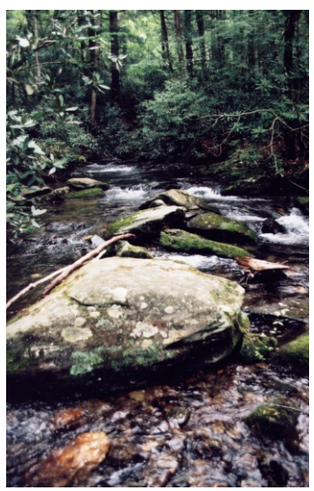
Mission:
To protect and improve outdoor air quality in North Carolina

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, agriculture 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.

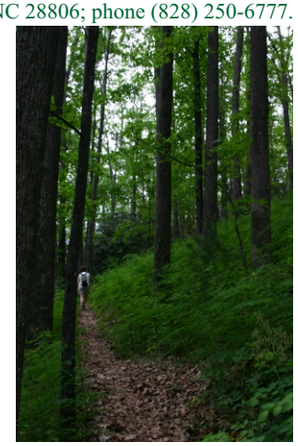
The DAQ, which is part of the N.C. Department of Environment and Natural Resources (DENR), also enforces state and federal air pollution regulations. In North Carolina, the General Assembly enacts state air pollution laws, and the Environmental Management Commission adopts most regulations dealing with air quality. In addition, the U.S. Environmental Protection Agency (EPA) has delegated to 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 issues 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) 707-5900.

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. Local programs in North Carolina include the:

Forsyth County Environmental Affairs Department, 537 North Spruce St., Winston-Salem, NC 27101; phone (336) 703-2440.

Mecklenburg County Department of Environmental Protection, 700 North Tryon St., Suite 205 Charlotte, NC 28202; phone (704) 336-5500.

Western North Carolina Regional Air Quality Agency (Buncombe County), 49 Mount Carmel Rd. Asheville, NC 28806; phone (828) 250-6777.



DAQ Organization

The DAQ Central Office is organized into five sections: Administration, Ambient Monitoring, Permits, Planning, and Technical Services. Key responsibilities for these sections include:

Administration is responsible for the overall operations of the division, including management, budgeting, and public information.

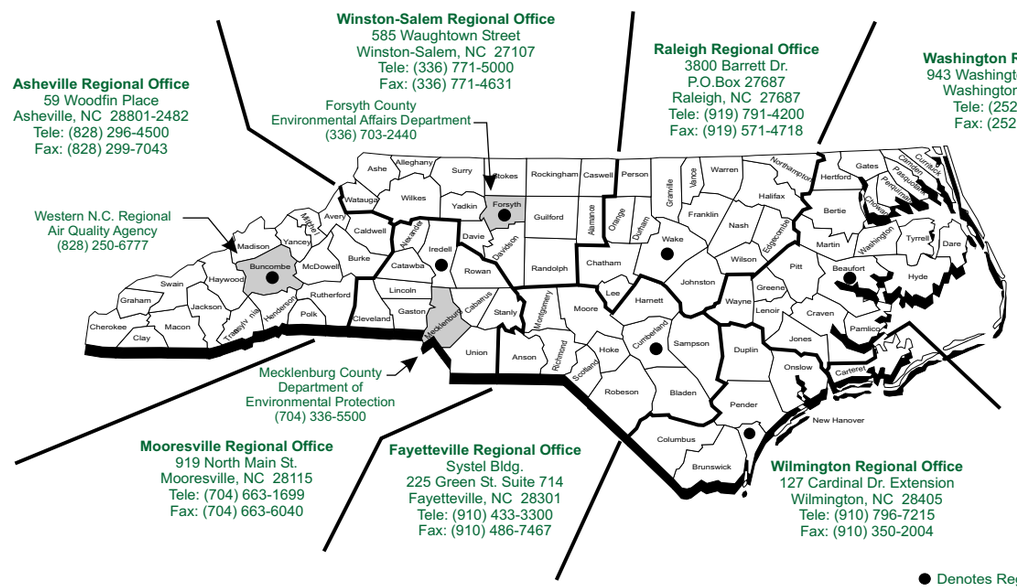
Ambient Monitoring is responsible for measuring levels of regulated pollutants in the ambient (outdoor) air. The section maintains a network of 45 monitoring stations across the state, measuring for pollutants such as ozone, lead, particulates (dust), nitrogen oxides, sulfur dioxide, carbon monoxide and acid rain.

