

## Contents

### Editorial

- 1489 **Virtual Special Issue on food security – greater than anticipated impacts of near-term global atmospheric change on rice and wheat**  
Stephen P. Long

### Review

- 1491 **A decade of climate change experiments on marine organisms: procedures, patterns and problems**  
Thomas Wernberg, Dan A. Smale and Mads S. Thomsen

### Primary Research Articles

- 1499 **Size increase in high elevation ground squirrels over the last century**  
Lindsey M. Eastman, Toni Lyn Morelli, Kevin C. Rowe, Chris J. Conroy and Craig Moritz
- 1509 **Parapatric species and the implications for climate change studies: a case study on hares in Europe**  
Pelayo Acevedo, Alberto Jiménez-Valverde, José Melo-Ferreira, Raimundo Real and Paulo Célio Alves
- 1520 **On the brink of extinction? How climate change may affect global chelonian species richness and distribution**  
Flora Ihlow, Johannes Dambach, Jan O. Engler, Morris Flecks, Timo Hartmann, Sven Nekum, Hossein Rajaei and Dennis Rödder
- 1531 **Reduced variability in range-edge butterfly populations over three decades of climate warming**  
Tom H. Oliver, David B. Roy, Tom Brereton and Jeremy A. Thomas
- 1540 **Some (worms) like it hot: fish parasites grow faster in warmer water, and alter host thermal preferences**  
Vicki Macnab and Iain Barber
- 1549 **Global warming threatens the persistence of Mediterranean brown trout**  
Ana Almodóvar, Graciela G. Nicola, Daniel Ayllón and Benigno Elvira
- 1561 **Temperature-driven coral decline: the role of marine protected areas**  
Elizabeth R. Selig, Kenneth S. Casey and John F. Bruno
- 1571 **Ammonia may play an important role in the succession of cyanobacterial blooms and the distribution of common algal species in shallow freshwater lakes**  
Guo-Zheng Dai, Jin-Long Shang and Bao-Sheng Qiu
- 1582 **The influences of climatic variation and vegetation on stream biota: lessons from the Big Dry in southeastern Australia**  
James R. Thomson, Nick R. Bond, Shaun C. Cunningham, Leon Metzeling, Paul Reich, Ross M. Thompson and Ralph Mac Nally
- 1597 **Robustness to thermal variability differs along a latitudinal gradient in zooplankton communities**  
Constance Tuck and Tamara N. Romanuk
- 1609 **Explaining fire-driven landscape transformation during the Initial Burning Period of New Zealand's prehistory**  
George L. W. Perry, Janet M. Wilmshurst, Matt S. McGlone, Dave B. McWethy and Cathy Whitlock
- 1622 **Quantifying global greenhouse gas emissions from land-use change for crop production**  
Helen C. Flynn, Llorenç Milà I. Canals, Emma Keller, Henry King, Sarah Sim, Astley Hastings, Shifeng Wang and Pete Smith
- 1636 **Comparing carbon sequestration in temperate freshwater wetland communities**  
Blanca Bernal and William J. Mitsch

*contents continued on inside back cover*

# Contents (*continued*)

- 1648 Interannual variability in responses of belowground net primary productivity (NPP) and NPP partitioning to long-term warming and clipping in a tallgrass prairie**  
Xia Xu, Shuli Niu, Rebecca A. Sherry, Xuhui Zhou, Jizhong Zhou and Yiqi Luo
- 1657 Methane emissions from soils: synthesis and analysis of a large UK data set**  
Peter E. Levy, Annette Burden, Mark D. A. Cooper, Kerry J. Dinsmore, Julia Drewer, Chris Evans, David Fowler, Jenny Gaiawyn, Alan Gray, Stephanie K. Jones, Timothy Jones, Niall P. McNamara, Robert Mills, Nick Ostle, Lucy J. Sheppard, Ute Skiba, Alwyn Sowerby, Susan E. Ward and Piotr Zieliński
- 1670 Variation in soil carbon stocks and their determinants across a precipitation gradient in West Africa**  
Gustavo Saiz, Michael I. Bird, Tomas Domingues, Franziska Schrodt, Michael Schwarz, Ted R. Feldpausch, Elmar Veenendaal, Gloria Djangbletey, Fidele Hien, Halidou Compaore, Adama Diallo and Jon Lloyd
- 1684 Soil carbon and nitrogen cycling and storage throughout the soil profile in a sweetgum plantation after 11 years of CO<sub>2</sub>-enrichment**  
Colleen M. Iversen, Jason K. Keller, Charles T. Garten Jr and Richard J. Norby
- 1698 No-analog climates and shifting realized niches during the late quaternary: implications for 21st-century predictions by species distribution models**  
Samuel D. Veloz, John W. Williams, Jessica L. Blois, Feng He, Bette Otto-Bliesner and Zhengyu Liu
- 1714 Dispersal limitation and spatial scale affect model based projections of *Pinus uncinata* response to climate change in the Pyrenees**  
Isabel Martínez, Fernando González-Taboada, Thorsten Wiegand, Jesus Julio Camarero and Emilia Gutiérrez
- 1725 A global assessment of invasive plant impacts on resident species, communities and ecosystems: the interaction of impact measures, invading species' traits and environment**  
Petr Pyšek, Vojtěch Jarošík, Philip E. Hulme, Jan Pergl, Martin Hejda, Urs Schaffner and Montserrat Vilà
- 1738 Predicting the potential distribution of a riparian invasive plant: the effects of changing climate, flood regimes and land-use patterns**  
Justine V. Murray, Kate E. Stokes and Rieks D. van Klinken
- 1754 Interactive responses of old-field plant growth and composition to warming and precipitation**  
Susanne S. Hoeppe and Jeffrey S. Dukes
- 1769 Modeling biophysical controls on canopy foliage water <sup>18</sup>O enrichment in wheat and corn**  
Wei Xiao, Xuhui Lee, Xuefa Wen, Xiaomin Sun and Shichun Zhang