Wildfire NEWS

BRITISH COLUMBIA
BC Wildfire Service

Northwest Fire Centre

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CURRENT STATISTICS

Fires to-date: 18

Hectares burned: 48

Human-caused: 12

Lightning-caused: 0

BANS AND PROHIBITIONS

Campfire: No Ban

Category 2: In Effect

Category 3: In Effect

Forest Use Restrictions: No Ban

Prohibitions section of bcwildfire.ca for full details.

Fire Centre Update

Cool weather leads to low fire activity

There are no active fires burning in the Northwest Fire Centre, following a period of cool, damp weather throughout much of the fire centre. Earlier in the fire season, however, BC Wildfire Service crews responded to 17 fires, all of which are suspected to be human-caused. They have all been put out.

While the fire danger rating throughout most of the fire centre is low to moderate, there are pockets of high risk around some communities that have had a warm, dry spring. This means forest fuels are very dry—fires can start easily, burn vigorously and be difficult to suppress—and calls for extreme caution when conducting any activities in the forests.

Communities with high danger ratings include Telegraph Creek and Atlin, which have experienced dry springs coupled with drought-like conditions over previous summers. There are also areas with a high danger rating around Terrace and Gitlax-t'aamiks (formerly New Aiyansh) in the Nass Valley, and around Houston and Burns Lake.

Forest fire risk throughout the fire centre will likely increase in the coming weeks as the weather warms and the possibility of

Helpful Links

Click here for current fire danger ratings in B.C.

Click here for information on current prohibitions on burning.

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The Spark: Prohibitions and Fire Causes

As of June 4th, 2020, there have been 154 wildfires throughout British Columbia. Over 80 per cent of these fires are human caused, despite an open burning prohibition in every fire centre throughout B.C. since April 16th. Every human caused wildfire is preventable and can take resources away from responding to lightning caused wildfires. It is the responsibility of the public to adhere to open burning prohibitions and take extreme care with all other forms of fire use. This is more important than ever as we move into the core wildfire season in 2020, as we are also amidst a global pandemic.

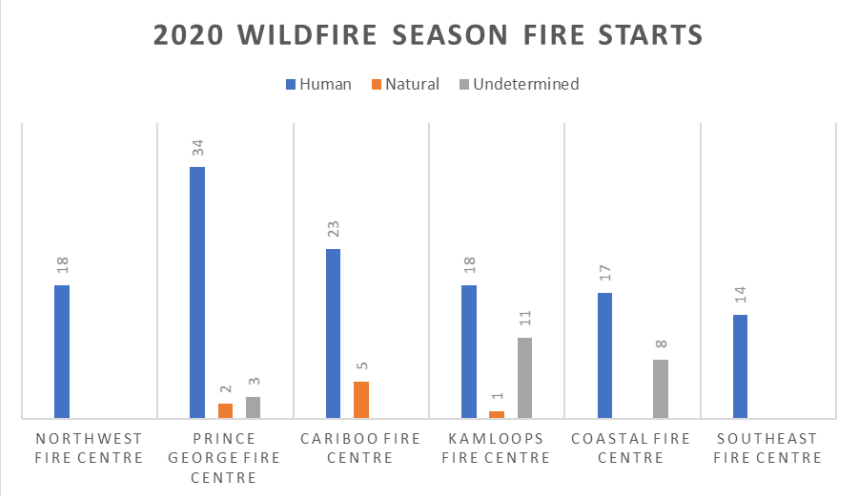
"Human caused" wildfires are any wildfire that is not ignited by lightning. This means there is a broad range of potential "sparks", or causes, that can lead to a wildfire. Driving an ATV in dry brush without a spark arrestor, or in areas with extreme fire danger rating, is potentially just as dangerous as abandoning a campfire without extinguishing it. Whenever there is a "spark" involved in an activity it is the responsibility of whomever creates the spark to be responsible with it.

