Dr. Bjorn Jozef Maria Robroek

**Address** 59 Honeysuckle Close, SO22 4QQ Winchester, United Kingdom

**Place and date of birth** Heerlen, the Netherlands, September 18, 1978 **Nationality** The Netherlands **Gender** Male

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**Date of CV** 18 March 2018

**EDUCATION**

05.2003 – 08.2007 PhD degree, Nature Conservation and Plant Ecology group, Wageningen University & Research, The Netherlands. Awarded: 09 November 2007.

**Robroek BJM**. 2007. Competition between *Sphagnum* mosses in European raised bogs: the effects of a changing climate. PhD thesis, Wageningen University. ISBN: 978-90-8504-754-4

09.1997 – 04.2003 BSc, followed by MSc in Biology, Utrecht University, the Netherlands.

**EMPLOYMENT**

CURRENT POSITION

03.2017 – Lecturer in Ecology, Biological Sciences, University of Southampton, UK

PREVIOUS POSITIONS

11.2014 – 03.2017 Scientific Collaborator (80%), École Polytechnique Fédérale de Lausanne, Switzerland

11.2011 – 10.2014 NWO-VENI research fellow, Biology, Utrecht University, The Netherlands

03.2009 – 10.2011 Postdoctoral researcher, Biology, Utrecht University, The Netherlands

08.2008 – 02.2009 Postdoctoral research assistant, Geography, University of Leeds, UK

09.2007 – 07.2008 Postdoctoral research fellow (80%) / junior lecturer (20%), Geosciences, Utrecht University, The Netherlands

**LINGUISTIC SKILLS**

• Mother tongue: Dutch

• English (fluent), German (fluent), French (A2/B1 level), Swedish (very basic)

**IMPORTANT ASSIGNMENTS**

• Opponent thesis defence: University of Eastern Finland. Aino Korrensalo*,* 2017; Masaryk University, Brno, Czech Republic, Mgr. Martin Jiroušek, 2012

• Panel chair, Graduate School of the National Oceanography School, PhD studentship, Abbie Mabey (NERC-DTP, SPITFIRE student)

• Member of the NERC Strategic Programme Area group ‘Peatland Resilience’: Innovative Science for Transforming Management (PRISM)

• Internal reviewer University of Southampton, 1st Progression review: Claire Lamb; Tania Garcia; Reem Aldawai

• Internal reviewer University of Southampton, 2nd Progression review Tania Garcia Becerra.

**AWARDS AND DISTICTIONS**

• École Polytechnique Fédérale de Lausanne (EPFL), 'prime special' for outstanding services.

• 1st prize best scientific publication 2010 Scientific Journals. Centre for Ecosystems, Wageningen University. Breeuwer A, Heijmans MMPD, Robroek BJM & Berendse F. Ecosystems 13 (5): 712-726.

• 2nd prize best scientific publication 2009 Scientific Journals. Centre for Ecosystems, Wageningen University. Robroek BJM et al. 2009, Global Change Biology 15 (3): 680-691.

**FUNDING**

• CASE funding (industrial co-funding for SPRITFIRE NERC-DTP) from Länstyrelsen i Jönköpings län, 2018-2021, 33k SEK, main applicant

• British Ecological Society, Small Research grant (SR17\1427), *Do plant communities affect microbial function in peatlands?* 2017, £ 5k, sole applicant

• Institute for Life Sciences, University of Southampton studentship grant, *Plant-Microbe interactions in a changing climate*, 2017, £ 32.5k, main applicant

• French National Research Agency (ANR), *MIXOPEAT – Rethinking the peatland carbon cycle – identifying the role of mixotrophs in the biological carbon pump*, 2017, € 313k, co-applicant

• Swiss National Science Foundation (SNSF: 315260\_149807), *Allelochemical arms race in peatlands: the role of polyphenols in aboveground-belowground interactions*, 2013, CHF 204k, co-applicant

• The Netherlands Organization for Scientific Research (NWO-ALW: 863.10.014), VENI Innovational Research Incentives Scheme, *Can diversity control peatland carbon sequestration under climate change? An experimental study*, 2010, € 250k, sole-applicant

• INTERACT Transnational Access program, *Effects of permafrost thawing on peatland root growth and activity related to plant biodiversity*, 2011, Travel costs and access to Abisko Research Station, 90 man-days, co-applicant

