

Great Smoky Mountains National Park

70 mile visibility

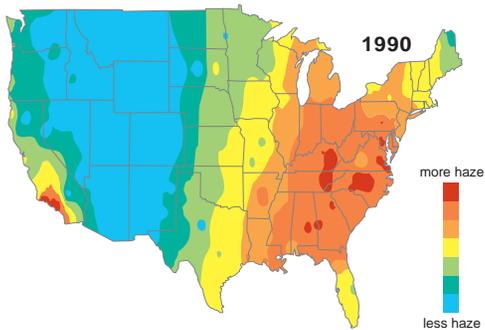
Great Smoky Mountains National Park

25 mile visibility

## How far can you see?

Every year there are over 280 million visitors to our nation's most treasured parks and wilderness areas. Unfortunately, many visitors aren't able to see the spectacular vistas they expect. During much of the year a veil of white or brown haze hangs in the air blurring the view. Most of this haze is not natural. It is air pollution, carried by the wind often many hundreds of miles from where it originated.

Typical visual range in most of the Western U.S. is 60 to 90 miles or about one-half what it would be without manmade air pollution. In most of the East, the typical visual range is 15 to 30 miles, or about one-third of the visual range under natural conditions.



Haze conditions vary across the country. Eastern U.S. areas have more haze due to higher pollutant and humidity levels. Visual range in many Eastern locations is only about one-third the level it would be under natural conditions. In many Western locations, visual range is about one-half as good as it would be without manmade pollution.

## What is haze?

Haze is caused when sunlight encounters tiny pollution particles in the air. Some light is absorbed by particles. Other light is scattered away before it reaches an observer. More pollutants mean more absorption and scattering of light, which reduce the clarity and color of what we see. Some types of particles such as sulfates, scatter more light, particularly during humid conditions.



Pollution particles in the air absorb or scatter light so the view is not as clear or as far as it should be.

## Where does haze-forming pollution come from?

Air pollutants come from a variety of natural and manmade sources. Natural sources can include windblown dust, and soot from wildfires. Manmade sources can include motor vehicles, electric utility and industrial fuel burning, and manufacturing operations.

Some haze-causing particles are directly emitted to the air. Others are formed when gases emitted to the air form particles as they are carried many miles from the source of the pollutants.

## What else can these pollutants do to you and the environment?

Some of the pollutants which form haze have also been linked to serious health problems and environmental damage. Exposure to very small particles in the air have been linked with increased respiratory illness, decreased lung function, and even premature death. In addition, particles such as nitrates and sulfates contribute to acid rain formation which makes lakes, rivers, and streams unsuitable for many fish, and erodes buildings, historical monuments, and paint on cars.

Sulfur dioxide gas, emitted from utility boilers and other combustion sources, react in the air to form sulfates, which contribute to haze problems.



*Haze reduces how far and how well you can see the view.*

# What is being done about haze?

To reduce haze, we must reduce emissions of haze-forming pollutants across broad areas of the country. Several programs are already in place to reduce these air pollutants over the next 10 years. State and local air quality agencies play an important role in the success of these programs by ensuring that their laws and national regulations set by the U.S. Environmental Protection Agency (EPA) are followed. As a result of these efforts, cars and industries pollute far less now than they did in the past.

## Strategies to reduce haze

- ▶ Reduce emissions from power plants and industrial sources
- ▶ Reduce emissions from auto, diesel truck and bus exhaust
- ▶ Minimize impacts of both planned burning and wildfires

Still, there is much to be done to reduce air pollution. In 1999, EPA issued regulations to further reduce haze and protect visibility across the United States. EPA and Federal Land Managers are working with state, local and tribal authorities to promote steady improvements in visibility and provide other protections to people and their surroundings for decades to come.



Office of Air Quality Planning and Standards  
Research Triangle Park, NC 27711

United States  
Environmental Protection  
Agency

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## What can you do?

As the U.S. population and the number of vehicles continue to increase we are all challenged to do our part to reduce air pollution.

- ▶ Cut energy use; participate in your local utility's energy conservation programs
- ▶ Recycle
- ▶ Carpool or use mass transit
- ▶ Minimize open burning
- ▶ Actively participate in state, local and federal planning efforts to reduce air pollution

## Where can you get more information?

Contact your State or Local Air Quality Agency  
or

U.S. Environmental Protection Agency (EPA) -- [www.epa.gov/oar/oaqps](http://www.epa.gov/oar/oaqps)  
National Parks Service -- [www.nature.nps.gov/ard](http://www.nature.nps.gov/ard)  
U.S. Fish and Wildlife Service -- [www.nature.nps.gov/ard/fws/fwsaqb.htm](http://www.nature.nps.gov/ard/fws/fwsaqb.htm)  
U.S. Department of Agriculture Forest Services --  
[www.fs.fed.us/r6/aq/natarm](http://www.fs.fed.us/r6/aq/natarm)



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## How Air Pollution Affects the View