

GANÉ Programme Publications

Refereed Journal Publications
2001
Aneja, V.P., Roelle, P.A., Murray, G.C., Southerland, J., Erisman, J-W., Fowler, D., Asman, W.A.H. and Patni, N. 2001. Atmospheric nitrogen compounds II: emissions, transport, transformation, deposition and assessment. <i>Atmospheric Environment</i> 35, 1903-1911.
Cape, J.N., Kirika, A., Rowland, A.P., Wilson, D.R., Jickells, T.D., Cornells (2001). Organic Nitrogen in Precipitation: Real Problem or Sampling Artefact? <i>The Scientific World</i> , Vol 1 (S2) 230-237.
Erisman, J.W., Hensen, A., Fowler, D., Flechard, C., Cape, J.N., Storton-West, R.L., Coyle, M. & Smith, R.I. (2001). Dry Deposition monitoring in Europe. <i>Water Air and Soil Pollution: Focus</i> 1, 17-27.
Fowler, D., Coyle, M., Flechard, C., Hargreaves, K., Storeton-West, R., Sutton, M. & Erisman, J-W. 2001. Advances in micrometeorological methods for the measurement and interpretation of gas and particles nitrogen fluxes. <i>Plant and Soil</i> 228, 117-129.
Geider, R.J, Grime, J.P. and 19 others (2001). Primary productivity of planet earth: biological determinants and physical constraints in terrestrial and aquatic habitats. <i>Global Change Biology</i> 7, 849-882.
Loreau, M., Grime, J.P. and 10 others (2001). Biodiversity and ecosystem function: current knowledge and future challenges. <i>Science</i> 294, 804-808.
Owen, A.G. & Jones, D.L. (2001). Competition for amino acids between wheat roots and rhizosphere microorganisms and the role of amino acids in plant N acquisition. <i>Soil Biology & Biogeochemistry</i> 33, 651-657.
Pitcairn, C.E.R., Leith, I.D., Sutton, MA., Fowler, D., Hargreaves, K.J., Moghaddam, M, Kennedy, V.H. and Grannat, L. (2001). Foliar nitrogen as an indicator of nitrogen deposition and critical loads exceedence on a European scale. <i>Water Air Soil Pollution</i> 130, 1037-1042.
Power, S.A., Barker, C.G., Allchin, E.A., Ashmore M.R. and Bell, J.N.B. (2001). Habitat management: a tool to modify ecosystem impacts of nitrogen deposition. <i>The Scientific World</i> 1 (S2), 714-721
Robinson, C.H. (2001). Cold adaptation in Arctic and Antarctic fungi. <i>New Phytologist</i> 151, 341-353.
Sommerville, K. & Preston, T. (2001). Characterisation of dissolved combined amino acids in marine waters. <i>Rapid Communications in Mass Spectrometry</i> 15, 1287-1290
Uher, G., Hughes, C., Henry, G. & Upstill-Goddard, R.C. (2001). Non-conservative mixing behaviour of coloured dissolved organic matter in a humic-rich, turbid estuary. <i>Geophysical. Research. Letters</i> 28, 3309-3312.
Vinolas, L.C., Vallejo, V.R. & Jones, D.L. (2001). Control of amino acid mineralization and microbial metabolism by temperature. <i>Soil Biology & Biochemistry</i> 33, 1137-1140.
2002
Jones, D.L. & Kielland, K. (2002). Soil amino acid turnover dominates the nitrogen flux in permafrost-dominated taiga forest soils. <i>Soil Biology & Biochemistry</i> 34(2), 209-219.
Jones, D.L., Owen, A.G. & Farrar, J.F. (2002). Simple method to enable the high resolution determination of total free amino acids in soil solutions and soil extracts. <i>Soil Biology & Biochemistry</i> 34, 1893-1902.
Jones, R.I. & Feuchtmayr, H. (2002). Nutrient limitation of bacterioplankton growth in three upland lakes. <i>Verhandlungen der Internationalen Vereinigung fur Theoretische und Angewandte Limnologie</i> 28, 97-101.
Laughlin, R.J. & Stevens, R.J. (2002). Changes in composition of nitrogen-15-labeled gases during storage in septum-capped vials. <i>Soil Science Society of America Journal</i> 67(2), 540-543.
Leith, I.D., Pitcairn, C.E.R., Sheppard, L.J., Hill, P.W., Cape, J.N., Fowler, D., Tang, S., Smith, R.I. & Parrington, J.A. (2002). A comparison of Impacts of N deposition applied as NH ₃ or as NH ₄ Cl on ombrotrophic mire vegetation. <i>Phyton</i> 42 (3), 83-88.

