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Title: Assessment of Potential Relationships Between Microclimate Variables Measured Within A Forest Patch And The Presence Of Interior Forest Birds

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ABSTRACT

Research was conducted over three field seasons in isolated eastern deciduous forest patches of three different sizes (~10, ~90, and ~300 hectares) in Loudoun and Prince William counties in Virginia, to determine if there was a relationship between microclimate variables, temperature and photosynthetically active radiation (PAR), the presence of interior forest birds, and forest patch size. The results of this study indicate that microclimate variables, temperature, and photosynthetically active radiation (PAR), generally decreased from the edge to the interior of the forest patch. The number of birds observed held fairly constant from the edge to the interior of the forest patch, while the number of species observed increased from the edge to the interior of the forest patch. The number birds observed was significantly related to PAR in the ~10 hectare forest patch and to distance from the edge in the ~90 forest patch. The number birds observed was not significantly related to any of the variables measured in the ~300 hectare forest patch. When data from all three patches were combined, the Wood Thrush, which was the most frequently observed species, was statistically linked to

distance from the forest edge with the number of Wood Thrush observed decreasing with distance from the forest edge. Overall, the number of birds seen per day per location, the number of species of birds seen per day per location, and the number of forest-interior species increased with increasing forest patch size. Policy makers should be aware of these results when determining minimum remnant patch size when allowing forest fragmentation.