

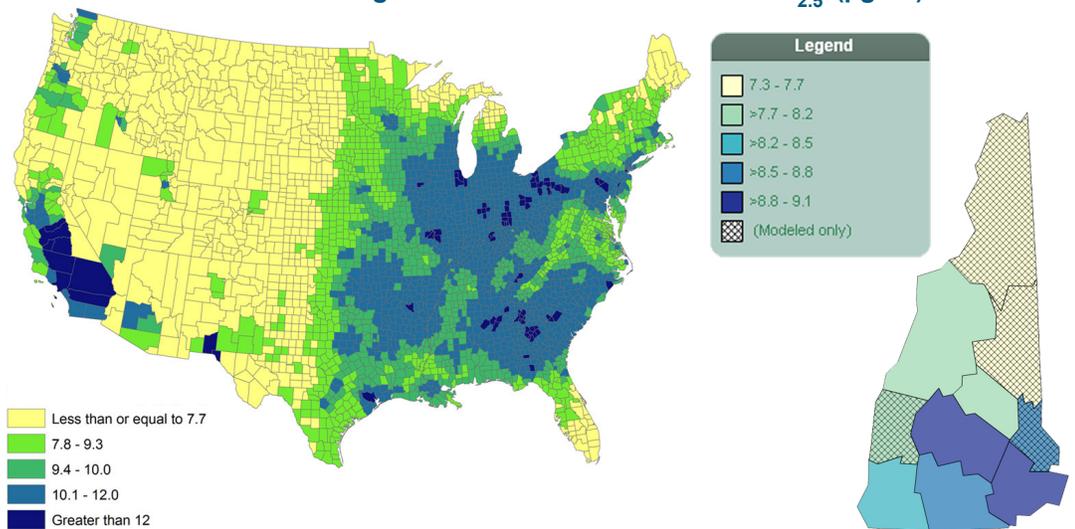
CDC's National Environmental Public Health Tracking Network

The Environmental Public Health Tracking Network is a dynamic system that provides information and data about environmental hazards and potentially related health problems. It presents what is known about environmental hazards, such as air pollution, and where they might exist, where people are exposed to hazards, and how targeted action can protect health, reduce illness, and save lives.

AIR POLLUTION (PM_{2.5}) AND HEALTH

Air pollution is a leading environmental threat to human health. Particles in the air such as dust, dirt, soot, and smoke are kinds of air pollution that have been linked with health problems. Some particles in the air are large or dark enough to be seen, like some kinds of smoke and soot. Other particles are so small that you cannot see them. Very small particles that are less than 2.5 micrometers wide (smaller than a grain of sand) are known as fine particulate matter or PM_{2.5}.

2011 Annual Average Ambient Concentrations of PM_{2.5} (µg/m³)



PM_{2.5} particles are small enough to be inhaled deeply into the lungs. Once fine particles are in the lungs, they can affect the heart, blood vessels, and lungs. People exposed to fine particles over a long period of time can have more heart and lung problems than people who are not breathing this kind of air pollution. Being exposed to any kind of particulate matter may lead to increased emergency department visits and hospital stays for breathing and heart problems and other health problems. In New Hampshire:

9
/10,000

Age-adjusted Rate of Emergency Department Visits for Asthma - 2008



36
/10,000

Age-adjusted Rate of Hospitalizations for Heart Attacks (Over 35) - 2008



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Radon, Smoking, and Lung Cancer

Radon is a naturally occurring radioactive gas that seeps into homes from soil and bedrock. Radon and smoking are the top two leading causes of lung cancer. The risk of radon-induced lung cancer is especially high for smokers. The New Hampshire Environmental Public Health Tracking Program (New Hampshire Tracking Program) is collecting data on radon testing and exposure, tobacco use among adults and youth, and lung cancer incidence. The U.S. Environmental Protection Agency (EPA) recommends residents reduce indoor radon levels to below 4 picocuries per liter (pCi/L). Many radon-related lung cancers can be prevented with simple and relatively inexpensive radon reduction systems. Smoking or secondhand smoke-related lung cancers can also be prevented by taking corrective actions.

Environmental Hazards



In 2012, the estimated level of indoor radon in NH was **1.8 pCi/L**



More than 700 New Hampshire residents died from lung cancer in 2012, about 13% of deaths could be radon related based on EPA analysis. Among non-smokers, an estimated 26% were radon related



In 2012, more than **17%** of NH adults reported as current smokers



Men have significantly higher age-adjusted lung cancer incidence rate (**79.8** per 100,000 persons) than women (**62.2** per 100,000) over a 5-year period between 2007 and 2011

Arsenic and Risk

Arsenic in drinking water from private wells is an important public health issue. Arsenic is a naturally-occurring element in the earth's crust and in drinking water is odorless, tasteless, and colorless. Trace amounts can be found in geologic formations, soil, and groundwater. Arsenic may also be found in soil due to past use of arsenic-containing pesticides and wood preservatives.

The New Hampshire Tracking Program collaborated with U.S. Geological Survey and developed an online mapping tool to present the risk of arsenic in groundwater. This mapping tool assists researchers, public health officers, and policy makers to determine potential arsenic risks and promote water testing and mitigation. Exposure to high levels of arsenic has been linked to several types of cancer, especially bladder cancer. Chronic exposure to lower levels of arsenic has been associated with increased risks of skin, bladder, kidney, and lung cancers, as well as lower childhood intelligence. EPA has identified the action level for arsenic in drinking water as 10 micrograms per liter ($\mu\text{g/L}$). Private well users are encouraged to have their water tested for arsenic and other contaminants every three years.

Environmental Hazards



About **70%** of New Hampshire residents are served by groundwater (46% served by private wells, and 25% served by community groundwater)



Exposure to low dose arsenic is associated with negative health impacts, including skin, lung and bladder cancer and decreased IQ in children



It is estimated that **20% to 30%** of private wells in New Hampshire contain 10 $\mu\text{g/L}$ or more of arsenic in 2012



It is estimated that as many as 650 cancer cases could be avoided in New Hampshire through testing and treatment of water with unhealthy levels of arsenic, based on a study by Dartmouth College



Merrimack, Strafford, Hillsborough, and Rockingham Counties have the greatest potential for having arsenic concentrations above 5 and 10 $\mu\text{g/L}$ in bedrock groundwater.