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WHAT DRIVES THE DYNAMICS OF A SOIL MITE POPULATION UNDER SEASONAL FLOODING? A NULL MODEL ANALYSIS
O QUE DIRECIONA A DINÂMICA DE UMA POPULAÇÃO DE ÁCAROS ORIBATÍDEOS SUJEITA A ENCHENTES PERIÓDICAS NA AMAZÔNIA? UMA ANÁLISE BASEADA EM MODELOS NULOS

P.A.C.L. Pequeno & E. Franklin
Instituto Nacional de Pesquisas da Amazônia, INPA, Manaus, AM.

In floodplains with a predictable flood pulse, the terrestrial biota is often characterized by flood-related traits that can be important to their long term persistence. However, little is known of how intraspecific variation in those traits may affect the dynamics of field populations. We used a simulation approach to gain insight into the population dynamics of a soil arthropod in an Amazonian blackwater floodplain, the oribatid mite *Rostrozetes ovulum*. We estimated the proportion of adults surviving seasonal inundation in the field, and then compared it to a null model built on laboratory measurements of individual survival time following instant submersion. The field proportion of survivors was estimated as 19.6%. This value was significantly lower than that expected under the null model when assuming constant flood duration (41.6%, $P < 0.0001$), but not when assuming the more realistic interannual variability in flood duration (44.3%, $P = 0.17$). Nonetheless, in both cases, the field survival rate was only about a half that expected based on laboratory measurements. Thus, although the persistence of the studied *R. ovulum* population across flooding cycles seems to depend mainly on its ability to survive long periods following instant submersion (as experimentally determined), there is some evidence for extra mortality in the field, which could be related to suboptimal water conditions such as low oxygen level. If so, changes in water properties due to global warming could have strong impacts on the distribution of this common soil arthropod.
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