

Information on Data Collection and Organization from the SGS-LTER

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 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, and items such as images, proposals, and reports contribute to a comprehensive SGS-LTER collection. The data tables and associated EML documents represent components of the LTER data package, which may be discovered and accessed through secondary repositories serving specific ecosystem science domains (e.g. PASTA (LTER Network Repository), DataONE, or The Knowledge Network for BioComplexity).

The following information is copied from the SGS-LTER field protocols to provide specific details on how these data were collected.

Field Protocol for BOGR Seed Harvest

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Objective: to study the effects of soil texture and grazing treatments on seed production of *Boutelous gracilis*.

Equipment:

Rubber bands
Bucket
Pencil and Sharpies
Clippers
Pre-labeled bags to collect samples (supplied by the Sample Prep Lab, Judy Hendryx)
Meter stick
A meter long piece of string or rope with a nail tied on the end
Maps of study sites and blocks (filed at the SGS-LTER field station and data management office)
32 random numbers generated between 1 and 5 with one decimal place (for example 1.3).
Eight numbers are used to pace out plants along one transect. There are four transects.
10 randomly choose ten plants to be clipped for biomass. Clip at the same locations at each site.

Procedures:

When to conduct the seed harvest:

Culms with seed heads are harvested from Bogr plants once a year in ten different sites. At the end of August, the field researcher(s) must check the Bogr plants at each study site for phenological stages of seed dispersal and senescence. When over 75% of the seed heads appear tanned-out and curled back the culms from that site are ready to be harvested.

Where and how to conduct the seed harvest:

There are ten study sites from which Bogr seed heads are harvested (Sec 21N Grazed, Sec 21N Ungrazed (only when electric fence is maintained), Sec 24 Ridge, Sec 25SE, ESA (in the Control Block), GS (Grazing strip between Sec 23 and Sec 24), HG (Heavily Grazed area in Sec 23 to the west of the Grazing Strip), Met Station UNGZ (ungrazed within the enclosure), Met Station GZ (grazed to the west of the enclosure), and O.C. (within the Owl Creek enclosure).

There are 3 blocks at each site. The corners are marked with orange plates and tall pin flags. Each block contains 4 transects that also are marked by pin flags. The field researcher(s) paces off 8 plants along each transect using the random numbers that were generated. (10 sites x 3 blocks x 4 transects x 8 plants) = 960 samples.

Before you head out to the field, mark which ten plants are to be clipped for biomass on the data sheets. Start at the first transect and pace off to the first Bogr plant location. Measure the basal dimensions of the Bogr plant in centimeters. (Measure first the length and then the width, which is perpendicular to the length.) Clip the inflorescences(s) at the crown of the plant and put them in the correct sample bag. Fold the top of the bag over neatly and firmly as not to loose any plant material. Record the number of culms with inflorescences that were harvested. Record whether the plant was located within Oppo cactus or not. If you reach a plant that needs to be clipped for biomass, record the number of inflorescences. Clip the culms and the rest of the vegetation down to the crown of the plant. Remove old, dead litter before placing the sample in the bag. Mark the bag "CLIP" to indicate that it contains both culms and basal vegetation of the Bogr plant.

If you pace to a plant location and have trouble locating a Bogr plant with any inflorescence, take the meter long string or rope and rotate it around the plant location point. If there are no Bogr plants within that circular area, then record NO DATA on the data sheet. Pace to the next plant location along the transect.