CWFIS GeoNetwork catalogue (PROD)

Reporting weather stations

This dataset contains about 2500 weather stations operated by federal or provincial and territorial agencies that supply weather observations to the Canadian Wildland Fire Information System (CWFIS). Forecast weather data is also supplied through different sets of locations which are described in separate documents. Weather observations from these locations are used to construct series of weather and fire weather products available on the CWFIS or through the Canadian Wildland Fire Information Framework. (CWFIF).

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Identification

Data identification

Citation

Date (Revision)	2026-03
Date (Creation)	2019-09
Date (Publication)	2026

Point of contact

Government of Canada; Natural Resources Canada; Canadian Forest Service - Data Owner (Data Owner)
5320-122nd Street, Edmonton, Alberta, T6H 3S5, Canada
780-000-0000

Status	On going

Custodian

Government of Canada; Natural Resources Canada; Canadian Forest Service - Data Custodian (Data Custodian)
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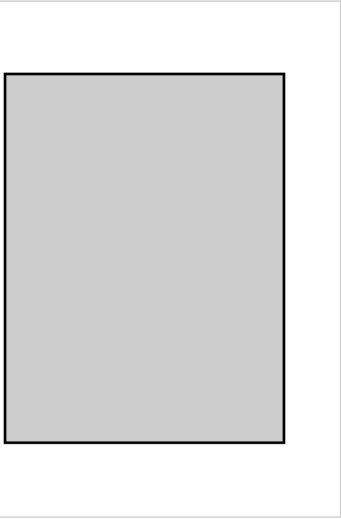
Maintenance and Update Frequency	Irregular
CWFIF Data Themes	• Weather • Fire weather
Government of Canada Core Subject Thesaurus	• Meteorology • Weather • Meteorological data • Forest fires
CWFIF Internal Workflow	• wf-prod • wf-test • wf-sbx
CWFIF Weather Dataset Source	• Observations
Fire Weather	• Wind Direction (WDIR) • Relative Humidity (RH) • Current wx and fwi • Temperature (TEMP)

	• Precipitation (PRECIP) • Wind Speed (WS)
CWFIF Model Method	• FWI 1987 • FWI 2025
CFWIF Evaluation Method	• Analysis
CWFIF Temporal Type	• Day • Hour • Local Noon
Security Classification	Unclassified

Legal constraints

Use Limitation	Open Government Licence - Canada (https://open.canada.ca/en/open-government-licence-canada)
Use Constraints	Other restrictions
Other constraints	When the Data is displayed, in print, electronically, or otherwise, the source (i.e., Natural Resources Canada) must be acknowledged along with the following citation: Canadian Forest Service. 2026. Canadian Wildland Fire Information System (CWFIS), Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta. https://cwfis.cfs.nrcan.gc.ca.
Spatial representation type	Vector
Language	eng
Topic category	• Environment
Begin Date	1970
End Date	2026

87.00	N	20.00	S	-50.00	E	-171.00	W



Supplemental Information

Agencies operating stations in this set include Environment Canada -- Meteorological Service of Canada (EC-MSC), Nav Canada, provincial and territorial fire management agencies, and the National Weather Service (NWS) of the United States of America. Updates to the EC-MSC and Nav Canada stations are done at occasional intervals through contents of hourly Surface Weather OBservation (SW-OB) reports. For provincial and territorial agencies, coordinates may be deliberately reduced in precision to help protect locations. As of March 2026 observations are not collected from Yukon, Ontario, Prince Edward Island, and New Brunswick, although data from these regions has been collected during historical periods. Updates to stations from provincial and territorial agencies are done during processing if the agency's data contains coordinates. For NWS stations, a subset of locations has been chosen, with the intent of maintaining regular spacing or inclusion of a few locations from each state. These locations have not been updated for several years.

Historical stations are available for year of CWFIS fire weather content. Methods used in the past to compile comprehensive EC-MSC station lists include use of metstat1 and station_data_catalogue files, with the latter providing complete station histories from the earliest (about 1840) to the most recent; however, the source for these files, the ftp server from the EC-MSC Downsview office, was dropped in about 2021 and a source has not been found since then. Thus recent updates are done from the SW-OB files.

Station attributes may include the following, but some station lists contain a subset of this list:

AES -- Station identifier 7-character alphanumeric used by EC-MSC (previously Atmospheric Environment Service).

For stations not operated by Canadian federal agencies, a 6-digit number is assigned and replicated in the WMO column.

WMO -- World Meteorological Organization station identification number, or an assigned 6-digit number assigned by WFIS. In each case, the first two digits represent the WMO region. A number used for provincial or territorial stations may be the agency's own number, or a 4-digit assigned number.

