

Smoke Impact

Using the Web for fast response to public concerns about wildfire smoke

STAPPA/ALAPCO Communicating
Air Quality Conference

December 1-3, 2004

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Smoke Impact

- Sacramento region: 2-million people
- 6-county ozone non-attainment area
- Sacramento AQMD is the largest air district in the region

- We run the region's ozone education, Spare The Air, and forecasting programs
May 1 – October 31





What is Smoke Impact?

- Simple Web page created to meet a specific communications need in late October, 2003.
- Southern California fires raged out of control for days, creating huge public demand for health information about the health impact of smoke.
- CAPCOA (California Air Pollution Control Officer's Association) Public Outreach Committee decided to create an instant resource.





Creation process

- Need determined morning of October 27, 2003.
- Collaborated with CAPCOA POC Chair.
- Decided to create a single-page site on behalf of CAPCOA POC to be housed on our agency's Web site.
- Collected useful links including agency contacts, satellite photos, weather forecasts and fire updates.





Creation process

- Used Macromedia Dreamweaver Web page creation software to create simple Web page using the links deemed most useful – done in about 2.5 hours.
- Immediately uploaded Web page to Sacramento AQMD's Web site – www.AirQuality.org/smokeimpact

Smoke Impact
Provided by the California Air Pollution Control Officer's Association Public Outreach Committee

Local Air Agencies Participating in the CAPCOA Public Outreach Committee

Bay Area
Air Quality Management District
[Home Page](#)
[Spare The Air Page](#)

Butte County
Air Quality Management District

How to Protect Your Family from the Health Effects of Smoke

- Pay attention to local air quality reports and stay alert to any news coverage or health warnings related to smoke.
- Use common sense. If it looks smoky outside, it's probably not a good time to mow the lawn or go for a run. And it's probably not a good time for your children to play outdoors.





Marketing

- **Contacted key air districts and California Air Resources Board to let them know the page was on line and asked them to publicize it.**
- **Sent individual e-mails to all major Southern California TV and radio stations asking them to link the page to their Web sites.**
- **They did!**
- **Result: Thousands of page views per day.**



Fast-forward to Oct., 2004

- Fires break out in northern California's Sierra Nevada range





Media and public reacts



THREE FIRES BURNING

FRED'S FIRE 5,000 acres
El Dorado County, evacuations of Kibbutz and Silver Fork, Highway 50 closed

POWER FIRE 12,000 acres
Amador County, Highway 88 west of Cook's Station closed

RUMSEY FIRE 39,100 acres
Yolo and Napa counties, evacuation lifted for Berryessa Estates

Wildfire smoke casts pall



High-flying smoke from wildfires gives the sky over a statue at the state Capitol an eerie quality Thursday. Though it wasn't an official "Spare the Air" day, local air-quality officials said they used their eyes and common sense to discern a breathing hazard.

Wind-driven blazes resist suppression

By Mareva Brown and Elizabeth Hume
BEE STAFF WRITERS

Eleanor Martin's telephone at the Kibbutz Mini Mart rang off the hook Thursday with anxious calls from evacuated residents wanting to know if their mountain hamlet of Highway 50 still stood.

"They know if it rings a lot, that I've gone," said Martin, who has owned the brown-and-yellow market for three decades.

Despite mandatory evacuation orders Wednesday night for portions of the town that lie north of Highway 50, Martin stayed put, brewing coffee for firefighters and keeping an eye on the red-lit-down sky outside the next morning. As of Thursday evening, she — and the town — were still there.

The last moving Fred's fire, which had burned more than 5,000 acres of forest and brush by

► FIRES, back page, A28

SMOKE IS IN THE AIR

- Delay strenuous outdoor exercise, particularly when you can smell smoke.
- If elderly or very young, stay indoors as much as possible.
- People with health problems, especially respiratory illnesses, should stay indoors.
- Consider using HEPA (High-Efficiency Particulate Air) fine masks when outdoors. Non-HEPA masks are not capable of filtering the smallest and most dangerous smoke particles.
- If using air conditioning in cars and homes, close fresh-air intake.
- Keep windows and doors closed.

Source: Local air quality management district.

Stay indoors if you can, air officials say

By Edie Lau
BEE SCIENCE WRITER

Smoke from Northern California wildfires threw a murky pall over the sky, painted the mid-day sun red and prompted air pollution districts in and around Sacramento on Thursday to advise people to stay indoors.

The Sacramento Metropolitan Air Quality Management District took the unusual step of issuing a special health statement recommending that residents avoid strenuous activities outdoors and stay indoors if possible.

The air could get worse before it gets better. The National Weather Service office in Sacramento issued an advisory warning of dense smoke in the foothills and portions of the western slope of the Sierra through midmorning today.

In the Valley, "We could even begin to smell the smoke," said weather service forecaster Karl

► AIR, back page, A28

Air: Schools across area curtail outdoor activities

Smoke gets in your eye

Even though Thursday's poor air was aspersed to the north, eye sensors don't fully reflect the bad air quality. Here's why.

① Part of the smoke plume from the fire in the Central Valley is 100 miles high above the air we breathe — and it's not always visible.

② Heavy particles of ash fall 500 feet from the air, but are too large for fine-particle sensors to measure.

③ The smoke in the atmosphere. Particles from smoke reflect the light of the sun, scattering out the blue light but allowing in the red hues.

④ In Sacramento, smoke hung high overhead for much of the day, resulting in ground-level particulate readings that were only slightly above normal, according to the air district.

