

Figure 1 Plots showing the concentration of CFC-12, CFC-11 and SF₆ in air-equilibrated water at 10°C, based on the respective NH-AMR (northern hemisphere atmospheric mixing ratio) curves over the past half-century (from http://water.usgs.gov/lab/software/air_curve/). Also shown is the concentration curve for a notional 50% local atmospheric excess, and the resulting maximum difference in interpretation of water age.

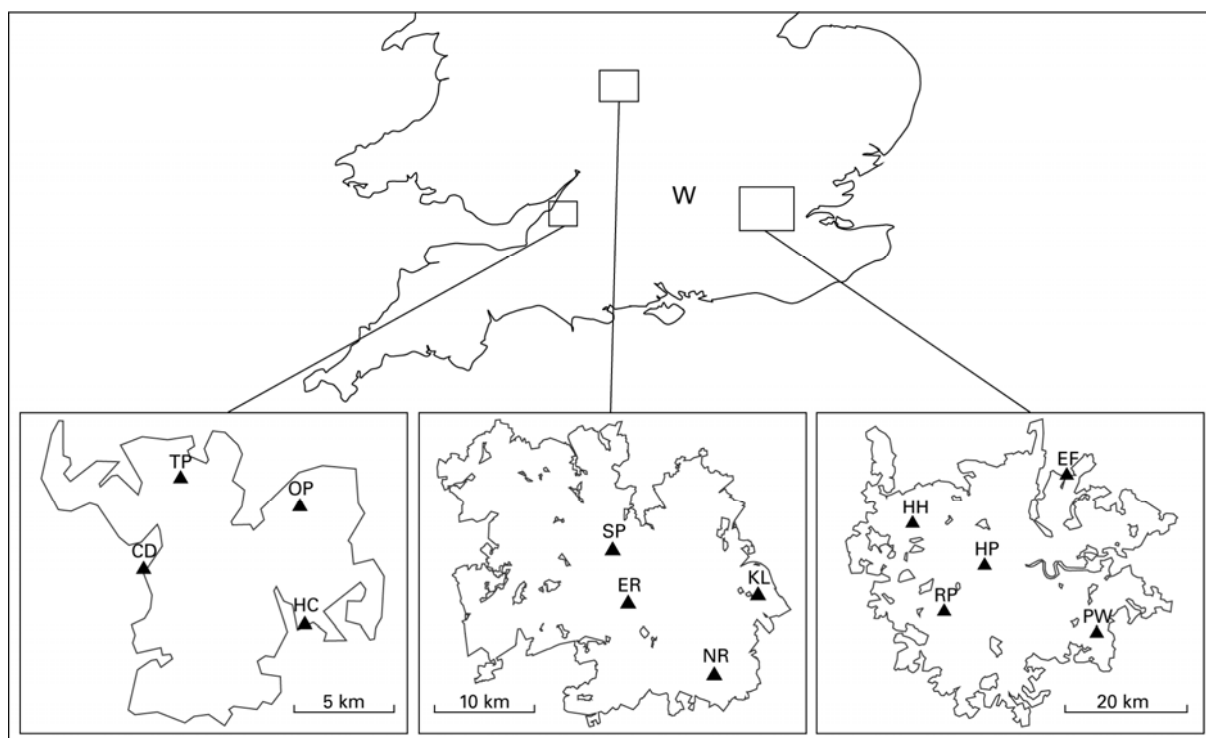


Figure 2 Map of southern Britain showing the location of the sampling sites in relation to urban boundaries in Bristol (left), Birmingham (centre) and London (right). Site codes as in Table 1. W – location of BGS Wallingford.

