

February 2012

esa

Volume 93 No. 2

# ECOLOGY

A PUBLICATION OF THE ECOLOGICAL SOCIETY OF AMERICA



## Reports

Multi-decadal drought and amplified moisture variability drove rapid forest  
community change in a humid region  
Robustness of variance and autocorrelation as indicators of critical slowing down

## Articles

Harvesting creates ecological traps: consequences of invisible mortality risks  
in predator-prey metacommunities  
Interactions among lignin, cellulose, and nitrogen drive litter  
chemistry-decay relationships



## CONTENTS

### Reports

219

Multi-decadal drought and amplified moisture variability drove rapid forest community change in a humid region • ROBERT K. BOOTH, STEPHEN T. JACKSON, VALERIE A. SOUSA, MAURA E. SULLIVAN, THOMAS A. MINCKLEY, AND MICHAEL J. CLIFFORD

227

Effects of plant species traits on ecosystem processes: experiments in the Patagonian steppe • PEDRO FLOMBAUM AND OSVALDO E. SALA

235

Epiphyte metapopulation dynamics are explained by species traits, connectivity, and patch dynamics • VICTOR JOHANSSON, THOMAS RANIUS, AND TORD SNÄLL

242

Incompletely resolved phylogenetic trees inflate estimates of phylogenetic conservatism • T. JONATHAN DAVIES, NATHAN J. B. KRAFT, NICOLAS SALAMIN, AND ELIZABETH M. WOLKOVICH

248

Testing hypotheses in evolutionary ecology with imperfect detection: capture-recapture structural equation modeling • SARAH CUBAYNES, CLAIRE DOUTRELANT, ARNAUD GRÉGOIRE, PHILIPPE PERRET, BRUNO FAIVRE, AND OLIVIER GIMENEZ

256

Fitting complex population models by combining particle filters with Markov chain Monte Carlo • JONAS KNAPE AND PERRY DE VALPINE

264

Robustness of variance and autocorrelation as indicators of critical slowing down • VASILIS DAKOS, EGBERT H. VAN NES, PAOLO D'ODORICO, AND MARTEN SCHEFFER

### Concepts and Synthesis

272

Can rare positive interactions become common when large carnivores consume livestock? • VIJAYAN SUNDARARAJ, BRIAN E. MCLAREN, DOUGLAS W. MORRIS, AND S. P. GOYAL

### Articles

281

Harvesting creates ecological traps: consequences of invisible mortality risks in predator-prey meta-communities • PETER A. ABRAMS, LASSE RUOKOLAINEN, BRIAN J. SHUTER, AND KEVIN S. MCCANN

294

Scale dependence in species turnover reflects variance in species occupancy • DANIEL J. MCGLINN AND ALLEN H. HURLBERT

303

Catastrophe and the life span of coral reefs • RICHARD B. ARONSON, WILLIAM F. PRECHT, IAN G. MACINTYRE, AND LAUREN T. TOTH

314

Sea ice microbial production supports Ross Sea benthic communities: influence of a small but stable subsidy • S. R. WING, R. J. MCLEOD, J. J. LEICHTER, R. D. FREW, AND M. D. LAMARE

324

Meta-ecosystem engineering: Nutrient fluxes reveal intraspecific and interspecific feedbacks in fragmented mussel beds • CÉSAR LARGAESPADA, FRÉDÉRIC GUICHARD, AND PHILIPPE ARCHAMBAULT

334

Tidal regime dictates the cascading consumptive and nonconsumptive effects of multiple predators on a marsh plant • DAVID L. KIMBRO

345

Interactions among lignin, cellulose, and nitrogen drive litter chemistry-decay relationships • JENNIFER M. TALBOT AND KATHLEEN K. TRESEDER

355

CO<sub>2</sub> enrichment inhibits shoot nitrate assimilation in C<sub>3</sub> but not C<sub>4</sub> plants and slows growth under nitrate in C<sub>3</sub> plants • ARNOLD J. BLOOM, JOSE SALVADOR RUBIO ASENSIO, LESLEY RANDALL, SHIMON RACHMILEVITCH, ASAPH B. COUSINS, AND ELI A. CARLISLE