

111

E 20/1

November 2014

esa

Volume 95 No. 11

# ECOLOGY

A PUBLICATION OF THE ECOLOGICAL SOCIETY OF AMERICA



## Articles

Determinants of maximum tree height in *Eucalyptus* species along a rainfall gradient in Victoria, Australia

Neonatal body condition, immune responsiveness, and hematocrit predict longevity in a wild bird population

Seasonality elicits herbivores' escape from trophic control and favors induced resistance in a temperate macroalga

The application of occupancy modeling to evaluate intraguild predation in a model carnivore system

## CONTENTS

### Articles

**2991**

Determinants of maximum tree height in *Eucalyptus* species along a rainfall gradient in Victoria, Australia • THOMAS J. GIVNISH, S. CHIN WONG, HILARY STUART-WILLIAMS, MEISHA HOLLOWAY-PHILLIPS, AND GRAHAM D. FARQUHAR

**3008**

Lianas in gaps reduce carbon accumulation in a tropical forest • STEFAN A. SCHNITZER, GEERTJE VAN DER HEIJDEN, JOSEPH MASCARO, AND WALTER P. CARSON

**3018**

Apparent environmental synergism drives the dynamics of Amazonian forest fragments • WILLIAM F. LAURANCE, ANA S. ANDRADE, AINHOA MAGRACH, JOSÉ L. C. CAMARGO, MASON CAMPBELL, PHILIP M. FEARNSIDE, WILL EDWARDS, JEFFERSON J. VALSKO, THOMAS E. LOVEJOY, AND SUSAN G. LAURANCE

**3027**

Neonatal body condition, immune responsiveness, and hematocrit predict longevity in a wild bird population • E. KEITH BOWERS, CHRISTINE J. HODGES, ANNA M. FORSMAN, LAURA A. VOGEL, BRIAN S. MASTERS, BONNIE G. P. JOHNSON, L. SCOTT JOHNSON, CHARLES F. THOMPSON, AND SCOTT K. SAKALUK

**3035**

Seasonality elicits herbivores' escape from trophic control and favors induced resistance in a temperate macroalga • FIJA HAAVISTO AND VEIJO JORMALAINEN

**3046**

A quantitative framework for analysis of regime shifts in a Galápagos coastal lagoon • ALISTAIR W. R. SEDDON, CYNTHIA A. FROYD, ANDRZEJ WITKOWSKI, AND KATHERINE J. WILLIS

**3056**

Habitat degradation modifies the strength of interspecific competition in coral dwelling damselfishes • LISA BOSTRÖM-EINARSSON, MARY C. BONIN, PHILIP L. MUNDAY, AND GEOFFREY P. JONES

**3068**

Constraints by oxygen and food quality on carbon pathway regulation: a co-limitation study with an aquatic key herbivore • MARCUS LUKAS AND ALEXANDER WACKER

**3080**

Phenotypic plasticity influences the eco-evolutionary dynamics of a predator-prey system • BEAT B. FISCHER, MAREK KWiatkowski, MARTIN ACKERMANN, JASMIN KRISMER, SEVERIN ROFFLER, MARC J. F. SUTER, RIK I. L. EGGEN, AND BLAKE MATTHEWS

**3093**

Direct and indirect drivers of plant diversity responses to climate and clipping across northern temperate grassland • SHANNON R. WHITE, EDWARD W. BORK, AND JAMES F. CAHILL, JR.

**3104**

Fitness maximization by dispersal: evidence from an invasion experiment • D. BONTE, A. DE ROISSART, N. WYBOUW, AND T. VAN LEEUWEN

**3112**

The application of occupancy modeling to evaluate intraguild predation in a model carnivore system • QUINN H. ROBINSON, DAVID BUSTOS, AND GARY W. ROEMER

**3124**

Multiple pathways mediate the effects of climate change on maternal reproductive traits in a red deer population • KATIE V. STOPHER, ANA I. BENTO, TIM H. CLUTTON-BROCK, JOSEPHINE M. PEMBERTON, AND LOESKE E. B. KRUUK

**3139**

Food resources and intestinal parasites as limiting factors for boreal vole populations during winter • KRISTIAN M. FORBES, PETER STUART, TAPIO MAPPES, HEIKKI HENTTONEN, AND OTSO HUITU

