

Update on Communicating Health Risk of Wildfire Smoke

EPA and Interagency National Efforts

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2019 Smoke Management in the Northwest
Seattle, WA
May 30, 2019

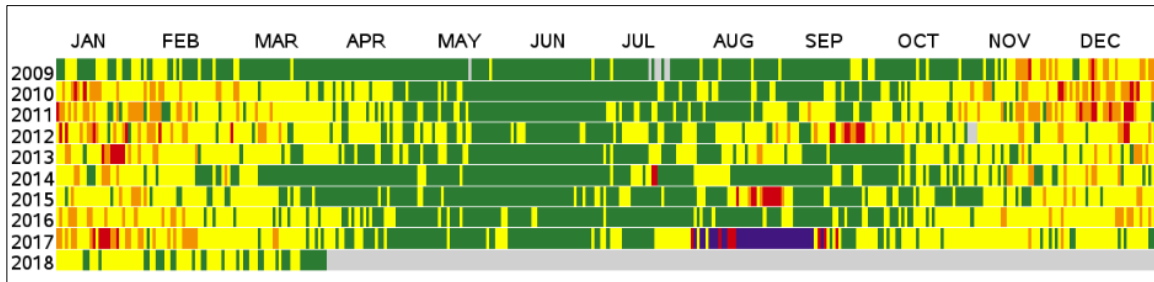


Introduction

- Air Quality Index
- AirNow
- EPA tools available on AirNow
- Wildfire Smoke: Guide for Public Health Officials
- Preparedness

Air Quality Index - Linking Air Quality and Health

- EPA's color-coded tool for communicating air quality and health information to the public
 - Nationally uniform – used by federal/state/tribal/local agencies
 - Used for all FRM/FEM monitors
 - Updated to reflect the latest standards and science
- The daily Air Quality Index (AQI) for fine particle pollution is a 24-hour index
- AQI is used for
 - Next-day forecasting
 - Current air quality (NowCast)
- Daily AQI reports for particle pollution show previous day's air quality



The Air Quality Index	
Index Values	AQI Category
0 - 50	Good
51 - 100	Moderate
101 – 150	Unhealthy for Sensitive Groups
151 – 200	Unhealthy
201 – 300	Very Unhealthy
301 – 500	Hazardous

PM2.5 Daily AQI Values 2009-2018, Missoula Co, MT
Data Viz (www.airnow.gov)

Air Quality Index

- Pollutant-specific health effects and cautionary statements address question “who will be affected”
- Based on health information supporting the NAAQS – uses health relevant averaging periods
 - Controlled human exposure, epidemiological studies exposure/risk assessments used to set breakpoints
 - Epidemiological studies useful for identifying risk factors and more serious effects
 - Controlled human exposure studies useful for identifying proportion of healthy population affected, symptoms, mechanisms of effects, genetic variability

How to use the AQI to lower the dose of inhaled pollution when air quality is poor:

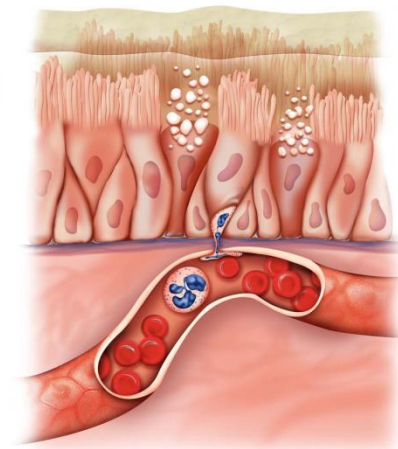
Dose = Concentration x Ventilation rate x Time

C - be active outdoors when air quality is better

V - take it easier when active outdoors

T - spend less time being active outdoors

Since people respond differently - PAY ATTENTION TO SYMPTOMS!



AirNow and Fires: Current Conditions

The screenshot shows the AirNow website interface. At the top, there's a search bar for 'Local Air Quality Conditions' with fields for 'Zip Code' and 'State' (set to Alabama). Below this, a navigation bar includes links for 'Forecast', 'Current AQI', 'AQI Loop', and 'More Maps'. The main content area features a map of the United States titled 'Today's AQI Forecast' for Monday, April 25, 2016. The map shows varying levels of air quality, with yellow indicating 'Unhealthy for Sensitive Groups' and orange indicating 'Unhealthy'. A red circle highlights a link labeled 'Fires: Current Conditions' in the top right corner of the main content area. Below the map, there's a section for 'Highest 5:' with a table of locations and their current AQI values. To the right of the map, there are sections for 'Announcements', 'Air Quality Basics', and 'Health Learning Center'. At the bottom right, there's a 'Popular Links' section with icons for various services like Apps, Facebook, Webcams, Videos, AirNow on Google Earth, EnviroFlash Email, Widgets, RSS, Twitter, and Developer Tools.

Local Air Quality Conditions
Zip Code: Go State: Go

Fires: Current Conditions
[Click to see map](#)

Today's AQI Forecast
Monday, April 25, 2016

Highest 5:
[About the Highest 5](#)

Today's Forecasts	Tomorrow's Forecasts	Current AQI
Yuma, AZ		130
Imperial Valley, CA		123
Coachella Vly, CA		101
Nipomo, CA		98
Cincinnati, OH		95

Announcements
4/14/16: The Air Quality Flag Program [Spring Challenge](#) starts tomorrow, April 15 and ends May 15.
3/9/16: NEW: [Spanish-language website](#) for Air Quality Flag Program - NUEVO: [En español—El sitio web](#) del programa de banderines sobre la calidad del aire
[more announcements](#)

Air Quality Basics
[Air Quality Index](#) | [Ozone](#) | [Particle Pollution](#) | [Smoke from fires](#) | [What You Can Do](#)

Health Learning Center

Popular Links
Apps | EnviroFlash Email | Facebook | Widgets | Webcams | RSS | Videos | Twitter | AirNow on Google Earth | Developer Tools

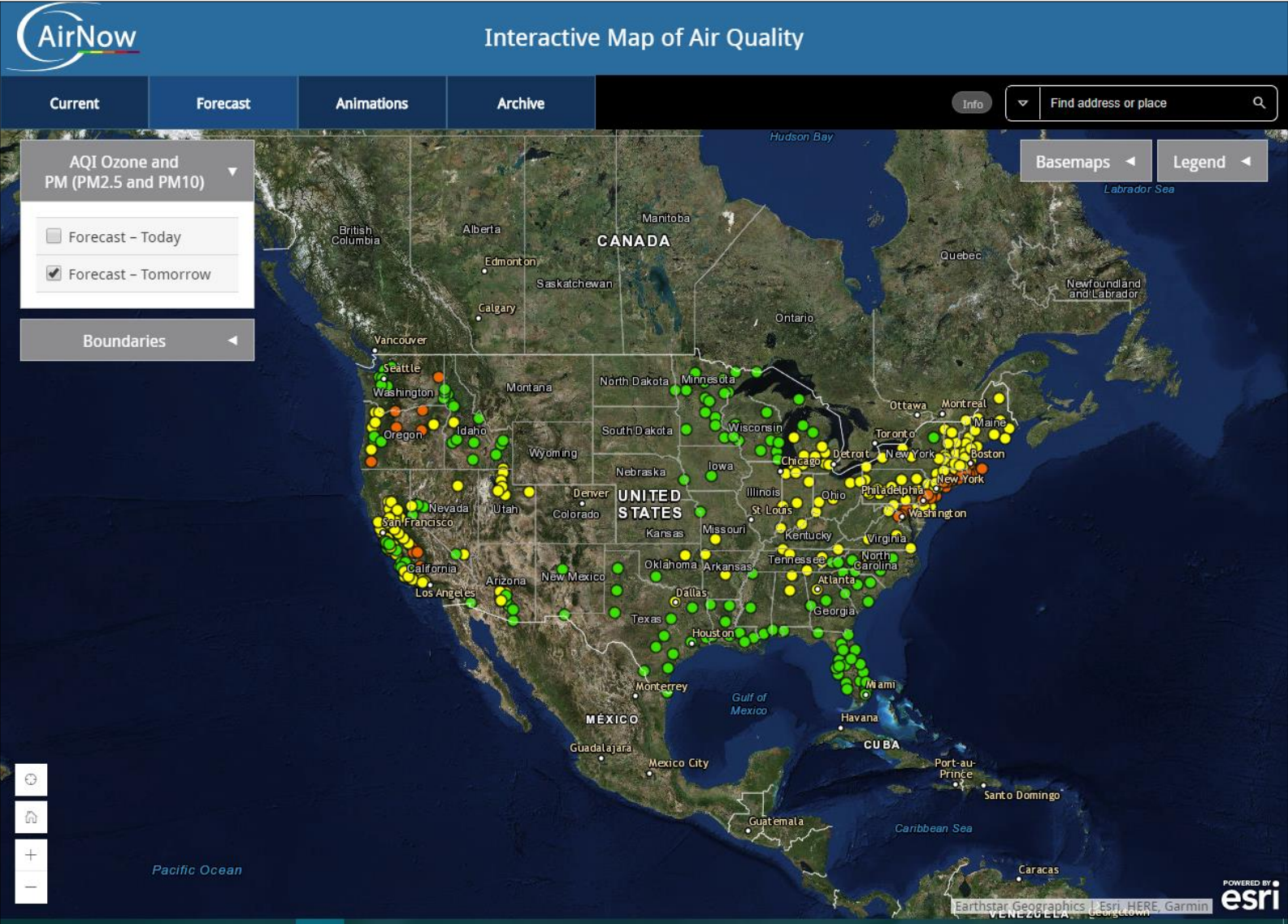
AirNow – Coming Soon – Again!

