



Reducing Exposure to Wildfire Smoke

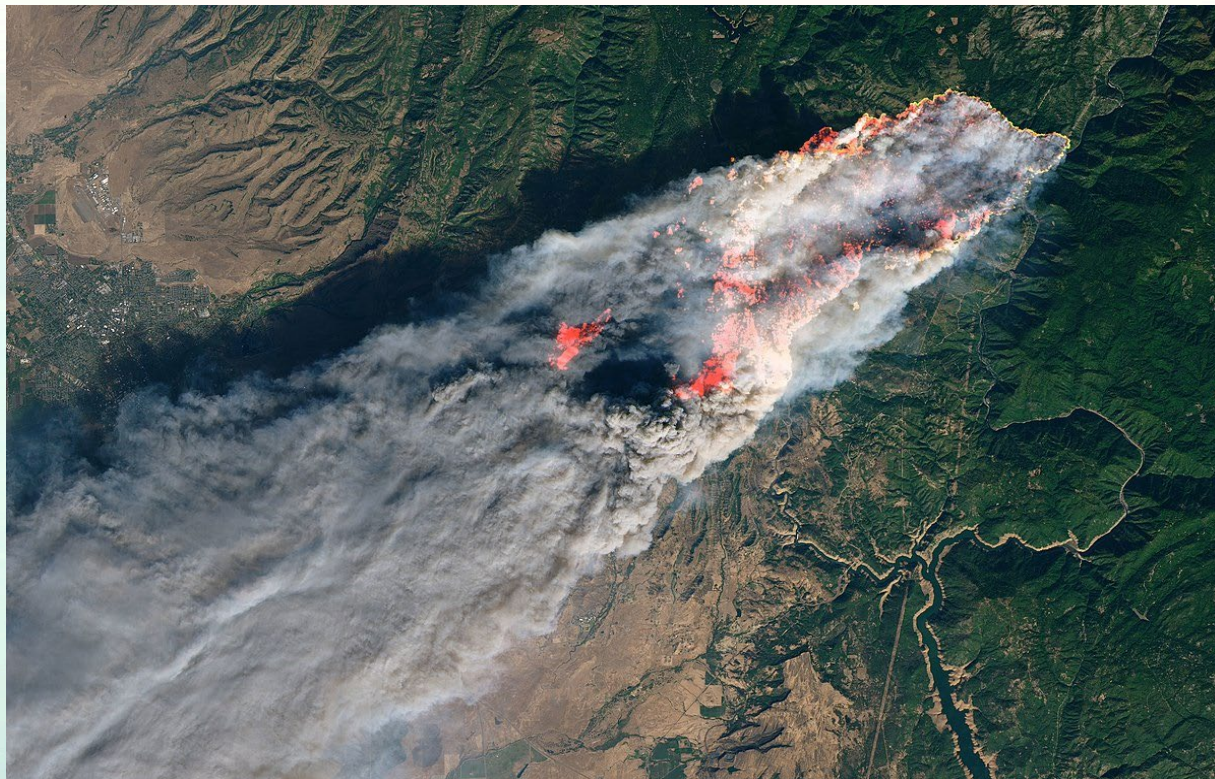
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Overview

- Introduction – wildfire and smoke in California
- The Air Quality Index (AQI) and checking your local air quality
- Strategies to Reduce Smoke Exposure
- Resources

Wildfire in California



What is the AQI?

0-50	Good	Enjoy your usual outdoor activities.
51-100	Moderate	Extremely sensitive children and adults should refrain from strenuous outdoor activities.
101-150	Unhealthy for Sensitive Groups	Sensitive children and adults should limit prolonged outdoor activity.
151-200	Unhealthy	Sensitive groups should avoid outdoor exposure and others should limit prolonged outdoor activity.
201-300	Very Unhealthy	Sensitive groups should stay indoors and others should avoid outdoor activity.
301-500	Hazardous	Everyone should avoid all outdoor exertion.

Checking Air Quality - AirNow

AirNow | AirNow | AQI & Health | Fires | Maps & Data | Education | International | Resources

74°

Good

Current Air Quality 1 PM PDT Mar 30

40 NowCast AQI | PM10

Forecast AQI: Today (Good), Tomorrow (Good)

ZIP Code, City, or State: Sacramento, CA

Sacramento Reporting Area

Monitors Near Me | Recent Trends

EPA and PARTNERS | Data courtesy of California Air Resources Board

Current Air Quality

Primary Pollutant
This pollutant currently has the highest forecasted AQI in the area.

