



Earth Gauge™ Washington D.C – Air Quality

Environmental Information for Broadcast Meteorologists

This fact sheet is part of a series on key weather-environment topics for the DC Metropolitan area. The Earth Gauge™ Healthy Communities project is designed to provide basic background information on environmental impacts in major U.S. urban areas, as well as simple messages meteorologists can deliver to their viewers.

More than 51 percent of Americans live in cities with unhealthy levels of air pollution, and residents of DC are no exception. Here, read about air pollution in Washington D.C., and find ways to reduce your impact on the Region's air quality.

Ground-Level Ozone and Particle Pollution in DC

During DC summers, heat and sunlight react with nitrogen oxides (NO_x) and volatile organic compounds (VOCs) – pollutants found in exhaust from cars and gas-powered lawn equipment, power plant emissions, gasoline fumes, and other sources – to create ground-level ozone pollution.

Particle pollution (particulate matter) consists of solid and liquid particles that are suspended in the air and range in size from 2.5-10 microns. These particles are created through the combustion of fossil fuels during activities like firewood burning, driving, agricultural burning, power plant emissions, and other sources.

Air Pollution Impacts People, Plants, and the Built Environment



Ground-level ozone pollution irritates airways and causes health problems for individuals with chronic lung conditions, such as asthma. More than 50,000 individuals in DC suffer from asthma, which can ultimately lead to missed work and school days. Particle pollution, like ozone, has health implications because it can get deep into the lungs and remain for long periods of time, causing health problems for the elderly, children, and individuals with heart and lung conditions.



Ground-level ozone pollution damages plant life. High concentrations can slow photosynthesis (the process by which plants make food), stunt growth, and damage plant cells. It can also reduce agricultural crop yields and forest growth.



Some materials – rubber, textiles, some paints and fibers – can be weakened by ground-level ozone pollution, and elastic materials (such as rubber) can become more brittle or crack. Ground-level ozone can damage buildings and national monuments, and reduce visibility in cities. Particle pollution can be carried considerable distances by the wind, affecting areas miles from where it originated. It is a main ingredient in haze, and can soil and damage buildings, monuments, and other materials.

Learn More about Air Quality

Clean Air Partners provides air quality information and forecasts for Washington, DC and Baltimore. www.cleanairpartners.net

AIRNow provides local air quality forecasts, fact sheets and resources on the effects of air pollution, and resources for meteorologists to include the air quality forecast in their on-air presentations. www.airnow.gov

It All Adds up to Cleaner Air, a public education campaign to raise awareness of connections between transportation and air quality, includes links local resources, tips, and relevant publications. www.italladdsup.gov

Flip this page over to find simple messages and tips about air pollution you can use during your on-air weather report.



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Making the Connection: What You Can Say On-Air

Here are some simple facts and tips you can provide to your viewers to help make the connection between weather and air quality. Help your viewers understand how air pollution forms and how they can take simple steps to reduce their own impact on DC's air quality.



Sitting Idle

On hot days, exhaust from idling cars reacts with heat and sunlight to create ground-level ozone, a harmful pollutant that can cause health problems for asthmatics and others with chronic lung conditions. It can also create haze that reduces visibility.

Viewer Tip: Try sharing a ride with a coworker or friend, and you'll cut your emissions almost in half. Mass transit is equally beneficial for air quality. Using alternative transportation just once per week can save you up to 1200 miles on your car and more than 500 dollars in driving costs. Visit www.wmata.com to learn more about the Washington D.C regional transit system and find a route to your destination.

Breathe Easy

The District of Columbia ranks fifth on the list of U.S Asthma Capitals, and was placed on the list of the "100 most challenging places to live." Ozone - an airway irritant created when air pollutants from car exhaust, gasoline fumes, and other sources react with heat and sunlight - can trigger health problems for asthmatics and others with lung diseases. Kids can be particularly susceptible to ozone pollution because their respiratory systems are still developing, and they tend to spend more time outside.

Viewer Tip: Keep your eye on the air quality forecast provided by your local meteorologist. On days with poor air quality, consider rescheduling sports games and other outdoor activities for another day. If you do go outside, aim for early morning or evening hours, when air pollution levels are likely to be lower.



Two-Wheeling

The average passenger car emits 77 pounds of hydrocarbons (key ozone pollution ingredients); 575 pounds of carbon monoxide (reduces oxygen delivery to the body and aggravates some heart and lung conditions); and 11,450 pounds of carbon dioxide (traps heat in the atmosphere) each year. Your bike? Zero emissions, no gas required.

Viewer Tip: Dust off your two-wheeler. There is almost one adult-sized bike per household in the U.S., but few adults report taking frequent bike trips. Try using your bike for short trips - leaving your car at home for five separate one-mile trips eliminates the same amount of air pollutants as one 15-mile trip.

The Truth About Trees

Did you know that trees can actually clean the air? In Washington D.C., it is estimated that our urban forest can remove up to 878,000 pounds of pollutants (largely from the burning of fossil fuels for transportation and energy) from the air annually - making the "air-cleaning" value of trees add up to about 2.1 million dollars!

Viewer Tip: Make sure to take good care of the trees around your home and neighborhood. During weeks when there is little to no rain, water trees slowly with about 5-10 gallons of water. Remove weeds from around tree bases, and use mulch to help keep moisture in the ground. These simple actions can make sure that DC-area trees flourish!