• Dutch foundation for the conservation of Irish bogs, several projects: *Plant removal experiment set-up* (2018, € 0.8k); *The Global Sphagnum Production Project* (2013, € 1.5k); *Influence of frost on the carbon cycle in an alpine raised bog* (2012, € 1k); *PEATBOG: Floristic diversity in relation to biogeochemical factors and N cycling across gradients in N deposition and climate* (2010, € 1.5k); *The competition between* Sphagnum *species in Irish bogs* (2004, € 6k), € 10k, sole-applicant

• Department for Environment, Food and Rural Affairs (DEFRA), *Ecosystem services of peat*, 2008, £ 33.5k, co-applicant

**INTERNATIONAL RESEARCH AND TEACHING EXPERIENCE**

**•** I have been employed at academic institutions in three European countries (NL, CH, and UK).

• I have performed fieldwork, and build collaborations in > 18 countries in the EU/EEA

• I have published 46 publications in peer-reviewed scientific journals. Total number of citations: 698. *h*-index: 16. Data: Scopus / 08 June 2018.

• I have given oral presentationsat > 9 international scientific conferences (1 keynote, and 3 invited talks), and several academic institutes.

• I have teaching experience in multiple academic institutions in three European countries.

**SUPERVISION**

• Main supervisor 3 PhD studentships:

 - Plant-Microbe Interactions in a changing climate

 - Using plant-soil feedbacks to enhance ecosystem restoration and biodiversity conservation

 - Eat in or eat out? The role of plant communities for microbial metabolic activity

• Director (daily supervisor) Justine Gay-des-Combes: defended: 27 October 2017, École Polytechnique Fédérale de Lausanne, Switzerland. Alternatives to slash-and-burn agriculture in Central Menabe, Madagascar’ (thesis nr: 7839).

• Panel chair for PhD student Abbigail Mabey, Graduate School of the National Oceanography Centre Southampton (GSNOCS).

• Undergraduate students (36): 15 MSc- 14 BSc-, and 7 internship students.

**ASSIGNMENTS AS EDITOR, REFEREE**

**•** Blog editor Functional Ecology: [www.functionalecologists.com](http://www.functionalecologists.com/)

**• Referee for international scientific journals**: Nature Communications, Global Change Biology, New Phytologist, Journal of Ecology, Journal of Applied Ecology, Functional Ecology, Oikos, Oecologia, Ecosystems, Plant and Soil, Environmental and Experimental Botany, Journal of Vegetation Science, Applied Vegetation Science, Boreal Environment Research, Ecohydrology, Aquatic Botany, Plant Ecology, Plant Species Biology, Botany, Climatic Change, Polar Biology, Folia Geobotanica, Wetlands, Ecology and Evolution, Land, Wetland Ecology and Management, Journal of Geophysical Research–Biogeosciences, Freshwater Science, Mires and Peat, Frontiers in Ecology and Evolution, European Journal of Soil Biology, Biogeochemistry, Soil Biology and Biochemistry, Science of the Total Environment.

**• Referee for grant proposals**: Natural Sciences and Engineering Research Council of Canada, Leverhulme Trust, British Ecological Society – Small research grants; Outreach grants; Ecologists in Africa grants ; BARD – The US–Israel Agricultural Research & Development Fund; Estonian Research Council (ETAg); Postdoctoral funding programme P.R.I.M.E. (Postdoctoral Researchers International Mobility Experience), German Academic Exchange Service (DAAD); National Research Network for Low Carbon Energy and the Environment; Royal Geographical Society (with IBG) postgraduate research awards.

**SCHOLARLY/ACADEMIC SOCIETIES**

• Peatland Ecology Special Interest Group of the British Ecological Society, Secretary

• Plant-Soil-Ecosystems Special Interest Group of the British Ecological Society, Vice-Secretary

• Expert panel Climate Change, International Peat Society

• Dutch foundation for the conservation of Irish bogs, board member

**PRESENTATIONS** (\* = INVITED)

• International symposium on *Carbon Cycling in Boreal Peatlands and Climate Change*II, Hyytiälä Forestry Field Station, Finland, 2017 \*

• Ecology Across Borders – Joint annual meeting being organised by the British Ecological Society (BES), NecoV and GfÖ, in association with the European Ecological Federation (EEF), Ghent, Belgium, 2017

• British Ecological Society annual meeting, Liverpool, United Kingdom, 2016

• EcoSummit 2016 Ecological Sustainability: Engineering Change, Montpellier, France, 2016 \*

• Rhizosphere 4, Maastricht, The Netherlands, 2015 \*

• British Ecological Society–SFE Joint Annual Meeting, Lille, France, 2014

• Society for Wetland Scientists European Chapter meeting, Padova, Italy, 2013

• British Ecological Society Annual Meeting, Sheffield, UK, 2011

• Invited seminars: University of York, Dept. of Environment, 2017; University of Manchester, Fac. of Life Sciences, 2014; University of Linköping, Dept. of Thematic studies, 2010; University of Hamburg, 2010

**Participation in the organisation of scholarly symposia and conferences**

• Member of the organising community of the weekly Biological Sciences Seminar Series at the University of Southampton.

