

Effects of vertebrate predation on a caviomorph rodent, the degu (*Octodon degus*), in a semiarid thorn scrub community in Chile

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Abstract

The effects of vertebrate predation have been monitored since 1989 on 16 replicated 0.56 ha study plots in a semiarid thorn scrub community in north-central Chile. Using fences of different heights with and without holes and suspended game netting to alter principal predator (foxes and raptors) and large rodent herbivore (*Octodon degus*) access, four grids each have been assigned to the following treatments: 1) low fencing and holes allowing free access of predators and small mammals; 2) low fencing without holes to exclude degus only; 3) high fencing and netting with holes to exclude predators only; and 4) high fencing and netting without holes to exclude predators and degus. Small mammal population censuses are conducted monthly using mark-recapture techniques. Degu population trends during 1989 and 1990 showed strongly but nonsignificantly lower numbers in control plots during months when densities were characteristically low (September–November) for this seasonally reproductive species; since March 1991, differences have become persistent and increasingly significant. Predators appear to have greater numerical effects when their prey populations are low. Survival times of degus, particularly established adults, were significantly longer in predator exclusion grids during the 2 1/2 years of observation; thus, predation also affects prey population structure.

Keywords

Vertebrate predation, Small mammals, Semiarid zone, Neotropical mammals, Chile.