At noon, the smoke was at 8,000 feet and higher. It had dropped to 5,000 feet by 4:30 p.m., weather service readings showed.

Smoke forecast to reach level unhealthy for sensitive groups if exposed on a day-to-day basis.

Also — to make matters even more confusing — the local "Spare the Air" program focuses solely on ozone pollution. It does not account for particulates, the pollutant of most concern from smoke.

Titus said the day-care director agreed to bring the children inside if Titus would be the one to break the news to them. She didn't mind doing so.

"I helped them get the kids lined up and back in," Titus said. The children, she added, "kept

Air Quality Index

Thursday's hourly readings for fine particulate matter generally remained in the moderate range.

④ The smoke and resulting air advisories prompted schools throughout the region to curtail outdoor activities.

Sacramento City Unified, San Juan Unified, Elk Grove Unified, Davis Joint Unified and the Roseville City Elementary school districts sent alerts to each of their campuses recommending that students be kept indoors as much as possible.

In Davis, Deputy Superintendent Carol Bly said teachers were asked to take extra precautions with children who have allergies or other respiratory ailments.

At Hazen Johnson High School in Sacramento, Principal Lynne Tatrova said all physical education classes and team practices were canceled, indoor and outdoor alike.

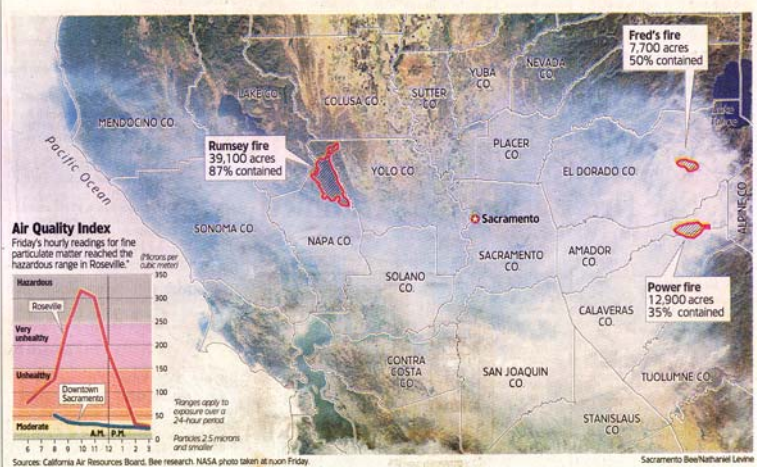
"A lot of our kids had watery eyes and irritated throats, so even if they would be running indoors, we opted to be careful," she said.

Why the smoke is so bad

The Bee's Edie Lau can be reached at (916) 321-1096 or edie@thebee.com. Bee staff writer Erika Chavez contributed to this report.

While the pall from nearby blazes is undeniably unpleasant, scientific data on health effects are lacking, says an expert

Wildfire smoke threat is far from clear



At noon, the smoke was at 8,000 feet and higher. It had dropped to 5,000 feet by 4:30 p.m., weather service readings showed.

The rule of thumb says if the



Smoke Impact site reactivated

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Ventura County
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-If you are advised to stay indoors, take steps to keep indoor air as clean as possible. Keep your windows and doors closed — unless it's extremely hot outside.

-Check the Air Quality Index (AQI) forecast for your area. The links to this information are on the left menu bar of this page. The AQI, based on data from local air quality monitors, tells you about the daily air quality in your area and recommends precautions you can take to protect your health. As smoke gets worse, the concentration of particles in the air changes — and so do the steps you should take to protect yourself.

-Run your air conditioner, if you have one. Keep the fresh air intake closed and the filter clean to prevent bringing additional smoke inside. Note: If you don't have an air conditioner, staying inside with the windows closed may be dangerous in extremely hot weather. In these cases, seek alternative shelter.

-Help keep particle levels inside lower. When smoke levels are high, try to avoid using anything that burns, such as wood fireplaces, gas logs, gas stoves — and even candles! Don't vacuum. That stirs up particles already inside your home. And don't smoke. That puts even more pollution in your lungs, and in the lungs of people around you. If you have asthma or other lung disease, make sure you follow your doctor's directions about taking your medicines and following your asthma management plan. Call your doctor if your symptoms worsen.



Satellite view of "Fred's Fire" smoke impact on November 10th, Sacramento Valley, Dec. 16, 2004

Updated Friday October 15, 2004 3:45 p.m.
Smoke from wildfires in the Sierra Nevada range settled into the foothills and eastern Sacramento County Friday morning, bringing smoke down to ground level and causing particulate readings to rise to unhealthy levels.

Readings at an air monitor in Roseville that measures Particulate Matter 2.5 showed high readings throughout much of the day Friday, with an average of 132 micrograms per cubic meter from midnight through 2:00 p.m. East of Roseville, students at Rocklin High School reported hazy conditions that severely restricted visibility.

The smoke resulted in special advisories being issued by the Sacramento, Placer, and El Dorado air districts urging residents to avoid outdoor exposure, and a dense smoke advisory issued by the National Weather Service.

The Sacramento Metropolitan Air Quality Management District received calls throughout the day from parents, sports coaches and school district administrators concerned about whether to participate in or hold Friday night football games and Saturday soccer competitions.

The smoke was expected to persist overnight and in the early morning hours on Saturday, leading to a gradual clean-out this weekend as rain approaches on Sunday.

Meantime, fire crews continue to battle the blazes that created the smoky conditions.

