Konza Prairie LTER

Data Catalog

2024

Version 2024.01

INTRODUCTION

This catalog presents the archived documentation files for the datasets currently in the Konza Prairie LTER site database. These datasets are affiliated with LTER scientists associated with the Konza Prairie LTER research program from 1981 to current. The purpose of this catalog is to assist scientists in the analysis and synthesis of this database. In addition to this catalog, a detailed methods manual documents the procedures used in collecting these data sets.

The design of the current Konza Prairie LTER database is straightforward. All data sets are stored in our mysql database, sever, and online. The database is divided into subgroups. The subgroups correspond to the research groups that have developed on Konza or represent the data set. They are: Abiotic, Consumer, GIS, Nutrient, Producer, and Other. The extension of the file name represents the year of the data set. For example, the data set associated with prairie precipitation for 1986 (data set code APT01), is found in the subgroup abiotic under the file name of apt011.86. Data sets that do not conform to this naming procedure are listed in the abstract section of their corresponding data set code description. For the most part, these data sets involve data that comes from other sources than LTER investigators (e.g. USGS flow data or NADP). The subgroup woody contains the files of the dataset code PWV01. The subgroup other is reserved for datasets that do not conform to the naming procedures (for now, datasets from the water supplementation experiment (WAT01) are here).

To have consistent format of LTER data files, most LTER data sets have the first 6 columns of each line organized as:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. Year		7-8	I2	
4. Month		9-10	I2	
5. Day		11-12	I2	
6. Watershed		13-16	A4	

Thus, each line has the data set code associated with it. Although, this was setup in the "days of computer cards" and it was important to have the data set code on each card, it is now useful to have this information in case of hardware failures (disk crashes, bad tapes, etc.) Under "Format" the letter "A" indicates alphabet so that, for example, A5 means 5 spaces for alphabet characters. The letter "I" indicates integer so that, for example, I2 means 2 spaces for integer characters. An "f" indicates decimal spaces so that f6.2 would mean 6 characters with a maximum of 2 decimal places. A "c" indicates comment so that c1 would mean one space for a comment character.

All quality control checks are managed by the principal investigator(s) associated with a data set. System backups are executed on a nightly basis on DAT 24 tape cartridges and twice a year on compact disks.

Data requests for data not available online simply require the following information:
1) Formal written request and a statement of intended use.
2) Approval of the investigator and/or the Konza Prairie LTER Principal Investigator.
3) Request must be filed with the Konza Prairie LTER information manager.
4) Release of data (following approval) should include a cover letter specifying that: The data are released for your use only and for the purposes outlined in your request.
5) Manuscripts using the data are to be provided to the Principal Investigator, LTER, Division of Biology, Ackert Hall, Kansas State University, Manhattan, KS 66506 so that he/she may notify the appropriate investigators.

6) Publicationof these data are allowed by the expressed permission of Konza Prairie LTER investigators named, who have primary responsibility for the data sets.
7) Acknowledgment should be made to recognize the contribution of data by Konza Prairie LTER. In addition, the format shown below is also to be included with the letter. Citation of a data set should use the following format: "Data from the Konza Prairie Biological Station were collected as part of the Konza Prairie LTER program (NSF grants DEB-1440484), Division of Biology, Kansas State University, Manhattan, KS. Data and supporting documentation are stored (Data Set Code(s)=__) in the Konza Prairie Biological Station LTER Data Bank." Additionally, specific investigators might be cited for their contributions to the paper.

SITE DESCRIPTION
CLIMATE SYNOPSIS:

Temperate mid-continental climate, yearly mean temperature is 13C with a range of extremes from 6 to 19C. The January mean temperature is -3²C (range -9 to 3C) and the July mean is 27C (range 20 to 33C). Annual precipitation is 835 mm of which about 75% occurs in the growing season. Mean snowfall for January is 150 mm with an annual total of 521 mm. Mean annual windspeed is 5 meters per second from the south.

NARRATIVE:

Tallgrass or bluestem prairie is one of the major ecosystem types of the conterminous United States (exceeded in area only by eastern deciduous forest). Undisturbed examples of tallgrass prairie are rare because this ecosystem type has been extensively converted to agroecosystems.

Konza Prairie is representative of the Flints Hills, a dissected upland with hard chert- and flint-bearing limestone layers. The ridges are usually flat with shallow, rocky soils, whereas the larger and wider valleys have deep permeable soils. The steep-sided hills are characterized by exposed Permian limestone and shale strata that prevented cultivation.

When acquired in the 1970's, the majority of Konza Prairie was dominated by native prairie species, especially big bluestem, Indian grass, little bluestem, and switchgrass. Lowland areas with deep soils now have patches of these and other tallgrasses that grow to 2 to 3 m by late summer. Gallery forests on lower Kings Creek are dominated by bur and chinquapin oaks with green ash, hackberry, elm, and black walnut often common. The KSU herbarium contains more than 450 species of vascular plants collected from Konza Prairie. Woody plants have been mapped according to species and size on some portions of the site. Species lists have also been developed for a number of animal groups including birds, mammals, reptiles, amphibians, and aquatic invertebrates.

Konza Prairie is managed to provide an array of burning and grazing (especially bison) treatments to facilitate research to evaluate the effects of fire and grazing on plant composition, primary production, consumer density and diversity, nutrient dynamics, soil chemistry, and hydrology (Fig. 1). This natural prairie also serves as a reference site from comparison to manipulated agricultural systems.

Fire started by both lightning and aboriginal man, influenced patterns and processes in the tallgrass prairie. To understand these effects, a series of spring burning treatments (primarily areas burned at 1, 2, 4, 10, and 20 year intervals) are maintained on watershed units. These experimental burns are conducted in April before the dominant warm-season grasses begin active growth. Treatment boundaries follow watershed divides to facilitate analysis of hydrologic and nutrient responses to fire and frequency of fire. An extensive soil water/ground water monitoring system has been installed by the USGS on one of these watersheds.

Bison were introduced into a fenced area of nearly 500 ha encompassing several different burn treatments in 1987. The area affected by bison will be enlarged to 1100 ha in 1991. Bison, free-ranging within the fenced area, are able to choose between burned and unburned prairie and among sites representing an array of topographic/physiographic conditions. Cattle grazing still occur sporadically on parts of Konza Prairie but not on the primary LTER research watersheds.

Table of Contents

Abiotic Data

Data Set Code--AET01

Title of Data Set: Konza prairie grass reference evapotranspiration

Abstract:

Estimated evapotranspiration from a hypothetical short grass with a height of 0.12 m, a surface resistance of 70 s m-1, and an albedo of 0.23 (no water stress)

Keywords that describe data set:

atmospheric processes, hydrologic processes, physiological processes, evapotranspiration, precipitation, respiration.

Date data commenced: 10/16/2000
Date data terminated: ongoing

Principle Investigator: Trisha Moore

RECORD TYPE 1: This record type contains daily total estimated evapotranspiration (AET011)

Data Format Specification:

Variable	Description	Format	Units
1. RecYear		I2	
2. RecMonth		I2	
3. RecDay		I2	
4. DailyET	Estimated Evapotranspiration	F5.1	
5. EstimET	Estimated Evapotranspiration	F5.1	

Data Set Code--AGW01

Title of Data Set: Long-term measurement of groundwater physical and chemical properties from wells on watershed N04D

Abstract:

In 1988 and 1990, the U.S. Geological Survey, Lawrence, KS, drilled 31 wells at 20 sites within the N04D watershed at the Konza Prairie Research Natural Area. The wells range in depth from about 2 to 13 meters, and are nested to include wells completed in alluvium/colluvium near the N04D drainage and in two Permian-aged limestone's. In 1997, Konza LTER drilled an additional 4 wells at 3 sites, that range in depth from about 12 m to 37 m. The sites comprise four transects running approximately east-west across the drainage, and occupy the lower one-quarter of the surface area of the watershed. The geology of the area is characterized by patchy, near-stream alluvium/colluvium which overlies bedrock that is composed of thin (1-2 meter) limestones alternating with thicker (2-4 meter) shales. Beginning in 1990, water levels were measured and water samples collected quarterly. Since 1991, water levels have been measured and water samples for inorganic chemical analysis have been collected every four to six weeks; sample collection is by bailing wells after removing 1-2 well volumes of groundwater. The groundwater is then filtered through 0.45μ membrane filters by gravity feed or using a peristaltic pump. One 250-mL LDPE bottle is filled with 250 mL of sample and 5 mL of concentrated HNO_3 for determination of major and minor cation concentrations. One 250-mL LDPE bottle is filled to the brim for anion determination by ion chromatography and alkalinity determination by titration with 0.02 N H_2SO_4. The bottles are stored on ice and later in a refrigerator.

Keywords that describe the data set:

water chemistry, dissolved nutrients, temperature, groundwater, low-temperature aqueous geochemistry, inorganic groundwater chemistry, chemical hydrogeology, geology, biogeochemistry.

Date data commenced: 01/19/1990
Date data terminated: ongoing

Principle Investigator: Gwendolyn Lee Macpherson

RECORD TYPE 1: Groundwater Chemistry and Physical Properties from Wells on N04D (AGW011)

Data Format Specification:

Variable   Units
1. DateCode
2. Rectype
3. Location
4. Trans

5. Plot
6. Geology
7. Recyear
8. WLDate (Water level date)
9. Elevation (Water Level Elevation)   m amsl
10. SWDate (Chemistry Water Sample Date)
11. Na1   mg/L
12. Na 2   ppm
13. K1   mg/L
14. K2   ppm
15. Li   ppm
16. NH4_N   mg/L
17. Ca1   mg/L
18. Ca2   ppm
19. Mg1   mg/L
20. Mg2   ppm
21. Sr   ppm
22. Ba   ppm
23. SO4   ppm
24. F   ppm
25. Cl   ppm
26. NO3_N   ppm
27. HPO4_P   ppm
28. Alkalinity   ppm as HCO3
29. pH1 (lab)
30. DDB (lab) pH at 13 °C
31. pH2 (field)
32. T (Temperature of field pH)   °C
33. Si1   mg/L
34. Si2   ppm
35. B   ppm
36. Conduct (Specific conductance, lab, at 20°C)   µS/cm

Codes used:

Well_loc

Name	Code Value
ow	observation well
1-4	Transects (1-4), the lowest number in nearest the concrete weir
1-6	Number unique to the well site (1 is nearest the steam; 3 is farthest from the stream on the east or northeast side. Well site numbers 4-6 are progressively further away from the stream on the west or southwest side of the stream.
Alpha chara.	Eis=Eiss Limestone Eis1=Lower Eiss Limestone Eis2=Upper Eiss Limestone Mor=Morril Limestone Al=Alluvium-colluvium.

RECORD TYPE 2: Locations of Groundwater Wells on Watershed N04D (AGW012)

Data Format Specification:

Variable	Units
1. Loc (Name of Location)	
2. Trans (Transect identity)	number
3. PlotID (Plot identity)	number
4. AbName (Abriage name of geology formation)	
5. FullName (Full name of geology formation)	
6. Elevation (Elevation of wells above sea level)	
7. Latitude (Latitude in geographic projection)	decimal degree
8. Longitude (Longitude in geographic projection)	decimal degree

Note: AGW012 Details and Data Geographic information for groundwater wells located on waterhed N04D

Data Set Code--AGW02

Title of Data Set: Measurement of groundwater physical and chemical properties from wells in contrasting land uses near Kings Creek

Abstract:

Wells were drilled in two sites on Konza Prairie Biological Station in April, 1993 approximately 100 m from Kings Creek. The two sites are located in a grassland and an agricultural area. The grassland site (K01A) is an old field that was planted with brome sometime prior to 1976. It has not been grazed for 25 years and is burned in spring every 1-2 years. The agricultural site is currently under a mix of cultivation and restoration plots. Historically, it was cultivated from sometime between 1939 and 1950 to the present. It is approximately 1 km downstream in an area geologically similar to K01A. The soil at both sites is mapped as Reading silt loam (fine, mixed, mesic Typic Arguidolls). Samples are taken monthly by PVC bailer following removal of 2 times the well volume. Samples are analyzed with same methods as used for LTER stream water chemistry.

Keywords that describe the data set:

groundwater, water chemistry, dissolved nutrients, organic and inorganic nitrogen and phosphorus, nitrate, ammonium, soluble reative phosphorus, dissolved organic carbon

Date data commenced: 05/17/1996
Date data terminated: ongoing

Principle Investigator: Walter Dodds

RECORD TYPE 1 (AGW021)

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. WellNumber	A1-A7, P1-P7	18-20	A3	
8. WellDepth		26-30	F4.1	ft
9. DepthToWater		32-36	F4.1	ft
10. NO_3	NO_3-N + NO_2-N	38-43	F6.1	ug/l
11. NH4	Ammonium-nitrogen	45-49	F5.1	ug/l
12. PO4	Soluble Reactive Phosphorus	51-54	F4.1	ug/l
13. TN	Total N	56-61	I6	ug/l
14. TP	Total P	63-67	F5.1	ug/l

Variable	Name	Columns	Format	Units
15. DOC	Dissolved Organic Carbon	69-74	F6.2	mg/l
16. Comments		76-110	c35	

RECORD TYPE 2 (AGW022)

Data Format Specification:

Variable	Name	Columns	Format	Units
1. WellID	Well identifier			
2. Date	Date of sample collection			
3. Depth2wat	Water depth from ground			
4. isdry	Is well dry			
5. Na	Sodium concentration			ug/l
6. Na_error	Analytical error			ug/l
7. K	Potassium concentration			ug/l
8. K_error	Analytical error			ug/l
9. Ca	Calcium concentration			ug/l
10. Ca_error	Analytical error			ug/l
11. Mg	Magnesium concentration			ug/l
12. Mg_erro	Analytical error			ug/l
13. NH4_H	Ammonium-nitrogen concentration			ug/l
14. NH4_error	Analytical error			ug/l
15. SO4	Sulfate concentration			ug/l
16. SO4_error	Analytical error, based on precision of duplicate samples and accuracy of quality control samples			
17. F	Fluoride concentration			
18. F_error	Analytical error, based on precision of duplicate samples and accuracy of quality control samples			
19. CL	Chloride concentration			
20. Cl_error	Analytical error, based on precision of duplicate samples and accuracy of quality control samples			
21. NO3_N	Nitrate-nitrogen concentration			
22. NO3_error	Analytical error, based on precision of duplicate samples and accuracy of quality control samples			
23. P	Phosphate as phosphorus concentration			
24. P_error	Analytical error, based on precision of duplicate samples and accuracy of quality control samples			
25. Alkal	Titration alkalinity			
26. pH_Lab	pH measured in lab			
27. pH_F	pH measured in field			
28. pH_H	pH measured with hydrolab			
29. T	Water temperature			
30. Cond	Specific conductance, (micromhos/cm)			
31. Salinity	Salinity in hydrolab			
32. DO	Dissolved oxygen (percent saturation)			
33. DO_ppm	Dissolved oxygen, (parts per million)			
34. Eh	Oxidation-Reduction potential (millivolts)			

35. TDS   Total dissolved solids
36. del15N_NO3   Nitrogen isotope ratio, nitrate

RECORD TYPE 3 (AGW023)

Data Format Specification:

Variable	Name	Columns	Format	Units
1. WellID	Well identifier from A-1 to A-7 and from P-1 to P-7			
2. Elvation	Relative ground elevation (m), estimated from Clennan			M
3. Depth	Total depth below ground			M
4. CaseWidth	Casing diameter			M
5. CaseHeight	Original casing height above ground			M
6. CaseHeightA	Casing above ground after well protectors installed (m)			M
7. CapLength	Screen + slotter bottom cap length			M

Data Set Code--AGW03

Title of Data Set: Konza Prairie Long-term high frequency groundwater level and temperature from wells on N04d

Abstract:

The objectives of this project are to quantify the seasonably variable timing among meteoric precipitation, groundwater recharge, and groundwater temperature. Hypotheses are: 1. Because of the karst-like characteristics of the aquifers in N04d (and by extension, the entire region), recharge will be rapid during moderately large precipitation events where fractures are enlarged by dissolution and therefore highly conductive, except during the most active part of the growing season. 2. The recharge efficiency of the aquifers will be spatially variable, with highest hydraulic conductivity (because of solution enlargement of fractures) near the riparian zone. 3. Groundwater temperature will vary continuously over the year and also demonstrate abrupt changes after recharge-effective precipitation events when the precipitation temperature is different from the groundwater temperature. Because the aquifers are merokarst and recharge is rapid, data are recorded at high frequency (5 minute intervals).

Keywords that describe the data set:

groundwater, water chemistry, dissolved nutrients, organic and inorganic nitrogen and phosphorus, nitrate, ammonium, soluble reative phosphorus, dissolved organic carbon

Date data commenced: 01/30/2004
Date data terminated: ongoing

Principle Investigator: Gwendolyn Lee Macpherson

RECORD TYPE 1 (AGW031)

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode				
2. Rectype				
3. RecYear				
4. WlDate		Date and time of measurement		
5. Wellname		each sensor location/well		
6. WL		groundwater elevation		
7. GWtemp		groundwater temperature		
8. BLtemp		the temperature recorded by the "Barologger", which sits in the observation well casing, 25.6 cm below ground level and 4 m above the highest measured groundwater level.		
9. Comments				

Data Set Code--AMC01

Title of Data Set: Growing season microclimate by topographic position for annually-burned and 4-yr burned watersheds at Konza Prairie

Abstract:

Dataset contains 30min averages of many variables used to record changes in microclimatic conditions. Microclimate sensor stations were arrayed in discrete topographic positions (upland, slope, lowland) in 4 watersheds: 1D, 1B, 4B, 4F. No microclimate sensor stations were present in upland-1D or lowland-4B because eddy flux towers are present in these locations. Similar microclimate data is available from these flux towers during the time period of this study.

Keywords that describe the data set:

microclimate, air temperature, relative humidity, soil moisture, soil temperature, topography, wind speed.

Date data commenced: 01/5/2010
Date data terminated: complete

Principle Investigator: Jesse Nippert

RECORD TYPE 1 (AMC011)

Data Format Specification:

Variable	Name	Columns	Format	Units
1. DataCode				
2. RecType				
3. RecYear		The year of data collected		
4. Watershed		Watershed name, 4 watersheds: 1D, 1B, 4B, 4F		
5. location		Microclimate sensor stations were established in 10 locations		
6. doy		Day of year		
7. hour_min		Time of day in 30 min intervals		
8. T_air		Air temperature (degC)		
9. Tsoil_5cm		Soil temperature at 5cm depth (degC)		
10. Tsoil_15cm		Soil temperature at 15cm depth (degC)		
11. RH_mv		Relative humidity (mv)		
12. RH		Relative humidity (%)		
13. SBTemp		IRT sensor body temp (degC)		
14. ws_ms		Wind speed (m/s)		
15. SBTemp_c		IRT target temp (degC)		

16. swc1_soilmoisture   10cm depth soil moisture (wfv or m3-m-3)
17. swc1_conductivity_corrected   10cm depth electrical conductivity (S / m)
18. swc1_Temp_C   10cm depth electrical conductivity (S / m)
19. swc1_Temp_F   10cm depth soil temperature (degF)
20. swc1_real_dialectric_permittivity_corrected 30cm dielectric permittivity (unitless)
21. swc2_soilmoisture   30cm depth soil moisture (wfv or m3-m-3)
22. swc2_conductivity_corrected   30cm depth electrical conductivity (S / m)
23. swc2_Temp_C   30cm depth soil temperature (degC)
24. swc2_Temp_F   30cm depth soil temperature (degF)
25. swc2_real_dialectric_permittivity_corrected 30cm dielectric permittivity (unitless)
26. swc3_soilmoisture   100cm depth soil moisture (wfv or m3-m-3)
27. swc3_conductivity_corrected   100cm depth electrical conductivity (S / m)
28. swc3_Temp_C   100cm depth soil temperature (degC)
29. swc3_Temp_F   100cm depth soil temperature (degF)
30. swc3_real_dialectric_permittivity_corrected 100cm dielectric permittivity (unitless)

Data Set Code--ANA01

Title of Data Set: Weekly measurement of precipitation volume and chemistry collected as part of the national atmospheric deposition program

Abstract:

Data set contains results of chemical analysis of wetfall samples collected on Konza Prairie. Analysis is done by the Central Analytical Lab (CAL), Champaign, IL as part of the National Atmospheric Deposition Program (NADP). NADP data products available on the NADP/NTN web site (nadp.slh.wisc.edu/data/NTN/ (link is external)) include: Annual Data Summaries, Semiannual Data Reports, Annual and Seasonal Averages, Monthly Averages, and Weekly data. Konza Prairie LTER archives and provides the weekly data in electronic form.