Maberly, S.C., King, L., Dent, M.M., Jones, R.I. & Gibson, C.E. (2002). Nutrient limitation of phytoplankton and periphyton growth in upland lakes. <i>Freshwater Biology</i> 47, 2136-2152.
Sheppard, L.J. & Leith, I.D. (2002). Effects of NH ₃ fumigation on the frost hardiness of Calluna - Does N deposition increase winter damage by frost? <i>Phyton</i> 42 (3), 183-190.
Smith, A.M.S., Wooster, M.J., Powell, A.K. & Usher, D. (2002). Texture based feature extraction: application to burn scar detection in Earth Observation satellite imagery. <i>International Journal of Remote Sensing</i> 23(8), 1733-1739.
2003
Angus, A.J., Hodge, I.D., McNally, S., Sutton, M.A. (2003). The setting of standards for agricultural nitrogen emissions: a case study of the Delphi technique. <i>Journal of Environmental Management</i> 69(4), 323-337.
Cannell, M.G.R (2003). Carbon sequestration and biomass energy offset: theoretical, potential and achievable capacities globally, in Europe and the UK. <i>Biomass and Bioenergy</i> 24, 97-116.
Cannell, M.G.R. & Thornley, J.H.M. (2003). Ecosystem productivity is independent of some soil properties at equilibrium. <i>Plant and Soil</i> 257, 193-204.
Cornell, S.E., Jickells, T.D., Cape, J.N., Rowland, A.P., Duce, R.A. (2003). Organic nitrogen deposition on land and coastal environments: a review of methods and data. <i>Atmospheric Environment</i> 37(16), 2173-2191.
Davison, A.W. & Cape, J.N. (2003). Atmospheric nitrogen compounds - issues related to agricultural systems. <i>Environment International</i> 29(2-3), 181-187.
Ellis, C.J., Crittenden, P.D., Scrimgeour, C.M. & Ashcroft, C. (2003). The natural abundance of ¹⁵ N in mat-forming lichens. <i>Oecologia</i> 136, 115-123.
Farrar, J., Hawes, M., Jones, D.L., Lindow, S. (2003). How roots control the flux of carbon to the rhizosphere. <i>Ecology</i> 84, 827-837.
Grime, J.P. (2003). Plants hold the key: ecosystems in a changing environment. <i>Biologist</i> 50, 87-91.
Hann, D.B., Smith, A.M.S. and Powell, A.K. (2003). Technical Note: Classification of off-diagonal points in a co-occurrence matrix. <i>International Journal of Remote Sensing</i> 24(9), 1949-1956.
Hiscock, K.M., Bateman, A.S., Fukada, T., Dennis, P.D. (2003). Significance of indirect emissions of nitrous oxide from regional aquifers in the UK. <i>Environmental Science & Technology</i> 37, 3507-3512.
James, C., Fisher J., Moss, B. (2003). Nitrogen driven lakes: the Shropshire and Cheshire Meres. <i>Archiv fur Hydrobiologie</i> 24, 249-266.
Jones, D.L., Farrar, J., Giller, K.E. (2003). Associative nitrogen fixation and root exudation - What is theoretically possible in the rhizosphere. <i>Symbiosis</i> 35, 19-38.
Levy, P.E. & McKay, H.M. (2003). Assessing tree seedling vitality tests using sensitivity analysis of a process-based growth model. <i>Forest Ecology and Management</i> 183, 77-93.
Maberly, S.C., King, L., Gibson, C.E., May, L., Jones, R.I., Dent, M.M. & Jordan, C. (2003). Linking nutrient limitation and water chemistry in upland lakes to catchment characteristics. <i>Hydrobiologia</i> 506-509, 83-91.
Owen, A.G., & Jones, D.L. (2003). Competition for amino acids between wheat roots and rhizosphere microorganisms and the role of amino acids in plant N acquisition. <i>Soil Biology & Biochemistry</i> 33, 651-656.
Pitcairn, C.E.R., Fowler, D., Leith, I.D., Sheppard, L.J., Sutton, M.A., Kennedy, V. & Okello, E. (2003). Bioindicators of enhanced nitrogen deposition. <i>Environmental Pollution</i> , 126(3) 353-361.
Phoenix, G.K, Booth R.E, Leake, J.R, Read, D.J., Grime, J.P. & Lee, J.A. (2003). Effects of enhanced nitrogen deposition and phosphorus limitation on nitrogen budgets of semi-natural grasslands. <i>Global Change Biology</i> 9, 1309-1321.

