UK Air Quality Forecasting Update

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UK National Air Quality Forecasting Seminar
14th July 2010

Today's Presentation

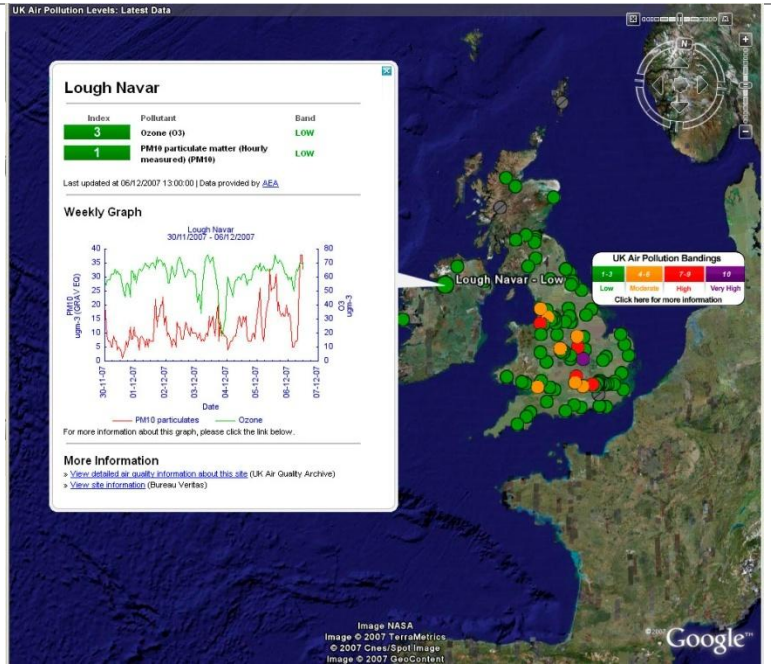
- **Background & Approach**
- **Project Update.**
- **Interesting Pollution Events.**

Project Background

- **Defra and the Devolved Administrations require a daily UK Air Quality Forecast to both protect public health and to meet specific EC Directive Requirements.**

- **The Directive requires publication of:**
  - The likely geographical extent of periods of high concentrations.
  - The expected change in pollution (improvement, stabilisation or deterioration) and reasons for those changes.

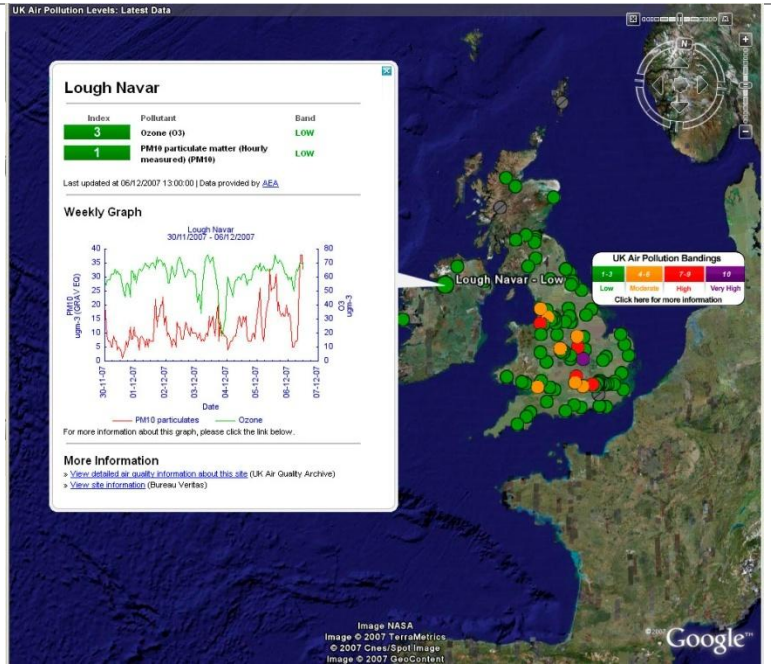
- **Forecasts are disseminated via the internet (www.airquality.co.uk), media bulletins and a freephone information service (0800 556677).**



Project Background (cont'd)