Permits handles the issuance, renewal and modification of air quality permits in North Carolina. Currently, about 3,500 facilities hold air quality permits in the state.

Planning performs computer modeling and analyses to determine how to attain air quality standards. The section works with the legislature and Environmental Management Commission to develop rules, regulations and programs for meeting air quality standards. Planning also coordinates the N.C. Air Awareness Program, which educates and informs the public about air pollution, its causes and effects, and ways to prevent it.

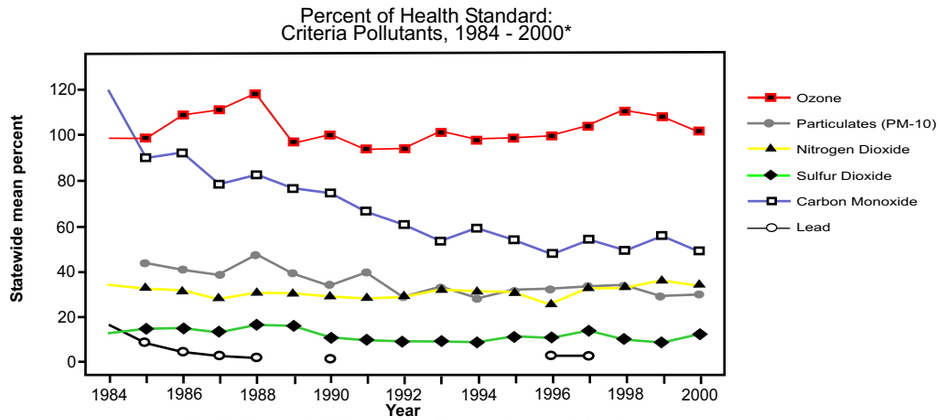
Technical Services is responsible for tracking facilities for compliance with air quality rules, regulating emissions from mobile sources (cars and trucks), and implementing the state rules for controlling toxic air emissions. The section coordinates enforcement actions for rules violations based on inspections and investigations by field staff.

In addition to these sections, the DAQ has seven **regional offices**, located in **Asheville, Fayetteville, Mooresville, Raleigh, Washington, Wilmington, and Winston-Salem**. DAQ staff in these regional offices handle many of the day-to-day responsibilities for the division, including investigating complaints, inspecting and monitoring facilities, issuing and renewing air permits, and maintaining air quality monitoring equipment. The map below shows the locations and jurisdiction of DAQ regional offices, their addresses, and phone numbers.



Air Quality Trends

Air quality generally has improved in North Carolina since 1970, when Congress first enacted the federal Clean Air Act. Under the act, the EPA sets federal standards for six air pollutants: ozone, lead, particulates (dust), carbon monoxide, nitrogen dioxide and sulfur dioxide. Air concentrations of pollutants are not supposed to exceed these standards, which are set at levels needed to protect public health and the environment. The following graph shows long-term trends for air pollutants in North Carolina, with levels declining for lead, larger particulates, carbon monoxide, nitrogen dioxide and sulfur dioxide. The exception to this trend is ozone, which declined from the late 1980s to mid-1990s, but has gone up in recent years.



*The PM-10 summary for 2000 excludes data flagged as affected by wild forest fires.

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 in 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 (NOx) react in the air with volatile organic compounds (VOCs) on hot, sunny days. The main sources of NOx 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 NOx 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-conntrolled 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 that 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

Internet: The DAQ's Internet Web site (www.ncair.org) is the simplest place to learn more about air quality data, regulations, programs, publications, news releases and other information.

Phone: General information about air quality in North Carolina can be obtained by calling the toll-free Air Awareness hotline, 1-888-RU4NCAIR (1-888-784-6224). The hotline has pre-recorded messages on a number of air-quality topics, including ozone forecasts, open burning, and odor problems. Callers also can leave messages. People who are seeking information on current air quality conditions can call the toll-free Air Quality Index hotline, 1-888-AIRWISE (1-888-247-9473).

Complaints: People who would like to report a problem or request more information about air quality can contact the nearest DAQ regional office, as shown in the map.

Public Information: Copies of air quality brochures, reports, news releases and other public information can be found at the DAQ Web site (www.ncair.org) or obtained by calling the DAQ Public Information Office at (919) 715-7408.

Clearing the Air: North Carolina Division of Air Quality

NCDENR

North Carolina Department of Environment and Natural Resources