Sounding Out Pollution

Please view at: https://wm-air.org.uk/sound/

Three presentations using sound to express air quality data.

1 https://youtu.be/4Rv7j2Bkm0Q

Annual average air quality readings for a range of urban and rural locations are presented. These were converted directly into frequency and assigned their closest musical notes. They were then synchronised with the displayed air quality readings, with the nitric oxide readings sounding in the left speaker and the nitrogen dioxide levels in the right speaker. The map on the left hand side of the screen displays the whereabouts of the various chosen locations.

2 https://youtu.be/Z5C2p509thc

Nitrogen Dioxide levels across the West Midlands region are presented both visually and aurally. The map displays the seven different counties of the west midlands and the changing levels of nitrogen dioxide, hour by hour, throughout an average day. These are mapped as follows. First of all, each of the counties has its own place within the stereo spectrum (west to east being represented as left to right). Then the different levels of pollution, as indicated by the map, are assigned a musical tone, with the higher levels being mapped to higher pitch. Finally, the volume for each of these levels is mapped to the pollution spread and the amount of area that a particular level of pollution extends to as indicated on the map.

3 https://youtu.be/X0nMgM8QgkA

Nitrogen Dioxide and particulate matter levels are presented for a series of locations on an imagined route through the centre of Birmingham from its rural outskirts. The journey (from Lickey Hills to Sutton Park) is traced on the accompanying map and synchronised with the sound of the rising and falling particulate pollutants $PM_{2.5}$ and PM_{10} (in the left-hand and right-hand loudspeakers respectively). At each location, the nitrogen dioxide levels are presented as three-note chords representing the minimum, mean and maximum levels of modelled air quality data for each site.

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