
PUBLICATIONS SUMMARY

Total number to present including in press:	1230
of which: Books/refereed special issues:	44
Refereed journal papers	290
Refereed book chapters	41
Book chapters (including refereed chapters)	270
Contract and other reports	360
Web materials and software	28
UN and other policy documents	77
Contract proposals	116
Media and dissemination mobilized (non-authored)	816
Theses conducted/supervised	22
H-Factor	
All publications (Google Scholar)	92 (citations: 40,600)
Journal articles (Scopus)	73
Journal articles (Web of Science)	67

Published Books and Edited publications**2022**

- B.44. **Sutton M.A.**, Howard C.M., Mason K.E., Brownlie W.J. and Cordovil, C.M.d.S. (eds.) (2022) *Nitrogen Opportunities for agriculture, food and environment. UNECE Guidance Document on Integrated Sustainable Nitrogen Management*. UK Centre for Ecology & Hydrology, Edinburgh. 228 pp. (in press).
- B.43. Brownlie W.J., **Sutton M.A.**, Heal K.V., Reay D.S. and Spears B.M. (eds.) (2022) *Our Phosphorus Future. Towards global phosphorus sustainability*. UK Centre for Ecology & Hydrology. Edinburgh. 388 pp. www.opfglobal.com

2020

- B.42. **Sutton M.A.**, Mason K.E., Bleeker A., Hicks W.K., Masso C., Raghuram N., Reis S. and Bekunda M. (2020) *Just Enough Nitrogen. Perspectives on how to get there for regions with too much and too little nitrogen*. (Proceedings of the 6th International Nitrogen Conference, Kampala, Uganda). Springer. 608 pp. <https://doi.org/10.1007/978-3-030-58065-0>
- B.41. Fowler D., Pyle J.A., **Sutton M.A.** and Williams M.L. (2020) Global Air Quality, past present and future. (Science+ Discussion Meeting) Theme Issue. *Phil. Trans. Roy. Soc. A.* **378**. Issue 2183. <https://royalsocietypublishing.org/toc/rsta/2020/378/2183>

2019

- B.40. **Sutton M. A.**, Dalgaard T., Cordovil C.M.d.S. and Howard, C. (2019) *Guia de Boas Práticas Agrícolas para a Redução das Emissões de Amónia*. Base o documenta E/EB.AIE/129. Comissão Económica das Nações Unidas para a Europa – UNECE. Covenão sobre a Poluição Atmosférica Transfronteiriça a Longa Distância – LRTAP, 2019. ISBN 9789728669782 (In Portuguese).

2016

- B.39. Bekunda M., Reis S., Karanja N., Winiwarer W., **Sutton M.A.**, Howard C. and Yan X. (Eds.) (2014-2016) Focus on Nitrogen Management Challenges: From Global to Local Scales. Focus Issue of *Environmental*

Research Letters. Containing 31 papers from the N2013 Conference, Kampala .

<http://iopscience.iop.org/journal/1748-9326/page/Nitrogen%20management%20challenges>

2015

- B.38. Stahel W.R., Saritas O., Damianova Z., van den Hove S., Knudsen L.E., Kurppa S., Laurent L., Mueller A., Nieuwenhuijsen M.J., Nonhebel S., **Sutton M.A.** and Watson K. (2015) *The Junction of Health, Environment and Bioeconomy: Foresight and Implications for European Research & Innovation Policies*. European Commission [ISBN: 978-92-79-44579-8] <http://ec.europa.eu/research/foresight/>
- B.37. Oenema O., Billen G., Lassaletta L., Brentrup F., Lammel J., Bascou P., Dobermann A., Erismann J.W., Garnett T., Hammel M., Hanjotis T., Hoxha A., Jensen L.S., Oleszek W., Pallière C., Powlson D., Quemada M., **Sutton M.A.**, Vallejo A., Van Grinsven H.J.M., Winiwarter W. (2015) *Nitrogen Use Efficiency (NUE) - an indicator for the utilization of nitrogen in food systems*. (EU Nitrogen Expert Panel). Wageningen University, The Netherlands.
- B.36. Westhoek H., Lesschen J.P., Rood T., Leip A., Wagner S., De Marco A., Murphy-Bokern D., Pallière C., Howard C.M., Oenema O. & **Sutton M.A.** (2015) *Nitrogen on the Table: The influence of food choices on nitrogen emissions and the European environment*. (European Nitrogen Assessment Special Report on Nitrogen and Food.) Centre for Ecology and Hydrology, UK. 67 pp. [ISBN: 978-1-906698-51-5]
- B.35. Reis S., Howard C.M. and **Sutton M.A.**, (eds) (2015) *Costs of ammonia abatement and the climate co-benefits*. Springer. 284 pp.
- B.34. UNECE (2015) *United Nations Economic Commission for Europe Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions* (authors: S. Bittman, M. Dedina, B. Amon, H. Menzi, J. Webb, K. Groenestein, T. Misselbrook, N. Hutchings, H. Dohler, K. van der Hoek, S. Gyldenkerne, L. Valli, C. Pallière, C. Howard, O. Oenema and **M.A. Sutton**) United Nations Economic Commission for Europe, Geneva.

2014

- B.33. Wolseley P.A., Leith I.D., Sheppard L.J., Lewis J.E.J., Crittenden P. and **Sutton M.A.** (2014) *Guide to using a lichen based index to nitrogen air quality*. Field Studies Council. 8 pp [ISBN 978 1 908819 10 9].
- B.32. **Sutton M.A.**, Mason K.E., Sheppard L.J., Sverdrup H., Haeuber R. and Hicks W.K. (2014). (eds.) *Nitrogen Deposition, Critical Loads and Biodiversity*. (Proceedings of the International Nitrogen Initiative Workshop, linking experts of the Convention on Long-range Transboundary Air Pollution and the Convention on Biological Diversity). Springer: Dordrecht. 534 pp.
- B.31. Bittman S., Dedina M., Howard C.M., Oenema O. and **Sutton M.A.** (2014) (eds.) *Options for ammonia mitigation: Guidance from the UNECE Task Force on Reactive Nitrogen*. TFRN-CLRTAP, Centre for Ecology and Hydrology, UK. [ISBN: 978-1-906698-46-1]

2013

- B.30. UNEP (2013) *Drawing Down N₂O to Protect Climate and the Ozone Layer*. A UNEP Synthesis Report. (Eds.: J. Alcamo, S.A. Leonard, A.R. Ravishankara and **M.A. Sutton**). ISBN: 978-92-807-3358-7. (14 + 57 pp), United Nations Environment Programme, Nairobi.
- B.29. Fowler D., Brunekreef B., Fuzzi S., Monks P.S., **Sutton M.A.**, Brasseur G.P., Friedrich R., Passante L.G., Jiménez Mingo J.M. (2013) Research Findings in support of the EU Air Quality Review. (eds. Maione M. and Fuzzi S.). European Commission, Directorate-General for Research and Innovation, Brussels. 57 pp.
- B.28. Fowler D., Pyle J.A., Raven J.A. and **Sutton M.A.** (2013) The global nitrogen cycle of the twenty-first century. (Special Issue) *Philosophical Transactions of the Royal Society, Series B*. **368** (1621).
- B.27. **Sutton M.A.**, Bleeker A., Howard C.M., Bekunda M., Grizzetti B., de Vries W., van Grinsven H.J.M., Abrol Y.P., Adhya T.K., Billen G., Davidson E.A., Datta A., Diaz R., Erismann J.W., Liu X.J., Oenema O., Palm C., Raghuram N., Reis S., Scholz R.W., Sims T., Westhoek H. & Zhang F.S., with contributions from Ayyappan S., Bouwman A.F., Bustamante M., Fowler D., Galloway J.N., Gavito M.E., Garnier J., Greenwood S., Hellums D.T., Holland M., Hoysall C., Jaramillo V.J., Klimont Z., Ometto J.P., Pathak H., Ploq Fichet V., Powlson D., Ramakrishna K., Roy A., Sanders K., Sharma C., Singh B., Singh U., Yan X.Y. & Zhang Y. (2013) *Our Nutrient World: The challenge to produce more food and energy with less pollution*. Global Overview of Nutrient Management. Centre for Ecology and Hydrology, Edinburgh on behalf of the Global Partnership on Nutrient Management and the International Nitrogen Initiative. 114 pp. <http://initrogen.org/index.php/publications/our-nutrient-world/>

2012

- B.26. **Sutton M.A.**, Billen G., Cellier P., Erisman J.W., Mosier A.R., Nemitz E., van Grinsven H., Voss M., Reis S., Sprent J., Beier C., and Skiba U. (2012) Nitrogen and global change. (Eds.) (Fifth NitroEurope Special Issue) *Biogeosciences* **9**. http://www.biogeosciences.net/special_issue93.html
- B.25. Prevot A.S.H., Simpson D., **Sutton M.**, Hansen H.C. and Beekmann M. (Eds.). EMEP – an integrated system of models and observations in support of European air quality and policy. Special Issue. Atmospheric Chemistry and Physics 9-12. https://www.atmos-chem-phys.net/special_issue152.html

2011

- B.24. de Vries, W., Cellier P., Erisman J.W. and **Sutton M.A.** (2011) Assessment of nitrogen fluxes to air and water from site scale to continental scale (Eds). (Fourth NitroEurope Special Issue) *Environmental Pollution*, **159** (11), 3143-3268.
- B.23. Goodale C.L., Dise N.B. and **Sutton M.A.** (2011) Special Issue Section: Nitrogen deposition, critical loads, and biodiversity (Eds). *Environ. Pollut.* **159** (10), 2211-2299.
- B.22. Ambus P., Skiba U., Butterbach-Bahl K. and **Sutton M.A.** (2011) Reactive nitrogen and greenhouse gas flux interactions in terrestrial ecosystems. (Third NitroEurope Special Issue) (Eds.) *Plant Soil* **343**, 1-185.
- B.21. **Sutton M.A.**, Howard C., Erisman J.W., Billen G., Bleeker A., Grennfelt P., van Grinsven H. and Grizzetti B. (2011) *The European Nitrogen Assessment: Sources, Effects and Policy Perspectives* (Eds.) Cambridge University Press. 612 pp. (ISBN 978-1-107-00612-6).
- B.20. **Sutton M.A.**, Nemitz E., Skiba U.M., Beier C. Butterbach Bahl K., Cellier P., de Vries W., Erisman J.W., Reis S., Bleeker A., Bergamaschi P., Calanca P.L., Dalgaard T., Duyzer J., Gundersen P., Hensen A., Kros J., Leip A., Olesen J.E., Owen S., Rees R.M., Sheppard L.J., Smith P., Zechmeister-Boltenstern S., Soussana J.F., Theobald M.R., Twigg M., van Oijen M., Veldkamp T., Vesala T., Winiwarter W., Carter M.S., Dragosits U., Flechard C., Helfter C., Kitzler B., Rahn K.H., Reinds G.J., Schleppi P., with contributions from the NitroEurope community. (2011) *The nitrogen cycle and its influence on the European greenhouse gas balance*. Centre for Ecology and Hydrology, 43 pp. [ISBN 978-1-906698-21-8].
- B.19. Hicks W.K., Whitfield C.P., Bealey W.J., and **Sutton M.A.** (2011) ‘*Nitrogen Deposition and Natura 2000: Science & practice in determining environmental impacts*’ (Eds.) (Findings of a European workshop linking scientists, environmental managers and policymakers, Brussels, 18th - 20th May, 2009), COST Office, Brussels.

