



# MEDIA GUIDE TO FOREST FIRES

## **A Media Guide to Forest Fires**

Prepared by the  
Department of Natural Resources  
Forest Protection Division  
Wildfire Management Group  
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## I. Introduction

This guide has been designed to assist the media with forest fire-related definitions, statistics, and guidelines. It is a quick reference guide and is not intended to be all inclusive. Please forward suggestions or comments regarding this reference tool to [protinfo@gov.ns.ca](mailto:protinfo@gov.ns.ca)

## II. Contact Information

Emergency Wildfire Reporting: 911 or 1-800-565-2224

### Daytime media contacts:

DNR Communications		
Director:	Dan Davis	424-2354
DNR Communications		
Advisor:	David Salter	424-5239
DNR Communications		
Officer:	Jacqueline Parker	424-8282

### After regular business hours:

Provincial Fire Centre:	Duty Officer	758-7230
	Supervisor	758-7229

### District Offices: (See Figure 1 on page 6 for map)

Antigonish County:	Antigonish	863-4513
Annapolis County:	Lawrencetown	584-2229
Cape Breton County:	Coxheath	563-3370
Colchester County:	Bible Hill	893-5620
Cumberland County:	Parrsboro (West)	254-3241
	Oxford (East)	447-2115
Digby County:	Hillgrove	245-2164
Guysborough County:	Stillwater (West)	522-2024
	Guysborough (East)	533-3503
Halifax County:	Waverley (West)	861-2560
	Md. Musquodoboit (East)	384-2290
Hants County:	Hants East (East)	758-3437
	Windsor (West)	798-2016
Inverness County:	Whycocomagh	756-2339
Kings County:	Kentville	679-6097
Lunenburg County:	Bridgewater	543-8167
Pictou County:	MacLellans Brook	922-4020
Queens County:	Milton	354-3462
Richmond County:	St. Peters	535-2032
Shelburne County:	Churchover	875-2501
Yarmouth County:	Tusket	648-3540
Victoria County:	Baddeck	295-2554

## On-site Safety Guidelines

Wildfires, like structure fires, are emergency situations. Please respect all these measures, for your safety and the safety of our fire crews. Fire sites should only be attended by trained, authorized personnel. Media are asked to stay clear of the staff and equipment on a forest fire scene. In some situations the air space near a forest fire will be closed to all air traffic except that being used by emergency staff.

## Websites of Interest

Current Nova Scotia Fire Weather Index  
(updated by 2 p.m. daily during fire season)  
[www.gov.ns.ca/natr/forestprotection/wildfire/fw](http://www.gov.ns.ca/natr/forestprotection/wildfire/fw)  
Canadian Interagency Forest Fire Centre  
(national fire organization with countrywide stats)  
[www.cifff.ca](http://www.cifff.ca)

Northeastern Forest Fire Protection Compact  
[www.nffpc.org](http://www.nffpc.org)

## III. Fire Information

### Fire Season

Fire season is a period designated in the Forest Act to represent the time of year when forest fires are most likely to occur. During the fire season, more stringent regulations of the use of fire are in place. The Department of Natural Resources (DNR) issues burning permits (often in addition to local burning permits required by the municipality). DNR offices also begin Fire Duty Scheduling; staff are designated to be responsible for responding to forest fires in their areas. Fire season is usually April 1st to October 15th inclusive for Kings, Annapolis, Digby, Yarmouth, Shelburne, Queens and Lunenburg and April 15th to October 15th inclusive for all other counties.

### Fire Size

Fire size is usually just an estimate until after the fire is out, when it can be properly measured. Often, an accurate estimate is difficult due to the smoke and confusion that can accompany a large active fire. This is why a fire can end up being much bigger, or much smaller than originally thought. Nova Scotia measures its fires using the hectare (short form "ha" i.e. 20ha). The hectare is the metric unit of area measurement and can be considered in the following ways:

- 1 hectare = 2.47 acres
- 1 hectare = 100metres by 100 metres or 0.01 km2

### For reference:

Total land area of Nova Scotia: 5.6 million ha\*  
Forested land area of Nova Scotia: 3.9 million ha\*

\* Source: The State of Canada's Forests 2001-2002.  
Natural Resources Canada

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## Fire Information cont'd.

