Alexandre Buttler

Adjunct Professor, Laboratory of Ecological Systems (ECOS)

MSc Biology, 1978, University of Neuchâtel, Switzerland
Teaching certificate, 1979, University of Neuchâtel, Switzerland
PhD Plant Ecology, 1987, University of Neuchâtel, Switzerland

Keywords
Terrestrial ecosystems, plant-soil-microbes' interactions, soil organic carbon, biogeochemistry, manipulative field experiments, wetland, pasture-woodland and grassland ecosystems, ecosystem management

Career trajectory

1988: Postdoc, QMC University of London
1988: Postdoc, LRRC Agriculture Canada, Ottawa
1989-1999: Lecturer, University of Neuchâtel
1998-2003: Ordinary professor at University of Franche-Comté, France
2006-2010: Director of course "Sustainable Development", EPFL SHS
2006-2011: Appointed member of WSL directorate
2004-now: Adjunct Professor, joint appointment EPFL & WSL, director of the laboratory ECOS, EPFL
2013-now: Invited professor Univ. Adam-Mieckiewicz, Poznan
2014: Visiting Professor, University of Berkeley
2014: Visiting Professor, INSTAAR, Boulder, University of Colorado

Bibliometric indicators

Google Scholar (Feb. 2019) h = 46, 6131 citations

151 peer-reviewed publications (93 since 2011)

73 other publications (not cited peer-reviewed, proceedings, reports)

14 chapters in books

22 articles for a broader audience

23 press releases (e.g. Le Monde, The Guardian Weekly)

Research mission & relevance

The scientific activity of the group is centered on the organization, functioning and dynamics of terrestrial plant, animal and microbial communities in relation to soil and ecosystem processes. Main aims are the conservation, restoration and management of natural and semi-natural sensitive terrestrial ecosystems. A strong focus is on the functional links between above (vegetation) and belowground (soil) communities in the delivery of critical ecosystem services and as indicators of a changing environment. Methodologies cover descriptive/gradient and experimental approaches, as well as modeling. Research outputs concern mainly wetland, pasture woodland and grassland ecosystems.

Most important grants since 2011

Interactive effects of altitude and management on resistance and resilience of permanent grasslands to drought (SNSF, 476 KCHF)

Influence of global warming and drought on carbon sequestration and biodiversity of *Sphagnum* peatlands (Poland-Swiss Research Program, 1 M CHF)

Experimental assessment of innovative slash and burn cultivation practices for sustainable land-use and deforestation prevention in Central Menabe. Madagascar (SNSF r4d, 357 KCHF)

Honors, memberships, scientific community services

2013-2017: Elected member of EPFL-SNF Research Commission
2007-now: Member of national committees CEMAGREF-IRSTEA-France
2007-2013: Appointment for European Research Council Referees in Peer Review Evaluation
Associate Editor of Wetland Ecology and Management

Innovation, technology transfer & impact on society

Sustainable soil management in slash-and-burn cultivation in Madagascar

Soil organic matter management in oil palm plantation

Main cooperative work / collaborative projects

Experiments on climate change in wetlands (Univ. Adam-Mieckiewicz, Poznan, WSL, University of Neuchâtel, CNRS, University of Orléans, University of Poitier, University of Franche-Comté, University of Nancy I, Yugra State University, Russia)

Drought experiments in grasslands (Agroscope, WSL, University of Göttingen, University of Bordeaux)

Oil Palm Adaptive Landscape and carbon cycle (ETHZ, EPFL, WSL, Luc Hoffman Institute, CIFOR, WWF, CIRAD, IRD, Univ. Javeriana, Bogor Agricultural University, Naturaleza, Energia y Sociedad NES)

Key publications since 2011

Buttler, A., Mariotte, P., Meisser, M., Guillaume, T., Signarbieux, C., Vitra, A., Preux, S., Mercier, G., Quezada, J., Bragazza, L., Gavazov, K., (2019). Drought-induced decline of productivity in the dominant grassland species *Lolium perenne* L. depends on soil type and prevailing climatic conditions. Soil Biology and Biochemistry 132 (2019) 47–57. https://doi.org/10.1016/j.soilbio.2019.01.026

Gavazov, K., Albrecht, R., Buttler, A., Dorrepaal, E., Garnett, M.H., Gogo, S., Hagedorn, F., Mills, R.T.E., Robroek, B.J.M. and Bragazza, L. (2018) Vascular plant-mediated controls on atmospheric carbon assimilation and peat carbon decomposition under climate change. Global Change Biol. 2018; 24:3911–3921. (doi:10.1111/gcb.14140).

Sanginés de Cárcer, P., Vitasse, Y., Peñuelas, J., Jassey, V.E.J., Buttler, A., Signarbieux, C. 2018. Vapor-pressure deficit and extreme climatic variables limit tree growth. Glob Change Biol. 24: 1108-1122. https://doi.org/10.1111/gcb.13973

Robroek, Bjorn J. M., Vincent E. J. Jassey, Richard J. Payne, Magalí Martí, Luca Bragazza, Albert Bleeker, Alexandre Buttler, Simon J. M. Caporn, Nancy B. Dise, Jens Kattge, Katarzyna Zając, Bo H. Svensson, Jasper van Ruijven, Jos T. A. Verhoeven. 2017. Taxonomic and functional turnover are decoupled in European peat bogs. Nature Communications 8: 1161. https://www.nature.com/articles/s41467-017-01350-5

Bragazza, L., Parisod, J., Buttler, A., Bardgett, R.D. 2013. Biogeochemical plant-soil microbe feedback in response to climate warming. Nature Climate Change 3 : 273-277. https://www.nature.com/articles/nclimate1781?proof=true