

Urban Atmospheric Environments

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Urban environments usually have higher concentrations and depositional fluxes of atmospheric chemicals than rural environments. Most atmospheric pollutants originate from the combustion of fossil fuels and industrial emissions, which are often associated with urban areas. These include nitrogen oxides, sulfur oxides, heavy metals, and various organic chemicals. These pollutants are emitted locally into a restricted geographic area, particularly relative to the area from which the resources were derived, resulting in high atmospheric concentrations and depositional flux rates. Since the capacity of ecosystems to assimilate atmospheric chemicals is correlated with the amount of living biomass and soil biological activity, highly altered urban ecosystems may have greatly diminished capacities to assimilate chemicals, especially when inputs are high. We will discuss 1) the complexity of the spatial and temporal dimension of depositional flux rates occurring in urban landscapes, 2) how these elevated fluxes potentially impact ecosystem structure and function and human health, and 3) the importance of measuring urban atmospheric environments and their relationship to sensitive ecosystems.