THE GLOBE PROGRAM

Weather and Traffic-Related Air Pollution

What about the weather?

Weather can influence traffic related air pollution levels in the air.

Wind has a big effect on air pollution as it can move pollutants from one place to another. Traffic-related pollution comes from vehicles, but it can be moved by wind to other locations. Wind speed and wind direction are important factors when understanding what areas are most likely to record higher levels of traffic-related pollutants. In general, the higher the wind speed, the more contaminants are dispersed and the lower their concentration at source.

Sun can also have a big effect on air pollution. On sunny days, nitrogen dioxide reacts with the sun's rays to form a secondary pollutant, ground level Ozone (O_3). This pollutant forms a smog and reduces visibility in the atmosphere. Ground level ozone can also be dispersed by wind to other locations. There are damaging effects from ozone on human health such as lung damage and inflammatory responses (World Health Organisation).

Rain can impact air pollution levels in the air. Droplets of water wash out water-soluble pollutants and particulate matter from the air, forming an acidic rain which falls to the Earth's surface. The acid rain causes surface water (rivers, ponds) to become more acidic which can have a detrimental impact on the environment.

Indirect effects of weather on air quality:

Traffic: the numbers of vehicles on the roads tend to increase during bad weather, which increases the amount of traffic-related pollutants entering our air.