Pretty, J. N., Mason, C. F., Nedwell, D. B. & Hine, R. E. (2003). Environmental costs of freshwater eutrophication in England and Wales. <i>Environmental Science and Technology</i> 37(2), 201-208.
Reay, D.S., Smith, K.A. & Edwards, A.C. (2003). Nitrous oxide in agricultural drainage waters. <i>Global Change Biology</i> 9(2), 195-203.
2004
Baker, A. & Spencer, R.G.M. (2004). Characterization of dissolved organic matter from source to sea using fluorescence and absorbance spectroscopy. <i>Science of the Total Environment</i> 33, 217-232.
Clark, M.J., Cresser, M.S., Smart, R., Chapman, P.J., Edwards, A.C. (2004). The influence of catchment characteristics on the seasonality of carbon and nitrogen species concentrations in upland rivers of Northern Scotland. <i>Biogeochemistry</i> 68(1), 1-19.
Ellis, C.J., Crittenden, P.D., Scrimgeour, C.M. (2004). Soil as a potential source of N for mat-forming lichens. <i>Canadian Journal of Botany</i> 82, 145-149.
Heaton, H.E., Wynn, P. & Tye, A.M. (2004). Low 15N/14N ratios for nitrate in snow in the High Arctic (79°N). <i>Atmospheric Environment</i> 38, 5611 – 5621.
Jones, R.I., King, L., Dent, M.M., Maberly, S.C. & Gibson, C.E. (2004). Nitrogen stable isotope ratios in epilithon, macrophytes and surface sediments from upland lakes with different nutrient status. <i>Freshwater Biology</i> 49, 382-391.
Mitchell, R.J., Sutton, M.A., Truscott, A.M., Leith, I.D., Cape, J.N., Pitcairn, C.E.R., Van Dijk, N. (2004). Growth and tissue nitrogen of epiphytic Atlantic bryophytes: effects of increased and decreased atmospheric N deposition. <i>Functional Ecology</i> 18(3), 322-329.
Murray, P.J., Hatch, D.J., Dixon, E.R., Stevens, R.J., Laughlin, R.J. & Jarvis, S.C. (2004). Denitrification potential in a grassland subsoil: effect of carbon substrates. <i>Soil Biology and Biogeochemistry</i> 36(3), 545-547.
Phoenix, G.K, Booth R.E, Leake, J.R, Read, D.J., Grime, J.P. & Lee, J.A. (2004). Simulated pollutant nitrogen deposition increases P stress and enhances root-surface phosphatase activities of three plant functional types in a calcareous grassland <i>New Phytologist</i> 161, 279-289.
Reay, D.S., Edwards, A.C. & Smith, K.A. (2004). Nitrous oxide in agricultural drainage waters following field fertilisation. <i>Water, Air and Soil Pollution: Focus</i> 4(2-3), 437-451.
Robinson, C.H., Saunders, P.W., Madan, N.J., Pryce-Miller, E.J., Pentecost, A. (2004). Does nitrogen deposition affect soil microfungus diversity and soil N and P dynamics in a high Arctic ecosystem? <i>Global Change Biology</i> 10(7), 1065-1079.
Stapleton, L.M., Young, S.D., & Crout, N.M.J. (2004). Have missing markets for ecological goods and services affected modelling of terrestrial C and N fluxes? <i>Ecological Modelling</i> 179, 569-574.
Terry, A.C., Ashmore, M.R., Power, S.A., Allchin, E.A. & Heil G.W.(2004). Modelling the impacts of atmospheric nitrogen deposition on Calluna-dominated ecosystems in the UK. <i>Journal of Applied Ecology</i> 41, 897-909
Willett, V.B., Reynolds, B., Stevens, P., Ormerod, S., Jones, D.L. (2004). Regulation of dissolved organic nitrogen in freshwaters. <i>Journal of Environmental Quality</i> 33, 201-209.
Wilson, L.J., Bacon, P.J., Bull, J., Dragosits, U., Blackall, T.D., Dunn, T.E., Hamer, K.C., Sutton, M.A., Wanless, S. (2004). Modelling the spatial distribution of ammonia emissions from seabirds in the UK. <i>Environmental Pollution</i> 131, 173-185.
GANE special issue Water, Air & Soil Pollution: Focus – The fate and effects of atmospheric N deposition
Fowler, D., Muller, J.B.A. & Sheppard, L.J. (2004). The GaNE Programme in a Global Perspective. <i>Water Air & Soil Pollution: Focus</i> 4(6), 3-8.
Fowler, D., O'Donoghue, M., Muller, J.B.A., Smith, R.I., Dragosits, U., Skiba, U., Sutton, M.A. & Brimblecombe, P. (2004). A Chronology of Nitrogen Deposition in the UK between 1900 and 2000. <i>Water Air & Soil Pollution: Focus</i> 4(6), 9-23.

