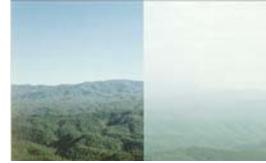




BRIEFING STATEMENT



Great Smoky Mountains National Park Air Quality Issues January 2008

Background: Monitoring and research conducted over the past 28 years at Great Smoky Mountains National Park (GRSM) has shown that air pollution is significantly affecting park resources (streams, soils, vegetation and visibility), visitor enjoyment and public health. The burning of fossil fuels (e.g. coal, oil, and gasoline) produces emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x) and mercury (Hg) that convert into harmful secondary pollutants (e.g. sulfates, nitrates, fine particles, ozone, and methylmercury). Winds coming into the southern Appalachians carry pollutants from the Tennessee valley and as far away as the Ohio and Mississippi valleys, the industrial cities of the Southeast and Midwest.

The park experiences some of the highest measured air pollution of any national park in the U.S. The park is in non-attainment areas for both the 8-hour ozone and the annual fine particle National Ambient Air Quality Standards. Although air quality in most urban areas throughout the country had been improving over the past two decades, air quality at GRSM in the 1980's and 1990's had been showing signs of further deterioration.

Current Status: The most recent 10-year air quality assessment (1996-2005) shows that air quality at the park is improving (visibility, fine particles, sulfate deposition, and nitrate deposition) or remains stable (ozone concentrations and ammonium deposition). Even though air quality is beginning to improve, air quality problems continue including:

Ozone concentrations have exceeded standards to protect public health and vegetation. There have been 260 unhealthy ozone days since 1997. Over 30 species of plant life show visible foliar damage from ozone pollution. Visibility on the worst days averages about 15 miles, much less than the estimate of natural visibility conditions (77 miles). Sulfate particles account for 84% of the haze on the worst days. High levels of acid deposition are acidifying high elevation streams and saturating soils with too much nitrogen deposition which harms wildlife and trees. High levels of mercury deposition is posing a threat to the park's food web.

Park managers are optimistic that air quality will continue to improve over the next ten years at GRSM because of recent air quality regulations and other related actions.

An Environmental Protection Agency (EPA) program took effect in 2004 that reduced nitrogen oxides in most eastern states by 30% (NO_x SIP Call). The Tennessee Valley Authority (TVA) installed nitrogen oxide emissions controls (selective catalytic

reduction) on the 2 closest power plants to the park, which reduced emissions by 71%. This has led to less ozone pollution and nitrogen deposition in the park.

The EPA issued the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR) in 2005 for eastern states which will lower electric utility emissions of sulfur dioxide, nitrogen oxides, and mercury by an additional 73%, 61% and 70%, respectively, by 2015. Pollution would be capped at the reduced levels providing long-term protection against future air quality deterioration caused by utilities.

The TVA announced in 2001 that they will be installing sulfur dioxide controls (scrubbers) on the two closest power plants to the park by 2010, which will reduce sulfur dioxide emissions from those plants by over 90 percent and further improve the park's air quality by lessening haze, particle pollution, acid rain, and mercury.

The State of North Carolina passed the Clean Smokestack Act in 2002, which will reduce electric utility emissions of sulfur dioxide by 73% by 2013, and nitrogen oxides by 77% by 2009.

The EPA issued the Clean Air Diesel Rule in 2005 that will cut nitrogen oxide emission from non-road construction, agricultural and industrial diesel-powered equipment by more than 90% by 2015. The rule will also remove 99% of the sulfur in diesel fuel by 2010.

The Park Service is collaborating with state and local regulatory agencies, EPA and regional planning organizations (VISTAS) to develop visibility, fine particle, and ozone State Implementation Plans (SIPs) to further protect the park. The Park Service is also working the State of Tennessee on a comprehensive mercury study to better assess the impacts of atmospheric mercury deposition to park resources from TVA power plants. These efforts will help to ensure that public health standards are attained by 2009-2010, reasonable progress for visibility improvements are achieved by 2018, and deposition impacts are lessened to better protect park resources.

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