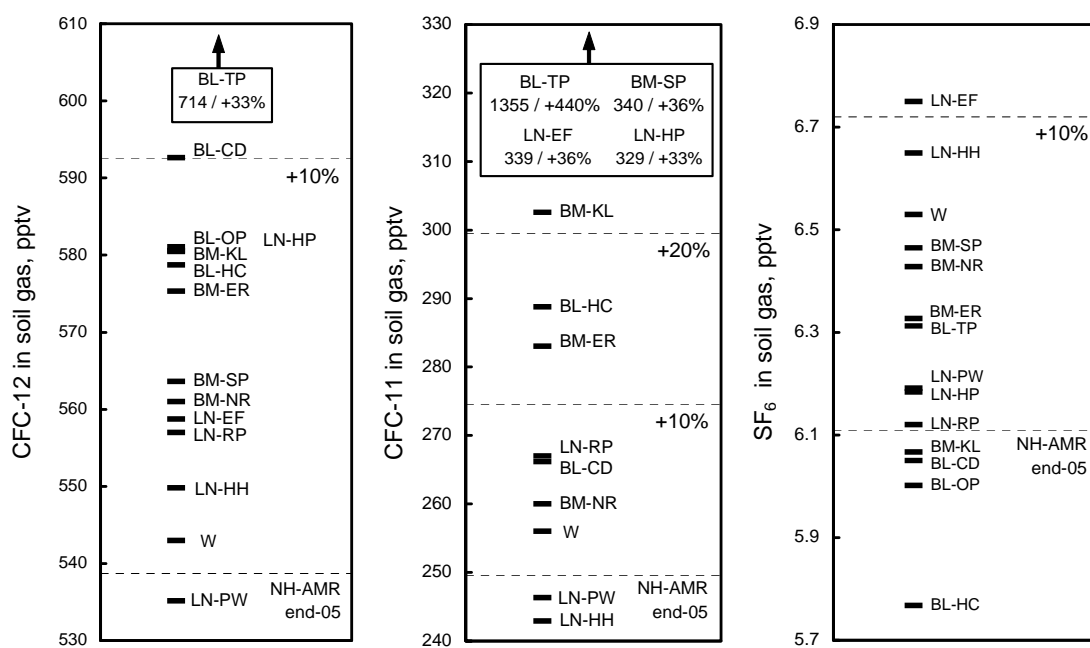


Figure 3 CFC and SF₆ compositions of soil gas samples from the studied sites. Also shown are the NH-AMR values for the end of 2005, with 10% and 20% additions as appropriate. Site codes as in Table 1.

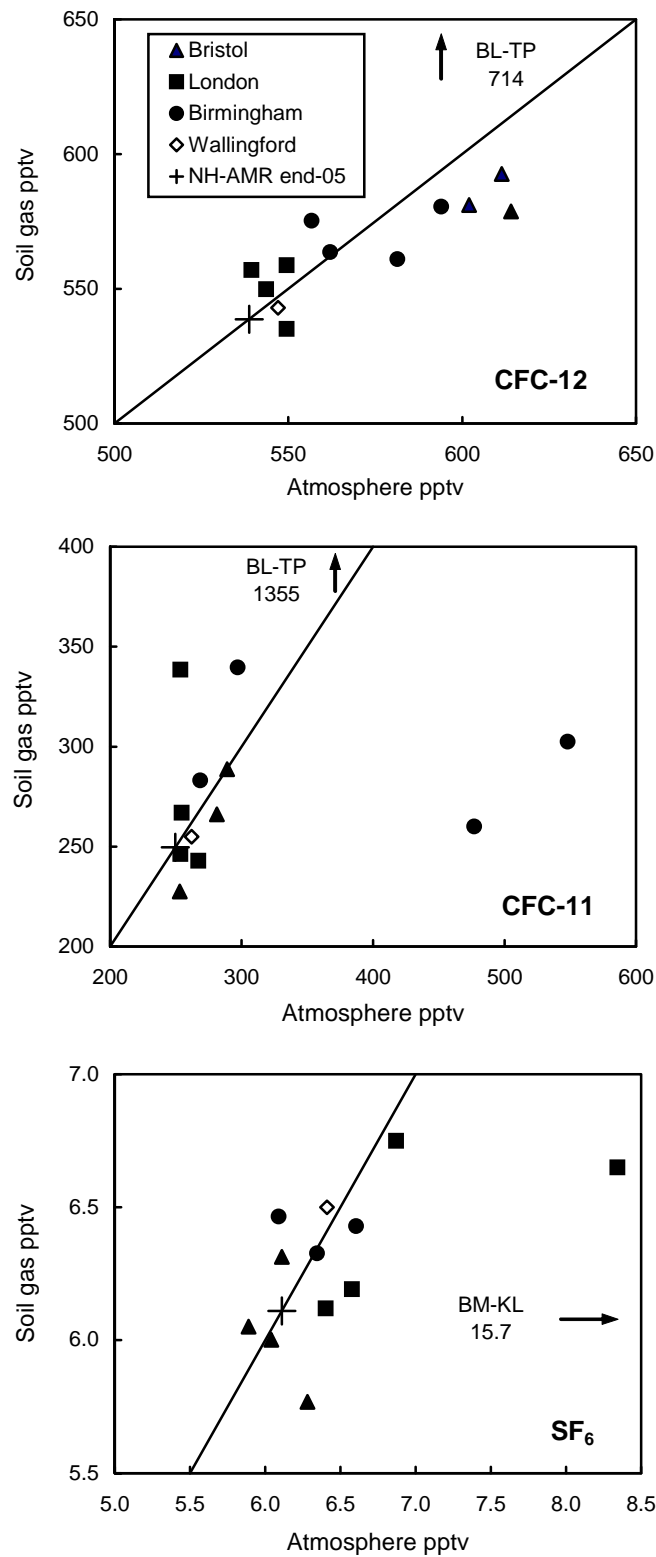


Figure 4 Averaged soil gas versus atmospheric composition for the studied sites. Also shown are the NH-AMR values for end-2005, and the 1:1 ratio lines.