Keywords:

wetfall, precipitation, precipitation chemistry, NADP, Ca, Mg, K, Na, NH4, NO3, Cl, SO4, pH, conductance

Date data commenced: 08/17/1982
Date data terminated: ongoing

Principle Investigator: John M. Blair

Data Format Specification for NADP/NTN Weekly Data File, the following information comes from NADP/NTN office at Fort Collins, CO. *http://nadp.sws.uiuc.edu/*

RECORD TYPE 1

Data Format Specification:

Variable	Columns	Format
1. CAL Code	1-4	A4
2. Date On (mo/da/year)	7-16	I10
3. Date Off (mo/da/year)	18-27	I10
4. Limit of Detection symbol (<) for Ca	29	c1
5. Ca concentration	31-35	F5.3
6. Limit of Detection symbol (<) for Mg	37	c1
7. Mg concentration	39-43	F5.3
8. Limit of Detection symbol (<) for K	45	cl
9. K concentration	47-51	F5.3
10. Limit of Detection symbol (<) for Na	53	c1
11. Na concentration	55-59	F5.3
12. Limit of Detection symbol (<) for NH4	61	c1
13. NH4 concentration	63-67	F5.3
14. Limit of Detection symbol (<) for NO3	69	c1
15. NO3 concentration	71-75	F5.3

16. Limit of Detection symbol (<) for Cl	77	c1
17. Cl concentration	79-83	F5.3
18. Limit of Detection symbol (<) for SO4	85	c1
19. SO4 concentration	87-91	F5.3
20. Lab pH	94-97	F4.2
21. Field pH	100-103	F4.2
22. FV pH	105	A1
23. Lab conductance	108-112	F5.1
24. Field conductance	114-118	F5.1
25. FV conductance	120	A1
26. Sample volume	123-129	F7.1
27. Precipitation from rain gauge	132-137	F6.2
28. Subppt	139-145	F7.3
29. Labtype	147-148	A2
30. Valcode	152-153	A2
31. Invalcode	156-157	A2
32. Notes	160-161	A2

DESCRIPTION OF PARAMETERS INCLUDED IN NADP/NTN WEEKLY DATA FILES

Cal code

Alpha-numeric site identification code, first two characters of which are the abbreviation of the state in which the site is located (Konza Prairie Cal code is KS31)

Dates

On - Date sample bucket was installed on the collector, reported in Greenwich mean time (GMT), modayr.

Off - Data sample bucket was removed from the collector, reported in Greenwich mean time (GMT), modayr.

Ion concentrations

Concentrations of Ca, Mg, K, Na, NH4, NO3, Cl, and SO4 reported in mg/l. Concentrations which are below the detection limit of the analysis are indicated with a "<" preceding the value;the value reported is the actual limit of the detection. (In calculating weighted-mean concentrations and depositions NTN substitutes one-half the reported detection limit for concentrations below the limit of detection.)

pH

pH reported as the negative log of hydrogen ion concentration.

lab - pH of the precipitation sample as measured at CAL

field - pH of the precipitation sample as measured on site (Bushnell Hall), discontinued Jan, 2005.

FV - provides information about the validity of field pH.

Codes used 1992-2004:

– No field pH measurement for precipitation sample.

p Sample passes all screening criteria for field measurements.

f Sample fails to meet screening criteria for field measurements.

i Some or all information necessary to apply screening criteria is unavailable.

Conductivity

Conductivity reported in microsiemens/cm.

lab - conductivity of the precipitation sample as measured at CAL.

field - conductivity of the precipitation sample as measured on site (Bushnell Hall), discontinued Jan, 2005.

FV – provides information about the validity of field conductivity.

Codes used 1992-2004:

– No field pH measurement for precipitation sample.

p Sample passes all screening criteria for field measurements.

f Sample fails to meet screening criteria for field measurements.

i Some or all information necessary to apply screening criteria is unavailable.

Sample Volume (Svol)

Volume of sample captured by the sampler bucket in milliliters

Precipitation from Rain Gauge (RG ppt)

Precipitation amount as measured by the rain gauge in millimeters. Trace amounts are indicated by -7.00.

Sub ppt

Precipitation amount used by NADP/NTN in calculating weighted-mean concentrations, depositions and precipitation totals. In most cases, sub ppt equals the rain gauge reading. Where the rain gage reading is a trace amount, sup ppt is assigned a value of 0.127mm; in cases where the rain gauge is missing or invalid, sub ppt is calculated by converting the sample volume to its equivalent depth. (The area of the sampler bucket used for this conversion is 678.9 square centimeters.)

Lab type

A code indicating the condition of the sample upon arrival at CAL

w - sample volume of approximately 35 mL or more

wa - sample volume less than 35 mL; dilution was required

t - trace amount of less than approx. 10 mL; analyses are incomplete

da - dry sample

qa - quality assurance sample submitted in lieu of a wet-side sample bucket for a week during which no precipitation occurred

Valcode

A code which indicates whether a sample is considered valid according to NADP/NTN data validations rules. In the case of a valid sample, the code indicates how the sample is used in calculations of weighted-mean concentrations, depositions and data completeness estimates.

0 - invalid sample

t - valid trace sample

d - valid dry collection period

w - valid sample of lave type w

wa - valid samples of lab type wa

Only samples of w and wa are used by NADP/NTN in calculating weighted-mean concentrations.

Invalcode

A series of codes assigned to samples which are considered invalid by NADP/NTN for the purposes of computing weighted-mean concentrations, depositions and data completeness estimates. The codes indicate the reason for invalidation.

b - bulk sample (Collector was open continuously)

u - undefined sample (Collector was open for > 6 hours and less than the entire sampling period when no precipitation was occurring.

f - filed protocol departure

c - contaminated sample

v - inadequate volume for analysis

s - short sampling interval (< 6 days)

e - extended sampling interval (> 8 days)

l - lab error

i - incomplete chemical analysis

n - no sample collected

p - precipitation amount unknown

x - reasons other than described above

Notes

Coded summary of the CAL screening codes and remarks written on the Field Observer Report Form by field personnel, CAL staff, and Coordination Office Staff.

bu - bulk sample. Sample was continuously exposed to both wetfall and dryfall. (Collector was open continuously.)

na - Results are not yet available (predominantly dry samples).

nn - Information was never reported and will never be available.

ns - No chemistry data will be reported because of extreme contamination, undefined sampling protocol, leakage, loss in the mail, etc.

sp - Samples was collected at a nonapproved sampling site or with nonapproval equipment.

*January 01, 2017: Starting Jan 01, 2013, We don't provide the seasonal total data (ANA012), which can be calculated from the weekly data or downloaded form NADP.

Data Set Code--APT01

Title of Data Set: Daily precipitation amounts measured at multiple sites across konza prairie

Abstract:

Data set contains daily records of precipitation on 10 raingauges at 10 sites on Konza Prairie. Two sites (020A and 002C; SE) have 7-day clocks (one revolution per week), 7 have 24-hour clocks (one revolution per day), and the Headquarters raingauge generates daily data (15-minute data upon your request). The Headquarters raingauge generates data year round. The remaining raingauges are operated from April 1 to October 31. Precipitation amounts are recorded in mm. As of 2011, the HQ 1 (7-day clock) and HQ 2 (24-hour clock) raingauges have been discontinued and replaced with an Ott Pluvio2 rainguage that began data generation March 2010.

Keywords that describe data set:

Atmospheric Processes, Hydrologic Processes, Rain, Precipitation, Daily Precipitation Amounts

Date data commenced: 06/01/1982
Date data terminated: ongoing

Principle Investigator: Jesse Nippert

Comments: Headquarters raingauge 1 in operation continuously from June 1982 through 2010; prairie raingauges at 004B, 020B and 002C (south end) in operation since April 1983. Raingauges at N01B, N04D (flume), N04D (prairie chicken blind), and 020A in operation since 02 April 1986. Raingauge HQ2 has been in operation from 20 August 1986 through 2010. All raingauges except gauges at Headquarters are operated from April 1 to October 31 each year.

RECORD TYPE 1 – Daily Precipitation at all rain gauges

Data Format Specification:

Variable	Description	Columns	Format	Units
1. Datacode	Dataset code	1-5	A5	
2. Rectype	Record type	6	I1	
3. RecDate	Date of sample	7-8	I2	
4. watershed	watershed of collection	9-10	I2	
6. ppt	Precip at raingauges Ott Pluvio^2	16-20	F5.1	mm
7. Comments	Comments for the data			

Data Set Code--APT02

Title of Data Set: Monthly temperature and precipitation records from Manhattan, KS

Abstract:

      Data set contains the monthly values of maximum, minimum and average temperatures and monthly total precipitation for Manhattan, KS since 1891. Data are in three separate files, one for each measurement. Data comes from the Weather Data Library in the computer system office of the Cooperative Extension Service of Kansas State University, Manhattan Kansas. (211 Umberger Hall, 785-532-6270)

Keywords that describe data set: Temperature, Precipitation

Date Data Commenced: 1891
Date Data terminated: complete

Principle Investigator: Jesse Nippert

Data Format Specification: The format is the same for all four record types.

RECORD TYPE 1: Maximum monthly temperature for Manhattan from 1891 to 2006

RECORD TYPE 2: Mean monthly temperature for Manhattan from 1891 to 2006

RECORD TYPE 3: Minimum monthly temperature for Manhattan from 1891 to present

RECORD TYPE 4: Monthly precipitation for Manhattan from 1891 to present

1. Record Year
2. January Value
3. February Value
4. March Value
5. April Value
6. May Value
7. June Value
8. July Value
9. August Value
10. September Value
11. October Value
12. November Value
13. December Value
14. Yearly averages for temperature values or yearly total for precipitation values

Comments: All temperatures values are in degree Centigrade and all precipitation values are in mm. No column or format is given as the data can varied in its form from year to year. Also data files do not follow the LTER file naming procedure.

RECORD TYPE 5: Monthly pan water evaporation for Tuttle Creek from 1980.
Data on the monthly totals of actual pan water evaporation from April to October based on daily measurements. These data are recorded from Tuttle Creek Reservoir by Corp of Engineers from 1980 to present.

Data Format Specification
1. record year
2. record month
3. monthly totals of actual pan water evaporation

Notes:
Filenames (as of 01 March 1993) are: maxtemp.man--Maximum temperatures, mintemp.man--Minimum temperature, meantemp.man--Average temperatures, precip.man--Monthly precipitation.

Data Set Code--ASD01

Title of data set: Stream discharge for Kings Creek measured at USGS gaging station

Abstract:

The 1060 hectacre Kings Creek watershed (STATION NUMBER 06879650) is a U.S. Geological survey hydrologic benchmark. (cf. Cobb, e.D. and J.E. Beisecker. 1971. USGS circular 460-d) flow is measured continuously with a bubble gage. The period of record started in March, 1979. The hydrologic regime is driven by the mid-continent climate characterized by summer thunderstorms and drought. The stream, at the gaging station, is fourth order in gallery forest. The riparian vegetation in the headwaters (1st & 2nd order) is tallgrass, or true, prairie. Flow occurred in spring and early summer in all years. Late summer, fall and winter records also include periods of no flow; the longest of these was ca. nine months. The time from base flow to peak flow for typical storm flow hydrographs is an hour or so and amplitude of ca. three meters above base flow has been recorded (Data comes from USGS office in Lawrence, Kansas; Contact person: Butch Lawcock, (913) 842-9709).

Organization: U.S. Geological Survey
For more metadata description and data, please see:
https://waterdata.usgs.gov/nwis/uv/?site_no=06879650

Keywords that describe data set: hydrology, hydrologic processes, stream, streamflow, stream discharge
Date data commenced: 04/01/1979
Date data terminated: complete

Principle Investigator: Walter K. Dodds

RECORD TYPE 1: Stream daily discharge in Kings Creak at USGS station
Data Format Specification
1. record date
2. discharge
3. comments for the data

Data Set Code--ASD02

Title of data set: Stream discharge meaured at the flume on watershed N04D

Abstract:

Stream discharge is measured on a catchment (N04D), with 4-year fire return interval and grazed by bison since 1992. Measurements are taken at 5 minute intervals at a triangular throated flume. The prairie streams are 3rd-order and are intermittent. Daily and stormflow discharge records are available.

Keywords that describe data set:

hydrology, hydrologic processes, streamflow, stream discharge

Date data commenced: 01/06/1985
Date data terminated: ongoing

Principle Investigator: Walter K. Dodds

Format for file names and documentation

There are two files for each watershed for each year. One is for daily stream flow and one is for storm flow.

RECORD TYPE 1: Storm flow. For stormflow discharge estimates, stage hight was recorded at 5 minute intervals. During non-stormflow periods, 3-hour intervals were used. (After 2004, this data is available if requested but is not online)

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5		
2. Rectype		6		
3. RecYear		7-8		
4. RecMonth		9-10		
5. RecDay		11-12		
6. Watershed		13-16		
7. Dayofyear		19-22		
8. RecHour (2400-hour format)		25-28		hh:mm:ss
9. Discharge		33-38		m3/sec
10. Sheight	stage height in centimeters			cm
11. CorrectedSheight	Corrected stage height			
12. Height	manual measurements of stage			
13. LogFlag	flag used to mark times when maintenance was performed			
14. QualFlag	flag used to mark bad data			

RECORD TYPE 2: Daily flow. Five-minute stage height measurements were processed to provide mean daily discharge, maximum and minumum discharge and times these occurred, and total dicharge volume for the 24-hour period.

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5		
2. Rectype		6		
3. RecYear		7-8		
4. RecMonth		9-10		
5. RecDay		11-12		
6. Watershed		13-16		
7. Dayofyear		19-22		
8. Meandischarge		28-32		m3/sec
9. Max discharge		36-42		m3/sec
10. TimeMax	time of max discharge in 24-hour period			
11. MinDischarge		52-56		
12. TimeMin	time of min discharge in 24-hour period			
13. Volume	Volume			
14. Incomplete_flag	flag used to mark days with some missing five-minute stage measurements			
15. Maintenance_flag	flag used to mark days with maintenance work			
16. Qual_flag	flag used to mark days with bad data			

Data Set Code--ASD04

Title of data set: Stream discharge meaured at the flume on watershed N20B

Abstract:

Stream discharge is measured on a catchment (N20B), with 4-year fire return interval and grazed by bison since 1992. Measurements are taken at 5 minute intervals at a triangular throated flume. The prairie streams are 3rd-order and are intermittent. Daily and stormflow discharge records are available.

Keywords that describe data set:

hydrology, hydrologic processes, streamflow, stream discharge

Date data commenced: 01/01/1987
Date data terminated: ongoing

Principle Investigator: Walter K. Dodds

Format for file names and documentation

There are two files for each watershed for each year. ASD042 is for daily stream flow, ASD041 is for storm flow.

RECORD TYPE 1: Storm flow- For stormflow discharge estimates, stage hight was recorded at 5 minute intervals. During non-stormflow periods, 3-hour intervals were used. (after 2004, this data is available if requested but is not online):

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5		
2. Rectype		6		
3. RecYear		7-8		
4. RecMonth		9-10		
5. RecDay		11-12		
6. Watershed		13-16		
7. Dayofyear		19-22		
8. RecHour		(2400-hour format)		hh:mm
9. Discharge		discharge		m3/sec
10. Sheight	Stage height in centimeters			cm
11. CorrectedSheight	Corrected stage height			cm
12. Height	manual measurements of stag			cm
13. LogFlag	flag used to mark times when maintenance was performed			
14. QualFlag	flag used to mark bad data			

RECORD TYPE 2: Daily flow - Five-minute stage height measurements were processed to provide mean daily discharge, maximum and minumum discharge and times these occurred, and total dicharge volume for the 24-hour period.

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5		
2. Rectype		6		
3. RecYear		7-8		
4. RecMonth		9-10		
5. RecDay		11-12		
6. Watershed		13-16		
7. Dayofyear		19-22		
8. MeanDischarge		mean discharge		m3/sec
9. MaxDischarge		max discharge		m3/sec
10. TimeMax	Time of max discharge in 2400-hour			
11. Min discharge	min discharge			
12. TimeMin	Time of min discharge in 2400-hour			
13. Volume	Volume			
14. Incomplete_flag	flag used to mark days with some missing five-minute stage measurements			
15. Maintenance_flag	flag used to mark days with maintenance work			
16. Qual_flag	flag used to mark days with bad data			

Data Set Code--ASD05

Title of data set: Stream discharge meaured at the flume on watershed N01B

Abstract:

     Stream discharge is measured on a catchment (N01B), with 4-year fire return interval and grazed by bison since 1992. Measurements are taken at 5 minute intervals at a triangular throated flume. The prairie streams are 3rd-order and are intermittent. Daily and stormflow discharge records are available.

Keywords that describe data set:

     hydrology, hydrologic processes, streamflow, stream discharge

Date data commenced: 01/01/1987
Date data terminated: ongoing

Principle Investigator: Walter K. Dodds

Format for file names and documentation

     There are two files for each watershed for each year. ASD052 is for daily stream flow, and ASD051 is for storm flow.

RECORD TYPE 1: Storm flow - For stormflow discharge estimates, stage hight was recorded at 5 minute intervals. During non-stormflow periods, 3-hour intervals were used. (After 2004, this data is available if requested but is not online):

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5		
2. Rectype		6		
3. RecYear		7-8		
4. RecMonth		9-10		
5. RecDay		11-12		
6. Watershed		13-16		
7. Dayofyear		19-22		
8. Hour		(2400-hour format)		hh:ss
9. Discharge		discharge		m3/sec
10. Sheight		Stage height in centimeters		cm
11. CorrectedSheight		Corrected stage height		cm
12. Height		manual measurements of stag		cm
13. LogFlag		flag used to mark times when maintenance was performed		
14. QualFlag		flag used to mark bad data		

RECORD TYPE 2: Daily flow - Five-minute stage height measurements were processed to provide mean daily discharge, maximum and minumum discharge and times these occurred, and total dicharge volume for the 24-hour period.

