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Canadian Active Fire Information Systems Status/Update

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Natural Resources Canada
Canadian Forest Service
Great Lakes Forestry Centre

3rd GWIS and GOFC-GOLD Fire IT meeting
1st-2nd October 2018, University of Maryland




European Commission (EC)
GOFC GOLD Fire Implementation Team (GOFC Fire IT)

Canada



Canadian Wildland Fire Information System

Central portal for national data: <http://cwfis.cfs.nrcan.gc.ca/home>

 Government of Canada / Gouvernement du Canada

Canada.ca | Services | Departments | Français

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Energy ▾ Mining/Materials ▾ Forests ▾ Earth Sciences ▾ Hazards ▾ Explosives ▾ Canada's Green Future ▾ Climate Change ▾

[Home](#) → [Forests](#) → [Forest Topics](#) → [Fire](#) → CWFIS

Disclaimer: The information, maps and data services available through the Canadian Wildland Fire Information System are approximations based on available data, and may not show the most current fire situation. For additional maps and information on the current conditions, please visit the fire management agency website for your region of interest (province, territory or park). [Links to these agencies are available here](#). [Limitation of Liability](#).

Forests

[CWFIS](#)

Background Information

Maps and Reports

Interactive map

Current Conditions

Fire Danger

Weather

Fire Weather

Fire Behavior

Fire M3 Hotspots

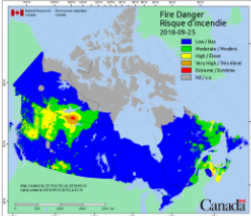
Monthly and Seasonal Forecasts

National Wildland Fire Situation Report

Canadian Wildland Fire Information System

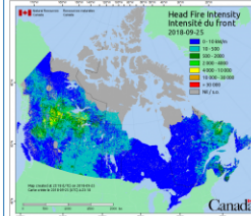
The **Canadian Wildland Fire Information System (CWFIS)** creates daily fire weather and fire behavior maps year-round and hot spot maps throughout the forest fire season, generally between May and September.

Fire Weather



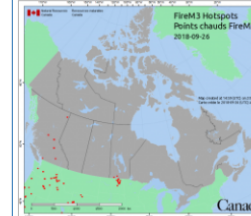
[View the most recent Fire Danger map](#)

Fire Behavior



[View the most recent Head Fire Intensity](#)

Fire M3 Hotspots



[View the most recent Daily Hotspot map](#)

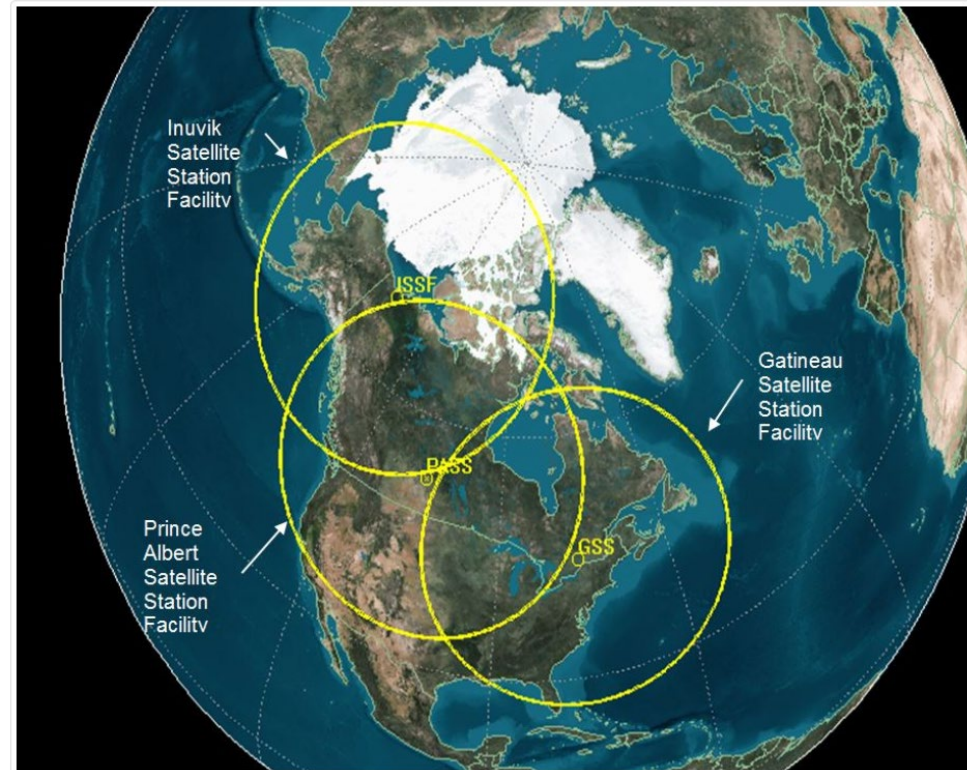
The **Canadian Wildland Fire Information System** is a computer-based fire management information system that monitors fire danger conditions across Canada. Daily weather conditions are collected from across Canada and used to produce fire weather and fire behavior maps. In addition, satellites are used to detect fires.