2010

- B.18. Beier C., Skiba U. and **Sutton M.A.** (2010) Greenhouse gas exchange with European ecosystems and their interactions with nitrogen – results from NitroEurope IP. (Eds.) *European Journal of Soil Science*. (Second NitroEurope Special Issue). **61** (5), 627-805.

2009

- B.17. Hjorth J., Raes F., Monks P., Isaksen I., Laj P., Fowler D., van Aardeene J., Cescatti A., Dentener F. Giechaskiel B., Leip A., Marmer E., Marotta A., Martini G., **Sutton M.** and Eyring V. (2009) Answers to the Gothenburg Questions. ACCENTs Second Policy-Driven Synthesis. Answers by the atmospheric chemistry and air pollution research community to questions posed by policy makers in view of the revision of the Gothenburg Protocol. ACCENT Secretariat, Urbino, 46 pp. (ISBN 978-92-79-13444-9).
- B.16. Reis S., Butterbach-Bahl K. and **Sutton M.A.** (2009) Reactive nitrogen in agro-ecosystems: integration with greenhouse gas interactions. (Eds.) *Agriculture, Ecosystems and Environment* (First NitroEurope Special Issue). **133** (3-4), 135-288.
- B.15. **Sutton M.A.**, Oenema O., Erisman J.W., Grennfelt P., Beier C., Billen G., Bleeker A. Britton C., Butterbach Bahl K., Cellier P., van Grinsven H., Grizzetti B., Nemitz E., Reis S., Skiba U., Voss M., de Vries W. and Zechmeister-Boltenstern S. (2009) *Managing the European Nitrogen Problem: A proposed strategy for integration of European Research on the multiple effects of reactive nitrogen*. Centre for Ecology and Hydrology / Partnership for European Environmental Research, 23 pp. (ISBN 978-1-906698-13-3).
- B.14. Pilegaard K., Schjoerring J.K. and **Sutton M.A.** (2009) Processes controlling the exchange of ammonia between grassland and the atmosphere (GRAMINAE). (Eds.) *Biogeosciences* (Special Issue). Vol. **6**. 15 ff.
- B.13. **Sutton M.A.**, Reis S., and Baker S.M.H. (2009) *Atmospheric Ammonia: Detecting emission changes and environmental impacts*. (Eds). Springer, 464 pp.

2008

- B.12. Erisman J.W. and Sutton M.A. (2008) *Reduced nitrogen in ecology and the environment*. (Eds.) *Environmental Pollution* (Special Issue) **154** (3), 357-507.

2002

- B.11. DEFRA (2002) *Ammonia in the UK*. Department for Environment, Food and Rural Affairs, London. 89 pp.
 B.10. Sutton M.A. and Fowler D. (2002) Ammonia Special Section. (Eds.) *Environmental Pollution* 119 (1).

2000

- B.9. Sutton M.A., (Moreno J.M., van der Putten W. and Struwe S.) (2000) *Terrestrial Ecosystem Research in Europe: Successes, Challenges and Policy* (Eds.) Final Conference of the Terrestrial Ecosystem Research Initiative - Concerted Action (TERICA). EUR 19375, European Commission, Luxembourg. 208 pp.
 B.8. Agricultural and Forest Meteorology (Ammonia Exchange Special Issue) Series of 6 peer review papers and foreword, co-ordinated by M.A Sutton.

1999

- B.7. Sutton M.A., (Beier C., van Breemen N., Byrne C., Cernusca A., Christensen T., Ekschmitt K., Heads P., Huntley B., Kertesz M., Lawton J.H., Moreno J.M., Mulder J., van der Putten W., Schulze E.D., Struwe S., Wolters V.) (1999) Transects for European research in ecosystem functioning: site based measurement strategies in the Terrestrial Ecosystem Research Initiative. ITE Edinburgh/TERICA. [ISBN: 1 870393 45 7].

1998

- B.6. (Beier C., Brown V., Buchmann N., Byrne C., Cernusca C., Cramer W., Cruz A., Christensen T., de Angelis P., Ekschmitt K., Emmett B., Fernandez F., Ferrier R., Gallardo J., Giovannini G., Hulme P., Jenkins A., Kertesz M., Kjoller A., Lawton J.H., Moreno J.M., Mulder J., Perez B., Scarascia-Mugnozza G., Smith P., Struwe S., Sutton M.A., (Sykes M., Troumbis A., Vellejo R., van der Putten W., Whitmore A., Wolters V., Wookey P. and Zuazua E.) (1998) Ecosystem research and the European Union policy needs. Report of the Terrestrial Ecosystem Research Initiative (TERI) Concerted Action Workshop, Toledo (April-May 1998), Universidad de Castilla-La Mancha, Toledo, Spain.
 B.5. Sutton M.A., (Lee D.S., Dollard G.J.) and Fowler D. (1998) *International conference on atmospheric ammonia: emission, deposition and environmental impacts*. (Eds.) *Atmos. Environ. (Special Issue)* **32** (3) 269-594.

1997

- B.4. Fowler D., (Campbell G.W.), Cape J.N., (Choularton T.W., Dollard G.J., Irwin J.G.), Smith R.I., (Stedman J.R.), Sutton M.A., (Weston K.J.) and Pitcairn C.E.R. (1997) Deposition fluxes in the United Kingdom. UK Critical Loads Advisory Group sub-group report on deposition fluxes. Department of Environment / Institute of Terrestrial Ecology, Edinburgh. 45 pp.
 B.3. (Irwin J.G., Campbell G.W., ApSimon H.M.,) Bull K., Cape J.N., (Carruthers D.J., Choularton T.W., Derwent R.G., Fisher B.E.A.), Fowler D., (Lee D.S., Longhurst J.W.S., Metcalfe S.E., Rea J.), Smith R.I., Sutton M.A. (1997) *Acid deposition in the United Kingdom 1986-1995*. Fourth report of the Review Group on Acid Rain. Department of Environment, London. 176 pp.

1996

- B.2. Sutton M.A., (Lee D.S., Dollard G.J.) and Fowler D. (1996) *Atmospheric ammonia: emission, deposition and environmental impacts*. (Eds.) Poster Proceedings of the International Conference on Atmospheric Ammonia (Oxford, UK 2-4 October 1995). Institute of Terrestrial Ecology, Edinburgh. 135 pp [ISBN: 1 870 393 32 5]

1995

- B.1. Hornung M., Sutton M.A. and (Wilson R.B.) (1995) *Mapping and modelling of critical loads for nitrogen - a workshop report*. (Eds.) (Report of the UN-ECE workshop, Grange-over-Sands, 24-26 October 1994). Institute of Terrestrial Ecology, Edinburgh, 207 pp.(ISBN 1 870393 24 4).

Journal papers
2022

- P.290. Olf H., Aerts R., Bobbink R., Cornelissen J.H.C., Erisman J.W., Galloway J.N., Stevens C.J., **Sutton M.A.**, de Vries F.T., Wamelink G.W.W. and Wardle D.A.. (2022) Explanations for nitrogen decline. *Science*, **376** (6598), 1169-1170. <https://doi.org/10.1126/science.abq7575>
- P.289. Bansal S., Raghuram N., Adhya T.K., Rahman Md. M., Tshering D., Dahal K.R., Wakeel A., Aminath S., Safi Z., Nissanka S., Pathak H., Aziz T., Naher U.A., Dandeniya W., Biswas J.C., Taneja J., Panda A.N., Kaushik H., Jain N., Skiba U., Ramachandran R., Sutton M.A. (2022) Long-term trends of direct nitrous oxide emission from fuel combustion in South Asia. *Environmental Research Letters*, **17** (4), 045028. <https://doi.org/10.1088/1748-9326/ac5cf7>
- P.288. Ellis C.J., Steadman C.E., Vieno M., Chatterjee S., Jones M.R., Negi S., Pandey B.P., Rai H., Tshering D., Weerakoon G., Wolseley P., Reay D., Sharma S. and **Sutton M.** (2022) Estimating nitrogen risk to Himalayan forests using thresholds for lichen bioindicators. *Biological Conservation* **265**, 109401. <https://doi.org/10.1016/j.biocon.2021.109401>
- P.287. Gu B., Zhang L., Holland M., Vieno M., Van Grinsven H.J.M., Zhang S., Rao S., **Sutton M.A.** (2022) Particle toxicity's role in air pollution—Response. *Science* **375** (6580), 506-507. <https://10.1126/science.abn7647>
- P.286. Rahman M., Biswas J.C., **Sutton M.A.**, Drewer J. and Adhya T.K. (2022) Assessment of Reactive Nitrogen Flows in Bangladesh's Agriculture Sector. *Sustainability* **14** (1), 272, <https://doi.org/10.3390/su14010272>

