

Wildfire Smoke and Air Quality

There are many different sources of information on air quality, including local radio and television broadcasts, community centres and band offices, smartphone apps, and websites. Knowing where to find reliable information about the air quality is a first step to understanding wildfire smoke and protecting your health.



Different agencies provide information on current air quality across the province using a range of tools.

- Outside the Lower Mainland, there is a subscription service to get text or email alerts for Smoky Skies Bulletins and Air Quality Advisories. <https://u.nu/e3xtf>
- Within the Lower Mainland, there is an email subscription service to get Air Quality Advisories and Bulletins. <https://u.nu/7gwgj>
- Wildfire smoke is a complex mixture of air pollutants, but fine particulate matter (PM_{2.5}) poses the greatest risk to human health. Online air quality maps show the current PM_{2.5} levels in many communities. <https://u.nu/lamf>
- In British Columbia, the current PM_{2.5} levels can be used to estimate the current Air Quality Health Index (AQHI), which provides health advice for different risk categories (Table 1).

1-HOUR PM _{2.5} (µg/m³)	PROVINCIAL AQHI	AQHI RISK CATEGORY	HEALTH MESSAGE FOR PEOPLE AT HIGHER RISK	HEALTH MESSAGE FOR GENERAL POPULATION	ACTIONS TO REDUCE WILDFIRE SMOKE EXPOSURE
0 – 10	1	LOW	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.	Normal air quality in British Columbia
11 – 20	2				
21 – 30	3				
31 – 40	4	MODERATE	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms.	No need to modify your usual outdoor activities unless you experience symptoms.	<ul style="list-style-type: none"> • Use a portable air cleaner to reduce smoke in your home • Stay inside with doors and windows closed, but keep cool – being too hot is more risky than breathing smoke for most people
41 – 50	5				
51 – 60	6				
61 – 70	7	HIGH	Reduce or reschedule strenuous activity outdoors.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms.	<ul style="list-style-type: none"> • Visit places with cleaner and cooler air, such as libraries, community centres, and shopping malls
71 – 80	8				
81 – 90	9				
91 – 100	10				
101+	10+	VERY HIGH	Avoid strenuous activity outdoors.	Reduce or reschedule strenuous activity outdoors, especially if you experience symptoms.	<ul style="list-style-type: none"> • If you cannot access cleaner air, consider using a well-fitted N95 respirator or relocating to an area with less smoke

TABLE 1: 1-hour concentrations of fine particulate matter (PM_{2.5}) can be used to estimate the Air Quality Health Index (AQHI) in British Columbia.

If your community does not have a PM_{2.5} monitoring station, there are some other tools that can help you understand the current air quality.

- Get [Smoky Skies Bulletins](https://u.nu/e3xtf) for areas outside the Lower Mainland by text or email. <https://u.nu/e3xtf>
- **Trust your senses.** Human eyes and noses are excellent smoke detectors. If you see smoke or smell smoke, the air quality is being affected.
- The PM_{2.5} concentration is usually in the **moderate health risk** category of the provincial AQHI when you can first smell smoke (Table 1).
- **Smoke in the air affects how far you can see** into the distance, and visibility decreases as PM_{2.5} levels increase. Provincial webcams can show when smoke is in the air. <https://u.nu/khab>
- The **WeatherCAN smartphone app** may provide information about local visibility, air quality, and smoke in your area. <https://u.nu/an9l>
- Satellite images taken every 15 minutes show wildfire smoke plumes from high in the atmosphere. These images cannot show what is happening on the ground, but they are useful for assessing smoke movement. <https://u.nu/3v7r>



Many inexpensive PM_{2.5} sensors are now available for personal use, but they should be used with caution.

- The estimates are **not always reliable** when compared with the instruments used by government agencies.
- The estimates are more reliable when they are averaged over an appropriate period, such as one hour.
- In general, these sensors tend to overestimate the exact PM_{2.5} concentrations but can be helpful for assessing whether PM_{2.5} concentrations are in the low, moderate, high, or very high ranges (Table 1).
- The most complete guidance on using inexpensive sensors is available from the United States Environmental Protection Agency. <https://u.nu/vjzr>

Smoke forecasts show the predicted movement of wildfire smoke through the entire province and its potential air quality impacts over the next few days.

- The most reliable smoke forecasts for British Columbia are provided by FireWork which is run by Environment and Climate Change Canada. <https://u.nu/qdlv>
- FireWork does a good job of predicting where smoke will travel but tends to overestimate the PM_{2.5} levels near to large fires.
- The BlueSky system also provides smoke forecasts for British Columbia. <https://u.nu/p25x>



BC Centre for Disease Control
Provincial Health Services Authority

LAST UPDATED: MAY 2021

FOR MORE INFORMATION bccdc.ca/wildfiresmoke