ID -- Four-letter aerodrome identifier assigned by International Civil Aeronautics Organization (ICAO) or

International Air Transport Association (IATA).

NAME -- Weather station location name. Spaces may be replaced by "+" .

PROV -- Province or state two-letter postal abbreviation.

CR -- Cross-reference indicator used in ECCC historical records. Values include:

'-' -- No cross referencing.

'+' -- Cross reference indicator, which shows that an alternate station name or identification is used for the same site.

It should also have a '+' indicator. This is a bit difficult to use -- one may need to match the coordinates and/or start

and end dates of the locations to determine the correct cross-references.

'R' -- Unknown meaning, only occurring once at 1130PFR (Beaverdell, BC) in the year 2000.

INSTR -- Weather station instrument package name. Most of these are read from historical EC-MSC metstat1 files, or indicated as 'SFC' if the instrumentation package is unknown, the surface station is from provincial/territorial fire management agencies, or from the USA. A value of 'AUTO' is assigned if the station is known to be automatic but the specific instrument package is unknown. EC-MSC stations with a value of 'CON' have operation contracted to an external agency. Definitions of some station

instrumentation types (e.g. FSS) are currently unknown. Stations with an AU5 or READAC instrument set may have poor precipitation reporting, especially in the winter and/or wind.

LON -- Longitude of weather station in decimal degrees. Precision may be intentionally reduced to help protect the location from vandalism.

LAT -- Latitude of weather station in decimal degrees. Precision may be intentionally reduced to help protect the location from vandalism.

ELEV -- Elevation in metres above sea level. Station elevation from provincial/territorial fire weather networks may be sampled

from a Digital Elevation Model if elevation is not included in their station data.

STD_TZ -- Difference in time zone between UTC and local time: STD_TZ = UTC-zone_x, where Earth is divided into 24 equal zones of 15 degrees each. The centre of zone_x = 0 is the Prime Meridian, and this zone thus extends 7.5 degrees to the east and west. The next zones to the west and east of zone_x = 0 therefore encompass the areas between 7.5 and 22.5 degrees W, and 7.5 and 22.5 degrees E respectively.

POL_TZ -- Difference in time zone between UTC and local time = UTC-LST, usually used in older historical data. Some values may be incorrect if estimated from coordinate ranges and maps. Errors may occur where a station lies close to a time zone boundary, or where a community chooses to use a time zone its main supply centre lies in. This is equivalent to TZ_CORRECT in operational current tables.

TZ_CORRECT -- Difference in time zone between UTC and local time = UTC-LST, used in recent data or recent reruns. If a values is unknown, it is sampled from a time zone raster or vector layer. Some communities may choose to use a time zone its main supply centre lies in.

H_BUL -- Hourly bulletin in which the station's reports reside in under the WMO's World Weather Watch Program. Unknown bulletins are coded "xxxxxx/xxxx". Since EC-MSC began using the SW-OB reporting format, H_BUL uses "swobml/cccc" where cccc is the station airport code and the station has been found in SW-OB reports.

S_BUL -- Synoptic or upper air bulletin in which the station's reports reside in under the WMO's World Weather Watch Program. Unknown bulletins are coded "xxxxxx/xxxx".

ST_DATE -- Start date (YYYY-MM-DD) of observations for the station.

SSN -- Seasonal operation indicator, often found in historical records in EC-MSC's station_data_catalogue files. Values include:

'S' -- Summer only

'W' -- Winter only

'-' -- No seasonality indicated

EN_DATE -- End date (YYYY-MM-DD) of observations for the station. If the station has no end date assigned yet (active stations) then EN_DATE is coded "9999-09-09". If the station has an end date indicated with an asterisk (*) in EC-MSC's station_data_catalogue files, EN_DATE is encoded with "9999-01-01".

The following observing program codes are derived from EC-MSC's historical station_data_catalogue files. Generic values are used for locations from non-EC-MSC networks. In recent station records, the programs appearing in station data are generally limited to HLY, SYN, TMM, and UA:

HLY -- Hourly observing program code. Values include: </attrdef>

'D' -- Manned stations with daily irregular observations.

'G' -- Automated stations with daily irregular observations.

'H' -- Automated stations with 24-hour observations.

'X' -- Manned stations with 24-hour observations.

'-': Stations without a known program.

SYN -- Synoptic observing program code. Values include:

'H' -- Manned stations with a standard synoptic program.

'X' -- Automated stations with a standard synoptic program.

'-': Stations without a known program.