Fred's Fire

The "Fred's Fire" near Kyburz burned about 7,600 acres and was 30 percent contained early Friday afternoon. The fire started Wednesday evening. The cause is under

[Home Page](#)

Yolo-Solano
Air Quality Management District
[Home Page](#)

This Web page is operated by the Public Outreach Committee of the California Air Pollution Control Officer's Association.

[Contact the Webmaster](#)

Last modified October 15, 2004 4:38 P.M.
PDST

-If you have heart or lung disease, if you are an older adult, or if you have children, talk with your doctor about whether and when you should leave the area. When smoke is heavy for a prolonged period of time, fine particles can build up indoors even though you may not be able to see them.

Health Effects of Smoke

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic matter burn. The biggest health threat from smoke comes from fine particles.

These microscopic particles can get into your eyes and respiratory system, where they can cause health problems such as burning eyes, runny nose, and illnesses such as bronchitis.

Fine particles also can aggravate chronic heart and lung diseases — and even are linked to premature deaths in people with these conditions.

If you have heart or lung disease, such as congestive heart failure, angina, chronic obstructive pulmonary disease, emphysema or asthma, you may experience health effects earlier and at lower smoke levels than healthy people.

Older adults are more likely to be affected by smoke, possibly because they are more likely to have heart or lung diseases than younger people.

Children also are more susceptible to smoke for several reasons: their respiratory systems are still developing, they breathe more air (and air pollution) per pound of body weight than adults; and they're more likely to be active outdoors. (Information provided by U.S. EPA)

investigation.

The Power Fire

The Power Fire burning in Amador County has charred more than 12,500 acres and was 35% contained Thursday afternoon. Containment is not estimated to occur until October 23.

The Rumsey Fire

The Rumsey Fire has burned more than 39,000 acres near Lake Berryessa and is estimated at 80% containment. Full containment is expected by Saturday night.

Fire and Weather Information

[National Interagency Fire Center - News](#)
[GEOMAC Wildland Fire Support](#)
[US Forest Service - Large Fire Incidents](#)
[US Forest Service Northern California Predictive Services](#)
[California Dept. of Forestry - Major Incidents](#)
[Fire Weather Center - Northern California](#)
[Fire Weather Center - Southern California](#)
[AirNow Air Quality Forecasts](#)

Be Prepared

[Firewise - A Resource for Homeowners](#)
[What to do Before, During and After a Wildfire \(PDF\)](#)
[Wildfire Smoke Guide for Public Health Officials \(PDF\)](#)

Air Quality and Smoke Impacts

[AirNow Smoke Events Page](#)
[National Fire Plan](#)
[EPA's Smoke From Fires & Health Brochure](#)
[CalEPA - Smoke Management Program](#)

CAPCOA Public Outreach Committee

The Smoke Impact Web Page originated in October, 2003 from the Public Outreach Committee of the California Air Pollution Control Officer's Association in response to the widespread health impacts of smoke from the devastating Southern California wildfires.

The goal of this page is to provide links to important air quality, weather, health and fire status information in a single, convenient location.



Smoke Impact site reactivated

• 1,800 page views
over a 3-day period

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Intense public inquiry load



- Sports teams
- Concerned parents
- Worried residents
- News media



During this week's bad-air episodes, national air-quality standards are largely inapplicable.

By Edie Lan
BEE SCIENCE WRITER

You can see it, you can smell it, you can feel it sting your eyes, nose and throat. But when it comes to how unhealthy it is to breathe smoke from wildfires, a top federal air-pollution regulator said there's not enough scientific data to say for sure.

As a result, national air-quality standards largely are irrelevant during bad-air episodes like the one this week, when smoke from several Northern California forest fires transformed day into twilight from the mountains to the Valley.

"We established (the standard on a basis of more typical air pollution ... not wildfires," said John Bachmann, associate director of science policy with the



A cyclist rides over the pedestrian bridge from the bike trail to Sacramento State on Friday.

Sacramento Bee/
Briton Baer

MORE COVERAGE

Two major highways stay closed, but the threat to several communities lessens.
► Page B3

Bad air forces the cancellation of several prep football games.
► Sports, Page C9

U.S. Environmental Protection Agency's air office in North Carolina. "We have less data there."
The most worrisome pollutants from wildland fires are fine particles, microscopic specks that can lodge deep in the

lungs and invade the bloodstream, possibly leading to heart disease.
But national standards for fine particulates are based on average exposures over 24 hours and over the course of a

► AIR, page B4





Getting the word out

- Special Health Statements were issued to the media and our Health Advisory list.
- AirAlert advisories were sent to e-mail, text pager and cell phone addresses of subscribers to our electronic notification system.



Special Health Statement

Issued by the Sacramento Metropolitan AQMD and the Air Districts of the Sacramento Region

TODAY'S DATE/TIME: October 14, 2004 11:45 a.m.

To: Schools, Park Districts, Hospitals;
From: Sacramento Metropolitan Air Quality Management District

We're continuing to monitor the impact on the Sacramento region of the series of fires burning in the Sierra Nevada.

This morning, we issued on SpareTheAir.com and via our AirAlert electronic notification system a Special Health Statement addressing the effects of smoke in the Sacramento region which has impacted visibility and deposited ash in various parts of the region.

Please continue to monitor SpareTheAir.com for any updates that might be issued throughout the day. You can also sign up to receive AirAlert advisories via e-mail, text pager or cellular text messaging. Sign up at: www.myAirAlert.net.

This morning, the elevation of the smoke was well above ground level in the Sacramento area, but there is always a chance that the smoke could mix down to ground due to changes in surface temperature and wind patterns.