- Mobile-friendly website
- Front page provides real-time and forecast AQI, map and box plot of hourly AQI values
- To reduce smoke exposure, knowing the smoke forecast, current air quality, and spatial and temporal patterns of smoke is important

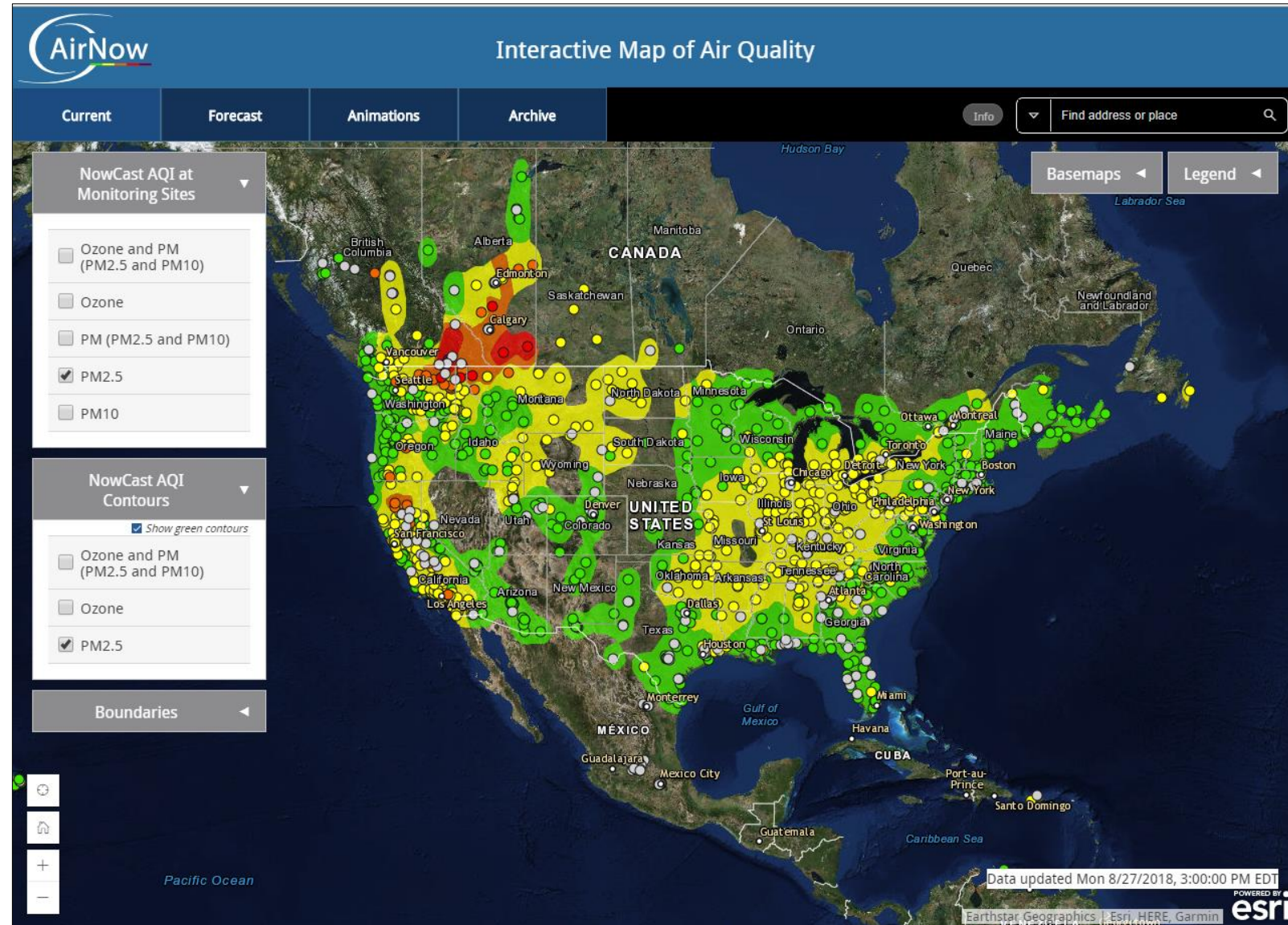
www.airnow.gov , 5/09/19



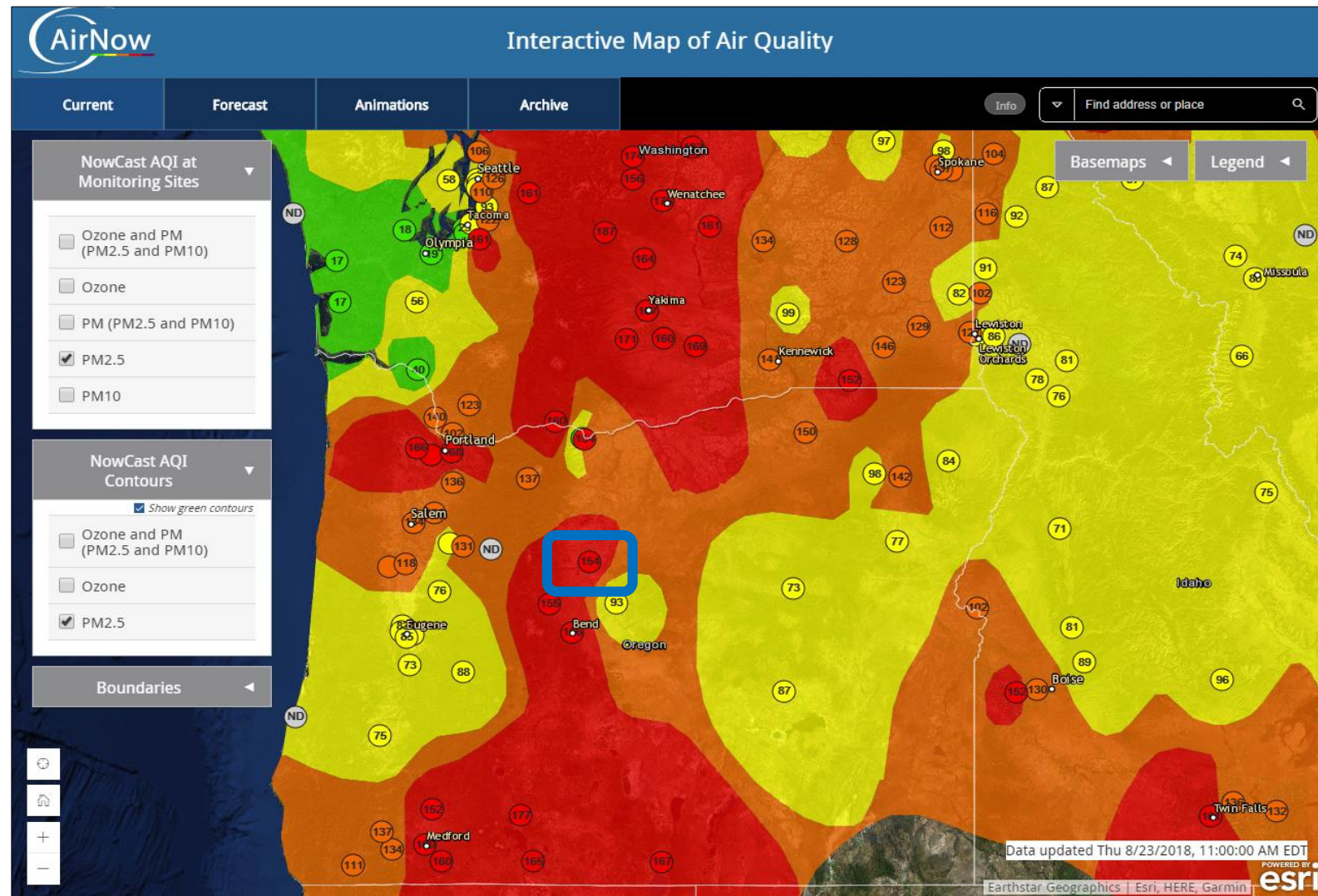
Forecast AQI



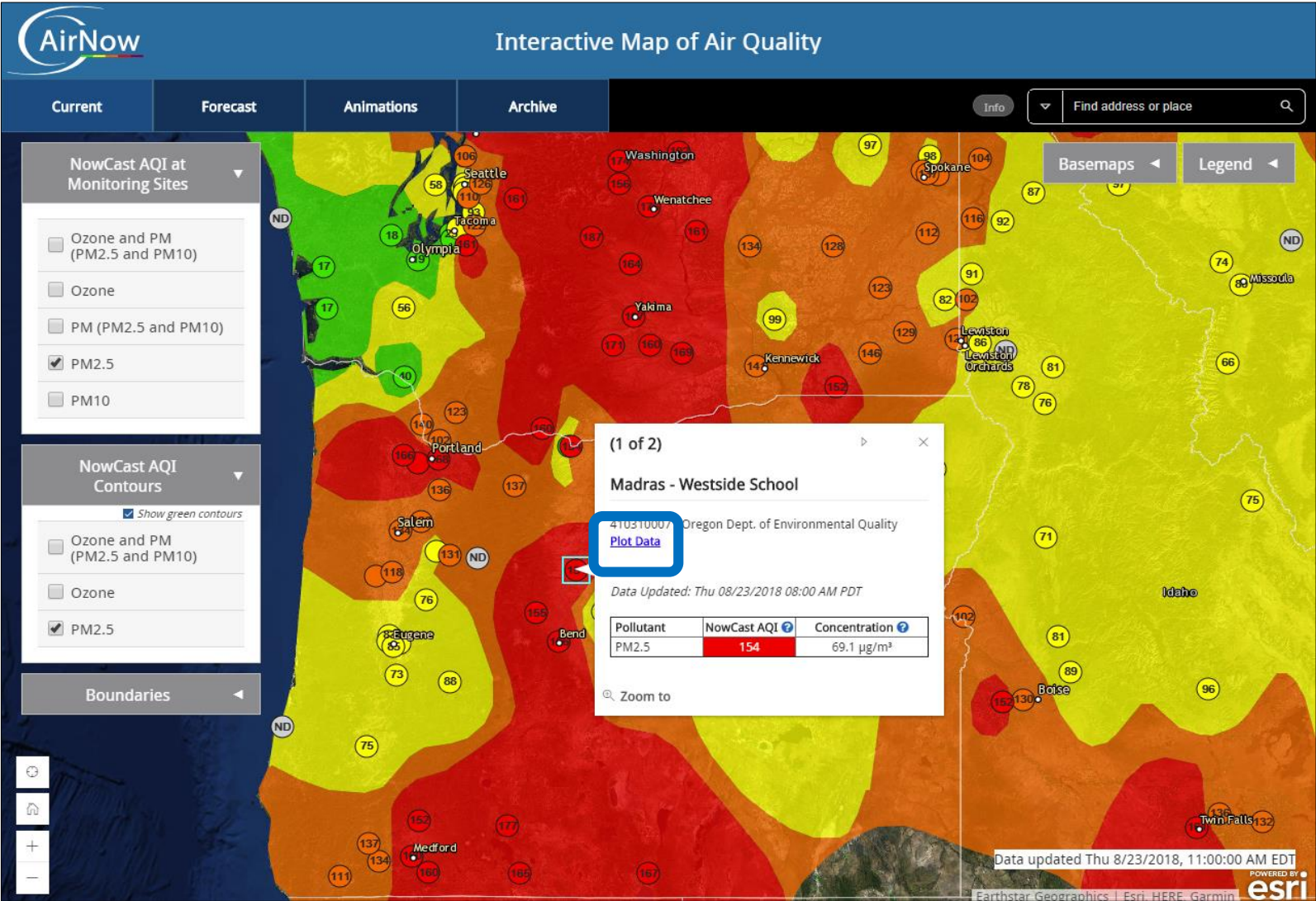
Real-time AQI



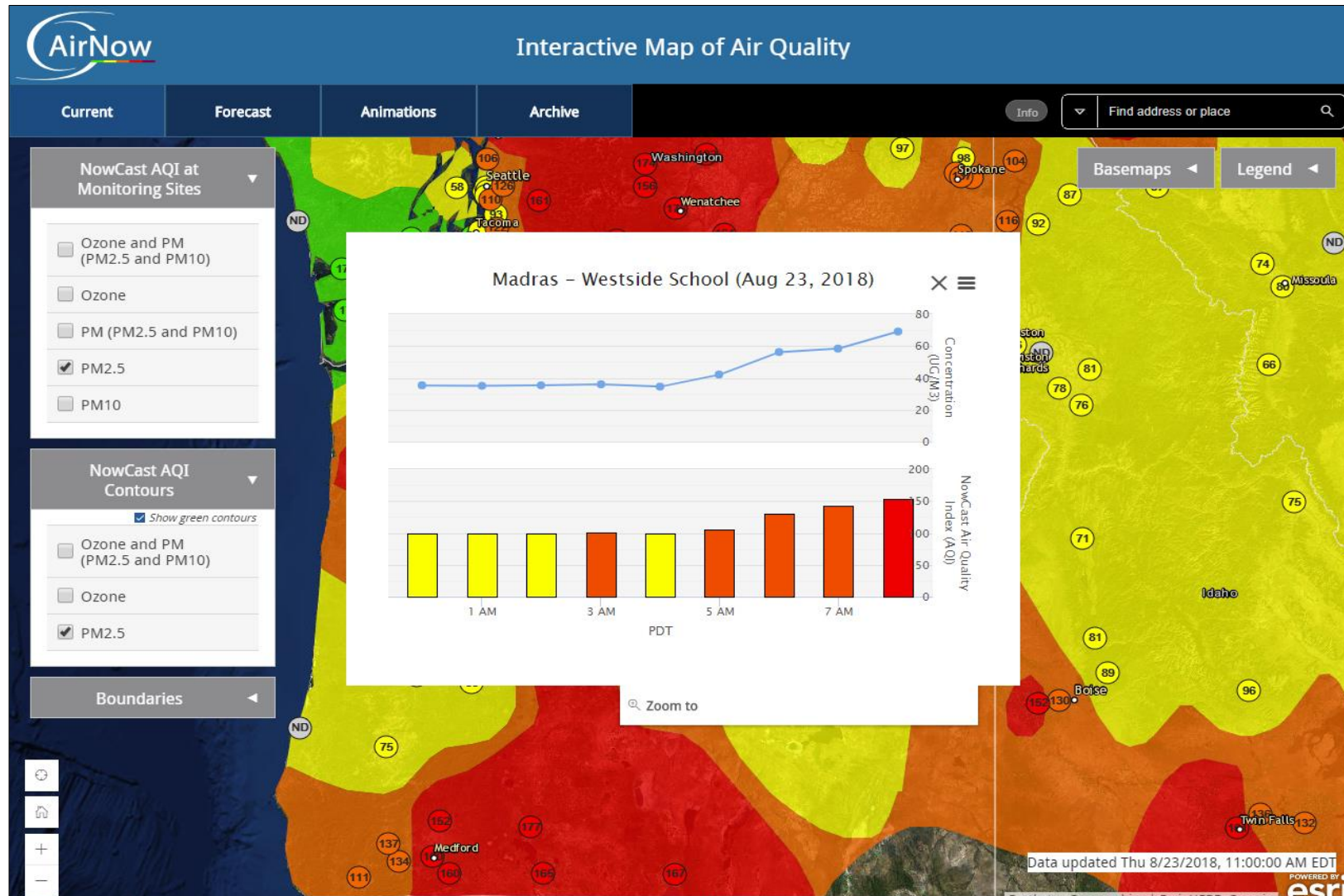
Interactive Map – Spatial Resolution



Interactive Map – Spatial Resolution

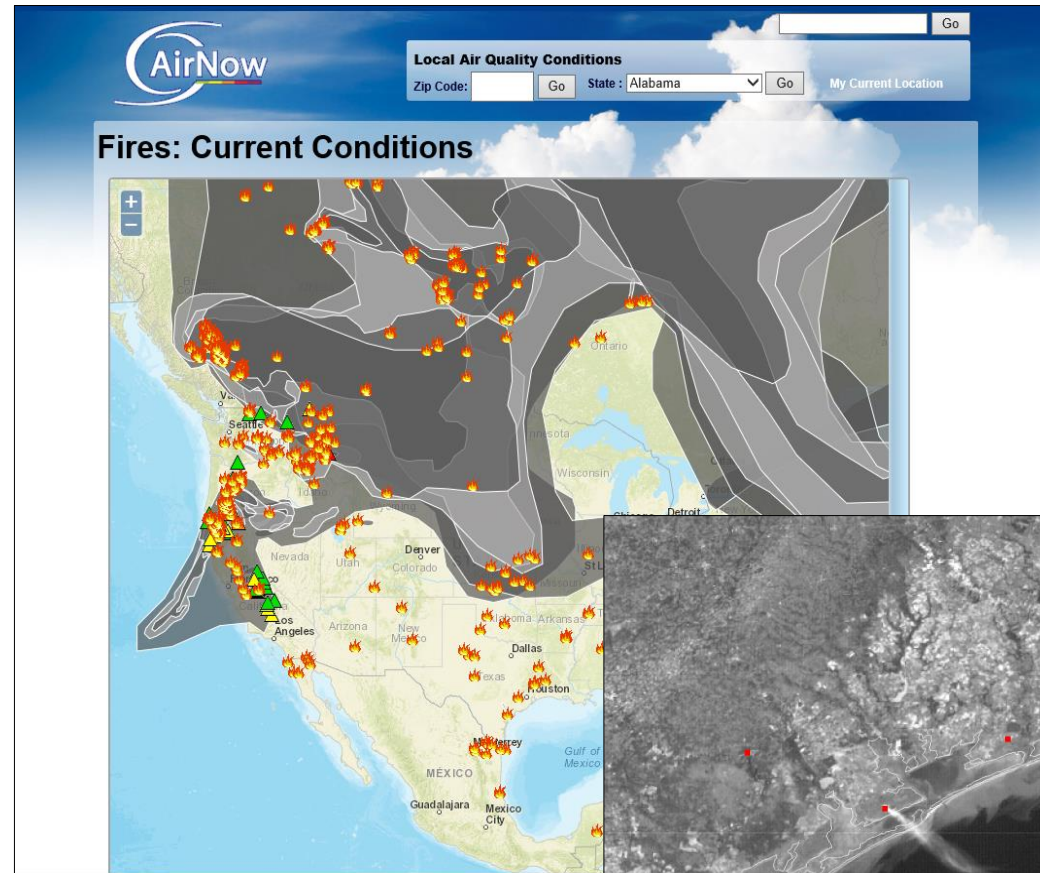


Interactive Map – Spatial and Temporal Resolution

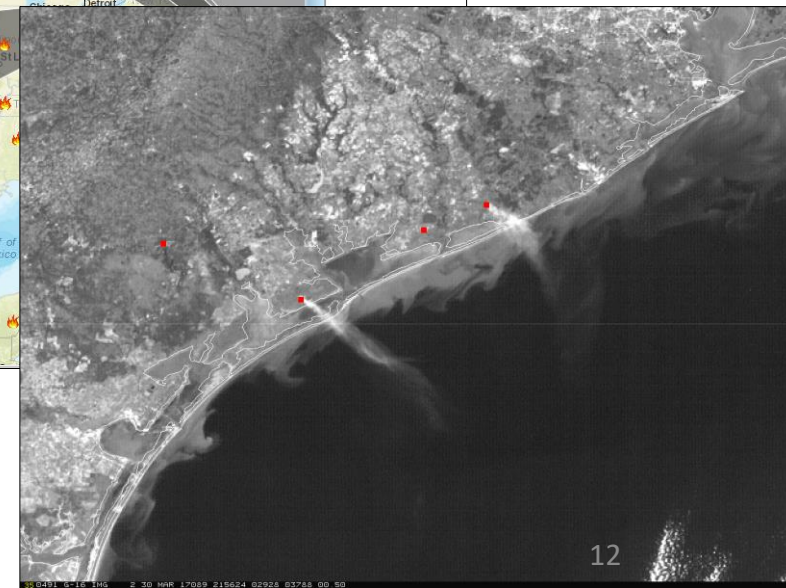


Fires Current Conditions Map

- Map shows fire locations and smoke plumes
- Map generated by NOAA Hazard Mapping System (HMS)
- Map updated about 5 times a day
- GOES-16 provides higher resolution images to detect smoke from most fires
- Satellite imagery may also identify other potential air quality concerns



8/18/17



How Smoke from Fires Can Affect Your Health

- New document - currently html only
- May develop pdf version for distribution



Local Air Quality Conditions

Zip Code: Go State: Alabama Go My Current Location

How Smoke from Fires Can Affect Your Health

Updated January 2017

Smoke may smell good, but it's not good for you

While not everyone has the same sensitivity to wildfire smoke, it's still a good idea to avoid breathing smoke if you can help it. And when smoke is heavy, such as can occur in close proximity to a wildfire, it's bad for everyone.

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles. These microscopic particles can penetrate deep into your lungs. They can cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particle pollution is even linked to premature death.

Some people are more at risk

It's especially important for you to pay attention to local air quality reports during a fire if you are

- a person with heart or lung disease, such as heart failure, angina, ischemic heart disease, chronic obstructive pulmonary disease, emphysema or asthma.
- an older adult, which makes you more likely to have heart or lung disease than younger people.
- caring for children, including teenagers, because their respiratory systems are still developing, they breathe more air (and air pollution) per pound of body weight than adults, they're more likely to be active outdoors, and they're more likely to have asthma.
