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Supplement of

60 years of UK visibility measurements: impact of meteorology and atmospheric pollutants on visibility

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Supplementary Figures

**Figure S1** Density of different visibility ranges for different sub periods (1950s to 2010s) for 8 sites.
Figure S2 Boxplot of decadal visibility at eight different study sites, where red dot denotes mean value of decadal visibility.
Figure S3 Historical trend of annual mean rainfall derived from daily (12 noon) observations by station: a) Aldergrove b) Heathrow, c) Leuchars, d) Nottingham, e) Plymouth, f) Ringway, g) Tiree, h) Waddington.
Figure S4 Historical trends of annual mean visibilities (with and without filtering for precipitation) derived from daily (12 noon) observations by station: a) Aldergrove b) Heathrow, c) Leuchars, d) Nottingham, e) Plymouth, f) Ringway, g) Tiree, h) Waddington.
Figure S5 Mean monthly visibility at different RH conditions at Waddington
Figure S6 Time-series of meteorological components relative humidity (RH), air temperature (T), wind speed (ws), and prevailing wind direction (wd) including visibility (V), where all variables are averaged at 12 noon. Shaded lines show smooth fit line at 95% confidence interval.
Figure S7 Decadal seasonal polar plots for all eight stations for 1950s, 1960s, 1970s, 1980s, 1990s, 2000s and 2010s (left to right). * represents years where visiometer measured data is included.
Figure S8 (a) Scattering coefficient ($\beta_{sca}$), (b) total extinction coefficient ($\beta_{ext}$) and (c) contribution of scattering coefficient in total extinction coefficient at Heathrow. Estimates of error are not included here to improve clarity.
Figure S9 Model output parameters a) absorption coefficient ($\beta_{abs}$), b) Gamma (γ), and c) dry visibility at different seasons for Heathrow site.
Figure S10 Decadal observed visibility at 70 % RH (range 67.5 -72.5 %) for Heathrow site. Error bars represent standard error at 95 % confidence interval.
Supplementary Tables

Table S1 Method of visibility measurement at different station with its used time period, where present indicates the sensor is still installed and being used.

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Table S2 Correlation coefficient ($r$) values between different variables, where daily data at 12 noon was used for calculation for last six decades

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* Statistically significant value (p < 0.05)
** Statistically significant value (p < 0.01)

Temp- Air Temperature    RH- Relative Humidity
### Table S3 Model output parameters (Vis(dry), βabs, Gamma (γ) and βsca)

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