This site is divided into three main sections:



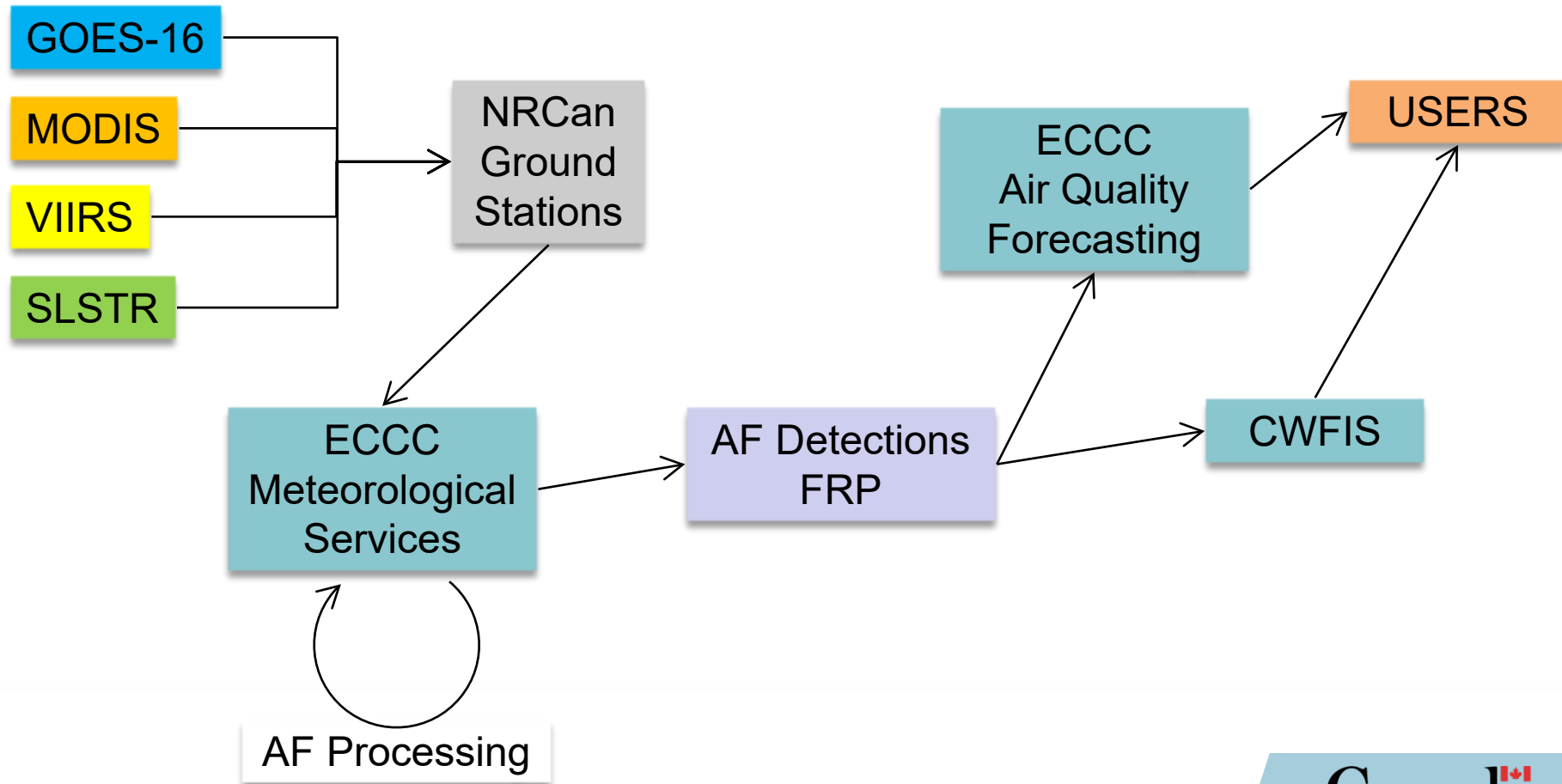
Active Fire Satellite Data

- MODIS, VIIRS, and AVHRR hotspots are reported through the M3 hotspot tool
- Primarily provided second hand through USFS etc
- Currently at a 3-12hr data latency
- Limited value for operational fire management
- In 2017-2018 CFS began a campaign to fix these issues using NRCan ground stations
 - The objective is to deliver near-real-time AF detections and FRP





New Data Processing Chain is Being Established





Torchlight: Automating the art of tactical wildfire mapping

- Emergency mapping support only
- Generally:
 - Threatening a community or critical value
 - Distance to interface zone ~ 50 km
 - OR has caused evacuation
 - OR has caused State of Emergency
 - OR is assigned a Type-1 IMT
- Provides overnight high resolution IR mapping, similar to the products produced in the USFS NIROPS program
- Algorithms are applicable to calibrated and uncalibrated IR imagery (MWIR or LWIR)
- Best suited to spatial resolutions < 20m