Due to the uncertainty of weather conditions, the Sacramento Metropolitan Air Quality Management District has advised residents to minimize outdoor activity, and this advice extends to school activities.

In particular, strenuous, sustained outdoor activity should be curtailed, in order to avoid the possibility of breathing in elevated levels of particles that could be present in areas impacted by the smoke.

www.SpareTheAir.com

Contact: Sacramento Metropolitan AQMD Community Education Office, (916) 874-4888 (Media Line)
Staff Pagers: Kerry Shearer (877) 237-2832, Jamie Bero, (916) 828-1534



Challenges we faced

- Web site still geared to ozone forecasting and reporting through October 31.
- People want accurate PM forecasts to make decisions about how to protect their health just as they want accurate ozone forecasts.
- People want real-time PM level readings available on the Web.
- Referring to a 24-hour standard doesn't work in a smoke situation.



Things we learned

- A communications office must be prepared to react immediately to smoke situations.
- Have a plan to handle the phone calls.
- Have practical, "Things to Do" steps prepared for the public and media.
- The higher profile your ozone program, the more likely the public will expect you to have all the answers for PM.
- The trend is clear: Prepare for year-round, multi-pollutant forecasting and bolster your PM network if possible.

A shameless commercial:

Don't miss tomorrow's AirShare presentation during the Tool Time session to learn more about how AirShare can be a resource for you!

airSHARE.info Air Quality Communicator's Home Page

Home News Submit Search AirShare My Account Forum Find Colleague FAQ Site Map Contact Us

Local AQI for: CITY/STATE: Sacramento, CA ZIP: 95826 GO

Current	Oct. 29	Ozone	Moderate
Forecast	Oct. 30	O 3	Unhealthy for sensitive groups
	Oct. 31	O 3	Unhealthy for sensitive groups

SAVE AS MY HOMEPAGE CITY/STATE: ZIP: OK

ACTION DAYS

Sacramento, CA	Nov 6	UNHEALTHY
Houston, TX	Nov 8	UNHEALTHY
Atlanta, GA	Nov 12	UNHEALTHY-SG
Baltimore, MD	Nov 12	UNHEALTHY-SG
San Francisco, CA	Nov 14	MODERATE

MORE

TODAY'S TOP AQI FORECASTS

Atlanta, GA	OZONE
Houston, TX	OZONE
Phoenix, AZ	NOx
Sacramento, CA	NOx
San Diego, CA	OZONE

MORE

WHAT'S NEW

Save Planet Polluto - Sacramento AQMD
Clean Air Quest - Ventura County APCD
Clean Air Texas - Texas NRCC

WHAT'S HOT

SECAT Marketing - Sacramento AQMD
KAIRE Network - Louisville Metro APCD
Air Defenders - Wisconsin DNR

Quick Links

- Google
- Weather Underground
- The Weather Channel
- CNN
- USA Today
- Lung Association

STAPPA/ALAPCO More

Upcoming Events

- U.S. EPA Conference
Houston, Texas October 31
- U.S. EPA Conference
Houston, Texas October 31
- U.S. EPA Conference
Houston, Texas October 31

AirShare Newsroom 11-5-03

(Los Angeles, California 11-3-03)
[State air board approves south coast clean air plan after debate](#)

(Washington D.C. 11-2-03)
[U.S. EPA issues ozone designations for 8-hour ozone standard](#)

(Sacramento, CA 10-31-03)
[Spare The Air program signs up 100,000th AirAlert subscriber](#)

(Atlanta, GA 10-30-03)
[City council attempts to end urban sprawl with bulldozers and explosives](#)

(Dallas, TX 10-30-03)
[Ozone action partnership formed to cut smog](#)

(New York, NY 10-29-03)
[New report details health impacts of Ground Zero particulates](#)

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FRIDAY October 15, 2004 **

www.sacbee.com

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BURNING**

**FRED'S FIRE
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Sacramento Bee/Bryan Patrick

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► FIRES, back page, A28

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► AIR, back page, A28



Fires: Wet weather on the horizon

► FROM PAGE A1
Thursday night, was one of three major blazes burning in mountains around Sacramento on Thursday. The fire in El Dorado County began at 4 p.m. Wednesday and quickly spread through dry brush and timber, forcing the closure of Highway 50 and the evacuation of about 150 Kyburz and Silver Fork residents.

In an evacuation shelter, officials were setting up temporary elementary classes for the 17 students of Silver Fork School in anticipation of continued evacuations today.

Mike Wescott had been washing paintbrushes in his front yard Wednesday evening when he realized danger was just over the hillside.

Wescott, who lives on Kyburz Drive just north of Highway 50, ignored the acrid smell of burning wood at first, but when he noticed smoke above the trees, he walked to the top of his driveway for a better look.

"We've got a fire," he yelled to his wife, Sharon. "And it's pretty close."

On Thursday, the blaze sprinkled ash on Sacramento like flakes of snow. A thick layer of

smoke shrouded the Valley, transforming the sun into a glowing pink orb and dropping the day's high temperature about 15 degrees from earlier in the week.

At noon, fire officials let expire the last two red-flag advisories for the Valley, which had signified extreme fire danger. Most of the northern end of the state had been under the warnings earlier in the week.

From Sunday through Wednesday, the gusting north winds had sent flames roaring through mountain canyons, throwing sparks into dry brush as far as two miles, igniting flurries of new blazes and fanning three major wildfires.