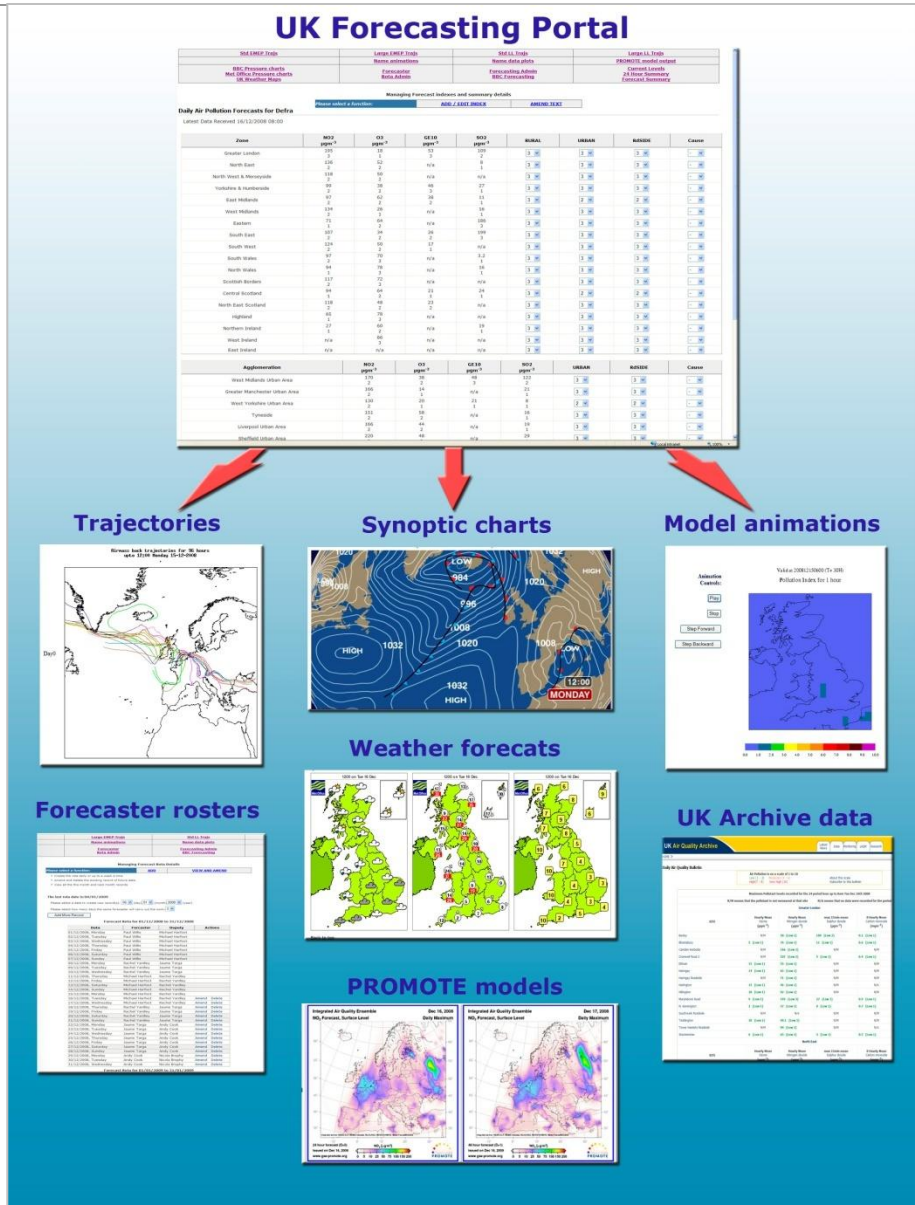
- **A 3-year contract was let to AEA to provide these daily forecasts from April 2009.**

- **Other aspects of the contract are also covered through today's seminar, including the need to:**
  - Keep abreast of advances in forecasting air quality and advise Defra and the DAs on possible approaches to improve the forecasts.
  - Enhance understanding of the value and role of air quality forecasting in air quality management and public information services.



Approach

- **AEA's approach is to use a team of air quality experts to compile the forecasts based on a portfolio of inputs.**
- **The team use a daily forecasting protocol and a web-based portal to deliver forecasts 365 days a year.**
- **The inputs include:**
  - UK optimised AQ forecasting models.
  - Pan-European model results.
  - Latest UK & European monitoring data.
  - Weather forecasts.
  - Satellite imagery.
  - Expert judgement based on analyses of historical air pollution episodes.

