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Evaluating the role of prealternate moult in carry-over effects from overwintering to migration for Neotropical migratory songbirds.

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Migratory songbirds that breed in temperate North America and overwinter in the Neotropics have drastically declined over the past 50 years. Our poor understanding of the annual life cycle for most species, particularly during the overwintering period, hampers efforts to reverse this trend. Yet, understanding the conditions experienced by migratory birds during winter and how these conditions can carry over to shape success during spring migration and the breeding season is crucial for understanding population declines. Our objectives are to evaluate 1) how the quality of neotropical overwintering habitat influences moult, the vital process of replacing feathers, and 2) if the timing and intensity of moult carry over to influence the timing of spring migration. In winter 2023, we studied six songbird species overwintering in Jamaica in both high-quality mangrove habitat and low-quality logwood habitat. We captured individuals throughout the season to document the timing and intensity of their winter moult, then used radio-telemetry tags and a global network of automated receiving towers (The Motus Network) to track spring migration timing. Preliminary results indicate the focal species exhibited substantial intra- and inter-specific variation in their winter moult patterns. This research will fill a critical knowledge gap in an understudied period of the annual cycle for Neotropical migratory songbirds that moult on the overwintering grounds. Ultimately, we aim to determine whether winter moult limits these populations within their annual cycle.