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FEATURE ARTICLES

NONBREEDING HABITAT SELECTION AND FORAGING BEHAVIOR OF THE BLACK-THROATED GREEN WARBLER COMPLEX IN SOUTHEASTERN MEXICO¹

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Abstract. We studied the ecological distribution and foraging behavior of three species in the Black-throated Green Warbler (*Dendroica virens*) species group in the Eastern Highlands of Chiapas, Mexico. The three species, Black-throated Green, Hermit (*D. occidentalis*) and Townsend's (*D. townsendi*) Warblers are largely allopatric on the breeding grounds and variably sympatric during the winter. We surveyed the composition of 166 mixed-species flocks and recorded habitat variables associated with the flock location along an elevational transect. We found that Black-throated Green and Townsend's Warblers segregated by altitude, whereas Hermit Warbler overlapped extensively with both other species. Even though Townsend's and Hermit Warblers co-occurred commonly in the same flocks, the latter showed strong selective use of pine trees and the former showed weaker selectivity of oak trees. Black-throated Green Warbler showed no tree-type selection. The combined differences in elevational distribution and tree-type use resulted in very low ecological overlap for the three species. The Black-throated Green Warbler was the most distinct in its foraging behavior, occurring more often in the outer and upper branches of trees, and using hanging, aerial, and hovering maneuvers more than its congeners. In addition, it showed a higher movement frequency and a lower rate of between-branch flights. The Black-throated Green Warbler also is the most morphologically distinct as a result of its overall smaller body size, which is consistent for the trend towards larger body size in more conifer-specialized species in this genus. We propose that as new breeding populations were founded, and speciation occurred, individuals of the more derived species occupied decreasingly productive winter habitats.

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