Cape, J.N., Anderson, M., Rowland, A.P. & Wilson, D. (2004). Organic nitrogen in precipitation across the United Kingdom. <i>Water Air & Soil Pollution: Focus</i> 4(6), 25-35.
Skiba, U., Pitcairn, C., Sheppard, L., Kennedy, V. & Fowler, D. (2004). The influence of atmospheric N deposition on nitrous oxide and nitric oxide fluxes and soil ammonium and nitrate concentrations. <i>Water Air & Soil Pollution: Focus</i> 4(6), 37-43.
Murray, P.J., Hatch, D.J., Dixon, E.R., Granger, S., O'Prey, C., Stevens, R.J., Laughlin, R.J. & Jarvis, S.C. (2004). Transformations of nitrogen at the interface between the topsoil and an impervious clay subsoil. <i>Water Air & Soil Pollution: Focus</i> 4(6), 45-52.
Willet, V.B., Green, J.J., MacDonald, A.J., Baddeley, J.A., Cadisch, G., Francis, S.M.J., Goulding, K.W.T., Saunders, G., Stockdale, E.A., Watson, C.A. & Jones, D.L. (2004). Impact of land use on soluble organic nitrogen in soil. <i>Water Air & Soil Pollution: Focus</i> 4(6), 53-60.
Kenny, C., Yamulki, S., Blackwell, M., Maltby, E., French, P. & Birgand, F. (2004). The release of nitrous oxide from the intertidal zones of two European estuaries in response to increase ammonium and nitrate loading. <i>Water Air & Soil Pollution: Focus</i> 4(6), 61-66.
Levy, P.E., Wendler, R., Oijen, M.V., Cannel, M.G.R. & Millard, P. (2004). The effect of nitrogen enrichment on the carbon sink in coniferous forests: uncertainty and sensitivity analyses of three ecosystem models. <i>Water Air & Soil Pollution: Focus</i> 4(6), 67-74.
Crowe, A.M., Sakata, A., McClean, C. & Cresser, M.S. (2004). What factors control soil profile nitrogen storage? <i>Water Air & Soil Pollution: Focus</i> 4(6), 75-84.
Cresser, M.S., Smart, R.P., Clark, M., Crowe, A., Holden, D., Chapman, P.J. & Edwards, A.C. (2004). Controls on leaching of N species in upland moorland catchments. <i>Water Air & Soil Pollution: Focus</i> 4(6), 85-95.
Evans, C.D., Reynolds, B., Curtis, C.J., Crook, H.D., Norris, D. & Brittain, S.A. (2004). A conceptual model of spatial heterogeneous nitrogen leaching from a Welsh moorland catchment. <i>Water Air & Soil Pollution: Focus</i> 4(6), 97-105.
Reay, D.S., Edwards, A.C. & Smith, K.A. (2004). Determinants of nitrous oxide emission from agricultural drainage waters. <i>Water Air & Soil Pollution: Focus</i> 4(6), 107-115.
Homewood, J.M., Purdie, D.A. & Shaw, P.J. (2004). Influence of sewage inputs and fish farm effluents on dissolved nitrogen species in a chalk river. <i>Water Air & Soil Pollution: Focus</i> 4(6), 117-125.
Dong, L.F., Nedwell, D.B., Colbeck, I. & Finch, J. (2004). Nitrous oxide emission from some English and Welsh rivers and estuaries. <i>Water Air & Soil Pollution: Focus</i> 4(6), 127-134.
Theobald, M.R., Dragosits, U., Place, C.J., Smith, J.U., Sozanska, M., Brown, L., Scholefield, D., Prado, A.D., Webb, J., Whitehead, P.G., Angus, A., Hodge, I.D., Fowler, D. & Sutton, M.A. (2004). Modelling nitrogen fluxes at the land-landscape scale. <i>Water Air & Soil Pollution: Focus</i> 4(6), 135-142.
Marco, C.D., Skiba, U., Weston, K., Hargreaves, K. & Fowler, D. (2004). Field scale N ₂ O flux measurements from grassland using eddy covariance. <i>Water Air & Soil Pollution: Focus</i> 4(6), 143-149.
Famulari, D., Fowler, D., Hargreaves, K., Milford, C., Nemitz, E., Sutton, M.A. & Weston, K. (2004). Measuring eddy covariance fluxes of ammonia using tuneable diode laser absorption spectroscopy. <i>Water Air & Soil Pollution: Focus</i> 4(6), 151-158.
Phoenix, G.K., Leake, J.R., Read, D.J., Grime, J.P. & Lee, J.A. (2004). Accumulation of pollutant nitrogen in calcareous and acidic grasslands: evidence from N flux and ¹⁵ N tracer studies. <i>Water Air & Soil Pollution: Focus</i> 4(6), 159-167.
Jones, D.L., Farrar, J.F. & Newsham, K.K. (2004). Rapid amino acid cycling in Arctic and Antarctic soils. <i>Water Air & Soil Pollution: Focus</i> 4(6), 169-175.