• Co-organizer thematic session (Winter Ecology) for the Joint Annual Meeting being organised by the British Ecological Society (BES), NecoV and GfÖ, in association with the European Ecological Federation (EEF), 11-14 December 2017, Ghent, Belgium.

• Co-convener symposium session C and N cycles. Rhizosphere 4, Maastricht, The Netherlands, 2015

• Co-convener symposium session Microbial ecology – from species richness to functional biodiversity, Netherlands Annual Ecology Meeting, 2013.

• Co-organizer 1st International symposium on Carbon in Peatlands, Wageningen, NL, 2007.

**REFERENCES**

• Prof. Dr. Ir. Liesje Mommer, Plant Ecology and Nature Conservation, Wageningen University, liesje.mommer@wur.nl, +31317486944

• Prof. Dr. Jos TA Verhoeven (emeritus), Ecology and Biodiversity, Utrecht University, j.t.a.verhoeven@uu.nl, +31302536851

• Prof. Dr. Alexandre Buttler, Ecological Systems Laboratory, École Polytechnique Fédérale de Lausanne, alexander.buttler@epfl.ch, +41216933939

**LIST OF PUBLICATIONS**

ARTICLES IN INTERNATIONAL SCIENTIFIC JOURNALS

1. Granath G, [...], **Robroek BJM** et al. (2018) Environmental and taxonomic controls of carbon and oxygen stable isotope composition in [*Sphagnum*](https://doi.org/10.5194/bg-2018-210) across broad climatic and geographic ranges. *Biogeosciences Discuss*. https://doi.org/10.5194/bg-2018-210
2. Jassey VEJ, [...], **Robroek BJM** et al. (2018) Tipping point effect in plant-fungal interactions under severe drought causes abrupt rise in peatland ecosystem respiration. *Global Change Biology* 24:972-986.
3. Gavazov K, [...], Robroek BJM, Bragazza L. (2018) Vascular plant-mediated controls on atmospheric carbon assimilation and peat carbon decomposition under climate change. *Global Change Biology*. DOI: 10.1111/gcb.14140
4. Samson M, […], **Robroek BJM**et al. (2018) Impact of experimental temperature increase and water level manipulation on carbon dioxide release in a poor fen in northern Poland. *Wetlands* https://doi.org/10.1007/s13157-018-0999-4
5. **Robroek BJM**, Jassey VEJ, et al. (2017) Taxonomic and functional turnover are decoupled in European peat bogs. *Nature Communications* 8:1161
6. **Robroek BJM** et al. (2017) Diverse fen plant communities enhance carbon-related multifunctionality, but do not mitigate negative effects of drought. *Royal Society Open Science* 4:170449
7. Shazad SM, Arif MS, [...], **Robroek BJM**. (2017) Interaction of compost additives with phosphate solubilising rhizobacteria improved maize production and soil biochemical properties under dryland agriculture. *Soil and Tillage Research* 174:70-80
8. Küttim M, Hofsommer ML, **Robroek BJM** et al. (2017) Freeze-thaw cycles simultaneously decrease peatland photosynthetic carbon uptake and ecosystem respiration. *Boreal Environment Research* 22:267-276 (2017)
9. Gay-des-Combes J, Sanz Carrillo C, **Robroek BJM** et al. (2017) Tropical soils degraded by slash-and-burn cultivation can be recultivated when amended with ashes and compost. *Ecology and Evolution* 14:5578-5388
10. Mulot M, [...], **Robroek BJM** et al. (2017) Genetic determinism vs. phenotypic plasticity in protist morphology. *Journal of Eukaryotic Microbiology* 64:729-739
11. Gay-des-Combes J, **Robroek BJM** et al. (2017) Slash-and-burn agriculture and tropical cyclone activity in Madagascar: implication for soil fertility dynamics and corn performance. *Agriculture, Ecosystems and Environment* 239:207-218
12. Puissant J, Mills RTE, **Robroek BJM** et al. (2017) Climate change effects on the stability and chemistry of soil organic carbon pools in a subalpine grassland*. Biogeochemistry* 132:123-139
13. **Robroek BJM** et al. (2016) Peatland vascular plant functional types affect dissolved organic matter chemistry. *Plant and Soil* 407:135-143
14. Jassey VEJ, [...], **Robroek BJM**. (2016) ​Loss of testate amoeba functional diversity with increasing frost intensity across a continental gradient reduces microbial activity in peatlands. *European Journal of Protistology* 55:190-202
15. Bragazza L, Buttler A, **Robroek BJM** et al. (2016) Persistent high temperature and low precipitation reduce peat carbon accumulation. *Global Change Biology* 22:4114-4123
16. Jassey VEJ, […], **Robroek BJM**. (2015) An unexpected role for mixotrophs in the response of peatland carbon cycling to climate warming. *Scientific Reports* 5:16931
17. **Robroek BJM** et al. (2015) Peatland vascular plant functional types affect methane dynamics by altering microbial community structure. *Journal of Ecology* 103:925-934
18. Buttler A, **Robroek BJM** et al. (2015) Experimental warming interacts with soil moisture to discriminate plant responses in an ombrotrophic peatland. *Journal of Vegetation Science* 26:964-974
