

EFFECTS OF FOREST FRAGMENTATION ON REPRODUCTIVE EFFORT AND
PRODUCTIVITY OF INDIGO BUNTINGS (*PASSERINA CYANEA*)

Dana Morris

Dr. John Faaborg, Dissertation Supervisor

ABSTRACT

Forest fragmentation creates edge habitat that attracts nest predators that lower reproductive success and force birds to renest. To determine if predation-induced renesting causes a decline in condition of females and reduces productivity and offspring quality, I measured maternal condition and reproductive output of Indigo Buntings breeding in a fragmented and a contiguously forested landscape in Missouri. Renesting females had lower body condition than those that nested once successfully. As maternal condition declined with nesting attempt, stress hormone levels increased, suggesting poor-conditioned females lack the energetic reserves to meet increased demands. Additionally, females in poor condition produced small clutches and poor-conditioned nestlings. A higher proportion of nests containing all-female offspring indicates a bias in production of the smaller, less profitable sex in the fragmented landscape. These results suggest that increased reproductive effort associated with renesting imposes costs to breeding females and decreases their ability to invest in high quality offspring.