

# Wildfire NEWS



## Coastal Fire Centre

ISSUE 3 | 06.05.2020

### IN THIS ISSUE

- Research and Innovation Trial
- Flood Response
- Tips for Recreating During COVID-19
- The Spark: Prohibitions and Fire Causes
- How a Forest Dries and Weather Effects
- Fine Fuel Moisture Codes
- Fire Weather Forecast
- Coastal News
- Helpful Links

### CURRENT STATISTICS

Fires to-date: 25

Hectares burned: 236

Human-caused: 25

Lightning-caused: 0

### BANS AND PROHIBITIONS

**Campfire:** No Ban

**Category 2:** In Effect

**Category 3:** In Effect

**Resource Management Open Fire:** In Effect

**Forest Use Restrictions:** No Ban

[Prohibitions section of bcwildfire.ca for full details.](http://bcwildfire.ca)

## Research and Innovation Trial – Quick Fire Remote Automated Fire Weather Stations

Submitted by Mike Kimmerly, Research Technician

To better assist forecasters build accurate and timely fire prediction models, the BCWS Research and Innovation team – with support from Predictive Services Unit - has procured two Campbell Scientific Quick Fire Remote Automated Fire Weather Stations (RAWS) for testing. One unit comes with Wi-Fi and LTE communication options, and the other with an LTE communication option. The expectation is that these devices will help bolster site specific weather monitoring efforts, aiding in the determination of tactics, resource needs, evacuation plans and other operational decisions.

There is a variety of models being tested across the Province, but this specific model is currently being trialled in the Coastal Fire Centre.

This Quick Fire unit comes pre-programmed to output key fire weather indicators including;

- Fine Fuel Moisture Code (FFMC)
- Duff Moisture Code (DMC)
- Drought Code (DC)
- Initial Spread Index (ISI)
- Buildup Index (BUI)



# Wildfire NEWS



Coastal Fire Centre

PAGE 2

## Quick Fire Remote Automated Fire Weather Stations cont'd

- Fire Weather Index (FWI)
- Fire Danger Code (FDC)

This system typically measures the following parameters:

- Wind speed
- Wind direction
- Air temperature
- Relative humidity
- Rainfall
- Barometric pressure
- Solar radiation
- Lightning strike count and distance

The benefits of Campbell Scientific's Quick Fire units include portability, rugged design, and easy assembly.

Coastal  
Crews  
Assist  
with  
Flood  
Response



## Tips for Recreating During COVID-19

### DON'T FORGET TO LISTEN TO OFFICIAL GUIDELINES EVEN WHEN OUTDOORS

Just because you're outside doesn't mean you can stop listening the recommendations of local governments and health officials. The BC Centre for Disease Control is the best authority for suggestions, tips and breaking information. <http://covid-19.bccdc.ca/>.

Our crews are rethinking everything they do, and you should too. One outdoors challenge is keeping your hands clean enough that your use of hand sanitizers will work – excessively dirty hands will negate the value of hand sanitizers. If you hike in an area where you can't wash your hands easily, you may have to pack a soap/water solution, and extra water for rinsing, along with your hand sanitizer.



### FOLLOW THE BC WILDFIRE PROHIBITIONS

Currently Category 2, Category 3 and Resource Management Open Fire prohibitions are in place. The prohibitions in place will reduce the potential for human-caused wildfires, which decreases the risk COVID-19 exposure for staff and alleviates pressure on resources.

- To report a wildfire or backyard burning violation, call 1 800 663-5555 toll-free or \*5555 on a cellphone.
- To report unlawful open burning (Category 3 and resource management open fires), call the 24/7 Report All Poachers and Polluters (RAPP) hotline at 1 877 952-7277 or #7277 on a cell phone.

Reducing the number of wildfires that BCWS crews must respond to and reducing exposure to the public is of high importance in ensuring the health and safety of first responders.