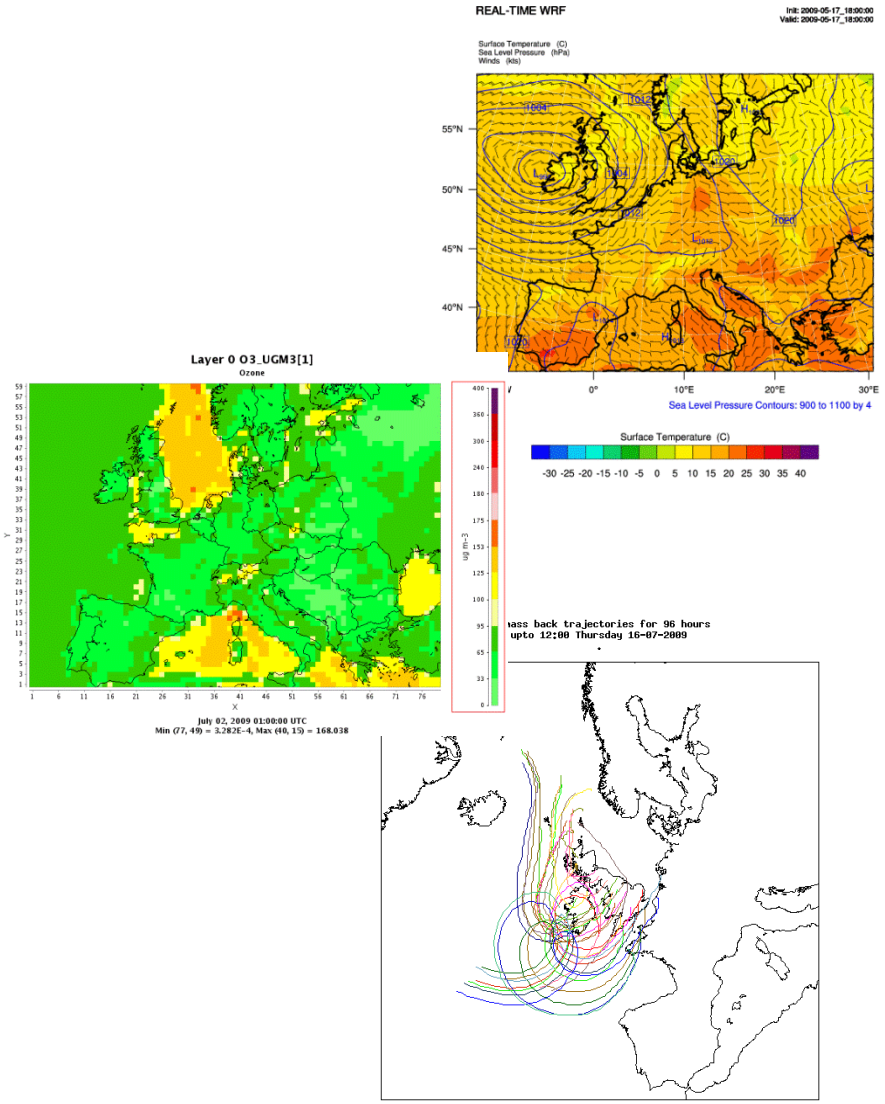


Project Update

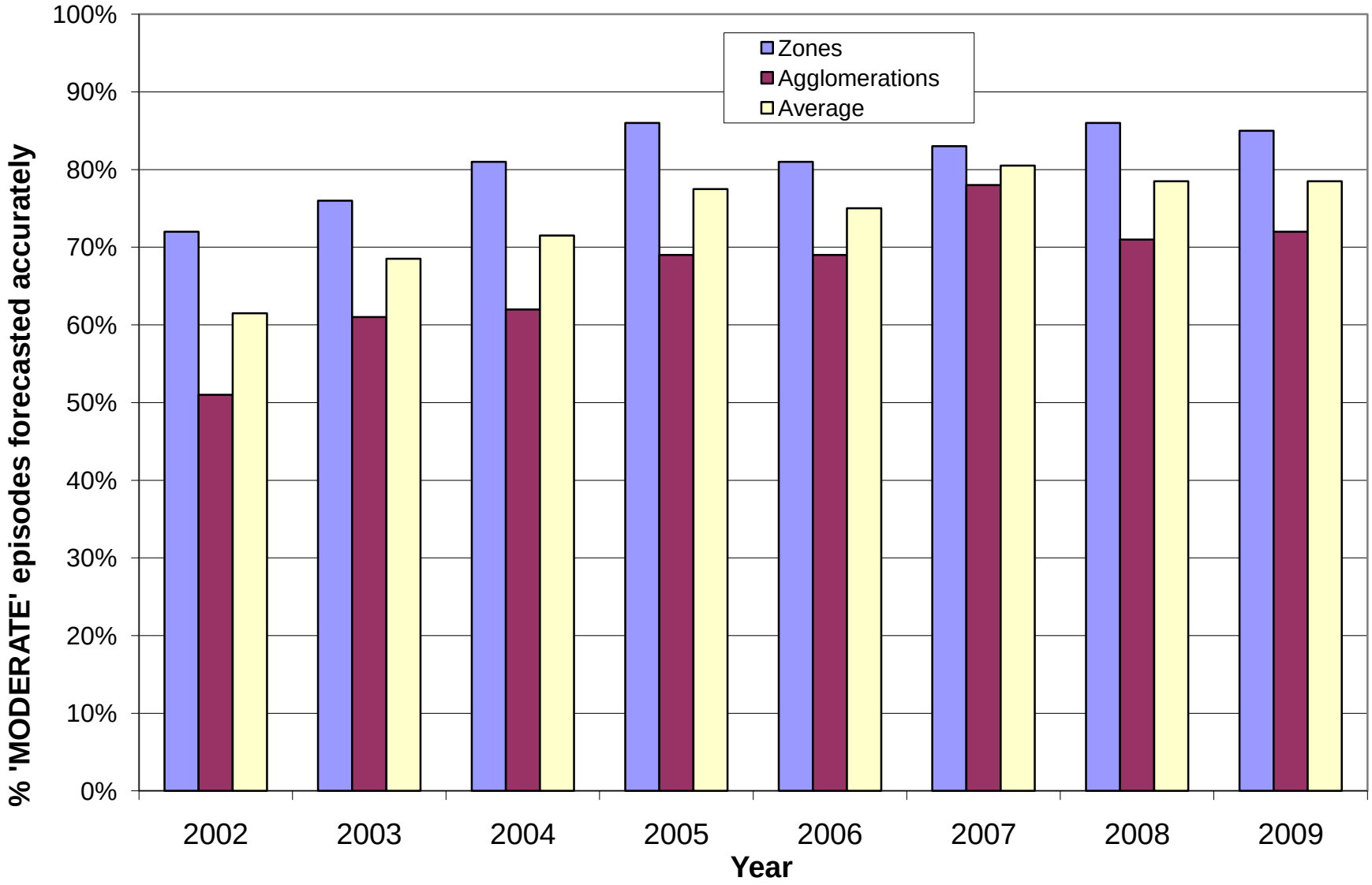
- **Some changes to the service have been implemented as a result of transposition of the new AQ Directive.**
  - New model configuration to meet the 100km^2 representative area requirement.
  - More rigorous treatment and checking of AQ Alert exceedences.

