1067-92-149        **Gregory Alan Backus\*** (`greg.backus@gmail.com`), PO Box 500, Annandale-on-Hudson, NY 12504, and **Albert Boggess**, **May Boggess** and **Kirsten Bohn**. *A Categorization of Brazilian Free-Tailed Bat (Tadarida brasiliensis) Chirps.*

Male Brazilian Free-tailed Bats (*Tadarida brasiliensis*) attract mates and defend territory using multi-phrase songs that follow a structured set of rules. A subjective view of their spectrograms shows similarity and dissimilarity between the chirps (a syllable within the song) of different males. We developed an algorithm to characterize the shapes of these chirps. The discrete Fourier transform allowed us to focus on frequency information while a four level Daubechies 2 wavelet decomposition allowed us to focus on both frequency and time. For comparison, we compressed large data vectors into a single data point using multidimensional scaling. Segmenting chirps, to further emphasize ranges of time and frequency, gave categorizations that most closely resemble the subjective groupings. (Received July 27, 2010)