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U.S. CLIMATE & ENERGY

Strong, Science-Based Ozone Air Quality Standard Urgently Needed to Protect Human Health, Inform Families Whether their Air is Safe to Breathe, and Help Ensure Healthy Air in our National Parks

Ground-level ozone, also referred to as smog, is an air pollutant that poses a significant health risk. Ozone forms near ground level when two air pollutants, volatile organic compounds and nitrogen oxides, are emitted by sources such as cars, power plants, oil and gas operations, chemical plants and react chemically in the presence of sunlight. High ozone pollution concentrations are associated with asthma attacks, long-term lung damage and death. Children, the elderly, and people who suffer from lung diseases such as asthma are especially susceptible to adverse health effects, while even healthy individuals working or exercising outside are at risk. The Environmental Protection Agency (EPA) estimates that our nation has a variety of programs and clean air measures already underway that could help many communities lower harmful ozone pollution and restore healthy air in cost effective ways.

Ozone is a regulated "criteria" pollutant under EPA's National Ambient Air Quality Standards (NAAQS). There are six criteria pollutants regulated by EPA because they are harmful to public health and wellbeing, and prevalent in our environment. The current ozone standard, established in 2008, is set at 75 parts per billion (ppb).

Under the Clean Air Act, EPA is required to periodically review our nation's health-based air quality standards to ensure that they provide adequate health and environmental protection, considering up-to-date medical science. On November 25, 2014, EPA proposed to revise the ozone standard, lowering it to a range from 65 to 70 ppb. Scientific record indicates an even lower pollution concentration of 60 ppb would ensure greater protection for American families.

According to EPA's analysis, a revised standard of 60 ppb would yield a reduction in ozone and particulate pollution in 2025 that prevents up to 7,900 premature deaths, 1.8 million asthma attacks among children, and 1.9 million missed school days.

TRACKING OZONE EXCEEDANCE DAYS

EPA uses the information tracked in real time by the air monitors to forecast daily ozone levels, and later validates and verifies the data submitted by the thousands of monitoring stations and reports the data through its Air Quality System (AQS). The validated data in the AQS is then used to track exceedances, or days during which an area exceeded the standard for ozone, which is currently set at 75 parts per billion.

Millions of Americans were repeatedly exposed to high ozone pollution levels in 2014. Table 2 below identifies the ten areas outside of California with the greatest number of ozone exceedance days in 2014 including Phoenix, Las Vegas, Atlanta, Chicago, and Dallas-Fort Worth. Figure 1 depicts the 25 areas across the country with the greatest number of ozone exceedances.

AIR QUALITY INDEX

In order to track air quality across the country, EPA relies on the information reported by over 4,000 air monitors located throughout the U.S. These monitors track air quality and report it to EPA in real time for over 300 cities at the website www.airnow.gov. EPA uses the information from these monitors to inform the public of potential health risks due to poor air quality, using the Air Quality Index (AQI).

EPA issues daily AQI forecasts in order to advise the public on air pollution levels. EPA makes this data available to the public and to local weather forecasters to be disseminated throughout communities.

The AQI indexes and categorizes air quality into six categories: (1) good, (2) moderate (3) unhealthy for sensitive groups (4) unhealthy, (5) very unhealthy, and (6) hazardous. Each category represents a level of precaution ranging from no expected health impacts to air quality that represents a serious health threat to the whole population. Much of the population, especially sensitive populations like children with asthma, depend upon the AQI forecasts to plan outdoor activities and take extra steps to protect themselves from harm.

Under the current index, an AQI level of 100 is associated with an 8-hour ozone level between 60 and 75 (the current standard). It is color coded as yellow, indicating that the air quality may be a moderate health concern for people who are sensitive to air pollution. EPA is proposing to update the AQI level of 100 to associate it with an 8-hour ozone concentration ranging from 50 to 70 when they finalize the revised ozone standard. See Table 1 below to compare the current and proposed ozone concentration breakpoint levels, the associated AQI level, categories, and their health meanings for the population.

Table 1: AQI with current and proposed 8-hour ozone concentration breakpoints

Associated AQI level	Current 8-Hour Concentration Level Breakpoints	Proposed 8-Hour Concentration Level Breakpoints	Category	Meaning
0-50	0-59	0 to (49-54)	Good	Air quality is considered satisfactory, and air pollution poses little or no risk
51-100	60-75	(50-55) to (65-70)	Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
101-150	76-95	(66-71) to 85	Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
151-200	96-115	86-105	Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
201-300	116-374	106-200	Very Unhealthy	Health warnings of emergency conditions. The entire population is more likely to be affected.
301-500	375 to the Significant Harm Level	201 to the Significant Harm Level	Hazardous	Health alert: everyone may experience more serious health effects.

