

GEOGRAPHY OF SPRING LANDBIRD MIGRATION THROUGH RIPARIAN HABITATS IN SOUTHWESTERN NORTH AMERICA

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Abstract. Migration stopover resources, particularly riparian habitats, are critically important to landbirds migrating across the arid southwestern region of North America. To explore the effects of species biogeography and habitat affinity on spring migration patterns, we synthesized existing bird abundance and capture data collected in riparian habitats of the borderlands region of the U.S. and Mexico. We determined the importance of geographic factors (longitude and latitude) in explaining variation in abundances and capture rates of 32 long-distance and three short-distance migrant species. Abundances and capture rates of 13 and 11 species, respectively, increased with increasing longitude, and four species' abundance and capture rates decreased with increasing longitude. Riparian associates were more abundant in western sites than nonriparian species; their abundance patterns were only weakly influenced by species biogeography. In contrast, biogeography did influence abundance patterns of nonriparian birds, suggesting that they choose the shortest, most direct route between wintering and breeding areas. We hypothesize that riparian obligate birds may, to some degree, adjust their migration routes to maximize time spent in high-quality riparian zones, but they are able to find suitable habitat opportunistically when crossing more hostile landscapes. In contrast, nonriparian birds adhere more closely to a hierarchical model in which the migratory route is determined by biogeographic constraints. Conservation of riparian habitats is necessary to meet future habitat stopover requirements of many western Neotropical migrant birds. We advocate a coordinated research effort to further elucidate patterns of distribution and habitat use so that conservation activities can be focused effectively.

Key words: desert southwest, geography, Nearctic-Neotropical migrants, riparian habitat, spring migration, stopover sites.