But despite calmer conditions Thursday, fire officials said the danger remains.

"We're still very concerned," Donna Winkelman, a U.S. Forest Service spokeswoman, said of the Power fire in Amador County, which began near a power house close to Salt Springs Reservoir last week.

Firefighters staged engines around an enclave of 48 cabins near the Bear River Resort and the nearby lodge Thursday, intending to take a stand should the



Kurt Allendorf, above, a firefighter with the California Department of Forestry and Fire Protection, hauls a fire hose Thursday as he and colleagues work to contain Fred's fire near Kyburz. At left, the sun struggles to emerge over trees that were torched by a firestorm near Granite Springs Road in the Kyburz area.

Sacramento Bee
Brian Boer

flames hop Highway 88. Fire officials said shifting winds were cause for concern, even though the gusts had subsided.

The Power fire had been fully contained at about 490 acres Tuesday after nearly a week of firefighting on steep hillsides, but 40 mph gusts blew flames out of control that night.

By Thursday evening, the blaze had charred 12,000 acres and was 35 percent contained with 1,064 people thrown into the battle, said Forest Service spokeswoman Tina Garcia.

Its smoke turned the Amador sky an eerie red Thursday and acrid smoke filled area valleys, reducing visibility on mountain

Air: Schools across area curtail outdoor activities

► FROM PAGE A1

Swanberg.

On the bright side, the weather service predicts that a flow of ocean air from the west will begin gently breaking up the stagnant Valley air later today.

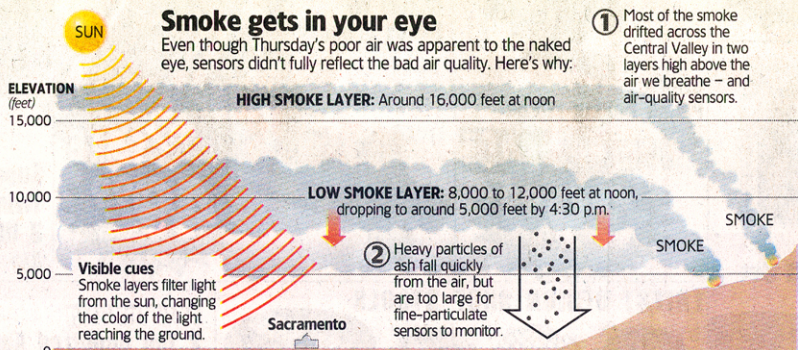
The Delta breeze is expected to strengthen Saturday. Sunday may bring air-cleansing rain – first in the mountains and, toward evening, possibly in the Valley.

Thursday's air-district health advisory was extraordinary because the district's usual measures of air quality – monitors that detect ozone or particulates – did not show that the air was particularly dirty.

Instead, air district officials relied on common sense.

"The guts of the message that we sent out is: Hey, there's ash falling, we know there are areas that are impacted, smoke could mix to ground level," said Kerry Shearer, spokesman for the Sacramento Metropolitan Air Quality Management District. "The best advice is to protect yourself and stay out of it, no matter what the AQI says."

The AQI, or Air Quality Index, is keyed to pollution levels that violate federal Clean Air Act standards. Those standards, however, assume day-to-day exposure and don't recognize short-



Sources: California Air Resources Board, National Weather Service. Bee research/Pete Basoffin

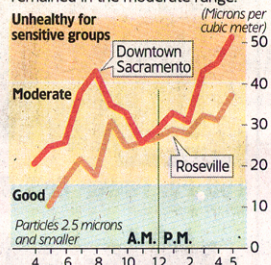
① Most of the smoke drifted across the Central Valley in two layers high above the air we breathe – and air-quality sensors.

② Heavy particles of ash fall quickly from the air, but are too large for fine-particulate sensors to monitor.

*Ranges apply to exposure over a 24-hour period.

Air Quality Index

Thursday's hourly readings for fine particulate matter generally remained in the moderate range.*



Sacramento Bee/Nathaniel Levine

air is so hazy that you can see no farther than three to five miles, the air is unhealthy for sensitive groups.

The smoke and resulting air advisories prompted schools throughout the region to curtail outdoor activities.

Sacramento City Unified, San Juan Unified, Elk Grove Unified, Davis Joint Unified and the Roseville City Elementary school districts sent alerts to each of their campuses recommending that students be kept indoors as much as possible.

In Davis, Deputy Superintendent Carol Bly said teachers were asked to take extra precautions with children who have allergies or other respiratory ailments.

At Hiram Johnson High School in Sacramento, Principal Lynne Tafoya said all physical education classes and team practices were canceled, indoor and outdoor alike.

"A lot of our kids had watery eyes and irritated throats, so even if they would be running indoors, we opted to be careful," she said.

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The Bee's Edie Lau can be reached at (916) 321-1098 or elau@sacbee.com. Bee staff writer Erika Chavez contributed to this report.

term exposures from occasional events such as wildfires.

That shortcoming in the index can cause confusion. Kori Titus, director of policy and communications at the American Lung Association of Sacramento-Emigrant Trails, encountered some of that confusion at her daughter's day-care center in Folsom on Thursday.

Titus said she recommended to the center director that the tots be kept indoors because of the smoky air. The director responded, baffled, "But it's not a 'Spare the Air' day."

"Spare the Air" days are declared by the air district when air

pollution is forecast to reach a level unhealthy for sensitive groups if exposed on a day-to-day basis.

Also – to make matters even more confusing – the local "Spare the Air" program focuses solely on ozone pollution. It does not account for particulates, the pollutant of most concern from smoke.