Hill, P., Marshall, C., Harmens, H., Jones, D.L. & Farrar, J. (2004). Carbon sequestration: do N inputs and elevated atmospheric CO ₂ alter soil solution chemistry and respiratory C losses? <i>Water Air & Soil Pollution: Focus</i> 4(6), 177-186.
Williams, D., Emmett, B.A., Brittain, S.A., Reynolds, B., Stevens, P.A. & Benham, D. (2004). The GANE Roof Project: the impact of reduced N and S deposition and experimental warming in an acid grassland. <i>Water Air & Soil Pollution: Focus</i> 4(6), 187-196.
Sheppard, L.J., Crossley, A., Leith, I.D., Hargreaves, K.J., Carfrae, J.A., van Dijk, N., Cape, J.N., Sleep, D., Fowler, D. & Raven, J.A. (2004). An automated wet deposition system to compare the effects of reduced and oxidised N on ombrotrophic bog species: practical considerations. <i>Water Air & Soil Pollution: Focus</i> 4(6), 197-205.
Leith, I.D., Sheppard, L.J., Fowler, D., Cape, J.N., Jones, M., Crossley, A., Hargreaves, K.J., Tang, Y.S., Theobald, M. & Sutton, M.A. (2004). Quantifying dry NH ₃ deposition to an ombrotrophic bog from an automated NH ₃ field release system. <i>Water Air & Soil Pollution: Focus</i> 4(6), 207-218.
Skinner, R., Ineson, P., Hicks, W.K., Jones, H.E., Sleep, D., Leith, I.D. & Sheppard, L.J. (2004). Correlating the spatial distribution of atmospheric ammonia with δ ¹⁵ N values at an ammonia release site. <i>Water Air & Soil Pollution: Focus</i> 4(6), 219-228.
Carfrae, J.A., Sheppard, L.J., Raven, J.A., Leith, I.D., Stein, W., Crossley, A. & Theobald, M. (2004). Early effects of atmospheric ammonia deposition on <i>Calluna vulgaris</i> (L.) Hull growing on an ombrotrophic peat bog. <i>Water Air & Soil Pollution: Focus</i> 4(6), 229-239.
Marsh, S., Miller, A.J., Zhang, X-H. & Pearson, J. (2004). Tree leaf biomarkers for atmospheric nitrogen deposition. <i>Water Air & Soil Pollution: Focus</i> 4(6), 241-250.
Gidman, E., Goodacre, R., Emmett, B., Sheppard, L.J., Leith, I.D. & Gwynn-Jones, D. (2004). Applying metabolic fingerprinting to ecology: the use of fourier-transform infrared spectroscopy for the rapid screening of plant responses to N deposition. <i>Water Air & Soil Pollution: Focus</i> 4(6), 251-258.
Power, S.A., Ashmore, M.R., Terry, A.C., Capron, S.J.M., Pilkington, M.G., Wilson, D.B., Barker, C.G., Carroll, J.A., Cresswell, N., Green, E.R. & Heil, G.W. (2004). Linking field experiments to long-term simulation of impacts of nitrogen deposition on heathlands and moorlands. <i>Water Air & Soil Pollution: Focus</i> 4(6), 259-267.
Smart, S.M., Ashmore, M.R., Hornung, M., Scott, W.A., Fowler, D.A., Dragosits, U., Howard, D.C., Sutton, M.A. & Famulari, D. (2004). Detecting the signal of atmospheric N deposition in recent national-scale vegetation change across Britain. <i>Water Air & Soil Pollution: Focus</i> 4(6), 269-278.
Blackall, T.D., Theobald, M.R., Milford, C., Hargreaves, K.J., Nemitz, R., Wilson, L.J., Bull, J., Bacon, P.J., Hamer, J. C., Wanless, S. & Sutton, M.A. (2004). Application of tracer ratio and inverse dispersion methods with boat-based plume measurements to estimate ammonia emissions from seabird colonies. <i>Water Air & Soil Pollution: Focus</i> 4(6), 279-285.
Wilson, L.J., Bacon, P., Bull, J., Dragosits, U., McDonald, A.G., Blackall, T.D., Dunn, T.E., Hamer, K.C., Sutton, M.A. & Wanless, S. (2004). The spatial distribution of ammonia emitted from seabirds and its contribution to atmospheric nitrogen deposition in the UK. <i>Water Air & Soil Pollution: Focus</i> 4(6), 287-296.
in press
Mitchell, R.J., Truscott, A-M., Leith, I.D., Cape, J.N., Van Dijk, N., Tang, Y.S., Fowler, D. & Sutton, M.A. (in press). A study of the epiphytic communities of Atlantic oak woods along an atmospheric nitrogen deposition gradient. <i>Journal of Ecology</i> .
Smith, A.M.S., Wooster, M.J., Drake, N.A., Dipotso, F.M. & Perry, G.L.W. (in press). Fire in African savanna: testing the impact of incomplete combustion on pyrogenic emission estimates. <i>Ecological Applications</i> .
Wolseley, P., James, P., Theobald, M.R & Sutton, M.A. (in press). Detecting changes in epiphytic lichen communities in sites affected by atmospheric ammonia from agricultural sources. <i>Environment International</i> .