19. Mariotte P, **Robroek BJM**, Jassey VEJ, Buttler A. (2015) Subordinate plant species dampen the effect of drought on soil ecosystem processes. *Functional Ecology* 29:1578-1586
20. Martí M, Juottonen H, **Robroek BJM** et al. (2015) Nitrogen and methanogen community composition within and among three *Sphagnum* dominated peatlands in Scandinavia. *Soil Biology and Biochemistry* 81:204-211
21. Puissant J, Cecillon L, Mills RTE, **Robroek BJM** et al. (2015) Seasonal influence of climate manipulation on microbial community structure and function in mountain soils. *Soil Biology and Biochemistry* 80:296-305
22. Nijp J, [...], **Robroek BJM**. (2014) Can frequent precipitation moderate the impact of drought on peatmoss carbon uptake in Northern peatlands? *New Phytologist* 203:70-80
23. **Robroek BJM** et al. (2014) Microclimatological consequences for plant and microbial composition in Sphagnum-dominated peatlands. *Boreal Environment Research* 19:195-208
24. Kuiper JJ, [...], **Robroek BJM**. (2014) Plant functional types define magnitude of drought response in peatland CO2 exchange. *Ecology* 95:123-131
25. Pel MJC, Wintermans PCA, Cabral A, **Robroek BJM** et al. (2014) Functional analysis of *Hyaloperonospora arabidopsidis* RXLR effectors. *PlosOne* 9, e110624
26. Jassey VEJ, Lamentowicz L, **Robroek BJM** et al. (2014) Plant functional diversity drives niche-size structure of microbial biota along a poor to extremely rich fen gradient. *Journal of Ecology* 102:1150-1162
27. **Robroek BJM** et al. (2013) Snow cover manipulation effects on microbial community structure and soil chemistry in a mountain bog. *Plant and Soil* 369:152-164 (2013)
28. van Dijk J, **Robroek BJM**, Kardel I, Wassen M. (2012) Combined effects of nitrogen enrichment, sulphur pollution and climate change on fen meadow vegetation N:P stoichiometry and biomass. *Biogeochemistry* 111:139-150
29. Crushell PH, Smolders AJP, Schouten MGC, **Robroek BJM**, van Wirdum G, Roelofs JGM. (2011) Restoration of a terrestrialized soak lake of an Irish raised bog: results of field experiments. *Restoration Ecology* 19:261-272
30. **Robroek BJM**, Smart RP and Holden J. (2010) Sensitivity of blanket peat vegetation and hydrochemistry to local disturbances. *Science of the Total Environment* 408:5028-5034 (2010)
31. Breeuwer A, Heijmans MMPD, **Robroek BJM** et al. (2010) Field simulation of global change: transplanting Northern bog mesocosms southward. *Ecosystems* 13:712-726
32. Fujita Y, **Robroek BJM** et al. (2010) Increased N affects P uptake of eight grassland species: the role of root surface phosphatase activity. *Oikos* 119:1665-1673
33. Breeuwer A, **Robroek BJM** et al. (2009) Decreased summer water table depth affects peatland vegetation. Basic and Applied Ecology 10:330-339
34. **Robroek BJM** et al. (2009) How nitrogen and sulphur addition, and a single drought event affect root phosphatase activity in *Phalaris arundinacea*. *Science of the Total Environment* 407:2342-2348
35. **Robroek BJM** et al. (2009) Interactive effects of water table and precipitation on net CO2 assimilation of three co-occurring *Sphagnum* mosses differing in distribution above the water table. *Global Change Biology* 15:680-691
36. **Robroek BJM** et al. (2009) *Sphagnum* re-introduction in degraded peatlands: the effects of aggregation, species identity and water table. *Basic and Applied Ecology* 10: 697-706
37. **Robroek BJM**, Waucomont JGM, Schouten MGC. (2009) The disappearance of *S. imbricatum* from European raised bogs: a comment on McClymont et al. *The Holocene* 19:1093-1094
38. Breeuwer A, Heijmans MMPD, Gleichman M, **Robroek BJM** et al. (2009) Response of *Sphagnum* species mixtures to increased temperature and nitrogen availability. *Plant Ecology* 204:97-111
39. Limpens J, Robroek BJM, Heijmans MMPD et al. Mixing ratio and species affect the use of substrate-derived CO2 by *Sphagnum*. *Journal of Vegetation Science* 19:841-848 (2008)
40. Breeuwer A, Heijmans MMPD, **Robroek BJM** et al. (2008) The effect of increased temperature and nitrogen deposition on decomposition in bogs. *Oikos*117:1258-1268
41. Breeuwer A, Heijmans MMPD, **Robroek BJM** et al. (2008) The effect of temperature on growth and competition between Sphagnum mosses. *Oecologia* 156:155-167
42. **Robroek BJM** et al. (2007) Effects of water level and temperature on performance of four *Sphagnum* mosses. *Plant Ecology* 190: 97-107
43. **Robroek BJM** et al. (2007) Interspecific competition between *Sphagnum* mosses at different water tables. *Functional Ecology* 21: 805-812
44. **Robroek BJM** et al. (2007) Precipitation determines the persistence of hollow *Sphagnum* species on hummocks. *Wetlands* 27: 979-986