### AVOID AREAS YOU THINK MIGHT BE CROWDED

Since community spread is a concern during times of contagion, seek outdoor areas that are typically less crowded. For example, picking a heavily used park for an adventure might not be ideal. Additionally, outdoor hot spots are likely to experience a higher level of closures. Seek off-the-beaten path alternatives. If you arrive at an outdoor destination and do encounter large groups, consider going elsewhere.

### BE A TOURIST IN YOUR OWN TOWN

With ever changing closures and Provincial and local mandates, taking trips closer to home is a good idea to avoid unnecessary stress. While this can mean visiting a nearby park or trail, it can also be as simple as taking a quick walk around the block. Even taking the time to enjoy your own backyard can offer a nice respite from hours indoors. Get creative with how and when you can get outside and avoid the crowds.

Consider exploring parks you didn't know existed. Be sure to plan ahead and do a bit of research regarding possible closures or potential crowding before heading out. While one spot might be closed, another option down the road might be open and ready to explore.

Below are links to the **Regional District Parks** within the Coastal Fire Centre. Check your local regional district as you may be surprised at the options available to you.

Nanaimo - <https://www.rdn.bc.ca/regional-parks-and-trails>

Mount Waddington - <http://www.rdmw.bc.ca/regional-services/parks/>

Fraser Valley - <https://www.fvrd.ca/EN/main/parks-recreation/parks-trails.html>

Metro Vancouver - <http://www.metrovancouver.org/services/parks/parks-greenways-reserves/>

Capital (Victoria) - <https://www.crd.bc.ca/parks-recreation-culture/parks-trails/crd-regional-parks>

Cowichan Valley - <https://www.crvd.bc.ca/96/About-Parks-Trails>

Alberni-Clayoquot - <https://www.acrd.bc.ca/parks-and-trails>

## Tips for Recreating During COVID-19 cont'd

Strathcona - <https://srd.ca/parks-and-recreation/>

Comox Valley - <https://www.comoxvalleyrd.ca/parks-recreation/parks-trails-beach-accesses>

Qathet (Powell River) - <https://www.qathet.ca/services/parks-and-recreation/>

Sunshine Coast - <https://www.scrd.ca/parks>

Squamish-Lillooet - <https://www.slrdfbc.ca/services/recreation-culture/parks-trails>

Central Coast - <https://www.ccrd.ca/land-use-planning/maps/recreation-trail-maps>

Skeena-Queen Charlotte - <http://www.sqrdfbc.ca/visitors/north-coast/>

### Provincial Parks

BC Parks - <http://bcparks.ca/>

Rec Sites and Trails - <http://www.sitesandtrailsbc.ca/>

### Federal Parks

Federal Parks in BC - <http://britishcolumbia.com/things-to-do-and-see/parks-and-trails/national-parks-in-british-columbia/>

### PREVENT WILDFIRES WHILE RECREATING

Keep yourself and others safe while out in forested areas.

- If you are a smoker dispose of your smoking materials responsibly. Do not discard used smoking materials along trails or out vehicle windows.
- If you are enjoying a campfire remember (or learn) all about campfire safety and your obligations. If you have children take it as an opportunity to pass down your wisdom and outdoor skills. And most importantly if you are having a campfire put it out completely when you are done enjoying it. [https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/fire-bans-and-restrictions/bcws\\_campfireposter.pdf](https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/fire-bans-and-restrictions/bcws_campfireposter.pdf)
- If you are driving an ATV or ORV do not drive through or park on tall, dry grasses.
- While kayaking – if you choose to have a campfire on a beach put it out. Fire crews often respond to abandoned or escaped campfires on islands, or along beaches, as some believe that since it is near water there is no danger.



### LIMIT YOUR TOUCH POINTS

Getting outdoors is a great way to relieve stress in trying times, but still try to limit your exposure opportunities. Don't call up all your friends, but rather limit your group to those in your immediate household. Similarly, avoid making stops at shops and stores on your way (hopefully you'll already stocked up on trail snacks). Hop in your car, get to the trail, breathe the fresh air and make your way home.

