Thesis title:

Island biogeography: focal species models and their implication for system-level relationships.

11 May 2002

Thesis abstract:

The distributional patterns of 15 species in the boreo-cordilleran mammalian faunal element of the western United States were analyzed. Based on individual species' incidence functions, the distributions of four species were determined by both area and isolation effects while the distributions of eleven species was determined only by area effects. Thus, the original fauna was thus split into equilibrium and relaxation subgroups. The entire fauna had a significant species-area relationship with a high z-score (0.325). Both subgroups had significant species-area relationships but with lowered z-scores within the range typically exhibited in an equilibrium situation. Species-isolation relationships were significant for the entire fauna and relaxation fauna groups, but not for the equilibrium subgroup. The entire fauna was significantly nested and the relaxation subgroup was more highly nested. The equilibrium subgroup was not significantly nested. Uncharacteristic species-area and species-isolation results lend little confidence to their use in interpreting biogeographic processes. Results indicate that the entire fauna and relaxation subgroup were extinction driven and the equilibrium subgroup was in equilibrium. In addition, constituent species can affect outcomes of system-level tests. Refinement of the initial fauna by using a fauna with shared historical origins, and use of a complete archipelago, help to provide reliable inference for land-bridge island biogeography studies of montane non-volant mammals. These analyses allow for species and population conservation and provide a basis for progressive future work.
Education:

BSc Zoology (Magna Cum Laude); University of Glasgow, Glasgow, Scotland; 1999.

M.S. Biology: Zoology; Eastern New Mexico University; December 2003.

PhD Biology; University of New Mexico; Dissertation topic: Phylogeography of the masked shrew species complex. In progress.

Professional presentations related to his thesis:


Winner Clark Hubbs Award


Wilks Award Finalist; presented at Plenary Session

Publications resulting from thesis:

Andrew shows Christy how to hold a woodrat.

Andrew and Jennifer surveying for endangered least chipmunks.