

Contents

Letter

- 337 **The carbon sink in intact tropical forests**

Stuart Joseph Wright

Primary Research Articles

- 340 **Ocean acidification increases the toxicity of contaminated sediments**

David A. Roberts, Silvana N. R. Birchenough, Ceri Lewis, Matthew B. Sanders, Thi Bolam and Dave Sheahan

- 352 **Does more mean less? The value of information for conservation planning under sea level rise**

Rebecca K. Runting, Kerrie A. Wilson and Jonathan R. Rhodes

- 364 **Climate, copepods and seabirds in the boreal Northeast Atlantic – current state and future outlook**

Morten Frederiksen, Tycho Anker-Nilssen, Grégory Beaugrand and Sarah Wanless

- 373 **Climate change reduces offspring fitness in littoral spawners: a study integrating organismic response and long-term time-series**

Fabrizio Bartolini, Alberto Barausse, Hans-Otto Pörtner and Folco Giomi

- 387 **Toward a loss of functional diversity in stream fish assemblages under climate change**

Laëtitia Buisson, Gaël Grenouillet, Sébastien Villéger, Julie Canal and Pascal Laffaille

- 401 **How should we grow cities to minimize their biodiversity impacts?**

Jessica R. Sushinsky, Jonathan R. Rhodes, Hugh P. Possingham, Tony K. Gill and Richard A. Fuller

- 411 **Climate change has indirect effects on resource use and overlap among coexisting bird species with negative consequences for their reproductive success**

Sonya K. Auer and Thomas E. Martin

- 420 **Range margin shifts of birds revisited – the role of spatiotemporally varying survey effort**

Heini Kujala, Ville Vepsäläinen, Benjamin Zuckerberg and Jon E. Brommer

- 431 **Environmental context determines multi-trophic effects of consumer species loss**

Nessa E. O'Connor and Ian Donohue

- 441 **The imprint of humans on landscape patterns and vegetation functioning in the dry subtropics**

Germán Baldi, Santiago R. Verón and Esteban G. Jobbágy

- 459 **Plant functional traits mediate reproductive phenology and success in response to experimental warming and snow addition in Tibet**

Tsechoe Dorji, Ørjan Totland, Stein R. Moe, Kelly A. Hopping, Jianbin Pan and Julia A. Klein

- 473 **Modeling plant species distributions under future climates: how fine scale do climate projections need to be?**

Janet Franklin, Frank W. Davis, Makihiko Ikegami, Alexandra D. Syphard, Lorraine E. Flint, Alan L. Flint and Lee Hannah

- 484 **Cloud shading and fog drip influence the metabolism of a coastal pine ecosystem**

Mariah S. Carbone, A. Park Williams, Anthony R. Ambrose, Claudia M. Boot, Eliza S. Bradley, Todd E. Dawson, Sean M. Schaeffer, Joshua P. Schimel and Christopher J. Still

Contents (*continued*)

- 498 **Forest response to increasing typhoon activity on the Korean peninsula: evidence from oak tree-rings**
Jan Altman, Jiří Doležal, Tomáš Černý and Jong-Suk Song
- 505 **Climate-diameter growth relationships of black spruce and jack pine trees in boreal Ontario, Canada**
Nirmal Subedi and Mahadev Sharma
- 517 **The effect of heat waves, elevated [CO₂] and low soil water availability on northern red oak (*Quercus rubra* L.) seedlings**
Ingvar Bauweraerts, Timothy M. Wertin, Maarten Ameye, Mary Anne McGuire, Robert O. Teskey and Kathy Steppe
- 529 **CO₂ fertilization and enhanced drought resistance in Greek firs from Cephalonia Island, Greece**
Athanasios Koutavas
- 540 **Biodiversity buffers pollination from changes in environmental conditions**
Claire Brittain, Claire Kremen and Alexandra-Maria Klein
- 548 **Impacts of climate change on paddy rice yield in a temperate climate**
Han-Yong Kim, Jonghan Ko, Suchel Kang and John Tenhunen
- 563 **Climate warming over the past three decades has shortened rice growth duration in China and cultivar shifts have further accelerated the process for late rice**
Tianyi Zhang, Yao Huang and Xiaoguang Yang
- 571 **Net greenhouse gas balance in response to nitrogen enrichment: perspectives from a coupled biogeochemical model**
Chaoqun Lu and Hanqin Tian
- 589 **Environmental and physical controls on northern terrestrial methane emissions across permafrost zones**
David Olefeldt, Merritt R. Turetsky, Patrick M. Crill and A. David McGuire
- 604 **The response of soil organic carbon of a rich fen peatland in interior Alaska to projected climate change**
Zhaosheng Fan, Anthony David McGuire, Merritt R. Turetsky, Jennifer W. Harden, James Michael Waddington and Evan S. Kane
- 621 **Impacts of 3 years of elevated atmospheric CO₂ on rhizosphere carbon flow and microbial community dynamics**
Barbara Drigo, George A. Kowalchuk, Brigitte A. Knapp, Agata S. Pijl, Henricus T. S. Boschker and Johannes A. van Veen
- 637 **Responses of the functional structure of soil microbial community to livestock grazing in the Tibetan alpine grassland**
Yunfeng Yang, Linwei Wu, Qiaoyan Lin, Mengting Yuan, Depeng Xu, Hao Yu, Yigang Hu, Jichuang Duan, Xiangzhen Li, Zhili He, Kai Xue, Joy van Nostrand, Shiping Wang and Jizhong Zhou
- 649 **Thawing permafrost increases old soil and autotrophic respiration in tundra: Partitioning ecosystem respiration using $\delta^{13}\text{C}$ and $\Delta^{14}\text{C}$**
Caitlin E. Hicks Pries, Edward A. G. Schuur and Kathryn G. Crummer
- 662 **Warming and drought reduce temperature sensitivity of nitrogen transformations**
Dolaporn S. Novem Auyeung, Vidya Suseela and Jeffrey S. Dukes