- a person with diabetes, because you are more likely to have underlying cardiovascular disease.
- a pregnant woman, because there could be potential health effects for both you and the developing fetus.

How to tell if smoke is affecting you

High concentrations of smoke can trigger a range of symptoms.

- Anyone may experience burning eyes, a runny nose, cough, phlegm, wheezing and difficulty breathing.
- If you have heart or lung disease, smoke may make your symptoms worse.
 - People with heart disease might experience chest pain, palpitations, shortness of breath, or fatigue.
 - People with lung disease may not be able to breathe as deeply or as vigorously as usual, and may experience symptoms such as coughing, phlegm, chest discomfort, wheezing and shortness of breath.

Protect yourself!

It's important to limit your exposure to smoke - especially if you are at increased risk for particle-related effects. Here are some steps you can take to protect your health:

Prepare for fire season if you live in a fire-prone area

If you have heart, vascular or lung disease, including asthma, talk with your health care provider before fire season to make plans. Discuss when to leave the area, how much medicine to have on hand, and your asthma action plan if you have asthma.

Have a several-day supply of nonperishable foods that do not require cooking.
Cooking - especially frying and broiling - can add to indoor pollution levels.

Consider buying an air cleaner. Some room [air cleaners](#) can help reduce particle levels indoors, as long as they are the right type and size for your rooms as specified by the manufacturer. If you choose to buy an air cleaner, don't wait until there's a fire - make that decision beforehand. Note: Don't use an air cleaner that [generates ozone](#). That just puts more pollution in your home.

Have a supply of N-95 or P-100 masks on hand, and [learn how to use them correctly](#). If no [NIOSH](#) [NIOSH](#) [NIOSH](#) They are sold at many hardware and home repair stores and online.

During a fire

Pay attention to local air quality reports. As smoke gets worse, the concentration of particles in the air increases - and so should the steps you take to protect yourself. [Air](#)



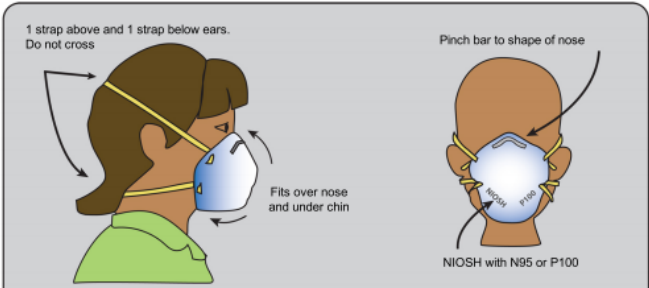
<https://airnow.gov/index.cfm?action=smoke.index>

Infographics

EPA The right respirator* and proper fit can reduce your exposure to wildfire smoke.

