# Air Quality Guide for Particle Pollution

<table>
<thead>
<tr>
<th>Air Quality</th>
<th>Air Quality Index (AQI)</th>
<th>Health Advisory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>0 – 50</td>
<td>None.</td>
</tr>
<tr>
<td>Moderate</td>
<td>51 – 100</td>
<td>Unusually sensitive people should consider reducing prolonged or heavy exertion.</td>
</tr>
<tr>
<td>Unhealthy for sensitive groups</td>
<td>101 – 150</td>
<td>People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion.</td>
</tr>
<tr>
<td>Unhealthy</td>
<td>151 – 200</td>
<td>People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.</td>
</tr>
<tr>
<td>Very unhealthy (Alert)</td>
<td>201 - 300</td>
<td>People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.</td>
</tr>
</tbody>
</table>

An AQI of 100 for particles up to 2.5 micrometers in diameter corresponds to a level of 40 micrograms per cubic meter (averaged over 24 hours). An AQI of 100 for particles up to 10 micrometers in diameter corresponds to a level of 150 micrograms per cubic meter (averaged over 24 hours).
Sea Spray
Dust Storm From Africa
(Feb. 28, 2000)

A massive sandstorm blowing off the northwest African desert has covered hundreds of thousands of square miles of the western Atlantic Ocean with a dense cloud of Saharan dust. The massive cloud of dust was first spotted by NASA's SeaWiFS mission (Sea-viewing Wide Field-of-view Sensor) when it reached over 1200 miles into the Atlantic. These storms are the most intense and farthest (15,000 feet or so above the African desert and then out across the Atlantic) seen by satellite. They have been reaching as far as the Caribbean where they often lay over and impact coastal areas. SeaWiFS and other satellite measurements allow scientists to track and study these events that can affect air quality, visibility, and climate worldwide. (Image and data courtesy of NASA SeaWiFS Project, NASA/Goddard Space Flight Center and ORBIMAGE.)
Mount St. Helens (Fall, 1982)

Peter Frenzen, available from Mount Saint Helens National Volcanic Monument Photo Gallery
Biomass Burning in South Africa (September 7, 2000)

NASA/GSFC/JPL, MISR and Air MISR Teams
Prescribed Burn in Big Horn National Forest, Wyoming (1981)

Fig. 5.7. U.S. Forest Service, available from National Renewable Energy Lab.
Ash, Combusted Plant Fiber, Elongated Ash, Soil Dust

Reid and Hobbs (1998)
Fossil fuel combustion
Diesel: School buses
Wet Deposition

Acids and other gases are taken up into water droplets, which are then deposited

Clouds in contact with mountains

2H\(^+\) SO\(_4\)\(^=\) = rain or wash out

fog 2H\(^+\) SO\(_4\)\(^=\)
Dry Deposition

Acids (and other gas molecules) are taken up by surfaces, i.e. ground, buildings, plants (also respiration)