

Air Quality & Libraries

How is air quality measured?

Air quality is measured for many pollutants, including: particulate matter (PM 2.5), ground-level ozone, pollen (PM 10), carbon, sulfur dioxide, and nitrogen oxide. The Air Quality Index (AQI), a tool created by the EPA, measures both ozone pollution and PM 2.5 in ranges from 0-300+. Air quality advisories are issued when the AQI exceeds, or is expected to exceed, a value of 100¹.

AQI Levels of Health Concern	Numerical Value	8-hr Ozone (ppb)	24-hr PM _{2.5} (ug/m ³)
Good	0-50	0-54	0.0 to 12.0
Moderate	51-100	55-70	12.1 to 35.4
Unhealthy for Sensitive Groups	101-150	71-85	35.5 to 55.4
Unhealthy	151-200	86-105	55.5 to 140.4
Very Unhealthy	201-300	106-200	140.5 to 210.4
Hazardous	> 300	> 201	> 210.4

Air Quality Index image from <https://airquality.wi.gov/home/text/538>.

What is Particulate Matter 2.5?

Particulate matter, which comes from wildfire smoke, is composed of tiny liquid droplets or microscopic matter so small they penetrate deep into our lungs and can even enter our bloodstream².

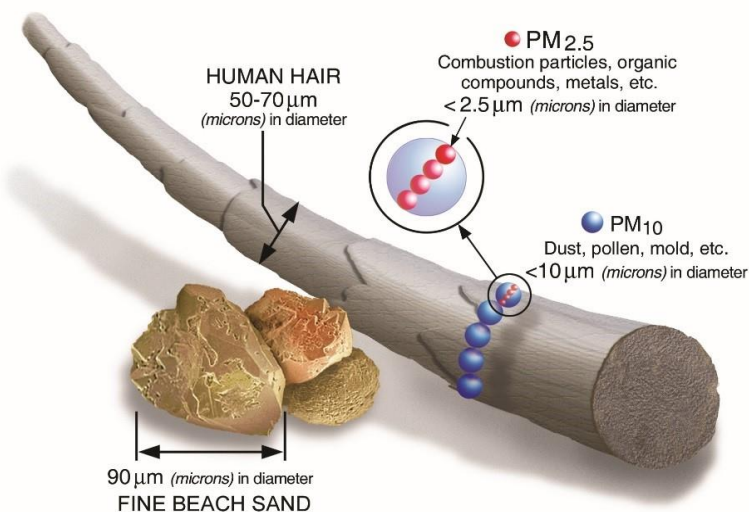


Image from <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>.

What are the health impacts?

- Particle pollution, or particulate matter, is a great concern for triggering heart attacks, stroke, and irregular heart rhythm, especially in people who have asthma, heart disease, or heart failure. People with these conditions are more likely to show symptoms when the air quality is polluted³.
- Folks who are healthy may experience symptoms as well, including irritation of the eyes, nose and throat; coughing; phlegm; chest tightness; and shortness of breath⁴.
- Others considered at a higher risk include children, older folks, and pregnant people⁵.

Resources for Understanding Particulate Matter

- Particulate Matter Basics: <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>
- Your Health: <https://www.airnow.gov/air-quality-and-health/your-health/>
- Why Wildfire Smoke is a Health Concern: <https://www.epa.gov/wildfire-smoke-course/why-wildfire-smoke-health-concern>
- Health & Environmental Effects of Particulate Matter: <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>

Resources for Monitoring Air Quality

- To find air quality data for where you live/work: <https://www.airnow.gov/>
- About the Air Quality Index:
 - AQI Basics: <https://www.airnow.gov/aqi/aqi-basics/>
 - Using the AQI: <https://www.airnow.gov/aqi/aqi-basics/using-air-quality-index/>

How to Cope ([from Wisconsin Department of Natural Resources](#))

- The best way to avoid wildfire smoke is to stay indoors. Be sure to:
 - Close windows and doors.
 - Run A/C on recirculate.
 - Use an indoor air purifier.
- If you must spend time outside during wildfire smoke events:
 - Check air quality conditions before leaving the house and throughout the day.
 - Avoid or limit exercising outdoors.
 - Consider wearing an N-95 mask, especially if outdoors for an extended period.

- Stay informed: Pay attention to peak air quality hours and alerts
- Monitor your symptoms



Image from [WPR](#).

Creating Safe Spaces in the Library

- Keep windows and doors closed
- Offer N95 masks to staff and patrons
- If using air conditioning, keep the fresh air intake closed (so you are not pulling air in from outside) and keep the filter clean
- Consider moving outdoor programming inside
- Display board games and activities that can be done indoors; share these options on social media
- Borrow an air sensor from the EPA: <https://www.epa.gov/air-sensor-toolbox/air-sensor-loan-programs#r5>
- Display a flag or colored paper that corresponds with current air quality: <https://www.airnow.gov/air-quality-flag-program/>
- Participate in Air Quality Awareness Week: <https://www.epa.gov/air-quality/air-quality-awareness-week>
- Understand that [people experiencing homelessness are at greater risk during these times](#)

Share Your Experience with Us

May and June of 2023 were tough months in terms of air quality. Did you notice any shifts in patrons' use of your library? How did you cope during the weeks of poor air quality? Tell us about your experience and consider how NFLS might better support your Library staff and space.

Other Resources Cited

1. <https://airquality.wi.gov/home/text/538>
2. <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>
3. <https://www.airnow.gov/air-quality-and-health/your-health/>
4. <https://www.airnow.gov/air-quality-and-health/your-health/>
5. <https://www.wpr.org/worst-air-quality-more-decade-wisconsin-communities-continue-deal-wildfire-smoke>