Cloth (wet or dry), paper masks, and tissues will **NOT** filter out wildfire smoke. Look for respirators (masks) marked NIOSH with N95 or P100. They can be found online, or in hardware, home repair, or drugstores.

* Respirators are not designed to fit children. Facial hair prevents proper fit and reduces effectiveness.



Respirator should collapse as you breathe in and not let air in from the sides.

Ask your doctor before using if you have heart or lung health issues.	Throw mask away if it's dirty or you find it difficult to breathe.	If you are dizzy or nauseous, go to where there is less smoke and seek medical attention.
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Use a respirator only after first trying other, more effective methods to avoid smoke. That includes staying indoors and reducing activity. When possible, people at risk should move away from the smoke area.


airnow.gov

EPA Reduce health risks in areas with wildfire smoke:

Follow these tips, especially if someone in your family (including you!) has heart or breathing problems, is an older adult or child, or is pregnant.

DO

- Stay inside
- Pay attention to local advisories and check air quality (airnow.gov)
- Set car A/C on recirculate (to keep smoke out)
- Keep a supply of medicine and non-perishable food
- Use a well-fitted N95 or P100 respirator if you go outside when it is smoky
- Prepare to evacuate if smoke levels get too high




KEEP AIR CLEAN

Close windows and doors. Close fresh intake on A/C units. If your home is too warm, try to stay with friends or relatives.	Use a portable air cleaner with HEPA filters properly sized for a specific room.
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DON'T

- ✗ Play or exercise outdoors
- ✗ Fry or broil foods, which can add particles to indoor air
- ✗ Use a fireplace, gas logs or gas stove
- ✗ Smoke indoors
- ✗ Vacuum, it can stir up dust






airnow.gov

https://www3.epa.gov/airnow/smoke_fires/the-right-respirator-and%20proper-fit-508.pdf

<https://airnowtest.epa.gov/sites/default/files/2018-06/reduce-health-risks-with-wildfire-smoke-508.pdf>

Downloadable Factsheets for People with Heart or Lung Disease

In English and Spanish



ASTHMA AND OUTDOOR AIR POLLUTION

1 Air pollution can make asthma symptoms worse and trigger attacks.

If you or your child has asthma, have you ever noticed symptoms get worse when the air is polluted? Air pollution can make it harder to breathe. It can also cause other symptoms, like coughing, wheezing, chest discomfort, and a burning feeling in the lungs.

