

**The Role of Bats as Potential Seed Dispersers of Large-seeded Trees in the Caribbean Lowland Forest of Nicaragua**

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Hurricane Joan toppled up to 90% of the rainforest on Nicaragua's Caribbean Coast and up to 50 miles inland. For more than a decade botanists and ecologists have documented the forest's recovery. Factors affecting recovery, re-vegetation, and dispersal of trees that produce large seeds remain unclear. These large seeds do not have mechanisms for dispersal by wind or water, and many characteristics prevent birds and reptiles from dispersing them. The probable dispersers of vital large-seeded trees in this forest must be mammalian, and bats in particular. Mist nets were set along forest trails, at forest exits, and outside of the forest; daytime roost searches and line transects were conducted; and people living and working along the forest were interviewed. Bats appear to be the main potential dispersers of large seeds in this forest. Based on analysis showing that bats may be capable of carrying over 50% of their weight, we determined that bats weighing over 50g were potential dispersers of large seeds – 21.6% of all bats captured exceeded 50g (*Artibeus lituratus*, *A. intermedius*, *A. jamaicensis*). Bat tents with guano and large seed piles were also found within the forest. Large bats were most likely to be caught over pasture or on major trails linking villages. Other small mammals were uncommon, rarely seen, and almost never captured. Bat roosts ranging from a few to hundreds of individuals were located in most hollow trees and in some human structures. Bats that are large enough to disperse large seeds are abundant in the forest, and the occurrence of piles of large seeds associated with bat tents confirms that bats are dispersing large seeds. The discovery that most large bats occurred outside of forested areas may indicate their importance in carrying seeds to deforested areas. This study was intended as a preliminary analysis of the dispersal of large seeds in the rainforest; additional data and more direct studies of seed dispersal are necessary to create a clear account of the role of these bats as dispersers of large-seeded trees.

**Censusing Brazilian Free-tailed Bats with Infrared Thermal Imaging – Challenges, Lessons Learned, and Initial Results**

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To census Brazilian free-tailed bats (*Tadarida brasiliensis*) in south-central Texas, we have initiated periodic, non-invasive monitoring of maternity colonies with infrared thermal video cameras. The collection and analysis of these data were challenging because of the topography at the different sites and the enormous numbers and density of emerging bats, as well as the variability of nightly emergence patterns. We describe the lessons learned for future field experiments and discuss the challenges we encountered using our previously-developed semi-automatic censusing algorithms for object recognition and flow rate analysis. We also provide initial censusing results for three major colonies using these methods.