

Preliminary Avian Habitat and Animal Performance Response to an Integrated Forage/Biofuels Management System in the Mid-south

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Abstract: Habitat loss, habitat degradation, and agricultural intensification are primary factors contributing to the decline of many birds that use grasslands, including the endangered grasshopper sparrow and the northern bobwhite. Current grazing practices in the Mid-South focus on getting high yields from dense, monotypic stands of non-native forages, which provide no bare ground, little vertical structure, and poor plant species richness. Few studies have examined the vegetative response of native warm-season forages to various grazing systems with respect to bird habitat, and none have been conducted in the Mid-South. We measured vegetative, invertebrate, and animal performance response to two grazing strategies on three native warm-season grass forages at three Research and Education Centers across Tennessee, May–July 2010. Our grazing strategies were full-season, low-density grazing (4–5 head/acre; approximately 100 days) and short-duration, intensive grazing (6–8 head/acre; approximately 28 days). Forages used were eastern Gama grass, switch grass, and a mixture of big bluestem and Indian grass. Plant species richness was similar between pastures in full-season, low-density grazing (35 species) and short-season, intensive grazing (36 species). Short-season, intensively-grazed switch grass pastures had the highest coverage of undesirable grasses such as dallis grass (53%), and full-season, low-density grazed eastern Gama grass had the lowest coverage (7%). Neither grazing strategy promoted desirable seed-producing forbs (<10% coverage). Steers grazed on big bluestem/Indian grass pastures had higher average daily gain in both short season (2.6 lb/day) and full season (2.2 lbs/day) systems than switch grass (2.2 short season, 1.7 full season lbs/day) and eastern Gama grass (1.7 short season, 1.1 full season lbs/day). First year results indicate full season, low-density grazing of big bluestem/Indian grass pastures may create more structurally diverse vegetation than short-duration, intensive grazing, particularly during brood-rearing periods, and all three forages produced excellent average daily gain for steers.

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