Two key air pollutants can affect asthma. One is *ozone* (found in smog). The other is *particle pollution* (found in haze, smoke, and dust). When ozone and particle pollution are in the air, adults and children with asthma are more likely to have symptoms.

2 You can take steps to help protect your health from air pollution.

► **Get to know how sensitive you are to air pollution.**

- Notice your asthma symptoms when you are physically active. Do they happen more often when the air is more polluted? If so, you may be sensitive to air pollution.




- Also notice any asthma symptoms that begin up to a day *after* you have been outdoors in polluted air. Air pollution can make you more sensitive to asthma triggers, like mold and dust mites. If you are more sensitive than usual to indoor asthma triggers, it could be due to air pollution outdoors.

► **Know when and where air pollution may be bad.**

- Ozone is often worst on hot summer days, especially in the afternoons and early evenings.
- Particle pollution can be bad any time of year, even in winter. It can be especially bad when the weather is calm, allowing air pollution to build up. Particle levels can also be high:
 - Near busy roads, during rush hour, and around factories.
 - When there is smoke in the air from wood stoves, fireplaces, or burning vegetation.

Asthma

<https://www3.epa.gov/airnow/asthma-flyer.pdf>



Heart Disease, Stroke, and Outdoor Air Pollution

1 Did you know that air pollution can trigger heart attacks, stroke, and other health effects?

Medical studies show that air pollution can trigger heart attacks, stroke, and irregular heart rhythms—especially in people who are already at risk for these conditions. Also, for people with a medical condition called heart failure, air pollution can further reduce the ability of the heart to pump blood the way that it should. Very small particles are the pollutants of greatest concern for triggering these effects. Particle pollution is found in haze, smoke, and dust—and sometimes in air that looks clean. This fact sheet tells you how you can:

- Get up-to-date information about your local air quality.
- Protect your health when particle pollution is at unhealthy levels.

2 Are you at higher risk?

Older adults and people with risk factors for heart disease or stroke may be at greater risk. You are at greater risk if you:

- Have had a heart attack, angina, bypass surgery, angioplasty with or without a stent, a stroke, blockages in the neck or leg arteries, heart failure, heart rhythm problems, diabetes, or chronic obstructive lung disease.

You may be at greater risk of heart disease or stroke (and therefore at greater risk from particle pollution) if any of these apply:

- You are a man 45 years or older, or a woman 55 years or older.
- You have a family history of stroke or early heart disease (father or brother diagnosed before age 55; mother or sister diagnosed before age 65).
- You have high blood pressure or high blood cholesterol.
- You are overweight or not physically active.
- You smoke cigarettes.

3 How can you protect your health?

Regular exercise is important for staying healthy, especially if you have heart disease. By adjusting when and where you exercise, you can lead a healthier lifestyle and help reduce your risk of heart problems or stroke triggered by air pollution. In addition:

- If you have heart disease or have experienced a stroke, check with your health care provider about the best ways to protect your health when the air quality is unhealthy.
- If you're at risk of heart disease or stroke and plan to exercise more than usual, discuss this with your health care provider.

► **Know when and where particle pollution levels may be unhealthy.**

Particle pollution levels can be high any time of year. Particle levels can also be high:

- Near busy roads, in urban areas (especially during rush hour), and in industrial areas.
- When there is smoke in the air from wood stoves, fireplaces, burning vegetation, or forest fires.

Cardiovascular Disease

<https://www3.epa.gov/airnow/heartflyer.pdf>






School Activity Guidelines

- Developed with Centers for Disease Control and Prevention (CDC)
- Slightly revised version will be released in 2019
- Will reflect difference in use of forecast and current air quality
- New language will recommend being precautionary with outdoor activities during smoke events

<https://www3.epa.gov/airnow/flag/school-chart-2014.pdf>

Air Quality and Outdoor Activity Guidance for Schools

Regular physical activity — at least 60 minutes each day — promotes health and fitness. The table below shows when and how to modify outdoor physical activity based on the Air Quality Index. This guidance can help protect the health of all children, including teenagers, who are more sensitive than adults to air pollution. Check the air quality daily at www.airnow.gov.

Air Quality Index	Outdoor Activity Guidance
 green GOOD	Great day to be active outside!
 yellow MODERATE	Good day to be active outside! Students who are unusually sensitive to air pollution could have symptoms.*
 orange UNHEALTHY FOR SENSITIVE GROUPS	It's OK to be active outside, especially for short activities such as recess and physical education (PE). For longer activities such as athletic practice, take more breaks and do less intense activities. Watch for symptoms and take action as needed.* Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy.
 red UNHEALTHY	For all outdoor activities , take more breaks and do less intense activities. Consider moving longer or more intense activities indoors or rescheduling them to another day or time. Watch for symptoms and take action as needed.* Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy.
 purple VERY UNHEALTHY	Move all activities indoors or reschedule them to another day.

* Watch for Symptoms

Air pollution can make asthma symptoms worse and trigger attacks. Symptoms of asthma include coughing, wheezing, difficulty breathing, and chest tightness. Even students who do not have asthma could experience these symptoms.

If symptoms occur:

The student might need to take a break, do a less intense activity, stop all activity, go indoors, or use quick-relief medicine as prescribed. If symptoms don't improve, get medical help.

Go for 60!


CDC recommends that children get 60 or more minutes of physical activity each day. www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm

Plan Ahead for Ozone

There is less ozone in the morning. On days when ozone is expected to be at unhealthy levels, plan outdoor activities in the morning.

Smoke-Ready Toolbox





<https://www.epa.gov/smoke-ready-toolbox-wildfires>



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Smoke-Ready Toolbox for Wildfires


Wildland fires produce air pollution that impacts people's health and other aspects of daily life. The increased frequency and intensity of wildfires in the United States are adversely affecting air quality and putting more people at a health risk from exposure to smoke. Public health officials and others can use the resources in the Smoke Ready Toolbox to help educate the public about the risks of smoke exposure and actions people can take to protect their health.

Smoke & Your Health




- [AirNow](#)
- [Smoke Advisories](#)
- [Fires and Your Health](#)
- [Frequent Questions](#)
- [Smoke Sense App](#)
- [Prepare for Natural Disasters and Recovery](#)
- [Before, During, and After a Wildfire \(CDC.gov\)](#)

Current Fires




- [Current Fires](#)
- [Current Fire Incident Information System](#)
- [NOAA Smoke Forecast Tool](#)
- [NOAA's Fire Weather Outlook](#)
- [GEOMAC Wildland Fire Support](#)
- [MODIS Active Fire Mapping](#)
- [National Interagency Coordination Center](#)
- [National Interagency Fire Center](#)

Wildland Fire Publications, Fact Sheets, and Other Resources



- [Fact Sheets](#)
 - [Reduce Your Smoke Exposure](#)
 - [Protecting Children from Wildfire Smoke and Ash](#)
 - [Respiratory Protection](#)
 - [Protect Your Pets from Wildfire Smoke](#)
 - [Protect Your Large Animals and Livestock](#)
- [Wildfire Smoke Guide](#)
- [Infographic: Reduce Health Risks from Wildfire Smoke & How to Use a Respirator](#)

For Health Professionals



- [Online Training](#)
- [Wildfire Smoke Guide for Public Health Officials](#)

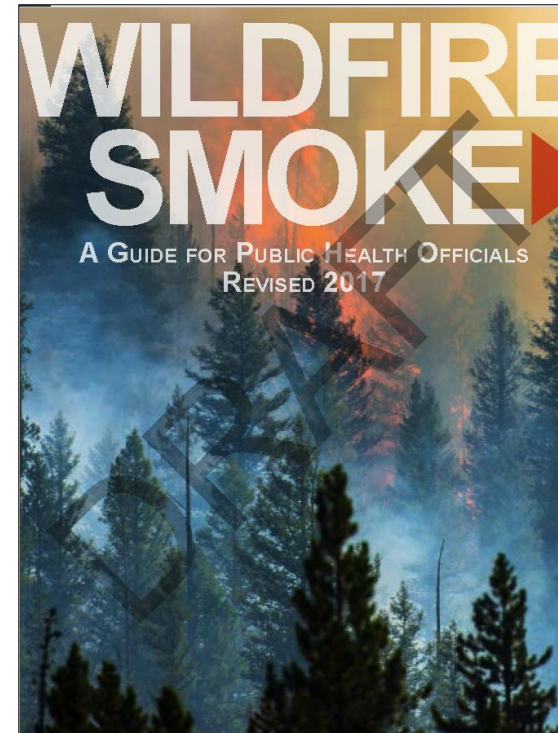
Featured Resources

New resource en español now available:

- [Caja de herramientas "Smoke Ready" \(Listo para el humo\) para incendios forestales](#)
- [Blog: Using the Smoke Sense App During the Camp fire in California](#)

2019 Wildfire Smoke: A Guide for Public Health Officials

- Multi-agency document
 - CA ARB, DPH, OEHHA; US CDC, EPA, FS
- Updated look/format
- Expanded sections
 - Preseason planning
 - Indoor air quality
 - Outdoor workers
 - Partnerships
 - New monitoring and air quality estimation technologies
 - After the fire clean-up
- Health effects section
 - Prolonged exposures
 - Heat and smoke
 - Ozone