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5		
2. Rectype		6		
3. RecYear		7-8		
4. RecMonth		9-10		
5. RecDay		11-12		
6. Watershed		13-16		
7. Dayofyear		19-22		
8. MeanDischarge	Meandischarge			m3/sec
9. MaxDischarge	max discharge			m3/sec
10. TimeMax	Time of max discharge in 24-hour period			
11. MinDischarge	Min discharge			
12. TimeMin	Time of min discharge in 24-hour period			hh:mm
13. Volume	Volume			
14. Incomplete_flag	flag used to mark days with some missing five-minute stage measurements			
15. Maintenance_flag	flag used to mark days with maintenance work			
16. Qual_flag	flag used to mark days with bad data			

Data Set Code--ASD06

Title of data set: Stream Discharge Meaured at the Flume on Watershed N02B

Abstract:

Stream discharge is measured on a catchment (N02B), with 4-year fire return interval and grazed by bison since 1992. Measurements are taken at 5 minute intervals at a triangular throated flume. The prairie streams are 3rd-order and are intermittent. Daily and stormflow discharge records are available.

Keywords that describe data set:

hydrology, hydrologic processes, streamflow, stream discharge

Date data commenced: 01/01/1987
Date data terminated: ongoing

Principle Investigator: Walter K. Dodds

Format for file names and documentation

There are two files for each watershed for each year. ASD062 is for daily stream flow, and ASD061 is for storm flow.

RECORD TYPE 1: Storm flow - For stormflow discharge estimates, stage hight was recorded at 5 minute intervals. During non-stormflow periods, 3-hour intervals were used. (After 2004, this data is available if requested but is not online):

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5		
2. Rectype		6		
3. Year		7-8		
4. Month		9-10		
5. Day		11-12		
6. Watershed		13-16		
7. Dayofyear		Day of year		
8. RecHour		Hour (2400-hour format)		hh:mm
9. Discharge		Discharge		m3/sec
10. Sheight		Stage height in centimeters		cm
11. CorrectedSheight		Corrected stage height		cm
12. Height		manual measurements of stag		cm
13. LogFlag		flag used to mark times when maintenance was performed		
14. QualFlag		flag used to mark bad data		

RECORD TYPE 2: Daily flow - Five-minute stage height measurements were processed to provide mean daily discharge, maximum and minumum discharge and times these occurred, and total dicharge volume for the 24-hour period.

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5		
2. Rectype		6		
3. RecYear		7-8		
4. RecMonth		9-10		
5. RecDay		11-12		
6. Watershed		13-16		
7. Dayofyear		Day of year		
8. MeanDischarge		Mean Discharge		m3/sec
9. MaxDischarge		Max Discharge		m3/sec
10. TimeMax	Time of max discharge in 24-hour period			hh:mm
11. MinDischarge		Min Discharge		
12. TimeMin	Time of min discharge in 24-hour period			hh:mm
13. Volume		Volume		
14. Incomplete_flag	flag used to mark days with some missing five-minute stage measurements			
15. Maintenance_flag	flag used to mark days with maintenance work			
16. Qual_flag	flag used to mark days with bad data			

Data Set Code--ASM01

Title of data set: Soil Water Content Measured by Neutron Probe

Abstract:

Data set contains measurements of soil moisture (%volume) at various depths (25-200 cm) in deep (lowland) soils collected on LTER grazed and ungrazed watersheds burned at 1-, 4-, and 20-year intervalsersheds. Soil moisture measured by the neutron probe method

Keywords that describe data set:

soil moisture, neutron probe, stream, stream water, water quality, conductivity, dissolved oxygen

Date data commenced: 05/01/1983
Date data terminated: ongoing

Principle Investigator: Jesse Nippert

RECORD TYPE 1   Water Content Measured by Neutron Probe

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. Tube #	Access tube number	
8. D25	Value at 25 cm kg/m3	kg/m3
9. D50	Value at 50 cm kg/m3	kg/m3
10. D75	Value at 75 cm kg/m3	kg/m3
11. D100	Value at 100 cm kg/m3	kg/m3
12. D125	Value at 125 cm kg/m3	kg/m3
13. D150	Value at 150 cm kg/m3	kg/m3
14. D175	Value at 175 cm kg/m3	kg/m3
15. D200	Value at 200 cm kg/m3	kg/m3
16. Comments		

Explanation of comments for ASM011

"no stopper" or "stopper missing": Access tubes are "closed" between reading events with a rubber stopper and a "metal top" (a pop can with the top removed). Occasionally, the rubber stopper will go missing, usually due to animal activity. For an unknown amount of time the

access tube was open to the environment and rain or snow could have entered the access tube possibly effecting moisture readings. The stopper will be replaced during next session.

"Can off" or "can missing: All of the access tubes have a "metal top" (a pop can) covering the rubber stopper. This is to protect the stopper from the elements. Occasionally, the can will go missing, usually due to animal activity. As long as the rubber stopper remains, the access tube is not open to the environment. The can will be replaced during the next session.

"Ground", "bottom" or "hit bottom": The bottom of the access tube was hit sooner than expected.

"ants": Several sites are prone to ant nests being built under the protective can. Ants and eggs will be brushed away before readings are taken. If the infestation is especially bad, the outer protective can will be left off until the next session in hopes the ants will move away; stopper will be replaced.

"bison": Six of the access tubes are inside the bison area. If bison are in the area, readings will not be taken; this is for the safety of the technician.

Data Set Code--ASR01

Title of data set: Short-Term Assessment of Effects of Burning on Infiltration, Runoff and Sediment and Nutrient Loss on Tallgrass prairie using rainfall simulation.

Abstract:

Rainfall simulation and overland flow experiments were performed on four plots at a single site on Konza from May to August, 1989. Two plots were treated with a late spring burn and two plots were left unburned. Five simulations were performed on burned plots and three simulatons on unburned plots. Each simulation consisted of a "dry run" followed 24 hours later by a "wet run". The dry run consisted of rainfall applied at an intesity of approximately 60 mm/hour. The wet run was the same as a dry run, except when the rainfall was complete, overland flow was applied directly at the top of the plots to simulate run off coming from upslope. Measurements taken include overland flow velocity, water application rate, runoff, hydrograph, water flow depth, sediment content, nitrogen and phosphorus content and percent ground cover (See A.B. Duell, Effects of burning on infiltration, overland flow, and sediment loss on tallgrass prairie, M.S. thesis, Kansas State University, 82pp. for further details).

Keywords that describe data set:

Fire, rain, simulation, nitrogen, phosphorus, sediments, overland flow, infiltration, runoff, hydrologic processes, hydrology

Date data commenced: 05/17/1989
Date data terminated: 08/26/1989

Principle Investigator: Trisha Moore

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode				
2. Rectype				
3. RecYear				
4. RecMonth				
5. RecDay				
6. Watershed				
7. Plot	Burned or unburned			
8. Runtype	Dry or wet run			
9. Realtime	Time of simulation			hours min.
10. Timesb	Time since beginning of initiation of rainfall			minutes
11. Rainint	Rainfall intensity			mm/hour
12. Cumrain	Cummulative rainfall			mm

13. Rorate	Runoff rate	mm/hour
14. Cumro	Cummulative runoff	mm
15. Turbid	Turbidity of Runoff	NTU
16. Tsolids	Total solids in Runoff (inorganic+organic)	mg/l
17. Tfsolids	Total fixed solids in runoff (Inorganic solids)	mg/l
18. Nitrate	Nitrate-n concentrations in runoff	µg/l
19. Totaln	Total nitrogen concentrations in runoff	µg/l
20. Totalp	Total phosphorus concentrations in runoff	µg/l
21. Comments		

RECORD TYPE 2-Nutrients in simulated rainfall (well water)

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. Tsolids	Total solid (organic + inorganic)	mg/l
8. Tfsolids	Total fixed solids (Inorganic)	mg/l
9. Nitrate	Nitrate N concentration	µg/l
10. Totaln	Total Nitrogen concentration	µg/l
11. Totalp	Total Phosphorus concentration	µg/l

Codes used:

Name	Value	Definition of code value
Plot	a	burned plot
	b	burned plot with overland flow
	c	Unburned plot with overland flow
	d	Unburned plot
Runtype	d	Dry run--application of rainfall to saturate soil
	w	Wet run--measure runoff from rain and overland flow

Data Set Code--ASS01

Title of data set: Suspended Sediments in Streams Impacted by Prescribed Buring, Grazing and Woody Vegetation Removal at Konza Prairie

Abstract:

    To determine effects of rotational burning and riparian vegetation removal on suspended solid concentrations in streams. Two sites are burned with a frequency of 2 (N02B) and 4 (N04D) years and grazed by bison. In 2011, N02B will have woody riparian vegetation removed along the entire stream length. The Shane Creek site (SHAN) is currently ungrazed and burned most years. In 2011 the treatment will be switched to grazing and burning of 1/3 of the watershed every year. The data include before and during-treatment sampling for both experiments.

Keywords that describe data set:

    stream, hydrologic properties, suspended solids, sediments, burning, grazing, woody vegetation

Date data commenced: 05/06/2009
Date data terminated: ongoing

Principle Investigator: Walter Dodds

RECORD TYPE 1 Suspended sediments in streams impacted by prescribed burning, grazing and woody vegetation removal on N02B.

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. RecTime	time of record	hh:mm
7. Watershed	Watershed	
8. Temp	temperature at start of sampling	C°
9. Depth	depth of sample in centimeters	cm
10. FilterID	Filter ID	
11. Pre1	mass of filter before	g
12. Pre2	replicate mass determination	g
13. Water	water in mil	mL
14. TSS1	mass of filter after	g
15. TSS2	replicate mass after	g
16. VS1	ass of filter after combustion	g
17. VS2	replicate after combustion	g

18. TSS	total suspended solid	Milligram/lite
19. VSS	voliatile suspended solids	Milligram/liter
20. Comments		

Data Set Code--AST01

Title of data set: Soil temperature measured in burned, burned-clipped, and unburned plots at Konza Prairie

Abstract:

Soil temperature was measured using temperature probes and dataloggers at selected depths in small plots that were either burned annually, burned and clipped to remove aboveground biomass, or left unburned. Raw data was summarized into hourly readings and daily minimum, maximum, and mean temperatures.

Keywords that describe data set:

soil, soil temperature, burned, unburned, physical properties

Date data commenced: 04/23/1987
Date data terminated: 10/01/1993

Principle Investigator: John M. Briggs

RECORD TYPE 1: Hourly soil temperatures in burned and unburned plots.

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. RecTime		
8. UB2	Unburned, 2cm depth	deg C
9. UB10	Unburned, 25cm depth	deg C
10. UB25	Unburned, 25cm depth	deg C
11. B2	Burned, 2 cm depth	deg C
12. B10	Burned, 10cm depth	deg C
13. B25	Burned, 25cm depth	deg C
14. Comment		

RECORD TYPE 2-Maximun daily soil temperatures in burned and unburned plots

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		

4. RecMonth
5. RecDay
6. Watershed
7. RecTime

Variable	Name	Units
8. UB2	Unburned, 2cm depth	deg C
9. UB10	Unburned, 25cm depth	deg C
10. UB25	Unburned, 25cm depth	deg C
11. B2	Burned, 2 cm depth	deg C
12. B10	Burned, 10cm depth	deg C
13. B25	Burned, 25cm depth	deg C
14. Comments		

RECORD TYPE 3: Minimun daily soil temperatures in burned and unburned plots

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. RecTime		
8. UB2	Unburned, 2cm depth	deg C
9. UB10	Unburned, 25cm depth	deg C
10. UB25	Unburned, 25cm depth	deg C
11. B2	Burned, 2 cm depth	deg C
12. B10	Burned, 10cm depth	deg C
13. B25	Burned, 25cm depth	deg C
14. Comments		

RECORD TYPE 4: Average daily soil temperatures in burned and unburned plots

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. RecTime		
8. UB2	Unburned, 2cm depth	deg C
9. UB10	Unburned, 25cm depth	deg C
10. UB25	Unburned, 25cm depth	deg C

11. B2	Burned, 2 cm depth	deg C
12. B10	Burned, 10cm depth	deg C
13. B25	Burned, 25cm depth	deg C
14. Comments		

Comments:

Only data from 1987 and 1988 are complete and error free for the entire time period. In 1989, the UB25 and B25 were dropped and a burned and clipped (to simulate grazing) were added. Variable number 10 became B2CL (burned and clipped with temperatue probe at 2 cm) and variable 13 became B10CL (burned and clipped with temperature probe at 10 cm). Clipped is done at investigator descrisson and in 1989 only two clipps were done. In 1990, the plots were clipped 5th and 19th of June, 18th of July and 13 August. In 1991, the probes in the clipped plots malfunctioned and no data was collected in these two treatments. In 1992, no data was collected on clipped plots.

Data Set Code--ASW01

Title of data set: Stream water quality at the flumes on watersheds N04D and N02B and at the Shane Creek crossing on watershed SA at Konza Prairie

Abstract:

Turbidity, dissolved oxygen, conductivity, temperature, and pH are measured on streams draining catchments with 2-year (N02B), 4-year (N04D), and rotational (SA, SB, and SC) burns. Measurements are taken at 10 minute intervals upstream of the flume or crossing. Water quality parameters are measured using Yellow Springs Instruments (YSI) multiparameter water quality sondes model 6600 or 6920. Turbidity and dissolved oxygen are measured using YSI 6136 optical turbidity probe and YSI 6150 ROX optical dissolved oxygen probe. Conductivity, temperature, and pH are measured with the YSI 6560 temperature and conductivity sensor. The prairie streams are 3rd-order and are intermittent. The period of record started in October, 2008 and missing records are explained by the YSI sondes being removed for data download or the stream being dry or frozen.

Keywords that describe data set:

stream, stream water, turbidity, dissolved oxygen, conductivity, water temperature, pH, water quality

Date data set commenced: 10/23/2008
Date data set terminated: 05/17/2010

Principle Investigator: Walter K. Dodds

RECORD TYPE 1-10 minute values for stream water chemistry and physical properties on watershed N02B

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. Date		yyyy-mm-dd
4. Time		hh:mm:ss
5. Temp	temperature at start of sampling	°C
6. Spcond	Specific conductivity of the percipitation sample measured in	mS/cm
7. cond	conductivity of the percipitation sample measured in	mS/cm
8. sal	Salinity	ppt
9. pH	pH of the precipitation sample was measured	
10. pHMv	pH of the precipitation sample was measured	mV
11. Turbid	turbidity of runoff	NTU
12. ODOsat	Dissolved oxygen saturation	%
13. ODO	Dissolved oxygen	mg/L

14. Battery   Battery   volts

15. Comments

RECORD TYPE 2-10 minute values for stream water chemistry and physical properties on watershed N04D

Variable		Units
1. Datacode		
2. Rectype		
3. Date		yyyy-mm-dd
4. Time		hh:mm:ss
5. Temp	temperature at start of sampling	°C
6. Spcond	Specific conductivity of the percipitation sample measured in	mS/cm
7. cond	conductivity of the percipitation sample measured in	mS/cm
8. sal	Salinity	ppt
9. pH	pH of the precipitation sample was measured	
10. pHMv	pH of the precipitation sample was measured	mV
11. Turbid	turbidity of runoff	NTU
12. ODOsat	Dissolved oxygen saturation	%
13. ODO	Dissolved oxygen	mg/L
14. Battery	Battery	volts
15. Comments		

RECORD TYPE 3-10 minute values for stream water chemistry and physical properties on watersheds SHAN, SA, SB, SC

Variable		Units
1. Datacode		
2. Rectype		
3. Date		yyyy-mm-dd
4. Time		hh:mm:ss
5. Temp	temperature at start of sampling	°C
6. Spcond	Specific conductivity of the percipitation sample measured in	mS/cm
7. cond	conductivity of the percipitation sample measured in	mS/cm
8. sal	Salinity	ppt
9. pH	pH of the precipitation sample was measured	
10. pHMv	pH of the precipitation sample was measured	mV
11. Turbid	turbidity of runoff	NTU
12. ODOsat	Dissolved oxygen saturation	%
13. ODO	Dissolved oxygen	mg/L
14. Battery	Battery	volts
15. Comments		

when data commenced it was at 15 minute intervals but now the standard is 10 minute intervals

Data Set Code--AWE01

Title of data set: Meteorological data from the Konza Prairie headquarters weather station

Abstract:

The following weather data are included in this data set: hourly mean temperature, mean relative humidity, mean wind speed, total precipitation, total solar radiation, wind direction, max wind speed (sampled on the hour; record type 1); daily mean, maximum and minimum air temperature, relative humidity, total precipitation, total solar radiation; mean, maximum and minimum soil temperature, average wind speed (sampled at midnight; record type 2). These data are collected by a micrologger at headquarters on Konza Prairie.

Keywords that describe data set:

air temperature, soil temperature, relative humidity, wind speed, wind direction, solar radiation, precipitation

Date data commenced: 04/22/1982
Date data terminated: ongoing

Principle Investigator: Jesse Nippert

RECORD TYPE 1-Hourly weather data measured at Konza Prairie headquarters

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. RecHour		hours
8. Tair	Air temperature	°C
9. Rhum	Relative humidity	%
10. Wspeed	Wind speed	m/s
11. Wdir	Wind direction	deg
12. Srad	Solar Radiation	Joules/cm^2
13. stemp	Soil Temperature at 25cm	°C
14. Wmax	Max wind speed (10 sec. execution interval)	m/s

RECORD TYPE 2-Daily weather data measured at Konza Prairie headquarters

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. DayofYear		
8. Tmax	Maximum Air Temperature	°C
9. Tmin	Minimum Air Temperature	°C
10. Tave	Average Air Temperature	°C
11. Dhumid	Average Relative Humidity	%
12. Dsrad	Total daily solar radiation	Joules/cm^2
13. Dppt	Total Daily Precipitation	mm
14. Smax	Maximum soil temp	°C
15. Smin	Minimum soil temp	°C
16. S_ave	Average soil temp	°C
17. Wave	Average Wind Speed	m/s

Program execution interval was changed from 60 seconds to 10 on 7/17/00. This change could significantly influence values reported for max wind speed. Caution should be used when comparing
 max wind speeds across this date.

Solar radiation collected prior to 7/19/2000 was recorded in Langleys.

Prior to 7/14/2000 this parameter was maximum daily wind speed.

Data Set Code--AWT02

Title of data set: Water temperature measured continuously in Konza Prairie streams

Abstract:

Water temperature is measured in streams draining catchments with annual, 2-year, 4-year, and 20-year burn treatments. Hourly measurements of water temperature (degrees C) are made in each of the four streams where discharge is continuously monitored (see data set ASD02).

Keywords that describe data set:

stream, stream water, water temperature, physical properties

Date data commenced: 04/10/1986
Date data terminated: 12/31/2000

Principle Investigator: Walter K. Dodds

RECORD TYPE 1   Continuously measured water temperatures in Konza Prairie streams

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. Tmean	Temperature of mean	Deg C
8. Tmin	Temperature of minimum	Deg C
9 Tmax	Temperature of maximum	Deg C

Consumer Data

Data Set Code--CBC01

Title of data set: Weekly record of bird species observed on Konza Prairie

Abstract:
Presence, including documented nesting, of all bird species recorded on Konza Prairie on a weekly basis throughout the year.