### Nova Scotia's Largest Fires (1990 to present)

1. Porters Lake/ Lake Echo, Halifax Co.	June 13, 2008	1925 ha
21 km perimeter, more than 50 agencies involved in response, 5,000 evacuated, 2 houses lost, no fatalities.		
2. Woods Harbour, Shelburne Co.	April 28, 1999	810 ha
3. Wallace Lake, Shelburne Co.	May 20, 2003	795 ha
4. Goff's, Halifax Co.	June 12, 1992	595 ha
5. Turtle Pond, Yarmouth Co.	July 2, 1991	532 ha

### Largest fire since the 1950s

Porcupine Lake near Tralfalgar, Guysborough County. Started on June 4th, 1976 and burned for six days burning a total of about 13000ha.

### Fire Causes

In many provinces a large number of forest fires are caused by lightning. In Nova Scotia only an average 3 per cent of fires start in this way. The remaining 97 per cent are caused by the activities of people, mostly accidental but sometimes deliberate. About one-third of person-caused fires are classed as "residential." These fires are caused by people engaged in activities – like debris and grass burning – on and around their property. Another major cause is arson, which accounts for about one quarter of the person-caused fires in this province in an average year. The cause of the fire is usually determined by an investigation after the fire has been declared out.

## IV. Fire Weather Indices

These codes and indices are indicators of the dryness of the forest fuels, and give relative measure of the burning conditions that can be expected for a "standard" fuel type. Low numbers mean wet conditions. High numbers mean dry conditions.

The individual fields are:

1. Fine Fuels Moisture Code (FFMC) Range: 0–100  
The dryness of the smallest forest fuels (surface litter, leaves, needles, small twigs, etc.). Derived from yesterday's FFMC, and the local noon temperature, relative humidity, wind speed and 24-hour precipitation.
2. Duff Moisture Code (DMC) Range: 0–Unlimited  
The dryness of the medium sized surface fuels and duff layers (the layer of partially and fully decomposed organic materials lying below the litter and immediately above the mineral soil). Approximately 2-10 cm in depth). Derived from yesterday's DMC, and the local noon temperature, relative humidity, and 24-hour precipitation

3. Drought Code (DC) Range: 0–Unlimited  
The dryness of the largest sized surface fuels and deep duff layers. (Approximately 10+ cm in depth). Derived from yesterday's DC, and the local noon temperature, and 24-hour precipitation
4. Initial Spread Index (ISI) Range: 0–Unlimited  
A relative measure of how quickly a wildfire can be expected to spread. Derived from the FFMC and wind speed.
5. Build Up Index (BUI) Range: 0–Unlimited  
A relative measure of the amount of fuel available for combustion. Derived from the DC and DMC.
6. Fire Weather Index (FWI) Range: 0–Unlimited  
A numerical rating of fire intensity that combines ISI and BUI. It is suitable as a general index of fire danger throughout the forested areas of Canada.

### Numerical minimums for each danger class.

Nova Scotia	Low	Moderate	High	Extreme
FFMC	0.0	80.9	86.9	90.0
DMC	0.0	15.9	30.9	51.0
DC	0.0	140.0	240.0	341.0
ISI	0.0	2.2	5.0	10.0
BUI	0.0	20.0	36.0	61.0
FWI	0.0	3.0	10.0	23.0

## V. Glossary of Wildfire Terms

- Air tanker** A fixed-wing aircraft fitted with tanks and equipment for dropping suppressants or retardants on wildfires.
- Campaign Fire** A wildfire of such size, complexity and/or priority that its extinction requires a large organization, high resource commitment, significant expenditure, and prolonged suppression activity. (*Synonym: Project Fire.*)
- Control a Fire** To complete a control line around a fire, any spot fires therefrom, and any interior island(s) to be saved; cooling down all hot spots that are immediate threats to the control line until the lines can be expected to hold under foreseeable conditions. (*Stages of Control: see fire status.*)

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## Glossary of Wildfire Terms cont'd.