Wildfire Guide Recommendations to Reduce Exposure

- Go indoors and keep activity levels low
- Close doors and windows; open windows when air quality is better
- Don't add to indoor particle levels
- Use high efficiency filters in central air system
- Use high efficiency portable air cleaner - HEPA indoor air filtration or electrostatic precipitator that does not generate ozone – that is appropriate (Clean Air Delivery Rate) for space it is intended to clean
- Create a clean room
- Use cleaner air spaces, if available
- Evacuate to a cleaner air shelter or out of the area

Observed Challenges to Reducing Smoke Exposures

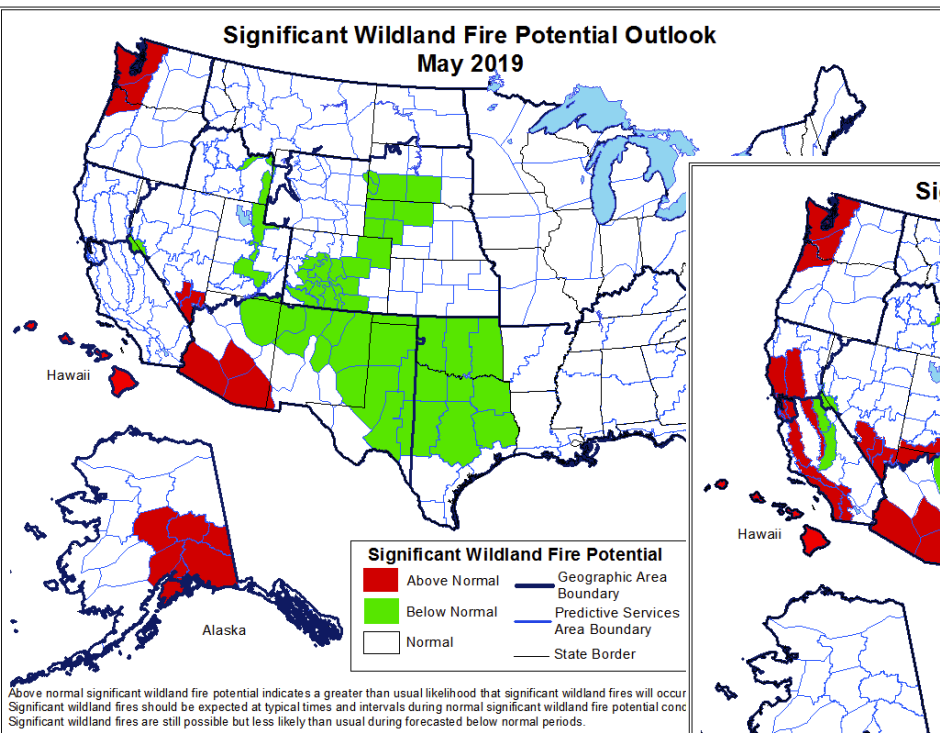
- High temperatures/no air conditioning
- Cold temperatures/home heating that generates indoor particles
- Lack of outdoor air quality information – current and forecast air quality
- Central air system not designed for use with high efficiency filters
- No access to high efficiency portable air cleaners
- Inability or reluctance to go to shelter or evacuate
- Longer duration smoke events
- After the fire - smoke and ash exposure

Be Prepared to Reduce Smoke Exposure

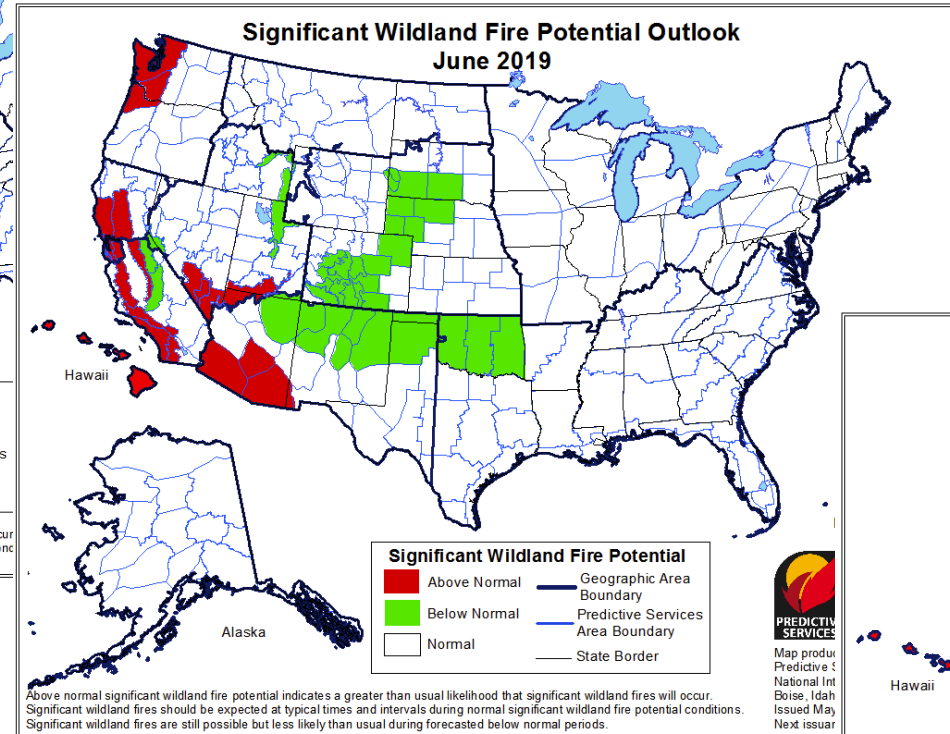
Preseason planning

- Risk awareness
- Communication plan
- Partnerships
- Indoor air quality
- Respirator use; eventually in children

National Interagency Fire Center (NIFC) Monthly Outlooks

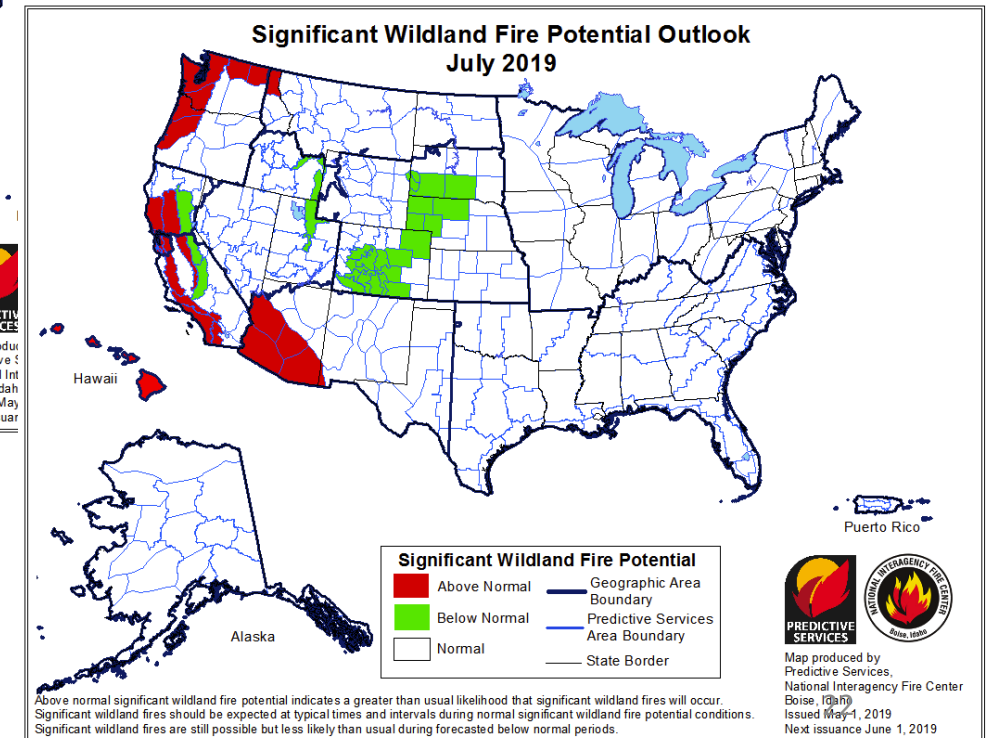


May 2019



June 2019

July 2019



Updated monthly, this is a very useful tool to help public health and environmental agencies be prepared.


<https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm>

Wildfire Guide Factsheets

- Prepare for Fire Season
 - Reduce Your Smoke Exposure
 - Indoor Air Filtration
 - Protect Your Lungs from Wildfire Smoke or Ash
 - Protecting Children from Wildfire Smoke and Ash
 - Protect Yourself from Ash
 - Protect Your Pets - New!
 - Protect Your Large Animals and Livestock - New!
- Almost ready:
- After the Fire
 - Spanish translations - some

WILDFIRE SMOKE FACTSHEET

Protect Your Lungs from Wildfire Smoke or Ash




Wildfire smoke and ash can irritate your eyes, nose, throat, and lungs. They can make you cough or wheeze, and can make it hard to breathe. A respirator is a device that covers your mouth, fits tightly to your face, and can filter out smoke or ash. Respirators are not sized for children.