Keywords that describe data set:
consumers, birds, phenology, populations, nesting

Date data commenced: 01/01/1971
Date data terminated: 12/01/1996

Principle Investigator: Alice   Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode			
2. Rectype			
3. Species	4 character alphameric code unique for each species		
4. 2 Mar	Status (see codes below)		
5. 9 Mar			
6. 16 Mar			
7. 23 Mar			
8. 30 Mar			
9. 6 Apr			
10. 13 Apr			
11. 20 Apr			
12. 27 Apr			
13. 4 May			
14. 11 May			
15. 18 May			
16. 25 May			
17. 1 Jun			
18. 8 Jun			
19. 15 Jun			
20. 22 Jun			
21. 29 Jun			
22. 6 Jul			

23. 13 Jul
24. 20 Jul
25. 27 Jul
26. 3 Aug
27. 10 Aug
28. 17 Aug
29. 24 Aug
30. 31 Aug
31. 7 Sep
32. 14 Sep   Status
33. 21 Sep   Status
34. 28 Sep
35. 5 Oct
36. 12 Oct
37. 19 Oct
38. 26 Oct
39. 2 Nov
40. 9 Nov
41. 16 Nov
42. 23 Nov
43. 30 Nov
44. 7 Dec
45. 14 Dec
46. 21 Dec
47. 28 Dec
48. 5 Jan
49. 12 Jan
50. 19 Jan
51. 26 Jan
52. 2 Feb
53. 9 Feb
54. 16 Feb
55. 23 Feb   Status

Codes used:

Status	0	not recorded
	x	recorded as present
	n	nesting

For list of Species codes used, see CBC011_bird_list.1971.1
* For data prior to and including the year 2000, species codes used are the pre-2001 codes.
2001-present are AOU Alpha Codes.

Data Set Code--CBC02

Title of data set: Winter-spring survival and response of birds to variable climate using mist-net captures at Konza Prairie

Abstract:

This dataset includes captures of small-bodied landbirds captured via passive mist-netting efforts. The objectives are to (a) initiate a long-term survey of the non-breeding birds of the site, (b) understand the behavioral and physiological mechanisms that allow birds to cope with the unpredictable, variable, and often harsh conditions during winter months, and (c) provide a training platform for students. The collection of this dataset is fully integrated into the teaching of "Wild Bird Research" (an undergraduate hands-on research course in the Division of Biology) and less formal instruction in bird research methods for graduate students. Additionally, the banding efforts have benefited from the engagement of Konza Prairie docents and frequently hosts class visits and other visitors interested in witness bird banding operations.

Keywords that describe data set:

Populations, apparent survival, body, composition, capturere, capture, survival, winter, Bird, Consumers, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station

Date data commenced: 01/09/2016
Date data terminated: 12/30/2022

Principle Investigator: Alice Boyle

RECORD TYPE 1 CBS021 NetHours dataset

Data Format Specification:

Variable	Name	Columns	Format
1. DataCode	Nominal	Dataset code	
2. NetEventID	Physical quantity	AutoNumber	
3. Date	Date/time	date of capture event in date format	
4. Watershed	Nominal	Watershed name	
5. NoHours	Physical quantity	Total hours net open on this day (in decimal hours; e.g., 4 hr and 20 mins = 4.33	
6. Month	Nominal	Typically same as capture date, but sometimes the sampling period for one month overlaps a day or two of an adjacent month	
7. Year	Physical quantity	biological sampling year; starts Dec of year previous. For example, birds caught in Dec of 2019 count for the "winter 2020" sampling period	
8. Comments	Nominal	Comments	

RECORD TYPE 2 CBS022 Captures dataset

Data Format Specification:

Variable	Name	Columns	Format

1. DataCode   Nominal   Dataset code
2. RecType   Physical quantity   Record type
3. CaptureID   Physical quantity   Unique identification number for record
4. NetEventID   Physical quantity   links to autonumber field in NetHours table
5. CaptureTime   Date/time   Time bird captured
6. SpeciesCode   Nominal   Species code which links to SpCode field in
   Species table
7. Recap   Nominal   True or False if bird was previously
   captured
8. BandNo   Nominal   9 digit federal band number in XXXX-
   XXXXX format. Missing band# is NA
9. Age   Nominal   Age of captured bird, U, HY, SY, TY, AHY,
   ASY, ATY: unknown, hatch year, second year, third year, after-hatch-year, after-second-
   year, or after-third-year. Note that on 1 January of each year, all birds enter the next year
10. Sex   Nominal   Sex of captured bird, U, M, or F: unknown,
                                           male, or female
11. FatScore   Physical quantity   Visible, subcutaneous furcular fat score.
   Numeric score from 0 to 6 (usually... up to 8 possible).
12. CP   Physical quantity   Clocal Protruberance score from 0 to 5
13. BP   Physical quantity   Brood patch score from 0 to 5
14. MoltScore   Physical quantity   Molt Score, presence of actively molting
   feathers. Numeric score between 0 and 3
15. WingChord   Physical quantity   Length of (unflattened) wing chord
16. Tarsus   Physical quantity   Length of tarsus
17. Bander   Nominal   Initials of person responsible for banding
   bird and/or measured bird
18. FatMass   Physical quantity   Mass of fat as measured by QMR
19. LeanMass   Physical quantity   Mass of muscle as measured by QMR
20. TotalBodyWater   Physical quantity   body water in g. As measured by QMR
   (Quantitative Magnetic Resonance
21. Comments   Nominal   Comments for the data

RECORD TYPE 3 CBS023- list of Species code, name dataset

Data Format Specification:

Variable   Name   Columns   Format
1. SpCode   Nominal   Species code
2. ScientificName   Nominal   Scientific Name
3. CommonName   Nominal   Common Name

Data Set Code--CBD01

Title of data set: Date of occurrence for bird species observed on Konza Prairie

Abstract:

   Dates of records of occurrence for all bird species reported on Konza Prairie.

Keywords that describe data set:

   birds, consumer, phenology, populations, nesting Presence

Date data commenced: 01/01/1971
Date   data   terminated: 12/31/1992

Principle   Investigator: Alice   Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. Species	Name of Bird,	7-10	A4
4. Date 1	6-digit year, month, day of record	12-17	I6
5. Date 2	6-digit year, month, day of record	19-24	I6
6. Date 3	6-digit year, month, day of record	26-31	I6
7. Date 4	6-digit year, month, day of record	33-38	I6
8. Date 5	6-digit year, month, day of record	40-45	I6
9. Date 6	6-digit year, month, day of record	47-52	I6
10. Date 7	6-digit year, month, day of record	54-59	I6
11. Date 8	6-digit year, month, day of record	61-66	I6
12. Date 9	6-digit year, month, day of record	68-73	I6
13. Date 10	6-digit year, month, day of record	75-80	I6

Codes used:

For list of Species codes used, see CBC011_bird_list.

Data Set Code--CBH01

Title of data set: Konza Prairie Bison Herd Information

Abstract:

This study is to monitor Long-term changes in individual animal mass. Dataset contains combined weight information of the entire Konza Prairie bison herd. In addition, a historical version of the data is hosted which reflects an experimental division of the herd in the years covered.

Keywords that describe data set:

Bison, Bison Herd, Consumers, Weight, Mass, Herbivores

Date data commenced: 11/08/1994
Date data terminated: ongoing

Principle Investigator: John M. Briggs

RECORD TYPE 1: This recordtype contains the number of male and female bison per age category

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1	A5
2. Rectype	Record type	2	I1
3. RecYear	Year of data collection	3	I4
4. Birthyear	Year of bison birth	4	I4
5. Age	Bison age	5	I2
6. Numoffemale	Number of female bison	6	I3
7. Numofmale	Number of male bison	7	I3

RECORD TYPE 2: This recordtype contains historical bison weight information for individual animals

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1	A5
2. Rectype	Record type	2	I1
3. RecYear	Year of data collection	3	I4
4. RecMonth	Month of data collection	4	I2
5. RecDay	Day of data collection	5	I2
6. Animalcode	ID	6	I6
7. Animalsex	Sex of bison	7	I1
8. Animalweight	Total weight of animals in year	8	I6
9. AnimalYOB	Year of animal was born		

RECORD TYPE 3: This recordtype contains Bison maternal parentage: raw data contains the ear tag number of each calf and that of its mother.

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1	A5
2. Rectype	Record type	2	I1
3. RecYear	Year of data collection	3	I4
4. CalfTag	Unique individual identification code (ear tag number for each of calf)		
5. DamTag mother)	Unique individual identification code (ear tag number for each of calf's		

Data Set Code--CBM01

Title of data set: Plains bison movement patterns in an experimental heterogeneous landscape at Konza Prairie

Abstract:

This GPS-collar data set was used to evaluate the factors that influence where bison choose to graze and how grazing and space use patterns affect ecosystem function and structure. Our objectives were to quantify space use and movement patterns of adult female Plains bison in the context of selection for specific prescribed burn frequencies and topographical features in the bison-grazed watersheds at Konza Prairie. We hypothesized bison would track post-prescribed burn forage productivity and we predicted watersheds burned for the first time in several years would be used to a greater extent than watersheds burned more frequently.

Keywords that describe data set:

Plains bison; fire frequency; grazing systems; Konza Prairie Biological Station; resource utilization; spring-burn grazing

Date data commenced: 11/01/2008
Date data terminated: 11/01/2013

Principle Investigator: Anthony Joern**,** Edward Raynor

RECORD TYPE 1

Data Format Specification:

Variable	Name
1. DataCode	DataSet Code
2. RecType	Record Type
3. Bison_ID	Ear tag number assigned to individual during first round-up after birth
4. RecDate	Record DateTime
5. RecTime	Record Time (Time in Central Standard Time)
6. UTM_E	Easting for UTM zone 14N
7. UTM_N	Northing for UTM zone 14N
8. RecDateTime	Concatenation of Date and Time

Data Set Code--CBN01

Title of data set: Records of breeding activities for birds on Konza

Abstract:

Dates by species of documented records of breeding, either nests or dependent, fledged young - with contents of nest, nest placement information and location on Konza Prairie recorded by grid square.

Keywords that describe data set:

birds, consumers, phenology, nest record, reproduction

Date data commenced: 01/01/1971
Date data terminated: 12/31/1992

Principle Investigator: Brett K. Sandercock

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. Year		7-8	I2
4. Month		9-10	I2
5. Day		11-12	I2
6. Species	4 character alphameric	14-17	A4
7. GridX	KPRNA 200 m2 grid designations	19-20	A2
8. GridY	KPRNA 200 m2 grid designations	21-22	I2
9. Eggs	number of eggs in clutch	24-25	I2
10. Dbeggs	number of cowbird eggs in clutch	27-28	I2
11. Young	number of young in nest	30-31	I2
12. Cbyg	number of cowbird young in nest	33-34	I2
13. Comment	to indicate nest placement e.g 2m high in Ulmus americana	36-80	A45

Data Set Code--CBP01

Title of data set: Variable distance line-transect sampling of bird population numbers in different habitats on Konza Prairie.

Abstract:

Records of bird species based on line transect sampling, giving perpendicular distance of sighting from the transect line on 16 separate transects. Bird surveys were conducted 2-4 times per year in January, April, June, and October for a 29-year period from 1981 to 2009. Transects were designed to determine bird communities and population numbers associated with tallgrass prairie habitats with different experimental treatments (fire frequency, grazed by bison vs. ungrazed), riparian habitats on forest edge, and gallery forests dominated by oak woodland.

Keywords:

avian, birds, consumers, populations, relative abundance, species diversity

Publications based on the CBP01 dataset:

Collins, S.L. 2000. Disturbance frequency and community stability in native tallgrass prairie. American Naturalist 155:311-325.

Powell, A.F.L.A. 2006. Effects of prescribed burns and bison (*Bos bison*) grazing on breeding bird abundance in tallgrass prairie. Auk 123:183-197.

Zimmerman, J.L. 1983. The Birds of Konza: The Avian Ecology of the Tallgrass Prairie, University Press of Kansas, Lawrence, Kansas.

Date data commenced: 05/27/1981
Date data terminated: 06/17/2009

Principle Investigator: Alice   Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Name	Format	Units
1. Datacode	Bird population surveys (CBP01)	A5	
2. Rectype	Record type (1)	I1	
3. Year	Year of survey (1981-2009)	I4	
4. Month	Month of survey (1-12)	I2	
5. Day	Day of survey (1-31)	I2	
6. Season	Round of survey (e.g., 1981-3)	A6	
7. Transnum	Transect number (1 to 18, not 7 or 11)	I2	
8. Watershed	Name of Konza LTER unit	A4	
9. Obsnum	Observation number	I3	
10. Specname	Code for bird species name recorded in field notes	A4	
11. AOUcode	Standardized 4-letter alpha code for bird name	A4	
12. Common name	Standardized common name of bird	A30	

13. Distance	Perpendicular distance to bird	I3	meters
14. Count	Number of birds detected (1 for all records)	I1	
15. Sex	Sex of bird	A1	
16. Status	Residency status of bird	A1	
17. Comments	Miscellaneous notes on natural history	A35	
18. Time	For obsnum=1, start and end time of survey (CT)	A26	
19. Duration	For obsnum=1, duration of survey	I2	minutes
20. Observer	For obsnum=1, person who conducted bird survey	A15	

Explanation of Codes for Variables:

Datacode: CBP01 for all records.

Year, Month, and Day: 1 to 4 digit integers. Range in years is 1981 to 2009. Range in months for four rounds of bird surveys: 1 (also 12 or 2), 4, 6 (also 5), and 10. Days range from 1-31.

Season: Season or round of LTER bird surveys. Observers conducted 2 to 4 rounds of transects each year, where each transect was conducted once in a round. The variable Season is coded with the year of survey, a hyphen, and then a numeric code for season from 1 to 4 where: 1 = Winter, 2 = Spring, 3 = Summer, and 4 = Autumn. Winter surveys were usually run in January, but sometimes December or February (n = 28 rounds, 1982 to 2009). Spring surveys were conducted in April for a 6-year period (n = 6 rounds, 1982 to 1987), but then discontinued. Summer surveys were usually run in June, with a few surveys in late May (n = 29 rounds, 1981 to 2009). Autumn surveys were conducted in October for a 6-year period (n = 6 rounds, 1981 to 1986), but then discontinued.

Transnum: A total of 18 unique bird survey transects were conducted at Konza Prairie. Transects 7 and 11 were conducted for the first three rounds of surveys (1981-3 to 1982-1), but then discontinued. Bird records from transects 7 and 11 are not included in the dataset. Transect 18 in N20B was not conducted in the first three rounds of surveys (1981-3 to 1982-1), but was then run for all remaining rounds of surveys (1982-2 to 2009-3). Transect 5 in 004D was conducted for a 15-year period from 1981 to 1995, but then discontinued. All remaining transects were conducted every round, with five cases where a single transect was missed in a round during 1994 to 1998. Complete list of transects, watersheds, and latitude/longitude of the approximate midpoint are given below (Table 1).

Watershed: Codes for watersheds follow the standardized names for the experimental units of the LTER experimental design (e.g., 001B, N04D, N20B). Three nonstandard codes include: G00A = north branch of upper King's Creek, L00A = lower King's Creek near Hokasen homestead, S00A = upper Shane Creek on the east side of Konza. Each watershed unit has a single bird transect with the exception of N01B which has two transects (No. 6 and 10). A map of transects and watersheds is given below (Figure 1).

Obsnum: Observation number of bird(s) detected on a survey transect. Bird detected on the transect were numbered consecutively as the observer walked along the line transect. The total

number of birds detected on a single transect could be zero and ranged up to 433 individual birds.

Specname: For bird surveys conducted in 1981 until 2000, Specname was based on a nonstandardized set of bird codes originally devised by J.L. Zimmerman to record bird data. The original codes have been retained in the CBP01 datafile to facilitate checking against the original datasheets but should not be used for analysis. Zimmerman codes were unique for most species but did overlap with AOU codes for two species: EWPW = Eastern Wood-Pewee for Zimmerman, but Eastern Whip-poor-will for AOU; TRES = American Tree Sparrow for Zimmerman, but Tree Swallow for AOU.   For bird surveys conducted during 2001 until 2009, the standardized 4-letter alpha codes of the American Ornithologists' Union were used to record the bird detections on the datasheets in the field.

AOUCode: The standardized 4-letter alpha codes based on common names of bird and the checklist of the American Ornithologists' Union. See the Institute for Bird Populations for a master list of all 4-letter alpha codes (www.birdpop.org). The data file includes a handful of nonstandard codes: UNME = Western/Eastern Meadowlark, UNSP = sparrow sp., NONE = bird survey was conducted but no birds were detected, and VOID = no bird survey was conducted.

CommonName: The standardized common names of bird species detected on the bird survey transects. The standardized common names follow the checklist of the American Ornithologists' Union (www.americanornithology.org). If there have been changes in taxonomy or common names, the most current name has been updated in the file (e.g., Northern Harrier instead of Marsh Hawk, Baltimore Oriole instead of Northern Oriole). In early years of surveys, some records of meadowlarks were not identified to species: Western/Eastern Meadowlark. Based on singing males, most meadowlarks at Konza Prairie are Eastern Meadowlarks (>98%) and Western Meadowlarks occur only rarely (<2%). In 1998, the AOU checklist committee split Rufous-sided Towhee (RSTO) into Eastern Towhee (EATO) and Spotted Towhee (SPTO). The species complex is recorded as RSTO in the early years of bird surveys, unless field notes allowed the bird to be identified. At Konza Prairie, Eastern Towhees usually occur in summer, Spotted Towhees occur during winter, but either species can occur during migration.

Distance: Perpendicular distance of bird from survey transect. Birds were detected by sighting or by vocalizations. Transects were variable width but average perpendicular distance was ca. 35 m and up to 350 m. Transects were reflagged each year with markers and observers were able to see the line of the transect. Observers did not record whether the bird was on the left or right side of the transect. Birds were recorded only if detected within the boundaries of the watershed unit. For bird surveys conducted in 1981 until 2000, distance was estimated by the observer. For bird surveys conducted in 2001 to 2009, distance was estimated with a laser rangefinder (Bushnell, Yardage Pro 450).

Count: Each bird detected was recorded once and numbered consecutively on a separate line in the data file with a different obsnum for each bird. If a flock of three birds was observed, the observations were recorded over three lines with consecutive numbers, and the species name and perpendicular distance was repeated three times. Distance sampling usually requires perpendicular distances for clusters of single birds or flocks. In the CBP01 datafile, repeated

information recorded on consecutive lines would usually be birds in the same flock, but in some cases could also be separate clusters of birds.

Sex: M = Male, F = Female, U = Unknown. Recorded in early years of sampling from 1981 to 1990 but then discontinued.
Status: P = Year-round resident, S = Summer resident, W = Winter resident, T = Transient, U = Unknown residency status. Recorded in early years of sampling from 1981 to 1992 but then discontinued.

Comments: Miscellaneous notes on the natural history of the bird sighting.

Time: If obsnum=1, the start and end times for the bird survey transect. All surveys were conducted in morning hours in the Central Timezone (CT). Time could be either Central Standard Time (CST) or Central Daylight Time (CDT) depending on the month of survey. In some cases, the end time was not recorded for the survey (End=????), but duration was set to be the average survey time for that transect in a given season.

Duration: If obsnum=1, the duration of the bird survey transect in minutes.