Common human-caused wildfires:

- Open Fire Use
- Incendiary Devices
- Campfires
- Mechanical / Equipment

Less common human-caused wildfires:

- Engine / Exhaust
- Electrical
- Structure / Vehicle / Accident Fires
- Smoking
- Outdoor Stove / Fireplace / BBQ
- Spontaneous Combustion



While the ratio of human caused wildfire is quite high, which at this point in the fire season is not unusual, BC is well below the ten-year average for wildfire starts at this time in 2020. The ten-year average at this point is 236 wildfires – a 53% increase from where we are today. In 2019, there were 255 wildfire starts at this time. With the slower start to wildfire season it is important to not become complacent with fire use.

How a Forest Dries and Weather Effects

Forest dries: smallest to largest fuels; Forest rehydrates: smallest to largest fuels

Fire Behavior Triangle

Fuel is one of three components of the fire behavior triangle. If one component changes, the behavior of the fire—how hot it burns and how fast it spreads—also changes. When fighting a wildfire fuel can more easily be manipulated whereas oxygen and heat are not subject to the same degree of influence.

What is Forest Fuel?

"Forest Fuel" is the combustible material generally (but not exclusively) found on forest floors. It is also referred to as "biomass". Biomass is any organic material, and combustible biomass are any organic material that burns. Fuels can be either living or dead and can be arranged vertically (referred to as "ladder fuels") or horizontally across areas as small as a clump of trees, a forest stand, or as large as a watershed. Homes and other structures are also considered forms of fuel.

Size of Fuel

Anyone who has started a fire is aware that small fuels ignite more readily than larger fuels. In building a campfire small fuel is used, then larger twigs and branches, and then larger logs are placed on the fire. The reason lies in the rapidity with which small fuels can be heated and ignited. Since a twig's surface area is not much larger than its volume, it ignites quickly. Once heated the smaller fuel can ignite the larger fuels. By comparison, a tree's surface area is much smaller than its volume, so it needs more time to heat up before it ignites.

Wildfires work the same way.

Firefighters categorize fuels based on their size and how quickly they dry out — and consequently, how easily they will ignite and burn. Grasses are 1-hour fuels, sometimes called light fuels, or flashy fuels. If the weather becomes hot and dry, they become just as dry as the surrounding atmosphere in about an hour. Trees and dead logs are usually 100 or 1000-hour fuels; it takes much longer before they're ready to burn, but when they ignite, they give off bigger flames, more intense heat, and can burn for a long time.

Fine Fuels	Flashy	Needles, grasses and small twigs
⬇		Shrubs and branches
Large Fuels	Slow-burning	Downed trees and logs

Wildfire NEWS

How a Forest Dries and Weather Effects Cont.

Fuel Loading: The amount of flammable material that surrounds a fire is referred to as the fuel load. Fuel load is measured by the amount of available fuel per unit area, usually tons per acre. The amount of fuel has a decided effect on fire behavior. Very low volumes of fuel can result in a low intensity, creeping fire. On the other hand, large volumes of fuel could result in a blow-up fire that is difficult to control.

Available Fuels: Those fuels which will burn during passage of a flame front under specific burning conditions. On most days, roughly half of understory fuel loading will be available and will be consumed. During long periods of drought however, most of the fuel can be consumed resulting in a potentially more damaging fire with high intensity and rapid spread. Such fires will also burn deeper into the duff and are more difficult to control. Other factors to be considered are quantity, density and continuity of the fuel.

Fuel Moisture: Fuels with a moisture content of over 15 percent are difficult to ignite while fuels with less than 10 percent moisture content readily ignite. Fuel moisture will increase during periods of rain or snow and high humidity. Sunlight will lower the relative humidity and increase the temperature resulting in the fuel losing moisture. The longer fuel is exposed to dryer conditions, the dryer it will get. Wind will also help to dry fuel. It will blow away the moisture laden air next to the fuel and replace it with drier air. At night, the surface temperature drops rapidly, atmospheric moisture (RH) will increase, winds will decrease or become calm and the atmosphere will become more stable. As a result, fuels will not continue to lose moisture to the atmosphere. In most cases, it will begin to draw moisture from the now damp air adjacent to them.