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- P.285. Gu B., Zhang L. Van Dingenen R., Vieno M., Van Grinsven H.J.M., Zhang X., Zhang S., Chen Y., Wang S., Ren C., Rao S., Holland M., Winiwarter W., Chen D., Xu J. and **Sutton M.A.** (2021) Abating ammonia is more cost-effective than nitrogen oxides for mitigating PM_{2.5} air pollution. *Science* **374** (6568), 758-762. <https://www.science.org/doi/10.1126/science.abf8623>
- P.284. Cowan N., Bhatia A., Drewer J., Jain N., Singh R., Tomer R., Kumar V., Kumar O., Prasanna R., Ramakrishnan B., Kumar D., Bandyopadhyay S.K., **Sutton M.**, Pathak H. (2021) Experimental comparison of continuous and intermittent flooding of rice in relation to methane, nitrous oxide and ammonia emissions and the implications for nitrogen use. *Agriculture, Ecosystems & Environment*, **319**, 107571. doi.org/10.1016/j.agee.2021.107571
- P.283. Pawar P.V., Ghude S.D., Jena C., Moring A., **Sutton M.A.**, Kulkarni S., Lal D.M., Surendran D., Van Damme M., Clarisse L., Coheur P.F., Liu X., Xu W., Jiang J., Adhya T.K. (2020) Analysis of atmospheric ammonia over South and East Asia based on the MOZART-4 model and its comparison with satellite and surface observations. *Atmospheric Chemistry and Physics* **21**, 1–21. <https://doi.org/10.5194/acp-21-1-2021>
- P.282. Gu B., van Grinsven H.J.M., Lam S.K., Oenema O., **Sutton M.A.**, Mosier A., Chen D. (2021) A credit system to solve agricultural nitrogen pollution. *The Innovation* **2**, 100079. <https://doi.org/10.1016/j.xinn.2021.100079>
- P.281. Moring A., Ahmad A., Bentley A., Bhatia A., Dragosits U., Drewer J., Pandey R., Uwizeye A., Hooda S., Raghuram N., Adhya T.K., Bandyopadhyay S.K., Barsby T., Beig G., Foulkes J., Ghude S., Gupta R., Jain N., Kumar D., Kumar R.M., Ladha J., Mandal P., Neeraja C.N., Pathak H., Pawar P., Pellny T.K., Poole P., Price A., Rao D.L.N., Reay D.S., Singh N.K., Sinha S., Srivastava R., Shewry P., Smith J., Steadman C.E., Subrahmanyam D., Surekha K., Karnam V., Singh V., Vieno M. and **Sutton M.A.** (2021) Nitrogen challenges and opportunities for agricultural and environmental science in India. *Frontiers in Plant Science* **5**:505347. <https://doi.org/10.3389/fsufs.2021.505347>
- P.280. Tang Y.S., Flechard C.R., Dämmgen U., Vidic S., Djuricic V., Mitosinkova M., Uggerud T.H., Sanz M.J., Simmons I., Dragosits U., Nemitz E., Twigg M., van Dijk N., Fauvel Y., Sanz F., Ferm M., Perrino C., Catrambone M., Leaver D., Braban C.F., Cape J.N., Heal M.R. and **Sutton M.A.** (2021) Pan-European rural atmospheric monitoring network shows dominance of NH₃ gas and NH₄NO₃ aerosol in inorganic pollution load. *Atmospheric Chemistry and Physics* **21**, 875-914. <https://doi.org/10.5194/acp-21-875-2021>
- P.279. Brownlie W.J., **Sutton M.A.**, Reay D.S., Heal K.V., Hermann L., Kabbe C. and Spears B.M. (2021) Global actions for a sustainable phosphorus future. *Nature Food* **2**, 71–74. doi.org/10.1038/s43016-021-00232-w
- P.278. Raghuram N., **Sutton M.A.**, Jeffery R., Ramachandran R. Adhya T.K. (2021) From South Asia to the world: embracing the challenge of global sustainable nitrogen management. *One Earth* **4**, 22-27. <https://doi.org/10.1016/j.oneear.2020.12.017>

- P.277. **Sutton M.A.**, Howard C.M., Kanter D.R., Lassaletta L., Móríng A., Raghuram N. and Read N. (2021) The nitrogen decade: mobilizing global action on nitrogen to 2030 and beyond. *One Earth* **4**, 10-14. <https://doi.org/10.1016/j.oneear.2020.12.016>
- P.276. Van Damme M., Clarisse L., Franco B., **Sutton M.A.**, Erisman J.W., Wichink Kruit R., van Zanten M., Whitburn S., Jadji-Lazaro J., Hurtmans D., Clerbaux C. and Coheur P.-F. (2021) Global, regional and national trends of atmospheric ammonia derived from a decadal (2008-2018) satellite record. *Environmental Research Letters* (pre-published) <https://iopscience.iop.org/article/10.1088/1748-9326/abd5e0/meta>
- P.275. Biswas, J.C., Hossain, M.B., Maniruzzaman, M., Haque, M.M., Akhter, S., Naher, U.A., Rahman, M.M., Adhya, T.K., **Sutton, M.A.** (2021) Spatio-temporal distribution of reactive nitrogen species in relation to wheat cultivation in Bangladesh. *SN Appl. Sci.* **3**, 51 (2021). <https://doi.org/10.1007/s42452-020-04120-z>
- P.274. Jiang J., Stevenson D.S., Uwizye A., Tempio G., **Sutton M.A.** (2021) A climate-dependent global model of ammonia emissions from chicken farming. *Biogeosciences* **18**, 135-158. <https://doi.org/10.5194/bg-18-135-2021>

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- P.273. **Sutton M.A.**, van Dijk N., Levy P.E., Jones M.R., Leith I.D., Sheppard L.J., Leeson S., Tang Y.S., Stephens A., Braban C.F., Dragosits U., Howard C.M., Viena M., Fowler D., Corbett P., Naikoo M.I., Munzi S., Ellis C.J., Chatterjee S., Steadman C.E., Móríng A. and Wolesey P.A. (2020) Alkaline Air: changing perspectives on nitrogen and air pollution in an ammonia-rich world. *Phil. Trans. Roy. Soc. A* **378**: 20190315. <http://dx.doi.org/10.1098/rsta.2019.0315>
- P.272. Fowler D., Pyle J.A., **Sutton M.A.** and Williams M.L. (2020) Global Air Quality, past present and future: an introduction. *Phil. Trans. Roy. Soc. A* **378**: 20190323. <https://doi.org/10.1098/rsta.2019.0323>
- P.271. Fowler D., Brimblecombe P., Burrows J., Heal M.R., Grennfelt P., Stevenson D.S., Jowett A., Nemitz E., Coyle M., Lui X., Chang Y., Fuller G.W., **Sutton M.A.**, Klimont Z., Unsworth M.H., Viena V. (2020) A chronology of global air quality. *Phil. Trans. Roy. Soc. A* **378**: 20190314. <https://doi.org/10.1098/rsta.2019.0314>
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- O.M.19. Reis S., **Sutton M.A.** and others (2007, and updated since) NitroEurope portal. <http://www.nitroeuropa.eu/> (5%)
- OM.18. Bleeker A., Reis S., **Sutton M.A.** and others (2007, and updated since) COST 729 Assessing and managing nitrogen fluxes in the atmosphere biosphere system in Europe. <http://cost729.ceh.ac.uk/> (5%)
- OM.17. Reis S., Britton C., **Sutton M.A.** and others (2008, and updated since) European Centre of the International Nitrogen Initiative <http://www.ini-europe.org/> (10%)
- OM.16. **Sutton M.A.**, Bealey W.J. and Leaver D. (2008) Managing the NitroNet – poll. http://www.nine-esf.org/?q=nitronet_poll (60%)
- OM.15. Britton C., Reis S. and **Sutton M.A.** (2008) Convention on Long Range Transport of Air Pollution: Task Force on Reactive Nitrogen. <http://www.clrtap-tfrn.org/> (5%)
- OM.14. Bleeker A., Reis S., **Sutton M.A.** and others (2007, and updated since) Nitrogen in Europe: Current problems and future solutions. <http://www.nine-esf.org/> (5%)
- OM.13. Bealey W.J., **Sutton M.A.** and others (2007, and updated since) UK air pollutant deposition portal. <http://www.uk-pollutantdeposition.ceh.ac.uk/> (5)
- OM.12. Theobald, M.R., Bealey W.J. and **Sutton M.A.** (2006, and updated since) SCAIL: Simple Calculation of Ammonia Impact Limits. <http://www.scail.ceh.ac.uk/> (10%)
- OM.11. Bealey W.J., **Sutton M.A.** and others. (2004, and updated since) Air Pollution Information System (APIS) <http://www.apis.ac.uk/> (20%)
- OM.10. Theobald M.R. and **Sutton M.A.** (2002) SCAIL v 1.1. (Simple Calculation of Ammonia Impact Limits) Computer Model written in C++ as a screening tool for the impacts of large pig/poultry units on semi-natural habitats. CEH Edinburgh, for the Environment Agency. (20%)
- OM.9. Bealey W., Dragosits U., Harding K.I.M. and **Sutton M.A.** (2002) UK Air Pollution Information System (APIS), implemented on the web. (For staff of the UK pollution and countryside agencies). <http://www.apis.ceh.ac.uk> (40%)
- OM.8. Bantock T. and **Sutton M.A.** (2002) UK Nitric Acid Monitoring Network. Web site. http://www.nbu.ac.uk/cara/UKNAMN/uknamn_nit.htm (30%)
- OM.7. **Sutton M.**, Dore T., Dragosits U., Theobald M. and Nemitz E. (2001) SCAIL - Simple Calculation of Ammonia Impact Limits (version 1.0) model concept implemented in Excel. CEH Edinburgh (July 2001).
- OM.6. **Sutton M.A.**, Dragosits U., Harding K.I.M., Fowler D., Dragosits U., (Langan S., Douglas R. and Rippey B.) (2001) The SNIFFER Air Pollution Information System: Access database supplied as run time version on CD, CEH Edinburgh. (30%)
- OM.5. Coyle M. and **Sutton M.A.** (2000) Co-ordinated Ammonia Research Activities at CEH Edinburgh. Web site. <http://www.nbu.ac.uk/cara> (50%)
- OM.4. Coyle M. and **Sutton M.A.** (2000) UK National Ammonia Monitoring Network. Web site. <http://www.nbu.ac.uk/cara/UKNAMN/uknamn.htm> (50%)
- OM.3. **Sutton M.A.** and Dragosits U. (1999) Initial survey of data sources relevant to the Global Nitrogen Enrichment (GANE) thematic programme. Report March 1999. Institute of Terrestrial Ecology, Edinburgh. Also published at: http://www.nerc.ac.uk/science/gane/data_survey.htm (60%)

OM.2. Coyle M. and **Sutton M.A.** (1998) Web site of the Terrestrial Ecosystem Research Initiative Concerted Action (TERICA). <http://www.nbu.ac.uk/terica> . Institute of Terrestrial Ecology, Nov 1998. (50%)

OM.1. **Sutton M.A.** and Nemitz E.G. (1995) *A canopy compensation point model to describe the surface/atmosphere exchange of NH₃: a simple implementation in EXCEL 5.0*. Draft Report, December 1995. Institute of Terrestrial Ecology (Edinburgh Research Station), Penicuik, Midlothian, UK. App. 20 pp. (50%)

Contract proposals

2019

CP.116. **Sutton M.A.**, Howard C.M. and Read N. (2016-2019). Support for the Task Force on Reactive Nitrogen from Defra, UK, European Commission and the Government of Germany (including two workshops to develop the Guidance Document on Integrated Sustainable Nitrogen Management) (collectively £250k).

2018

CP115. Dore A.J., Dragosits U., Reis S., **Sutton M.A.** and others. (2019) PMCOST. Improving understanding of heavy metals in air quality. EU Twinning Proposal (1M euro, successful).

CP114. Emberson L., Hicks K., Raghuram N., Howard C., **Sutton M.A.** and others. (2018) Action on Manure for a Sustainable Earth (AMASE). NERC call Towards a Sustainable Earth.

