

Effect of forest fragmentation on parasitism on solitary bees and wasps in the Chaco forests of central Argentina

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In this study we evaluated the effects of habitat area on the species richness and abundance of trap-nesting bees, wasps and their natural enemies; and also asses the effects of habitat area and host density on parasitism rates. The research was done on 8 fragments ranging in size from 0.5 to 10,500 hectares of Chaco forest in the province of Córdoba, Argentina. During the years 2004, 2005 and 2006 we placed 20 trap nests in each site in October (spring), and at the end of the growing season (April). All nesting traps were taken to the laboratory until the emergence of the adults. In total we obtained 668 nests from 27 species of solitary bees and wasps. The bees belong to Megachilidae and Colletidae families, and the wasps to Pompilidae, Sphecidae, Eumenidae and Vespidae. The parasitoids belong to four families: Eulophidae, Encyrtidae, Chalcididae and Braconidae; and the cleptoparasites belong to Megachilidae and Chrysididae. In contrast to expectations species richness of bees and wasps did not change with habitat area, this is probably due to the spatial scale at which these insects perceive the environment. Also unexpectedly the mortality due to parasitoids significantly decreased with increasing habitat area, possibly due to the fact that the dominant parasitoid, *Melittobia* sp. is highly generalist and has high dispersal ability. On the other hand and in accordance to expectations, mortality due to cleptoparasites slightly increased with increasing habitat area. In the present circumstances the small fragments are able to maintain high species richness; however the pressure of parasitoidism could affect the community in the future.

