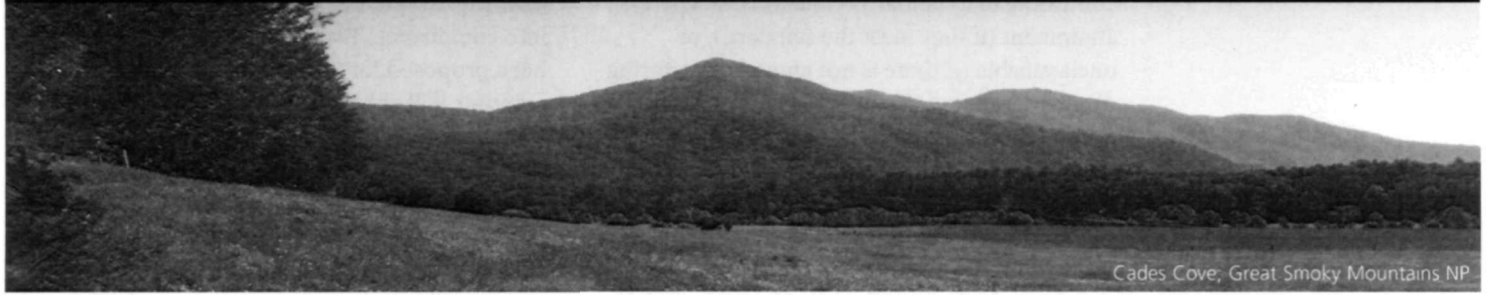


Changing Ozone Standards

National Park Service
U.S. Department of the Interior

Natural Resource Program Center
Air Resources Division



Cades Cove, Great Smoky Mountains NP

Overview

In January 2010, the Environmental Protection Agency (EPA) announced plans to strengthen the primary (human health) ozone standard and proposed a new secondary ozone standard to protect ecosystems and sensitive plants. Many NPS units that have not violated ozone standards before are likely to exceed the revised standards, which will be finalized this August.

The NPS supports strengthening the primary ozone standard and establishing a meaningful secondary ozone standard. A stronger primary standard will provide additional protection to thousands of park visitors and employees. A stronger secondary standard will help protect ozone-sensitive plants and environments. NPS units may need to work with States and the EPA to improve air quality as a result of the standards revision.

Understanding Ozone Standards

Ozone

Ground-level ozone is a pollutant that can harm human health and damage sensitive vegetation and ecosystems. The EPA sets national air quality standards that establish threshold levels of certain pollutants, including ground-level ozone. Ozone forms at the earth's surface when nitrogen oxides (from fossil fuel combustion, fires, fertilizers, and lightning) and volatile organic compounds (released by industrial processes, car emissions, and vegetation) react in the presence of sunlight. The current ozone standards were set in 2008 at 0.075 parts per million (ppm)—based on the fourth highest 8-hour average of ozone concentrations monitored in the past three years.

Protecting Human Health

The EPA plans to strengthen the primary (human health) standard to a value in the range of 0.060–0.070 ppm. This proposed primary standard will better protect human health especially among sensitive groups, including those with respiratory disease, children, and the elderly.

Protecting The Environment

The EPA additionally proposes a W126 value in the range of 7–15 ppm-hours for a new secondary ozone standard. W126 is the cumulative sum of hourly ozone values that places greater weight on the higher ozone concentrations most likely to affect plants. These weighted values are summed over daylight hours (and expressed as ppm-hours) for each 3-month period during the local ozone season, and the maximum 3-month period is reported.

The secondary standard is intended to protect ecosystems and sensitive plants. Currently, the secondary ozone standard is equal to the primary ozone standard, based on a short-term (8-hour) average concentration. However, plants respond to long-term ozone exposure, and scientists have shown that a cumulative index of exposure, the W126, is better correlated with plant growth effects than the 8-hour average concentration used to measure human health effects.

What to Expect

The EPA expects to finalize specific values for the primary and secondary ozone standards on August 31, 2010. States will then propose areas—usually counties—as nonattainment (if they do not meet the standard or contain sources that contribute to a standards violation elsewhere), attainment (if they meet the standard), or unclassifiable (if there is not enough monitoring data to determine whether the standard is met). For the primary standard, the EPA proposes that

each State will recommend designations for all areas of the State by January 2011. The EPA will finalize designations by July 2011. By December 2013, States are required to submit plans to the EPA describing steps they will take to lower ozone levels and bring nonattainment areas into compliance. Two alternative schedules have been proposed for the secondary standard; the schedule will either be the same as for the primary standard or delayed by approximately one year.

NPS Position

In March 2010, the NPS submitted comments to the EPA, through the Department of the Interior, on the proposed changes to the ozone standards. In these comments we supported the strengthening of the primary ozone standard and supported establishing a W126-based secondary ozone standard to protect sensitive vegetation. A stronger primary standard will provide additional protection to thousands of park visitors and

employees. A stronger secondary standard will help protect ozone-sensitive plants. Nearly every NPS unit contains one or more ozone-sensitive plant species and ozone exposure can lead to reduced plant growth, visible injury to leaves, and increased susceptibility to disease, insects, and drought. The official comment letter to the EPA is available on the web (<http://www.nature.nps.gov/air/hot/index.cfm>).

NPS Impacts

If the new primary standard were set today, 126–193 NPS units would be in counties designated as nonattainment for the primary ozone standard depending on the value chosen in the 0.060–0.070 ppm range.

Additional parks may have unhealthy ozone levels but lack the monitoring data to confirm it and cannot be designated nonattainment at this time. However, in 2009, the EPA required an expansion of the ozone monitoring network, mainly to smaller urban areas and non-urban areas. As more data become available, additional nonattainment areas may be designated.

NPS units in nonattainment areas will be required to work with State agencies for certain activities, including large construction projects and prescribed burning. This coordination, required by the General Conformity Rule of the Clean Air Act (section 176(c)(4)) and Transportation Conformity regulations (40 CFR parts 51 & 93), will ensure that the NPS does not interfere with a State's ability to reduce ozone forming emissions and bring all areas into compliance with the new standards. Parks in nonattainment areas may be eligible for federal funding to reduce emissions through the Congestion Mitigation and Air Quality (CMAQ) Improvement Program.

Recommended Actions

- Participate in States' discussions on recommended nonattainment boundaries.
- Collaborate with states to determine if more rural monitoring is needed.
- Assist States as needed in developing estimates of ozone-forming emissions as State Implementation Plans (SIPs) are developed.

- Coordinate with States on General Conformity Rule requirements during development of SIPs, as well as when projects including construction or prescribed burning exceed negligible levels.
- Consider participating in NPS or local health advisory programs.
- Step-up in-park emission inventory and reduction efforts.

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