Protecting Your Health
The most effective way to protect yourself during wildfire emergencies is to stay indoors or limit your time outdoors when there is smoke in the air. This is especially important if you have heart or lung disease and are at higher risk for adverse health effects. Reducing physical activity and using HEPA-filtered air cleaners indoors are other ways to reduce your smoke exposure. Consider temporary relocation out of the smoky area if possible. By limiting your

WILDFIRE SMOKE FACTSHEET

Indoor Air Filtration




When wildfire smoke gets inside your home it can make your indoor air unhealthy, but there are steps you can take to protect your health and improve the air quality in your home. Reducing indoor sources of pollution is a major step toward lowering the concentrations of particles indoors. For example, avoid burning candles, incense, and avoid using a gas or wood-burning stove or fireplace.

HEPA (High Efficiency Particulate Air) filters are the most effective for filtering your home's indoor air to protect your health. HEPA filters can reduce indoor particles by as much as 95 percent. Filters with a High Efficiency Particulate Air (HEPA) rating, (or MERV 17-20) are the most efficient. You may need to consult with a local heating and air technician or the manufacturer of your central air system to confirm which (or if) high efficiency filters will work with your system. If you can't switch to a more efficient filter, running the system continuously by switching the thermostat

WILDFIRE SMOKE FACTSHEET


Reduce Your Smoke Exposure



When wildfires create smoky conditions, there are things you can do, indoors and out, to reduce your exposure to smoke. Reducing exposure is important for everyone's health — especially for older adults, and people with heart or lung disease.

Reduce smoke exposure indoors


- **Stay inside** with the doors and windows closed. Whether you have a central air conditioning system or a room unit, use high efficiency filters to capture fine particles from smoke. Ask an air conditioning professional what type of high efficiency filter your air conditioner can accept.
- **Seek shelter elsewhere** if you do not have an air conditioner and it is too warm to stay inside with the windows closed.
- **Do not add to indoor air pollution.** Do not burn candles or use gas, propane, wood-burning stoves, fireplaces, or aerosol sprays. Do not fry or broil meat, smoke tobacco products, or vacuum. All of these can increase indoor air pollution.
- **Use a portable air cleaner** to reduce indoor air pollution. Make sure it is sized for the room and that it does not make ozone, which is a harmful air pollutant. Portable air cleaners can be used along with efficient central air systems with efficient filters to maximize the reduction of indoor particles.
- **Create a "clean room"** in your home. Choose a room with few windows and doors. Buy a portable air cleaner you can use in this room. **Never** use an ozone-generating air cleaner.
- **Have a supply of N95 respirators.** They are sold at home improvement stores and online.
- **Long-term smoke events** usually last several periods when the air is better. When quality improves, even temporarily, **leave your home** to reduce indoor air pollution.



Use a portable air cleaner to reduce indoor air pollution

WILDFIRE SMOKE FACTSHEET

Protecting Children from Wildfire Smoke and Ash



Background

- Children are especially at risk for health effects from exposure to wildfire smoke and ash, mostly because their lungs are still growing.
- Wildfire concerns include the fire itself, the smoke and ash, and the chemicals from materials that have burned, such as furniture.
- Smoke can travel hundreds of miles from the source of a fire. Pay attention to local air quality reports during fire season, even if no fire is nearby.

Health Effects from Wildfire Smoke and Ash

- Children who breathe in wildfire smoke and ash can have chest pain and tightness; trouble breathing; wheezing; coughing; nose, throat, and eye burning; dizziness; or other symptoms.
- Children with asthma, allergies, or chronic health issues may have more trouble breathing when smoke or ash is present.

Preparing for Wildfires


- Pay attention to local air quality reports. Stay alert to smoke-related news coverage and public health advisories.
- Look up your local **Air Quality Index (AQI)** on the **AirNow** (www.airnow.gov) web site.
- If **Enviroflash** is available for your area, sign up for air quality alerts. (<http://www.enviroflash.info/>).
- Create a "clean room" in your home. Choose a room with few windows and doors. Buy a portable air cleaner you can use in this room. **Never** use an ozone-generating air cleaner.
- Stock up on food, medicine and child care supplies before the threat of a wildfire.
- Remember that you may need to leave your home. Plan for it and prepare your children.

During Wildfires

- Continue to listen to local reports and public health warnings.
- Keep children indoors with the doors and windows closed. Use your "clean room". If you have an air conditioner, run it with the fresh-air intake **closed** to keep outdoor smoke from getting indoors. Use your portable air cleaner as well. Reduce health risks by avoiding strenuous activities.
- Keep the indoor air as clean as possible. Do **not** smoke. Do **not** use gas, propane, or wood-burning stoves, fireplaces, or candles. **Never** use ozone-generating air cleaners. **Never** use natural gas or gasoline-powered generators indoors. Do **not** use spray cans. Do **not** fry or broil meat. Do **not** vacuum. All of these can lead to poor air quality.
- A good time to open windows to air out the house and clean away dust indoors is once air quality improves (check AirNow for updates).
- Use common sense to guide your child's activity. If it looks or smells smoky outside, if local air quality is reported as poor, or if local officials are giving health warnings, wait until air quality improves before your family is active outdoors.

WILDFIRE SMOKE FACTSHEET

Prepare for Fire Season




Live in an area that is regularly affected by smoke or where the wildfire risk is high, take steps to prepare for fire season. Know how to get ready before a wildfire. Know how to protect yourself from exposure during a wildfire.


Prepare for fire season is especially important for the health of children, older adults, and people with heart or lung disease.

Before a Wildfire

- **Check up** so you don't have to go out when smoky. Have several days of medications on hand. Buy groceries that do not need to be refrigerated or cooked, because cooking adds to indoor particle levels.
- **Create a "clean room"** in your home. Choose a room with a few windows and doors as possible, such as a bedroom. Use a portable air cleaner and avoid indoor sources of pollution.
- **Use a portable air cleaner** before there is smoke event. High-efficiency particulate (HEPA) filter air cleaners, and electrostatic precipitators that do not produce ozone, can reduce indoor particle levels.
- **Understand** how you will receive alerts and health warnings, including air quality reports and public service announcements, from local officials.
- **If you have heart or lung disease**, check with your doctor about what you should do during smoke events.
- **If you have asthma or another lung disease**, update your respiratory management plan.
- **Have a supply of N95 masks** and learn how to use them. They are sold at many home improvement stores and online.
- **Organize** your important items ahead of time and know where to go in case you have to evacuate.



PM Web Course for Healthcare Professionals

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Particle Pollution and Your Patients' Health

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An evidence-based training course for healthcare providers that:

- Describes the biological mechanisms responsible for the cardiovascular and respiratory health effects associated with particle pollution exposure.
- Provides education tools to help patients understand how particle pollution exposure can affect their health and how they can use the Air Quality Index to protect their health.



This course is designed for family medicine physicians, internists, pediatricians, occupational and rehabilitation physicians, nurse practitioners, nurses, asthma educators, pulmonary specialists, cardiologists, and other medical professionals.

[Start the Course](#)

[Course developers](#)

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[Contact Us](#) to ask a question, provide feedback, or report a problem.

This web course offers CE credit for physicians, nurses, and health educators from CDC. The course and the following tools can be found at: https://airnow.gov/index.cfm?action=health_providers.index

What Is It? Who Is It For? Why Was It Created?

Particle Pollution and Your Patients' Health is an evidence-based training course that:

- Describes the biological mechanisms responsible for the cardiovascular and respiratory health effects associated with particle pollution exposure
- Helps health-care providers advise their patients about particle pollution exposure
- Provides practical education tools to help patients understand how particle pollution exposure can affect their health and how they can use the Air Quality Index to protect their health

Particle Pollution and Your Patients' Health is designed for family medicine physicians, internists, pediatricians, occupational and rehabilitation physicians, nurse practitioners, nurses, asthma educators, pulmonary specialists, cardiologists, and other medical professionals who counsel patients about lung, heart or vascular disease

Why? Very few people in at-risk groups reported that healthcare professionals had advised them to pay attention to the AQI. Also, people were much more likely to change outdoor activity levels if they were advised by a healthcare professional. (2005 BRFSS - Wen et al., 2009)

Offers Continuing Education Credits to physicians, nurses, health educators

- Continuing education for clinicians is required for continued licensure in many states

High Particle Pollution Events



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Particle Pollution and Your Patients' Health

Particulate Pollution Course Home

Learn About the Course

What is Particle Pollution?

