

EFFECTS OF SOCIOECONOMICS ON EUROPEAN STARLING (*STURNUS VULGARIS*)
ABUNDANCE IN BALTIMORE, MARYLAND

Chandler Boebel Denison

Dr. Charles H. Nilon, Thesis Supervisor

ABSTRACT

This study predicted avian species using the social area analysis approach, and census tract block group variables. By using European Starlings (*Sturnus vulgaris*) as a focal species, I wished to determine what socioeconomic variables best predicted their abundance in Baltimore City, Maryland. During May through June 2005 – 2007, birds were counted at 132 bird census points in Baltimore City. Data was gathered from the 2000 United States census tract block groups that contained these bird census points. Socioeconomic variables from the census tract block groups were used in a principal components analysis (PCA) to reduce the number of correlated variables into a smaller number of uncorrelated variables. Regression was used to predict the probability of detection for starling abundance within those census tract block groups. The regression revealed a very complicated relationship between percent of the population that is black, with a bachelor's degree or higher, families with only a female in the household and children, and median year housing unit built. These variables were the best predictors of starling abundance in residential census tract block groups. Future research can apply this principle to other species of birds as well, to create a uniform method of predicting avian species in cities that can be collated and compared among other metropolitan areas.