<b>Control Line</b>	A comprehensive term for all constructed or natural fire barriers and treated fire perimeter used to control a fire. ( <i>See Fireguard and Fireline.</i> )	<b>Fire Danger</b>	A general term used to express an assessment of both fixed and variable factors of the fire environment that determine the ease of ignition, rate of spread, difficulty of control, and fire impact. ( <i>Note Fire Hazard, Fire Risk, and Burning Conditions.</i> )
<b>Fine Fuels</b>	Fuels that ignite readily and are consumed rapidly by fire (e.g., cured grass, fallen leaves, needles, small twigs). Dead fine fuels also dry very quickly. ( <i>Synonym: Flash Fuels. Note Medium Fuels and Heavy Fuels.</i> )	<b>Fireguard</b>	A strategically planned barrier, either manually or mechanically constructed, intended to stop or retard the rate of spread of a fire, and from which suppression action is carried out to control a fire. The constructed portion of a control line.
<b>Fire Ban</b>	A Ministerial Order issued by the provincial government to restrict the use of fire in areas of high hazard. The order describes what types of fires are allowed or may in fact entirely prohibit the use of any fire.	<b>Fire Hand Tools</b>	<b>The principle hand tools used in wildfire suppression are:</b> <ul style="list-style-type: none"><li>• <b>Pulaski:</b> A combination chopping and trenching tool, which combines a single-bitted axe-blade with a narrow adze-like trenching blade fitted to a straight handle. Useful for grubbing or trenching in duff and matted roots. Well-balanced for chopping.</li><li>• <b>Pump:</b> An engine driven pump, usually gasoline powered, specifically designed for use in fire.</li><li>• <b>Shovel:</b> A type of shovel specifically designed for use in constructing a fire line, having a tempered blade with both edges sharpened. Used for digging, scraping, grubbing and cutting.</li><li>• <b>Backtank:</b> A plastic or metal container that holds water carried on the back of a firefighter. Water is sprayed out manually.</li></ul>
<b>Fire Behaviour</b>	<p>The manner in which fuel ignites, flame develops, and fire spreads and exhibits other related phenomena as determined by the interaction of fuels, weather, and topography.</p> <p><b>Some common terms used to describe fire behaviour include the following:</b></p> <ul style="list-style-type: none"><li>• <b>Smouldering:</b> A fire burning without flame and barely spreading.</li><li>• <b>Creeping:</b> A fire spreading slowly over the ground, generally with a low flame.</li><li>• <b>Running:</b> A fire rapidly spreading and with a well-defined head.</li><li>• <b>Torch or Torching:</b> A single tree or a small clump of trees is said to “torch” when its foliage ignites and flares up, usually from bottom to top. (<i>Synonym - Candle or Candling.</i>)</li><li>• <b>Spotting:</b> A fire producing firebrands carried by the surface wind, a fire whirl, and/or convection column that fall beyond the main fire area.</li><li>• <b>Crowning:</b> A fire ascending into the crowns of trees and spreading from crown to crown. (<i>Note the three classes of Crown Fire under Wildfire.</i>)</li></ul>		

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## Glossary of Wildfire Terms cont'd.

<b>Fire Status:</b>	<ul style="list-style-type: none"> <li>• <b>Out-of-Control:</b> A wildfire not responding or only responding on a limited basis to suppression action such that perimeter spread is not being contained. (<i>Synonym: Not under Control</i>)</li> <li>• <b>Being Held (BH):</b> Indicates that with currently committed resources, sufficient suppression action has been taken that the wildfire is not likely to spread beyond existent or predetermined boundaries under prevailing and forecasting conditions. (<i>Synonym: Partial Control, Contained</i>)</li> <li>• <b>Under Control (UC):</b> A wildfire having received sufficient suppression action to ensure no further spread of the fire.</li> <li>• <b>Being Patrolled:</b> In a state of mop-up; the wildfire area is being walked over and checked for hot spots.</li> <li>• <b>Extinguished:</b> Having been extinguished. (<i>Synonym: Out</i>)</li> </ul>	<b>Incident Management Team</b>	<p>The Incident Commander and all incident operations at the incident site.</p> <ul style="list-style-type: none"> <li>• <b>Incident Commander:</b> The individual responsible for the management of all incident operations at the incident site.</li> <li>• <b>Information Officer:</b> A member of the Command Staff responsible for interfacing with the public and media or with other agencies requiring information directly from the incident. There is only one information officer per incident. The information officer may have assistants.</li> </ul>
<b>Fire Suppression Tactics</b>	Determine exactly where to establish control lines, what to do along these lines, and how best to use each firefighting resource group to cope with site-specific conditions and fire behaviour at the moment. This is a line function.	<b>Initial Attack</b>	The action taken to halt the spread or potential spread of a wildfire by the first firefighting force to arrive at the wildfire.
		<b>Infrared Scanner</b>	An optical-electronic system for identifying or obtaining imagery of thermal infrared radiation to detect non-smoking wildfires or wildfire parameters through smoke. May also be used for mapping. The systems may be operated from an air craft or hand held unit.
		<b>Initial Attack Crew</b>	Personnel trained, equipped and deployed to conduct suppression action to halt the spread or potential spread of a wildfire within the first burning period. ( <i>Before 10:00 a.m. the next day</i> ).
<b>Hot Spot</b>	<p><b>Defined as follows:</b></p> <ol style="list-style-type: none"> <li>1. A particularly active part of a wildfire.</li> <li>2. A small area of smouldering or glowing combustion, which maybe exhibiting smoke, located on or within the wildfire perimeter; a term commonly used during the mop-up stage of a fire. (<i>Synonym: Smudge.</i>)</li> </ol>	<b>Helitack Crew</b>	An initial attack crew specially trained in the tactical and logistical use of helicopters for wildfire suppression.
		<b>Sustained Action Crew</b>	Personnel trained, equipped and deployed to conduct suppression action on a wildfire for an extended period of time.
		<b>Spread (ROS)</b>	<b>Rate of</b> The speed at which a wildfire extends its horizontal dimensions, expressed in terms of distance per unit of time. Generally thought of in terms of a wildfire's forward movement or head fire rate of spread, but also applicable to backfire and flank fire rate of spread.

