

Dr. Ben Keane  
Senior researcher  
Environment and Geography  
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## Research interests

Ecosystem processes, carbon and nitrogen cycling, greenhouse gas fluxes, plant-soil-atmosphere interactions, sustainable food production, climate change

## Employment

### Research Associate

Post doctoral research assistant  
Stockholm Environment Institute at York  
University of York  
Grimston House, Heslington, York  
1 May 2015 → 31 Oct 2015

### Research Associate

Post doctoral research assistant  
Environment and Geography  
University of York  
Heslington, York  
1 Feb 2017 → 31 Jan 2018

### Postdoctoral Research Associate

Post doctoral research assistant  
Stockholm Environment Institute at York  
University of York  
Grimston House, Heslington, York  
1 Feb 2017 → 31 Jan 2018

### Research Associate

Post doctoral research assistant  
Environment and Geography  
University of York  
Heslington, York  
5 Jul 2021 → 11 Dec 2023

### Research Fellow

Senior researcher  
Environment and Geography  
University of York  
Heslington, York  
17 Feb 2025 → 15 Feb 2030

### PhD, Biology

Biology  
University of York  
Wentworth Way, York  
1 Oct 2011 → 18 Jan 2016

## Research output

### **Nitrous oxide flux: what microbial physiology can do to mitigate climate change gas production**

Moir, J. W. B., Toet, S. & Keane, B., 20 Aug 2025, In: *Advances in Microbial Physiology*. 87, p. 119-161 43 p.

### **The effects of drought on Sphagnum moss species and the implications for hydrology in peatlands**

Keane, B., Alderson, D. M., Clay, G. D., Evans, M. G., Field, C. D., Johnston, A., Limpens, J., McCarter, C. P. R., Overtom, N., Ritson, J. P., Robroek, B. J. M., Rochefort, L., Shuttleworth, E. L., Telgenkamp, Y., Turetsky, M. R. & Waddington, J. M., 7 Jul 2025, (E-pub ahead of print) In: *New Phytologist*. 19 p.

### **Recovery of Sphagnum from drought is controlled by species-specific moisture thresholds**

Keane, B., Shuttleworth, E. L., Evans, M. G., Ritson, J. P., Harris, A., Johnston, A., Alderson, D. M. & Clay, G. D., 1 Jul 2025, In: *Scientific reports*. 15, 1, 14 p., 22167.

### **Elevated CO<sub>2</sub> interacts with nutrient inputs to restructure plant communities in phosphorus-limited grasslands**

Taylor, C. R., England, L. C., Keane, J. B., Davies, J. A. C., Leake, J. R., Hartley, I. P., Smart, S. M., Janes-Bassett, V. & Phoenix, G. K., 4 Jan 2024, In: *Global Change Biology*. 30, 1, 18 p., e17104.

### **Methane Producing and Oxidizing Microorganisms Display a High Resilience to Drought in a Swedish Hemi-Boreal Mire**

White, J., Åhrén, D., Ström, L., Kelly, J., Klemetsson, L. & Keane, B., 8 Sept 2023, In: *Journal of Geophysical Research: Biogeosciences*. 128, 9, 17 p., e2022JG007362.

### **Grassland responses to elevated CO<sub>2</sub> determined by plant-microbe competition for phosphorus**

Keane, B., Hartley, I., Taylor, C. R., Leake, J. R., Hoosbeek, M. R., Miglietta, F. & Phoenix, G. K., 10 Jul 2023, (E-pub ahead of print) In: *Nature Climate Change*. 11 p.

### **Challenges in scaling up greenhouse gas fluxes: experience from the UK Greenhouse Gas Emissions and Feedbacks Programme**

Levy, P., Clement, R., Cowan, N., Keane, B., Myrriotis, V., van Oijen, M., Smallman, T. L., Toet, S. & Williams, M., 9 May 2022, (E-pub ahead of print) In: *Journal of Geophysical Research: Biogeosciences*. 127, 5, e2021JG006743.

### **Organic phosphorus cycling may control grassland responses to nitrogen deposition: a long-term field manipulation and modelling study**

Taylor, C. R., Janes-Bassett, V., Phoenix, G. K., Keane, B., Hartley, I. P. & Davies, J. A. C., 6 Jul 2021, In: *Biogeosciences*. 18, 13, p. 4021-4037 17 p.

### **Soil C, N and P cycling enzyme responses to nutrient limitation under elevated CO<sub>2</sub>**

Keane, J. B., Hoosbeek, M. R., Taylor, C. R., Miglietta, F., Phoenix, G. K. & Hartley, I. P., 10 Nov 2020, In: *Biogeochemistry*. 151, 2, p. 221-235 15 p.

### **A model-data fusion approach to analyse carbon dynamics in managed grasslands**

Myrriotis, V., Blei, E., Clement, R., Jones, S. K., Keane, B., Lee, M. A., Levy, P. E., Rees, R. M., Skiba, U., Smallman, T. L., Toet, S. & Williams, M., Sept 2020, In: *Agricultural Systems*. 184, 102907.

### **Real-time monitoring of greenhouse gas emissions with tall chambers reveals diurnal N<sub>2</sub>O variation and increased emissions of CO<sub>2</sub> and N<sub>2</sub>O from *Miscanthus* following compost addition**

Keane, J. B., Morrison, R., McNamara, N. P. & Ineson, P., 1 Dec 2019, In: *GCB Bioenergy*. 11, 12, p. 1456-1470 15 p.

### **Greenhouse gas emissions from the energy crop oilseed rape (*Brassica napus*); the role of photosynthetically active radiation in diurnal N<sub>2</sub>O flux variation**

Keane, J. B., Ineson, P., Vallack, H. W., Blei, E., Bentkey, M., Howarth, S., McNamara, N., Rowe, R., Williams, M. & Toet, S., 1 Dec 2017, (E-pub ahead of print) In: *Global Change Biology Bioenergy*. p. 1-38 38 p.

### **Technical note: Differences in the diurnal pattern of soil respiration under adjacent *Miscanthus x giganteus* and barley crops reveal potential flaws in accepted sampling strategies**

Keane, J. B. & Ineson, P., 13 Mar 2017, In: *Biogeosciences*. 14, p. 1181-1187 7 p.

## **Projects**

### **GREENHOUSE: Generating Regional Emissions Estimates with a Novel Hierarchy of Observations and Upscaled Simulation Experiments**

Keane, B. (Researcher)

### **Investigating Biological Uptake of Nitrous Oxide in Soils**

Keane, B. (Principal investigator), James, S. R. (Co-investigator) & Toet, S. (Co-investigator)

NATURAL ENVIRONMENT RESEARCH COUNCIL

17/02/25 → 16/02/30

### **Upscaling of greenhouse gas emissions from freshwater wetlands**

Keane, B. (Researcher)

1/01/17 → 30/06/18