TMM -- Temperature observing program code. Values include: </attrdef>

'@' -- Stations with a program.

'-' -- Stations without a program.

PCP -- Precipitation observing program. Values include:

'@' -- Stations with a program.

'-' -- Stations without a program.

PRT -- Precipitation rate observing program.

'S' -- Stations using Fischer and Porter gauge with quarter-hourly values and rates in mm.

'W' -- Stations using weighing-type gauge with rates in mm.

'@' -- Stations with an unspecified program.

'-' -- Stations without a program.

WND -- Wind observing program. Values include:

'B' -- Stations using 45B autographic record with hourly total wind run in km/h and 8 directions.

'U' -- Stations using U2A autographic record with hourly (short duration mean) wind speed in km/h and directions in 10s of degrees.

'@' -- Stations with an unspecified program.

'-' -- Stations without a program.

SLT -- Soil temperature observing program. Values include:

'D' -- Stations using morning values for depths 5, 10, 20, 50, 100, 150 and 300 cm.

'@' -- Stations with an unspecified program.

'-' -- Stations without a program.

EVP -- Evaporation observing program. Values include:

'A' -- Stations using a Type A pan and recording daily values.

'R' -- Stations using a Type A pan and recording daily values with a radioactive tracer.

'-' -- Stations without a program.

SUN -- Sunshine observing program. Values include:

'E' -- Unknown.

'R' -- Stations using electronic recorders and observing hourly values of bright sunshine.

'S' -- Stations using other recorders and observing hourly values of bright sunshine.

'@' -- Stations with an unspecified program.

'-' -- Stations without a program.

RAD -- Solar radiation observing program. Values include:

'@' -- Stations with an unspecified program.

'-' -- Stations without a program.

O3 -- Ozone observing program. Values include:

'@' -- Stations with an unspecified program.

'-' -- Stations without a program.

UA -- Upper air observing program. Values include:

'@' -- Stations with a program.

'-' -- Stations without a program.

SNS -- Snow survey program. Values include:

'@' -- Stations with an unspecified program.

	'-' -- Stations without a program. TOW -- Tower program. Values include, but is undocumented in the EC-MSC station catalogue manual: 'X' -- Stations assumed to have a program. '-' -- Stations assumed to have no program. AQL -- Air quality observing program. Values include: '@' -- Stations with an unspecified program. '-' -- Stations without a program. NPH -- Nipher program. 'N' -- Stations using a nipher to convert snowfall into water equivalent (mm). '-' -- Stations without a program. REG -- Canadian region. Values may be undocumented in the EC-MSC station catalogue manual, and the divisions between regions are unclear. Values include: A -- Atlantic C -- Central D -- Department of National Defence H -- AES Downsview N -- Northern and Prairies? O -- Ontario P -- Pacific and Yukon? Q -- Quebec U -- Nunavut W -- Western? X -- Unclassified region? THE_GEOM -- PostGIS geometry encoding for the location in the NRCan Lambert Conformal Conic NAD83 (EPSG 3978) projection.

Distribution

Distribution

Distribution format	• SHP (2) • CSV (1) • WMS (PNG, PNG8, JPEG, GIF, TIFF, TIFF8, GeoTIFF, GeoTIFF8, SVG, PDF, GeoRSS, KML, KMZ) • WFS (GML2, GML3, Shapefile, JSON, JSONP, CSV)

Publisher
Government of Canada; Natural Resources Canada; Canadian Forest Service - Distributor (Distributor)
5320-122nd Street, Edmonton, Alberta, T6H 3S5, Canada
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Digital transfer options

Online Resource	WeatherStations_CWFIS_export.xml (HTTP) Dataset;XML;eng
Online Resource	WeatherStations_MSC_Hist_full.xml (HTTPS) Dataset;XML;eng

Online Resource	CWFIS_FWI_export_v3.xml (HTTPS) Dataset;XML;eng
Online Resource	public:firewx_stns (OGC:WMS) API;WMS;eng
Online Resource	public:firewx_stns (OGC:WMS) API;WMS;fra
Online Resource	Reporting Weather Stations (HTTP) Web Service;Web App;eng,fra
Online Resource	Reporting Weather Stations (HTTP) Web Service;Web App;eng,fra
Online Resource	Reporting weather stations (HTTPS) Web Service;PNG;eng
Online Resource	Reporting weather stations (HTTPS) Web Service;PNG;fra
Online Resource	Reporting Weather Stations - Shapefile (HTTP) Dataset;SHP;eng,fra
Online Resource	Reporting Weather Stations - CSV (HTTP) Dataset;CSV;eng,fra
Online Resource	Reporting Weather Stations - Dataset Attributes (HTTPS) Dataset;XML;eng,fra

