

FEATURE ARTICLES

NEST-SITE SELECTION PATTERNS AND THE INFLUENCE OF VEGETATION ON  
NEST SURVIVAL OF MIXED-GRASS PRAIRIE PASSERINES

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*Abstract.* Identification of habitat features influencing reproduction and survival are essential for the management and long-term viability of grassland bird populations. I quantified vegetation structure at nests and random sites in southern Saskatchewan, Canada, to determine which microhabitat features are important in nest-site selection by Sprague's Pipit (*Anthus spragueii*), Savannah Sparrow (*Passerculus sandwichensis*), Baird's Sparrow (*Ammodramus bairdii*), Chestnut-collared Longspur (*Calcarius ornatus*), and Western Meadowlark (*Sturnella neglecta*). In addition, I related microhabitat features to nest survival to determine whether predation might influence their choice of nest sites. Grassland passerines exhibited nonrandom nest-placement patterns and built their nests in sites that were characterized by a greater density of dead vegetation within 30 cm of the ground, increased amounts of litter, and reduced coverage of bare ground. In addition, each species nested in taller vegetation than that found at random sites. However, nests were partitioned along a vegetation gradient ranging from relatively short and sparse (e.g., Chestnut-collared Longspur) to relatively tall and dense (e.g., Western Meadowlark). Nest survival varied with time-specific variables (nest age and date) and year, with nest-site vegetation explaining additional variation not accounted for by these effects. However, vegetation effects were highly variable compared to age effects. Diverse predator communities, spatial and temporal variation in selection pressures, and other constraints may account for inconsistent relationships between nest survival and nest-site characteristics for grassland passerines.

*Key words:* grassland songbirds, mixed-grass prairie, nest predation, nest-site selection, nest survival, vegetation structure.