## Abstract

Order Chiroptera is the only mammalian taxon capable of powered flight. This key adaptation allows for high dispersion capabilities, therefore bats are often the only colonizers of remote islands. More than half of all bat species inhabit islands, and nearly a quarter of them are the islands' endemic organisms. They colonize islands around the entire world, being exempt from only very small, isolated or inhospitable islands.. Island biogeography has an extraordinary importance in many aspects of evolutionary and ecological disciplines. Because of its relative simplicity, as well as the impoverished nature of island biota, emerging interactions between island populations can be better observed compared to mainland. Species that might succumb to extinction due to competition on the mainland may survive on islands. Richness of island biota is subject to two opposing forces, colonization and extinction. A dynamic equilibrium occurs when the probability of colonization and extinction is equal, meaning the number of species is constant, but the composition of species may vary. Isolation, fragmented distribution, and the small size of island populations can lead to speciation, but can also conversely reduce genetic diversity, adaptive capabilities and ultimately cause extinction. The degree of isolation, and the size of the island correlates with biodiversity. Species richness is also influenced by migration, contributing new alleles into the existing gene pool. The rate of speciation may depend on the size of the population. The most commonly observed differences between mainland and island populations include gigantism, dwarfism and sedentarity. This thesis will focus on microevolutionary and macroevolutionary processes observed in island bats, with an emphasis to their population genetics, speciation, morphological adaptation, island biogeography, distribution and conservation.

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**Key words**: island evolution, bats, island biogeography, populations