Ref. system Reference Systems

Reference system identifier	http://www.epsg-registry.org / EPSG:3978 /

Metadata

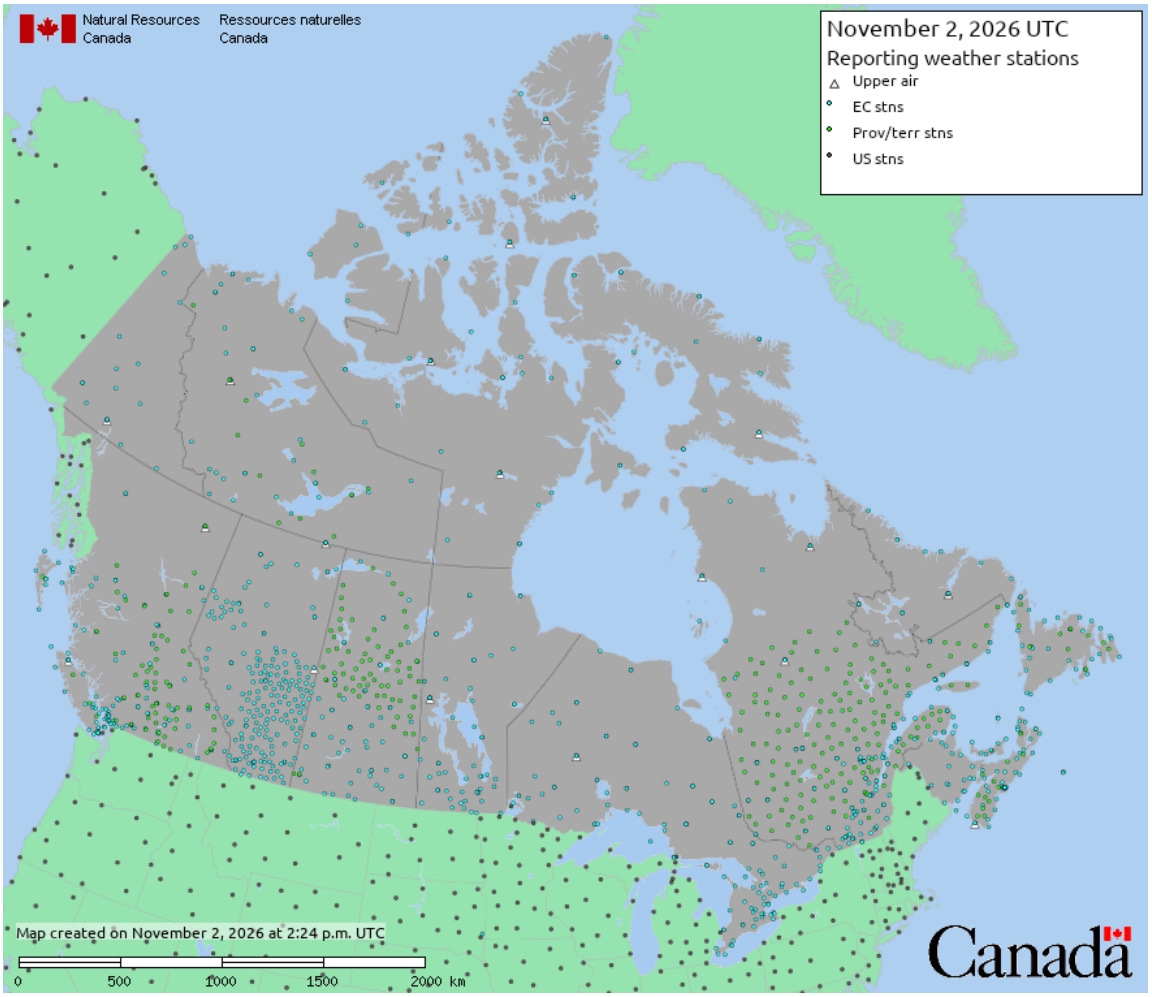
Metadata

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Metadata language	eng; CAN
Character set	UTF8
Hierarchy Level	Dataset
Date Stamp	2026-09-03T20:20:38.565Z
Metadata standard name	North American Profile of ISO 19115:2003 - Geographic information - Metadata
Metadata standard version	CAN/CGSB-171.100-2009

Point of contact

Government of Canada; Natural Resources Canada; Canadian Forest Service - Metadata Steward (Metadata Steward)
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Overviews



Reporting Weather Stations

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