Fire M3 Season-to-date Buffered Hotspots – Fire Perimeter Estimates

Satellite detected hotspots can be used to produce approximate burned area perimeters in near-real time. The Fire Perimeter Estimates layer on the CWFIS Interactive map shows the estimated extent of area burned to date and is generated by combining and processing the season-to-date hotspots. Due to the limited resolution and spatial accuracy of the hotspots, the results produced from this method should be considered as very rough estimates, and are best suited for large fires. However, they can be used as a good indicator of burned area when no other fire mapping options are available.

A hotspot is a satellite image pixel with high infrared intensity, indicating a heat source. Hotspots from known industrial sources are removed; the remaining hotspots represent vegetation fires, which can be in forest, grass, cropland, or logging debris. A hotspot may represent one fire or be one of several hotspots representing a larger fire. Not all fires can be identified from satellite imagery, either because the fires are too small or because cloud cover obscures the satellite's view of the ground.

The goals of Fire M3 are to use low-resolution satellite imagery to identify and locate actively burning fires on a daily basis; to estimate daily and annual area burned; and to model fire behavior and biomass consumption from fires.

The Fire M3 hotspots are obtained from these sources:

1. National Aeronautics and Space Administration (NASA) Land, Atmosphere Near real-time Capability for EOS (LANCE) Fire Information for Resource Management System (FIRMS), derived from Moderate Resolution Imaging Spectroradiometer (MODIS) and Visible Infrared Imaging Radiometer Suite (VIIRS) imagery

2. European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Copernicus program, derived from Sea and Land Surface Temperature Radiometer (SLSTR) imagery

Subsequent processing of hotspot data involves combining the datasets from multiple sources, estimating fire weather conditions and fire behavior potential at hotspot locations using the Canadian Forest Fire Danger Rating System, and mapping burned area.

Fire M3 maps, reports and data services are updated daily (every three hours) from May through September.

More information about Fire M3 is available at: https://natural-resources.canada.ca/forest-forestry/wildland-fires/fire-monitoring-mapping-modelling-system.

- Identification
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- Md. maintenance
- Schema info

Identification

Data identification

Citation

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

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)
5320-122nd Street, Edmonton, Alberta, T6H 3S5, Canada
780-000-0000

Maintenance and Update Frequency	Continual
Government of Canada Core Subject Thesaurus	• Remote sensing • Forest fires

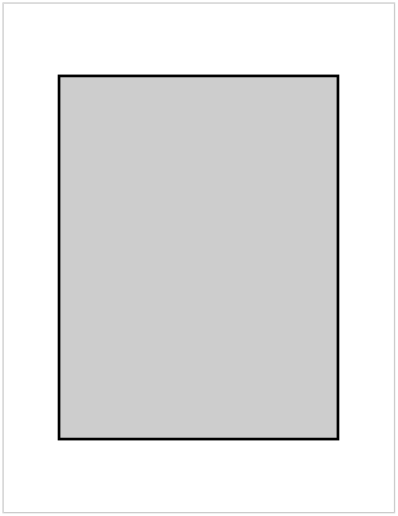
CWFIF Data Themes	• Fire mapping and monitoring
CWFIF Internal Workflow	• wf-prod • wf-test
Security Classification	Unclassified

Legal constraints

Use Limitation	Open Government Licence - Canada (https://open.canada.ca/en/open-government-licence-canada)
Access Constraints	Other restrictions
Use Constraints	Intellectual property rights
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. http://cwfis.cfs.nrcan.gc.ca.

Spatial representation type	Vector
Language	eng
Topic category	• Environment
Begin Date	2002
End Date	2026

83.11	N	41.68	S	-52.62	E	-141.00	W



Supplemental Information	The Fire Monitoring, Mapping, and Modeling System (Fire M3) began operations in 1998 as an initiative of the Canada Centre for Remote Sensing and the Canadian Forest Service, both agencies of Natural Resources Canada. The goals of Fire M3 are to use low-resolution satellite imagery to identify and locate actively burning fires on a daily basis; to estimate daily and annual area burned; and to model fire behavior and biomass consumption from fires. Subsequent processing of hotspot data involves combining the datasets from multiple sources, estimating fire weather conditions and fire behavior potential at hotspot locations using the Canadian Forest Fire Danger Rating System, and mapping burned area. In addition to images and reports for the web, data is made available to partners in fire management and industry, and it is used as input to other models such as smoke forecasting. Attributes for Buffered Hotspots: • uid – unique id • hcount – number of hotspots in polygon • firstdate – date and time of earliest hotspot (in UTC) • lastdate – date and time of latest hotspot (in UTC) • area (hectares) • geometry (polygon) More information about Fire M3 is available at: https://natural-resources.canada.ca/forest-forestry/wildland-fires/fire-monitoring-mapping-modelling-system.

