

https://www.theguardian.com/environment/2022/may/29/do-wood-burners-add-to-air-pollution-in-cities-yes-say-citizen-scientists?fbclid=IwAR2GF3Mqk56aJ1PiHwzqEjp8kiKg4XWfu_XBdgl2HIzOUMzgU4cTsquoZku0

U.K. England, Bristol, Ashley Ward, hands out Ten PM 2.5 air quality sensors to collect hyper-localized data.

RAWSEP View: Ashley Ward, in the inner city of Bristol, England is being gentrified. New middle-class homeowners are burning wood in the wealthier Montpelier area of Ashley Ward, and air quality monitors show wood smoke particulate matter of 2.5 micron size, PM 2.5, infiltrating the more deprived St. Paul's area of Ashley Ward. A 40 year old resident of St. Paul's found his hyper-localized PM 2.5 "sensor picked up more pollution during the weekend when some residents were burning wood, and during rush hours when cars queued on local roads."

Let's focus on the weekend, when PM 2.5 picked up from wood burning. The manager of Bristol, England's Ashley Ward Council project, which handed out the ten PM 2.5 air quality sensors to residents of Ashley Ward, says the wood burning in Montpelier is an example of a fashionable lifestyle choice in the wealthier parts of the Bristol where many Victorian and Georgian houses have been renovated.

In the Guardian's May 29, 2022, Article "Do Wood Burners Add to Air Pollution in Cities? Yes, say Citizen Scientists" the project manager who handed out ten PM 2.5 monitors, said in an interview "We've forgotten the journey we've been on with clean air. In the 1950s at least 4,000 people died in the smog in London in five days. That led to the clean air act, then natural gas started to get piped into homes in the 1960s. Most people stopped burning wood because it was dirty and inconvenient. Now it's become a fashionable lifestyle choice." The manager went on to say that "virtually any level of PM 2.5 is harmful" and he said that around one hundred fifty deaths in Bristol per year are attributable directly to PM 2.5. Wood smoke accounts for about 17% of the PM 2.5 in Bristol, which is more than traffic-created PM 2.5 in Bristol. PM 2.5 is the perfect size to infiltrate the human lung, and infiltration leads to a cascade of human health problems.

Two other Bristol wood burning populations were mentioned in the article. The project manager said that wood burners living in poverty have an open fire in one room and turn off the central heating. And there are those who live in vans.

The RAWSEP View is that even people living in poverty have alternatives to endangering lives in order to heat their homes. In the United States nationwide, there is a **LOW INCOME HOME ENERGY ASSISTANCE PROGRAM (L.I.H.E.A.P.)** which gives energy assistance to low income residents. In 2022 the maximum income allowed for one person is \$20,385. There are offices in states across the United States.

The RAWSEP View is that purchasing a PurpleAir monitor is a cost to the neighbors of wood burners. It is a health cost to near neighbors of wood burners to breathe in PM 2.5. PM 2.5 is infiltrating neighbor's yards where they hope to spend time outdoors in clean air, and infiltrating neighbors' homes where they have to use Air Purifiers constantly to rid the air of wood smoke.

The RAWSEP View is that the ECLIPSE project in Chicago which has handed out hyper-localized low cost PM 2.5 sensors to inner-city residents since August 2021 is a similar example for RAWSEP to learn from. One of the highest PM 2.5 level days in Chicago since August 2021 occurred when wildfire smoke infiltrated inner-city Chicago, showing that wood smoke emission particulates are a contributor to air pollution even in the inner city. The article about Bristol said "The project is thought to be the first where volunteers have been given newly affordable monitoring technology to gauge pollution partly caused by domestic combustion." That may be true for the United Kingdom, but there is a project resembling it Chicago, where low cost air quality monitors are handed out to residents, which differs in that it focuses on PM 2.5 from traffic and industry, and unfortunately seems to overlook residential wood burning.

The RAWSEP View is that this revival of "traditional" wood burning is only recent. It correlates roughly from the time that biomass burning was deemed "carbon neutral" and not counted as "carbon emitting" in the climate change equation by the European Union in 2009. The European Union this May 2022 voted to count biomass burning (primarily wood burning) as carbon emissions, NOT carbon neutral. Although the U.K. is no longer part of the European Union, air travels freely and the news that their EU neighbors view wood burning as carbon emitting may also have traveled freely.