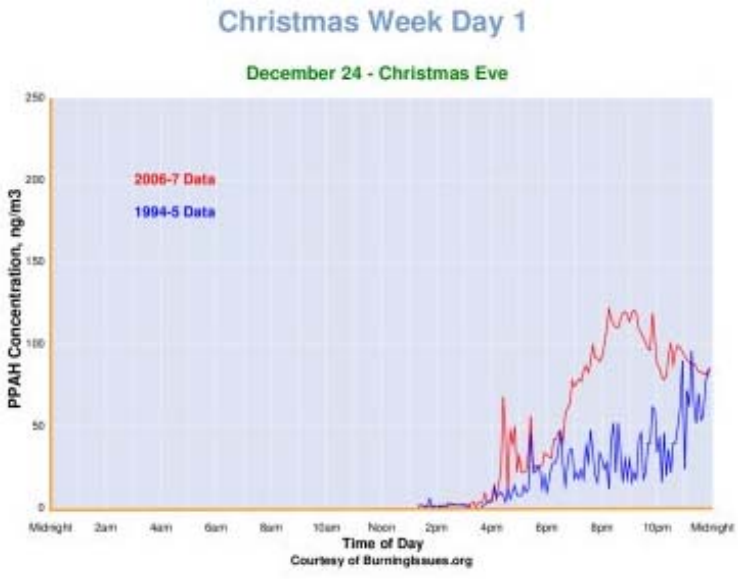
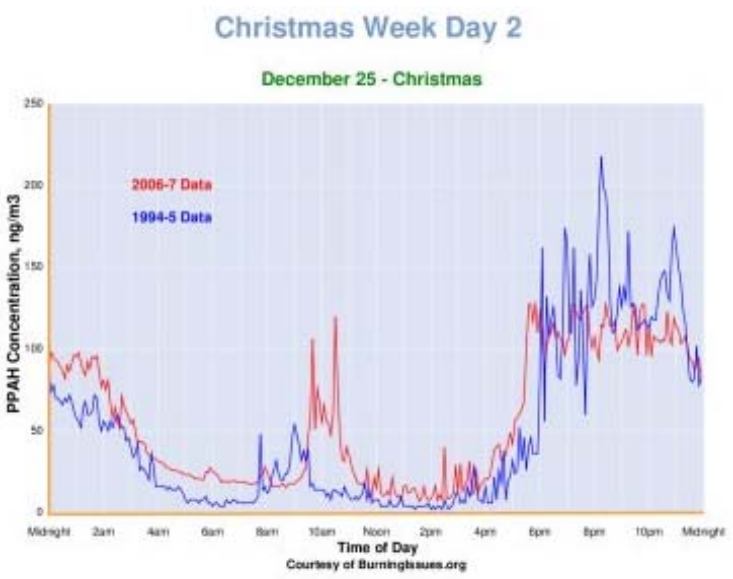
Bay Area Study of Wood Smoke Plumes and Particulate PAHs

BASIS FOR RESEARCH

These findings are from a study of fine particulate polycyclic aromatic hydrocarbons (PPAHs) measured at 7 homes in the San Francisco Bay Area by Stanford University researcher Wayne R. Ott . The research was sponsored by the U.S. Environmental Protection Agency, and the measurements were made with state-of-the art continuous air monitoring instruments that use ultraviolet light to irradiate the particles, which then are measured by their electric charge. This measurement principle is called *photoionization*.

Portions of the study describing the state-of-the-art measurement method are discussed in a published paper by W. R. Ott and H. C. Siegmann, "Using Multiple Continuous Fine Particle Monitors to Characterize Tobacco, Incense, Candle, Cooking, Wood Burning, and Vehicular Sources in Indoor, Outdoor, and In-Transit Settings," *Atmospheric Environment*, Vol. 40, 2006, pp. 821-843. For more information on wood smoke pollution, visit http://burningissues.org, Clean Air Revival, Inc.





The above charts show data for the **outdoor** concentrations of PPAH pollutants. The indoor reading for this house was approximately 50% of the outdoor values.

For comparison, consider the chart showing the pollutants from **five cigarettes smoked inside** the same house on a day with no wood burning.

All charts are drawn to the same scale.

Since about half the outdoor PPAHs infiltrate indoors**, residential wood smoke on Christmas day caused indoor concentrations equivalent to more than 5 cigarettes smoked indoors.**