Does land-use change increase the abundance of zoonotic reservoirs? Rodents say yes

By: Mendoza, H (Mendoza, Hugo)[1] ; Rubio, AV (Rubio, Andre V.)[2] ; Garcia-Pena, GE (Garcia-Pena, Gabriel E.)[1,3] ; Suzan, G (Suzan, Gerardo)[1] ; Simonetti, JA (Simonetti, Javier A.)[4]

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Abstract

Land-use change can raise the risk of human exposure to zoonotic diseases by increasing abundance of reservoir hosts. In this study, we conducted a meta-analysis on the associations between land-use change and the abundance of rodent species in relation to their reservoir status for rodent-borne diseases. Using the PREDICT database, we analyzed 58 case studies comprising 54 species from eight countries. In general, rodent reservoirs were significantly more abundant in modified habitats (anthropogenically altered sites), whereas non-reservoir species were more abundant in non-modified habitats. To our knowledge, this is the first meta-analysis that evaluates the response of rodents to land-use change with a focus on the potential implications for epidemiological risks. Our findings give further evidence that land-use change generally impacts biodiversity in ways that might imply higher risk of zoonotic pathogen transmission.

Keywords

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Author Information

Reprint Address: Rubio, AV (reprint author)

+ Univ Chile, Fac Ciencias Vet & Pecuarias, Dept Ciencias Biol Anim, Ave Santa Rosa 11735, Santiago, Chile.

Addresses:

+ [1] Univ Nacl Autonoma Mexico, Dept Etol Fauna Silvestre & Anim Lab, Fac Med Vet & Zootecnia, Mexico City 04510, DF, Mexico

[2] Univ Chile, Fac Ciencias Vet & Pecuarias, Dept Ciencias Biol Anim, Ave Santa Rosa 11735, Santiago, Chile

[3] Univ Nacl Autonoma Mexico, Ctr Ciencias Complejidad C3, Mexico City 04510, DF, Mexico

[4] Univ Chile, Fac Ciencias, Dept Ciencias Ecol, Casilla 653, Santiago, Chile

E-mail Addresses:arubio@uchile.cl

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