

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.

- There are subscription services to get text or email alerts for air quality warnings and bulletins: Lower Mainland: <https://rb.gy/en1cb> and Outside Lower Mainland: <https://rb.gy/xau78t>
- The Air Quality Health Index (AQHI) provides a simple indication of air quality, and health advice for different risk categories Table 1. Check AQHI for your region:
 - WeatherCAN smartphone app: <https://rb.gy/6oaoxa>
 - BC Air Quality website: <https://rb.gy/hnutt8>
- 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://rb.gy/wnxovi>
- In British Columbia, the current PM_{2.5} levels can be used to estimate the current the current AQHI (Table 1).

1-HOUR PM _{2.5} ($\mu\text{g}/\text{m}^3$)	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.	• 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 • Visit places with cleaner and cooler air, such as libraries, community centres, and shopping malls • If you cannot access cleaner air, consider using a well-fitted N95 respirator or relocating to an area with less smoke
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.	
71 – 80	8				
81 – 90	9				
91 – 100	10	VERY HIGH	Avoid strenuous activity outdoors.	Reduce or reschedule strenuous activity outdoors, especially if you experience symptoms.	
101+	10+				

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 [Air Quality Warnings](https://rb.gy/xau78t) for areas outside the Lower Mainland by text or email. <https://rb.gy/xau78t>
- The [AQ Map website](https://rb.gy/pkg7rl) displays measurements from networks of low-cost PM_{2.5} sensors, coloured according to the equivalent AQHI values. <https://rb.gy/pkg7rl>
- **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://rb.gy/hukk9s>



Many inexpensive PM_{2.5} sensors are now available for personal use, and they can be useful tools to monitor indoor and outdoor air quality.

- Although the estimates of the exact PM_{2.5} concentrations may not be always as accurate as those measured by government air quality monitors, these sensors are helpful to assess the general trend in whether PM_{2.5} concentrations are in the low, moderate, high, or very high ranges (Table 1).
- The estimates are more reliable when they are averaged over an appropriate period, such as one hour.
- Using both indoor and outdoor sensors and comparing the measurements can be a good way to assess whether indoor air filtration is working.
- The most complete guidance on using inexpensive sensors is available from the United States Environmental Protection Agency. <https://rb.gy/lr68ld>

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://rb.gy/30czn6>
- FireWork does a good job of predicting where smoke will travel but tends to overestimate the PM_{2.5} levels near large fires.
- The Asthma Prediction System provides the maximum expected AQHI based on FireWork forecasts for the next 24 to 48 hours. <https://rb.gy/30czn6>
- The BlueSky system also provides smoke forecasts for British Columbia. <https://rb.gy/30czn6>



BC Centre for Disease Control
Provincial Health Services Authority

LAST UPDATED: MAY 2025

FOR MORE INFORMATION bccdc.ca/wildfiresmoke