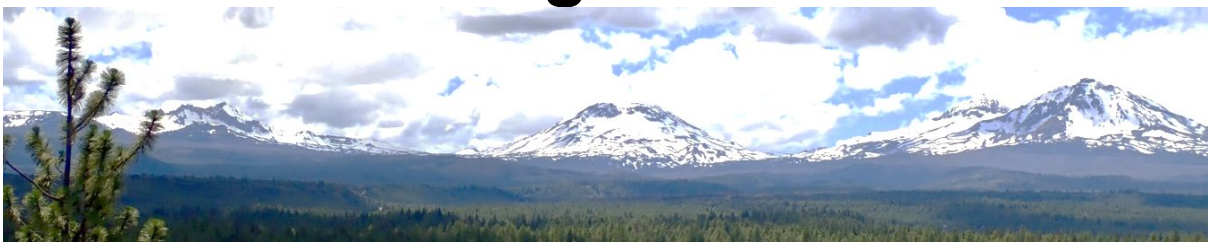
# Fact Sheet

# Overview of Regional Haze



*Three Sisters Wilderness.*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**What is regional haze?**
Regional haze is a term that EPA uses to refer to visibility impairment at designated national parks and wilderness areas caused by air pollution from different sources over a wide geographic area. EPA defines regional haze as different from visibility impairment caused by a single source at a single park or wilderness area.

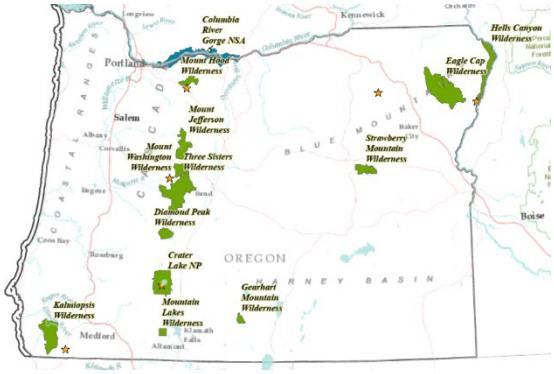
Visibility in the regional haze program is measured using deciviews, which is a measure of the loss of light. The lower the number of deciviews, the clearer the day.

*Looking east from Vista House, Columbia River Gorge, good visibility (9 deciview impairment, over 100 miles visibility).* Source: WinHaze.

*Looking east from Vista House, Columbia River Gorge, poor visibility (23 deciview impairment, less than 25 miles visibility).* Source: WinHaze

**What are the designated parks and wilderness areas where visibility is impaired by regional haze?**
EPA refers to these designated parks and wilderness areas as "Mandatory Federal Class 1 Areas," which are referred to as Class 1 Areas. There are 156 Class I Areas listed in federal regulations. You can see the list at https://www.epa.gov/visibility/list-areas-protected-regional-haze-program.

Oregon has 12 Class I Areas. We also include the Columbia River Gorge National Scenic Area in our Regional Haze planning processes.




*Map of Oregon's 12 Class I Areas (green) and the Columbia River Gorge National Scenic Area.*

**What causes regional haze?**
Regional haze is caused by air pollution made up of particles that scatter sunlight, blurring visibility over distances visible to the human eye. The particles that cause this effect are from both particles and gasses emitted by human activity and natural events.

In Oregon, stationary sources, motor vehicles, agriculture and dairies, prescribed burning, agricultural field burning, and

wintertime wood smoke are all significant sources of haze-forming pollutants. Natural events, such as wildfires, volcanic activity, and high winds can put particles into the atmosphere that also decrease visibility.

**What does the federal government do to try to alleviate regional haze?**

The federal Clean Air Act mandates that EPA issue regulations to improve visibility in Class 1 Areas, and in 1999, EPA issued the Regional Haze Rule. These regulations require states to submit plans to EPA, which must do three things:

- The plans must show which Class 1 Areas have visibility that's affected by the air pollutant emissions from that state, whether those Areas are in the state or beyond its borders.
- The plans must show reasonable pollution control measures the state will put in place to reduce the state's emissions from human activity that affects visibility at Class 1 Areas. The plans do not address emissions from natural events beyond human control.
- The plans must show how much visibility improvement is expected to result from the pollution control measures. The federal regulations on Regional Haze require that states evaluate progress in improving visibility conditions in Class 1 Areas relative to the rate of progress needed to achieve "natural conditions" by the 2064 benchmark.

**How do we know how much visibility impairment exists at a Class 1 Area?**

Air quality monitors are positioned in or near each Class 1 Area. These monitors measure the amount of visibility impairing particles in the air – that is, how much pollution is in the air that keeps people from seeing natural vistas clearly. This nationwide network of monitors is called the IMPROVE (**I**nteragency **M**onitoring of **PRO**tected **V**isual **E**nvironments) network. IMPROVE is managed and operated by a committee of federal agencies, including EPA and the various land management agencies, as well as organizations that represent state regulatory agencies. More information on IMPROVE is available at http://vista.cira.colostate.edu/Improve/.

**How do we find the source of visibility impairing pollutants?**

Federal and state air quality planners, working with federal land managers, perform highly technical analyses to answer that question. In part, they do this by identifying air pollutant emission sources in the region around a Class 1 Area. For each source, planners and land managers measure the amount of air pollutants emitted that are known to contribute to visibility impairment. They use state of the art computer models to identify where these pollutants are traveling, taking into account things like:

- the type of emission source (for example, a power plant versus a wildfire);
- the kind of pollutant;
- wind and temperature conditions;
- how different pollutants interact with each other in the atmosphere;
- how pollution travels across state boundaries; and
- how pollution is transported into the United States from outside U.S. borders.

**Alternative formats**

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.