

## Communal Nesting and Kinship in Degus (*Octodon Degus*)

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### Abstract

Communal nesting is a fundamental component of many animal societies. Because the fitness consequences of this behavior vary with the relatedness among nest mates, understanding the kin structure of communally nesting groups is critical to understanding why such groups form. Observations of captive degus (*Octodon degus*) indicate that multiple females nest together, even when supplied with several nest boxes. To determine whether free-living degus also engage in communal nesting, we used radiotelemetry to monitor spatial relationships among adult females in a population of *O. degus* in central Chile. These analyses revealed that females formed stable associations of > 2–4 individuals, all of whom shared the same nest site at night. During the daytime, spatial overlap and frequency of social interactions were greatest among co-nesting females, suggesting that nesting associations represent distinct social units. To assess kinship among co-nesting females, we examined genotypic variation in our study animals at six microsatellite loci. These analyses indicated that mean pairwise relatedness among members of a nesting association ( $r=0.25$ ) was significantly greater than that among randomly selected females ( $r=-0.03$ ). Thus, communally nesting groups of degus are composed of female kin, making it possible for indirect as well as direct fitness benefits to contribute to sociality in this species.