Vegetation and Breeding Bird Assemblages in Grazed and Ungrazed Riparian Habitats in Southeastern Kansas

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ABSTRACT

Research has shown that cattle grazing in riparian areas can alter vegetation structure and composition, and avian species composition. However, much of this research has been conducted in western riparian systems. There is a paucity of information concerning the effects of cattle grazing or the benefits of cattle exclusion on riparian habitats in the eastern Great Plains. In an effort to address this issue, I examined vegetation structure and composition as well as avian relative abundance, species richness, and species diversity in grazed and recently fenced closed canopy riparian woodlands in southeastern Kansas. To further investigate avian assemblages responses to cattle exclusion, I compared relative abundances of nesting guilds between the grazed and fenced riparian areas.

Total understory vegetation cover, grass cover, and litter cover was significantly higher ($P<0.10$) on the fenced study sites while bare ground was significantly higher on the grazed study sites. Height of herbaceous vegetation was greater ($P<0.10$) on the fenced study sites, however, there was a significant year by treatment interaction. Total species richness was slightly higher in the grazed study sites when compared to the fenced study sites.

Total avian abundance, species richness, and species diversity was similar ($P>0.10$) between the grazed and fenced study sites. The brown-headed cowbird (Molothrus ater) was more abundant in the grazed study sites ($P<0.10$). Grazed and fenced study sites exhibited high species overlap, indicated by a high Horn's index of community similarity value, during both years of the study. The majority of the species (56%) recorded belonged to the cavity or shrub nesting guild. Abundance of the ground nesting guild was higher ($P<0.10$) in the grazed study sites, but this was likely an artifact of the data since the only two species belonging to the guild were rare in occurrence, thus an effect of sample size.