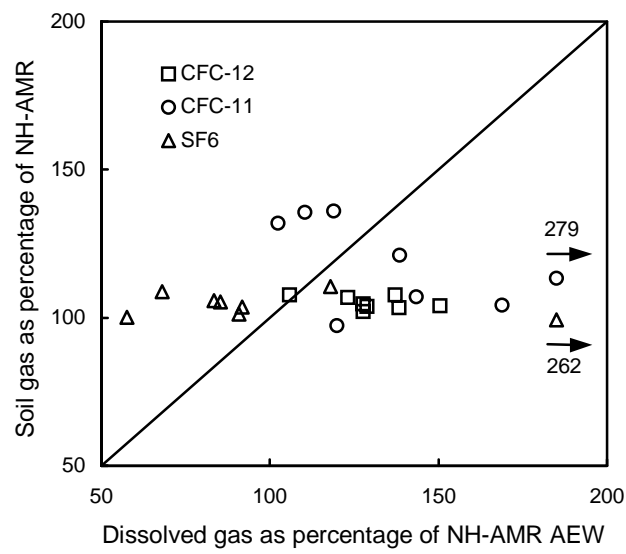


Figure 5 Soil gas versus lake water excesses in the CFCs and SF₆ for sites in London and Birmingham, based on NH-AMR values for end-2005, and assuming air-equilibrated water (AEW) at 10°C.

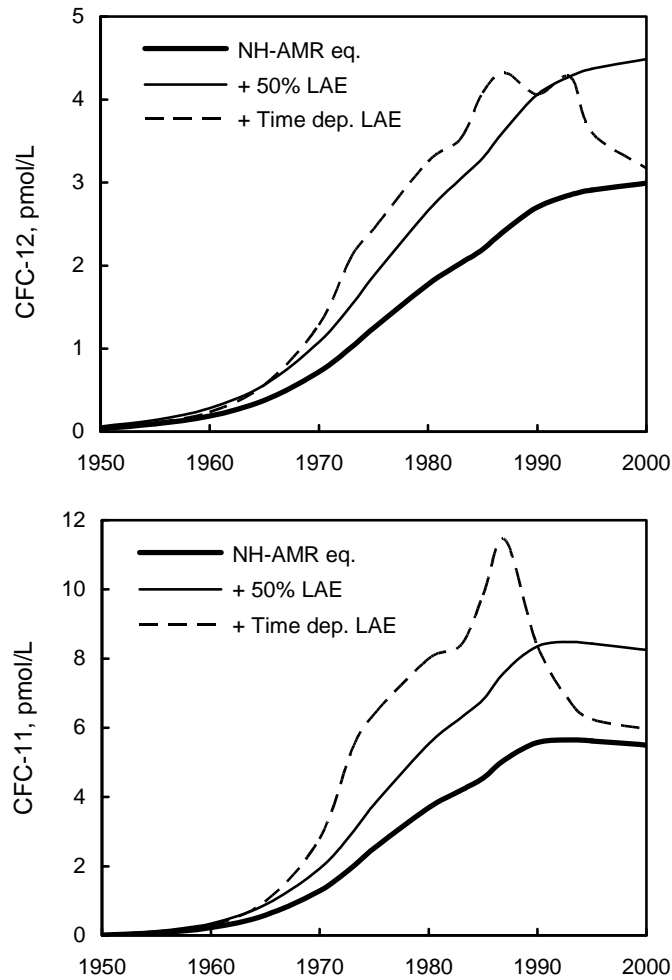


Figure 6 Groundwater concentrations derived from time-dependent LAEs for CFC-12 and CFC-11, based on the approach of Bauer et al. (2001) and emissions data 1950–2000 from Höhener et al. (2003), compared to the NH-AMR-equilibrated and 50% running LAE groundwater traces of Figure 1. The time-dependent LAEs have been calculated to cross the 50% LAEs at the year 1990 simply as an illustration.