- **On-line success rate and model validation plots will be available shortly.**

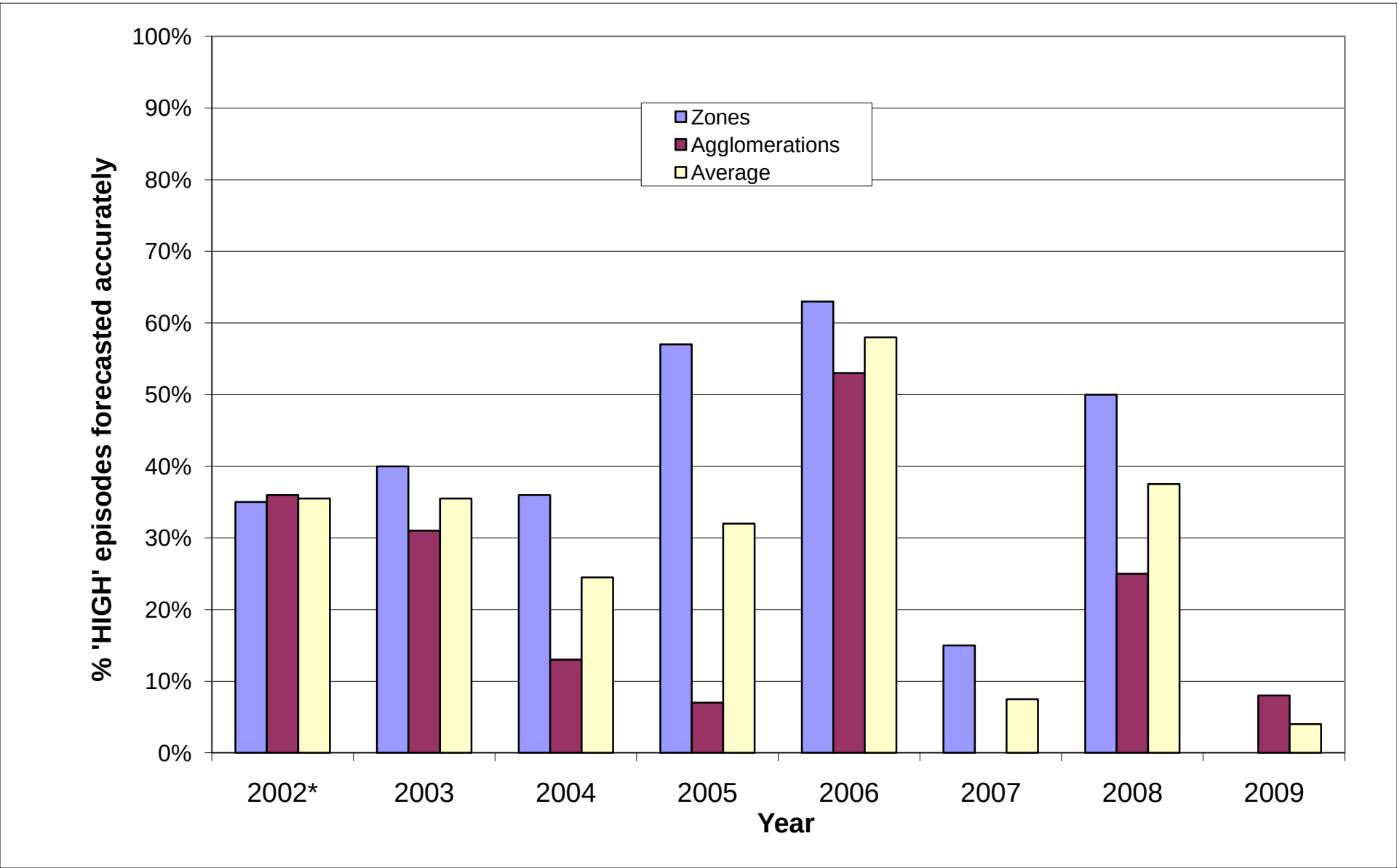
- **Using the GEMS model assessment method.**