- PM10: 40 Good
- OZONE: 37 Good
- PM2.5: 11 Good

Enjoy your outdoor activities.

Updated 1:00 pm PDT, Mar 30

Air Quality Forecast

Forecast Discussion: Tuesday, moderate and gusty northerly winds will disperse pollutants as a surface high pressure system builds into the Great Basin. As a res...

Forecast courtesy of Sacramento Metro AQI

Today	Tomorrow	Thursday	Friday	Saturday	Sunday
29 Good PM2.5	39 Good PM2.5	50 Good PM2.5	46 Good PM2.5	33 Good PM2.5	38 Good PM2.5

Primary Pollutant
This pollutant currently has the highest forecasted AQI in the area.

PM2.5: 29 Good

Enjoy your outdoor activities.

Other Pollutants
No Other Pollutants Available

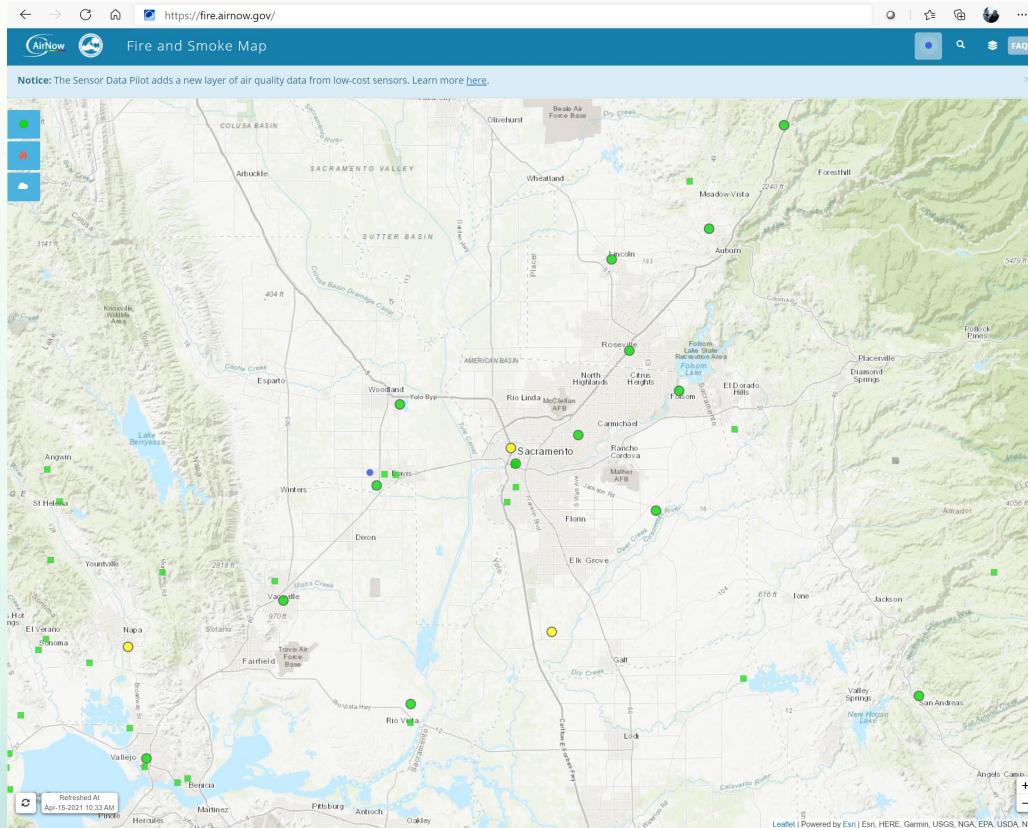
Announcements

- Upcoming Webinar: the Science Behind the AirNow Sensor Data Pilot**
2023-03-31
Learn about the scientific work that allowed AirNow to add data from low-cost sensors to the Fire and Smoke Map. Join us for a free webinar from 1:30 to 3:00 PM, ET, Thursday, January 26, 2023. For more info and to register to attend, visit <https://www.airnow.org/airnow2>
- Sensor Data Available on Fire and Smoke Map**
2020-08-19
AirNow and the U.S. Forest Service have launched a pilot project to show data from low-cost sensors on the Fire and Smoke Map. The goal of the project is to provide additional air quality information during wildfires, especially in areas with no AirNow monitors. [See the map.](#)
- AirNow app**
2020-06-04
The AirNow app has a sleek new look and improved functionality! Download the updated app for free on the [Apple App Store](#) or the [Google Play Store](#).