Fuel Shape: Shape affects the ignition and behavior of fire much the same as size. Flat shaped fuel is like small size fuel in that it has a larger surface-to-volume ratio. It dries out faster and there is also more surface area for the heat to enter, thus it will ignite more readily because it takes less heat to dry it out. It will also burn more rapidly contributing its heat energy to the fire quicker resulting in a more intense fire.

Type of Fuel: Even though pine needles are fine fuels and can exchange moisture rapidly, they give off moisture very slowly when on the ground and compacted, because they are in a moist environment. The moisture in the adjacent needles and the space in between stays wetter because the sunlight and air with lower relative humidity is exposed only to the top layer. Consequently, they will react more like larger size fuel. They also absorb more moisture from precipitation because the excess does not all run off but is held by the ground. As these fuels lose moisture, they in turn will absorb more moisture from the ground.

Aspect: The most hazard location of fuels is on a southern slope. Due to the direct rays of the sun, fuels dry more rapidly than in shaded areas.

Topography: Fuels are dried by winds and winds are directly affected by topography. Sustained low relative humidity results in continued drying of fuels. Those fuels in the open are more likely to dry whereas those fuels that are unexposed take longer to dry and may not be reached by light rains. Fuels that are above a temperature are also more prone to drying.

How a Forest Dries and Weather Effects Cont.

Weather: Wind likely has the biggest impact on a wildfire's behavior. It also the most unpredictable factor. Winds supply the fire with additional oxygen, further dry potential fuel and push the fire across the land at a faster rate.

Wildfire: As a wildfire progresses, it dries out the material just beyond it -- heat and smoke approaching potential fuel causes the fuel's moisture to evaporate. This makes the fuel easier to ignite when the fire finally reaches it. Fuels that are somewhat spaced out will also dry out faster than fuels that are packed tightly together, because more oxygen is available to the thinned-out fuel. More tightly-packed fuels also retain more moisture, which absorbs the fire's heat.

How Relative Humidity Affects Fuels: Relative humidity is the term used to express the amount of moisture in the atmosphere. It is the ratio of actual water vapor in the atmosphere compared to the amount of water vapor that would saturate the atmosphere at that temperature. When the relative humidity is 40 percent, it means that the atmosphere contains 40 percent of the moisture that it could contain at that same temperature.

While the dry fuels can result in a more prone fire environment the inverse is true when moisture is present. The amount of moisture in fuels directly affects the rate of burning, and the radiation from flames. Moisture in the form of water vapor is always present in the atmosphere. And - the amount of moisture that is in the atmosphere affects the amount of moisture that is in the fuel. As moisture content increases, the rate of burning and the amount of radiation decrease. The presence of moisture in the air slows or inhibits combustion.

How do fuels differ between wet and dry forests?

Wet Forests in the coastal region of the Province typically have greater amounts of fuel due to higher productivity, both on the surface and in the canopy, than dry forests. In coastal regions, fire is primarily climate -driven and can burn with high intensity when conditions (low rainfall, high temperatures, low humidity, and sustained winds) are right. Steep and complex topography can also influence fire intensity. While fires don't happen often in wet forests, when they do occur, the fire kills most of the vegetation.

Dry forests are typically found in the interior of the Province. Fuel buildup in the interior was historically limited to frequent, low- to moderate-severity fires that—rather than kill a large proportion of the trees—maintained open stands dominated by large, fire-adapted species.

In recent years, many areas feature an overabundance of fuels due to a combination of factors: a century of fire exclusion; the eruption of new trees and shrubs in the absence of fire; and past management practices that prioritized removal of the largest, most-fire resistant trees without adequately managing subsequent forest density. Wildfires that burn in these dry forests often burn at a much higher intensity.