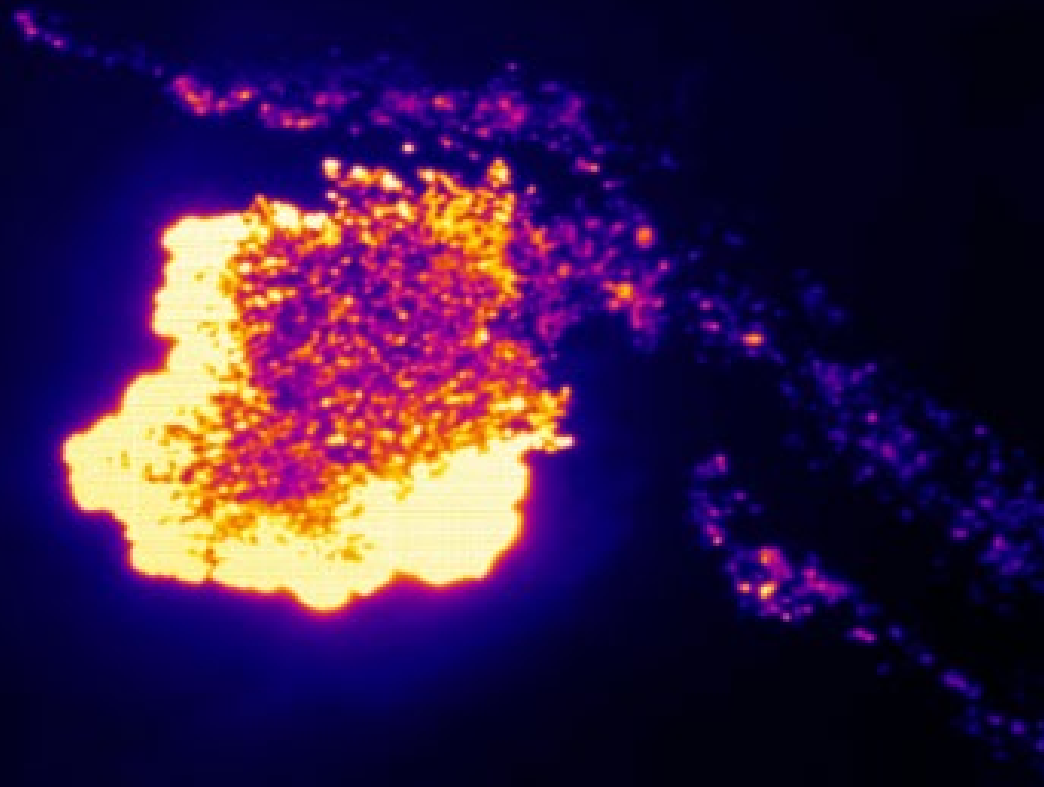


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Information NOT Imagery