Titus said the day-care director agreed to bring the children inside if Titus would be the one to break the news to them. She didn't mind doing so.

"I helped them get the kids lined up and back in," Titus said. The children, she added, "kept

coming up to me and asking me why the moon was out."

The sun did look like a big pinkish-red moon, thanks to the smoke in the atmosphere. Particles from smoke refract the light of the sun, scattering out the blue light but allowing in the red hues.

In Sacramento, smoke hung high overhead for much of the day, resulting in ground-level particulate readings that were only slightly above normal, according to the air district.

At noon, the smoke was at 8,000 feet and higher. It had dropped to 5,000 feet by 4:30 p.m., weather service readings showed.

Air districts in the foothill and mountain counties of Placer and El Dorado deemed the air unhealthy for sensitive groups – the very young, the very old and people with heart and lung diseases.

Marcella Taggart, air pollution control officer in El Dorado County, said El Dorado does not have real-time monitors for fine particulates, which are especially dangerous because they can lodge deep in the lungs.

Lacking a reading from a monitor, the district used "a visibility determination," Taggart said – meaning, they simply looked at the air.

One rule of thumb says if the

Air: Ozone level was a threat to some in Auburn

► FROM PAGE B1

year. The rules don't recognize a hazard in short spikes, such as those caused by drifting smoke.

Such spikes were clearly evident Friday at a fine-particulate monitor run by the California Air Resources Board on Sunrise Boulevard in Roseville.

The monitor showed levels reaching 317 micrograms per cubic meter of air about 11 a.m. That's astronomically higher than normal: One week earlier, the reading was 5 micrograms per cubic meter at the same location during the same hour.

Friday's spike was short-lived. By 3 p.m., the monitor was picking up 32 micrograms per cubic meter of fine particulates – still higher than normal but not stunningly so.

The high readings prompted the Placer County Air Pollution Control District to issue another health advisory lasting through today.

"We don't think it's over yet because the fires are still burning," said air-quality specialist Ann Hobbs.

Unless and until an expected storm materializes this weekend, she said, residents and visitors should continue to be cautious about going outside if the air is smoky, and should curtail strenuous activity outdoors.

What's more, ozone pollution in Auburn rose to a level that's unhealthy for sensitive groups late Friday afternoon. Kerry Shearer, spokesman for the Sacramento Metropolitan Air Quality Management District, said sunshine breaking through the smoke contributed to making ozone.

In El Dorado County, Air Pollution Control Officer Marcella McTaggart, too, recommended that residents cancel or restrict scheduled outdoor activities for the time being.

Western El Dorado County has no particulate monitors, but under the circum-

stances, they're not necessary to detect trouble, McTaggart said: Visibility in Placerville Friday was down to one mile.

Recognizing that Apple Hill, just up the highway from Placerville, is a popular autumn destination, McTaggart advised, "It will probably be smoky, and (visitors) should be walking very slowly. Very small children and older people with heart and lung disease probably should not go."

In Sacramento County, the air district issued an advisory Friday warning of unhealthy particulate levels in the eastern edge of the county and predicted today's levels countywide would be unhealthy for sensitive groups.

The district's fine-particulate monitor in Folsom is out of service, so the district used the Roseville readings to infer that Folsom's air quality probably was similarly poor, Shearer said.

A monitor on T Street in Sacramento showed a high reading of 51 micrograms

per cubic meter about 9 a.m. Friday. The measurement dropped to 25 micrograms per cubic meter by 3 p.m.

By comparison, the federal standard for fine particulates is 65 micrograms per cubic meter, averaged over 24 hours.

Shearer said Sacramento was not at risk of exceeding the federal fine-particulate standard – and in any case, wildfire smoke would be considered an anomalous event that would not count against the region – but the district thought that a health advisory for specific areas was warranted.

Bachmann of the EPA said the 24-hour standard reflects what's known about the effects of inhaling fine particles but should not be interpreted as suggesting that brief high exposures are safe.

Tom Cahill, an atmospheric physicist at the University of California, Davis, and an international authority on air pollutants, said the shortcoming in the standard boils down to equipment.

"It goes way back to history," Cahill said. "The only measurements you could get, you had to have 24 hours of mass (of accumulated particles) to measure it."

That's no longer true. Real-time monitors such as those stationed in Roseville and downtown Sacramento are now available that show particulate levels every hour. Cahill said such monitors have been available since 1997.

Bachmann said recent studies show that exposures of as little as two hours can trigger changes in the heart, even cardiac arrest. But making regulations is a time-consuming process.