CP113. **Sutton M.A.**, Howard C., Nemitz E., Dise N., Reis S., Dragosits U., Skiba U., Vieno M., Drewer J., Bowes M., Bell V., Tudhope A., Reay D., Stevenson D., Hillier J., Grant E., Brandani S., Jeffery R., Gathorne-Hardy A., Barnes C., Misselbrook T., Pellny T., Cardenas L., Shewry P., Rees R., Eory V., Dangour A., Allen I., Holt J., Painter S., Smith J.U., Smith P., Price A., Ganesan A., Ellis C., Skuce P., Adhya T., Tripathy S.K., Jena D., Subodhi R., Suar M., Raghuram N., Ramachandran P., Ramachandran R., Sharma S., Pinnawala M., Nissanka S., Bhatia A., Jain N., Bandyopadhyay S., Singh R., Beig G., Pathak H., Chatterjee S., Rahman M., Anik A.R., Wakeel A., Aziz T., Dahal K.R., Safi Z., Naher U.A., Iqbal T., Subrahmanyam D., Ahmad A., Tshering D., Naseer A., Mohamed S., Shazly A. (2018) Global Challenge Research Fund South Asian Nitrogen Hub. Second stage proposal (May 2018). 274 pp. (£20M, successful).

2017

CP112. **Sutton M.A.**, Dise N., Allen I., Skiba U., Bell V., Reay D., Brandani S., Eory V., Rees R., Dangour A., Misselbrook T., Ghude S., Nissanka S., Bhatia A., Safi Z., Rahman M., Tshering D., Shazly A., Pinnawala M., Ramachandran R., Adhya T., Raghuram N. (2017) Global Challenge Research Fund South Asian Nitrogen Hub. First stage proposal (November 2017). 23 pp. (Proposal short listed)

2016

CP111: **Sutton, M.A.**, Bealey, W., Skiba U., Blackman S., Robertson E., Oenema O. and scientists from 41 European organizations. (2016) FarmCircle: European Initiative to Strengthen Innovation in Optimizing Farm and Regional C, N and P Cycles for the Circular Economy. (not successful).

CP110: **Sutton, M.A.**, Howard, C.W., Becher A., Brownlie W. and many others: Towards the International Nitrogen Management System (INMS). 898 pages. (approved by UNEP and now for final endorsement by GEF).

2015

CP109: Van Damme M., **Sutton M.A.**, Braban C. and Vieno M. (2015) AMMONIAS: Towards a global AMmonia MONitoring and Integrated Assessment Strategy. EU Marie Skłodowska-Curie Fellowship proposal. (€183k, 86% score. Not successful)

CP108: **Sutton M.A.**, Raghuram N., Drewer J., Skiba U., Dragosits, Reay D.S., Sohi S., Smith J.U., Price A., Stott A.W., Hillier J., Hooda S., Pathak H., Bhatia A., Prasanna R., Kumar D., Singh R., Subramanyam D., Neeraja C.N., Voleti S.R., Kumar R.M., Surekha K. and Ahmad A. (2015) Newton-Bhabha Virtual Centre on Nitrogen Efficiency of Whole-cropping Systems for improved performance and resilience in agriculture (NEWS India-UK). Proposal to BBSRC/NERC and DBT). (£2.25M, successful)

CP107: Cordovil C., **Sutton M.A.**, Dragosits U., Dalgaard T. and Hutchings N. (2015) Strengthening Portuguese research and innovation capacities in the field of excess reactive nitrogen (NitroPortugal). Twinning Proposal to EU Horizon 2020. (€1M, successful).

CP106: **Sutton M.A.**, Howard C. (2015) Project Preparation Grant for “Targeted Research on the Global Nitrogen Cycle, Towards the Establishment of an International Nitrogen Management System”. Global Environment Facility and the United Nations Environment Programme (GEF/UNEP). (£100k, successful).

2014

CP105. **Sutton M.A.**, Bleeker A., Ramesh Ramachandran, Erisman J.W. and Cox P. (2014) Nitrogen in Future Earth: proposal for a cross-cutting cluster. (£64k, successful).

2013

CP104. **Sutton M.A.**, Howard C. and Reis S. (2013) Pump-priming for the International Nitrogen Management System (INMSpp). Proposal to the NERC International Opportunities Fund. (£380k, successful).

CP103. **Sutton M.A.**, Dragosits U., Misselbrook T., Dise N., Stevens N.D., O’Shea L., Sheppard L.J. (2013). Identification of Potential “Remedies” for Air Pollution (nitrogen) Impacts on Designated Sites (R.A.P.I.D.S.). AQ0834. Proposal to Defra (£150k, successful)

2012

CP102. Cape JN, CF Braban, YS Tang, WJ Bealey, D Leaver, J Poskitt, S Beith, S Thacker, K Hockenhull, C Woods, I Simmons, CF Braban, N van Dijk, P Rowland, D Fowler, **M. A. Sutton**, C. Conolly, K. Vincent, B. Donovan, M. Davies, D. Knight & T. Clark. Operation of the UK Eutrophying & Acidifying Atmospheric Pollutants (UKEAP) Networks 2012-2014. Research proposal to Defra. (Successful)

2011

CP101. **Sutton M.A.**, Nemitz E., Skiba U., Dragosits U. and 15 others. (2011) Macronutrients Atmospheres. Proposal to the NERC Macronutrients Cycles Programme (Score 9/10, not selected).

CP100. Vieno M., Reis M. and **Sutton M.A.** (2011) Development and application of the EMEP4UK model for the assessment of air quality interactions with meteorological and climate change drivers.(November 2011) Defra. (successful)

CP99. **Sutton M.A.**, Howard C.M., Nemitz E., Reis S., Eljasz A., & ~50 others (2011) ÉCLAIRE: ‘Effects of climate change on air pollution impacts and response strategies for European ecosystems.’ 163 pp. (39 institutes led by CEH). (successful)

2008

CP98. **Sutton M.A.** and many others (2010). Proposal to the European Union: Effects of Climate change on air pollution impacts and response strategies for European ecosystems (ÉCLAIRE). (under review).

CP97. Freibauer A., **Sutton M.A.** and many others. (2008) Proposal to the European Union: Greenhouse Gas Europe. (successful).

CP96. Braban C., **Sutton M.A.** et al. (2008) Proposal to Defra for a new network for the integrated monitoring of rural air pollution, including ammonia, nitric acid, aerosol chemistry, nitrogen dioxide concentrations and wet deposition. (successful)

CP95. Dore A.J., Vieno M., Hallsworth S. and **Sutton M.A.** (2008) Proposal to Defra for further development of the FRAME model for application in UK transboundary air pollution analysis. (Successful).

CP94. Reis, S., Vieno M. and **Sutton M.A.** (2008) Proposal to Defra for further development of the EMEP4UK model. (successful).

CP93. Dragosits U., Daunt F., Wanless S. and **Sutton M.A.** (2008) Global ammonia emissions from seabird colonies. Proposal to CEH integrating fund (successful).

CP92. Dragosits U. and **Sutton M.A.** (2008) Mapping of UK ammonia emissions. Proposal to Defra for contribution to the UK Atmospheric Emissions Inventory. (joint with IGER) (successful).

CP91. Dragosits U. and **Sutton M.A.** (2008) Quantification of non agricultural ammonia emissions in the UK. (Joint with AEA Technology). Proposal to Defra. (successful).

CP90. **Sutton M.A.** and Leith I.D. (2008) The development of epiphytic bioindicators for the detection of ammonia and nitrogen deposition impacts. Proposal to CEH with co-funding from SNIFFER (successful).

CP89. **Sutton M.A.** (2008) Proposal to Defra in support of the chairmanship and secretariat for the UNECE Task Force on Reactive Nitrogen. (successful).

2006

- CP88. Misselbrook T., Dragosits U., Reis S., Cape J.N. and Sutton M.A. (2006) Key unknowns in estimating atmospheric emissions from UK land management. Defra. AC0108 (successful).
- CP87. Sutton M.A., Dragosits U. and Misselbrook T. (2006). Future patterns of ammonia emissions across the UK and the potential impact of local emission reduction measures. Defra AC0109 (successful).
- CP86. Theobald M., Nemitz E., Tang S., Simmons I., Bealey W.J., McDonald A., Dragosits U., Sutton M.A., Williams A., Sandars D., Quinn A., Loubet B., Dupont S., Valatin G., Cook P. (2006) Agroforestry systems for ammonia abatement. Proposal submitted to Defra (June 2006). Outcome: Contract won
- CP85. Reis S., Sutton M.A. and Hurley F. (2006) Developing a framework for underpinning health impact assessment of tropospheric air pollution in contrasting urban and rural environments (FUTURES). Proposal to NERC/ESRC/MRC Environment and Human Health Thematic Programme. (August 2006). (not successful).
- CP84. Sutton M.A., Vieno M., Dore A.J., Wind P. and Tarrason L. (2006). Further development of the UK application of the EMEP Model (EMEP4UK). CEH and Met.No proposal to Defra. (August 2006).
- CP83. Cape J.N., Sutton M.A., Nemitz E. and Fowler D. (2006) Proposal for an EMEP Super Site at Auchencorth Moss. CEH proposal to Defra (Successful).
- CP82. Tang Y.S. and Sutton M.A. (2006) Proposal for a two year extension to the National Ammonia Monitoring Network. CEH proposal to Defra (April 2006) (Successful).
- CP81. Sutton M.A., Reis S., Bambalov N., Buchkina N., Minayeva T., Ryaboshapko A., Chikviladze K. (2006) The nitrogen cycle and its influence on the European greenhouse gas balance - Targeted Third Countries Extension. (NitroEurope IP TTC). Proposal for INCO funding to the European Commission. (May 2006). 35 pp. (outcome awaited)
- CP80. Skiba U., Sutton M.A., Niinemets U., Bambalov N., Varlagin A., Chojnicki B. and Medinets V. (2006) Wetland Greenhouse gas exchange in East Europe in relation to land use change (WHEEL). Proposal for the 6th framework programme to the European Commission. (Not successful)

