



Department
for Environment
Food & Rural Affairs

33rd ICP M&M Task Force Meeting

Welcome from Defra

Prof Ian Boyd

Chief Scientific Adviser

4th April 2017



Forestry Commission
England



Environment
Agency

Monitoring Critical Loads

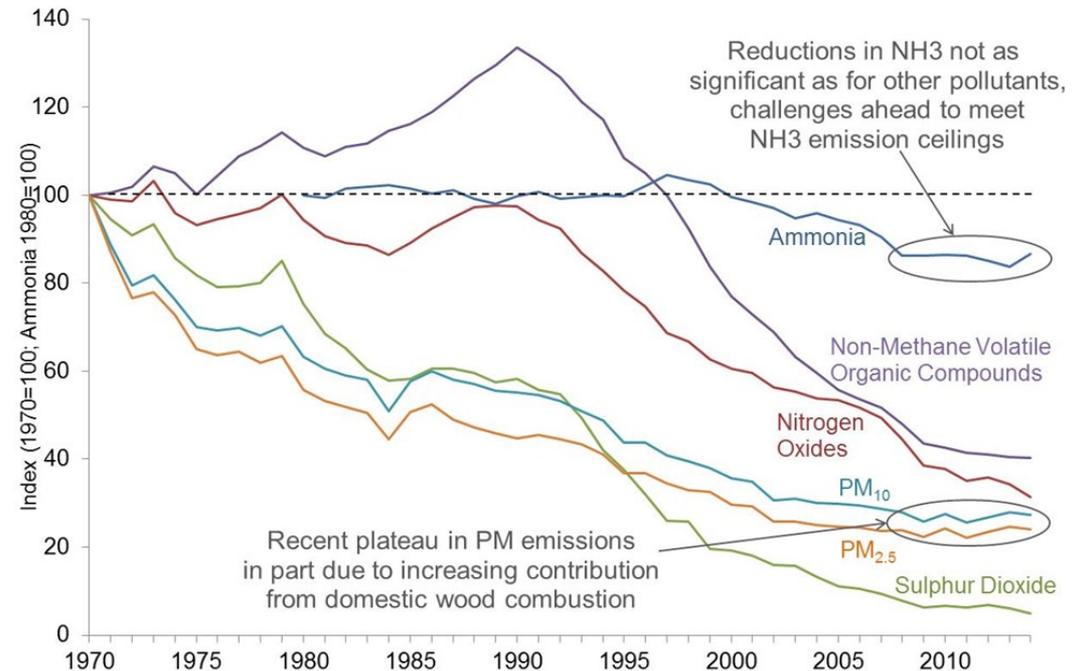
- Welcome
- UK is committed to its international obligations - reducing the impact of pollutants on ecosystems at home and internationally
- Defra is funding research on:
 - measuring critical loads and levels on natural vegetation and crops
 - modelling and mapping these loads to assess the level of acidification and eutrophication

Policy needs

- National Emissions Ceiling Directive (NECD) Ceilings were published in the official journal in December 2016. Member States must then:
- Transpose NECD within 18 months (June 2018)
- Draw up, adopt and implement National Air Pollution Control Programmes within 24 months (December 2018)
- Monitor impacts of air pollution on terrestrial and aquatic ecosystems and report their effects:
 - Biodiversity; species richness, diversity and habitat quality
 - Vegetation growth and yield, quality and resilience to disease and other damage pressures (e.g. climate change)
 - Soil and water quality; e.g. chemical, physical and biological conditions
 - Ecosystem services; e.g. natural capital, economic utility, carbon sequestration potential, societal enjoyment and utility of ecosystems.

