

ANNUAL REPORT

ANNUAL UPDATE OF STATE WILDLIFE GRANT: FEB. 24, 2009

PROJECT NUMBER: T-36-P-1

PROJECT TITLE: Interrelationships of grassland birds with sand prairie plants and insects.

PURPOSE: Grassland bird habitat is typically described only in structural terms such as height and density of vegetation, amount of bare ground, and extent of woody vegetation. At the same time, prairie restoration efforts, which often focus on high native plant species diversity, are in need of appropriate planting mixtures for grassland birds. In addition, little is known of links, if any, between grassland bird abundance and/or reproductive success and prairie insect diversity and abundance. This research will examine relationships among grassland birds, plants, and insects at a large remnant sand prairie to develop guidelines for management and restoration.

Update for progress to date:

The majority of the funding for this project supports a graduate student, Daniel Elbert, at UIUC. In 2008, Molly McNicoll, a graduate student at UIUC, was hired to conduct vegetation surveys and Daniel Murphy, an undergraduate student at Loras College, was hired to assist with data collection for summer 2008. Other expenditures included travel for Elbert to attend the Ecological Society of America annual conference in Milwaukee, WI. A spread sheet with specific expenditure details is attached. Matching funds were contributed by in-kind services by INHS Lost Mound Field Station biologist Dan Wenny. He worked closely with D. Elbert on all aspects of the field work, training field assistant, coordinating volunteers, and archiving data.

Field work proceeded mostly according to plan. In 2008, point counts were conducted to estimate bird abundance. Vegetation structure and plant community composition were measured at all point count locations. Elbert conducted insect sampling at a subset of the points. Elbert is working on a thesis project examining distribution patterns of Eastern and Western meadowlarks at Lost Mound and how the two species utilize habitat there, from SWG data collected in 2007 and 2008. Preliminary data analysis indicates that during both 2007 and 2008 the meadowlark species segregated across the site and this pattern was associated with habitat variables such as vegetation height and density, plant species composition, and extent of woody vegetation. In both years, Western meadowlarks tended to associate with study plots having shorter and sparser grass cover, with a shallower litter layer and fewer shrubs and trees than study plots that Eastern meadowlarks tended to associate with. This suggests that management plans at Lost Mound seeking to benefit many species of grassland birds need to consider a multi-user approach that maintains an array of habitat patches. Elbert continues to work on sorting and classifying insect samples, focusing mainly on Orthoptera. Thus far, 24 species of Orthoptera have been identified at the site (see accompanying species list). The job description for a summer field assistant for 2009 has been posted. Elbert is taking the lead on identifying suitable candidates from the group of applicants.

Because of snowy conditions this winter, woody encroachment may not be able to be cleared from several plots as originally planned.

Lost Mound Orthoptera

Family	SubFamily	Genus	Species
Acrididae	Melanoplinae	Melanoplus	angustipennis
Acrididae	Gomphocerinae	Mermiria	bivittata
Acrididae	Oedipodinae	Spharagemon	collare
Acrididae	Gomphocerinae	Amphitornus	coloradus
Acrididae	Melanoplinae	Melanoplus	dawsoni
Acrididae	Gomphocerinae	Ageneotettix	deorum
Acrididae	Melanoplinae	Melanoplus	differentialis
Acrididae	Melanoplinae	Melanoplus	femurrubrum
Acrididae	Oedipodinae	Psinidia	fenestralis
Acrididae	Melanoplinae	Melanoplus	flavidus
Acrididae	Cyrtacanthacridinae	Schistocerca	lineata
Acrididae	Melanoplinae	Phoetaliotes	nebrascensis
Acrididae	Gomphocerinae	Opeia	obscura
Acrididae	Gomphocerinae	Orphulella	pelidna
Acrididae	Melanoplinae	Melanoplus	sanguinipes sanguinipes
Acrididae	Gomphocerinae	Eritettix	simplex
Acrididae	Gomphocerinae	Orphulella	speciosa
Acrididae	Melanoplinae	Campylacantha	olivacea
Acrididae	Melanoplinae	Melanoplus	gladstoni
Acrididae	Melanoplinae	Melanoplus	fasciatus
Acrididae	Oedipodinae	Encoptolophus	costalis
Gryllacrididae	rhaphidophorinae	?	?
Gryllidae	oecanthinae	?	?
Gryllidae	?	?	?
Tettigoniidae	?	?	?