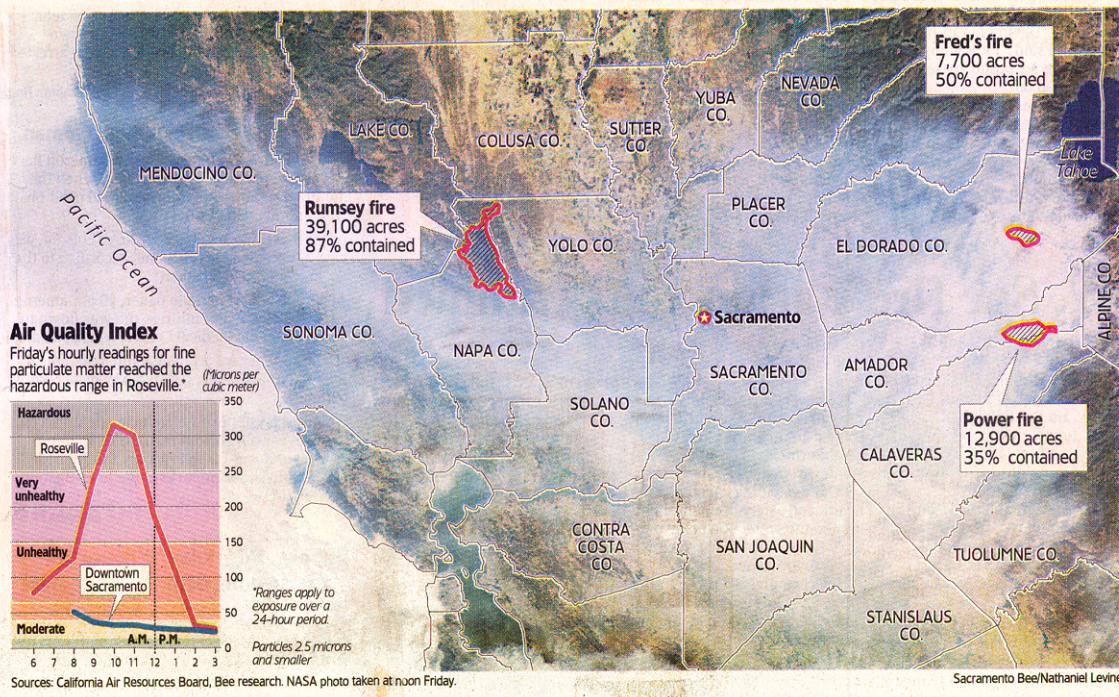
"It could be five or more years before this gets reflected in the regulations," he said. "However, it could be sooner than that that we put out something in the way of guidance."

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The Bee's Edie Lau can be reached at (916) 321-1098 or elau@sacbee.com.

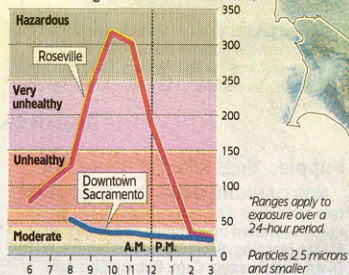
While the pall from nearby blazes is undeniably unpleasant, scientific data on health effects are lacking, says an expert

Wildfire smoke threat is far from clear

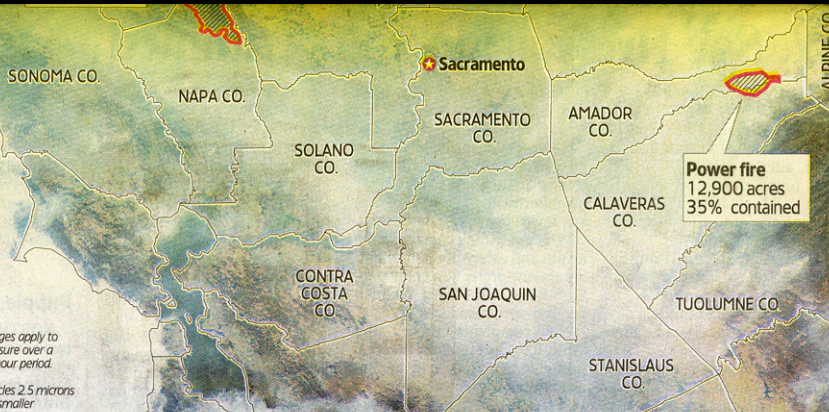


Air Quality Index

Friday's hourly readings for fine particulate matter reached the hazardous range in Roseville.*



Sources: California Air Resources Board, Bee research. NASA photo taken at noon Friday.



Power fire
12,900 acres
35% contained

Sacramento Bee/Nathaniel Levine

During this week's bad-air episodes, national air-quality standards are largely inapplicable.

By Edie Lau
BEE SCIENCE WRITER

You can see it, you can smell it, you can feel it sting your eyes, nose and throat. But when it comes to how unhealthy it is to breathe smoke from wildfires, a top federal air-pollution regulator said there's not enough scientific data to say for sure.

As a result, national air-quality standards largely are irrelevant during bad-air episodes like the one this week, when smoke from several Northern California forest fires transformed day into twilight from the mountains to the Valley.

"We established (the) standard on a basis of more typical air pollution ... not wildfires," said John Bachmann, associate director of science policy with the



A cyclist rides over the pedestrian bridge from the bike trail to Sacramento State on Friday.

Sacramento Bee/
Brian Baer

MORE COVERAGE

Two major highways stay closed, but the threat to several communities lessens.

► **Page B3**

Bad air forces the cancellation of several prep football games.

► **Sports, Page C9**

U.S. Environmental Protection Agency's air office in North Carolina. "We have less data there."

The most worrisome pollutants from wildland fires are fine particles, microscopic specks that can lodge deep in the

lungs and invade the bloodstream, possibly leading to heart disease.

But national standards for fine particulates are based on average exposures over 24 hours and over the course of a

► **AIR, page B4**

The Sacramento Bee

METRO

inside METRO



Rape at maze reported

A 13 year-old girl says she was assaulted in the Woodland labyrinth. ▶ Story, B3

▶ REGIONAL DIGEST B2 ▶ OBITUARIES B5 ▶ WEATHER B8

While the pall from nearby blazes is undeniably unpleasant, scientific data on health effects are lacking, says an expert

Wildfire smoke threat is far from clear









Smoke Impact

Provided by the California Air Pollution
Control Officer's Association
Public Outreach Committee

Local Air Agencies Participating in the CAPCOA Public Outreach Committee

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El Dorado County
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Ventura County
Air Pollution Control District

How to Protect Your Family from the Health Effects of Smoke

-Pay attention to local air quality reports and stay alert to any news coverage or health warnings related to smoke.