2005

- CP79. Theobald M.R., Bealey W.J., Smith R.I., Sutton M.A. (2005) Refining the current Simple Calculation of Ammonia Impact Limits (SCAIL) for application in Scotland. Proposal for SNIFFER (ref FF/05/18). CEH Edinburgh, 17 pp. (November 2005). (Successful)
- CP78. Hayman G., Lawrence, H., Davies M., Colbeck C., Vincent K., Tang Y.S., Cape J.N., Sutton M.A. (2005) The UK acid deposition monitoring network. Open competition proposal to Defra. AEA Technology/ CEH Edinburgh, 59 pp (November 2005) (Successful)
- CP77. Fournier N., Dore A.J. and Sutton M.A. (2005) Satellite view of NO₂ ship emissions over Europe and its implications for UK-scale modelling of NO₂. Proposal to Defra. (Option under CPEA34). 10 pp. (October 2005). (not successful)
- CP76. Dore A.J., Fournier N., Vieno M., Smith R.I. and Sutton M.A. (2005) Modelling the deposition and concentrations of long range air pollutants. Technical proposal to Defra under open competition (CPEA34). CEH Edinburgh, 50 pp (October 2005). (Successful)
- CP75. Nemitz E., Theobald M., Phillips G. and Sutton M.A. (2005) Dynamics of ammonium particles and their contribution to particulate matter (PM) concentrations in the UK in relation to agricultural ammonia emissions – An integrated project. Requested proposal to Defra, CEH Edinburgh, 45 pp. (Successful 2006.). (August 2005).
- CP74. Johnson M., Liss P., Nemitz E., Sutton M.A. and Fowler D. (2005) Fluxes of ammonia between oceans and the atmosphere. NE/D004489/1 Non thematic proposal to NERC (not-successful).
- CP73. Nemitz E., Theobald M.R., Blyth J., Cook P., Quinn A., Cellier P. and Sutton M.A. (2005) Strategies for Ammonia Mitigation By Agro-forestry systems (SAMBA). Open competition proposal to Defra. CEH Edinburgh 32 pp. (Successful in 2006).
- CP72. Sutton, Mark A., Jan Willem Erisman, Klaus Butterbach-Bahl, Claus Beier, Wim de Vries, Pierre Cellier, Francesca Cotrufo, Eiko Nemitz, Ute Skiba, Mark Theobald, Ulrike Dragosits, Claire Campbell, Marcel van Oijen, Bridget Emmett, Lucy Sheppard, Emma Giles, Jan Dick, Anne de Rudder, David Fowler, Albert Bleeker, Alex Vermeulen, Arjan Hensen, Nicolas Bruggeman, Ralf Kreise, Kim Pilegaard, Per Ambus, Oene Oenema, Gerard Heuvelink, Eddy Moors, Hans Kros, Jan Erik Wien, Marta Pérez-Soba, Jean-François Soussana, Patrick Durand, Benoit Gabrielle, Benjamin Loubet, Günther Seufert, Adrian Leip, Peter Bergamaschi, Albrecht Neftel, Pierluigi Calanca, Juerg Fuhrer, Jan K. Schjoerring, Per Gundersen, Annette Freibauer, Martin Heimann, Vincenzo Magliulo, Angelo Fierro, Gianfranco Rana, Sophie Zechmeister-Boltenstern, Timo Vesala, Jørgen E. Olesen, Tommy Dalgaard, Nicholas Hutchings, Bob Rees, Pete Smith, Jo Smith, Michael Obersteiner, Tom

Veldkamp, Andre van Amstel, Bogdan Chojnicki, Tuomas Laurila, László Horváth, Sonja Vidic, Kjetil Tørseth, Lars R. Hole, Marta Mitosinkova, Mike Jones, Jan Duyzer, Martin Gallagher, Gerard Kiely, John Moncrieff, Keith Smith, Riccardo Valentini, Giovanni Mancha, Volodymyr Medinets, Leif Klemetsson, Franco Miglietta, Zoltán Tuba, Oswald Van Cleemput, Pascal Boeckx, Menas Wuta, Michael Sommer, Per-Erik Jansson, Xunhua Zheng, Himanshu Pathak, Sergey Blagodatsky, Lech Ryszkowski, Lutz Breuer, Philippe Ciais, Lex Bouwman, David Simpson, Leonor Tarrasón, Alistair Manning, Alessandro Cescatti, Maria-Jose Sanz, Ulrich Dämmgen, Franz X. Meixner, Andrej Varlagin, Tamas Weidinger, Ülo Niinemets, Josep Peñuelas, João Santos Pereira, Peringe Grennfelt, Filip Moldan, Albert Tietema, Torben R. Christensen, Antonio Vallejo, Patrick Schleppi, Eva Boegh, Jari Liski and Zoltán Bozóki (2005) The nitrogen cycle and its influence on the European greenhouse gas balance (NitroEurope IP, NEU). Second stage proposal for an Integrated Project under EC Framework 6 research programme. Proposal number. 017841. CEH Edinburgh, + 64 partner institutes. 195 pp. (March 2005) (successful).

- CP.71. **Sutton M.A.**, Vieno M., Dore A.J., Wind P. and Tarrason L. (2005) The UK application of the EMEP model (EMEP4UK). Proposal to Defra under CPEA27 (collaborative research proposal with co-funding from CEH and Met.No). (January 2005) (successful)

2004

CP.70. **Sutton, Mark A.**, Jan Willem Erisman, Klaus Butterbach-Bahl, Claus Beier, Wim de Vries, Pierre Cellier, Francesca Cotrufo, Eiko Nemitz, Ute Skiba, Mark Theobald, Ulrike Dragosits, Claire Campbell, Marcel van Oijen, Bridget Emmett, Lucy Sheppard, David Fowler, Albert Bleeker, Alex Vermeulen, Nicolas Bruggeman, Kim Pilegaard, Oene Oenema, Hans Kros, Jean-François Soussana, Günther Seufert, Adrian Leip, Peter Bergamaschi, Albrecht Neftel, Juerg Fuhrer, Jan K. Schjoerring, Per Gundersen, Annette Freibauer, Vincenzo Magliulo, Sophie Zechmeister-Boltenstern, Timo Vesala, Jørgen E. Olesen, Bob Rees, Pete Smith, Jo Smith, Michael Obersteiner, Andre van Amstel, Bogdan Chojnicki, Tuomas Laurila, László Horváth, Lars R. Hole, Jan Duyzer, John Moncrieff, Keith Smith, Riccardo Valentini, Volodymyr Medinets, Leif Klemetsson, Franco Miglietta, Zoltán Tuba, Oswald Van Cleemput, Michael Sommer, Per-Erik Jansson, Lech Ryszkowski, Lutz Breuer, Alistair Manning, Ulrich Dämmgen, Josep Peñuelas, Peringe Grennfelt, Filip Moldan, Albert Tietema, Torben R. Christensen, Antonio Vallejo, Patrick Schleppi, Eva Boegh, Jari Liski and Zoltán Bozóki (2005) The nitrogen cycle and its influence on the European greenhouse gas balance (NitroEurope IP, NEU). First stage proposal for an Integrated Project under EC Framework 6 research programme. Proposal number. 017841. CEH Edinburgh, + 62 partner institutes. 15 pp. (October 2004) (First stage successful).

- CP.69. Erisman J.W., Domburg N. and **Sutton M.A.** (2004) Proposal for a COST Action on assessing and managing nitrogen fluxes in the atmosphere-biosphere system in Europe. ECN Petten. 26 pp. (August 2004). (successful)

CP.68. **Sutton M.A.**, Dragosits U., Theobald M.R., Midgley A., Nightingale A., Rees R.M., McDonald C., Smith J.U., May L., Cooper D., Bathurst J., Morris J., Angus A., Brown L., Scholefield D. del Prado A. (2004) Agricultural Production and Pollution of Rural Atmospheres: Interactions, Strategy and Evaluation (APPRAISE). First stage proposal to the Rural Economy and Land Use (RELU) thematic programme. 12 pp. (unsuccessful).

- CP.67. Erisman J.W., Domburg N. and **Sutton M.A.** (2004). *Nitrogen in Europe: Assessment of current problems and future solutions*. Proposal to the European Science Foundation. ECN Petten. (June 2004)

CP.66. Morecroft M.D., Cape J.N., Parr T.W., **Sutton M.A.**, Reynolds B., Emmett B.A., Mills G., Harmens H., Scott W.A., Lane A.M.J., Hill M.O., Wolseley P.A., Caporn S. (2004). Monitoring impacts of air pollution: acidification, eutrophication and ground-level ozone, on terrestrial habitats in the UK – a scoping study. Proposal to Defra under CPEA 20. CEH Lancaster, Edinburgh, Bangor, Monkswood, Natural History Museum and Manchester Metropolitan University. 72 pp inc. appendices.

- CP.65. Leith I.D., van Dijk N., Wolseley P., James P., Pitcairn C.E.R., and **Sutton M.A.** (2004) Refinement and testing of bio-monitoring methods, & development of protocols, for assessing impacts of atmospheric nitrogen deposition or concentrations on statutory nature conservation sites. Proposal for additional activities to SNIFFER. CEH Edinburgh. (May 2004) (successful).

CP.64. Chadwick D., Scholefield D., Newbold J., Phipps R., Crompton L., Dragosits U. and **Sutton M.A.** (2004) The implications of farm-scale methane mitigation measures for long-term national methane emissions. Proposal to Defra, (Env. Protection – Agriculture). Ref. CTE0405. IGER, Univ Aberystwyth, Univ Reading and CEH. 23 pp. July 2004. (successful)

- CP.63. Cape J.N., Bealey W.J., Leith I.D., Sheppard L.J., **Sutton M.A.**, Spurgeon D., Svendsen C., Shore R., Long S., Black H., Chamberlain P., Osborn D., Wolseley P.A. and Purvis O.W. (2004) Biomonitoring and Air Quality

Outcomes. Proposal to the Environment Agency, Ref. 13948. CEH Edinburgh. 75 pp (inc appendices). May 2004 (successful)

CP.62. Webb J., Misselbrook T., **Sutton M.A.**, ApSimon H.M. and Sneath R. (2004) Further development of the National Ammonia Reduction and Strategies Evaluation System (NARSES). Proposal to Defra (Env Prot, Agriculture Division). ADAS, IGER, CEH, IC and SRI. (25%) (successful)

CP.61. Wohlfahrt G., Nemitz E. and **Sutton M.A.** (2004). Interactions between Ozone Deposition and the Carbon Cycle of Grassland "OZCAR". Proposal for a Marie Curie Intra-European Fellowship to be hosted at CEH. Univ. Innsbruck and CEH Edinburgh. (20%) (not successful).

