



Ground-level Ozone

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Six Common Pollutants

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Ozone (O₃) is a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but at ground-level is created by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Ozone has the same chemical structure whether it occurs miles above the earth or at ground-level and can be "good" or "bad," depending on its location in the atmosphere.

In the earth's lower atmosphere, ground-level ozone is considered "bad." Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents as well as natural sources emit NO_x and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form in harmful concentrations in the air. As a result, it is known as a summertime air pollutant. Many urban areas tend to have high levels of "bad" ozone, but even rural areas are also subject to increased ozone levels because wind carries ozone and pollutants that form it hundreds of miles away from their original sources.

"Good" ozone occurs naturally in the stratosphere approximately 10 to 30 miles above the earth's surface and forms a layer that protects life on earth from the sun's harmful rays. [Learn more about how ozone can be beneficial up high in the stratosphere but harmful at ground level.](#)

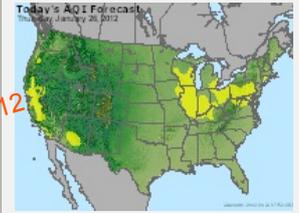
For more information about ground-level ozone:

- [Basic Information](#) - Basics about ground-level ozone pollution.
- [Health](#) - Effects of ground-level ozone pollution.
- [Ozone Standards](#) - Links to technical information related to setting the national air quality standards for ground-level ozone.
- [Ozone Designations](#) - Regional, state and local information related to ground-level ozone nonattainment.
- [Ozone Implementation](#) - Contains information related to implementing the NAAQS for ground-level ozone.
- [Regulatory Actions](#) - Links to proposed and final rules, fact sheets, and other rulemaking documents.
- [Nonattainment Areas](#) - Status of nonattainment areas (the Green Book)
- [Ozone Reduction Strategies](#) - information to help nonattainment and near nonattainment areas develop strategies to reach clean air goals.
- [Air Quality Trends](#) - Progress made in reducing ground-level ozone.
- [Air Emission Sources](#) - Summarizes ozone precursor emissions, volatile organic compounds and nitrogen oxides, by source at national, state and local levels.
- [Early Action Compacts](#) - Contains information about EPA's voluntary program to reduce ground-level ozone.
- [Related Links](#) - Other information related to ground-level ozone pollution.

Announcements

- September 22, 2011** - EPA clarifies the status of the ozone National Ambient Air Quality Standard (NAAQS) and outlines implementation steps moving forward.
 - [Memo \(PDF\)](#) (988kb, 4pp)
 - [Table \(PDF\)](#) (50kb, 2 pp)
- September 2, 2011** - Statement by EPA Administrator Lisa P. Jackson on the Ozone National Ambient Air Quality Standards [Learn More.](#)
- July 8, 2011** - EPA proposes criteria for waiving federal requirements for vapor recovery systems at gas stations in areas with high ground-level ozone. [Learn More.](#)
- May 13, 2011** - [Ozone Reduction Strategies](#) - state, local and tribal clean air agencies

Your Air Quality



Good	Moderate	Unhealthy for Sensitive Groups
Unhealthy	Very Unhealthy	Hazardous
No data available		

The [AIRNow Web site](#) offers daily air quality forecasts for ozone pollution as well as real-time air quality conditions for over 300 cities across the U.S.

Sierra Club v. U.S. E.P.A., No. 10-71457 archived on January 26, 2012