**The impacts of climate change, habitat alterations, human disturbance, and biotic interactions on Wood Thrush populations**

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Climate change (temperature, precipitation, acid rain), habitat alterations (forest fragmentation, fire), human disturbance (road, urban density), and biotic interactions (nest predation and brood parasitism) influence the distribution of wood thrush, but their relative influences are not fully understood. We have 2764 study sites in total based on the Breeding Bird Survey (BBS). Our research questions are which climatic, environmental, and biotic variables influence the presence/absence, abundance, and trends of wood thrush. We analyzed wood thrush occurrence, abundance, and trends using logistic and linear regression models, classification and regression trees, and boosted regression trees. Geography explained 59% of the variation in the occurrence of wood thrush, such that wood thrush is found in eastern United States and southeastern Canada. The important predictor variables on explaining the abundance of wood thrush are vegetation, acid rain, and spring temperature, reflecting wood thrush as forest-dwelling Neotropical migrant and impacted by the acid rain in late 19th century. The model describing trends of wood thrush explained very little variation (19%) by abiotic, biotic, and climatic variables in the breeding region. This suggests that the declines in wood thrush may be attributed to environmental stressors in their wintering range, such as tropical deforestation. Our findings suggest the abundance of wood thrush within the BBS range is largely dependent on the vegetation in the breeding region, but their trends may be mainly determined by variables in their wintering grounds. The results of our study can also be applied to other Neotropical migrants for conservation purposes.