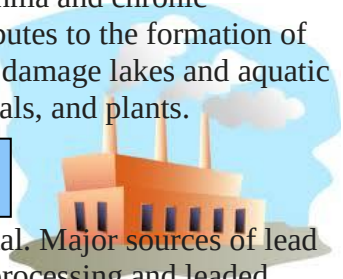
Sulfur Oxides

Sulfur oxides (SOx) are colorless gases that are the result of burning sulfur. All fuels used by man (oil, coal, natural gas, wood, etc.) contain some sulfur, which reacts with oxygen during combustion. The main source of SOx is the burning of fossil fuels, particularly coal, at industrial facilities. Sulfur dioxide (SO2) is used as an indicator of all SOx concentrations because it is easily measured. SO2 is known to irritate the respiratory system and is particularly harmful to people who suffer from respiratory diseases such as asthma and chronic bronchitis. It contributes to the formation of acid rain which can damage lakes and aquatic life, building materials, and plants.



Lead

Lead is a heavy metal. Major sources of lead are ore and metals processing and leaded aviation fuel. Once in the body, lead distributes through the blood and accumulates in the bones. It can affect the nervous system, kidney function, immune system, reproductive and development systems, and the cardiovascular system. The most common effects are neurological effects in children and high blood pressure/heart disease in adults. Young children are sensitive to low levels of lead, which may add to behavioral problems, learning deficits and low IQ. Lead accumulates in soil and water and stays in the environment. Ecosystems near sources of lead have many adverse effects including losses in biodiversity, changes in composition, and decreased growth/reproductive rates.

Additional Information

SOBOBA BAND OF LUISEÑO INDIANS

EST. JUNE 19, 1883

EPA's Six Common Pollutants
http://www.epa.gov/air/urbanair/

U.S. EPA Office of Air Quality
Planning and Standards
Information Transfer Group
Mail Code E143-03
Research Triangle Park, NC 27711
Fax: (919)541-0242
http://www.airnow.gov/

South Coast Air Quality
Management District
21865 Copley Drive
Diamond Bar, CA 91765
1-800-CUT-SMOG (288-7664)
http://www.aqmd.gov/Default.htm

California Air Resources Board
(800) 242-4450
http://www.arb.ca.gov/homepage.htm

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Air Quality and Criteria Pollutants

The Common Pollutants in Our Air and Where They Come From

Soboba Tribal
Environmental Department
951.654.5544 ext. 4129/4130

Criteria Pollutants

The Clean Air Act is an important law that requires EPA to set standards for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are found all over the United States. They are particle matter (PM), ground-level ozone, carbon monoxide, sulfur dioxide, nitrogen oxides, and lead. These pollutants can harm your health and the environment, and cause property damage. Of the six pollutants, PM and ground-level ozone are the most widespread health threats and also the most significant pollutants in our area. EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting levels that are considered acceptable. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards.

Nitrogen Oxides

Nitrogen oxides (NOx) are a group of highly reactive gasses. NOx forms from emissions from cars, trucks and buses, power plants, and off-road equipment. NOx emissions result primarily from the combustion of natural gas, oil, and coal. NOx is linked with adverse effects on the respiratory system including airway inflammation and aggravation of asthma. NOx can react with ammonia, moisture, and other compounds to form other pollutants such as particulate matter and ozone.

Ozone

Ozone is created by a reaction of nitrogen oxides, volatile organic chemicals (chemicals that have carbon and evaporate very easily), and sunlight. Ozone is the main part of smog. Ground level ozone is bad because it has harmful effects. Ozone is good when it is high above the Earth's surface because it provides some protection from UV rays. Sources include vehicle exhaust, industrial processes and plants, gasoline vapors, and chemical products or solvents. Inhaling ozone can cause chest pain, coughing, throat irritation, and congestion. It can make respiratory conditions like asthma worse. With longer exposure, the lungs can become inflamed or scared which reduces their ability to function. Ozone also damages vegetation and ecosystems.

Particulate Matter

PM is extremely small particles and liquid droplets. PM is made up of many components, including organic chemicals, metals, and dust particles. It can come directly from sources such as forest fires, residential burning, road dust, solvents, and fossil fuel combustion. It can also form when gases emitted from power plants, industries and automobiles react in the air. Small particles are the particles that generally enter the lungs. Once inhaled, these can affect the heart and lungs and cause serious health effects like irritation of the airways, coughing, difficulty breathing, decreased lung function, aggravated asthma, development of chronic bronchitis, irregular heartbeat, and premature death in people with heart or lung disease. Other effects include reduced visibility, changing the nutrient or acid balance of waters, depleting soil nutrients, and staining or damaging stone and other materials, including culturally important objects.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas emitted from combustion processes. Motor vehicles produce about 60 percent of carbon monoxide nationwide; in cities, it may be as high as 95 percent. Other sources include industrial processes, non-transportation fuel combustion, and wildfires. CO can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues. At very high levels, CO can cause death.