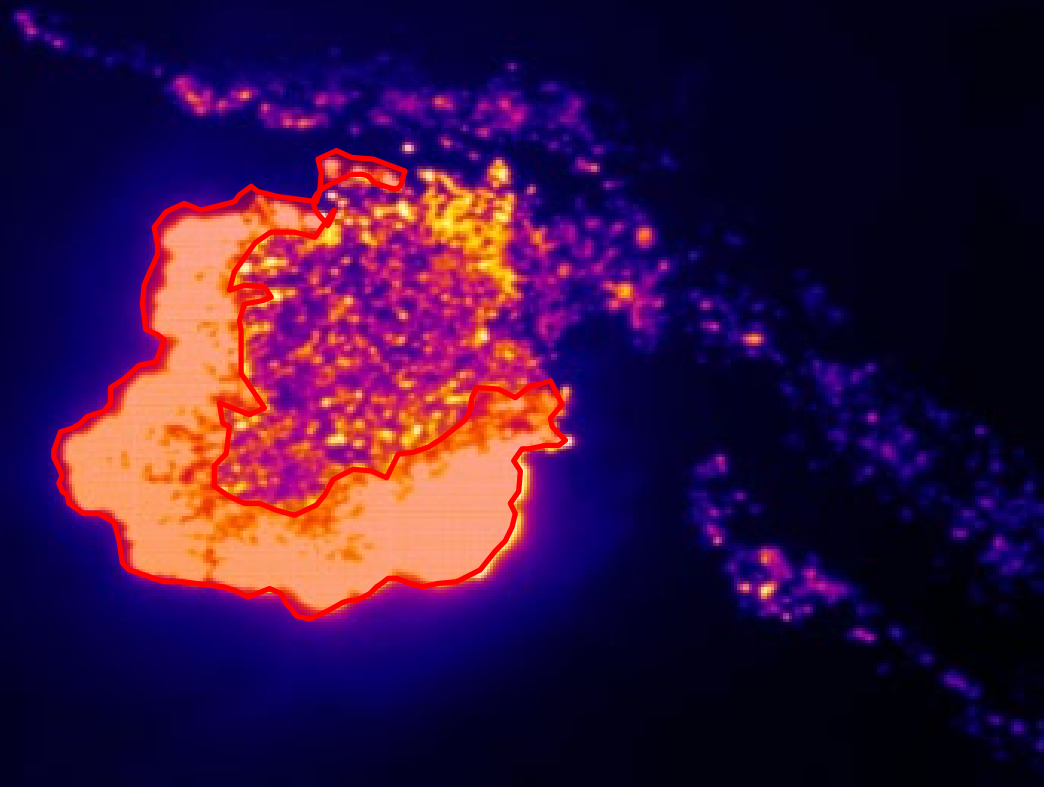
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Information NOT Imagery

