

REDUCING
WOOD
SMOKE
A BURNING
HEALTH ISSUE



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

One little log, cut to fit and tossed into a fireplace or wood stove, doesn't look like much. Yet, that wood chunk contains a bundle of gases, soot and smoke that can make a mess of air quality across the Bay Area. Wood fires provide a pleasant aroma and ambiance, but chimney exhaust is a chief source of wintertime air pollution. Communities across the country have restricted wood burning as medical studies link smoke to health problems. The Bay Area Air Quality Management District has a plan to clean it up, but to succeed we need your help. Just as each individual action contributes to smoky skies, you can make a big difference. Make a choice for clean air today.



WHAT'S WRONG WITH BURNING WOOD?

One chimney may seem inconsequential, but multiply by 1.2 million fireplaces and wood stoves across the Bay Area and that constitutes a lot of air pollution. In cold weather, the region's residents burn about 1,400 cords of wood daily — enough to fill 2,800 pickup trucks. Burned wood releases about 6,000 tons of sooty particles annually — more than the entire region's vehicles and businesses emit. The problem is greatest when polluted air cools at night and settles near the ground. In the wintertime, wood smoke contributes between one-third and one-half of the Bay Area's particle pollution.

Smoke can also contribute to indoor air pollution, inside your home as well as your neighbor's.

How can you reduce your contribution to air pollution? The Air District issues Spare the Air Tonight advisories when air quality conditions are forecast to be unhealthy. Visit www.sparetheair.org to get the latest forecast or to sign up for e-mail AirAlerts. Please don't burn when an advisory is issued.

IS WOOD SMOKE HARMFUL?

Smoke is more than just an irritant: It is a complex chemical mixture linked to serious health problems. In the Bay Area, clean air standards were exceeded 20 times in the winter of 2006–07, mostly due to smoke from residential chimneys.

Smoke contains millions of microscopic particles, called PM 2.5, or particulate matter 2.5 microns or smaller (a micron is one-millionth of a meter; thousands could fit on the dot of an "i"). The EPA's limit for PM 2.5 is 35 micrograms per cubic meter of air per day (a smattering of flecks in a space the size of a refrigerator).

The tiny particles can easily bypass filters in your nose and throat and penetrate into your lungs. Epidemiological studies have linked long-term exposure to particle pollution to loss of lung function, bronchitis, lung disease, heart attacks, and premature death. It also causes eye and throat irritation and headaches.

California health investigators found when wood burning increases, emergency room visits for asthma rose as much as 40 percent.

Asthma is the leading cause of hospitalization and emergency room visits for children in the Bay Area; about one person in seven in the region has a respiratory condition that makes them susceptible to smoke, according to the American Lung Association of California.

ARE THERE ALTERNATIVES TO WOOD BURNING?

Older wood stoves and fireplaces emit far more air pollution than heaters using other fuels. Consider heating your home without burning wood. Or consider a natural gas fireplace, which burns clean, starts easy and costs less to operate. They come in many sizes and styles, fit inside an existing fireplace, and produce lots of heat and little smoke.

New wood stoves have advanced well beyond the traditional pot-bellied model. These stoves produce abundant heat, little ash and use less wood. For example, old wood stoves produce up to 30 grams of particulate per hour, but an EPA-certified wood stove produces no more than 7 grams per hour by controlling air flow and temperature for an efficient burn. Pellet stoves, which use a renewable fuel, are among the cleanest burning — they produce about 1 gram of particulate per hour. For a list of EPA-certified wood stoves and fireplaces, visit www.epa.gov/woodstoves.

The best way to reduce emissions is to not light at all. Keep warm by adding insulation to your attic, caulking leaks or weather-stripping doors, windows and pipes. To learn how to insulate a home, visit www.energystar.gov.

Also, consider a sweater or warm blanket on chilly nights. And please don't burn when a Spare the Air Tonight advisory has been issued.



ISN'T BURNING WOOD CHEAP AND EFFICIENT?

Overall, a fireplace or wood stove costs more than using your furnace. Direct costs for burning include money spent for wood, fireplace tools, chimney sweeps and insurance. Add to that indirect costs, including splitting and stacking wood, cleaning out ash and health impacts and wood-burning is no bargain.

Ironically, a fireplace can empty your house of heat. The flames cause strong updrafts that pull warm indoor air up the chimney. While you may feel warm by the fire, the rest of the house will become cooler as heat escapes through the flue.

Most of the heat in a fireplace pulls moisture and gases out of a log and up the chimney, rather than heating the room. New EPA-certified stoves have an 80 percent heating efficiency and get more energy per unit of wood burned.



WHAT IS BEING DONE TO REDUCE WOOD SMOKE?

The Bay Area Air Quality Management District has developed strategies to reduce residential wood smoke in the region. The District and local governments developed ordinances requiring new and remodeled homes to switch to low-polluting technologies. Currently, 42 cities in the region have adopted such ordinances. The District is developing draft rules to limit wood burning on some winter nights.

The District encourages residents to replace their older fireplaces and woodstoves with cleaner burning devices. The District will be offering rebate incentives help pay for the change in early 2008. Visit www.sparetheair.org to learn more about the rebates for cleaner air.

The District also issues Spare the Air Tonight advisories when air quality is forecast to be unhealthy. Visit www.sparetheair.org to find out about advisories and to receive AirAlerts by e-mail.

Wood smoke is the biggest source of air pollution that individuals have the greatest power to control. Here are 10 things you can do to restore blue skies to the Bay Area:

1. Give your fireplace or wood stove the night off during Spare the Air Tonight advisories.
2. Switch to an EPA-certified wood stove, which emits up to 70 percent less particulate and uses 30 percent less fuel.
3. Insulate your house to keep warmth in.
4. Save energy and reduce pollution by wearing a sweater on chilly nights.
5. Watch smoke signals; if your chimney billows dark smoke 30 minutes after ignition, adjust dampers or fuel until you see wispy white emissions.
6. Properly dispose of painted wood, particle board, plastic, gift wrap or rubbish; burning them releases toxic chemicals.
7. Install a pellet stove — the cleanest wood burning technology available.
8. Switch to dry hardwood fuel such as oak or cherry, which produce less smoke.
9. Keep your chimney swept and ash bin clean to improve air flow and reduce emissions.
10. Replace your wood-burning fireplace with a natural gas insert.



WHERE CAN I GET MORE INFORMATION?

To learn more about wood smoke pollution and what you can do to reduce emissions, visit these Web sites:

Wood smoke basics

www.epa.gov/woodstoves/basic.html

Cleanup strategies

www.epa.gov/woodstoves/pdfs/epa_bcflyer_press_rev4.pdf

Health effects

www.ecy.wa.gov/pubs/92046.pdf

Spare the Air Tonight advisories

www.sparetheair.org

Rebates and incentives

www.sparetheair.org/changeout.htm

CHOOSE CLEAN AIR

Residential chimney smoke is a major source of air pollution in the Bay Area. More than a nuisance, the microscopic particles it contains have been linked to serious health injury. The good news is that your choices can do a lot for clean air. **Choose to minimize unnecessary burning and share information about the effects of wood smoke pollution with your friends and family.**

Working together, we can reduce air pollution and restore blue skies for everyone in the region.



On nights when pollution is expected to approach unhealthy levels, the Air District will issue a "Spare the Air Tonight" advisory asking Bay Area residents not to burn wood. Call **1-800-Help-Air** (1-800-435-7247) for the latest air quality forecast.

