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Conference Abstract

InvaPact: a metric to quantify the ecological impacts of biological invasions

Franck Courchamp[‡], Corey Bradshaw[§], Daniel Pincheira-Donoso[|], Gabriel Henrique de Oliveira Caetano[‡], Ross Cuthbert[¶], Sonia Mai Tieo[‡], Shengyu Wang[‡], Chunlong Liu[#], Ugo Arbieu[‡], Arman Norcio Pili[¤], Andrea Desiderato[«], Steven Cooke[»], Jonathan Tonkin[ˆ], Josie South[ˇ,¦], Josh Firth[ʔ], Tad A Dallas[ˢ], Laís Carneiro[‡]

‡ Université Paris–Saclay, CNRS, AgroParisTech, Ecologie Société Evolution, Gif-sur-Yvette, France
§ Flinders University, Adelaide, Australia
| School of Biological Sciences, Queen's University Belfast, Belfast, United Kingdom
¶ Queen's University Belfast, Belfast, United Kingdom
# College of Fisheries, Ocean University of China, Qingdao, China
¤ Department of Zoology, Cambridge, United Kingdom
« University of Lodz, Lodz, Poland
» Canadian Centre for Evidence-Informed Conservation, Carleton University, Ottawa, Canada
ˆ School of Biological Sciences, University of Canterbury, Christchurch, New Zealand
ˇ University of Leeds, Leeds, United Kingdom
¦ SAIAB, Grahamstown, South Africa
ʔ School of Biology, University of Leeds, Leeds, United Kingdom
ˢ University of South Carolina, Columbia, United States of America

Corresponding author: Franck Courchamp (franck.courchamp@cnrs.fr)

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Abstract

Despite ongoing efforts to categorize the diverse ecological impacts of biological invasions, ecology lacks a standardized metric to translate these heterogeneous and context-dependent observations into a shared quantitative scale. Here, we introduce InvaPact, a metric that rigorously integrates the normative importance of impact types with their empirical severity into a unified numerical currency, bounded between 0 and 100. InvaPact enables robust comparisons across diverse taxonomic, geographic, and ecological contexts, by bridging structured qualitative classifications and rigorous quantitative synthesis. This unifying tool has the potential to catalyze macroecological

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syntheses. It allows researchers to aggregate isolated datasets, test foundational ecological hypotheses, and forecast temporal impact trajectories. In doing so, InvaPact provides the standardized translation of the scientific evidence base required to prioritize global conservation interventions, assess ecosystem damage, and help to guide international biosecurity policies under global change. This presentation will serve as an introduction of the session, that will contain several presentations of analyses of impacts of invasions at the macro-ecological scale.

Keywords

invasive alien species, non-native species, InvaPact, type importance, severity magnitude

Presenting author

Franck Courchamp

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Conflicts of interest

The authors have declared that no competing interests exist.