

Grassland bird nesting success and hay field management at Camp Dodge, Johnston, Iowa

Report to the Iowa Ornithologists' Union Projects Committee

Tyler M. Harms and Cathy Mabry McMullen

Iowa State University

Project description

Agriculture and urban development have drastically reduced the amount of native grassland habitats across the Midwestern United States resulting in declines in grassland bird populations. Effective, science-based management of remaining grassland habitats is crucial to the conservation of grassland birds. This requires the evaluation of various grassland management practices (e.g., prescribed fire, mowing, haying) in regards to their impacts on vegetation characteristics and reproductive success of grassland birds.

We evaluated the impacts of mowing and haying on vegetation characteristics and grassland bird reproduction at Camp Dodge Army Base (hereafter Camp Dodge) located in Johnston, Iowa. Camp Dodge is approximately 1,780 ha with approximately 1,335 ha in a mosaic of grassland fields in various stages succession as well as riparian areas, early-successional forest, and field rows consisting primarily of shrubs and small trees. Our study was conducted on 14 fields (>15 ha) of restored grassland habitats. We conducted three transect surveys per field for ten grassland-associated bird species from May-August 2013. Our focal species included Eastern Kingbird (*Tyrannus tyrannus*), Bell's Vireo (*Vireo bellii*), Sedge Wren (*Cistothorus platensis*), Dickcissel (*Spiza americana*), Common Yellowthroat (*Geothlypis trichas*), Field Sparrow (*Spizella pusilla*), Grasshopper Sparrow (*Ammodramus savannarum*), Henslow's Sparrow (*Ammodramus henslowii*), Eastern Meadowlark (*Sturnella magna*), and Bobolink (*Dolichonyx oryzivorus*). We recorded all individual birds of each focal species observed on transects as well as any evidence of breeding (e.g., nest building, presence of fledglings, etc.) for all focal species. We also assessed vegetation characteristics in each field every 200 m along bird survey transects. We conducted vegetation assessments in May while birds were actively constructing nests and before any mowing or haying occurred on fields.

Project goals

The goals of our project were:

- 1) Document breeding territories, and when possible, nests and fledglings in 2013 prior to the change in the timing of mowing.
- 2) Evaluate the influence of vegetation characteristics in response to mowing and haying on the abundance of grassland bird species.
- 3) Obtain baseline information needed to support an application for an Audubon Important Bird Area designation on Camp Dodge.

Project impact

Camp Dodge staff are re-evaluating their management of grasslands and hay fields on the base. Therefore, our project has important implications because Camp Dodge staff will use the information to evaluate use of the fields by grassland birds and alter their mowing schedules to allow grassland bird nesting in the fields. This project also provided valuable information on the impacts of mowing and haying on vegetation characteristics and, thus, impacts on grassland birds.

Using various modeling approaches, we've obtained preliminary abundance estimates for six grassland bird species of conservation concern on Camp Dodge. Our estimates range from 85 (± 64) Sedge Wrens to 503 (± 298) Eastern Meadowlarks on the base.

We plan to continue this project in 2014, repeating the field methods described above. This will add to our existing data and allow us to obtain more precise abundance estimates. In addition, it allows us to further document breeding activity of grassland birds on the base. Knowing the impacts of haying on grassland bird populations will better allow us to assess the utility of haying and mowing as a grassland management practice in Iowa.