Distribution

Distribution

Distribution format	• SHP (ESRI shapefiles geospatial vector data format) • WMS (PNG, PNG8, JPEG, GIF, TIFF, TIFF8, GeoTIFF, GeoTIFF8, SVG, PDF, GeoRSS, KML, KMZ, OpenLayers) • 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
780-000-0000

Digital transfer options

Online Resource	Daily Hotspots (HTTPS) Dataset;CSV;eng

Online Resource	public:m3polygons (OGC:WMS) API;WMS;eng
Online Resource	public:m3polygons (OGC:WMS) API;WMS;fra
Online Resource	Fire Perimeter Estimates (HTTP) Web Service;Web App;eng,fra
Online Resource	Fire Perimeter Estimate (HTTP) Web Service;Web App;eng,fra
Online Resource	Fire Perimeter Estimate (HTTPS) Web Service;PNG;eng
Online Resource	Fire Perimeter Estimate (HTTPS) Web Service;PNG;fra
Online Resource	Fire Perimeter Estimates - Dataset Attributes (HTTPS) Dataset;XML;eng,fra
Online Resource	Fire Perimeter Estimates - End of Last Year - Shapefile (HTTPS) Dataset;SHP;eng,fra
Online Resource	Fire Perimeter Estimates - Latest estimates - Shapefile (HTTPS) Dataset;SHP;eng,fra

Digital transfer options

No information provided.

Digital transfer options

Online Resource	Fire Perimeter Estimate (HTTPS) Dataset;SHP;eng,fra

Digital transfer options

Online Resource	Fire M3 Season-to-date Buffered Hotspots - full metadata (HTTPS) Supporting Document;XML;eng,fra

Digital transfer options

No information provided.

Digital transfer options

Online Resource	Attributes for Buffered Hotspots - Fire Perimeter Estimate (HTTPS) Supporting Document;PDF;eng,fra

Quality

Data quality

Hierarchy level	Dataset

Source	• Fire M3 Hotspots

Ref. system Reference Systems

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

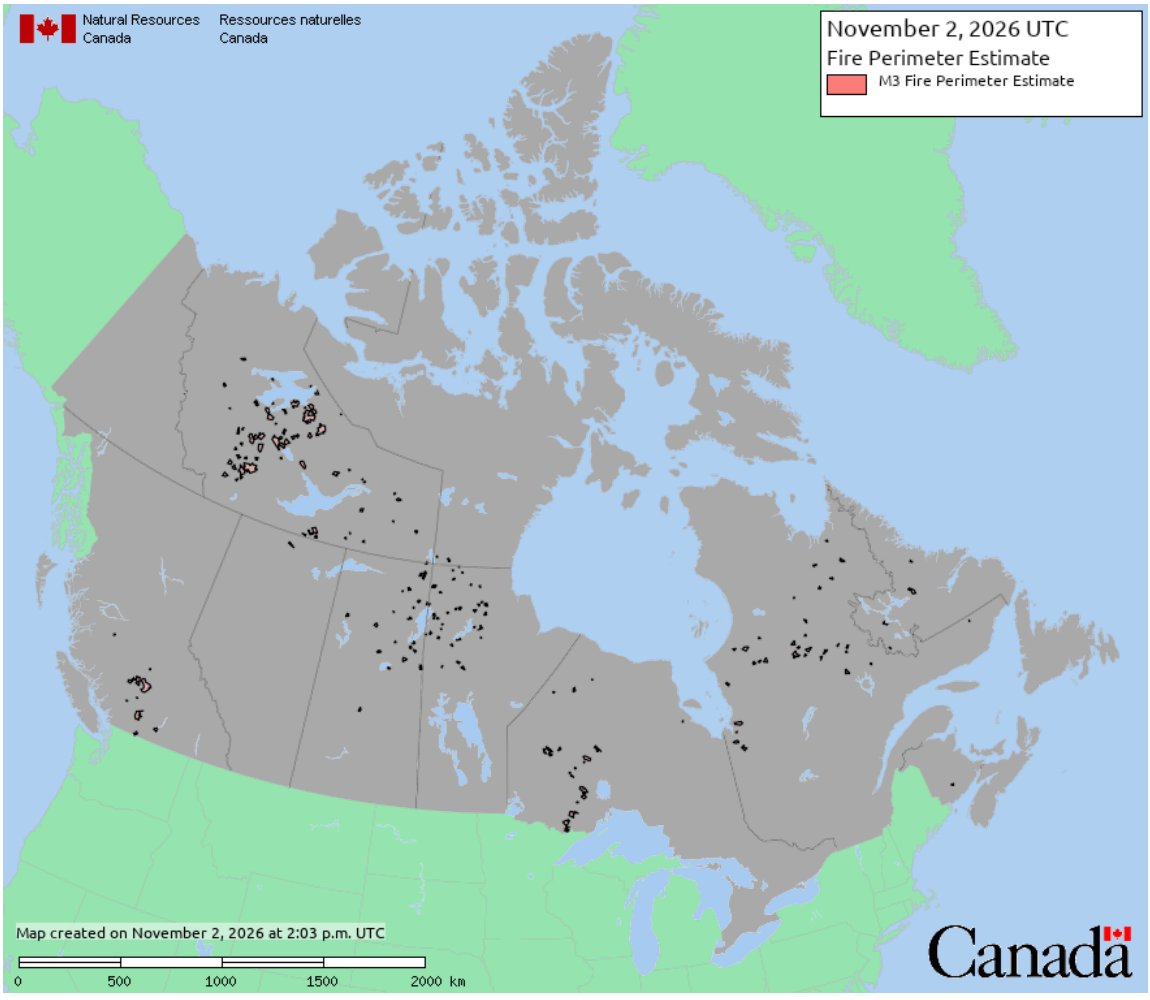
Metadata

Metadata

File Identifier	46c58bcf-230a-4035-a3e4-0ea38106e086 XML
Metadata language	eng; CAN
Character set	UTF8
Hierarchy Level	Dataset
Date Stamp	2026-09-03T20:20:26.926Z
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



Provided by

