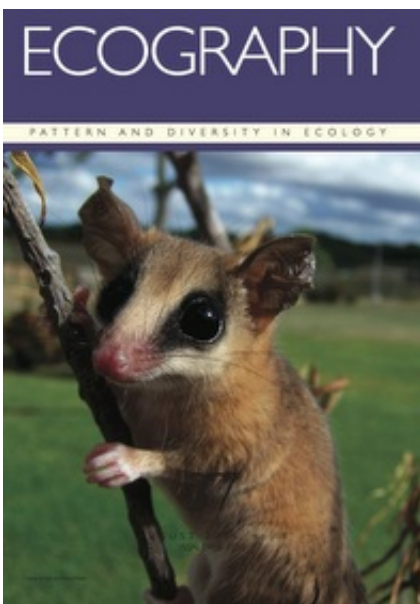


Study redefines ecological model: Competition among species can cause geographical isolation

August 27 2014, by Jay Mwamba



In a study that could alter traditional notions in the fields of ecology and evolutionary biology, three City College of New York researchers present results indicating that competition between two species can lead to the geographic isolation of one of them. The finding by biologists Elicer E. Gutiérrez, Robert A. Boria and Robert P. Anderson is the cover story in the August issue of the Swedish-published journal "*Ecography*" under the title, "Can biotic interactions cause allopatry?"

Niche models, competition, and distributions of South American mouse opossums."

In their study of mouse opossums in Venezuela, the trio conducted [geographic information systems](#) (GIS)-based ecological niche modeling analyses that revealed a phenomenon of wide ecological and evolutionary importance.

As explained in their [blogpost](#) on the journal's website, analyses suggest that [competition](#) between two species of mouse opossums greatly restricts the distribution of one of them, isolating one of its populations from all others. This study counters traditional notions in ecology that do not consider the possibility that [geographic isolation](#) (= "allopatry") could be promoted by biotic interactions (competition, predation/parasitism, mutualism, etc.).

"Geographic isolation has profound consequences for the long-term viability of a population and for its genetic evolution, making this finding noteworthy and important," said Dr. Anderson, Professor in City College's Biology Department.

He served as the research mentor to Dr. Gutiérrez, the paper's first author, who conducted the research as part of his dissertation at CCNY and the Graduate Center of CUNY. Dr. Gutiérrez is now a postdoctoral fellow at the Smithsonian Institution's Center for Conservation and Evolutionary Genetics in Washington, D.C.

Mr. Boria, the third member of the team, will receive his MS in biology from CCNY this fall.

More information: [onlinelibrary.wiley.com/doi/10.../ecog.00620/abstract](http://onlinelibrary.wiley.com/doi/10.1002/ecog.00620/abstract)

Provided by City College of New York

Citation: Study redefines ecological model: Competition among species can cause geographical isolation (2014, August 27) retrieved 25 April 2024 from <https://phys.org/news/2014-08-redefines-ecological-competition-species-geographical.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.