CWFIS GeoNetwork catalogue (PROD)

Wind Speed and Direction - FWI1987

This map displays conditions at local noon. Because Canada covers several time zones, local noon occurs at different times in different parts of the country. The arrows indicate wind direction. Wind speed and direction values are broken into west-east and north-south components for interpolation between weather stations.

Three different datasets are used depending on the retrieval time and when maps are updated daily. Details on the datasets and other information is found in the parent document, "Canadian Forest Fire Weather Index (FWI) System -- Daily Maps", linked above, and in Supplemental Information below.

- Identification
- Distribution
- Quality
- Spatial rep.
- Ref. system Reference Systems
- Content
- Portrayal
- Metadata
- Md. constraints
- Md. maintenance
- Schema info

Identification

Data identification

Citation

Date (Publication)	2026
Date (Creation)	2017-01-01

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

Other citation details	Canadian Forest Service. yyyy. Canadian Wildland Fire Information System (CWFIS), Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta. https://cwfis.cfs.nrcan.gc.ca.
Status	On going

Custodian

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

Maintenance and Update Frequency	Daily
Government of Canada Core Subject Thesaurus	• Forest fires • Risk management
CWFIF Data Themes	• Weather
CFWIF Evaluation Method	• Forecast • Analysis
CWFIF Temporal Type	• Local Noon
CWFIF Weather Dataset Source	• Observations • Scribe Meteocode • NAEFS
CWFIF Internal Workflow	• wf-prod • wf-test

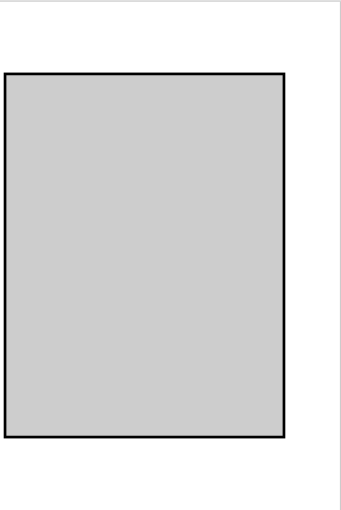
	• wf-sbx
Security Classification	Unclassified

Legal constraints

Use Limitation	Open Government Licence - Canada (https://open.canada.ca/en/open-government-licence-canada)
Access Constraints	License

Spatial representation type	Grid
Language	eng
Topic category	• Environment
Begin Date	2017
End Date	2026

83.12	N	41.67	S	-52.62	E	-141.01	W



Supplemental Information

Maps are updated daily shortly after 4 p.m., 5 p.m., and 6 p.m. Mountain Standard Time.

Wind Speed and Direction:

Inputs to the FWI 1987 System include elevation and current daily weather data from a variety of sources. Local noon wind speed and direction data are one of the four basic weather inputs into the FWI system (Canadian Forest Fire Weather Index (FWI) System - Daily Maps). Input weather data are included in the database holding FWI calculations done at weather stations, and from this, Geographic Information Systems (GIS) software interpolates the weather data between stations to produce gridded weather maps. The FWI System components are then calculated on a cell-by-cell basis according to the equations in Van Wagner and Pickett (1985) to produce the FWI maps.

Observed Weather Data Sources:

The CWFIS currently uses weather data from approximately 2500 stations in Canada and the United States. About 900 of these stations are operated by Environment and Climate Change Canada (ECCC) or other federal departments under contract to ECCC. About 600 stations are operated by the National Weather Service (NWS) of the United States are included (a subset of the total number), and the remainder of the stations are operated by the provincial and territorial governments.

The online data mart managed by ECCC provides a source for many observations from stations operated by various agencies, including other nations. While data from provincial and territorial wildland fire management programs are obtained through their own sources, observed weather without Fire Weather Index outputs for Atlantic Canada are downloaded from the ECCC data mart.

Forecast Weather Data Sources:

Forecasted weather used in the Canadian Wildland Fire Information System is provided by the Canadian Meteorological Centre, a branch of Environment and Climate Change Canada. Forecasted weather data can be found at the Meteorological Service of Canada Datamart (https://dd.weather.gc.ca/). These data take the form of spot forecasts for 845 Canadian weather stations or sample points. Weather elements are generated from the regional Global Environmental Multiscale (GEM) model and model output statistics (MOS) for three-hour intervals out to 48 hours. Noon weather is then interpolated from these data and fire danger indexes are calculated. The spot forecasts are straight model outputs or statistically post-processed data and do not include input from regional forecast offices.

Extended forecasts are based upon the North American Ensemble Forecast System (NAEFS), in which Canadian and American models contribute repeated forecasts with different initial conditions or physics packages. Median values of the 40-member ensemble are used to predict temperature, humidity, wind speed, and 24-hour precipitation at more than 250 weather stations for the next 14 days. These values are used to generate the extended forecast maps and the predicted fire weather conditions. Accuracy is limited because of the range of these forecasts. These forecasts are best used to judge the trend of long-term indices such as the duff moisture code (DMC), the drought code (DC), and the build-up index (BUI).

References:

• Lawson, B.D.; Armitage, O.B. 2008. Weather Guide for the Canadian Forest Fire Danger Rating System. Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre, Edmonton, AB. 84 p.

• Van Wagner, C.E.; Pickett, T.L. 1985. Equations and FORTRAN program for the Canadian Forest Fire Weather Index System. Canadian Forest Service, Ottawa, ON. Forestry Technical Report 33.