CP. 60. Tang Y.S., **Sutton M.A.** and van Dijk N. (2004) Ammonia monitoring in Northern Ireland: Continuation of monitoring at 12 established sites for a second year and plant chemical analysis (Options A & B). Proposal to the Scotland and Northern Ireland Forum For Environmental Research (SNIFFER). CEH Edinburgh. (March 2004). (25%) (successful)

CP.59. Bealey W.J. and **Sutton M.A.** (2004) Updates to the UK Air Pollution Information System (APIS). Proposal to the Scotland and Northern Ireland Forum For Environmental Research (SNIFFER). CEH Edinburgh. (successful) (30%)

2003

CP. 58. **Sutton M.A.**, Midgley A.C., Theobald M.R. and Dragosits U. (2003) Analysis of the acceptability of landscape planning in relation to stakeholder identity for the mitigation of agricultural air pollution impacts. Proposal to the ESRC/BBSRC/NERC Rural Economy and Land Use (RELU) Thematic Programme for a Capacity Building Project. (not successful) (75%)

CP. 57. Fowler D., Cape J.N., Smith R.I., Nemitz E., Coyle M., Milford C., Choularton T.W., Beswick K., Hayman G., Vincent K., Weston K. and **Sutton M.A.** (2003) Acid deposition processes in the UK. Proposal to DEFRA and the Devolved Administrations RMP/2125. CEH Edinburgh. 62 pp. (10%). (successful) (25%)

CP. 56. **Sutton M.A.**, Dragosits U. and Cape J.N. (2003) Proposal for ammonia, organic nitrogen and other agricultural emissions for the National Atmospheric Emissions Inventory. Subcontract proposal to AEA Technology, to DEFRA. CEH Edinburgh. (successful) (90%)

CP. 55. Theobald M.A., Nemitz E., Williams A. and **Sutton M.A.** (2003) The emissions of ammonia from woodchip corrals. Flexible Fund Competition to SEERAD. CEH Edinburgh and CREH. (not successful) (25%)

CP 54. Bealey W.J., Hall J., Dore A.J. and **Sutton M.A.** (2003) Source attribution and critical loads assessment for Special Areas of Conservation and Specially Protected Areas in the UK. Proposal to SIFFER/EA/SEPA/EHS. 18 pp, CEH Edinburgh. (successful) (25%)

CP 53. **Sutton M.A.**, Leith I.D., van Dijk N., Sheppard L.J., Wolsely P., James P., Pitcairn C.E.R. and Fowler D. (2003) Refinement and testing of biomonitoring methods, and development of protocols, for assessing impacts of atmospheric nitrogen deposition or concentrations on statutory nature conservation sites. Proposal to the Joint Nature Conservation Committee, F90-01-635. CEH Edinburgh with the Natural History Museum. (July 2003). (successful) (80%)

CP 52. Theobald M.R. Williams A., Loubet B. and **Sutton M.A.** (2003) An assessment of how process modelling can be used to estimate agricultural ammonia emissions and the efficacy of abatement techniques. Open Competition to DEFRA LMID CTE 0305 (May 2003) (20%). (successful).

CP 51. Bealey W., Osborn D. and **Sutton M.A.** (2003). Call off contract: Provision of advice in relation to Integrated Pollution Prevention and Control (EIT34-03-003). (successful) (May 2003) (40%)

CP 50. **Sutton M.A.**, Y.S. Tang, N. van Dijk, L. Love, W. Bealey, R.I. Smith and D. Fowler (2003) Monitoring of atmospheric ammonia in the United Kingdom. Proposal to the Department for the Environment, Food and Rural Affairs and Devolved Administrations. RMP/1906 CEH Edinburgh (April 2003). (80%) (Successful).

CP.49. **Sutton M.A.**, Tang Y.S., van Dijk N., Dragosits U., Dodkins I., Rippey B. and Fowler D. (2003) Ammonia monitoring in Northern Ireland. Invited tender to the Scotland and Northern Ireland Forum For Environmental Research (SNIFFER). CEH Edinburgh and University Ulster. (January 2003). (60%). (successful).

2002

CP.48. Dore A.J., Fournier N., Vieno M., Smith R.I., Fowler D. and **Sutton M.A.** (2002) Modelling the Deposition and Concentration of Long Range Air Pollutants. Open competition proposal to DEFRA (AEQ) for contract EPG 1/3/202. CEH Edinburgh (60%). (successful).

- CP.47. **Sutton M.A.**, Bealey W., Dragosits U., Osborn D., Hankard P., Cape J.N., Sheppard L.J., (Davison A.) and Fowler D. (2002) Further development of the Air Pollution Information System (APIS). Research proposal to the Joint Nature Conservation Committee for contract no. F90-01-538. CEH Edinburgh. (successful).
- CP.46. **Sutton M.A.**, Pitcairn C.E.R., Leith I.D., Sheppard L.J., Smart S., Mitchell R., Fowler D., O.W. Purvis, P. Wolseley, P. James (2002) Biomonitoring tools for assessing effects of atmospheric nitrogen deposition on statutory nature conservation sites. Research proposal Joint Nature Conservation Committee for contract no. F90-01-535, CEH Edinburgh (successful).
- CP.45. **Sutton M.A.** and Theobald M.R. (2002) Simple Calculation of Ammonia Impact Limits: Initial development of the SCAIL model. Environment Agency. January 2002. (successful).
- CP.44. **Sutton M.A.** and Dore A. (2002). Modelling the consequences of different spatial ammonia abatement strategies. (DEFRA) January 2002. (variation to Acid Deposition Processes) (successful).
- CP.43. **Sutton M.A.** and (Hobbs P.) Monitoring and modelling trace-gas changes following FMD to reduce the uncertainties in agricultural emissions abatement. DEFRA-FMID (January 2002). (successful)

2001

- CP.42. **Sutton M.A.** and (Hobbs P.) The potential to use trace-gas changes following FMD to reduce the uncertainties in agricultural emissions abatement. (feasibility study). DEFRA-FMID (August 2001). (successful)
- CP.41. **Sutton M.A.** and approx 15 co-authors: SENSE Sensitive Ecosystems and Nitrogen Strategies for Europe. EU proposal Oct 2001 (not successful).
- CP.40. (Jones G.) and **Sutton M.A.** (2001) Compilation of emissions data for Scotland. Joint CEH/ENTEC proposal to the Scottish Executive. Dec 2001. (successful).
- CP.39. R. Barrocliffe, JNB Bell and **M.A. Sutton**. Developing a methodology for assessing the local impacts of air pollutants. Case study on the New forest (with ERM) Nov 2001 (successful).
- CP.38. **Sutton M.A.** and Tang Y.S. and Fowler D. (2002) Extension to the UK Ammonia monitoring network until end March 2002. (contract variation). (successful).
- CP.37. Webb J., Jarvis S.C., **Sutton M.A.**, Hornung M., Phillips V.C. and ApSimon H.M. (2001) Production of a DEFRA booklet: "Bringing down ammonia emissions". Progress in research and development. DEFRA, Nov 2001 (successful).
- CP.36. **Sutton M.A.**, Dragosits U., Harding K. Osborne D. and Fowler D. (2001) Development of the Air Pollution Information System (APIS). JNCC, EN, SNH, CCW, EA. (Successful).
- CP.35. Cape J.N., **Sutton M.A.**, Tang Y.S. and Fowler D. (2001) Monitoring of nitric acid and aerosol pollutants in the UK. (Subcontract to AEA Technology, for DEFRA). (successful)
- CP.34. **Sutton M.A.** and Fowler D. (2001) Proposed variation to the National Ammonia Monitoring Network: Continuation of the current contract to end November 2001. EPG 1/3/136 DEFRA. (successful)
- CP33. Webb J., **Sutton M.A.**, Misselbrook T. ApSimon H. and Phillips V.R. (2001) National Ammonia Reduction and Strategy Evaluation System (NARSES). DEFRA. (successful).
- CP.32. Soussana J.F., **Sutton M.A.**, Jones M., Fuhrer J., et al. (2001) GREENGRASS: Greenhouse gas emissions from European grasslands and mitigation strategies. Proposal to EC 5th Framework area C&N fluxes (successful)
- CP.30. Cernusca A., **Sutton M.A.**, Bayfield N. et al. (2001) CARBOMONT: Land use change and carbon fluxes in European mountain ecosystems. Proposal to EC 5th Framework area C&N fluxes. (successful)
- CP.29. **Sutton M.A.** (2001) Proposed variation to the National Ammonia Monitoring Network: Purchase of a four-processor workstation for running of the parallelized FRAME model code. EPG 1/3/136 DEFRA. (successful)
- CP.28. Joergensen H., **Sutton M.A.**, Pilegaard et al. (2001) CONFIRM: Chemistry of Oxidized Nitrogen Flux Interactions and Regional Modelling. Proposal to EC 5th Framework area C&N fluxes. (not successful)
- CP.27. McGowan G., Palmer S., **Sutton M.A.**, Fowler D. et al. (2001). Effect of nitrogen deposition on the biodiversity of Scottish Roads. Tender to SERAD (successful).

2000

- CP.26. **Sutton M.A.**, Dragosits U., Fowler D. and ApSimon H.M. (2000) Abatement of non-agricultural sources of ammonia. Tender to the DETR (December 2000; not successful)

- CP.25. Fowler D., **Sutton M.A.**, Smith R.I., Pitcairn C.E.R., Cape J.N. and Coyle M. (2000) Acid deposition processes in the UK. Tender to the DETR. (successful).
- CP.24. Mitchell R. and **Sutton M.A.** (2000) Impact of atmospheric nitrogen deposition on epiphytes in Atlantic Oakwoods. Proposal to GANE committee (successful).

1999

- CP.23. Erisman J.W. and **Sutton M.A.** (1999) Optimum nitrogen management strategy for Europe (EUNITE) Proposal to EC 5th Framework area Mitigation strategies. (unsuccessful).
- CP.22. Fowler D., **Sutton M.A.**, Pitcairn C.E.R., Bull K.R. and Hall J. (1999) Atmospheric deposition, critical loads and critical loads exceedance mapping for Scotland. Scottish Natural Heritage (successful).
- CP.21. Soussana J.F., **Sutton M.A.**, Jones M., Furrer J., et al. (1999) Greenhouse gas emissions from European grasslands and mitigation strategies. Proposal to EC 5th Framework area C&N fluxes. (7th out of 70 proposals, reserve list – unfunded)
- CP.20. **Sutton M.A.** and Fowler D. (1999) Concentrations, deposition and impacts of ammonia in the vicinity of a sugar beet factory. Tender to British Sugar for NH₃ environmental impacts research at Cantley. (successful).
- CP.19. **Sutton M.A.**, Fowler D., Place, C.J., Smith J., Jarvis S.C., Webb J., Whitehead P., Hodge I. and McNally S. (1999) Landscape Analysis of Nitrogen and Abatement Strategies (LANAS). Grant application to GANE first round, NERC. (successful).
- CP.18. **Sutton M.A.**, Nemitz E., Cape J.N. and Fowler D. (1999) Ammonia Mitigation by Enhanced Recapture (AMBER). Open competition tender to MAFF (successful).
- CP.17. **Sutton M.A.**, Nemitz E. and Fowler D. (1999) Modelling atmospheric pollutant dispersion, reaction and deposition at multiple spatial scales. Proposal for a New CEH New Blood post. (successful).
- CP.16. **Sutton M.A.**, Tang Y.S., Cape J.N., Smith R.I., Fowler and (Haymann G.). Proposal for monitoring of atmospheric nitric acid and aerosol nitrate in the UK. Tender to DETR (AEA Technology/ITE Edinburgh). 8 pp. (successful)
- CP.15. Wanless S., **Sutton M.A.** and Hamer K. (1999) Atmospheric ammonia emission from seabird colonies and its contribution to nitrogen supply of remote coastal ecosystems.). Grant application to GANE first found, NERC. (successful).