Observer: If obsnum=1, the name of the observer conducting the bird survey. Bird survey transects were conducted by four different observers over the 29-year period from 1981 to 2009: Elmer J. Finck (ca. 1981-1989, n = 430 surveys), John L. Zimmerman (ca. 1990-1997, n = 293 surveys), Christopher C. Smith (1998-2001, n = 105 surveys), and Brett K. Sandercock (2002-2009, n = 240 surveys).
Metadata revised: 06/26/2016

Table 1. List of bird survey transects at the Konza Prairie LTER, Kansas, 1981-2009. Each watershed had one transect, except N01B which had two transects (no. 6 and 10). Transects ranged from 375 m to 1.49 km in length. Transect` length was not standardized among units and usually followed the longest axis within an experimental unit. Survey transects followed different headings but most were relatively linear or at least broken-stick in layout. A few transects were nonlinear and followed hillsides to stay in the same watershed or habitat strata (e.g., L9 in R20A, L16 in S00A). The Latitude and Longitude are the geographic location of approximate midpoint for each transect line.

Transect	Watershed	Length	Latitude	Longitude
1	N04D	961	39.08148	-96.58116
2	N04B	778	39.09260	-96.58008
3	004B	902	39.07497	-96.59795
4	004A	375	39.07437	-96.60564
5	004D	408	39.07249	-96.58745
6	N01B	546	39.07986	-96.56709
8	001D	914	39.07861	-96.56163
9	R20A	666	39.07007	-96.60786
10	N01B	1091	39.08272	-96.57568

12	R01B	636	39.07591	-96.55205
13	020C	594	39.06966	-96.56263
14	020B	545	39.07211	-96.57812
15	L00A	882	39.10530	-96.60042
16	S00A	1300	39.10957	-96.54412
17	G00A	742	39.10149	-96.58256
18	N20B	1490	39.08556	-96.57020

Figure 1. Map of bird survey transects at the Konza Prairie LTER, Kansas, 1981-2009.
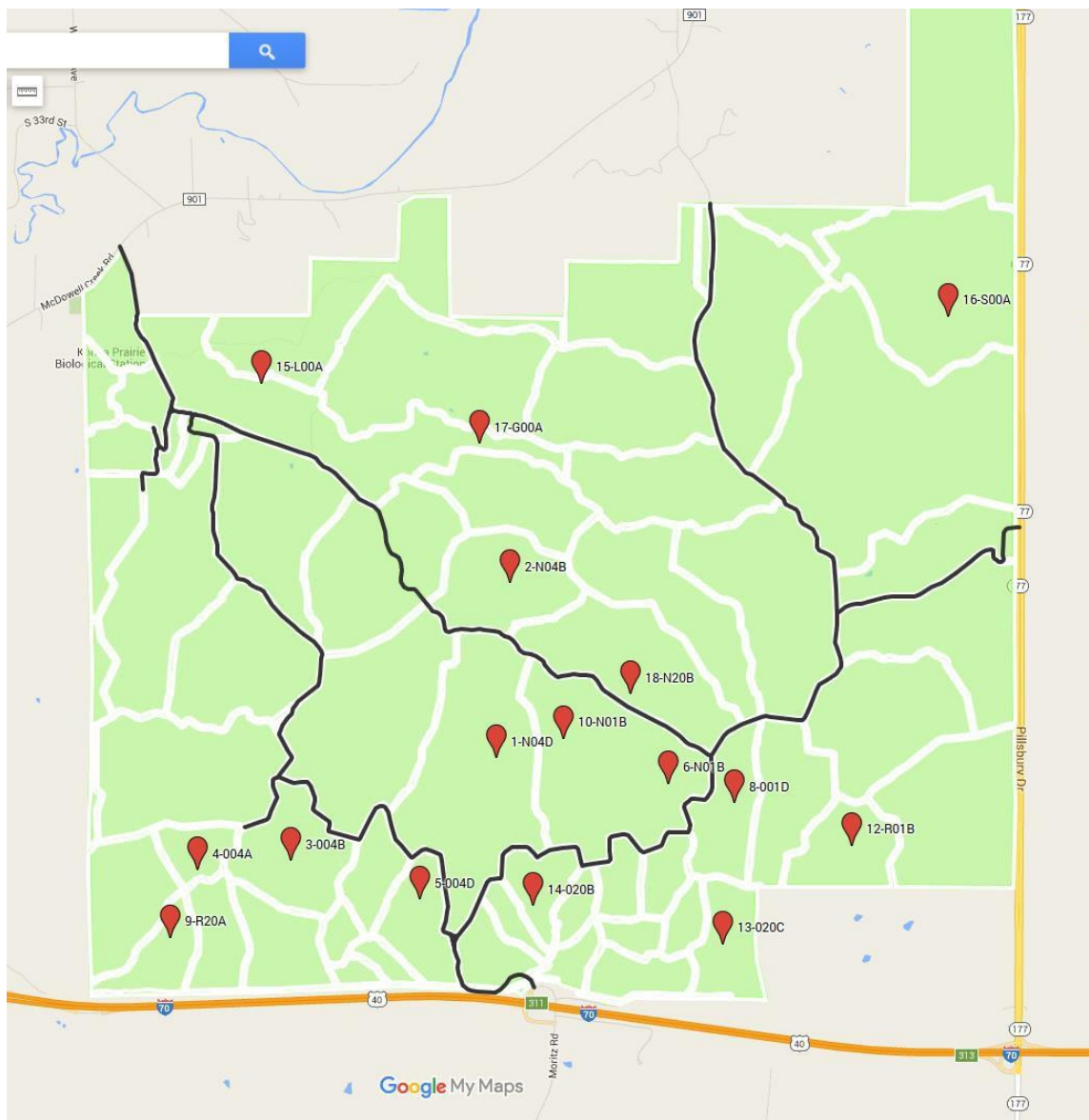
Data Set Code--CBS01

Title of dataset: Capture records of (mainly) Grasshopper Sparrows on Konza Prairie

Abstract:

This dataset includes captures of mainly Grasshopper Sparrows (GRSP), but includes other songbirds. Each row pertains to an individual captured on a certain day. Individuals can repeat. Most captures include data on age, sex, head-bill, tarsus, wind chord, molt score, fat score, and mass. In many cases, a single feather was collected from each Grasshopper Sparrow for isotopic analyses, and when available, results of those data are included. Some individuals were measured for body composition (fat mass, lean mass, and body water) using a mobile Quantitative Magnetic Resonance (QMR) machine. Most individuals were bled in the field within 5 min of capture. The blood was chilled, centrifuged the same day, and plasma stored frozen for analyses of metabolite concentrations. Red blood cells were stored in lysis buffer for genotyping. All birds were banded with a USFWS band and adults were individually marked using a unique combination of 3 plastic colored leg bands. Birds captured as independent young or nestlings banded prior to fledge were only marked with the USFWS bands. All birds were released at the location of capture.

Keywords that describe dataset:

Grasshopper Sparrow, *Ammodramus savannarum*, morphology, stable isotope, body composition

Date data commenced: April 2013
Date data commenced: ongoing

Principle Investigator: Alice Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Description	Bounds	Units
DataCode	Dataset code		
Rectype	Record type		
CaptureID	Unique identification number for record		
CaptureDate	Date bird was captured	12-May-13	DD-MMM-YY
Watershed	Name of plot bird was captured on (KNZ codes)		
SpeciesCode	American Ornithologists' Union/American Ornithological Society species code		See 'Codes Used'
CaptureTime	Time bird captured	5:47 to 20:06	Military time i.e.: 13:00 not

1:00pm

CaptureMethod	How bird was captured	Hand (for nestlings) /Mist net	
Recap	TRUE if bird was previously captured	TRUE/FALSE	
BandPrfNum	First four numbers on Federal silver band		
BandSufNum	Last five numbers on Federal silver band		
Colorband	Unique 4 color leg-band pattern		
Age	Age of captured bird		See 'Codes Used'
HowAged	Basis for aging decision		See 'Codes Used'
Sex	Sex of captured bird		See 'Codes Used'
CP	Cloacal Protuberance Scale (males only)	0-5	See 'Codes Used'
BP	Brood Patch Scale (females only)	0-5	See 'Codes Used'
HowSexed	Basis for sexing decision		See 'Codes Used'
HeadBill	Distance from back of head to end tip of bill	16.8-39	mm
Tarsus	Length of tarsus	11.4-29.7	mm
WingChord	Length of (unflattened) wing chord	18.5-109	mm
FlatWing	Length of flattened wing	56.5-72	mm
PF9	Length of the 9th primary feather	58.5-72	mm
MoltScore	Molt score	0-3	See 'Codes Used'
FatScore	Visible, subcutaneous furcular fat score	0-5	See 'Codes Used'
BloodSample	Was a blood sample taken?		TRUE/FALSE
BirdMass	Mass of bird	6.94-49.51	grams
HowWeighed	Instrument used to mass bird	DigitalScale/ Pesola	
Bander	Initials of person responsible for banding bird		See 'Codes Used'
Photos	TRUE if photos (head, wing) were taken of the bird	TRUE/FALSE	
TotalBlood	µl of whole blood collected	0-143	µl
Haematocrit	Percent of haematocrit to total blood amount (mm= µl)	40-89	µl
plasma	Amount of plasma after centrifuging (mm= µl)	0-79	mm

SampleID	Blood Sample ID	1-1743	
Interpubic	Width of space between points on pubic bones as measured through skin on belly		mm
Culmen/Bill	Length of bill		mm
Feather	TRUE if a feather taken at capture	TRUE/FALSE	
FeatherCollected	Which feather was collected? P = primary	P1-P9	
ConcTRIG	Concentration of triglycerides in plasma	0.155-14.63	mmol/L
TRIG	Was the CV over 20?	TRUE/FALSE	
ConcBUTY	Concentration of β-hydroxy Butyrate	0.306-3.7	mmol/L
BUTY	TRUE if CV was over 20%	TRUE/FALSE	
FatMass	Mass of fat as measured by QMR	0.04-2.23	g
LeanMass	Mass of muscle as measured by QMR	8.09-16.29	g
BodyWater	Mass of body water as measured by QMR	0.28-17.72	g
PositionRegion	UTM Zone	14 S	
PositionX	Easting (latitude)	706367-714178	
PositionY	Northing (longitude)	4326889-4340953	

Notes
Codes Used:

Species Code:

Species Code	Common Name	Scientific Name
BHCO	Brown-headed Cowbird	*Molothrus ater*
GRSP	Grasshopper Sparrow	*Ammodramus savannarum*
HESP	Henslow Sparrow	*Ammodramus henslowii*

Color Band Color Abbreviations:

A	Gray	K	Black	S	Silver
B	Light Blue	O	Orange	W	White
D	Dark Blue	P	Pink	Y	Yellow
G	Green	R	Red		

Age:

NG   Nestling

HY	Hatch Year
AHY	After Hatch Year
SY	Second Year
ASY	After Second Year
TY	Third Year
ATY	After Third Year
U	Unknown

How aged or sexed:

Plumage	Young (hatch-year) birds have distinct plumage. Following their first year, GRSP cannot be sexed or aged by plumage
CP	Cloacal Protuberance present—indicates male in breeding condition
BP	Brood Patch present—if >0.5, indicates female in breeding condition (males only lose a few belly feathers)
OnNest	Nestlings found in nest = known age. Birds flushed from nest sexed as females
Song	Males observed singing prior to capture (females don't sing)
Display	Males observed displaying prior to capture (females don't display)
Molecular	Molecularly sexed post-hoc
Ossification	Young (< 4 mo) birds have incomplete ossification
Recap	If a bird was captured in a previous season, we can age precisely (if HY or NG at time for first capture), or know minimum age (if captured as AHY)

Sex:

M	Male
F	Female
U	Unknown

CP:

0	No evidence of swelling
1	Very slight thickening
2	Still longer than wide, but noticeably bulging
3	Resembling the drawing in the front of Pyle guide
4	Size of an unripe blueberry
5	Size and color of an ripe blueberry

BP:

1	Smooth feathers are dropped and some vascularization is evident, but most of the area is still rather smooth and dark red

2   Vascularization is evident, some wrinkles are present, and some fluid is present under the skin, giving the area a pale, opaque, pinkish color

3   Vascularization is at the maximum extent of the brood patch; the brood patch is thickly wrinkled, and much fluid is present under the skin

4   Wrinkled, vascularization and fluid is mostly gone, skin retains many thin, dry, contracted wrinkles

5   Molting with no vascularization or fluid, most wrinkles gone, and pinfeathers present only on breast with no other flight feather or body molt occurring

Molt:
0   No molt
1   Some pin feathers, adventitious flight feather molt, or very beginning stages of complete molt (i.e., dropped feathers but no new feathers grown in)
2   Moderate molt. Multiple feather tracts and/or flight feathers or retricies
3   Most tracts in molt including flight feathers and body

Fat:
0   No fat visible in furculum
1   A light covering or partial covering of fat on the inside of the furculum
2   >10% full and <~35% full
3   Roughly half full of fat
4   Furculum ~75% full, fat typically extending out of furcular area at the top and some visible fat in wing pits and lower belly
5   Furculum ~full-slightly bulging. Obvious fat reserves elsewhere on the body
6   Furculum very bulging. Extensive fat reserves elsewhere

Observers:

AB	W. Alice Boyle	HN	Hunter Nedland
AJH	Alex Henry	JMG	Jackie Gehrt
ANB	Allison Bays	JMS	Joseph Schmidt
BV	Bram Verheijen	KEG	Keil Garey
CES	Chelsea Sink	LTA	Lauren Angermeyer
CKP	Chyna Pei	MLG	Michaela Gustafson
DDH	Destiney Hett	SKW	Sarah Winnicki
DJS	Dylan Smith	SLD	Sarah Demadura
EJW	Emily Williams	SVR	Suzy Replogle
GW	Virginia Winder		Curnutt

Data Set Code--CBS02

Title of dataset: Nests of Grasshopper Sparrows on Konza Prairie

Abstract:

This data set contains data describing Grasshopper Sparrow nests. These nests were primarily found by rope dragging but also on surveys (see RI Survey Data Set), flushing birds during other activities, and via behavioral observations. We described nest contents and monitored nest fate via visits every 2-3 day and by placing an iButton placed in the center of the nest flush with the bottom of the nest cup and comparing temperature traces to a second iButton placed outside of the nest to determine the timing of nest failure and other metrics of incubation/brooding behavior. We compiled counts of partial egg loss, partial brood loss, and estimated causes of nest failure, comparing the timing of these events with KNZ-collected meteorological data to determine the temporal association between rainstorms and nest abandonment.

Keywords that describe dataset:

Grasshopper Sparrow, *Ammodramus savannarum*, nests, species, color banded birds, iButton, nest parasitism, measurements, partial brood loss, partial egg loss, nest failure, storm

Date data commenced: May 2014
Date data concluded: ongoing

Principle Investigator: Alice Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Description	Bounds	Units
DataCode	Dataset code		
RecType	Record type		
NestAutoID	Unique identification		
NestID	Unique name for nest with the pattern watershed-observer-number		
NestOrientation	Bearing toward nest cup opening	0-360	Degrees
Watershed	Watershed where nest was found (KNZ codes)		
DateFound	Date of first nest check	13-May-14	DD-MMM-YY
FemaleBands	Unique 4 color leg-band pattern		See 'Codes Used'
MaleBands	Unique 4 color leg-band pattern		See 'Codes Used'

Observer	Unique code for technicians		See 'Codes Used'
MethodFound	How nest was found		See 'Codes Used'
StageFound	Stage of nest when discovered		See 'Codes Used'
iButtons	TRUE if iButtons placed	TRUE/FALSE	
DateiButtonsP	Date iButtons were placed	17-May-14	DD-MMM-YY
TimeiButtonsP	Time iButtons were placed	5:35-17:35	Military time i.e.: 13:00 not 1:00pm
DateiButtonsR	Date iButtons were retrieved	20-May-14	DD-MMM-YY
TimeiButtonsR	Time iButtons were retrieved	5:50-18:17	Military time i.e.: 13:00 not 1:00pm
EggsMeasured	TRUE if eggs were measured	TRUE/FALSE	
EggMeasureID	Unique identifier for each egg measured	4-584	
EggMeasureDate	Date eggs measured	17-May-14	DD-MMM-YY
EggLength	Length of egg by calipers	16.6-22.7	Millimeter
EggWidth	Width of egg by calipers	13.3-25	Millimeter
EggMass	Mass of egg in tared weight boat on scale	0.66-3.32	Grams
NestlingMeasured	TRUE if nestlings measured	TRUE/FALSE	
NestlingMeasureDate	Date when nestlings were measured, blank if not applicable	22-May-14	DD-MMM-YY
MaxNGRSP	Maximum number of grasshopper sparrows observed in clutch	0-6	
TotClutchSize	Total number of eggs in nest	0-7	
NCowbirds	Number of cowbird nestlings in nest	0-4	
BroodSize	Total number of nestlings	0-6	
NFledge	Number of GRSP nestlings fledged	0-6	
NCowbirdsFledge	Number of BHCO nestlings fledged	0-2	
DateHatch	Date of first egg hatched	15-May-14	DD-MMM-YY
HatchDayInferred	TRUE if hatch day is inferred	TRUE/FALSE	
Date1stEgg	Date of first egg layed	30-Apr-14 to	DD-MMM-YY
1stEggDayInferred	TRUE if egg data estimated	TRUE/FALSE	

		E	
1stEggDateUncertain	Level of uncertainty for 1st egg date: No of days +/- in estimate of first egg layed	0-5	
DateFledgeFail	Date of last nest check	19-May-14	DD-MMM-YY
InferredFateField	Fate of nest deduced in field		See 'Codes Used'
InferredFateLab	Fate of nest deduced after reviewing iButton data in the lab		See 'Codes Used'
ComDayVerified	TRUE if nest fate can be verified by iButton data	TRUE/FALSE	
iButtonComDate	Nest completion date as indicated by iButton data	19-May-14	DD-MMM-YY
iButtonComTime	Nest completion time as indicated by iButton data	0:00-23:38	Military time i.e.: 13:00 not 1:00pm
PartialEggLoss	TRUE if some eggs disappear without reason and without complete nest failure	TRUE/FALSE	
DateCBEggLoss	Nest check date before partial egg loss	13-May-14	DD-MMM-YY
TimeCBEggLoss	Nest check time before partial egg loss	6:15-14:50	Military time i.e.: 13:00 not 1:00pm
DateCAEggLoss	Nest check date after partial egg loss	16-May-14	DD-MMM-YY
TimeCAEggLoss	Nest check time after partial egg loss	6:00-16:00	Military time i.e.: 13:00 not 1:00pm
PartialBroodLoss	TRUE if some nestlings disappear without reason and without complete nest failure	TRUE/FALSE	
DateCBBroodLoss	Nest check date before partial brood loss	22-May-14	DD-MMM-YY
TimeCBBroodLoss	Nest check time before partial brood loss	5:49-15:30	Military time i.e.: 13:00 not 1:00pm
DateCABroodLoss	Nest check date after partial brood loss	24-May-14	DD-MMM-YY
TimeABroodLoss	Nest check time after partial brood loss	5:50-15:24	Military time i.e.: 13:00 not 1:00pm
FailTimeStorm	Time between nest failure and nearest previous storm time	0-411	Hours

StormSevere	TRUE if most recent storm before nest failure was severe (>=11.65 mm per rain event)	TRUE/FALSE
EggLossStorm	TRUE if partial egg loss was during a storm	TRUE/FALSE
BroodLossStorm	TRUE if partial brood loss was during a storm	TRUE/FALSE
PositionRegion	UTM zone	14 S
PositionX	Easting (latitude)	in m, UTM system
PositionY	Northing (longitude)	in m, UTM system
NestFateDesc	Brief description of nest fate	
OtherNotes	Other pertinent details about nest	

Codes Used:

GRSP	Grasshopper Sparrow (*Ammodramus savannarum)*
BHCO	Brown-Headed Cowbird *(Molothrus ater)*
NOAA	National Oceanic and Atmospheric Administration

Color Band Color Abbreviations:

A	Gray	G	Green	S	Silver
B	(Light) Blue	K	Black	W	White
		O	Orange	Y	Yellow
D	Dark (Blue)	P	Pink		
		R	Red		

Observers:

AB	W. Alice Boyle	CRW	Caitie Weichmann	KRW	Kyle Wait
ADT	Alaina Thomas	DDH	Destiney Hett	LTA	Lauren Angermeyer
AJH	Alex Henry	DJS	Dylan Smith	MLG	Michaela Gustafson
AMC	Amanda Charpinel	EJH	Emily Hudson	SKW	Sarah Winnicki
BJR	Breyana Ramsey	EJW	Emily Williams	SVR	Suzy Replogle Curnutt
BV	Bram Verheijen	HN	Hunter Nedland		
CES	Chelsea Sink	JMG	Jackie Gehrt		

Method:

BO	Behavioral Observation	RW	Random Walking
		RD	Rope Dragging

OT   Other   UN   Unknown

Stage:
BU   Building   NG   Nestlings
LAY   Laying   FL   Fledged/Fledglings
IB   Incubating

Inferred Fate:
SU   Fledged ≥1 GRSP   TR   Trampled by livestock
SC   Fledged ≥1 GRSP and ≥1BHCO   WE   Nest flooded, nestlings died of
CO   Fledged only BHCO or abandoned   exposure
      due to cowbird parasitism   HU   Suspected human-caused
PR   Nest contents eaten   abandonment or destruction
AB   Abandoned for no apparent reason

Data Set Code--CBS03

Title of dataset: Grasshopper sparrow surveys: densities, reproductive index, and locations of marked individuals on Konza Prairie

Abstract:

Data on the location, identity, and reproductive index (Vickery, 1992 #5253) of Grasshopper Sparrows within 10-ha plots on 14 watersheds units on Konza and on 2 adjoining units on the Rannells Preserve. Each plot was surveyed every ~7-10 days. These surveys documented individual sparrow locations, and are used to calculate dispersal distances and territory densities.

