

Extinction and colonization processes in subpopulations of five neotropical small mammal species

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Abstract

We report the extinction and colonization rates of five sympatric small mammal species at a semiarid locality in north central Chile. We provide information based on 6 years of monitoring on how colonization and extinction rates change according to landscape features (slope aspect) and on their relationship to populations size, population variability, and body size. We found that: (1) for all species in the assemblage, extinction rates of subpopulations from equatorial-facing slopes were significantly lower than those in polar-facing slopes, (2) population size was the most important factor determining extinction rates, (3) colonization rates did not vary between slopes, and were affected by population size only in equatorial-facing slopes, and (4) most species had higher extinction than colonization rates. Persistence of the metapopulation system for all five small mammal species appears to be fueled by repeated colonization events.