

Patricia Bohls, Hiram College. Genetic testing of the taxonomic validity of two subspecies of the Eastern Chipmunk (*Tamias striatus*). Mentor: Dr. Evon Hekkala

Abstract: Traditionally North American chipmunks have been divided into two main groups. They are the Western species, divided into twelve species, and the Eastern chipmunk, divided into five subspecies. In 1929 Arthur H. Howell wrote "Revision of the American Chipmunks" in which he divided the chipmunks into their current groupings; it was based on morphology primarily of the skull and baculum (penis bone). This study is to test the validity of two subspecies distribution and distinction. The two subspecies in question are *Tamias striatus lysteri*, occupying a northern region of the U.S., and *Tamias striatus fisheri*, occupying an area primarily south of the former. Samples were obtained from two locations in 2012. These sites are Pleasant Valley, NY Dutchess County, location of *T.s. lysteri*, and the Louis Calder Center, Armonk, NY in Westchester County, location of *T.s. fisheri*. A total of twelve samples were used from each location. The samples had their DNA extracted, and a 400 bp region of the 12s region of mtDNA was amplified on the program 12S57. The PCR products were then sent for sequencing at Macrogen. All 12s "barcodes" corresponded to correct subspecies with the exception of one individual. All haplotypes exhibited fixed differences at three positions. This suggests long term genetic isolation. Further research must be done with more samples from different locations and looking at nucleotide DNA to determine if the boundaries have remained the same and if there could be a possible species rather than just subspecies distinction.