Dr. Ben Keane
Senior researcher
Environment and Geography
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Phone: (01904) 321315

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

PhD, Trace gas fluxes from agricultural systems and the development of novel automated techniques for their measurement
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., Overtoom, 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_2 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., Ahrén, D., Ström, L., Kelly, J., Klemedtsson, L. & Keane, B., 8 Sept 2023, In: Journal of Geophysical Research: Biogeosciences. 128, 9, 17 p., e2022JG007362.

Grassland responses to elevated CO2 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., Myrgiotis, 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 CO2
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
Myrgiotis, 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_2O variation and increased emissions of CO_2 and N_2O 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_2O 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 ×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