

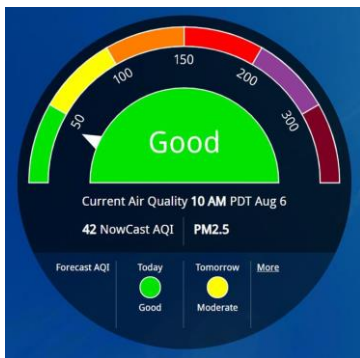
# Wildfire Smoke Monitoring

## A guide to air monitoring resources during wildfire smoke events

Daily AQI Color	Levels of Concern	Values of Index
Green	Good	0 to 50
Yellow	Moderate	51 to 100
Orange	Unhealthy for Sensitive Groups	101 to 150
Red	Unhealthy	151 to 200
Purple	Very Unhealthy	201 to 300
Maroon	Hazardous	301 and higher

Local air quality can change rapidly during wildfire smoke events. Cal/OSHA regulations require that employers monitor air quality and implement specific measures to protect their employees when exposures to wildfire smoke may become unhealthy. Exposure to wildfire smoke is considered unhealthy when the current [Air Quality Index \(AQI\)](#) for fine particulate matter (PM2.5) exceeds 150. To determine if local air quality impacts are due wildfire smoke, you can check the Fire and Smoke Map available at <https://fire.airnow.gov/> or use the USFS modeling tool [BlueSky](#). Once verified, current and forecasted air quality for your location may be accessed at [www.airnow.gov](http://www.airnow.gov). You can also download the U.S. EPA's AirNow app to your smartphone or sign up to receive air quality alerts via the [EnviroFlash](#) website. More information on active fires in California is available here: <https://www.fire.ca.gov/incidents/>.

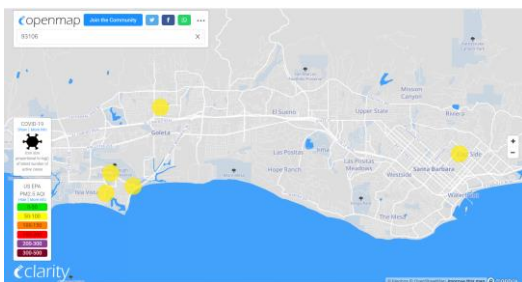
## Primary Data Sources: EPA AirNow Website and other Federal Reference or Federal Equivalent Monitors



Both Cal/OSHA and the U.S. Environmental Protection Agency (EPA) recommend that local air quality information be obtained using the [EPA AirNow](#) website. The Current Conditions Air Quality Index - referred to as the "NowCast" - represents data collected over periods of varying length to reflect present air quality conditions as accurately as possible. This data is obtained through a network of state and local agencies using properly calibrated and highly accurate federal reference or equivalent monitoring methods approved by EPA. If air quality information for your location is not available through the AirNow website, air quality monitoring information from local air quality control districts, UC monitoring devices, and unofficial public sensors may be used. However, when evaluating data from other sources, it is important to be aware of the limitations outlined below, and if necessary, use the [EPA AQI Calculator](#) to convert PM2.5 concentrations in ug/m3 to AQI.

## Secondary Data Sources: Low-Cost Optical Sensors (Clarity, PurpleAir, and Handheld Instruments)

The [US EPA AirNow website](#) should be used as the official data source for UC locations whenever possible. However, low-cost optical sensors that measure particle size and concentration can provide supplemental data for viewing spatial and temporal trends during wildfire smoke events. It is important to recognize these sensors may not be properly calibrated or maintained, and typically overestimate PM2.5 concentrations during wildfire smoke events. Additionally, data presented by low-cost sensors may fluctuate rapidly if it is not averaged over time, similar to the EPA's NowCast algorithm. For these reasons, low-cost optical sensors should not be used independently of other data sources for air quality related decision-making.



### Clarity Sensors: Data viewable at [openmap.clarity.io](http://openmap.clarity.io)

As part of a pilot project to improve air quality data collection, the UC has installed dozens of low-cost optical sensors at a variety of UC owned and managed locations. Outdoor concentrations are reported using the EPA NowCast algorithm for PM2.5 and may be co-displayed with nearby AirNow data on the same map/plot.

### PurpleAir Sensors: Data viewable at [purpleair.com](http://purpleair.com)

Distribution across public spaces, businesses, and private homes makes this network valuable for comparing neighborhoods and regions. For better comparison to reference monitors, in the map's settings, disable indoor sensors and set the reporting time to one hour, or more conservatively to one day; consider using a provided conversion factor for wildfire smoke.

## ADDITIONAL RESOURCES

[UCSB Wildfire Smoke Protection Webpage](#)

[UC Wildfire Smoke and Air Quality Report](#)

[UC AQI-Based Decision-Making Matrix for Wildfire Smoke Events](#)