POPULAR SCIENCE PUBLICATIONS

1. Caporn SJM, Payne R, **Robroek BJM**. (2016) The vulnerability of peatbogs to climate change and air pollution. Shropshire Botanical Society Newsletter 33:7-9
2. Dielissen E, **Robroek BJM**, Dorrepaal E. (2015) Plant community controls on thawing permafrost soils. In: InterAct Stories of Arctic Science. Eds.: TV Callaghan, H Savela. p. 48-49
3. **Robroek BJM**. (2013) Understanding peatland ecology: peatland ecosystems and global climate change. International Innovation. 10:24-26

OTHER SCIENTIFIC OUTPUT / REPORTS

1. van Dijk J, **Robroek BJM**, Kardel I, Wassen M. (2013) Mogelijke effecten van gecombineerde atmosferische depositie en klimaatveranderingen op laagveenmoerassen. *Landschap* 29:1-11
2. Chapman PJ, **Robroek BJM**, Holden J, Ashley D, Irvine B. (2009) Spatial variability in stream biogeochemistry related to catchment characteristics in the Nidderdale Area of Outstanding Beauty, UK. *Yorkshire Water report*
3. **Robroek BJM**, Eppinga MB, Limpens J, Wassen MJ, Schouten MGC. (2009) Hoogveenherstel in Nederland: méér dan een droom. Restoration of raised bogs in the Netherlands: more than just a dream (in Dutch). *Landschap* 25:17-2
4. **Robroek BJM**, Schaepman-Strub G, Limpens J, Berendse F, Breeuwer A (Eds.) (2007). *Proceedings of the First International Symposium on Carbon in Peatlands*. Wageningen, the Netherlands
5. **Robroek BJM**, de Jong H & Sommeijer MJ. (2003) The behaviour of the kleptoparasite, Pseudohypocera kerteszi (Diptera, Phoridae), in hives of stingless bees (Hymenoptera, Apidae) in Central America. *Proc. of the section Experimental and Applied Entomology - Netherlands Entomological Soc.* 14: 65-70
6. **Robroek BJM**, de Jong H, Arce H & Sommeijer MJ. (2003) The development of Pseudohypocera kerteszi (Diptera, Phoridae), a kleptoparasite in nests of stingless bees (Hymenoptera, Apidae) in Central America. *Proc. of the section Experimental and Applied Entomology - Netherlands Entomological Soc.* 14:71-74