

Division of Statistics
Master's Thesis Defense

**HABITAT GROUP CLUSTERING FROM LOGISTIC
REGRESSION MODEL COEFFICIENTS: EXTENSIONS
TO POLYCHOTOMOUS LOGISTIC REGRESSION**

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ABSTRACT

Extensions of habitat association models used to generate clusters of individual North Idaho landbird species were investigated in this thesis using polychotomous logistic regression (HAB/PO, PC/PO, and PC/NPO). Species preference for different habitats was considered by grouping species into several subgroups according to the generated Mahalanobis distance between their model coefficient vectors so that species in subgroups had similar habitat utilization pattern. The effect of intercepts was also studied by including or excluding them in Mahalanobis distance. The degree of consistency among clustering methods was evaluated with the Rand and the Jaccard statistics. In addition, the performance of the clustering methods from these extended models was investigated via simulation.