Other Refereed Publications
2001
NEG-TAP (2001). <i>Transboundary Air Pollution: Acidification, Eutrophication and Ground-level Ozone in the UK</i> . Report of the National Expert Group on Transboundary Air Pollution (D Fowler Chair). DEFRA
2002
Hiscock, K.M., Bateman, A.S., Fukada, T. and Dennis, P.F. (2002). The concentration and distribution of groundwater N ₂ O in the Chalk aquifer of eastern England. <i>Proceedings of the Third International Symposium on Non-CO₂ Greenhouse Gases: Scientific Understanding, Control Options and Policy Aspects, Maastricht, January 2002</i> ISBN 90 77017 70 4, 179-184.
2003
Levy, P.E., Millard, P., van Oijen, M., Wendler, R. & Cannell, M.G.R. (2003). Assessing uncertainties in the effect of nitrogen enrichment on the terrestrial carbon sink. <i>Geophysical Research Abstracts</i> 5, 11313.
Levy, P.E. (2003). Effects of changes in CO ₂ , climate, land use change, and nitrogen deposition on the terrestrial carbon sink: a process-based model analysis. <i>Geophysical Research Abstracts</i> 5, 11416.
2004
Dragosits, U., Theobald, M.R., Place, C.J., Smith, J.U., Sozanska, M., Brown, L., Scholefield, D., Del Prado, A., Angus, A., Hodge, I.D., Webb, J., Whitehead, P.G., Fowler, D. & Sutton, M.A. (2004). Interactions of nitrogen pollutants at the landscape level and abatement strategies. Paper presented at the 3rd International Nitrogen Conference (N2004), Nanjing, China, October 12-16th 2004. (Conference Proceedings to be published in October 2005 by China Science Press, CAS).
Non-Refereed Publications
2001
Fowler, D., Dragosits, U., Pitcairn, C.E.R., Sutton, M.A., Hall, J., Roy, D. & Weidemann, A. (2001). Deposition of acidifying and eutrophying air pollutants across Scotland. Mapping critical loads and levels exceedances. Report to Scottish Natural Heritage.
Hughes, L., Healey, J.R. & Jones, D.L. (2001). Dissolved organic nitrogen (DON) dynamics in coniferous forest ecosystems. In: <i>Proceedings of the international workshop on ecological aspects of dissolved organic matter in terrestrial ecosystems</i> , 9-11 October 2001, Wissenschaftszentrum Schloss Thutnau, Germany.
Jones, D.L., Kielland, K. & Owen, A.G. (2001). Rhizosphere DOC and DON dynamics: Mechanisms of regulation and their role in plant nutrition. In: <i>Proceedings of the international workshop on ecological aspects of dissolved organic matter in terrestrial ecosystems</i> , 9-11 October 2001, Wissenschaftszentrum Schloss Thutnau, Germany.
Leith, I.D., Pitcairn, C.E.R., Sheppard, L.J., Hill, P.W., Cape, J.N., Fowler, D., Tang, Y.S., Smith, R.I. & Parrington, J. (2001). Comparisons of effects of N applied as NH ₃ or NH ₄ Cl (aq) to moorland vegetation growing in open-top chambers. Final Report to the Department of the Environment, Food and Rural Affairs.
Macdonald, A.J., Webster, C.P., Poulton, P.R., Wilmer, W.S. & Goulding K.W.T. (2001). Losses of dissolved organic N (DON) from soils of contrasting organic matter content on the Broadbalk Continuous Wheat Experiment. In: <i>Proceedings of the 11th Nitrogen Workshop</i> , 9-12 September 2001, Reims, France, pp. 321-322.
Pitcairn, C.E.R., Leith, I.D., Sutton, M.A., Fowler, D., Hargreaves, K.J., Moggaddam, M., Kennedy, V.H. and Grannat, L (2001). Foliar nitrogen as an indicator of nitrogen deposition and critical loads exceedance in Europe. In: <i>CAPER 2001</i> , CEH Edinburgh.
Rowland, V.B., Stevens, P.A., Reynolds, B.A. & Jones, D. L. (2001). Dissolved organic carbon (DOC) and nitrogen (DON) dynamics in acid freshwaters of Wales. In: <i>Proceedings of the international workshop on ecological aspects of dissolved organic matter in terrestrial ecosystems</i> , 9-11 October 2001, Wissenschaftszentrum Schloss Thutnau, Germany.

2002
Baddeley, J.A., Green, J.J. and Watson, C.A. (2002). Assessing the role of dissolved and particulate organic matter in nitrogen cycling within natural, semi-natural and agro-ecosystems in the UK. Annual Meeting of the British Ecological Society, University of York, 18-20 December 2002. Poster & Abstract.
Chapman, P.J., Edwards, A.C. & Cresser, M.S. (2002). Inorganic and organic losses of nitrogen from upland regions of Britain: Concentrations and fluxes. BIOGEOMON 4th International Symposium on Ecosystem Behaviour, Conference Abstracts.
Clark, M.J., Smart, R.P., Cresser, M.S. & Palmer, R. Application of catchment scale data to the quantification of soluble organic- and inorganic-N fluxes within and from UK upland soils. Soils and the Environment, 9-10 September, 2002; IPSS & BSSS Book of Abstracts.
Cresser, M.S., Smart, R.P. & Clark, M.J. (2002). Modelling diffuse pollution impacts on water chemical quality in a major Scottish catchment. 6 th International Conference on Diffuse Pollution Proceedings, Amsterdam, IWA, Eindhoven, 642-643.
Crowe, A.M., Few, K.J. & Cresser, M.S. The Effects of Sampling Support on Estimates of Soil Profile Elemental Storage. Soils and the Environment, 9-10 September, 2002; IPSS & BSSS Book of Abstracts.
Cunha, A., Power, S.A., Ashmore, M.R., Green, P., Haworth B.J. and Bobbink, R. (2002). Whole ecosystem nitrogen manipulation: an updated review. <i>Joint Nature Conservation Committee Report Series</i> 331.
Dixon, E.R., Hatch, D.J., Murray, P.J., Jarvis, S.C., O'Prey, K., Layghlin, R.J., Stevens, R.J. (2002). A method to investigate the transfer of N species in the subsoil using one metre deep soil columns. Soils and Environmental Quality. British Soil Science Society Conference, University of Plymouth, 8-11 September, 2002.
Evans, C. D., Reynolds, B., Curtis, C., Shackle V., Brittain, A., Crook, H. (2002). Spatial heterogeneity and nitrate leaching within a small acid moorland catchment. BIOGEOMON 4th International Symposium on Ecosystem Behaviour, Conference Abstracts.
Helliwell, R.C., Coull, M.C., Evans, C.D., Ferrier, R.F., Jenkins, A., Norris, D., Reynolds, B., Shackle, V., Smith, J.J.L (2002). An inter-regional assessment of nitrogen leaching and catchment characteristics in the United Kingdom. BIOGEOMON 4th International Symposium on Ecosystem Behaviour, Conference Abstracts p. 87.
Kitidis, V., Uher, G., Woodward, E.M.S., Owens, N.J.P., Henry, G., Upstill-Goddard, R.C. Photo-production of Ammonium from Chromophoric Dissolved Organic Matter (CDOM) in Coastal Waters. <i>Eos, Transactions, American Geophysical Union</i> , 83(4): 277.
Kitidis, V., Uher, G., Upstill-Goddard, R.C., Henry, G., & Woodward E.M.S. (2002). Photochemical release of ammonium from chromophoric dissolved organic matter in aquatic environments. UK Challenger Society for Marine Science 2002 Conference Abstracts.
Sakata, A. & Cresser, M.S. (2002). The Use of Soil Survey Data for Quantification of Soil Profile Nitrogen Storage. Soils and the Environment, 9-10 September, 2002; IPSS & BSSS Book of Abstracts
Uher, G., Kitidis, V., Woodward, E.M.S., Upstill-Goddard, R.C, Law, C.S. (2002). Chromophoric Dissolved Organic Matter (CDOM) Dynamics and Seasonality During Three Atlantic Meridional Transect Cruises. <i>Eos, Transactions, American Geophysical Union</i> , 83(4): 192.
2003
Cresser, M.S., Smart, R.P., Clark, M., Holden, D., Chapman, P.J. and Edwards, A.C. (2003). Controls on Transfer of Nitrogen Deposition to Soils through to Upland Rivers. <i>Proceedings of the IWA DipCon 2003 7th International Specialised Conference on Diffuse Pollution and Basin Management</i> . International Water Association, 1-13-1-19.
Di Marco, C., Skiba, U., Weston, K., Hargreaves, K., Fowler, D. (2003). A comparison of nitrous oxide and ammonia fluxes from managed grassland. Abstracts of the 12th N Workshop, Exeter, Sept 2003.
Jones, D.L., Willett, V.B., Darrah, P.R., Hodge, A. & Farrar, J.F. (2003). Dissolved organic nitrogen dynamics in grassland soils. Abstracts of the 12th N Workshop, Exeter, Sept 2003.