Explore

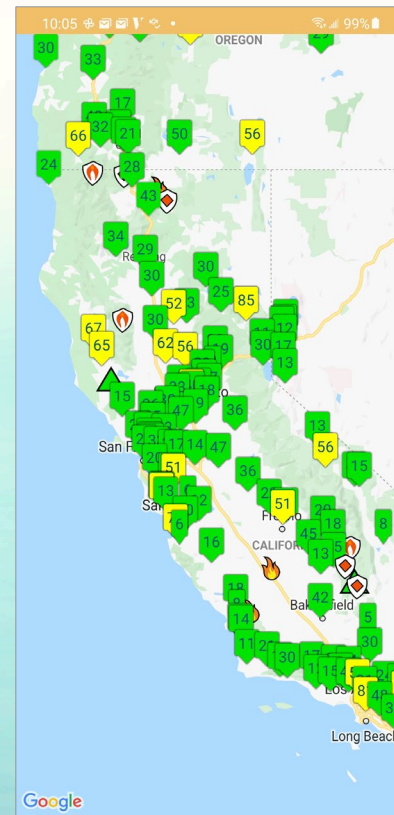
- Fires
- Embassies and Consulates
- Archived Dates
- Air Quality Webcams
- Air Quality Flag Program
- Sign up for Email Notifications

AirNow Fire and Smoke Map



Smoke Sense App

- Mobile App for iPhone or Android Platforms
- Provides current and forecasted local information about the AQI
- Participatory citizen-science app



Strategies to Reduce Smoke Exposure



Avoid Outdoor Activities

- Avoid exercising outdoors
- If AQI is unhealthy, consider eliminating outdoor activities altogether
- **Always follow evacuation orders. If you have to evacuate:**
 - Make sure to operate your vehicle with the windows rolled up
 - Set vehicle air conditioner to recirculate mode

Indoor Air Quality

Create a Cleaner Air Space

Choose a room that fits everyone and is comfy enough to spend time in.

Close windows and doors, but do not block exits.

Filter the air. Use a certified portable air cleaner and run continuously on the highest setting.

Avoid activities that create smoke or other particles indoors.

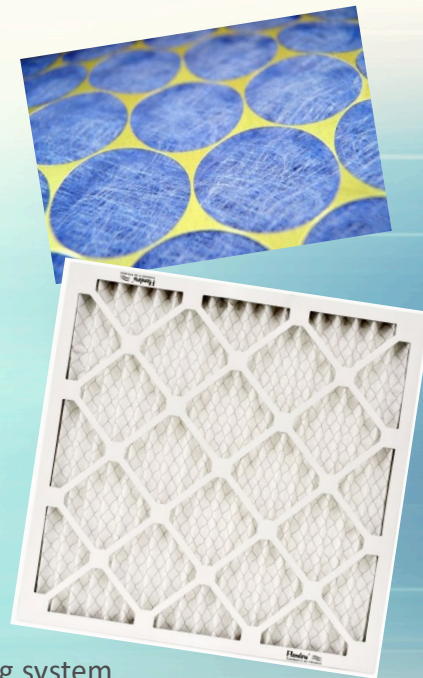
Stay cool. Run fans or AC on recirculate with a new filter.

Use a damp cloth or mop to trap settled dust and particles.



Filter Efficiency (MERV)

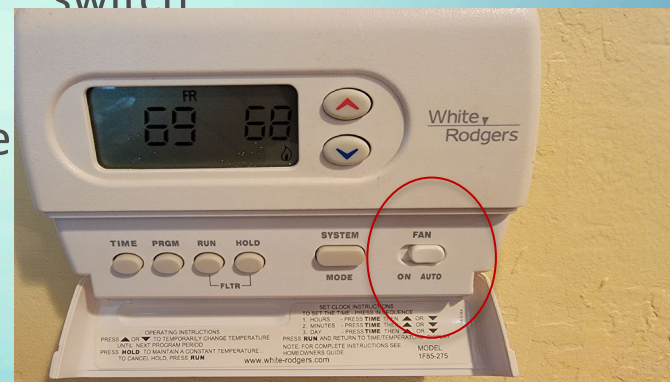
MERV Rating	Average Particle Size Removal Efficiency (%)		
	Particle Size (μm)		
	0.3–1.0	1.0–3.0	3.0–10.0
Low (1–4)	n/a	n/a	<20
Medium (5–8)	n/a	>20 ⁺	20 to >70
Medium (9–12)	20 to >35 ⁺⁺	35 to >80	75 to >90
High (13–16) *	50 to >95	>85	>90
HEPA (17–20)	≥ 99.97		



