



**Centre for
Ecology & Hydrology**

NATURAL ENVIRONMENT RESEARCH COUNCIL

CAPER 2014

CAPERS' 40th Anniversary Symposium

LANCASTER UNIVERSITY

**The Global Impact of Pollutants on
Ecosystems**

Monday 14th – Wednesday 16th April 2014

Programme

Monday 14th April - Lancaster Environment Centre, Training Room 1/2

14.00	Keys and parking permits can be collected from Lancaster University Conference Centre	
14.30	Welcome	
Semi-natural vegetation now and in 40 years time Session Chair: David Fowler		
14.35	Stan Harpole (Iowa State University)	Does it matter that air pollution is changing the species composition of semi-natural habitats?
15.15	Carly Stevens (Lancaster University)	How will the semi-natural vegetation in the UK change between 2010 and 2030 given historical and current N deposition and the likely changes in coming decades?
15.35	Tobias Ceulemans (Leuven University)	Phosphorus constrains biodiversity in European grasslands independent of atmospheric nitrogen deposition.
15.55	TEA	
16.20	Roland Bobbink (Radboud University, Netherlands)	Nitrogen versus phosphorus enrichment effects on plant species richness in herbaceous ecosystems
16.40	Ed Rowe (CEH Bangor)	Relating species change to biodiversity targets
17.00	Richard Payne (Stirling University)	Air pollution impacts on the rest of biodiversity
17.20	Isabel Rogers (Lancaster University)	Carbon storage in grasslands: the impact of atmospheric nitrogen pollution
17.40	Robin Senn (MMU)	Microbial community responses in degraded peatlands undergoing restoration in the southern Pennines
18:00	LEC Atrium - Joint drinks reception with COGER and poster session	
19.00	DINNER - County Hall private dining room	
~21.00	Committee meeting (bar)	

Tuesday 15th April (am) - Lancaster Environment Centre, Training Room 1/2

08.00 - 09.00 **Breakfast** (County Hall Private Dining Room)

Where have we got to with N deposition?

Session Chair: Mike Ashmore

09.00 Lucy Sheppard (CEH Edinburgh) Is ammonia the main driver of species composition change in semi-natural plant communities in areas of enhanced N deposition?

09.20 Mark Sutton (CEH Edinburgh) Assessing the global role of Nitrogen

09.45 Laurence Jones (CEH Bangor) Valuing nitrogen impacts on ecosystem services, current status and next steps

10.05 Simon Caporn (MMU) Twenty five years of the Ruabon N addition experiment

10.25 Teresa Dias (Lisbon University) Ammonium as a driving force of plant diversity and ecosystem functioning: observations based on 5 years' manipulation of N dose and form in a Mediterranean ecosystem

10.45 Didier Allard (University Bordeaux) The effects of N deposition on vegetation structure and composition of European calcareous grasslands.

11.05 **COFFEE**

11.30 Melanie Vile (Villanova University) Biological N₂-fixation in Scottish peats: the P² pattern - can phosphorus and potassium alleviate chronic N loading when assessing sensitive ecosystem function?

11.50 Eva van den Elzen (Radboud University) Physiological response of *Sphagnum capillifolium* and its N₂-fixing community to long-term addition of reduced and oxidised nitrogen

12.10 Silvana Munzi (Lisbon University) Physiological response of lichens to long-term and short-term nitrogen treatments under controlled conditions

12.30 **LUNCH**

Tuesday 15th April (pm) - Lancaster Environment Centre, Training Room ½

Ozone challenges for semi-natural vegetation and food security

Session Chair: David Fowler

14.00	Bill Davis (Lancaster Environment Centre)	Ozone pollution and wheat: Quantifying future impacts and scope for increasing tolerance
14.40	Stephanie Osbourn (CEH Bangor)	Ozone and food security: A review of ozone-induced yield reduction in soybean cultivars
15.00	Simon Peacock (Newcastle University)	Effects of ozone on plant parasite-host interactions: <i>Striga hermonthica</i> (Purple Witchweed) and <i>Oryza sativa</i> (Rice) ¹
15.20	Kirsten Wyness (Newcastle University)	Impacts of ozone on grassland soil bacterial diversity and function
15.40	Christopher Malley (CEH Edinburgh)	Assessment of ozone impact on vegetation at the UK EMEP supersites using a chemical climatology framework
16.00	TEA	
16.30	Daniel Stabler (Newcastle University)	Ground-level ozone-induced changes in pollen quality
16.50	Katrina Sharps (CEH Bangor)	New ICP vegetation smart-phone app for recording incidences of ozone injury on vegetation
17.10	Daniel Hewitt (CEH Bangor)	The effects of ozone on pasture mesocosms
17.30	Felicity Hayes (CEH Bangor)	Impacts of ozone and nitrogen on silver birch

CONFERENCE DINNER

19.00 - County Hall private dining room

Wednesday 19 April (am) - Lancaster Environment Centre, Training Room ½

08.00 - 09.00 **Breakfast** (County Hall Private Dining Room)
(Move out & **return keys to conference centre by 10.00**)

Current and future (2030) global air pollution

Session Chair: Mike Ashmore

09.00	David Fowler (CEH Edinburgh)	Air Pollution threats to crops and semi-natural vegetation in the 21 st century.
09:45	Andy Sweetman (Lancaster University)	Hoppers, swimmers and flyers – the importance of multi-media partitioning on the long-range transport persistent organic pollutants (POPs)
10.30	COFFEE	
11:00	Paul Young (Lancaster University)	Modelling tropospheric ozone changes, 1850 to 2100
11:30	Sim Tang (CEH Edinburgh)	Local influences on spatial, temporal and long term trends in ammonia in the UK
12:00	Kevin Hicks (SEI)	Co-benefits of tackling poor air quality and regional climate: a focus on ecosystems
12:30	David Fowler (CEH Edinburgh)	Closing comments for CAPER 2014
12.45	LUNCH & DEPART	