2009 Forecasting Success Rates



Few ‘High’ Episodes – Lowest year says EEA

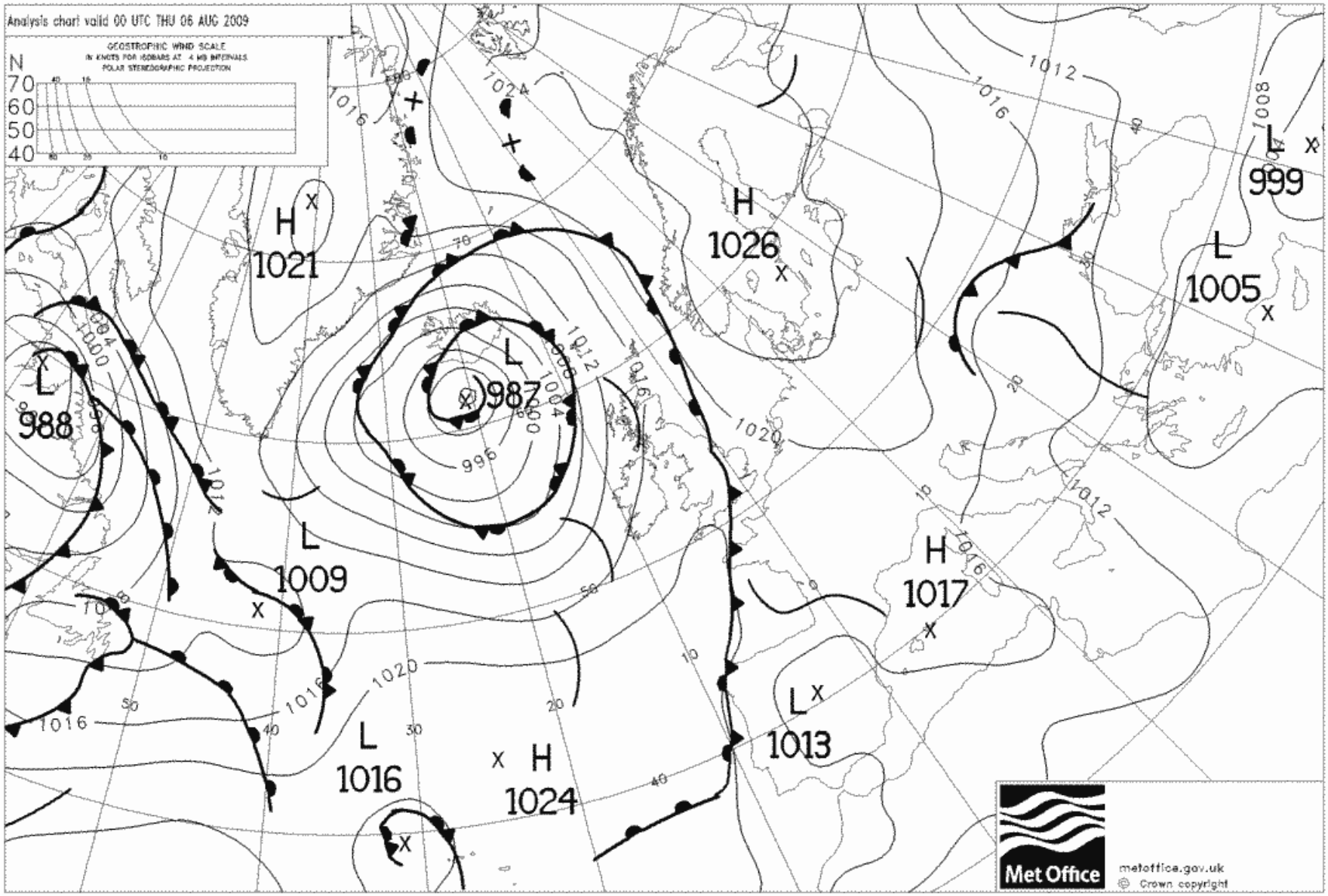


Interesting Pollution Episodes

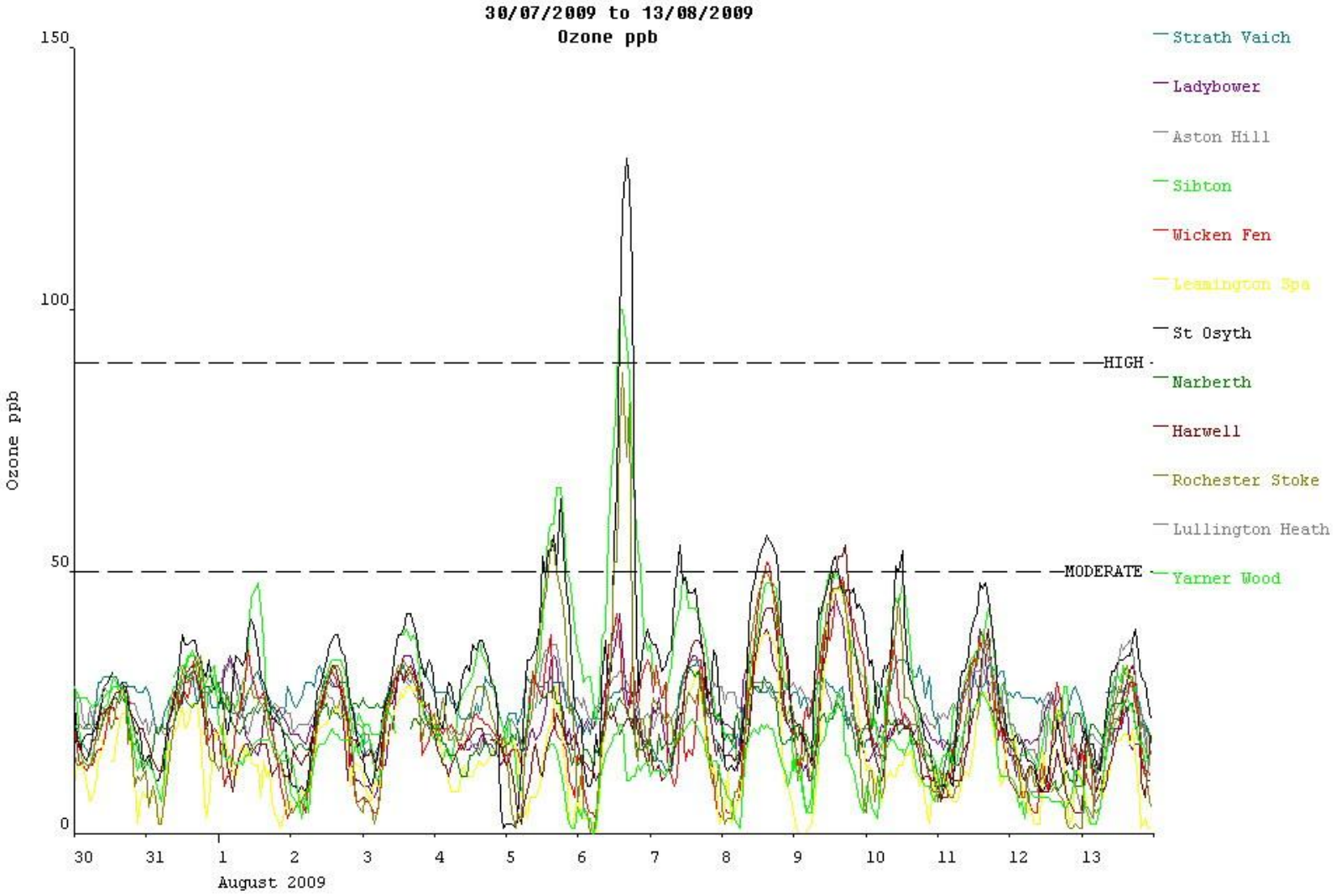
- **Very few in the last 12-months ……**

- **Summer Ozone, early August 2009.**
- **Bonfire Night 2009.**
- **Particulates, March 2010.**
- **The Volcano!**

