PhD Dissertation Defense

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Defense Date: June 11, 2014

Title: The Influence of Migratory Connectivity and Seasonal Interactions on Individual- and Population-Level Dynamics of a Long Distance Migratory Songbird

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ABSTRACT

Determining the factors that influence population dynamics of migratory animals is complex in part because of the large spatial scales that these species occupy annually. The strength of migratory connectivity, the geographic link between breeding and non-breeding populations, may influence the way populations respond to selective pressures and influence how we conserve and protect such species. Furthermore, periods of the annual cycle interact and events during one period may affect subsequent stages of the life cycle. Using archival light-level geolocators, I examined the degree of migratory connectivity and how carry-over effects influence individuals and the population growth rate of the Ovenbird (*Seiurus aurocapilla*) a long distance Neotropical migratory songbird. Ovenbirds exhibit strong migratory connectivity at broad spatial scales but connectivity within sub-populations ranged from moderate to weak. I found evidence of a strong carry-over effect during spring but no interaction resulting from breeding season events during the fall. The presence of a strong carry-over effect in the spring was mediated via departure from the non-breeding grounds. Departure timing from the non-breeding and subsequent arrival to the breeding grounds influenced reproductive parameters at the individual level. As a result, early arriving individuals added significantly to the population while late arriving individuals did not. Indeed, the population growth rate decreased by 0.028 ± 0.003 for each day arrival to the breeding grounds was delayed. Overall, my findings suggest that seasonal interactions in the form of carry-over effects play a significant role in shaping individual and population-level dynamics of a migratory songbird. These findings highlight the importance of considering the entire annual cycle of migratory animals when attempting to determine processes that regulate or limit migratory populations.