

Perch height selection of grassland birds.—Zimmerman (Auk 88:591–612, 1971) and Wiens (Ecology 54:877–884, 1973) have suggested that most grassland bird species will usually select the highest perch available from which to sing. I observed this generalization to hold true for only 1 of 6 grassland-associated bird species in a study conducted from May 1973 to August 1974 in Kalamazoo County, Michigan.

The land used for the study consisted of a 56.7 ha alfalfa (*Medicago sativa*) field. A 30.7 ha study area was situated within the field so as to have a border of at least 55 m of alfalfa on all sides. It was then equally divided into three 10.24 ha subplots. Separating the 3 subplots from each other were buffer strips of 30 m. Each subplot was subsequently divided into a grid composed of 16 sections 80 m on a side. Grid intersections were marked with bricks painted white and countersunk into the ground.

During late June 1973 I added artificial perches to one subplot and, in December, I added identical perches to a second. The perches consisted of 2.5 × 2.5 cm pine stakes, 1.5 and 2.0 m tall and topped by a horizontal perch of 2.5 × 2.5 cm pine 30 cm long. The third subplot was not staked. No vegetation was as tall as the stakes. The greatest height reached by the alfalfa was approximately 0.5 m. In each case, 25 stakes (13 large and 12 small) were established in a pattern of alternating heights at grid intersections. Perch height selection was determined by recording each observed use of the perches during spot map censuses (Williams, Ecol. Monogr. 6:317–408, 1936).

Based on all species use (720 observations), no preference ($P > 0.05$) was indicated for either the high (2.0 m, 369 observations) or the low (1.5 m, 351 observations) perch structure (Table 1). Of 6 species for which there were sufficient data to conduct a chi-

TABLE I
PERCH HEIGHT SELECTION BY BIRDS IN AN ALFALFA FIELD

Species	Perch use (Number of observations)				Chi square value ^b
	1.5 M		2.0 M		
	Observed	Expected ^a	Observed	Expected ^a	
American Kestrel (<i>Falco sparverius</i>)	8	9.6	12	10.4	0.51
Eastern Meadowlark (<i>Sturnella magna</i>)	6	20.4	34	19.6	20.73*
Red-winged Blackbird (<i>Agelaius phoeniceus</i>)	154	157.0	180	177.0	0.11
Savannah Sparrow (<i>Passerculus sandwichensis</i>)	132	120.5	114	125.5	2.15
Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	23	13.0	3	13.0	15.38*
Vesper Sparrow (<i>Pooecetes gramineus</i>)	28	27.0	26	27.0	0.07
Preference by all species	351	345.6	369	374.4	0.16

^a Expected ratios based on the frequency of high and low perches within territories of the individual species.

^b Chi-square analysis, testing the hypothesis ($\alpha = 0.05$) that there exists no preference for a specific perch height; tested with one degree of freedom.

* Significant, ($P < 0.05$).

square test (expected ratios based on the frequency of high and low perches within the territories of the individual species), only 2 species, the Grasshopper Sparrow and the Eastern Meadowlark, showed a specific preference for 1 of the 2 sizes.

The Grasshopper Sparrow, according to Smith (U.S. Natl. Mus. Bull. 237, Part 2, 1968) and Wiens (Ecology 54:877-884, 1973) will normally select the highest perch available. The Grasshopper Sparrow, in this study, used ($P < 0.05$) the lower perches. Furthermore, in every territory established by this species, both large and small structures were present and therefore available for use.

Only the Eastern Meadowlark exemplified the generalization that higher perches will be used instead of lower ones. Of a total of 40 observations, the higher perches were selected ($P < 0.05$) 34 times.

Also using the perches but recorded 4 or fewer times were Mourning Dove (*Zenaida macroura*), Short-eared Owl (*Asio flammeus*), Eastern Kingbird (*Tyrannus tyrannus*), Barn Swallow (*Hirundo rustica*), American Robin (*Turdus migratorius*), Starling (*Sturnus vulgaris*), Bobolink (*Dolichonyx oryzivorus*), and Brown-headed Cowbird (*Molothrus ater*).

The general conclusion to be drawn appears to be that the above grassland-associated birds will use any elevated perch structure, at least up to 2 m tall. Some species may exhibit more specific tendencies, possibly preferring the highest available perch or preferring perches of a certain height range above the vegetation.

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