Particle Pollution Exposure

Cardiovascular Effects

Respiratory Effects

Patient Exposure & the Air Quality Index

Patient Exposure & High Particle Pollution Events

Clinical Scenarios

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Course Outline & Key Points

Review Questions

Patient Education Tools

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References

Glossary

Patient Exposure and High Particle Pollution Events

On this page:

- [Introduction](#)
- [What steps can I advise for my patients who live in areas where fires are likely to occur?](#)
- [How can my patients use respirators to protect themselves from smoke?](#)

Consistent with Wildfire Smoke:
A Guide for Public Health Officials

Introduction

Ozone and the other common pollutants rarely reach very high levels each year, in many parts of the country, particle pollution levels reach ranges of the AQI. These events are usually associated with fires, wildfires, but on a smaller spatial and temporal scale high particle pollution events can be caused by other types of fires or combustion. Examples of these high particle pollution events include urban particles and residential wood burning in valleys during winter months. For reducing exposure to particle pollution, discussed below, are needed with some fires depending on hazards of the chemicals that are released.

Portions of the text in the following sections are adapted from the document "Wildfire Smoke: A Guide for Public Health Officials (May 2016)" which is designed to help local public health officials



Coming in 2019!! Short web course about smoke events by EPA and CDC. Will offer CE credits!!


PM Web Course Outreach Materials

Postcard and flyer

Free CME, CNE, and CEU
Training for healthcare professionals

Particle Pollution and Your Patients' Health Web Course

An extensive body of scientific evidence shows exposure to fine particle pollution may lead to a range of adverse health effects, including heart and lung effects, and even premature death. This course will provide health professionals with knowledge they can share with patients to help reduce overall risk of particle pollution-related health effects, particularly in individuals with heart and lung disease.



www.epa.gov/pmcourse

https://www.airnow.gov/index.cfm?action=health_providers.index



Particle Pollution and Your Patients' Health Web Course


Free evidence-based training for healthcare professionals

CNE CEU CME

www.epa.gov/pmcourse

Learn about the health risks of exposure to ambient particle pollution and how to reduce your patients' exposure using the Air Quality Index.

-  **Cardiovascular effects of particle pollution:** can cause a heart attack, irregular heartbeat, stroke, exacerbation of heart failure, and early death in people with heart disease.
-  **Respiratory effects of particle pollution:** can trigger an asthma attack, aggravate other lung diseases, and impact lung development in children.

 United States Environmental Protection Agency

Air Resource Advisor Smoke Outlooks

Smoke Outlook for Southern Oregon and Northern California Border for Saturday and Sunday Aug. 25-26, 2018



Smoke Outlook for 8/25 - 8/26
California-Oregon Border
Issued at: 2018-08-25 07:38 PDT

Outlook for California-Oregon Border

Special Statement

This air quality forecast predicts potential particulate matter levels, not ozone. Forecast is based on 24 hour average.

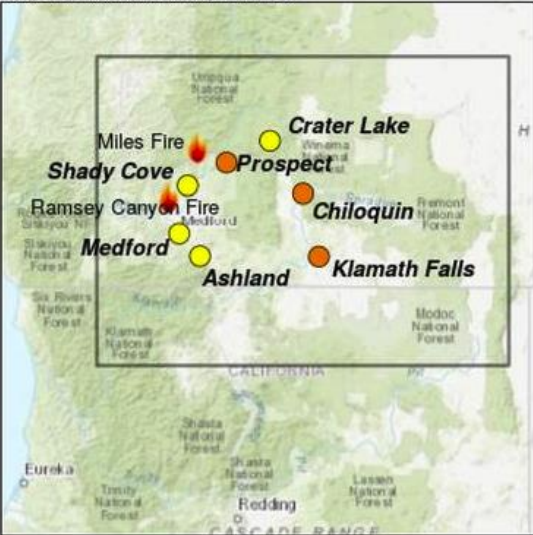
Fire

Miles and Columbus fires: 301 acres burned in the last 24 hours. Columbus is burning southern flank and Miles is burning north and northwest of the fire. The crew are working securing the fire perimeter. Ramsey Canyon fire is at 1,329 acres with 17% containment. The fire is burning tall grass, timber, and shrub and burning into 1994 fire scar. Watson Creek fire (not pictured on map) is burning 13 miles west of Paisley, OR. Watson Creek fire is at 46,525 acres with 10% containment. The crew are working on holding the line and conducting firing operation today.

Smoke

Air quality has improved significantly yesterday as the cooler temperature and gusty wind pushes the smoke out of the area. Northwest wind will continue today 5-12 mph with gusts up to 18 mph in some area. Watson Creek Fire will experience variable wind with westerly wind becoming north westerly by this evening then shifting to north easterly wind. Paisley will experience more smoke with west winds. Smoke conditions of varying densities are expected to continue for the next few days until the inversion breaks and gusty wind picks up pushing the smoke out.

Daily AQI Forecast for Aug 25, 2018



Station	Yesterday hourly			Fri 8/24	Comment for Today -- Sat, Aug 25	Forecast	
	6a	noon	6p			Sat 8/25	Sun 8/26
Ashland					Moderate smoke impact continues through Sunday.		
Medford					Moderate smoke impact continues through Sunday.		
Shady Cove					Air quality has improved in the morning and should be moderate for most of the day.		
Prospect					Due to close proximity to the fire, smoke impact will continue.		
Crater Lake					Air quality has improved in the morning and should be moderate for most of the day.		
Chiloquin					Smoke impact will continue due to northwest winds.		
Klamath Falls					Smoke impact will continue due to northwest winds.		

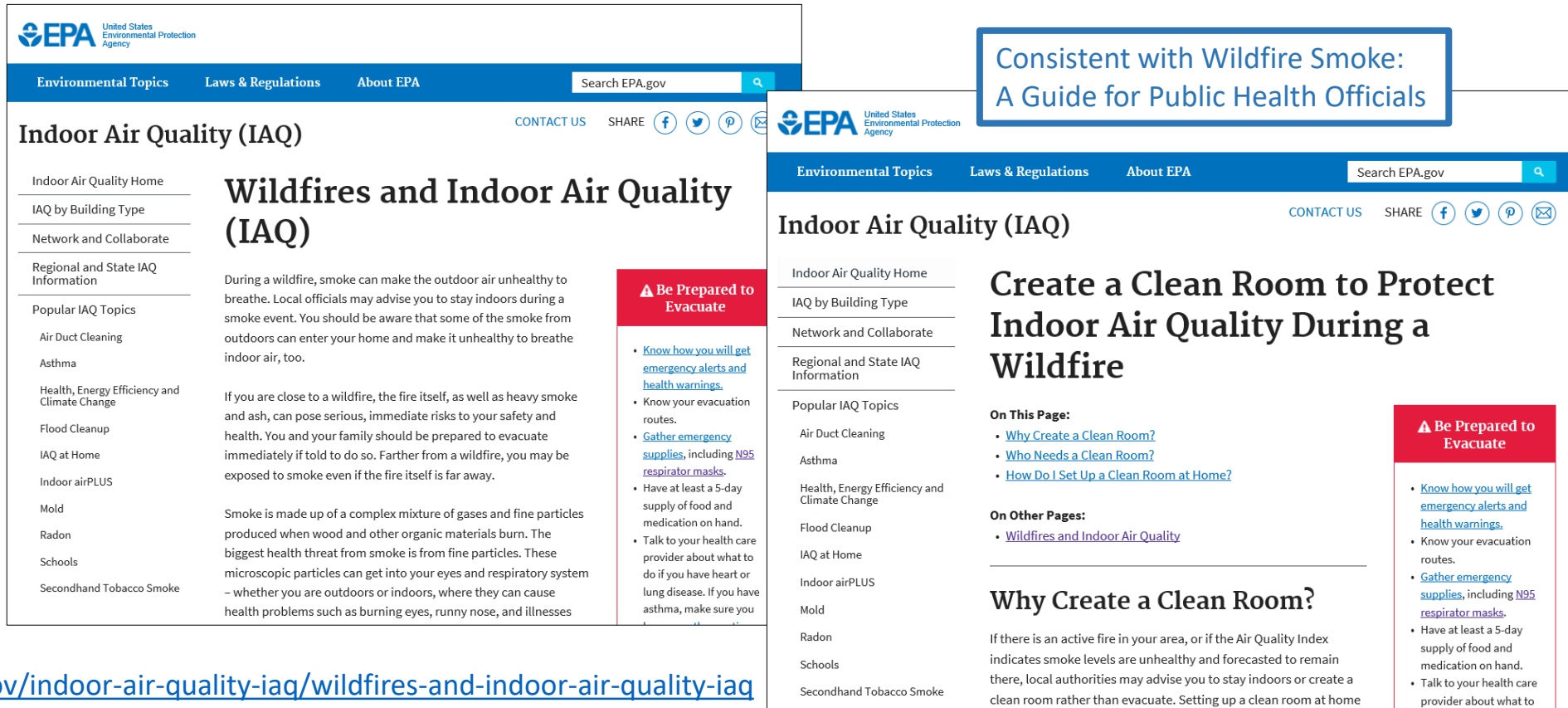
Issued 2018-08-25 07:38 PDT by Nicole Bringolf, Air Resource Advisor, not

Air Resource Advisor Smoke Outlook,
OR and Northern CA border, 8/25-
26/18

ARA Smoke Outlooks
- Issued for smoke from major fires
- Available on AirNow

Wildfires and Indoor Air Quality

- New webpages
- Information for the general public to reduce exposure to wildfire smoke indoors



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