

COMMUNITY STRUCTURE OF BATS ALONG AN ALTITUDINAL GRADIENT IN TROPICAL EASTERN MEXICO

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ABSTRACT.- The changes in species richness, relative abundance, and biomass of bats were monitored along an altitudinal gradient (800 to 2,560 m) in the Sierra Madre Oriental in eastern Mexico. In general, species richness, density, and biomass were correlated with elevation, but the insectivorous bats were more numerous at mid-elevation sites. The frugivorous bats contributed with the majority of the biomass along the gradient. One migratory species (*Tadarida brasiliensis*) was only detected during the summer months. It is hypothesized that the observed changes are correlated to the amount of food availability and thermoregulatory abilities of bats.

RESUMEN.- Los cambios en riqueza de especies, abundancia relativa y biomasa de los murciélagos fueron monitoreados a lo largo de un gradiente altitudinal (800 a 2,560 m) en la Sierra Madre Oriental en el este de México. En general, la riqueza de especies, densidad y biomasa estuvieron correlacionadas con la altitud; sin embargo, los murciélagos insectívoros fueron más numerosos en altitudes intermedias. Las especies frugívoras contribuyeron con la mayor proporción de la biomasa. Una especie migratoria (*Tadarida brasiliensis*) sólo fue colectada en el verano. Se sugiere que los patrones observados están correlacionados con la disponibilidad de alimento y las habilidades termorregulatorias de los murciélagos.

Key words: Chiroptera, community structure, altitudinal gradients, Queretaro.

INTRODUCTION

The changes of animal communities along altitudinal gradients in tropical mountains represent one of the most interesting phenomena to study in community ecology, because several life zones are generally compressed within a relatively short distance, and the results can help to understand the structure of communities. Probably one of the most extensively surveyed areas is the Peruvian Andes Mountain, where studies are available for birds (Terborgh, 1971, 1977; Terborgh and Weske, 1975), reptiles (Duellman, 1979), non-volant mammals (Pearson and Ralph, 1978), and rodents (Pizzimenti and De Salle, 1981).