

## 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.



The Ministry of Environment and Climate Change Strategy provides information on current air quality across the province using a range of different tools.

- Smoky Skies Bulletins are used to notify the public when wildfire smoke is likely to affect regional air quality over the next 24–48 hours. Air Quality Advisories are issued when pollutant concentrations approach or exceed provincial objectives. <https://u.nu/q1t->
- Wildfire smoke is a complex mixture of air pollutants, but fine particulate matter (PM<sub>2.5</sub>) poses the greatest risk to human health. Online air quality maps show the current PM<sub>2.5</sub> levels in many communities. <https://u.nu/lamf>
- In British Columbia, the current PM<sub>2.5</sub> 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 <sub>2.5</sub> (µg/m <sup>3</sup> )	PROVINCIAL AQHI	AQHI RISK CATEGORY	HEALTH MESSAGE FOR PEOPLE AT HIGHER RISK	HEALTH MESSAGE FOR GENERAL POPULATION
0 – 10	1	LOW	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.
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.
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			
101+	10+	VERY HIGH	Avoid strenuous activity outdoors.	Reduce or reschedule strenuous activity outdoors, especially if you experience symptoms.

**TABLE 1:** 1-hour concentrations of fine particulate matter (PM<sub>2.5</sub>) can be used to estimate the Air Quality Health Index (AQHI) in British Columbia.

## If your community does not have a PM<sub>2.5</sub> monitoring station, there are some other tools that can help you understand the current air quality.

- Check whether there is a Smoky Skies Bulletin for your area. <https://u.nu/q1t->
- **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<sub>2.5</sub> 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<sub>2.5</sub> 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<sub>2.5</sub> 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<sub>2.5</sub> concentrations but can be helpful for assessing whether PM<sub>2.5</sub> 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 48 hours.

- 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<sub>2.5</sub> 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

FOR MORE INFORMATION

[bccdc.ca/health-info/health-your-environment/air-quality](https://bccdc.ca/health-info/health-your-environment/air-quality)