*Check with your HVAC company or local contractor to make sure your existing system can handle an upgraded filter

Central Air System Filtration

- Use high efficiency filters (MERV 13 or higher)
 - Mount at ceiling return or base of air handling unit
 - Replace dirty filters as needed
- Only provides filtration while heating or cooling is needed
 - For continuous airflow through filters, switch from “auto” to “on” position
 - Running fan continuously will use more energy



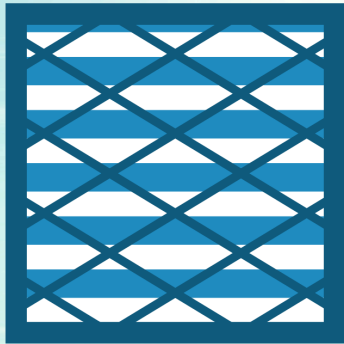
Use Portable Air Cleaners

- Can be operated continuously, and moved from room to room
- Mechanical
 - Fibrous filter - typically will be HEPA level
- Electronic
 - Electrostatic precipitator, UVGI, PCO
- Avoid ozone-generating devices (see list of [CARB-certified devices](#))
- Effective for creating a cleaner air room or space. Refer to [CADR](#) for proper size



DIY Temporary/Improvised Air Purifier

Materials



20 x 20" air filter
(MERV rating 13 or higher)



20 x 20" box fan



Duct tape

Assembly

Duct tape the air filter to the back of the box fan.

Check the filter for the direction of the air flow (marked on the sides of the filter).

Wear a Respirator

- N-95 will provide much better protection from smoke than cloth
- Look for NIOSH-approved N-95
- KN-95 is probably effective but not NIOSH-approved
- A good fit is important for proper filtration
- Dispose of dirty or old respirators



CARB Resources

- Protecting Yourself from Smoke - [webpage](#)
- CARB on Twitter
 - [@AirResources](#)
 - [@CARBespanol](#)

Protect Yourself from Smoke

- Check air quality
- Close windows & doors
- Run AC on recirculate with a new filter
- Use a CARB-certified air cleaner
- Avoid vacuuming, frying food or using gas-powered appliances
- Wear a mask indoors if needed

Wildfire Smoke's Biggest Health Concern

PM10
≤ 10 μm

HUMAN HAIR
50-70 μm

PM2.5
≤ 2.5 μm

Particulate Matter (PM)

Particulate matter is the principal pollutant of concern from wildfire smoke for the relatively short-term exposures (hours to weeks) typically experienced by the public.

Particles from smoke tend to be very small (2.5 microns or less in diameter), and can be inhaled into the deepest recesses of the lung. The association between PM2.5 and heart and lung health effects is well documented in scientific literature.

Be Ready for Wildfires

- Radio/Television**
Tune into local radio or television stations for information and instructions from local officials. IF ADVISED, EVACUATE IMMEDIATELY.
- Flame/Smoke**
Listen and watch for air quality reports and health warnings. Smoke can hurt eyes, irritate lungs and worsen chronic heart and lung disease.
- Windows/Vents**
Close all windows, doors, vents, and blinds before evacuating.
- Escape Route**
Have several planned escape routes – by car and by foot.
- Smoke Detector**
Install a dual-sensor smoke alarm on each level of your home. Test monthly. Change the batteries at least once each year.
- Go-kit**
Have a disaster supply kit ready to take with you for every member of your household, including pets.

Resources

Air Quality and Preparing For Wildfires

- <https://fire.airnow.gov/>
- <https://ww2.arb.ca.gov/protecting-yourself-wildfire-smoke>
- <https://www.epa.gov/air-research/smoke-sense-study-citizen-science-project-using-mobile-app>
- <https://www.readyforwildfire.org/>
- <https://www.cdph.ca.gov/Programs/EPO/Pages/Wildfire%20Pages/Wildfires--.aspx>
- [Fire Response and Recovery | CalEPA](#)

Resources (Cont.)

Portable Air Cleaners and Filtration

- <https://ww2.arb.ca.gov/list-carb-certified-air-cleaning-devices>
- https://www.epa.gov/sites/production/files/2018-07/documents/guide_to_air_cleaners_in_the_home_2nd_edition.pdf
- https://www.airnow.gov/sites/default/files/2020-10/indoor-air-filtration-factsheet_1.pdf
- <https://www.ahamdir.com/room-air-cleaners/>
- [How to Make a DIY Air Purifier – YouTube](#)

Respirators

- https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html
- <https://www.airnow.gov/sites/default/files/2020-02/the-right-respirator-and%20proper-fit-508.pdf>



Thank You

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