Distribution

Distribution

Distribution format	• WMS (PNG, PNG8, JPEG, GIF, TIFF, TIFF8, GeoTIFF, GeoTIFF8, SVG, PDF, GeoRSS, KML, KMZ, OpenLayers) • GeoTIF (1.1)

Publisher

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

Digital transfer options

Online Resource	Static Maps: Wind Speed (HTTPS) Web Service;Web App;eng,fra
Online Resource	Wind Speed and Direction (HTTPS) Web Service;PNG;fra
Online Resource	Wind Speed (OGC API – Coverages) API;WCS;eng,fra
Online Resource	Static Maps: Wind Direction (HTTP) Web Service;Web App;eng,fra
Online Resource	Wind Speed and Direction (HTTPS) Web Service;PNG;eng
Online Resource	Wind Direction (HTTPS) Web Service;Web App;eng,fra
Online Resource	Wind Speed (HTTPS) Web Service;Web App;eng,fra
Online Resource	Wind Direction (OGC API – Coverages) API;WCS;eng,fra
Online Resource	public:ws.public:wdir (OGC:WMS) API;WMS;eng
Online Resource	public:ws.public:wdir (OGC:WMS) API;WMS;fra

Digital transfer options

No information provided.

Digital transfer options

No information provided.

Digital transfer options

No information provided.

Digital transfer options

No information provided.

Digital transfer options

No information provided.

Digital transfer options

No information provided.

Digital transfer options

No information provided.

Quality

Data quality

Hierarchy level	Dataset

Lineage

Source	• Reporting weather stations • Forecast weather stations (SCRIBE) • Forecast weather stations (NAEFS) • Elevation of Canada (250m) • Daily Weather Grids

Ref. system Reference Systems

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

Metadata

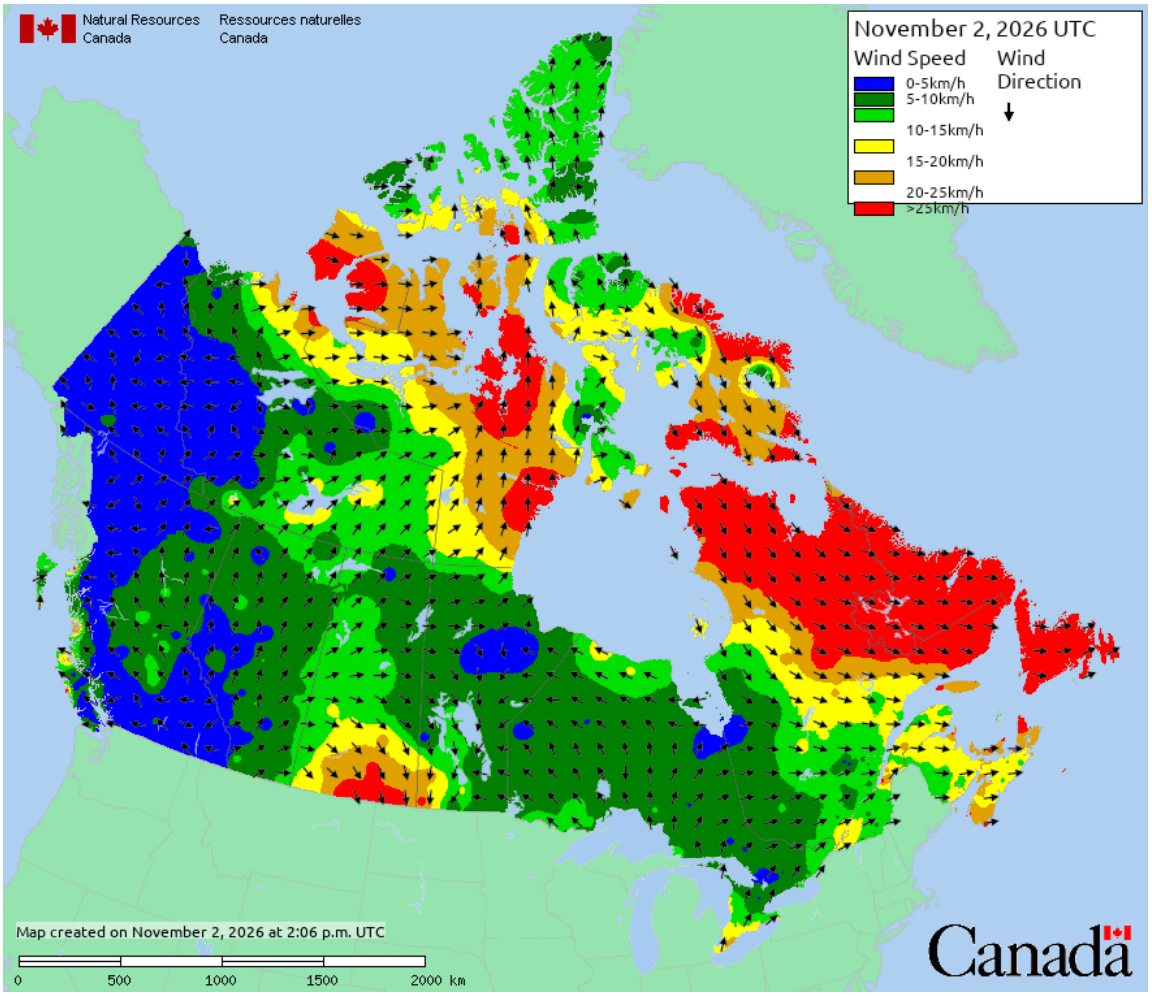
Metadata

File Identifier	5bfad8dd-db9e-4b8c-a569-41036891f9d3 XML
Metadata language	eng; CAN
Character set	UTF8
Parent identifier	Canadian Forest Fire Weather Index (FWI) System - Daily Maps efec0079-273e-47d4-84d7-6940e0af3932
Hierarchy Level	Dataset
Date Stamp	2026-07-16T14:30:15.231Z
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)
5320-122nd Street, Edmonton, Alberta, T6H 3S5, Canada
780-000-0000

Overviews



Wind Speed and Direction

Provided by