1998

- CP.14. Fowler D., **Sutton M.A.** and Pitcairn C.E.R. (1998) Tender for air pollution advice contract for English Nature. (March 1998) app. 10 pp (50%) (successful)
- CP.13. (Riedo M.) and **Sutton M.A.** (1998) Development of dynamic ecosystem models to link exchange and sequestration of nitrogen and carbon to management practices of European grasslands. Proposal to the Marie Curie Fellowship (European Training and Mobility Fellowship scheme). (2 year fellowship in Edinburgh, successful).
- CP.12. **Sutton M.A.**, Fowler D., (Langan S., Rippey B. and Dragosits U.) (1998) The impacts of air pollutants on the Scottish and Northern Irish environments. Proposal AIR (98)01 to the Scotland and Northern Ireland Forum For Environmental Research (SNIFFER) ITE Edinburgh 42 pp. (successful).
- CP.11. **Sutton M.A.**, Tang Y.S., Coyle M., Smith R.I. and Fowler D. (1998) Monitoring of atmospheric ammonia in the United Kingdom. Proposal to the Department of the Environment, Transport and the Regions. EPG 1/3/136. ITE Edinburgh, December 1998. 29 pp (80%) (successful)

1997

- CP.10. **Sutton M.A.**, Fowler D., Nemitz E., (Gallagher M.W., Schjørring J.K., Wyers G.P., Cellier P., Neftel A., Horváth L.) (1997) Biosphere-atmosphere interactions of ammonia with grasslands across Europe (GRAMINAE). Proposal to the EC Environment and Climate Programme. (January 1997). Institute of Terrestrial Ecology, Edinburgh. 92 pp. (80%) (successful)
- CP.9. **Sutton M.A.**, Fowler D., Nemitz E., Milford C., (Singles R.J. , Caruthers D. and Weston K.J.) (1997) Acid Deposition Processes, Part 2: Development of models for estimating ammonia fluxes between the atmosphere and ecosystems at local and national scales. Proposal to DETR, ITE Edinburgh. 29 pp. (80%) (successful).

1996

- CP.8. Harrison R.H., Webb J., **Sutton M.A.** and 8 others. Seasonal Ammonia exchange between agricultural crops and the atmosphere (SAMBAA). Concerted Action proposal to the EC Agriculture and Fisheries Framework 4 Programme. (March 1996) ADAS, UK. App. 30 pp. (5%) (not successful)
- CP.7. Asman W.A.H., Hutchins N., **Sutton M.A.**, (Cellier P. and Wyers G.P.) (1996) Distribution and fate of ammonia emitted by agricultural systems (FAME). Collaborative proposal to the EC Agriculture and Fisheries framework 4. (March 1996). National Environmental Research Institute, Denmark. App. 50 pp. (30%) (not successful)
- CP.6. **Sutton M.A.**, Fowler D., (Schjørring J.K., Wyers G.P., Papakosta D. and Gagianos A.A.) (1996) Quantification and minimization of ammonia emissions from agricultural crops and grassland (QUANTAM). Collaborative proposal to the EC Agriculture and Fisheries framework 4. (March 1996). ITE, Edinburgh. App. 60 pp. (70%) (not successful)

1995

- CP.5. (Asman W.A.H.), **Sutton M.A.** and (Wyers G.P.) (1995) Distribution and fate of ammonia emitted by agricultural systems (FAME). Collaborative proposal to the EC Agriculture and Fisheries framework 4. (March 1995). National Environmental Research Institute, Denmark. App. 60 pp. (40%) (not successful)
- CP.4. Fowler D., Cape J.N. and **Sutton M.A.** (1995) Monitoring of atmospheric ammonia in the United Kingdom. Proposal to the UK Department of Environment. Institute of Terrestrial Ecology, Edinburgh. App. 30 pp (80%). (successful)
- CP.3. **Sutton M.A.**, Fowler D., (Wyers G.P., San José R., Schjørring J.K., Meixner F.X. and Neftel A.) (1995) Generalization of ammonia exchange with terrestrial ecosystems (GAMETE). Proposal for the Environment Program 1994-1998 to the European Commission. Proposal EN AA 124926. ITE, Edinburgh. 40 pp. (80%) (not successful)
- CP.2. **Sutton M.A.**, Fowler D., (ApSimon H.M., Jarvis S.C., Pain B.F., Harrison R., Lee D.S.,) Hornung M., Bull K. and Reynolds B. (1994) Ammonia Distribution and Effects Project (ADEPT): Distribution, deposition and environmental impacts of ammonia emitted by agriculture. Collaborative open competition proposal to MAFF, Environment Protection Division, 1994-1997. ITE Edinburgh, 49 pp. (60%) (successful)

1993

- CP.1. **Sutton M.A.**, Fowler D., (Wyers G.P., San José R., Schjørring J.K., Meixner F.X. and Neftel A.) (1993) Exchange of ammonia with European ecosystems. Proposal for the Environment Program 1991-1994 to the Commission of the European Communities. Proposal EN AA 111583. ITE, Edinburgh. 37 pp. (70%) (successful)

Theses (inc supervised)

- T.22. Tang Y.S. (2020) Development and application of low-cost monitoring approaches for atmospheric ammonia, acid gases and aerosols. PhD. University of Edinburgh.
- T.21. Bleeker A. (2018) Quantification of nitrogen deposition and its uncertainty with respect to critical load exceedances. PhD thesis. Free University of Amsterdam.
- T.20. Moring A. (2016) Process modelling of ammonia emissions from grazing. PhD Thesis. University of Edinburgh.
- T.19. Bealey W. (2016) Benefits of planting trees for mitigating ammonia emissions. PhD Thesis University of Edinburgh.
- T.18. Theobald M.R. (2012) Modelling and verification of nitrogen fluxes at the landscape scale. PhD Thesis. University Polytechnica Madrid.
- T.17. Lewis J. (2012) Bio-monitoring for atmospheric nitrogen pollution using epiphytic lichens and bryophytes. PhD Thesis. University of Nottingham.
- T.16. Riddick S. (2012) Global ammonia emissions from seabird colonies. Kings College, University of London.
- T.15. Vogt E. (2011) Nitrogen fluxes at the landscape scale. A case study in Scotland. PhD Thesis, University of Edinburgh.

- T.14. Twigg M. (2008) Application of tunable diode laser absorption spectroscopy for the measurement of ammonia fluxes. PhD. thesis, University of Edinburgh.
- T.13. Hellsten S. (2005) Modelling the spatial distribution of ammonia emissions from agriculture in the UK. PhD thesis, University of Edinburgh.
- T.12. Vieno, M. (2005) The use of an Atmospheric Chemistry-Transport Model (FRAME) over the UK and the development of its numerical and physical schemes. PhD thesis, University of Edinburgh
- T.11. Angus A. (2005) An economic analysis of the trade offs in mitigating nitrogen emissions from intensive farming activities. PhD Thesis, University of Cambridge.
- T.10. Blackall T. (2004) Ammonia emissions from seabird colonies. Ph.D. thesis. University of Leeds.
- T.9. Milford C. (2004) Dynamics of atmospheric ammonia exchange with intensively-managed grassland. Ph.D. thesis. University of Edinburgh, 219 pp.
- T.8. Fournier N. (2002) Development of an atmospheric transport model simulating concentration and deposition of reduced nitrogen over the British Isles. Ph.D. thesis. University of Edinburgh, 220 pp.
- T.7. Angus A. (2000) The setting of standards for agricultural nitrogen emissions: A test for the Delphi technique. M.Phil. thesis. St. Catharine's College, University of Cambridge. 164 pp.
- T.6. Dragosits U. (1999) A spatially distributed ammonia emissions inventory for the UK. Ph.D. thesis. University of Edinburgh, 304 pp.
- T.5. Hill P.W. (1999) Physiological aspects of the exchange of gaseous ammonia between *Luzula sylvatica* (Huds.) Gaud. and the atmosphere. Ph.D. thesis. University of Dundee, 216 pp.
- T.4. Nemitz E. (1998) Investigations into the surface-atmosphere exchange of ammonia and chemically interacting species. Ph.D. thesis. University of Manchester Institute of Science and Technology, Manchester 300 pp.
- T.3. Singles R.J. (1996) Fine resolution modelling of ammonia dry deposition over Great Britain. Ph.D. thesis, Department of Meteorology, University of Edinburgh. pp 278.
- T.2. Eager M. (1992) The development of an ammonia emissions inventory for Great Britain using GIS techniques. MSc Thesis, University of Edinburgh.
- T.1. **Sutton M.A.** (1990) *The surface/atmosphere exchange of ammonia*. Ph.D. thesis. Institute of Ecology and Resource Management, University of Edinburgh, UK. 195 pp.

Selected General Media & Other Dissemination

- M816. Giuliana Viglione, *Carbon Brief* (11 July 2022) Q&A: What does the world's reliance on fertilisers mean for climate change? <https://www.carbonbrief.org/qa-what-does-the-worlds-reliance-on-fertilisers-mean-for-climate-change/> [INMS, UNEP Nitrogen Campaign; in-depth interview with Mark Sutton].
- M815. Katharine Hay, *The Independent* (9 June 2022) Call to tackle phosphorus impact on food and water security. <https://www.independent.co.uk/climate-change/news/scientists-reporting-england-china-russia-b2097037.html> [launch of Our Phosphorus Future report] (and multiple other outlets via PA Media).
- M814. Carlo Simone, *The Herald* (9 June 2022) Phosphorus impact on food and water security needs to be dealt with, say scientists. <https://www.heraldscotland.com/news/national/uk-today/20197355.phosphorus-impact-food-water-security-needs-dealt-say-scientists/> [launch of Our Phosphorus Future report]
- M813. *Australian Associated Press* via Yahoo News NZ, and multiple other outlets (9 June 2022). War, pandemic behind phosphorous loss. <https://nz.news.yahoo.com/war-pandemic-behind-phosphorous-loss-230505672.html> [launch of Our Phosphorus Future report]
- M812. Nancy Nicolson, *The Courier (Evening Telegraph)* (9 June 2022) Call for clarity on fertilizer market. <https://www.thecourier.co.uk/fp/business-environment/farming/3376743/call-for-clarity-in-fertiliser-market/> [launch of Our Phosphorus Future report]
- M811. *SBS news (Australia)* (9 June 2022) 'Price hikes all over the world': How the war in Ukraine is fuelling a global food crisis. <https://www.sbs.com.au/news/article/price-hikes-all-over-the-world-how-the-war-in-ukraine-is-fuelling-a-global-food-crisis/lifwu119w> [launch of Our Phosphorus Future report]
- M810. Jason Arunn Murugesu, *New Scientist* (1 June 2022) Cutting air pollution could boost crop yields by up to 28 per cent. <https://www.newscientist.com/article/2322885-cutting-air-pollution-could-boost-crop-yields-by-up-to-28-per-cent/> [INMS, UNEP Nitrogen Campaign]