US Forest Service. Understanding Fuels: Forest Fire Science. https://www.youtube.com/watch?v=7gjxG_kN6x8

Fine Fuel Moisture Codes

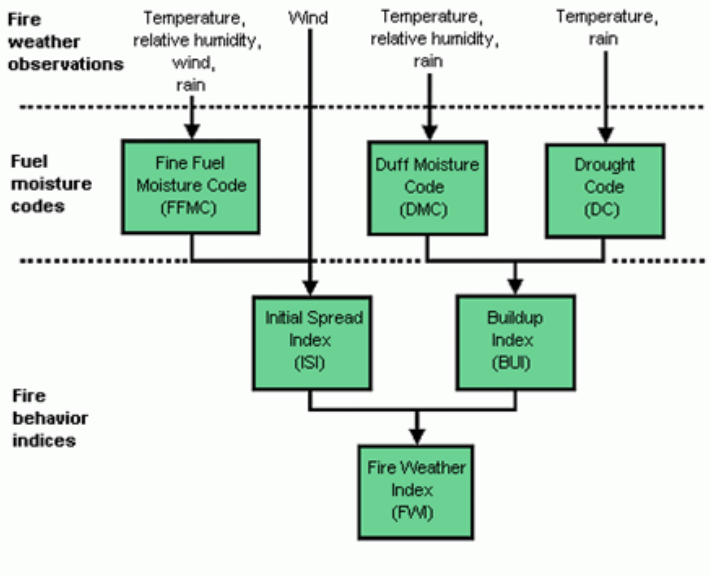
How a fire kindles (it all starts with the fine fuels)

The Fine Fuel Moisture Code (FFMC) is a numeric rating of the moisture content of litter and other cured fine fuels. This code is an indicator of the relative ease of ignition and the flammability of fine fuel. Four factors are used to determine the FFMC: temperature, relative humidity, wind and rainfall amounts.

Smaller, fine fuels require less time to dry out, require less energy (heat) to cause ignition, and are therefore available for ignition much faster than larger coarse fuels.

A small amount of heat for a short amount of time will cause a grass fire, and a sustained heat source will be required over a longer period to ignite a fire in heavy fuels.

Conversely, the moisture content will impact ignition because moisture is a cooling agent and fuels of any size will require more heat to reach ignition.



Datasets consisting of seven indices, each of which describes a different aspect of the effect that fuel moisture and wind have on fire ignition probability and its behavior, are used.

The indices are called: Fine Fuel Moisture Code (FFMC), Duff Moisture Code (DMC), Drought Code (DC), Initial Spread Index (ISI), Build Up Index (BUI), Fire Weather Index (FWI) and Daily Severity Rating (DSR).

Congrats to the Class of 2020 from the Northwest Fire Centre!

...And a word of caution on grad fires

Secondary school graduations will look a lot different this year, due to precautions necessary due to the coronavirus. But almost every school throughout the Northwest Fire Centre has planned some kind of event to mark the occasion, from vehicle parades to student-only ceremonies to pre-filmed "walk ups" that will be broadcast on grad night.

As non-traditional as graduation ceremonies will be this year, the Northwest Fire Centre is aware of the long-standing tradition in many communities of grads, families and friends getting together for bonfires following grad ceremonies. While physical-distancing requirements are likely to reduce these gatherings this year, the Northwest Fire Centre reminds anyone planning to celebrate with a fire to use caution.

Only fires classified as campfires are permitted in the province at this time, meaning a fire that is no larger than half a metre wide by half a metre high. All campfires must be surrounded by a fuel break, such as a ring of rocks. Those enjoying campfires must have at least 8L of water and/or a hand tool, such as a shovel, at the ready, and campfires must NEVER be left unattended—it must be fully extinguished, meaning cool to the touch, before leaving the area.

The Northwest Fire Centre congratulates all the grads of the Class of 2020 and wishes a fun, safe

Grad across the Northwest Fire Centre

Burns Lake: June 12, 2020
Houston: June 12, 2020
Smithers: June 19, 2020
Hazelton: June 20, 2020
Terrace: June 19, 2020
Nisga'a: June 20, 2020
Kitimat: June 19, 2020
Prince Rupert: June 12, 2020
Dease Lake: postponed until fall 2020

Contact Information

Report a Wildfire: *5555 on a cell or 1-800-663-5555

Wildfire Information Line: 1-888-3FOREST

Northwest Fire Centre Reception: 250-847-6600

NWFC Information Officer:

Phone: 250-847-6639

Email: BCWS.NWFCInformationOfficer@gov.bc.ca