Keywords that describe dataset:

Grasshopper Sparrow, *Ammodramus savannarum*, Reproductive Index Survey, species, distribution, color banded birds, phenology

Date data commenced: May 2013
Date data concluded: ongoing

Principle Investigator: Alice Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Description	Bounds	Units
DataCode	Dataset code		
Rectype	Record type		
ReproSurID	Unique identification		
SurveyDate	Date survey was conducted (D/M/Y)	7-Jun-13 to	DD-MMM-YY
Watershed	Usually agrees with 'Watershed', not used for incidental observations (KNZ codes)		
Observer	Unique code for technicians		See 'Codes Used'
StartTime	Time at beginning of survey		Military time i.e.: 13:00 not 1:00pm
IncidentalObs	TRUE if bird was detected outside traditional survey, i.e.: off plot or during transport	TRUE/FALSE	
SurDuration	Length of survey	20-410	Minutes
Temperature	Temperature at beginning of survey	4-40	Degrees Celsius
Wind	Category of wind based off	0-7	See 'Codes

	Beaufort Scale		Used'
Cloud	Percent of sky covered by clouds	0-100	Percent
Precipitation	Categorical distinction of ambient moisture		See 'Codes Used'
NMaleGRSP	Number of territorial males on plot	0-24	
PositionRegion	UTM zone	14 S	
PositionX	Easting (latitude)		In m, UTM system
PositionY	Northing (longitude)		In m, UTM system
ReproDataID	Unique identification		linking field between tables in original database
ColorBands	Unique 4 color leg-band pattern		
RI	Reproductive Index	1-5	See 'Codes Used'

Codes Used:

Observers:

AB	W. Alice Boyle	CES	Chelsea Sink	JN	Jessica Nyguyen
ADT	Alaina Thomas	CKP	Chyna Pei	LTA	Lauren Angermeyer
AJH	Alex Henry	CRW	Caitie Weichmann	MLG	Michaela Gustafson
AMC	Amanda Charpinel	DDH	Destiney Hett	MR	Mark Herse
ANB	Allison Bays	DJS	Dylan Smith	SKW	Sarah Winnicki
ASS	Amie Sommers	EJW	Emily Williams	SLD	Sarah Demadura
BJB	Brett Budach	HN	Hunter Nedland	SMM	Stephanie Munguia
BJR	Breyana Ramsey	ITW	Ian Waters	SVR	Suzy Replogle Curnutt
BV	Bram Verheijen	JMG	Jackie Gehrt	YVM	Yisel Marquez
BW	Blake Walter	JMS	Joseph Schmidt		

Wind:

0	Calm	Calm, smoke rises vertically
1	Light Air	Smoke drift indicates wind direction,
2	Light Breeze	Wind felt on face, leaves rustle, vanes begin to move
3	Gentle Breeze	Leaves and small twigs constantly moving, light flags extended
4	Moderate Breeze	Dust, leaves, and loose paper lifted, small tree branches move
5	Fresh Breeze	Small trees in leaf begin to sway
6	Strong Breeze	Larger tree branches moving, whistling in wires
7	Near Gale	Whole trees moving, resistance felt walking against wind

Precipitation:
None, mist, drizzle, light rain, heavy rain, snow, hail

Reproductive Index:

1	Territorial	Buzz song
1.5	Courtship	Alternate song
2	Paired	Two birds, no fight
3	Nest Building/Incubating	Carry grass, flush close, chips
4	Nestlings	Carry food; chips, little song
5	Fledglings	

Data Set Code--CBS04

Title of dataset: Sweep sample data: prey estimates for Grasshopper Sparrows on Konza Prairie

Abstract:

This data set includes data on the contents of sweep samples. We collected sweeps in 2014 monthly in May, June, and July in 3 locations on each of the focal watersheds. Sweeps were X m long and centered at veg points. Data consist of information about the sampling events, and sample wet mass, edible mass (combined mass of selected orders listed below). Additionally, the dataset includes the number of individuals in each of a series of size categories, total N, and mass (in grams) of the following groups: Tettigoniidae, Acrididae, other Orthoptera, Gryllidae, Odonata, Ephemeroptera, Coleoptera, Hymenoptera, Lepidoptera, Arachnida, Hemiptera, Neuroptera, Diptera, Phasmatidae, Mantidae, and "other".

Keywords that describe dataset:

Grasshopper Sparrow, *Ammodramus savannarum*, species individuals, diversity, arthropods, sweep sampling, phenology

Date data commenced: May 2014
Date data concluded: ongoing

Principle Investigator: Alice Boyle

RECORD TYPE 1 - Data consist of information about the sampling events, total sample wet mass, and edible mass

Data Format Specification:

Variable	Description	Bounds	Units
DataCode	Dataset code		
RecType	Dataset record type		
SweepSampleEventID	Unique ID for sweep sample events		
TransectID	Unique name for sweep sample point	BUG-1-1B to BUG-54-N2B	
Watershed	Watershed		
DateSampled	Date of sweep sample	20-May-14 to 3-Aug-15	DD-MMM-YY
TimeSampled	Time of sweep sample	8:32-15:55	Military time i.e.: 13:00 not 1:00pm
SampledBy	Person who carried out sweep sample in field		See 'Codes Used'
ProcessedBy	Person who processed the		See 'Codes

	sweep sample in lab		Used'
SweepNumber	Each transects has two sweeps per DateSampled	1-2	
DateProcessed	Date sample was processed in lab	10/17/2014-10/16/2015	M/D/YYYY
InedibleMass	Mass of inedible insects as according to GRSP eating habits in one sweep	0-3.58	Grams
EdibleMass	Mass of edible insects as according to GRSP eating habits in one sweep	0.04-22.20	Grams
TotalWetMass	Total mass of insects in one sweep before drying in oven	0.07-22.22	Grams
Temperature	Temperature		Celsium
Wind	Wind speed status		
Cloud	Clooud status		
Notes	Additional notes about nest		

RECORD TYPE 2 - Data consist of information about the sample wet mass along with different taxonomy group

Data Format Specification:

Variable	Description	Bounds	Units
DataCode	Dataset code		
RecType	dataset record type		
SweepSampleEventID	Unique ID for sweep sample events		
watershed	watershed		
DateSampled	Date of sweep sample	20-May-14 to	DD-MMM-YY
TimeSampled	Time of sweep sample	8:32-15:55	Military time
SweepNumber	Each transects has two sweeps per DateSampled	1-2	
DateProcessed	Date sample was processed in lab	10/17/2014-10/16/2015	M/D/YYYY
TaxonomyGroup	Taxonomy group name in one sweep		
WetMass	Total mass of insects in one sweep before drying in oven	0.07-22.22	Grams

RECORD TYPE 3 - Data consist of number of count from different taxonomy group in different size class

Data Format Specification:

Variable	Description	Bounds	Units
DataCode	Dataset code		
RecType	dataset record type		
SweepSampleEventID	Unique ID for sweep sample events		
Watershed	watershed		
DateSampled	Date of sweep sample	20-May-14 to	DD-MMM-YY
TimeSampled	Time of sweep sample	8:32-15:55	Military time
SweepNumber	Each transects has two sweeps per DateSampled	1-2	
DateProcessed	Date sample was processed in lab	10/17/2014-	M/D/YYYY
TaxonomyGroup	Taxonomy group name in one sweep		
SizeClass	Taxonomy group in different size group (1 – 6 group see code below)	1-6	mm
SpeciesCount	Total number of species count in different taxomom group and in different size classs		

Codes Used:

Sampled by and Processed by:

ADT	Alaina Thomas	HN	Hunter Nedland
AJH	Alex Henry	JMG	Jackie Gehrt
ALL	Ashley Lysaught	JMM	Jerusha Matthews
AMC	Amanda Charpinel	JNB	Jordann Baker
ASS	Amie Sommers	LAG	Logan Green
BJR	Breyana Ramsey	LVO	Logan VanOverschelde
CES	Chelsea Sink		
CRW	Caitie Weichmann	MMS	Meredith Schmidt
DJS	Dylan Smith	SVR	Suzy Replogle Curnutt
EGS	Emily Samuel		
EJW	Emily Williams	VTN	Valerie Nyguyen

Wind:

0 - Calm Calm, smoke rises vertically

1 - Light Air Smoke drift indicates wind direction,

2 - Light Breeze Wind felt on face, leaves rustle, vanes begin to move

3 - Gentle Breeze Leaves and small twigs constantly moving, light flags extended

4 - Moderate Breeze Dust, leaves, and loose paper lifted, small tree branches move

5 - Fresh Breeze Small trees in leaf begin to sway

6 - Strong Breeze Larger tree branches moving, whistling in wires
7 - Near Gale Whole trees moving, resistance felt walking against wind

Taxonomy Group Size Class:
1 - (<5 mm)
2 - (5 ~15 mm)
3 - (15 ~25 mm)
4 - (25 ~35 mm)
5 - (35 ~45 mm)
6 - (>45 mm)

Data Set Code--CBS05

Title of dataset: Estimates of vegetation structure and composition collected on Konza Prairie watersheds and on the nearby Rannell's Preserve

Abstract:

Data set includes estimates of vegetation structure and composition collected during ~monthly sampling events on Konza Prairie watersheds and on the nearby Rannell's Preserve. Vegetation data were collected from three randomly-selected locations were chosen randomly on each watershed; two from outside the 10-ha plot (see project abstract) and one inside the plot. We sampled vegetation on each watershed once a month, during May, June, and July. Additional vegetation data were collected from Grasshopper Sparrow nest sites within ~3 days of nests failing. We used 5 sets of Daubenmire frame measures to determine percent cover of major plant functional groups (at the center of the plot and 5 m from center at the 4 cardinal directions). We estimated visual obstruction by placing a Robel Pole in the middle, and 5 m from the middle of the plot in each of the 4 cardinal directions. For each pole placement, we stood 4 m away with eye 1 m above the ground in each of 4 directions, and counting the highest 5-cm segment not completely obscured by vegetation. At nests, we also estimated the slope and aspect in the center of each plot.

Keywords that describe dataset:

Grasshopper Sparrow, *Ammodramus savannarum*, vegetation sampling, Robel Pole, visual obstruction, Daubenmire frame, percent cover

Date data commenced: May 2014
Date data concluded: ongoing

Principle Investigator: Alice Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Description	Bounds	Units
DataCode	Dataset code		
RecType	Record type		
VegID	Unique identification number		
Watershed	Watershed name (KNZ codes)		
Point	Should be same as 'WaypointName'		
Date	Date Vegetation Sampling Event occurred	23-May-14	DD-MMM-YY
Observer	Unique code for technicians		See 'Codes Used'
CenterRobelN	Robel pole reading from 5m north of point	0-10	Decimeter
CenterRobelE	Robel pole reading from 5m east of point	0-10	Decimeter
CenterRobelS	Robel pole reading from 5m south of point	0-10	Decimeter

CenterRobelW	Robel pole reading from 5m west of point	0-10	Decimeter
EdgeRobelN	Robel pole reading from 5m north of CenterRobel-N point	0-10	Decimeter
EdgeRobelE	Robel pole reading from 5m east of CenterRobel-E point	0-10	Decimeter
EdgeRobelS	Robel pole reading from 5m south of CenterRobel-S point	0-10	Decimeter
EdgeRobelW	Robel pole reading from 5m west of CenterRobel-W point	0-10	Decimeter
ShrubCover	Veg sampling area covered in shrubs	0-100	Percent
TreeCover	Veg sampling area covered by trees	0-100	Percent
Aspect	Aspect from nest toward lower elevation	0-360	Degrees
Slope	Slope that nest is on, measured by clinometer	0-25	Degrees
DaubenmireID	Unique number to each Daubenmire sample	1-3999	
VegPlotLoc	Location of Daubenmire frame at point		See 'Codes Used'
LiveGrass	Percent cover of live grass inside Daubenmire frame	0-100	Percent
LiveForb	Percent cover of live forb inside Daubenmire frame	0-100	Percent
Shrub	Percent cover of shrub inside Daubenmire frame	0-100	Percent
DeadGrass	Percent cover of dead grass inside Daubenmire frame	0-100	Percent
OtherDead	Percent cover of other dead vegetation inside Daubenmire frame	0-100	Percent
Litter	Percent cover of litter inside Daubenmire frame	0-100	Percent
Bare	Percent cover of bare ground inside Daubenmire frame	0-100	Percent
Nest	Percent cover of ground the nest covers inside Daubenmire frame	0-100	Percent
WaypointName	Should be same as 'Point'		
Position Region	UTM zone	14 S	
PositionX	Easting (latitude)		in m, UTM system
PositionY	Northing (longitude)		in m, UTM system
Notes	Additional notes about nest		

Codes Used:

Observers:

ADT	Alaina Thomas	AMC	Amanda Charpinel	BJR	Breyana Ramsey
AJH	Alex Henry	ASS	Amie Sommers	CES	Chelsea Sink

CRW	Caitie Weichmann	JMG	Jackie Gehrt	SKW	Sarah Winnicki
DDH	Destiney Hett	JMS	Joseph Schmidt	SVR	Suzy Replogle
DJS	Dylan Smith	JN	Jessica Nyguyen		Curnutt
EJW	Emily Williams	LTA	Lauren Angermeyer		
HN	Hunter Nedland	MLG	Michaela Gustafson		

VegPlotLocation:

Center	Center of point
N	North of point
E	East of point
S	South of point
W	West of point

Data Set Code--CBS06

Title of dataset: Line transects surveys of breeding birds throughout Konza Prairie

Abstract:

Like CPB01 and PBG051, this dataset includes records of bird species based on line transect sampling. These surveys re-initiate most of the original KNZ transects surveyed from 1981-2009 (initiated by Zimmerma), continue the two focal 300-m transects conducted from 2011-2016 by Sandercock on watersheds C3A, C3B, C3C, C1A, and 1D, (but not the peripheral segments which have been dropped), and adds two new 300-m transects to additional watersheds with the goals of (i) replicating all surveyed treatments at the watershed level, (ii) adequately sampling the grassland habitats present on Konza as of 2017, (iii) capturing transitions in bird community in response to woody encroachment and fire reversal treatments. The goals are to document and quantify long-term changes in the population sizes of breeding birds at Konza prairie by obtaining a standardized measure of annual breeding bird abundance at the site level and individual watershed or treatment level.