Environmental Defense Fund
257 Park Avenue South
New York, NY 10010

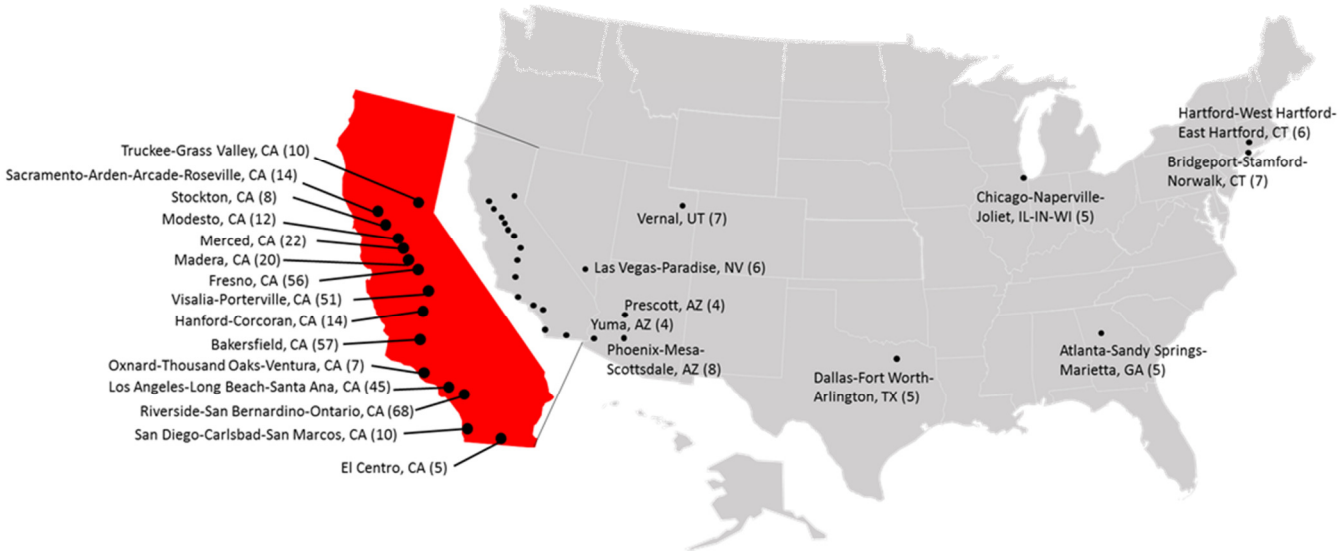
T 212 505 2100
F 212 505 2375
edf.org

New York, NY / Austin, TX / Bentonville, AR / Boston, MA / Boulder, CO / Raleigh, NC
Sacramento, CA / San Francisco, CA / Washington, DC / Beijing, China / La Paz, Mexico

Table 2: Ten areas outside California with the greatest number of ozone exceedance days in 2014

Days	CBSA Location
8	Phoenix-Mesa-Scottsdale, AZ
7	Bridgeport-Stamford-Norwalk, CT
7	Vernal, UT
6	Hartford-West Hartford-East Hartford, CT
6	Las Vegas-Paradise, NV
5	Atlanta-Sandy Springs-Marietta, GA
5	Dallas-Fort Worth-Arlington, TX
5	Chicago-Naperville-Joliet, IL-IN-WI
4	Prescott, AZ
4	Yuma, AZ

Figure 1: Map of the 25 areas with the greatest number of ozone exceedance days in 2014



The table and figure above demonstrate that millions of Americans across the country were repeatedly exposed to high ozone pollution levels in 2014. California, with its very serious ozone pollution challenges, had areas experiencing dozens of ozone exceedance days. The Riverside-San Bernardino-Ontario area, which has a population of more than 4 million people, experienced 68 exceedance days in 2014, the most of any area in the country.

OZONE IN NATIONAL PARKS

Many urban areas suffer from high levels of ozone due to the location of stationary emission sources of air pollutants, but U.S. national parks also suffer from a high level of ozone exceedance days. While national parks do not contain power plants, ozone exceedance days are monitored in places like Acadia National Park because ozone precursors are easily transported from upwind stationary emissions sources to downwind areas many miles away. Smog in national parks makes breathing difficult and dangerous for visitors and can harm trees, plants, and vegetation.

The National Park Service actively monitors ozone levels during the ozone season (April to October) and tracks the number of days during which the ozone level has exceeded the standard in the parks. Several of the parks have monitors in multiple locations due to their large size, such as Joshua Tree National Park. In 2014, numerous national parks had at least one day that exceeded the ozone health standard of 75 ppb.

In 2014, Sequoia and Kings Canyon National Parks had a particularly high number of exceedance days at 56 at the Ash Mountain monitoring site and 37 at the Lower Kaweah site. Joshua Tree National Park also had a high number of exceedance days in 2014, at 41 exceedance days at the Black Rock monitor. From data available for April to August in 2015, the same monitor recorded 24 exceedance days in Joshua Tree.

Table 3: National park areas ozone exceedance days so far in 2015 (April-August only)

National Park	Total Count	Max 8-hr O_3 (ppb)	4th highest max. 8-hr O3 (ppb)
Acadia– Cadillac Mountain	1	80	68
Great Basin National Park– Maintenance Yard	1	76	66
Great Smoky Mountains National Park– Clingmans Dome	0	75	66
Great Smoky Mountains National Park– Cove Mountain	0	69	68
Great Smoky Mountains National Park– Look Rock	0	72	68
Joshua Tree National Park– Black Rock	24	92	86
Joshua Tree National Park– Cottonwood Canyon	3	85	74
Joshua Tree National Park– Pinto Wells	6	84	77
Mammoth Cave National Park-Houchin Meadow– Houchin Meadow	0	67	63
Mojave National Preserve– Kelso Mountains	7	83	78
Pinnacles National Monument– Entrance Station	0	68	67
Rocky Mountain National Park– Long's Peak	0	75	70
Sequoia and Kings Canyon National Parks– Ash Mountain	44	91	88
Sequoia and Kings Canyon National Parks– Lower Kaweah	23	86	83
Yosemite National Park– Turtleback Dome	0	73	70

Air Quality Index (ppb)
Good (0-59)
Moderate (60-75)
Unhealthy for Sensitive Groups (76-95)
Unhealthy (96-115)
Very Unhealthy 116+

Table adapted from The National Park Service: http://www.nature.nps.gov/air/Monitoring/exceed.cfm

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