**3149**

A demographic, spatially explicit patch occupancy model of metapopulation dynamics and persistence • C. S. SUTHERLAND, D. A. ELSTON, AND X. LAMBIN

**3161**

Domesticated honey bees evolutionarily reduce flower nectar volume in a Tibetan lotus

- JUNPENG MU, YOUNG PENG, XINQIANG XI, XINWEI WU, JOHN N. GRIFFIN, KARL J. NIKLAS, AND SHUCUN SUN

**3173**

Dealing with under- and over-dispersed count data in life history, spatial, and community ecology • HEATHER J. LYNCH, JAMES T. THORSON, AND ANDREW OLAF SHELTON

**3181**

Silica decouples fungal growth and litter decomposition without changing responses to climate warming and N enrichment • JÖRG SCHALLER, JESSICA HINES, CARSTEN BRACKHAGE, ERNST BÄUCKER, AND MARK O. GESSNER

**3190**

Contrasting elevational diversity patterns between eukaryotic soil microbes and plants

- CONGCONG SHEN, WENJU LIANG, YU SHI, XIANGUI LIN, HUAYONG ZHANG, XIAN WU, GARY XIE, PATRICK CHAIN, PAUL GROGAN, AND HAIYAN CHU

**3203**

Removing an invader: evidence for forces resembling a Chihuahuan Desert ecosystem

- DANIELLE D. IGNACE AND PETER CHESSON

**3213**

Natural selection on seed size through the life cycle of a desert annual plant • EUGENIO LARIOS, ALBERTO BURQUEZ, JUDITH X. BECERRA, AND D. LAWRENCE VENABLE

**Notes**

**3221**

Plant species capacity to drive soil fungal communities contributes to differential impacts of plant-soil legacies • EMILY W. LANKAU AND RICHARD A. LANKAU

**Data Papers**

**3229**

Over 75 years of zooplankton data from Australia

- CLAIRE H. DAVIES, AMELIA J. ARMSTRONG, MARK BAIRD, FRANK COMAN, STEVEN EDGAR, DANIEL GAUGHAN, JACK GREENWOOD, FELIPE GUSMÃO, NATASHA HENSCHKE, J. ANTHONY KOSLOW, SOPHIE C. LETERME, A. DAVID MCKINNON, MARGARET MILLER, SARAH PAUSINA, JULIAN H. URIBE PALOMINO, RUBEN-LEE ROENNfeldt, PETER ROTHLISBERG, ANITA SLOTWINSKI, JOANNA STRZELECKI, IAIN M. SUTHERS, KERRIE M. SWADLING, SAM TALBOT, MARK TONKS, DAVID H. TRANTER, JOCK W. YOUNG, AND ANTHONY J. RICHARDSON

**3230**

**Erratum**

**3231**

**Book Reviews**

CONSORTE-MCCREA AND SANTOS—Ecology and conservation of the maned wolf: multidisciplinary perspectives

- MATTHEW E. GOMPPER

HARTVIGSEN—A primer in biological data analysis and visualization using R • WILLIAM H. BALTOSSER

PRIMACK—Walden warming: climate change comes to Thoreau's woods • THERESA M. CRIMMINS

**3236**

**Books and Monographs Received**

**Ecological Archives**

Appendices and Supplements are available online:  
[www.esapubs.org/archive](http://www.esapubs.org/archive)

**Instructions to Authors**

Available online:  
[www.esapubs.org/esapubs/AuthorInstructions](http://www.esapubs.org/esapubs/AuthorInstructions)

**COVER PHOTO:** Young stand of mountain ash (*Eucalyptus regnans*), the tallest angiosperm species worldwide, with a lush understory of the tree fern *Cyathea australis*, in Yarra Ranges National Park near Marysville, Victoria. The tallest live *E. regnans* on the Australian mainland is nearly 90 m in height; that in Tasmania, nearly 100 m in height. Maximum height of *Eucalyptus* species in Victoria varies from 4 to 90 m, is proportional to the ratio of annual precipitation to pan evaporation, and appears to be set by both allocational allometry and hydraulic limitations (see Givnish et al., pp. 2991–3007). Photo credit: T. J. Givnish.