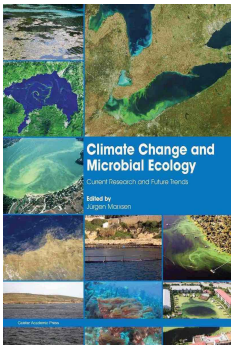
Climate Change and Microbial Ecology

Current Research and Future Trends



Edited by: **Jürgen Marxsen**
Justus Liebig University, Giessen, Germany

Published: March 2016. **Pages:** x + 204
ISBN: Book: 978-1-910190-31-9. Ebook: 978-1-910190-32-6 £159, $319
Published by: Caister Academic Press www.caister.com

The distribution and function of microorganisms are of crucial importance for the flow of matter in the Earth's biogeochemical cycles. Effects of microbial communities on the carbon and nitrogen cycles are particularly important for producing climate gases such as CO(2), CH(4), or N(2)O. However, the biogeochemical cycles are reversely impacted by global climate change, for example by increasing temperature, increasing CO(2) concentration, or changing soil humidity. However microbes may respond differently, by accelerating or by alleviating, human-caused climate change. Understanding of microbial ecology in the different ecosystems on Earth, such as soil, oceans, or inland waters, is essential for our ability to assess the importance of biogeochemical cycles-climate feedbacks. Unfortunately, microbial communities are extremely complex in structure and function and can be affected by climate and other global changes in many ways, which impedes our ability to draw reliable conclusions.

In this book, a broad range of renowned scientists reviews the most important hot-topics in the area of climate change and microbial ecology, thus providing a timely and authoritative overview of this increasingly important area. Individual chapters cover the various ecosystems on Earth as well as the different groups of microorganisms with respect to different cycles of matter. In addition, special chapters cover applied aspects, such as land-use and geoengineering.

This is an essential book for every microbial ecologist from the PhD student to the experienced scientist and is also recommended for everyone interested in the field of global climate change.

Order from:

Caister Academic Press https://www.caister.com/order

CURRENT BOOKS OF INTEREST www.caister.com

☞ **Porcine Viruses: From Pathogenesis to Strategies for Control**
Edited by: Hovakim Zakaryan (Published: 2019)

☞ ***Lactobacillus* Genomics and Metabolic Engineering**
Edited by: Sandra M. Ruzal (Published: 2019)

☞ **Cyanobacteria: Signaling and Regulation Systems**
Author: Dmitry A. Los (Published: 2018)

☞ **Viruses of Microorganisms**
Edited by: Paul Hyman and Stephen T. Abedon (Published: 2018)

☞ **Protozoan Parasitism: From Omics to Prevention and Control**
Edited by: Luis Miguel de Pablos Torró and Jacob-Lorenzo Morales (Published: 2018)

☞ **Genes, Genetics and Transgenics for Virus Resistance in Plants**
Edited by: Basavaprabhu L. Patil (Published: 2018)

☞ **DNA Tumour Viruses: Virology, Pathogenesis and Vaccines**
Edited by: Sally Roberts (Published: 2018)

☞ **Pathogenic *Escherichia coli*: Evolution, Omics, Detection and Control**
Edited by: Pina M. Fratamico, Yanhong Liu and Christopher H. Sommers (Published: 2018)

☞ **Postgraduate Handbook: A Comprehensive Guide for PhD and Master's Students and their Supervisors**
Author: Aceme Nyika (Published: 2018)

☞ **Enteroviruses: Omics, Molecular Biology, and Control**
Edited by: William T. Jackson and Carolyn B. Coyne (Published: 2018)
"frontiers in the study of the 12 species of the genus" (ProtoView); "the current most important enterovirus research" (Biotechnol. Agron. Soc. Environ.)

☞ **Molecular Biology of Kinetoplastid Parasites**
Edited by: Hemanta K. Majumder (Published: 2018)

☞ **Bacterial Evasion of the Host Immune System**
Edited by: Pedro Escoll (Published: 2017)
"The figures are expertly drawn" (SIMB News)

☞ **Illustrated Dictionary of Parasitology in the Post-Genomic Era**
Author: Hany M. Elsheikha and Edward L. Jarroll (Published: 2017)
"a guide for students, academic staff, medical and veterinarian professionals" (ProtoView); "an extensive and comprehensive glossary of contemporary concepts, terminologies, and vocabulary in modern parasitology" (Doodys); "a pure pleasure to explore and discover" (Epidemiol. Infect.); "highly recommended" (Biotechnol. Agron. Soc. Environ.)

☞ **Next-generation Sequencing and Bioinformatics for Plant Science**
Edited by: Vijai Bhadauria (Published: 2017)

☞ **The CRISPR/Cas System: Emerging Technology and Application**
Edited by: Muhammad Jamal (Published: 2017)
"reviews recent advances" (ProtoView)

☞ **Brewing Microbiology: Current Research, Omics and Microbial Ecology**
Edited by: Nicholas A. Bokulich and Charles W. Bamforth (Published: 2017)
"a valuable information source ... an authoritative overview" (IMA Fungus); "a must read book" (SIMB News)

☞ **Metagenomics: Current Advances and Emerging Concepts**
Edited by: Diana Marco (Published: 2017)
"presents those new to the field with important aspects of metagenomics" (Eur. J. Soil Sci.)

☞ ***Bacillus*: Cellular and Molecular Biology (Third edition)**
Edited by: Peter L. Graumann (Published: 2017)
"a one-stop shop for a huge range of ***Bacillus*-focused molecular biology" (Microbiology Today)**