### IF YOU FEEL BETTER WAITING – WAIT

While cabin fever is all too real, if you're at higher risk of contracting an illness during an outbreak it's probably best to just stay home. Consider using this time to daydream and plan future trips. It's never a bad time to think about where you want to go next. The outdoors will be waiting

### 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.

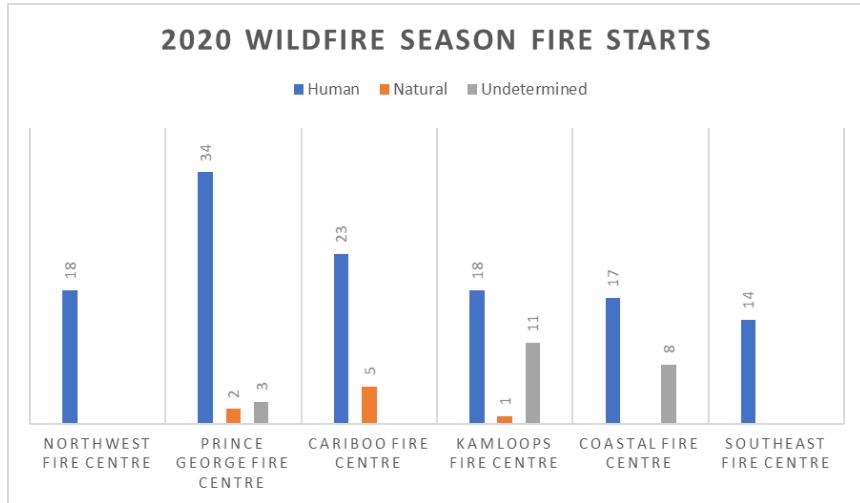
“Human caused” wildfires are any wildfire that is not ignited by lightning. This means there is a broad range of potential “sparks”, or causes, that can lead to a wildfire. Driving an ATV in dry brush without a spark arrestor, or in areas with extreme fire danger rating, is potentially just as dangerous 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

### 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.

**Weather:** Wind likely has the biggest impact on a wildfire's behavior. It is 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 fast rate.

# Wildfire

## NEWS

### Coastal Fire Centre

PAGE 8

## 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.

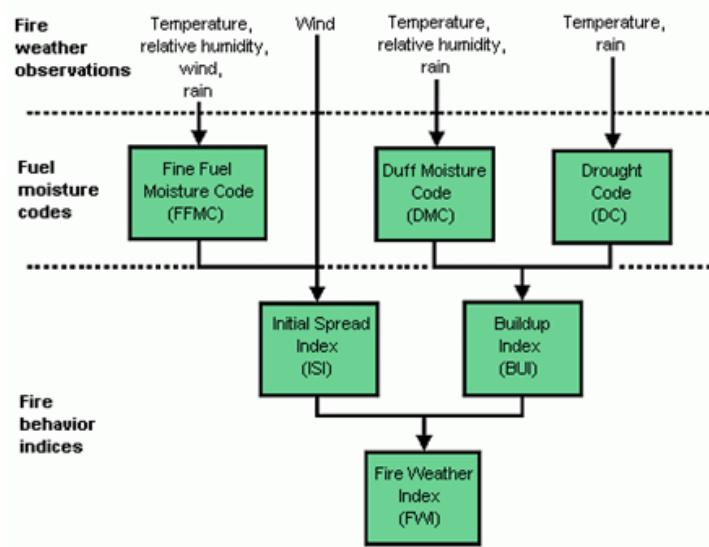
Smaller, fine fuels require less time to dry out, require less energy (heat) to cause ignition, and are therefore available for ignition much faster than larger coarse fuels.

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).





