

March 2014

esa

Volume 95 No. 3

ECOLOGY

A PUBLICATION OF THE ECOLOGICAL SOCIETY OF AMERICA



Reports

Evidence of maternal provisioning of alkaloid-based chemical defenses in the strawberry poison frog *Oophaga pumilio*

Forum

P values and model selection

Concepts and Synthesis

Discontinuities, cross-scale patterns, and the organization of ecosystems

Articles

An ecological regime shift resulting from disrupted predator-prey interactions in Holocene Australia

CONTENTS

Reports

587

Evidence of maternal provisioning of alkaloid-based chemical defenses in the strawberry poison frog *Oophaga pumilio* • JENNIFER L. STYNOSKI, YARITBEL TORRES-MENDOZA, MAHMOOD SASA-MARIN, AND RALPH A. SAPORITO

594

Predicting how altering propagule pressure changes establishment rates of biological invaders across species pools • ECKEHARD G. BROCKERHOFF, MARK KIMBERLEY, ANDREW M. LIEBHOLD, ROBERT A. HAACK, AND JOSEPH F. CAVEY

602

Permafrost degradation stimulates carbon loss from experimentally warmed tundra • SUSAN M. NATALI, EDWARD A. G. SCHUUR, ELIZABETH E. WEBB, CAITLIN E. HICKS PRIES, AND KATHRYN G. CRUMMER

Forum—*P* Values and Model Selection

609

P values, hypothesis testing, and model selection: it's déjà vu all over again • AARON M. ELLISON, NICHOLAS J. GOTELLI, BRIAN D. INOUE, AND DONALD R. STRONG

611

In defense of *P* values • PAUL A. MURTAUGH

617

The common sense of *P* values • PERRY DE VALPINE

621

To *P* or not to *P*? • JARRETT J. BARBER AND KIONA OGLE

627

P values are only an index to evidence: 20th- vs. 21st-century statistical science • K. P. BURNHAM AND D. R. ANDERSON

631

Model selection for ecologists: the worldviews of AIC and BIC • KEN AHO, DEWAYNE DERRYBERRY, AND TERI PETERSON

637

In defense of *P* values: comment on the statistical methods actually used by ecologists • JOHN STANTON-GEDDES, CINTIA GOMES DE FREITAS, AND CRISTIAN DE SALES DAMBROS

642

Comment on Murtaugh • MICHAEL LAVINE

645

Recurring controversies about *P* values and confidence intervals revisited • ARIS SPANOS

651

Rejoinder • PAUL A. MURTAUGH

Concepts and Synthesis

654

Discontinuities, cross-scale patterns, and the organization of ecosystems • KIRSTY L. NASH, CRAIG R. ALLEN, DAVID G. ANGELER, CHRIS BARICHIEVY, TARSHA EASON, AHJOND S. GARMESTANI, NICHOLAS A. J. GRAHAM, DEAN GRANHOLM, MELINDA KNUTSON, R. JOHN NELSON, MAGNUS NYSTRÖM, CRAIG A. STOW, AND SHANA M. SUNDSTROM

668

Assessing nutrient limitation in complex forested ecosystems: alternatives to large-scale fertilization experiments • BENJAMIN W. SULLIVAN, SILVIA ALVAREZ-CLARE, SARAH C. CASTLE, STEPHEN PORDER, SASHA C. REED, LAURA SCHREEG, ALAN R. TOWNSEND, AND CORY C. CLEVELAND

Articles

682

Exotic plant invasions under enhanced rainfall are constrained by soil nutrients and competition • ANU ESKELINEN AND SUSAN HARRISON

693

An ecological regime shift resulting from disrupted predator-prey interactions in Holocene Australia • THOMAS A. A. PROWSE, CHRISTOPHER N. JOHNSON, COREY J. A. BRADSHAW, AND BARRY W. BROOK