-Use common sense. If it looks smoky outside, it's probably not a good time to mow the lawn or go for a run. And it's probably not a good time for your children to play outdoors.

-If you are advised to stay indoors, take steps to keep indoor air as clean as possible. Keep your windows and doors closed — unless it's extremely hot outside.

-Check the Air Quality Index (AQI) forecast for your area. The links to this information are on the left menu bar of this page. The AQI, based on data from local air quality monitors, tells you about the daily air quality in your area and recommends precautions you can take to protect your health. As smoke gets worse, the concentration of particles in the air changes — and so do the steps you should take to protect yourself.

-Run your air conditioner, if you have one. Keep the fresh air intake closed and the filter clean to prevent bringing additional smoke inside. Note: If you don't have an air conditioner, staying inside with the windows closed may be dangerous in extremely hot weather. In these cases, seek alternative shelter.

-Help keep particle levels inside lower. When smoke levels are high, try to avoid using anything that burns, such as wood fireplaces, gas logs, gas stoves — and even candles! Don't vacuum. That stirs up particles already inside your home. And don't smoke. That puts even more pollution in your lungs, and in the lungs of people around you. If you have asthma or other lung disease, make sure you follow your doctor's directions about taking your medicines and following your asthma management plan. Call your doctor if your symptoms worsen.



Updated Friday October 15, 2004 3:45 p.m.

Smoke from wildfires in the Sierra Nevada range settled into the foothills and eastern Sacramento County Friday morning, bringing smoke down to ground level and causing particulate readings to rise to unhealthy levels.

Readings at an air monitor in Roseville that measures Particulate Matter 2.5 showed high readings throughout much of the day Friday, with an average of 132 micrograms per cubic meter from midnight through 2:00 p.m. East of Roseville, students at Rocklin High School reported hazy conditions that severely restricted visibility.

The smoke resulted in special advisories being issued by the Sacramento, Placer, and El Dorado air districts urging residents to avoid outdoor exposure, and a dense smoke advisory issued by the National Weather Service.

The Sacramento Metropolitan Air Quality Management District received calls throughout the day from parents, sports coaches and school district administrators concerned about whether to participate in or hold Friday night football games and Saturday soccer competitions.

The smoke was expected to persist overnight and in the early morning hours on Saturday, leading to a gradual clean-out this weekend as rain approaches on Sunday.

Meantime, fire crews continue to battle the blazes that created the smoky conditions.

Fred's Fire

The "Fred's Fire" near Kyburz burned about 7,600 acres and was 30 percent contained early Friday afternoon. The fire started Wednesday evening. The cause is under

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Yolo-Solano
Air Quality Management District
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Last modified October 15, 2004 4:38 P.M.
PDST

-If you have heart or lung disease, if you are an older adult, or if you have children, talk with your doctor about whether and when you should leave the area. When smoke is heavy for a prolonged period of time, fine particles can build up indoors even though you may not be able to see them.

Health Effects of Smoke

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic matter burn. The biggest health threat from smoke comes from fine particles.

These microscopic particles can get into your eyes and respiratory system, where they can cause health problems such as burning eyes, runny nose, and illnesses such as bronchitis.

Fine particles also can aggravate chronic heart and lung diseases — and even are linked to premature deaths in people with these conditions.

If you have heart or lung disease, such as congestive heart failure, angina, chronic obstructive pulmonary disease, emphysema or asthma, you may experience health effects earlier and at lower smoke levels than healthy people.

Older adults are more likely to be affected by smoke, possibly because they are more likely to have heart or lung diseases than younger people.

Children also are more susceptible to smoke for several reasons: their respiratory systems are still developing; they breathe more air (and air pollution) per pound of body weight than adults; and they're more likely to be active outdoors. (Information provided by U.S. EPA)

investigation.

The Power Fire

The Power Fire burning in Amador County has charred more than 12,500 acres and was 35% contained Thursday afternoon. Containment is not estimated to occur until October 23.

The Rumsey Fire

The Rumsey Fire has burned more than 39,000 acres near Lake Berryessa and is estimated at 80% containment. Full containment is expected by Saturday night.

Fire and Weather Information

[National Interagency Fire Center - News](#)
[GEOMAC Wildland Fire Support](#)
[US Forest Service - Large Fire Incidents](#)
[US Forest Service Northern California Predictive Services](#)
[California Dept. of Forestry - Major Incidents](#)
[Fire Weather Center - Northern California](#)
[Fire Weather Center - Southern California](#)
[AirNow Air Quality Forecasts](#)

Be Prepared

[Firewise - A Resource for Homeowners](#)
[What to do Before, During and After a Wildfire](#) (PDF)
[Wildfire Smoke Guide for Public Health Officials](#) (PDF)

Air Quality and Smoke Impacts

[AirNow Smoke Events Page](#)
[National Fire Plan](#)
[EPA's Smoke From Fires & Health Brochure](#)
[CalEPA - Smoke Management Program](#)

CAPCOA Public Outreach Committee

The Smoke Impact Web Page originated in October, 2003 from the Public Outreach Committee of the California Air Pollution Control Officer's Association in response to the widespread health impacts of smoke from the devastating Southern California wildfires.

The goal of this page is to provide links to important air quality, weather, health and fire status information in a single, convenient location.