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## Glossary of Wildfire Terms cont'd.

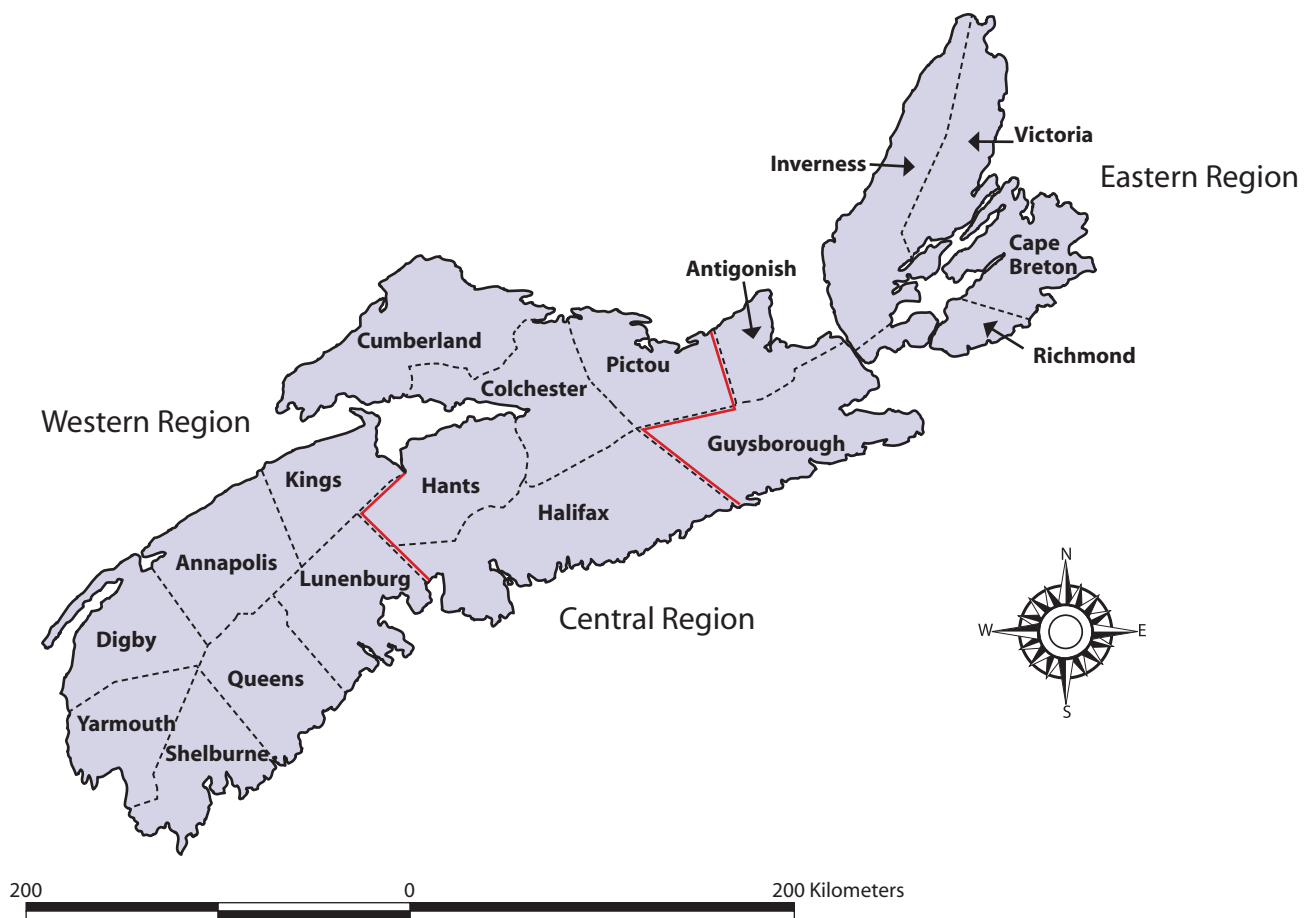
<b>Slash</b>	Debris left as a result of forest and other vegetation being altered by forestry practices and other land use activities (e.g., timber harvesting thinning and pruning, road construction). Includes material such as logs, splinters or chips, tree branches and tops, uprooted stumps and broken or uprooted trees and shrubs.	
<b>Snag</b>	A standing dead tree or part of a dead tree from which at least the smaller branches have fallen. ( <i>Synonym: chicot.</i> )	
<b>Values at Risk</b>	The specific or collective set of natural resources and human-made improvements/developments that have measurable or intrinsic worth and that could or may be destroyed or otherwise altered by wildfire in any given area (e.g., structures, logging, etc.)	<ul style="list-style-type: none"><li>• <i>Active Crown Fire:</i> A fire that advances with a well-defined wall of flame extending from the ground surface to above the crown fuel layer. Probably most crown fires are of this class. Development of an active crown fire requires a substantial surface fire, and thereafter the surface and crown phases spread as a linked unit. (<i>Synonym: Dependent Crown Fire.</i>)</li><li>• <i>Independent Crown Fire:</i> A fire that advances in the crown fuel layer only. (<i>Synonym: Running Crown Fire.</i>)</li></ul>
<b>Woods Closure</b>	An area in which specified activities or entry are temporarily restricted by agency legislation to reduce risk of human-caused fire. An official order by a designated authority to close a specified forest area.	
