronological occurrence
 2. Store the day of year of the end of this event (first day with minimum temperature below 0.0)
2. Compute the mean and median First Fall Frost and Frost Free Period for the full period of study (N=30)
3. The mean (average) daily values were not used as input as it can artificially expand the length of the growing season beyond that which is typically experienced. Output given is the average and median First Fall Frost and Frost Free Period values of each year from 1981-2010 as experienced according to each individual year's climate data.
4. In the mountain regions the data will likely be spotty and less useful
5. To the north the data will likely be less useful.

8. DATA MAINTENANCE

unknown

9. PORTRAYAL

Not applicable.

10. DATA PRODUCT DELIVERY

File Geodatabase

format name: Esri Geodatabase (File-based)

format version: 10.1

specification: A collection of various types of GIS datasets held in a file system folder.
(<http://arcgis.com>)

languages: eng

character set: utf8

GML

format name: Geography Markup Language

format version: 2.0

specification: Open Geospatial Consortium Inc., OpenGIS®Geography Markup Language (GML) Implementation Specification, Version 3.1.1, 2004-02-07, Reference number of this OGC® project document: 03-105r1
(http://portal.opengeospatial.org/files/?artifact_id=4700)

languages: eng

character set: utf8

csv

format name: Comma Delimited

format version: 1.0

specification: A delimited data format that has fields/columns separated by the comma character

languages: eng

character set: utf8

Delivery medium information/Informations relatives au support de livraison:

units of delivery/Unités de livraison: package

medium name/nom du support: online via HTTP, online via direct access

Delivery format information/Informations relatives au format de livraison:

11. METADATA

The metadata requirements follow the Government of Canada's Treasury Board Standard on Geospatial Data (ISO 19115).