Keywords that describe dataset:

birds, Consumers, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station, LTER, patch-burn grazing, species diversity, relative abundance, Population, population dynamics, Disturbance, Populations

Date data commenced: 01/02/2017
Date data concluded: ongoing

Principle Investigator: Alice Boyle

RECORD TYPE 1 CBS061 - Survey Events dataset

Data Format Specification:

1. SurveyEventID   Physical quantity   autonumber field, unique value for each event
2. TransectName   Nominal   Links to Transect datatable
3. Watershed   Nominal   Watershed name
4. Date   Date/time   The Date were data collected
5. Observer   Nominal   Initials of person doing the survey. Values: AB=Alice Boyle, BV=Bram Verheijen, WEJ=William E. Jensen, SKW=Sarah K. Winnicki
6. StartTime   Date/time   24-hr time survey began
7. StartCloud   Physical quantity   % of sky covered by clouds. AB populated this field based on "sky" field in original PBG51 data (0 assigned 15%, 1 assigned 50%, 2 assigned 85%, 3 and higher assigned 100%
8. StartWind   Physical quantity   Integers between 0 and 6; represent values on the Beaufort scale

9. StartTemp   Physical quantity   typically used MHK weather stations on phone app
10. Duration   Physical quantity   Duration in minutes
11. NoBirdsDetected   Nominal   True or False if no birds detected on survey
12. Comments   Nominal   Comments for the data

RECORD TYPE 2 CBS062 - Bird Records Dataset

Data Format Specification:

Variable	Name		Columns	Format	Units

1. RecType   Physical quantity   Record type
2. Date   Date/time   Date of sample collection
3. TransectName   Nominal   Links to Transect datatable
4. SurveyEventID   Physical quantity autonumber field, unique value for each event
5. BirdRecordID   Physical quantity autonumber field, unique value for each observation
6. SpeciesCode   Nominal   Official 4-letter bird species code from the American Ornithological Society. See Bird Species (CBS064) for full common names
7. Count   Physical quantity   Number of individuals in group detected at the same time (birds had to be together, such as a flock flying together or a pair of birds)
8. Sex   Nominal   sex of bird. "U" = unknown, "M"=Male, "F"=Female, "MF"=males and females in group
9. ObsLocation   Physical quantity   Location of the observer along the line in meters. 0 is at the start, 300 is typically the end (although end may be a slightly different number because of differences in how distance measured in GIS and using a GPS in the field. Also, the last segments of old transects typically substantially shorter than 300 m).
10. Angle   Physical quantity   Angle from observer to bird in degrees (0-360)
11. AngularDistance   Physical quantity   Distance from observer to bird, estimated or measured with rangefinder in meters.
12. Flyover   Nominal   TRUE if the bird did not interact with the watershed other than flying over
13. AudioOnly   Nominal   TRUE if the observer only heard and did not see the bird
14. OffWatershed   Nominal   TRUE if the bird was beyond the boundaries of the watershed
15. BeyondLine   Nominal   TRUE if the bird was beyond a line perpendicular with the end of the transect line
16. Comments   Nominal   Comments for the data

RECORD TYPE 3 CBS063 - Bird Transect data

Data Format Specification:

Variable	Name		Columns	Format	Units

1. DataCode   Nominal   Data set Code
2. RecType   Physical quantity   Record type

3. TransectID   Physical quantity   autonumber field, unique value for each transect
4. TransectNumber   Physical quantity   One number/watershed. First 16 numbers (transects initiated prior to 2010) were = TRANSNUM in CPB01
5. SegmentID   Nominal   Letters = a, b, c, d, or NA. For transects initiated from 2010 onward, these were randomly assigned to one of the 2 transect/watershed. For older transects, these were used to divide up the single, longer transect into ~300 m sections.
6. TransectName   Nominal   Combination of TrasectNumber and SegmentID letter. This uniquely identifies a transect line
7. BrettTransectName   Nominal   Name used for transects in PBG051 database. NA for transects not part of that study
8. YrEstablished   Physical quantity   First year surveyed. Although 1-16 were established 1981, they were subdivided and run under the current naming system in 2017 or 2018. Most PBG transects initiated in 2011 but some locations changed in 2014. Highest numbered transects (i.e. TransectNumbers >23) initatied by WAB in 2017 or 2018
9. CurrWatershed   Nominal   Current watershed name
10. Grazed   Nominal   TRUE for grazed, whether it be cattle or bison, or FALSE for ungrazed
11. GrazingType   Nominal   bison, none, or cattle
12. FireReturnInterval Physical quantity   Current fire frequency (1, 2, 4, or 20 year returns on core KNZ treatment watersheds, 3 on patch-burn treatments)
13. TransectLength   Physical quantity   straight line, in meters, from start to stop points as measured in GIS. Note, these do not always correspond directly to field-measured distances from GPS
14. StartLatitude   Physical quantity   in decimal degrees, for transects 2011 and later
15. StartLongitude   Physical quantity   in decimal degrees, for transects 2011 and later
16. EndLatitude   Physical quantity   in decimal degrees, for transects 2011 and later
17. EndLongitude   Physical quantity   in decimal degrees, for transects 2011 and later
18. Riparian   Nominal   for the transects targeting Shane Creek and Kings Creek woodland. If FALSE, then site is/was a grassland site or a woody-encroached former grassland
19. Comments   Nominal   Comments for the data

RECORD TYPE 4 CBS064 - Bird Species Code data

Data Format Specification:

Variable	Name	Columns Format Units
SpCode	Nominal	Species Code: 4 letter code. Links to Bird Records CBS062
CommonName	Nominal	Full common name of each bird speci

Data Set Code--CFC01

Title of data set: Kings Creek long-term fish and crayfish community sampling at Konza at Konza Prairie

Abstract:

Prairie stream fish communities have been monitored seasonally at multiple sites within the Kings Creek watershed since 1995. The objective of this sampling is to evaluate how these communities respond to seasonal and annual variation in environmental conditions. Specifically, we are interesting in testing the resistance and resilience of stream communities in response to flood and drought disturbances. One site in a downstream perennial reach of the watershed has been sampled since 1995. Five sites have been sampled in smaller tributaries in the watershed, two were discontinued due to often lack of flow, two have been sampled since 1995 and one was added in 2008. Sampling is conducted with backpack electrofishing with at least one-person dip netting. At each site, multiple habitats (pools and riffles) are sampled. Length of all fish and crayfish are measured.

Keywords that describe data set:

fish, species diversity, abundance, population

Date data commenced: 05/16/1995
Date data terminated: ongoing

Principle Investigator: Keith B Gido

RECORD TYPE 1: This recordtype monitored seasonally fish communities at multiple sites

Data Format Specification:

Variable	Name	Columns	Format	Units
1. DataCode	Dataset code			
2. RecType	Dataset record type			
3. Date	Date		YYY-MM-DD	
4. RecYear	the year of data was collected			
5. RecMonth	The month of data was collected			
6. Watershed	Watershed			
7. Habitat	Habitat for sample collected			
8. Replicat	Replicates			
9. Species	Species code			
10. Length	Length of the species			mm
11. Count	Count			
12. Method	Method (Shock or Seine)			
13. Comments	Comments about data			

RECORD TYPE 2: This recordtype is physical data

Data Format Specification:

Variable   Name   Columns   Format   Units

1. RecYear   Physical quantity   the year of data was collected
2. Date   Date/time   Date
3. Watershed   Nominal   Watershed
4. Habitat   Nominal   Habitat for sample collected
5. Replicate   Physical quantity   Replicates
6. Transect   Physical quantity   Transect replicate number within each watershed. Transects are perpindicular to the current.
7. Width   Physical quantity   Width of each transect (m)
8. mean_sub   Physical quantity   Average substrate code for all points SUB1 - SUB5 along the transect
9. mean_dep   Physical quantity   Average depth (m) for all points DEP1 - DEP5 along the transect
10. mean_vel   Physical quantity   Average velocity (cubic meters per second) for all points VEL1 - VEL5 along the transect
11. SUB1   Physical quantity   Substrate code representing the dominant sustrate type at first point along transect. 1 = clay, 2 = silt, 3 = sand, 4 = gravel, 5 = pebble, 6 = cobble, 7 = boulder, 8 = bedrock
12. SUB2   Physical quantity   Substrate code representing the dominant sustrate type at second point along transect. 1 = clay, 2 = silt, 3 = sand, 4 = gravel, 5 = pebble, 6 = cobble, 7 = boulder, 8 = bedrock
13. SUB3   Physical quantity   Substrate code representing the dominant sustrate type at third point along transect. 1 = clay, 2 = silt, 3 = sand, 4 = gravel, 5 = pebble, 6 = cobble, 7 = boulder, 8 = bedrock
14. SUB4   Physical quantity   Substrate code representing the dominant sustrate type at fourth point along transect. 1 = clay, 2 = silt, 3 = sand, 4 = gravel, 5 = pebble, 6 = cobble, 7 = boulder, 8 = bedrock
15. SUB5   Physical quantity   Substrate code representing the dominant sustrate type at fifth point along transect. 1 = clay, 2 = silt, 3 = sand, 4 = gravel, 5 = pebble, 6 = cobble, 7 = boulder, 8 = bedrock
16. DEP1   Physical quantity   Depth (m) at the first point along transect
17. DEP2   Physical quantity   Depth (m) at the second point along transect
18. DEP3   Physical quantity   Depth (m) at the third point along transect
19. DEP4   Physical quantity   Depth (m) at the fourth point along transect
20. DEP5   Physical quantity   Depth (m) at the fifth point along transect
21. VEL1   Physical quantity   Velocity (cms) at the first point along transect
22. VEL2   Physical quantity   Velocity (cms) at the second point along transect
23. VEL3   Physical quantity   Velocity (cms) at the third point along transect
24. VEL4   Physical quantity   Velocity (cms) at the fourth point along transect
25. VEL5   Physical quantity   Velocity (cms) at the fifth point along transect
26. Densi1   Physical quantity   Densiometer reading from middle of transect looking upstream. Values range from 0 to 96. 0 = no canopy cover and 96 = full canopy cover.

Data Set Code--CFP01

Title of data set: Fish population on selected watersheds at Konza Prairie

Abstract:

Fishes were collected by habitat (pool or riffle) at 6 sites in the Kings Creek watershed with a single-pass electrofishing survey with one person operating the electrofisher and two people dipnetting. Collections were made seasonally.

Keywords that describe data set:

fish, species diversity, abundance, population

Date data commenced: 05/16/1995
Date data terminated: 11/15/2016

Principle Investigator: Keith B Gido

RECORD TYPE 1: This recordtype contains historical Konza fish species list

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Rectype	record type	1	I1	
2. ListID	Id number in species list	2	I3	
3. AbName	Abbreviation of genus name	3	A6	
4. Commonname	Common Name	4	A6	
5. Sciencename	Scientific Name	5	A6	
6. Comments	Comments	6	C	

RECORD TYPE 2: This recordtype contains historical Konza fish population

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1		
2. Rectype	record type	2	int	number
3. Recdate	Date of record	3	datetime	yyy-mm-dd
4. Watershed	code of watershed	4	nvarchar	
5. Habitat	habitat type	5	nvarchar	
6. Replicate	Replicate of sampling	6	int	number
7. SPPCode	species code	7		
8. Count	Number of counts for the species	8	int	number

SPPCode list:
Codes: Species Name
CAMANO = Campostoma anamolum
CATCOM = Catostomus commersoni
CHRERY = Chrosomus erythrogaster
CRAY = Unidentified crayfish
CYPLUT = Cyprinella lutrensis
ETHNIG = Etheostoma nigrum
ETHSPE = Etheostoma spectabile
GAMAFF = Gambusia affinis
LEPCYA = Lepomis cyanellus
LEPHUM = Lepomis humilis
LEPMAC = Lepomis macrochirus
LEPMEG = Lepomis megalotis
LUXCOR = Luxilus cornutus
NOTEXI = Noturus exilis
NOTPER = Notropis percobromus
NOTSTR = Notropis stramineus
ORCNAI = Orconectes nais
ORCNEG = Orconectes neglectus
PHEMIR = Phenocobius mirabilis
PIMNOT = Pimephales notatus
PIMPRO = Pimephales promelas
SEMATR = Semotilis atromaculatus
TADPOL = Unidentified tadpole

Data Set Code--CGP01

Title of data set: Gall-insect densities on slected plant speieis in watersheds with different fire frequencies

Abstract:

Long-term monitoring of gall-insect densities on Solidago canadensis, Vernonia baldwinii, and Ceanothus herbaceous. Gall abundances are censused in watersheds burned at one- to twenty- year intervals to asses the role of fire frequency and time since fire on gall-insect population dynamics. The data sets contain the following: Watershed fire frequency, number of growing seasons since last fire, plant species, number of galled stems, and number of censused stems. Censuses conducted for the 1989-1996 growing seasons except 1992 and 1994, next scheduled census is fall 1997. See methods manual pages 64-65 for further sampling details.

Keywords that describe data set:

Gall-insects, population dynamics, fire, Diptera, Lepidoptera Compositae, Rhamnaceae, Ceanothus, Solidago, Vernonia

Date data commenced: 10/1/88
Date data terminated: 4/30/1996

Principle Investigator: David C. Hartnett

RECORD TYPE 1

Data Format Specification:

	Variable	Name	Columns	Format
1.	Variable	Name	Columns	Format
2.	Datacode		1-5	A5
3.	Rectype		6	I1
4.	RecYear		7-8	I2
5.	RecMonth			
6.	RecDay			
7.	Watershed		13-16	A4
8.	Fire Frequency	fire frequence	20-21	I2
9.	Last Fire	last fire	25-26	I2
10.	Last Wildfire	last wildfire	31-33	I2
11.	Species	species name	40-50	A11
12.	Census Replicate	census replicates	55-56	I2
13.	Galled Stems	number of galled stems	64-67	I3
14.	Sampled Stems	number of samples stems	75-77	I3

Data Set Code--CGR01

Title of data set: Sweep Sampling of Grasshoppers on Konza Prairie LTER watersheds in 1981 only

Abstract:

Sweep samples for estimating grasshopper (Acrididae) composition and relative abundance at one site for each of 12 Konza Prairie LTER fire/grazing/soil treatment combinations (3 fire treatments x 2 soils x 2 grazing treatments). Samples were collected in June, August, and September. At each site on each occasion, 18 sets of 10 sweeps each (180 sweeps total) were taken. Stored data include for each site on each occasion: total number of each species (all instars combined) collected and total number for each instar for each species (180 sweeps combined).

Keywords that describe data set:

consumers, grasshoppers, Acrididae, insects, relative abundance, sweep sampling, species, species composition

Date data commenced: 04/01/1981
Date data terminated: 12/01/1981

Principle Investigator: Anthony Joern

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soiltype	Soil Type (Tully or Florence)	18-19	A2	
8. RecTime	Time sampling began	21-24	I4	Hours
9. Wind	Wind speed at start of sampling	26-29	F4.1	Km hr^{-1}
	mean of 5 measurements at 30 second intervals 5' aboveground			
10. AirTemp	Air temp at start of sampling	31-34	F4.1	deg C
	ground level in shade			
11. RelHum	Relative humidity at ground level	36-37	I2	%
	in shade at outset of sampling; determined by wet/dry bulb psychrometer			
12. Cloudcov	% of Cloud cover directly overhead	39-41	I3	%
	(estimated by eye)			

Codes used:

1. Soiltype	Tu	Tully soil	
2. Soiltype	Fl	Florence soil	

RECORD TYPE 2

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. Year		7-8	I2
4. Month		9-10	I2
5. Day		11-12	I2
6. Watershed		13-16	A4
7. Soiltype	Soil Type (Tully or Florence)	18-19	A2
8. Spcode	Species Code	21-22	I2
9. Species*	Abbreviated Species Name	24-43	A20
10. S1	Number of individuals in sample 1	45-46	I2
11. S2	Number of individuals in sample 2	48-49	I2
12. S3	Number of individuals in sample 3	51-52	I2
13. S4	Number of individuals in sample 4	54-55	I2
14. S5	Number of individuals in sample 5	57-58	I2
15. S6	Number of individuals in sample 6	60-61	I2
16. S7	Number of individuals in sample 7	63-64	I2
17. S8	Number of individuals in sample 8	66-67	I2
18. S9	Number of individuals in sample 9	69-70	I2
19. S10	Number of individuals in sample 10	72-73	I2
21. Total	Total # of individuals all samples	76-79	I4

Codes used:			
1. Soiltype	Tu	Tully soil	
2. Soiltype	Fl	Florence soil	

For list of Species codes used, see CGR011_species_list.1981.1 in Appendix F.

RECORD TYPE 3

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4

7. Soiltype	Soil type (Tully or Florence)	18-19	A2
8. Spcode	Species Code	21-22	I2
9. Species	Abbreviated species name	24-43	A20
10. S11	Number of individuals in sample 11	45-46	I2
11. S12	Number of individuals in sample 12	48-49	I2
12. S13	Number of individuals in sample 13	51-52	I2
13. S14	Number of individuals in sample 14	54-55	I2
14. S15	Number of individuals in sample 15	57-58	I2
15. S16	Number of individuals in sample 16	60-61	I2
16. S17	Number of individuals in sample 17	63-64	I2
17. S18	Number of individuals in sample 18	66-67	I2
18. Total	Total # of individuals/all samples	69-71	I3

Codes used: see record type 2

RECORD TYPE 4

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Soiltype	Soil Type (Florence or Tully)	18-19	A2
8. Spcode	Species code	21-22	I2
9. Species	Abbreviated species name	24-43	A20
10. First	# of individuals in first instar	45-47	I3
11. Second	# of individuals in second instar	49-51	I3
12. Third	# of individuals in third instar	53-55	I3
13. Fourth	# of individuals in fourth instar	57-59	I3
14. Fifth	# of individuals in fifth instar	61-63	I3
15. Adults	Total number of adults	65-67	I3
16. Total	Total # of individuals of all stages	69-72	I4

Data Set Code--CGR02

Title of data set: Sweep Sampling of Grasshoppers on Konza Prairie LTER watersheds (1982-present)

Abstract:

Sweep samples were taken for grasshoppers (Acrididae) at two sites for each of 14 Konza Prairie LTER watersheds. Samples are taken in late July to early August. At each site on each occasion, 10 sets of 20 sweeps (200 sweeps total) are taken. Stored data include for each site on each occasion: total number of each species (all instars combined) collected and total number for each instar for each species (200 sweeps combined).

Keywords that describe data set:

Consumers, grasshoppers, Acrididae, insects, relative abundance, sweep sampling, species, species composition

Date data commenced: 04/01/1982
Date data terminated: ongoing

Principle Investigator: Anthony Joern

RECORD TYPE 1

Data Format Specification:

Variable	Descripton	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. Soiltype	Soil Type (Florence)	
8. Repsite	Replicate site for a treatment	
9. RecTime	Time sampling began	24-hour clock
10. Wind	Ave wind speed of five measures	mph
11. AirTemp	Air temperature	Degrees Celsius
12. Relhum	relative humidity at ground level in shade at outset of sampling determined by wet/dry bulb psychrometer	
13. Cloud	Cloud cover directly overhead	%

Codes used:

1. Soiltype	FL	Florence soil
2. Soiltype	TU	Tully soil
3. Repsite	A	Replicate site A for treatment
4. Repsite	B	Replicate site B for treatment

RECORD TYPE 2

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Soiltype	Soil type (Florence)	18-19	A2
8. Repsite	Replication site for a watershed/soil	21	A1
9. Spcode	Species Code	23-24	I2
10. Species	Abbreviated name of species	26-45	A20
11. S1	# of individuals in sample 1	47-48	I2
12. S2	# of individuals in sample 2	50-51	I2
13. S3	# of individuals in sample 3	53-54	I2
14. S4	# of individuals in sample 4	56-57	I2
15. S5	# of individuals in sample 5	59-60	I2
16. S6	# of individuals in sample 6	62-63	I2
17. S7	# of individuals in sample 7	65-66	I2
18. S8	# of individuals in sample 8	68-69	I2
19. S9	# of individuals in sample 9	71-72	I2
20. S10	# of individuals in sample 10	74-75	I2
21. Total	Total # of individuals/all samples	77-79	I3
22. Comments		81-	

Codes used:

1. Soiltype	FL	Florence soil
2. Soiltype	TU	Tully soil
3. Repsite	A	Replicate site A for treatment
4. Repsite	B	Replicate site B for treatment

Species lists:
Please note that some of the species codes have changed after 1991.
Files up to (and including) 1991 used the following codes:
Current Code used:
CGR022-23_species_list

RECORD TYPE 3

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Soiltype	Soil type (Tully or Florence)	18-19	A2
8. Repsite	Replication site for a treatment	21	A1
9. Spcode	Species code	23-24	I2
10. Species	Abbreviated species name	26-45	A20
11. FirstInstar	# of individuals 1st instar	47-49	I3
12. SecthirdInstar	# of individuals 2nd & 3rd instars	51-53	I3
13. ForthInstar	# of individuals 4th instar	55-57	I3
14. FifthInstar	# of individuals 5th instar	59-61	I3
15. Female*	# of individuals of adult females	63-65	I3
16. Male*	# of individuals of adult males	67-69	I3
17. Total	Total # of individuals/all samples	71-74	I4
18. Comments		76-	

Codes used: See record type 2.

*Until 2003 the male and female columns were not in the correct order on the data sheets.
Starting with 2004, the columns on the data sheets were switched to reflect what was online.
C-V2011.2

Data Set Code--CGR03

Title of Data Set: Effects of Spring Burning on Grasshopper Nymphs (1982)

Abstract:

Sweep samples were taken for grasshoppers (Arcididae) at two upland sites on 5 watersheds at approximately two week intervals, June-Sept 1982. At each site on each occasion, 20 sets of 20 sweeps (400 sweeps total) were taken. Stored data include for each site on each occasion: total number of each species (all instars combined) collected and total number for each instar for each species (400 sweeps combined).