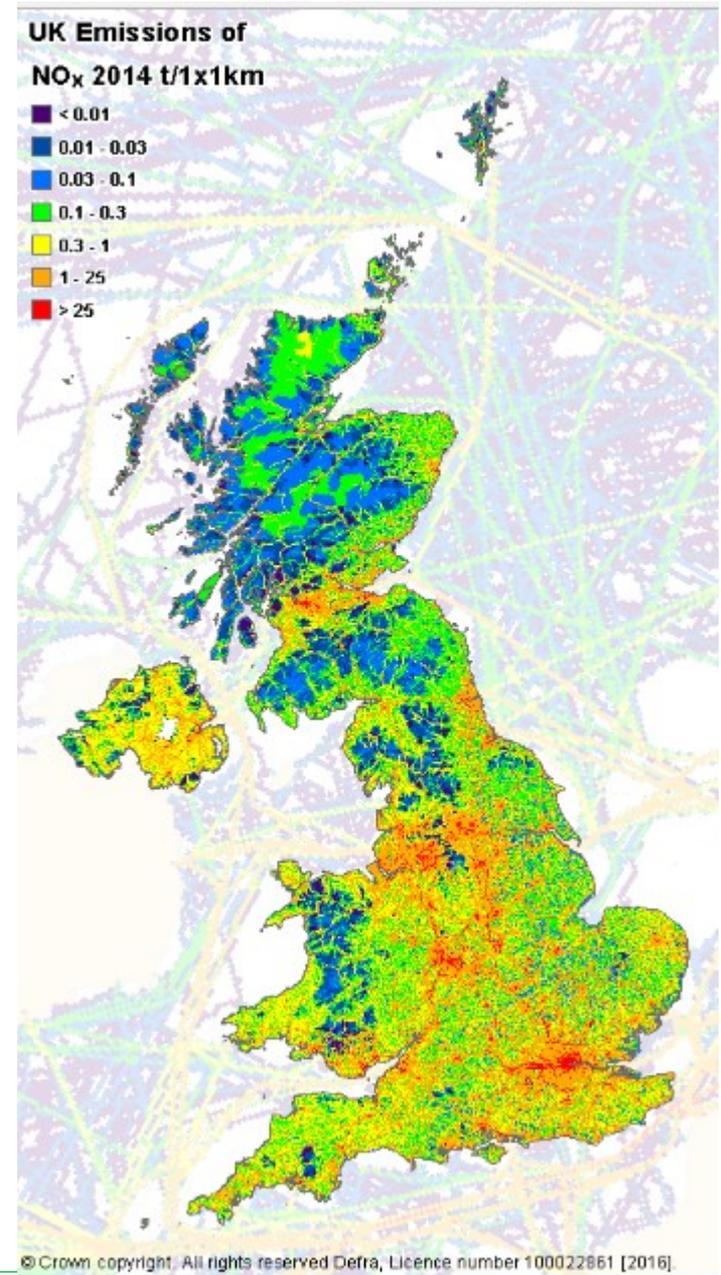
Emissions of Air Pollutants have fallen

- Defra and BEIS calculate UK emissions annually using the National Atmospheric Emissions Inventory (NAEI). The current data is for 2015.
- Emissions of many pollutants have fallen significantly, but some key pollutants have plateaued in recent years.
- Reducing emissions of ammonia is a significant challenge.
- Emissions are calculated following international guidance and based on best available data.



Modelling concentrations

- Defra uses the Pollution Climate Mapping (PCM) model – it supplements monitoring
- Modelling is used to assess national air quality concentrations
- PCM provides projections to 2030
- Models background concentrations of pollutants at 1 km x 1 km resolution, plus ~9,000 roads
- PCM is designed to reflect full national situation not local variations.
- A full model run can take in excess of three months to complete



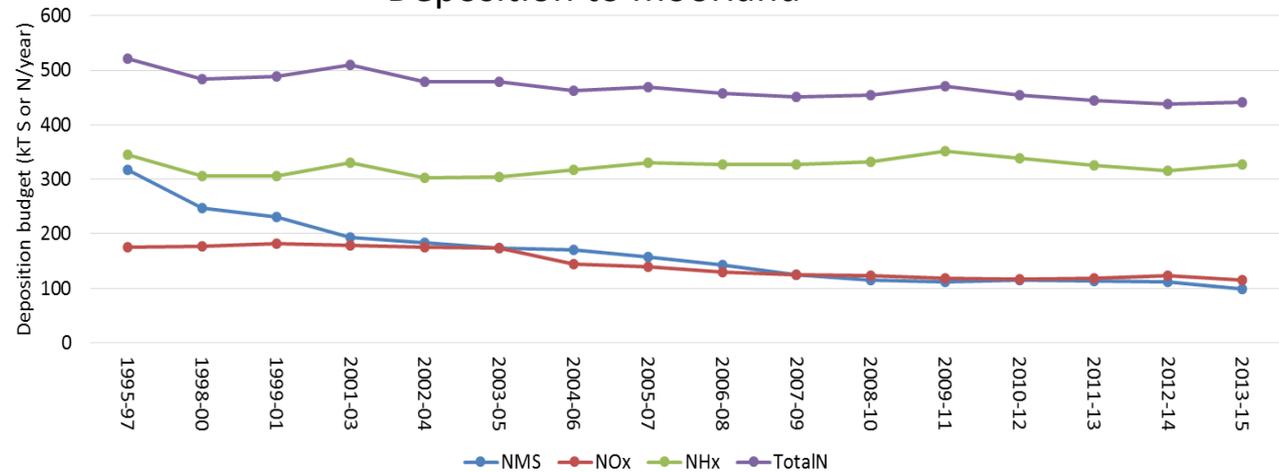
Key results of Defra's research

- Emissions of most pollutants have fallen across UK
- Deposition budgets are generally falling too, reducing acidity and nutrient nitrogen in the UK
- CEH will present data on:
 - latest critical load exceedance statistics
 - challenges in needing to further reduce nitrogen deposition
 - Methods to derive “biodiversity-based” critical loads