<b>Forest Fire</b>	Any wildfire that is burning in forested areas, grass or barren. ( <i>See Spot Fire.</i> )  <b>The main types of forest fire are:</b> <ul style="list-style-type: none"><li>• <b>Ground Fire:</b> A fire that burns in the ground fuel layer. (<i>Synonym: Subsurface Fire.</i>)</li><li>• <b>Surface Fire:</b> A fire that burns in the surface fuel layer, excluding the crowns of trees, as either a head fire, flank fire, or backfire.</li><li>• <b>Crown Fire:</b> A fire that advances through the crown fuel layer, usually in conjunction with a surface fire. Crown fires can be classified according to the degree of dependence on the surface fire phase, as follows:<ul style="list-style-type: none"><li>• <i>Intermittent:</i> A fire in which trees discontinuously torch, but rate of spread is controlled by the surface fire phase. (<i>Synonym: Passive CrownFire.</i>)</li></ul></li></ul>	

## VI. The Anatomy of a Forest Fire

The anatomical parts of a forest fire are:  
(see Figure 2 page 6)

<b>Bay(s):</b>	A marked indentation in the fire perimeter, usually located between two fingers. ( <i>Synonym: Pocket(s).</i> )
<b>Finger(s):</b>	An elongated burned area(s) projecting from the main body of the fire resulting in an irregular fire perimeter.
<b>Flanks:</b>	Those portions of the fire perimeter that are between the head and the back of the fire which are roughly parallel to the main direction of spread. ( <i>Synonym: Sides.</i> )
<b>Head:</b>	That portion of the fire perimeter having the greatest rate of spread and frontal fire intensity which is generally on the downwind and/or upslope part of the fire.
<b>Back:</b>	That portion of the fire perimeter opposite the head; the slowest spreading part of the fire. ( <i>Synonyms: Base, Heel, and Rear.</i> )
<b>Island(s)</b>	Area(s) of unburned fuels located within the fire perimeter.
<b>Point(s) of Origin:</b>	The location(s) within the fire perimeter where ignition first occurred. ( <i>Synonym: Origin(s) of a Fire.</i> )

**Figure 1. Provincial Counties and Department of Natural Resources' Regions**



**Figure 2. Parts of a Fire**