Ozone from Europe – Thursday 6th August 2009



Hourly Measured Concentrations in the AURN



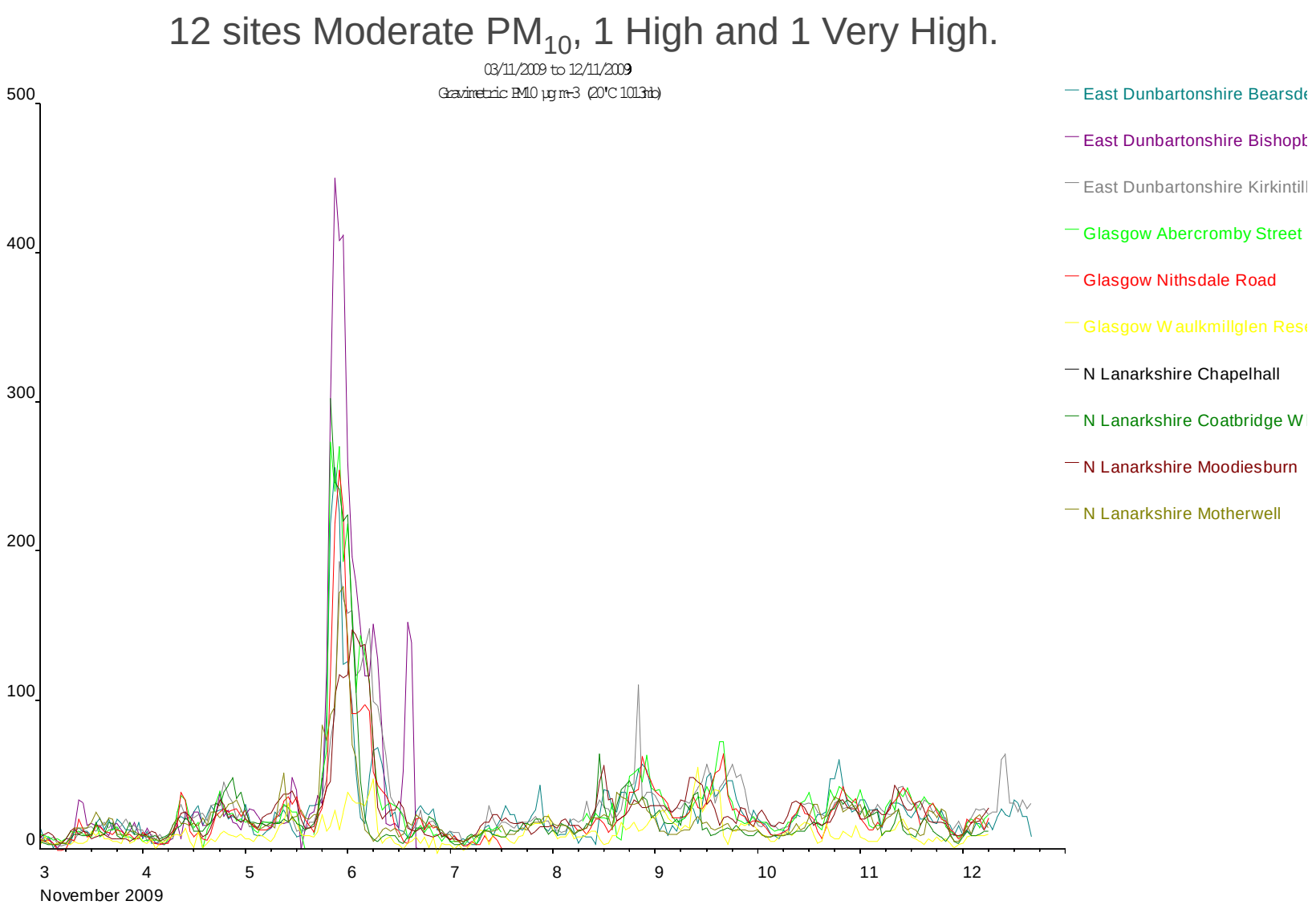
Bonfire Night 2009

- A number of sites around the Greater Glasgow region recorded Moderate to Very High PM_{10} on November 5th. Wind speeds were low.

- Glasgow Green Fireworks:

- "Glasgow's infamous and spectacular musical fireworks display.
- More than 50,000 explosions were set to music, with the timing almost perfect, and the biggest shells in the UK being fired up into the night sky."

Bonfire Night 2009



March 2010 Particulate Episode

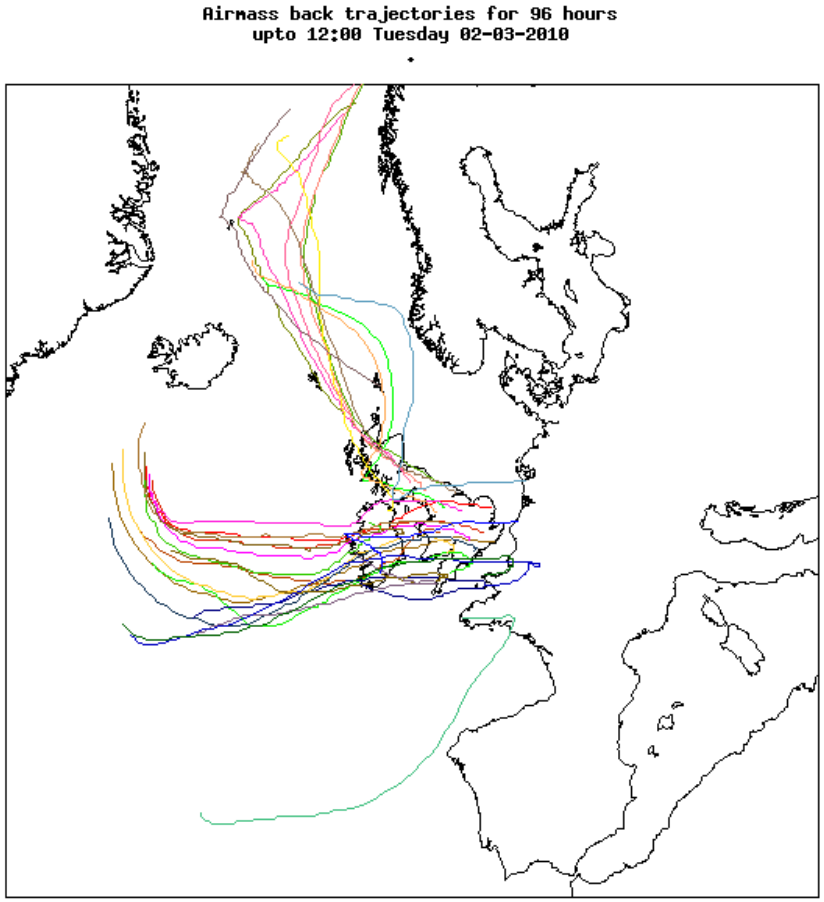
- During the period 28 Feb – 4 March 2010, thirteen air quality monitoring stations in Scotland recorded moderate or higher concentrations of PM_{10}

- Only one site was part of the AURN, the rest were LA sites.

