**Title:** **A Multi-Scale Behavioral Process Model for Wild Turkeys in Pennsylvania**

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**Abstract** Many ecological processes are hierarchical, where one process is dependent on previous events. For example, an individual’s home range is constrained by the population’s geographic range, and their selection of high-use areas is limited to what is available within their home range. Concurrently, conditions within the home range, or habitat preferences, may influence demographic processes. We developed a hierarchical model that integrates an individual movement model, a nest-site selection model, and a nest survival model. In addition, we can use latent variable selection to determine the spatial scale at which individuals are making decisions. We will apply this model to female wild turkeys (*Meleagris gallopavo silvestris*) in Pennsylvania USA. We captured 271 hens across four study areas and fitted each with a GPS-ACC transmitter. Because we do not have micro-scale data for the entire landscape, we will compare the ability of different aggregations of remotely-sensed data (30m, 90m, and 160m) to explain movement behavior. We used GPS-ACC data to identify initiation and termination of nesting behavior. We collected fine-scale vegetation data and remotely sensed data at the nest site and four alternative locations 100m away in each cardinal direction. We also determined if a nest had successfully fledged by examining the GPS-ACC data and ground truthing. We will compare effect sizes and odds ratios for the three processes to identify mismatches in the effect of habitat on daily movement, nest selection, and nest survival. This study will provide insights into the conditional processes that effect turkey movement and recruitment.