Macdonald, A.J., Francis, S.M.J., Stockdale, E.A., Goulding, K.W.T., Willett, V.B., Jones, D.L., Baddeley, J.A., the late Green, J.J., Watson, C.A., Saunders, G. & Cadisch, G. (2003). Effects of land use and management on soluble organic N in UK soils. Abstracts of the 12th N Workshop, Exeter, Sept 2003.
Pheonix, G.K. (2003). Flowers under threat. Planet Earth (NERC), Winter 2003.
Reay, D.S. (2003). Vanishing nitrous oxide. Planet Earth (NERC), Spring 2003.
Robinson, C.H., Saunders, P.W. & Madan, N.J. (2003). Does simulated N deposition affect saprotrophic fungal biodiversity at a high Arctic ecosystem? In: <i>The Fungal Cell: Individuals to Ecosystems</i> , p.84, Mycological Society of America.
Saunders, G., Baggs, E.M., Cadisch, G. & Rossiter, J. (2003). Complexation of polyphenol fractions from two English woodland tree species, <i>Alnus glutinosa</i> and <i>Quercus robur</i> , with crude leaf protein and the subsequent incubation of these complexes in the soil. In: <i>Proceedings of the British Society of Soil Science Young Scientists Meeting</i> , April 10-11, 2003, Imperial College London.
Sommerville, K., Berges, J.A., Savidge, G., Preston, T. (2003). The importance of dissolved organic nitrogen in macroalgal dominated coastal systems. ASLO 2003 Aquatic Sciences Meeting, Conference Abstracts.
Smart, R.P., Cresser, M.S., Dahl, D & Clark, M. (2003). Assessment of the spatial heterogeneity of weathering rates in upland catchments using the sodium dominance index and its significance in integrated catchment management. <i>Proceedings of the IWA DipCon 2003 7th International Specialised Conference on Diffuse Pollution and Basin Management</i> . International Water Association, 14-66 – 14-71.
2004
Maberly, S.C., Carvalho, L., Fisher J., May, L., Reynolds, B., Theobald, M., Sutton, M. & Defew, L. (2004). Deriving practical guidance on the importance of nitrogen in freshwater eutrophication. Draft final report to the Scottish Executive.
Reay, D.S. (2004). Fertilizer 'solution' could turn local problem global. <i>Nature</i> 427, 485.
Sheppard, L.J., Leith, I.D., Crossley, A., Jones, M., Tang, Y.S., Carfrae, J.A., Sutton, M.A., Hargreaves, K.J., Cape, J.N. & Fowler, D. (2004). Responses of <i>Cladonia portentosa</i> growing on an ombrotrophic bog, Whim Moss, to a range of atmospheric ammonia concentrations. English Nature Report 525, Lichens in a Changing Environment. 84-88.
Van Oijen, M., Cannell, M.G.R. & Levy, P.E. (2004). Modelling biogeochemical cycles in forests: state of the art and perspectives. In: <i>Proceedings Conference "Towards the sustainable use of Europe's forests"</i> , June 25-27, 2003, Tours, France.
Book Chapters
2001
Grime J.P. (2001). Plant functional types, communities and ecosystems. pp. 161-181. In: Press M C, Huntley N J and Levin S Eds. <i>Ecology: Achievement and Challenge</i> . Blackwell, Oxford
Jarvis, P.G. and Fowler, D. (2001). Forests and the Atmosphere. In: <i>Forest Handbook</i> . Vol 1 An Overview of Forest Science. (ed. J Evans). pp 229-281. Blackwell Science.
2003
Bell, J.N.B & Power, S.A. (2003). Plants and atmospheric pollution. In: B. Thomas, D. Murphy & B Murray (Eds.) <i>Encyclopaedia of Applied Plant Science</i> . Elsevier, London.
Bobbink, R., Ashmore, M.R., Braun, S., Fluckiger, W. & van den Wyngaert, I.J.J. (2003). Empirical critical loads for natural and semi-natural ecosystems: 2002 update. In: <i>Empirical critical loads for nitrogen</i> (Environmental Documentation, Air: 164, Eds: B. Achermann & R. Bobink.). Swiss Agency for the Environment, Forests and Landscape SAEFL.
Farrar, J.F. & Jones, D.L. (2003). Control of carbon acquisition by and the growth of roots. In: <i>Root Ecology</i> . Springer-Verlag.