Intense Heat = flaming combustion





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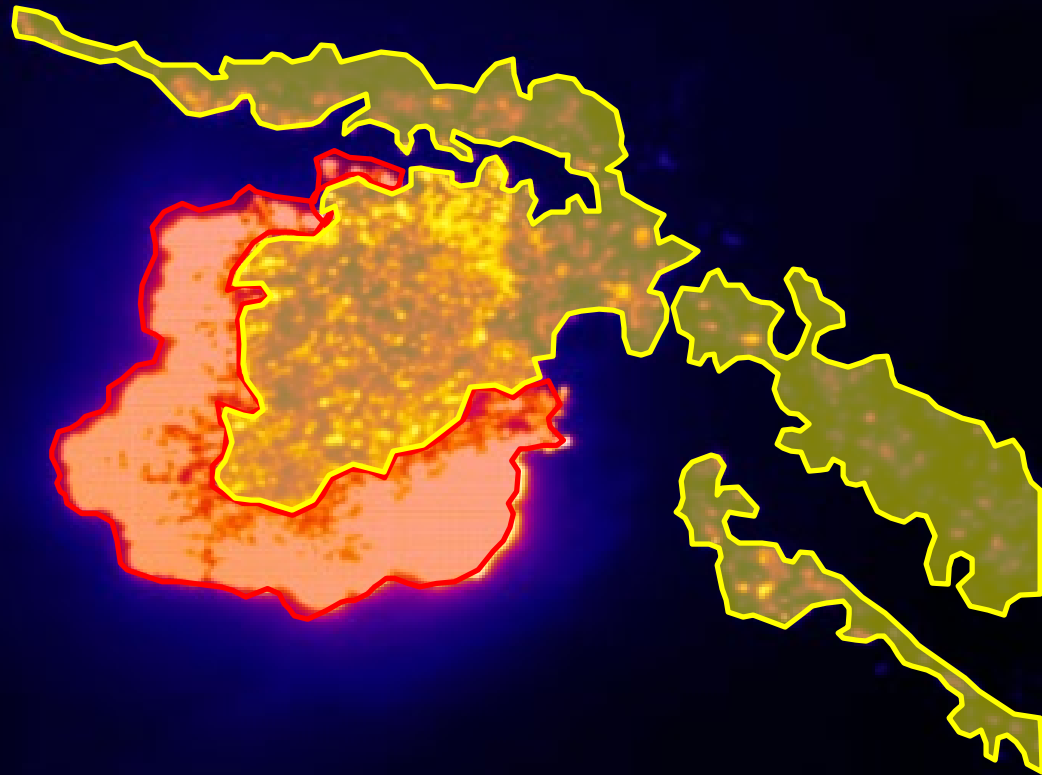
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Information NOT Imagery

