

Moderate – High Particulate Matter (PM₁₀ and PM_{2.5}) Episode 15th February 2017 – Scotland

On the 15th February 2017, provisional air quality monitoring data from sites across much of Scotland is measuring elevated concentrations of Particulate Matter (PM₁₀ and PM_{2.5}). Concentrations measured are generally in the air pollution banding Moderate (Index 4 – 6) however high (index 7) was measured at roadside site Edinburgh Queensferry Road. Figure 1 illustrates the elevated concentrations as seen on the Scottish Air Quality Website (www.scottishairquality.co.uk). Figure 2 illustrates the boundaries between index points for each pollutant. Further information on air pollution banding and the health impacts associated can be found on the Scottish Air Quality Website.

The episode is a result of a combination of factors which include; weather conditions, air masses affecting the country, and the build-up of locally sourced pollutants.

Dry, still, and misty weather conditions experienced throughout much of Scotland has caused poor pollution dispersion conditions. This has resulted in locally sourced pollution to build up. Air masses from the south and east are also affecting the country (as illustrated in Figure 3). Air masses from this direction often transport transboundary pollutants such as Particulates (PM₁₀ and PM_{2.5}) from the rest of the UK and continental Europe causing background levels to increase. These factors combined has resulted in Particulate concentrations to reach moderate to high levels in mainly urban locations.

The situation is expected to improve tomorrow as air masses and unsettled weather from the west affects the country dispersing locally sourced pollution and reducing background concentrations. If you want further information on this event or air pollution in general, please go to the Scottish Air Quality Website (www.scottishairquality.co.uk).

Figure 1: Scottish Air Pollution website 15th February 2017

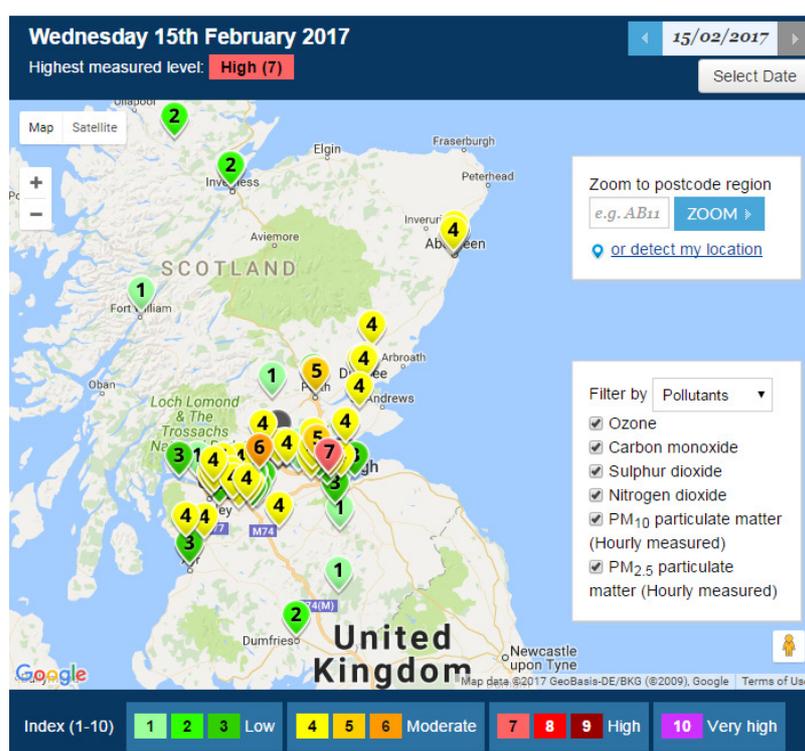


Figure 2: Boundaries between index points for each Pollutant

Boundaries Between Index Points for Each Pollutant						
Band	Index	Ozone	Nitrogen Dioxide	Sulphur Dioxide	PM2.5 Particles	PM10 Particles
		Running 8 hourly mean $\mu\text{g}\cdot\text{m}^{-3}$	hourly mean $\mu\text{g}\cdot\text{m}^{-3}$	15 minute mean $\mu\text{g}\cdot\text{m}^{-3}$	24 hour running mean $\mu\text{g}\cdot\text{m}^{-3}$	24 hour running mean $\mu\text{g}\cdot\text{m}^{-3}$ (Grav. Equiv.)
Low	1	0-33	0-66	0-88	0-11	0-16
	2	34-65	67-133	89-176	12-23	17-33
	3	66-99	134-199	177-265	24-34	34-49
Moderate	4	100-126	200-267	266-354	35-41	50-58
	5	127-140	268-334	355-442	42-46	59-66
	6	141-159	335-399	443-531	47-52	67-74
High	7	160-187	400-467	532-708	53-58	75-83
	8	188-213	468-534	709-886	59-64	84-91
	9	214-239	535-599	887-1063	65-69	92-99
Very High	10	240 or more	600 or more	1064 or more	70 or more	100 or more

Figure 3: 4-day Air Mass back trajectories for 15th February 2017