Mitchell, R.J., Truscott, A.-M, Leith, I.D., Tang, Y.S., van Dijk, N., Smith, R.I. & Sutton, M.A. Impact of atmospheric nitrogen deposition on epiphytes in Atlantic Oakwoods. In: *Empirical critical loads for nitrogen* (Environmental Documentation, Air: 164, Eds: B. Achermann & R. Bobink.). Swiss Agency for the Environment, Forests and Landscape SAEFL.

Power, S.A. & Barker, C.G. (2003). Deposition measurements at Thursley Common heathland nature reserve. In: *Empirical critical loads for nitrogen* (Environmental Documentation, Air: 164, Eds: B. Achermann & R. Bobink.). Swiss Agency for the Environment, Forests and Landscape SAEFL.

Sutton, M.A., Cape, J.N., Rihm, B., Sheppard, L.J., Smith, R.I., Spranger, T., Fowler, D. (2003). The importance of accurate background atmospheric deposition estimates in setting critical loads for nitrogen. In: *Empirical critical loads for nitrogen* (Environmental Documentation, Air: 164, Eds: B. Achermann & R. Bobink.). Swiss Agency for the Environment, Forests and Landscape SAEFL.

2004

Jones, D.L., Farrar, J.F. & Willett, V.B. (2004). Dissolved organic nitrogen concentrations in two grassland soils. In: *Controlling nitrogen flows and losses* (Eds D.Hatch D. Chadwick & S. Jarvis) pp 441-443. Wageningen Academic Publishers.

Macdonald, A.J. & Jones, D.L. (2004). Missing N: is the solution in dissolved N? In: *Controlling nitrogen flows and losses*. Eds D.Hatch D. Chadwick & S. Jarvis) pp 600-605. Wageningen Academic Publishers.

Murray, P.J., Hatch, D., Dixon, E.R., Stevens, R., Laughlin, R., Jarvis, S.C. (2004). Determination of N source in denitrification studies using stable isotopes. In: *Controlling N flows and losses* (Eds. D. Hatch, D. Chadwick & S. Jarvis) pp 347-348. Wageningen Academic Publishers.

Murray, P.J., Dixon, E.R., Hatch, D., Granger, S., Laughlin, R., Stevens, R.. (2004). N transformations at a sub-surface clay interface: a study using undisturbed, in situ soil lysimeters. In: *Controlling N flows and losses* (Eds. D. Hatch, D. Chadwick & S. Jarvis) pp 349-350. Wageningen Academic Publishers.

Reay, D.S., Smith, K.A. & Edwards, A.C. (2004). Leached N and the nitrous oxide emission factor. In: *Controlling N flows and losses* (Eds. D. Hatch, D. Chadwick & S. Jarvis) pp 354-356. Wageningen Academic Publishers.

Robinson, C.H., Pryce-Miller, E.J. & Deacon, L.J. (2004). Biodiversity of saprotrophic fungi in relation to their function: do fungi obey the rules? In: *Soil Biodiversity and Ecosystem Function* (Eds. R.D. Bardgett, D. W. Hopkins & M. B. Usher), Special Symposium of the British Ecological Society, Blackwell Scientific Publications, Oxford.

van Oijen, M. & Levy, P.E. (2004). Nitrogen metabolism and plant adaptation to the environment: the scope for process-based modelling. In: *Nitrogen Acquisition and Assimilation in Higher Plants* (Eds: S. Amancio & I. Stulen), pp.133-147. Kluwer, The Hague.

PhD Theses

Blackall, T.D. (2004). The emission of ammonia from seabird colonies. Ph.D. Thesis, University of Leeds.

Homewood, J.M. (2005) Dissolved Nitrogen in the River Test and Estuary. PhD. Thesis, University of Southampton

Kitidis, V. (2002). CDOM dynamics and Photoammonification in the marine environment systems. Ph.D. Thesis, University of Newcastle.

Smith, A.M.S. (2004). Determining nitrogen volatilised within African savanna fires via ground-based remote sensing. Ph.D. Thesis, University of London

Willett, V.B. (2004). Assessing the Role of DON in Semi Natural and Agricultural Ecosystems. Ph.D. Thesis, University of Wales, Bangor.