Intense Heat = flaming combustion

Scattered Heat = smoldering combustion



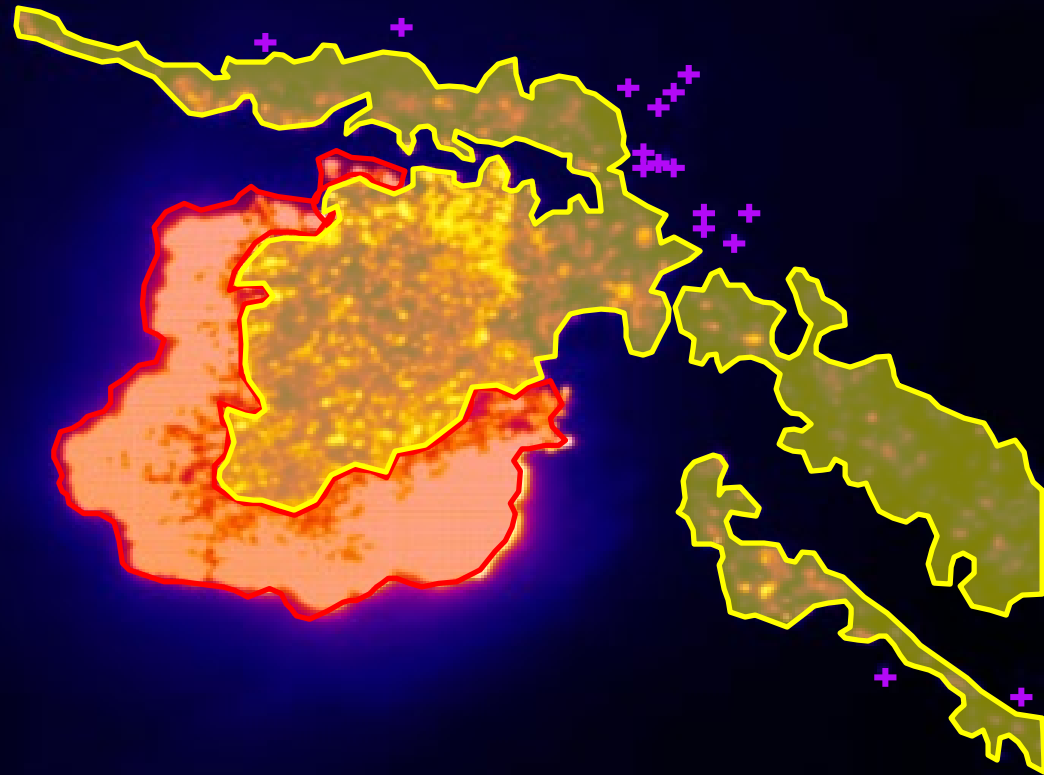


Information NOT Imagery

Intense Heat = flaming combustion

Scattered Heat = smoldering combustion

Isolated Heat = small heat clusters
at least 10m from other
clusters





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Torchlight (Automated Tactical Wildfire Mapping System)

Google Earth Pro

File Edit View Tools Add Help

Search

ex: pizza near NYC

Get Directions History

Places

- sect8
- sect2
- sect6
- sect1
- sect3
- sect4
- sect7
- AOI

Temporary Places

- PAR33_cloud_20180725_001
- PAR33_scattered_heat_20180725_001
- 20180726_001
- PAR33 20180727_001
- 20180728_001
- 20180729_001
- 20180730_001
- 20180731_001

Layers

- Primary Database
- Borders and Labels
- Places
- Photos
- Roads
- 3D Buildings
- Ocean
- Weather
- Gallery
- Global Awareness
- More
- Local Place Names
- Parks/Recreation Areas
- Water Body Outlines
- Place Categories
- Transportation

Image © 2018 DigitalGlobe

Image © 2018 DigitalGlobe

Imagery Date: 7/25/2016 lat 45.953843° lon -80.720100° elev 0 m eye alt 15.91 km

Google Earth

2:54 PM
2018-08-19

ENG

TACTICAL WILDFIRE MAPPING SYSTEMS
TORCHLIGHT
SPECTANTIBUS NOCTIS



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Imagery Date: 7/25/2016 lat 45.953843° lon -80.720100° elev 0 m eye alt 15.91 km

Google Earth

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2018-08-19

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Sign in

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Image © 2018 DigitalGlobe

Imagery Date: 7/25/2016 lat 45.953843° lon -80.720100° elev 0 m eye alt 15.91 km

Google Earth

2:58 PM

2018-08-19

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An aerial photograph of a large forest fire. Thick, dark smoke billows from the burning trees, filling the upper half of the frame. A helicopter is visible in the middle of the fire, likely dropping water or retardant. The fire is intense, with bright orange and red flames visible through the smoke. The surrounding forest is dense and green, contrasting sharply with the burning area. In the bottom left corner, a body of water is visible.

Thank you

Questions?

Photo: Natasha Jurko, CFS