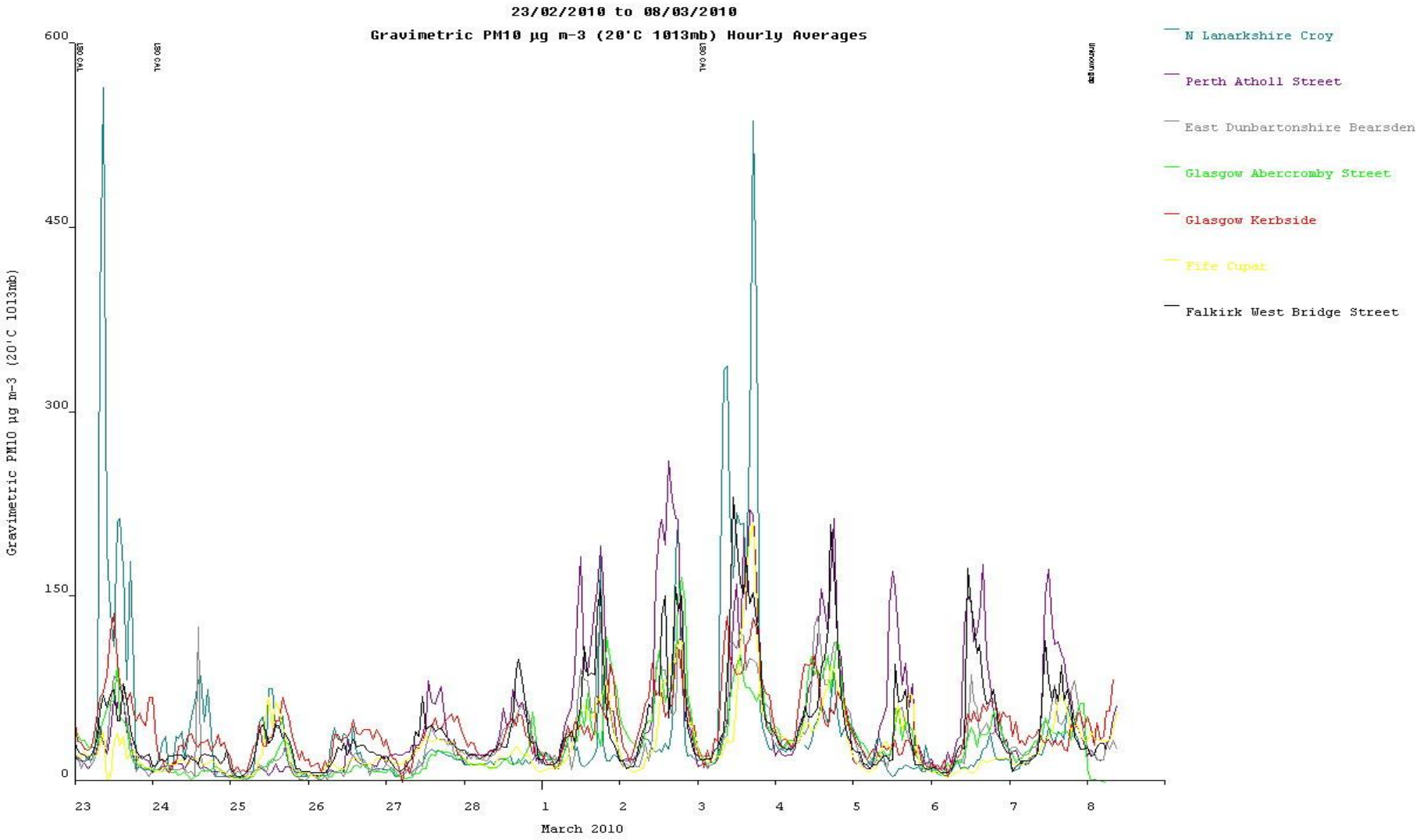
- All roadside or kerbside sites.

- Wind speeds were low.

- No increases in rural background measurements to indicate any long-range transport of pollutants.



March 2010 Particulate Episode



Eyjafjallajökull Volcano

Future Developments

- **Progress the UK Air Quality Forecasting Forum today.**
- **Working more closely together to ensure consistency and accuracy of national, regional and other forecasts issued in the UK.**
- **An On-line forum will be set up to share ideas and all interested parties are invited to participate.**
    - **The forecasting project continues to produce much data which could be useful to the wider AQ Community**
    - **More graphical forecast outputs could be made available on the web for easier interpretation.**
    - **Forecast accuracy statistics will be published on-line for public access.**

Any Questions?

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