- M809. BBC Radio 4, *Farming Today* (16 November 2021) Mark Sutton interviewed on new ammonia emissions regulations for Scotland. https://twitter.com/UK_CEH/status/1460617210574028803
- M808. Louise Gray, *Wicked Leeks* (16 November 2021) COP26 fails to tackle nitrogen in farming. <https://wickedleeks.riverford.co.uk/news/cop26-farming-climate-change/cop26-fails-tackle-nitrogen-farming>
- M807. *Daily News Sri Lanka* (15 November 2021) COP-26 in Glasgow: SL highlights importance of sustainable nitrogen management. [COP26 Rediscovering Nitrogen side-event] <https://dailynews.lk/2021/11/15/local/264584/sl-highlights-importance-sustainable-nitrogen-management>
- M.806. *Ministry of Foreign Affairs*, Sri Lanka (12 November 2021) Sri Lanka brings the importance of sustainable nitrogen management to the climate change discourse. [COP26 Rediscovering Nitrogen side-event] <https://mfa.gov.lk/sl-nitrogen4netzero/>
- M.805. Jan Willem Erisman, *Science* (5 November 2021) How ammonia feeds and pollutes the world. [summary of Gu et al. *Science* article] <https://www.science.org/doi/10.1126/science.abm3492>
- M.804. Rhys Blakely, *The Times* (5 November 2021) Farming is a bigger source of worst air pollution than traffic, study finds. [summary of Gu et al. *Science* article] <https://www.thetimes.co.uk/article/farming-is-a-bigger-source-of-worst-air-pollution-than-traffic-study-finds-ddjcl7n3>
- M.803. Ye Ruolin, *Sixth Tone* (5 November 2021) Curbing Ammonia Could Help China Tackle Air Pollution, Study Says. [summary of Gu et al. *Science* article] <https://www.sixthtone.com/news/1008876/curbing-ammonia-could-help-china-tackle-air-pollution%2C-study-says;text=Curbing>
- M.802. *EurekAlert* (4 November 2021) Cutting ammonia emissions is a cost-effective way to prevent air pollution deaths. [summary of Gu et al. *Science*] <https://www.eurekalert.org/news-releases/933858#.YYTziDfwD2k.twitter>
- M.801. Harry Cockburn, *The Independent* (4 November 2021) Nitrogen-based pollution driven by agriculture causing almost 200,000 years of ‘life lost’ every year. [summary of Gu et al. *Science* article] <https://www.independent.co.uk/independentpremium/uk-news/nitrogen-air-pollution-cop26-farming-b1951670.html>
- M.800. Krista Charles, *New Scientist* (4 November 2021) Cutting ammonia emissions may be the best way to reduce air pollution. [summary of Gu et al. *Science* article] <https://www.newscientist.com/article/2296406-cutting-ammonia-emissions-may-be-the-best-way-to-reduce-air-pollution/amp/>
- M.799. Damian Carrington, *The Guardian* (4 November 2021) Ammonia from farms behind 60% of UK particulate air pollution – study. [Comment on Gu et al. *Science* article and #Nitrogen4NetZero initiative to COP26] <https://www.theguardian.com/environment/2021/nov/04/ammonia-from-farms-behind-60-of-uk-particulate-air-pollution-study>
- M798. *BBC World News TV* (5 pm, 2 November 2021), Mark Sutton interview with Christian Fraser. See <https://twitter.com/TowardsINMS/status/1458392282676224002> and <https://www.youtube.com/watch?v=44Gg-BB2C-c>
- M797. *The President’s Office*, The Maldives (31 October 2021): President attends ‘Rediscovering Nitrogen’ side-event at COP26. <https://presidency.gov.mv/Press/Article/25614> and <https://presidency.gov.mv/Press/Article/25614#lg=1&slide=0>
- M796. Patrick Greenfield and Phoebe Weston, *The Guardian* (14 October 2021) The five biggest threats to our natural world ... and how we can stop them <https://www.theguardian.com/environment/2021/oct/14/five-biggest-threats-natural-world-how-we-can-stop-them-aoe> [INMS and UN Global Campaign on Sustainable Nitrogen Management]
- M795. Ashoka Mukpo, *Mongabay* (22 September 2021) Nitrogen: The environmental crisis you haven’t heard of yet. <https://news.mongabay.com/2021/09/nitrogen-the-environmental-crisis-you-havent-heard-of-yet/> [mobilization through UN Global Nitrogen Campaign]
- M794. Daniela De Lorenzo, *Forbes Magazine* (31 July 2021) Is the future for Nitro Finance now? <https://www.forbes.com/sites/danieladelorenzo/2021/07/31/is-the-future-for-nitro-finance-now/> [mobilization through UN Global Campaign on Sustainable Nitrogen Management / INMS]
- M793. Ella McSweeney, *Irish Times* (1 July 2021) Ireland’s waterways face increasing levels of nitrogen pollution. <https://www.irishtimes.com/news/science/ireland-s-waterways-face-increasing-levels-of-nitrogen-pollution-1.4600424> [UN Nitrogen Campaign, INMS].
- M792. The UK’s Global Footprint, launch of report “Thriving within our planetary boundaries. Reducing the UK’s footprint of production and consumption by 2030. (June 2021). Jennings S. et al. *World Wide Fund for Nature*.

- <https://www.wwf.org.uk/what-we-do/uk-global-footprint> [UN Nitrogen Campaign, INMS, document goes beyond Colombo Declaration goal].
- M791. Jenny Hawley, *Inside Track, Green Alliance* (17 June 2021) Clean Air Day: nitrogen pollution from agriculture has been overlooked for far too long. <https://greenallianceblog.org.uk/2021/06/17/clean-air-day-nitrogen-pollution-from-agriculture-has-been-overlooked-for-far-too-long/> [UN Nitrogen Campaign, INMS]
- M790. UN Sustainable Development. (12 July 2021) A New Global Framework for Managing Nature Through 2030: 1st Detailed Draft Agreement Debuts. <https://www.un.org/sustainabledevelopment/blog/2021/07/a-new-global-framework-for-managing-nature-through-2030-1st-detailed-draft-agreement-debuts/> [UN Convention on Biological Diversity sets out proposal to reduce nutrient pollution by 50% by 2030, embracing Colombo Declaration, UN Nitrogen Campaign] see <https://www.cbd.int/meetings/WG2020-03>
- M789. EOS. Editorial. Exploring the Widespread Impacts of Ongoing Nitrogen Pollution. <https://eos.org/editors-vox/exploring-the-widespread-impacts-of-ongoing-nitrogen-pollution#.YPudJOKj-ys.twitter> (UN Global Campaign on Sustainable Nitrogen Management).
- M788. Natalie Bennett, *The Ecologist* (22 July 2021), 'The global nitrogen time bomb', <https://theecologist.org/2021/jul/22/global-nitrogen-time-bomb> [Baroness Bennett, on UN Global Campaign on Sustainable Nitrogen Management]
- M787. Baroness Bennett and Lord Goldsmith, Parliamentary Question and Answer, UK House of Lords: Colombo Declaration on Sustainable Nitrogen Management. Question for Department for Environment, Food and Rural Affairs: UIN HL1625, tabled on 1 July 2021. <https://questions-statements.parliament.uk/written-questions/detail/2021-07-01/hl1625> [UN Global Campaign on Sustainable Nitrogen Management].
- M786. Tommy Greene, *The Guardian* (23 June 2021), 'Poo overload: Northern Ireland could be forced to export a third of its animal waste'. <https://www.theguardian.com/environment/2021/jun/23/poo-overload-northern-ireland-could-be-forced-to-export-a-third-of-its-animal-waste> [Interview on ammonia in Northern Ireland including on #Nitrogen4NetZero].
- M785. *Daily Times*, 'Pakistan, Scientists, intellectuals stress preventing degradation of ecosystems'. 14 June 2021. https://dailytimes.com.pk/772452/scientists-intellectuals-stress-preventing-degradation-of-ecosystems/amp/?fbclid=IwAR3L9i_0N_Dt1C0rmynCXdKkuSbXeJerdyR1Ydlw6V8B2xpDfBK01TVMTA [Article about *World Environment Day* event on Nitrogen and Ecosystem Restoration, UN Campaign on Sustainable Nitrogen Management]
- M784. UNECE (7 June 2021) Nitrogen pollution must be reduced to restore ecosystems. <https://unece.org/climate-change/news/nitrogen-pollution-must-be-reduced-restore-ecosystems> [INI Conference, World Environment Day, UNECE Task Force Reactive Nitrogen].
- M783. Ula Chrobak, *BBC Future*, (reprinted from Knowable Magazine) The world's forgotten greenhouse gas. <https://www.bbc.com/future/article/20210603-nitrous-oxide-the-worlds-forgotten-greenhouse-gas> [UN Nitrogen Campaign, INMS, World Environment Day]
- M782. Plantlife, #CleanAirDay: Air pollution is ravaging Wales' wildflowers and the wealth of wildlife they underpin. <https://www.plantlife.org.uk/uk/about-us/news/cleanairday-air-pollution-is-ravaging-wales-wildflowers-and-the-wealth-of-wildlife-they-underpin> [UN Nitrogen Campaign, INMS, Colombo Declaration]
- M781 INMS Newsletter (UNEP-UKCEH/GEF International Nitrogen Management System Project) June 2021. https://spark.adobe.com/page/GFd1PZZWPUaBy/?w=0_1733
- M780. India Science Wire (1 June 2021) Nitrogen pollution limits safe margin for other environmental issues, say scientists. <https://www.downtoearth.org.in/news/pollution/nitrogen-pollution-limits-safe-margin-for-other-environmental-issues-say-scientists-77207> [INI 8th International Conference]
- M.779. UNEP (27 May 2021) Why South Asia needs to tackle a surge in nitrogen pollution. <https://www.unep.org/news-and-stories/story/why-south-asia-needs-tackle-surge-nitrogen-pollution> [GCRF South Asian Nitrogen Hub, INMS, UN Nitrogen Campaign].
- M778. Ajith de Alwys, *Daily Financial Times, Sri Lanka* (20 May 2021) Oh nitrogen, how little we know you. <https://www.ft.lk/columns/Oh-nitrogen-how-little-we-know-you/4-718065> [UN Nitrogen Campaign, INMS]
- M.777. European Commission. European Green Deal: Commission aims for zero pollution in air, water and soil. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2345 [European Commission embraces Colombo Declaration goal to reduce nutrient pollution by 50% by 2030, INMS, SANH]
- M.776. Andrew Zaleski, *New Scientist*, 'The Godfather of Pollution' (15 May 2021, vol. 250, Issue 3334, pp. 41-45). (web title: 'The nitrogen emergency: How to fix our forgotten environmental crisis') [Feature article on nitrogen, INMS and Mark Sutton in relation to the UN Campaign on Sustainable Nitrogen Management]. <https://www.sciencedirect.com/science/article/abs/pii/S0262407921008423>

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