

Reducing airborne pollutants in urban areas with trees

1. The effects of land-type and 'edge' trees

Trees are popularly believed to remove pollution from the atmosphere, removing both gases and particles. However, this idea has developed largely without careful measurements in real-life conditions to show

- how large the effect is,
- what processes control it and
- how it might be exploited to improve air quality in urban areas.

To try to answer some of these questions, we measured the long-term (50 year) average deposition rate of airborne particles in urban air, such as those emitted by cars, on woodland, grassland and other short vegetation in the West Midlands conurbation. We did this by measuring the amount of naturally occurring radioactive compounds, found as particles in the atmosphere and soils, and then worked out the effect of trees on the rates of pollutant deposition.

The measurements show that

- mature, mixed woodland captures airborne particles at approximately three times the rate of grassland.
- trees on the edge of woodland are more effective at capturing airborne particles than the trees in the centre of the wood because they have larger leaf areas and are exposed to the wind.

