

ROBUST DESIGN SURVIVAL ANALYSIS OF A MIGRANT SONGBIRD BREEDING IN THE SOUTHERN APPLACHIANS, THE BLACK-THROATED BLUE

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Abstract: Our study uses a full-likelihood robust design mark-resight approach to investigate survival rates as well as immigration and emigration rates for one of the southernmost breeding populations of Black-throated Blue Warbler (*Setophaga caerulescens*). Our work increases understanding of avian population dynamics in this region; a geographic area where many species of migrant birds face declines. Moreover, our resulting estimates of population vital rates for this migratory songbird will aid in conservation planning. All together, our research aims to investigate applied questions regarding the population dynamics of this species in a geographic area where it has faced recent and continuing declines.

URBAN FORAGING IMPACTS ON FECAL CORTICOSTERONE METABOLITES IN WHITE IBIS (*EUDOCIMUS ALBUS*)

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Abstract: White Ibis wading birds, a Florida species of special concern, have recently become abundant in urban Palm Beach County, Florida (PBC). Ibis flocks are present daily at urban parks, where many ibis are habituated to people and accept consistent poor-quality supplemental food (e.g., white bread). Ibis in urban areas may experience increased stress, as the birds congregate at high densities and interact regularly with other wildlife, domestic animals, and humans. Ibis may encounter novel pathogens (via other birds and environmental contamination) and novel stressors (e.g., altered predator

communities, human interaction, and noise). If ibis successfully adapt to these novel stressors, they may benefit from use of urban habitats. Conversely, ibis may experience increased and chronic stress. Chronic stress may negatively impact immune function and overall health, with implications for ibis conservation and for pathogen transmission between ibis, other wildlife, and people. Birds release the hormone corticosterone in response to stress, and corticosterone is metabolized and excreted in feces. Higher levels of fecal corticosterone metabolites indicate more frequent exposure to stressors or increased long-term corticosterone release, indicative of chronic stress. Ibis flocks at PBC sites will be chosen based on flock level of habituation to humans, such that flocks will demonstrate low, medium, and high habituation (based on ibis tolerance of human presence and response to food handouts). Fecal samples will be collected from 10–15 individuals in each ibis flock, and samples will be analyzed with a radioimmunoassay kit previously validated for detection of corticosterone metabolites in White Ibis feces. Site- and flock-specific data relevant to stress (i.e., microclimate, size of ibis flock, number of other species present, number of people present) will be recorded, and correlations will be explored between those parameters and fecal corticosterone levels to determine if certain urban habitat features are associated with increased ibis stress. Effective conservation and management of urban birds, including White Ibis, depends on understanding how features of urban habitats affect avian health, including avian stress.