# Wildfire NEWS

## Coastal Fire Centre

PAGE 9

### Fire Weather Forecast

Issued: 1045 PDT Friday 5 June 2020.

**SYNOPSIS:** (Today-tomorrow) A large low pressure zone now offshore west of Haida Gwaii is sinking south to lie off Vancouver Island tomorrow. A southwest flow around the low is already bringing heavy clouds and showers to the outer west coast and as the air mass instability increases this afternoon you can expect more and heavier showers but thunderstorms are unlikely—at least for today. By tomorrow with the centre of the low moving to be off the Washington coast by evening a more southerly and much more unstable flow sets up over all southern Coastal zones. Showers will be frequent and afternoon thunderstorms are likely for all areas. Local thundershowers are expected along with possible hail and gusty winds.

**OUTLOOK:** (Sunday-Tuesday) By Sunday the low has opened up into a broad unstable trough centred over Vancouver Island and starting to shift eastward. A temporary ridge moves across on Monday but is followed on Tuesday by another wet storm.

**Freezing Level:** North, near 900 m. this afternoon remaining level Saturday. South, currently 1100 m. falling as the low approaches to only 600 m. Saturday. Van Isle, 2000 m. dropping to 1700 by Saturday afternoon. All freezing levels likely to rise on Sunday by a few hundred metres and then fall again Monday.

**6 TO 10 DAY:** (next week) After the brief break in the pattern on Monday followed by an even wetter flow Tuesday the progressive pattern continues through the end of the coming week with generally an onshore circulation bringing clouds and showers and changeable but not extreme weather.

### Coastal News

Fire activity in the Coastal Fire Centre continues to be low.

Crews assisted with flood response last week but no resource requests have been submitted this week. This could change at any time should rivers and waterways rise beyond the forecasted heights or crest their banks.

Crews continue to work on projects that necessitate pruning, thinning and mulching as Category 2, Category 3 and Resource Management Open Fire prohibitions remain in place.

Training requirements continue to be fulfilled through online courses or sessions, or on bases, in smaller units, as required.

### Contact Information

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

**Wildfire Information Line:** 1 888 3FOREST

**Burn Registration Number:** 1 888 797-1717

**Report All Poachers and Polluters (RAPP):**  
1 877 952-7277

**Information Officer Phone Number:** 250-951-4209

**Information Officer Email:**  
[BCWS.COFCInformationOfficer@gov.bc.ca](mailto:BCWS.COFCInformationOfficer@gov.bc.ca)

## Helpful Links:



### FireSmart BC

To effectively reduce wildfire risk, it is important that the public gain a better understanding of what it means to be FireSmart. Check out FireSmart BC's amazing resources online:

Facebook: <https://www.facebook.com/firesmartbc/>

Twitter: <https://twitter.com/BCFireSmart>

Website: [FireSmartbc.ca](http://FireSmartbc.ca)



### Interactive Map Updated Symbology

On April 15, 2020, the BC Wildfire Service made changes to how wildfire information is displayed on the Public Interactive BC Wildfire Dashboard. Fires will be displayed on the map by their stage of control.

[Interactive Map Reference Guide.](#)

[Interactive Map.](#)

### BC Wildfire Service mobile app



### BC Wildfire Service Mobile App

Available for download now:

The BC Wildfire Service mobile app is available for Apple (IOS) and Android devices and is free to download in the App Store and Google Play.

**Android:** The BC Wildfire Service mobile app can be downloaded at Google Play:

<https://play.google.com/store/apps/details?id=ca.bc.gov.WildfireInformation&hl=en>

**Apple (IOS):** The BC Wildfire Service mobile app can be downloaded from the App Store: <https://apps.apple.com/us/app/bc-wildfire-service/id1477675008?ls=1>

Please direct comments, questions or concerns to  
[BCWS.PublicMobileApp@gov.bc.ca](mailto:BCWS.PublicMobileApp@gov.bc.ca).