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Introduction: Wood Smoke in the 21st Century **By Mary Rozenberg, December, 2001**

Wood smoke is a very expensive and growing plague in America and around the world. Tens of thousands of Americans will die suddenly this winter from wood smoke emissions. Due to the pervasive haze of thousands of tons of smoke emitted daily in America, millions of people will suffer major debilitating illness, immune system, heart and lung damage that will undermine their long-term health and finances. Smoke pollution micro-particulate plays a large role in spreading infectious disease by both transporting the bacteria deep into the lung, and by paralyzing the immune system so that it can not defend the body. Winter months of November to February are the times of highest emissions and illness.

Our worldview has changed forever by the tragedy of the September 11, 2001 bombing of the World Trade Center in New York City with the resulting loss of life. The fire, dust and smoke particles have affected the survivors. Forty percent of the surviving firefighters exposed at the WTC are now suffering from lung system damage from this exposure. In addition the spread of Anthrax spore bacteria particles, as a weapon has struck dread in our hearts. We have all felt helpless at this time in the face of the fury of smoke and bacteria but we have seen the hard lessons about science, physics, how weapon-sized particles act and how deadly they are. How does this relate to wood smoke? Ninety percent of wood smoke is in the weapon-sized range of particles. "A particle is a particle," says Dr. Joe Mauderly, a toxicologist at the Lovelace Respiratory Research Institute in Albuquerque.

There is a devastating lack of awareness that wood smoke is a killer and that urban and rural wood smoke exposure is growing every year as population increases. There is deep denial about wood burning and what it actually costs us in loss of life, loss of quality of life and permanent loss of health. The United States has a population of almost 285 million people. Research indicates that again this year 30,000 Americans will die suddenly from wood smoke exposure. Since Burning Issues was founded in 1987, 420,000 premature deaths have occurred and yet the problem of particulate pollution from wood burning has continued to be ignored.

The scope of this booklet is to provide research on many different aspects of the growing wood smoke problem and is written to educate the general population. Chapters include technical and exposure information, (including a defense of the above numbers), they explore the systems of the human body and show how wood smoke upsets these functions. We will look at economics and the current state of legal protection from smoke. A chapter on denial and one on precautions conclude the booklet. An Appendix includes important information and an extensive list of references will show that this short work is in no way complete. To present the science of smoke concisely we will concentrate on The San Francisco Bay Area in California as a sample air shed, since we have a great deal of scientific information on this area. We will include other communities for which we have data. Please keep in mind that smoke is smoke and its behavior is governed by its physical properties in San Francisco or Mozambique. Our research shows that there is a remarkable similarity in pollution patterns wherever solid fuel is burned. By covering this one area well, we learn those patterns. Wood smoke is

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sneaky. It's a trickster that creeps and seeps around in the night, into the air around and inside your home. We are attempting here to expose its 'modus operandi'.

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