1003-X1-1173 **Ashraf F. EL-Houbi*** (aelhoubi@jcu.edu), Dept. of Mathematics and Computer Science, John Carroll University, 20700 North Park Blvd., University Hts, OH 44118. *Techniques For Resource Selection Studies Using Correlated Data.*

Resource selection has received a great deal of attention recently, especially in terms of estimation of resource selection functions for various wildlife species. The focus of the application and motivation of the research is on habitat choices made by wildlife. There are several statistical modeling techniques for resource selection. Common models in the resource selection literature, such as logistic regression, assume units are sampled randomly and independently. When individual animals relocate over time, it is assumed that the relocations are independent of one another; that is, they are not spatially or temporally correlated. This assumption may be violated, for example, when relocations are close to one another over an interval of time. The effect of correlation on inferences for resource selection has not been well studied. Over time with technology such as Geographic Information Systems (GIS) and Global Positioning Systems (GPS), more and more data violate these assumptions. My primary goal is to develop and apply new statistical techniques, particularly methods based on generalized linear mixed models (GLMM). I present the GLMM approach to model the correlation problem and to improve the ways in which biologists approach these kinds of animal behavior. (Received October 04, 2004)