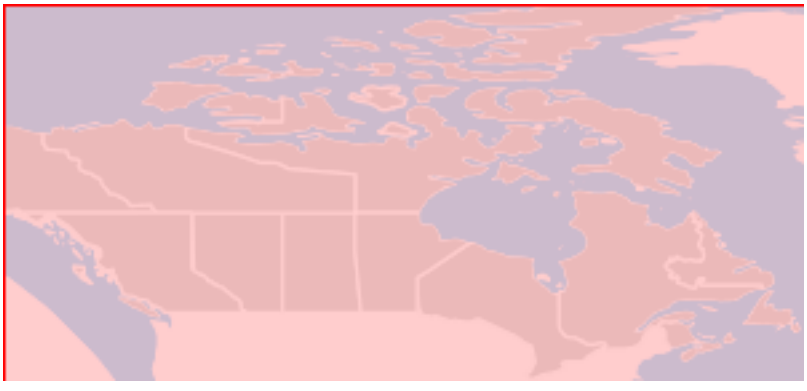
Daily Weather Grids

Description

Daily raster maps (grids) of temperature, relative humidity, wind speed, and precipitation are created by interpolating values between weather stations using IDW interpolation. Values are assigned to each grid cell by calculating a weighted mean of the values of the nearest 12 stations. For each cell, the station values are weighted by the inverse of the square of the distance to the cell. The weather grids are then used as inputs to the Fire Weather Index (FWI) and Fire Behavior Prediction (FBP) grid calculations.

Geographic Extent	SW:-141.003 41.676, NE:-52.617 83.114



Time Period	From:2000 - To:2020

Resources

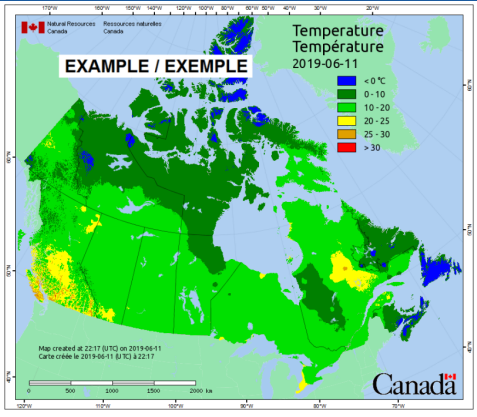
Resource Name	Resource Type	Language	Format
Weather Maps	Web Service	English, French	PNG
Weather Maps - Web Map Service (WMS)	Web Service	English, French	WMS
Weather Maps - Current Conditions	Dataset	English, French	TIFF

Additional Information

Dataset Identification

Date	2020 (Publication)
Date Type	Publication
Date	2020-01-01 (Creation)
Date Type	Creation
Status	On going
Maintenance and Update Frequency	Daily
Use Limitation	Open Government Licence - Canada (http://open.canada.ca/en/open-government-licence-canada)
Access Constraints	License
Use Constraints	Other restrictions
Use Constraints	License End User

Preview Image



Data Classification

GC Core Subject Thesaurus	Forest fires, Risk management
Topic category	Environment

Metadata Contact

Individual Name	John Little
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Protocol	http
Role	Point of contact

Data Contact

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Other constraints	Please note, an End-User Agreement is required for accessing these data. Please refer to this agreement for information regarding restrictions of use: http://cfs.nrcan.gc.ca/common/cwfis/End_User_Agreement_gen_EN.html
Spatial representation type	Vector
Metadata language	English
Supplemental Information	Weather Data The CWFIS currently uses weather data from about 900 stations in Canada and the northern United States. About 700 of these stations are operated by Environment Canada (EC) or other federal departments under contract to EC. Sixteen stations are operated by the National Weather Service (NWS) of the United States, and the remainder of the stations are operated by the provincial governments of Nova Scotia, Quebec, and Saskatchewan. Inclusion, over the next year, of stations operated by other provinces is planned. The EC and NWS data are obtained via Telesat Canada's Anik satellite. Weather observations are collected from the Canadian stations by the Canadian Meteorological Centre in Montreal and transferred to Telesat Canada in Toronto to be uplinked to the Anik satellite. The data are then downlinked to the Northern Forestry Centre in Edmonton for processing and storage. The provincial data are collected by fire management agencies and transferred daily to the Northern Forestry Centre by FTP. Forecast Weather Data Forecasted weather used in the Canadian Wildland Fire Information System is provided by the Canadian Meteorological Centre, a branch of Environment Canada. These data take the form of spot forecasts for 750 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 conditions are calculated. Note that the spot forecasts are straight model outputs or statistically post-processed data and do not include input from regional forecast offices

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Role	Distributor

Extended forecasts are based upon the North American Ensemble Forecast System (NAEFS). Median values of the 40-member ensemble are used to predict temperature, humidity wind speed and 24-hour precipitation at over 250 weather stations for the next 14 days. These values are used to generate the extended forecast maps and the predicted fire weather conditions. Because of the range of these forecasts, accuracy is limited. 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).

Daily Weather Processing

Weather observations are received in raw format and must be decoded before being saved in the weather database. The FWI System requires observed temperature, relative humidity, and wind speed at noon local standard time, as well as 24-hour precipitation. Once the noon observations have been received for all the time zones, the 24-hour precipitation is calculated for stations that report every hour, three times per day, four times per day, or irregularly. Various other observations, such as wind direction, dew point, and atmospheric pressure, are also saved in the database to be used for interpolation.

The FWI System requires an unbroken record of daily weather. If a station fails to report or reports missing data, the missing values are estimated from nearby stations by means of inverse distance weighted (IDW) interpolation. For temperature and relative humidity, the IDW interpolated value is corrected for elevation.
Lastly, daily FWI system output values are calculated for each station and saved in the database.

References

Turner, J.A.; Lawson, B.D. 1978. Weather in the Canadian Forest Fire Danger Rating System. A user guide to national standards and practices. Environment Canada, Pacific Forest Research Centre, Victoria, BC. BC-X-177.
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 Information

Distribution format

Name	WMS
Version	Web Map Service

Metadata Record

File Identifier	e16822e1-23c5-4220-9269-0020ee57e08f
Hierarchy Level	Dataset
Date Stamp	2020-01-10T19:32:25
Metadata language	English (Other language:French)
Character set	UTF8
Metadata standard name	North American Profile of ISO 19115:2003 - Geographic information - Metadata
Metadata standard version	CAN/CGSB-171.100-2009

Reference System Information

Unique resource identifier	EPSG:3978
Codespace	http://www.epsg-registry.org