

This data package was produced by researchers working on the Shortgrass Steppe Long Term Ecological Research Project. This project was supported by National Science Foundation from 1982-2014. This data package includes one or more tab-delimited data tables, tab-delimited files (named _var) that denote header definitions and data types for each column, and detailed metadata within an Ecological Metadata Language document (i.e. XML). Example image files of plots, digital datasheets, or schematics of the experimental design may also be included when applicable.

Background information on the SGS-LTER project is contained in related series of objects within the Digital Collections of Colorado and the Colorado State University archives. Together data packages and other background information, including items such as images, proposals, and reports contribute to a comprehensive SGS-LTER collection.

The data tables and associated EML documents represent components of a PASTA (Provenance Aware Synthesis and Tracking Architecture) congruent LTER data package, which may be discovered and accessed through secondary repositories serving specific ecosystem science domains (e.g. LTER Network Information System, DataONE, or The Knowledge Network for BioComplexity).

The following information was obtained from the SGS-LTER Field Crew Manual:

ARS#118 Arthropods on the Small Mammal Trapping Webs

Principal Investigator(s): Paul Stapp

Study Objectives: Track changes in relative abundance and species diversity of arthropods on small mammal trapping webs to estimate changes in prey abundance

What to know before you start sampling

- ✓ ***You can identify arthropods to family and tenebrionidae to species***
- ✓ ***You are familiar with the study site and grid layout***
- ✓ ***You have field reference sheets for identification of common arthropods and lists species codes for recording data correctly (these should be in the filing cabinet or ask Mark)***

Study Area Locations and Design: The arthropod trapping grids are on the southeast side of the small mammal trapping webs. The small mammal trapping webs are located in quarter sections in three shrubland sites (13NW, 13SW, and 24NE) three upland grassland sites (25NE, 26NW, and 27NE). Each web must be recorded with the section number and quarter-section direction on the data sheet.

Sampling Protocol:

Timetable: One trapping session in May, July, and September.

General Methods: Live pitfall trapping of terrestrial arthropods

Equipment required:

Pitfall traps (20), repair materials	PVC grasshopper sampling hoops
Clipboard and pencils	Long forceps
Film canisters (for unknowns)	Insect reference collection

SPECIFIC METHODS:

1. A small pitfall trap grid was established on all six (three shrub, grassland) small mammal live-trapping webs. Grids consist of 20 pitfalls (four columns A-D by five rows 1-5), with 10 m between traps. Grids are located 5 m south of web trapline 31-40. Trap A1 is south of trap 36, B1 south of 37, etc. Hoops will be placed in three transects with three hoops each spaced 20 m apart. Hoop transects are located 5 m to the east and west of the grid (parallel to columns at A1, 3, 5 and D1, 3, 5) and in the center of the grid (between B1-C1, B3-C3, and B5-C5).
2. Repair traps as necessary before beginning sampling and lay out grasshopper hoops. Traps will be left open for four consecutive days. Record the numbers of each group captured, using the most specific taxonomic grouping possible (Family or Genus-Species). All captured individuals will be marked and released. Bring any unknown specimens back to lab for identification. Data will be compared to continuing pitfall sampling along Catena Transect in June and August.
3. Using a surveyors lath or net handle, flush and count the number of grasshoppers flushed from within each hoop. Record the number of grasshoppers in records A1, A3, A5, B1, B3, B5, C1, C3, and C5. If Zero grasshoppers are in the hoop be sure the record a 0. All cells that don't contain data in the hoop column of the datasheet should receive a dash line.

QAQC Instructions: Fill in all the information required on each and every data sheet and full web code, including pasture number and quarter-section direction. Don't forget to record the number of grasshoppers within each hoop. Please keep the traps and hoops in the field in good repair. Identify unknown arthropods upon returning to the station. Be sure to use the provided codes to records individuals of species. If you are recording an unknown be sure to write it down in the correct family or order column on the data sheet. Record the scientific and common names. Make sure that people can read your hand-writing and collate the data sheets by trapping date. Double check that all traps were checked, animals released, and traps re-sealed before you leave the site.