

Air Quality in NC

Mission of the Division of Air Quality:

To protect and improve outdoor air quality in North Carolina

Clean air is essential to public health, the environment, and the economy in North Carolina. We need clean air so people can breathe without triggering asthma and other health problems. We need clean air to preserve our forests, streams and lakes for public recreation and wildlife. We need clean air so citizens can view scenery in our mountains, parks and coastal areas. We need clean air to sustain tourism, forestry, and other aspects of the economy.

Despite the value of clean air, people often don't notice it unless there are problems such as smoke, haze, noxious fumes or bad odors. That's too bad. Consider this: Humans can live for days without water and weeks without food, but only a few minutes without air. That's why we need laws and regulatory programs to protect air quality. In North Carolina, the Division of Air Quality is primarily responsible for protecting and improving air quality.

Regulatory Authority

The Division of Air Quality (DAQ) is responsible for protecting and improving outdoor air quality in North Carolina. To carry out this mission, the DAQ has programs for monitoring air quality, permitting and inspecting air emissions sources, and educating and informing the public about air quality issues.

The DAQ, which is part of the N.C. Department of Environment and Natural Resources, also enforces state and federal air pollution regulations. In North Carolina, the General Assembly enacts state air pollution laws, and the Environmental Management Commission adopts most regulations dealing with air quality. In addition, the U.S. Environmental Protection Agency (EPA) has delegated the DAQ the authority to enforce federal laws and regulations dealing with air pollution in North Carolina. The DAQ does not deal with indoor air pollution such as workplace safety, second-hand smoke, asbestos contamination, and radon and radiation problems. For information about indoor air quality, please contact the N.C. Division of Public Health at (919) 733-3410.

Several counties in North Carolina operate their own local air quality programs. In these areas, the local program is responsible for enforcing state or federal air quality regulations.

Key Air Quality Problems

Some air pollution problems remain in North Carolina despite steady improvements in air quality over the past three decades. Some of these problems are localized and short-term, such as smoke from outdoor fires, and others are more widespread and persistent, such as ozone and haze.

Following are brief summaries of key air quality problems, their causes, and efforts to control them:

Ozone, an extremely reactive form of oxygen, is the main component of smog. In the upper atmosphere, ozone protects the Earth from harmful solar radiation. Near the ground, however, ozone is unhealthy to breathe, damages trees and crops, and can degrade outdoor materials. Such problems led the EPA to adopt a stricter standard for ozone in 1997. Ozone is formed when nitrogen oxides (NO_x) react in air with volatile organic compounds (VOCs) on hot, sunny days. The main sources of NO_x emissions are cars and trucks, coal-fired electric power plants and large industrial boilers. Trees are the major source of VOCs, but substantial emissions also come from industry and motor vehicles. Ozone levels have risen in recent years due to: increased traffic and industry resulting from North Carolina's rapid population growth; and hotter weather conditions that favor ozone formation. North Carolina is working to reduce ozone levels by reducing NO_x emissions from industry and motor vehicles.

Haze can be caused by various air pollutants that reduce visibility, including dust, ammonia and sulfur oxides. Visibility has important implications for the state's tourist economy, because haze can obscure views and detract from scenery - a critical issue in the mountains. The DAQ plans to work with power plants to reduce their emissions of sulfur oxides, the single most important cause of haze in North Carolina.

Smoke from outdoor burning pollutes the air and is unhealthy to breathe. An EPA study found that backyard burning of trash from a family of four can emit as much of pollutants as a well-controlled municipal incinerator serving tens of thousands of households. Open burning is the DAQ's most widespread enforcement problem. The state Open Burning Rule prohibits most outdoor burning, with exceptions allowed for campfires, land-clearing under certain conditions, disposing of vegetative storm debris, and agricultural pest control.

Animal Odors are an increasing concern in North Carolina, largely due to the explosive growth of the hog industry. In 1999, the EMC adopted rules for controlling odors from animal operations, one of the first rules of this type in the nation. The DAQ is responsible for enforcing these rules, which apply to livestock operations that use liquid waste-management systems and meet certain size thresholds. The rules set minimum guidelines that eligible operations must follow and give DAQ the authority to require "best management plans" and equipment for controlling odors at farms where DAQ staff have documented an objectionable odor problem.

Nutrient Deposition is caused when air pollutants containing nitrogen and other nutrients settle in or are washed into streams, lakes and coastal waters. These nutrients, if they are too plentiful, can contribute to algal blooms and fish kills in waters. Nitrogen deposition is the largest airborne nutrient problem in North Carolina, with much of these emissions coming from livestock operations, industry and motor vehicles.

Fine Particulates are very small particles of dust, soot and vapors that can penetrate deep into a person's lungs and cause health problems. In 1997, the EPA adopted a new standard for fine particulates, or PM 2.5. North Carolina began monitoring the air for fine particulates in 1999 and is developing plans for reducing these emissions

Air Toxics include a range of compounds that are hazardous, poisonous or unhealthy to breathe at certain concentrations. The state Air Toxics Rule sets health-based limits for 105 compounds the emissions sources are not supposed to exceed at their property lines. The DAQ also enforces federal toxics rules that establish Maximum Achievable Control Technologies (or MACTs), by industry groups, for sources that emit threshold quantities of 188 hazardous air pollutants.

For More Information

information can be found at the DAQ Web site (<http://daq.state.nc.us>) or obtained by calling the DAQ Public Information Office at (919) 715-7408.