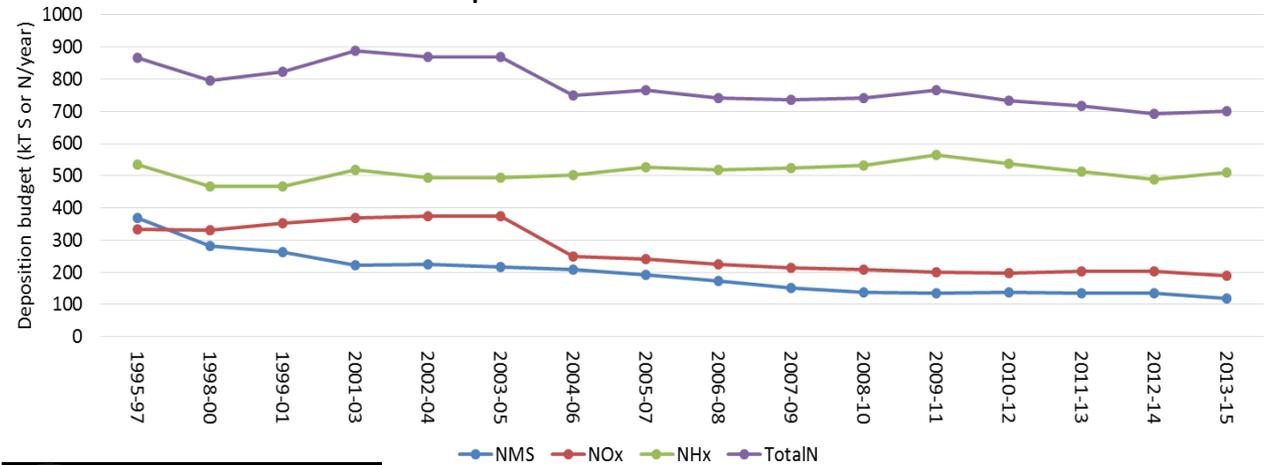
Concentration Based Estimated Deposition (CBED) budgets: 1995-2015

Although deposition is falling, there is an increasing trend in ammonia deposition

Deposition to moorland



Deposition to woodland

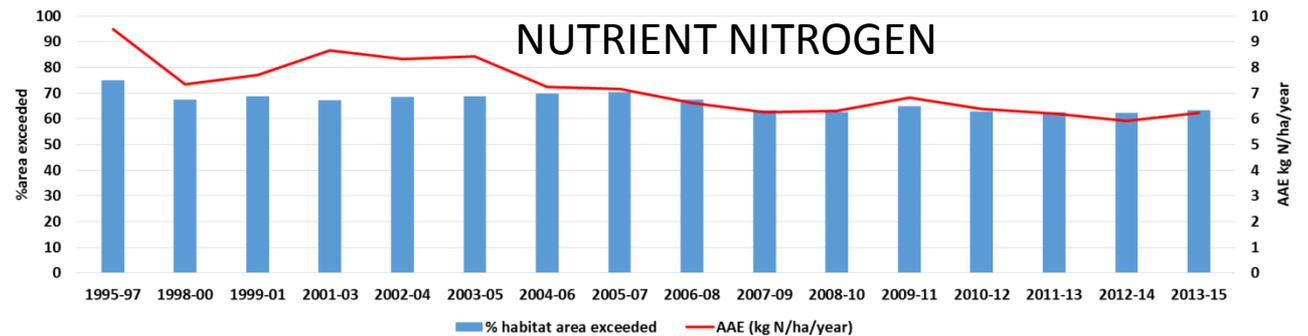
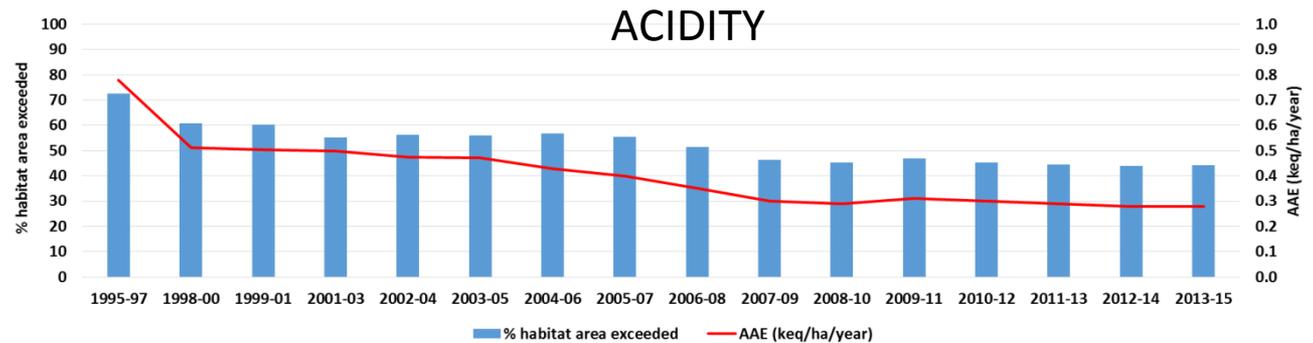


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UK Exceedance trends (1x1km habitats)

Acidity has fallen



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Next steps

- Conclusions
- Next steps