Keywords that describe data set:

consumers, grasshoppers, Acrididae, insects, sweep sampling, relative abundance

Date data commenced: 06/01/1982
Date data terminated: 09/02/1982

Principle Investigator: Anthony Joern

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Repsite	Replicate site for a watershed	18	A1	
8. RecTime	Time sampling began	20-23	I4	Hours
9. Wind	Wind speed at start of sampling	25-28	F4.1	Km/hr
	(mean of 5 measurements taken at 30 second intervals 5' above ground)			
10. AirTemp	Air temp at start of sampling	30-33	F4.1	(C)
11. Relhum	Relative humidity at ground level	35-36	I2	%
	in shade at outset of sampling determined by wet/dry bulb psychrometer.			
12. Cloudcov	% Cloud cover directly overhead	38-40	I3	%
	at start of sampling, estimated by eye.			
	ground level in shade			

Codes used:
Repsite: A, Replication site A for a treatment
Repsite: B, Replication site B for a treatment

RECORD TYPE 2

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Repsite	Replication site for watershed/soiltype	18	A1
8. Spcode	Species code	20-21	I2
9. Species	Abbreviated name of species	23-42	A20
10. S1	# of individuals in sample 1	44-45	I2
11. S2	# of individuals in sample 2	47-48	I2
12. S3	# of individuals in sample 3	50-51	I2
13. S4	# of individuals in sample 4	53-54	I2
14. S5	# of individuals in sample 5	56-57	I2
15. S6	# of individuals in sample 6	59-60	I2
16. S7	# of individuals in sample 7	62-63	I2
17. S8	# of individuals in sample 8	65-66	I2
18. S9	# of individuals in sample 8	68-69	I2
19. S10	# of individuals in sample 9	71-72	I2

Codes used:
Repsite: A   Replication site A for a treatment
Repsite: B   Replication site B for a treatment
Spcode: e.g. 01e.g. Brachystola magna (See CGR02)

RECORD TYPE 3

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Repsite	Replication site for watershed/soil type	18	A1
8. Spcode	Species code	20-21	I2
9. Species	Abbreviated name of species	23-42	A20
10. S11	# of individuals in sample 11	44-45	I2
11. S12	# of individuals in sample 12	7-48	I2
12. S13	# of individuals in sample 13	50-51	I2
13. S14	# of individuals in sample 14	53-54	I2

Variable	Name	Columns	Format
14. S15	# of individuals in sample 15	56-57	I2
15. S16	# of individuals in sample 16	9-60	I2
16. S17	# of individuals in sample 17	62-63	I2
17. S18	# of individuals in sample 18	65-66	I2
18. S19	# of individuals in sample 19	68-69	I2
19. S20	# of individuals in sample 20	71-72	I2
20. Total		74-76	I3

Codes used: See CGR02

RECORD TYPE 4

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Repsite	Replication site for a treatment	18	A1
8. Spcode	Species code	20-21	I2
9. Species	Abbreviated species name	23-42	A20
10. FirstInstar	# of individuals in 1st instar	44-46	I3
11. SecondInstar	# of individuals in 2nd instar	48-50	I3
12. ThirdInstar	# of individuals in 3rd instar	52-54	I3
13. FourthInstar	# of individuals in 4th insta	56-58	I3
14. FifthInstar	# of individuals in 5th instar	60-62	I3
15. Females	# of individuals of adult females	64-66	I3
16. Males	# of individuals of adult males	68-70	I3
17. Total	Total # of ind./all stages 400 sweeps	72-75	I4

Codes used:
Repsite	A	Replication site A for a treatment
Repsite	B	Replication site B for a treatment
Spcode	e.g. 01	e.g. Brachystola magna (see CGR02)

Data Set Code--CGR05

Title of data set: Effects of fire frequency on composition of grasshopper assemblages (1983)

Abstract:

Sweep samples were taken for grasshoppers (Acrididae) at two sites for each of 14 Konza Prairie LTER watersheds. Samples are taken in late July to early August. At each site on each occasion, 10 sets of 20 sweeps (200 sweeps total) are taken. Stored data include for each site on each occasion: total number of each species (all instars combined) collected and total number for each instar for each species (200 sweeps combined).

Keywords that describe data set:

community, consumer, relative abundance, grasshoppers, Acrididae, insects, sweep sampling

Date data commenced: 08/05/1983
Date data terminated: 08/10/1983

Principle Investigator: Anthony Joern

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Repsite	Replicate site for a watershed	18	I1
8. Spcode	Species Code	20-21	I2
9. Species	Abbreviaed species name	23-42	A20
10. S1	s1-s20 Number of individuals in sample	44-45	I2
11. S2	#1-20 (20 sweeps)	47-48	I2
12. S3		50-51	I2
13. S4		53-54	I2
14. S5		56-57	I2
15. S6		59-60	I2
16. S7		62-63	I2
17. S8		65-66	I2
18. S9		68_69	I2
19. S10		71-72	I2
30. Total	Total number of individuals in		

all samples combined (400 sweeps)

RECORD TYPE 2

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Repsite	Replicate site for a watershed	18	I1
8. Spcode	Species Code	20-21	I2
9. Species	Abbreviated species name	23-42	A20
10. S11	s1-s20 Number of individuals in sample	44-45	I2
11. S12	#1-20 (20 sweeps)	47-48	I2
12. S13		50-51	I2
13. S14		53-54	I2
14. S15		56-57	I2
15. S16		59-60	I2
16. S17		62-63	I2
17. S18		65-66	I2
18. S19		68-69	I2
19. S20		71-72	I2
20. Total	Total number of individuals in all samples	74-76	I3

RECORD TYPE 3

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Repsite	Replicate site for a treatment	18	A1
8. Spcode	Abbreviated species name	20-21	I2
9. Species	Species code	23-42	A20
10. FirstInstar	# of individuals in 1st instar	44-46	I3
11. SecondInstar	# of individuals in 2nd instar	48-50	I3
12. ThirdInstar	# of individuals in 3rd instar	52-54	I3
13. FourthInstar	# of individuals in 4th instar	56-58	I3

14. FifthInstar	# of individuals in 5th instar	60-62	I3
15. Female	# of individuals of adult female	64-66	I3
16. Males	# of individuals of adult males	68-70	I3
17. Total	Total # of ind/all stages-400 sweeps	72-75	I4

Codes used:

Repsite	A	Replicate site A for a treatment
Repsite	B	Replicate site B for a treatment
Spcode	e.g. 01	e.g. Brachystola magna (see CGR02)

Data Set Code--CMY01

Title of Data Set: Mycorrhizal colonization and plant community responses to long-term suppression of mycorrhizal fungi

Abstract:

Twenty replicate permanent 2x2 m plots were established in early 1991 along a randomly located transect, with a 2m space between each plot, on the following watersheds: 1B, 1D, annually burned HQB, 10B, 20D and infrequently burned HQB. Ten of the plots were randomly assigned as long-term mycorrhizal suppression plots. In each of these plots, AM fungi were suppressed by the application of the fungicide benomyl as a soil drench (7.5 liters per plot) at the rate of 1.25 g/m^2 (active ingredient). The mycorrhizal suppression plots were treated bi-weekly throughout each growing season (April through October) beginning in 1991. The control plots each received no fungicide, but an equivalent volume of water (7.5 liters) was applied bi-weekly. To evaluate the effectiveness of the fungicide, three soil cores (2.5 cm diameter x 14 cm deep) were removed from both fungicide-treated and control plots each October throughout the study. Roots were extracted from the soil, washed free of soil, stained in trypan blue (Phillips and Hayman, 1970), and examined microscopically to assess percentage root colonization by mycorrhizal fungi using a Petri dish scored in 1-cm squares (Daniels et al. 1981).

The vegetation within all plots was sampled in May and September of 1991, 1993, and 1995. In each plot, the cover and frequency of each plant species was estimated using a modified point-frame method (Cook and Stubbendieck, 1986). A frame containing ten 1m long vertical pins arranged in parallel at 10 cm apart was placed systematically at 4 locations (each 25 cm apart) within the central 1 m^2 of the plot (4 frames=40 pins per plot). Every contact of the aboveground structures of each plant species with each pin was recorded. From the pin-contact data, the relative cover was calculated for each plant species (total number of pin-contacts mad by individual of species *x*/total number of pin-contacts of all species) for each of the two sample dates each year and for each species the maximum value attained between the two sample dates was retained for analysis. The frequency (percentage of the 10-pin frames in which species *x* was encountered) also was estimated for each plant species. The total number of pin contacts of all species was used as an index of total canopy density in each plot. Previous use of this pin-contact method on these tallgrass prairie sites showed that the total number of pin contacts of all species is also strongly correlated with total aboveground plant biomass (Hickman, 1996). Plant species richness (mean number of species per plot), species diversity (Shannon's H'), and evenness were calculated using both types of abundance data (frequency and cover).

Keywords that describe data set:

Mycorrhizae, fungi, roots, plant species composition, species diversity, species composition, community composition,

Data data commenced: 03/1/1991
Data data terminated: 10/30/1995

Principle Investigator: Gail W.T. Wilson

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	A1
3. RecYear		7-8	I2
4. RecMonth		9-11	I2
5. RecDay		12-13	I2
6. Transect		14	
7. Burn	u or b	16	
	u=infrequent b=annual		
8. Plot	1-20	18-19	
9. Fungicide	myc=control	21-23	
	ben=fungicide		
10. Species	species abbreviation code	25-27	
	(see PVC011_species_list.1981.1)		
11. Form	growth form	29	
12. Sample	repeated measure 1-4	31	
13. Vegetative	# vegetative pin contacts	33-35	
14. Reproductive	# reproductive pin contacts	37-38	

Transects:
a=HQB
b=HQB
c=1B
d=10B
e=1D
f=20D

Data Set Code--CPC01

Title of data set: Annual census of greater prairie chickens on leks at Konza Prairie

Abstract:

Location of leks and number of birds per lek are censused during late April and early May across Konza Prairie to document year to year densities of greater prairie chickens.

Keywords that describe data set:

greater prairie chicken, birds, consumers, leks, adundance, populations

Date data commenced: 03/01/1981
Date data terminated: 05/02/2008

Principle Investigator: Alice Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. RecHour		17-20	I4
7. Numbirds	Number of birds	22-24	I3
8. Gridloc	Grid location of sighting	27-29	I3
9. Loctype	L=lek F=flush	32	A1
10. UTM1	first UTM number 07-	35-41	I7
11. UTM2	second UTM number 43-	43-49	I7
12. Watersheds		52-65	A4
13. Comments		67-	C13

Data Set Code--CPC02

Title of data set: Census of greater prairie chicken on leks at Konza Prairie

Abstract:

     Location of leks and number of birds per lek are censused during late April and early May across Konza Prairie to document year to year densities of greater prairie chickens.

Keywords that describe data set:

     greater prairie chicken, bird, leks

Date data commenced: 03/25/2000
Date data terminated: 04/26/2004

Principle Investigator: Alice Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. RecHour		15-28	A13
7. Numbirds	Number of birds	31-33	I3
8. Gridloc	Grid location of sighting	34-38	I3
9. Comments		41-80	A40

Data Set Code--CSA02

Title of data set: Soil Macroarthropod Densities and Biomass on annually burned and unburned watersheds

Abstract:

Belowground densities and biomass of macroarthropods were measured by hand-sorting techniques. Total herbivore biomass was greater in soils of annually burned sites, and was composed largely of white grubs (Scarabaeidae).

Keywords that describe data set:

soil invertebrates, consumers, insects, arthropods, herbivores, detritivores, predators, Scarabaeidae, Cicadidae

Date data commenced: 11/22/1981
Date data terminated: 04/01/1983

Principle Investigator: John Blair

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soil		21	A1	
8. Trt		23-24	I2	
9. ScarbL	# of Scarabaeidae beetle larvae	28-30	I3	#/.1m2
10. ScarbA	# of Scarabaeidae beetle adults	32	I1	#/.1m2
11. Clarv	Chrysomelid, Weevil, misc herbivorous larvae	34-35	I2	#/.1m2
12. Cicada	# of Cicada nymphs	37-38	I2	#/.1m2
13. Wire	# of Wireworms	40	I1	#/.1m2
14. PredL	# of Predaceous beetle larvae,carabids, etc	42-43	I2	#/.1m2
15. Millpd	# of Millipedes	45-46	I2	#/.1m2
16. Centpd	# of Centipede	48	I1	#/.1m2
17. Meloid	# of Meloidae	50	I1	#/.1m2
18. LepL	# of Lepidoptera larvae	52	I1	#/.1m2
19. Sow	# of Sow bugs	54	I1	#/.1m2
20. PredA	# of Adult beetles (predators)	56	I1	#/.1m2
21. Other	# of other (cockroaches, etc.	58	I1	#/.1m2

22. Mherb	of Misc herbivores (e.g. adult chrysomelids) Start 1983	60	I1	#/.1m2
23. Mdet	# of Misc detritivores (e.g. Bibionidae larvae) Start 1983	62-63	I1	#/.1m2
24. Earth	# of Earthworms Start 1983	65-66	I1	#/.1m2

Codes Used:

Name	Value	Code Value
Soil	T	Tully
TRT	AB	Annually burned
	UB	Unburned
	1B	Burned once recently
	2B	Two year burn
	M3	Mowed 3 times a year
	M1	Mowed once a year

RECORD TYPE 2

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soil		21	A1	
8. Trt		23-24	I2	
9. BscarbL	# of Scarabaedidae beetle larvae	29-31	I3	g/.1m2
10. BscarbA	Chrysomelid, Weevil, misc herbivorous larvae	33-34	I1	g/.1m2
11. Bclarv	# of Scarabaedidae beetel adults	36-37	I2	g/.1m2
12. Bcicada	# of cicada nymphs	39-40	I2	g/.1m2
13. Bwire	# of wireworms	42-43	I2	g/.1m2
14. BprepL	# of predaceous beetle larvae (carabids, etc.)	45-46	I2	g/.1m2
15. Bmillpd	# of Millipedes	48-50	I3	g/.1m2
16. Bcentpd	# of Centipedes	52-53	I2	g/.1m2
17. Bmeloid	# of Meloidae	55-56	I2	g/.1m2
18. BlepL	# of Lepidoptera larvae	58-59	I2	g/.1m2
19. Bsow	# of Sow bugs	61-62	I2	g/.1m2
20. BpredA	# of Adult beetles (predators)	64-66	I3	g/.1m2
21. Bother	# of Other (cockroaches, etc.)	68-69	I2	g/.1m2
22. Bmherb	# of Misc. herbivores (e.g. adult chrysomelids)	71-72	I2	g/.1m2
23. Bmdet	# of Misc detritivores (e.g. Bibionidae larvae)	74-75	I2	g/.1m2

24. Bearth   # of Earthworms   77-78   I2   g/.1m2

Codes used:
Name   Value   Code Value

Soil   T   Tully
TRT   AB   Annually burned
                     UB   Unburned
                     1B   Burned once recently
                     2B   Two year burn
                     M3   Mowed 3 times a year
                     M1   Mowed once a year

Data Set Code--CSM01

Title of Data Set: Seasonal summary of numbers of small mammals on 14 LTER traplines in prairie habitats

Abstract:

Data set contains seasonal summaries (spring and autumn) of the number of individuals of each species of small mammal captured (relative abundance) on each grassland trapline. Each record contains year, season, trapline and number of individuals captured of each species. These live trap records are based on daily captures during two 4-day trapping periods in spring (late February to early April) and autumn (early October to mid-November) for each of 14 permanent traplines established on seven fire-grazing treatments (two traplines per treatment). These seven fire-grazing treatments include three sites that are grazed by bison (1 unburned, 1 annual burn and 1 4-year burn) and four sites that are not grazed by bison (1 unburned, 1 annual burn and 2 4-year burn).

Keywords that describe data set:

consumers, prairie, relative abundance, rodents, shrews, small mammals, spring fire, species composition, mammals

Date data commenced: 10/20/1981
Date data terminated: 12/30/2013

Principal Investigator: Donald W. Kaufman

RECORD TYPE 1

Data Format Specification:

Variable	Name
1. Datacode	CSM01
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Trapline	Watershed and trapline
6. Pm	Relative abundance of *Peromyscus maniculatus*
7. Rmeg	Relative abundance of *Reithrodontomys megalotis*
8. Sh	Relative abundance of *Sigmodon hispidus*
9. Bh	Relative abundance of *Blarina hylophaga*
10. Rmon	Relative abundance of *Reithrodontomys montanus*
11. St	Relative abundance of *Spermophilus tridecemlineatus*
12. Mo	Relative abundance of *Microtus ochrogaster*
13. Pl	Relative abundance of *Peromyscus leucopus*
14. Ch	Relative abundance of *Chaetodipus hispidus*
15. Mm	Relative abundance of *Mus musculus*
16. Nf	Relative abundance of *Neotoma floridana*

17. Sc	Relative abundance of *Synaptomys cooperi*
18. Zh	Relative abundance of *Zapus hudsonius*
19. Cp	Relative abundance of *Cryptotis parva*
20. Mp	Relative abundance of *Microtus pinetorum*

Codes used

Season	AU	Autumn
	SP	Spring
Line	E	East
	W	West
	N	North
	S	South

RECORD TYPE 2 - csm012 Data is for small mammal individual records

Data Format Specification:

Variable	Name
1. Datacode	CSM01
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Recmonth	Month of data collected
6. Recday	Day of data collected
7. TrapDay	Trap Day
8. Watershed	Watershed
9. Line	Line of data collected (E, W, N, S, except L1=L, L2=L, XP=X and G=G)
10. Sta	The numbered tag on rebar adjacent to the trap
11. Species	The Two/four letter code used to identify species, please see csm011 for species name. code for 'X' means none of the animal was captured in the trap.
12. Sex	Gender of animal (M or F)
13. Age	Estimated animal's age
14. Preg	Pregnant status of the animal
15. Cond	Scrotal status of the animal
16. Mass	Weight determined to nearest gram
17. Status	Animal alive or not.
18. ToeClip	Position of Toe Clip
19. HairClip	position of Hair Clip
20. REarTag	Right side of of Ear Tag located
21. LEarTag	Left side of of Ear Tag located
22. TailLength	length from the distal portion of the pelvis to the last vertebra of the tail
23. HindFoot	Hind Foot length
24. Comments	Special information related to an observation
25. TakenBy	Who was taken the observation

Data Set Code--CSM02

Title of Data Set: Seasonal summary of numbers of small mammals on the four LTER gallery forest and limestone ledges traplines in wooded habitats at Konza Prairie

Abstract:

Data set contains seasonal summaries (spring, summer and autumn) of the number of individuals of each species of small mammal captured (relative abundance) on each woodland trapline. Each record contains year, season, trapline and number of individuals captured of each species. These live trap records are based on daily captures during a single 4-day trapping period in spring (early March to early April), summer (early July to late July) and autumn (mid-October to early December) for each of four permanent traplines established in two habitats (two traplines in gallery forest and two on limestone ledges). Bison did not graze any of the treatment units during the period of study.

Keywords that describe data set:

consumers, forest, gallery forest, relative abundance, rodents, shrews, small mammals, spring fire, wooded limestone ledges, mammals, specieis composition

Date data commenced: 12/01/1981
Date data terminated: 03/28/1988

Principal Investigator: Donald W. Kaufman

RECORD TYPE 1

Data Format Specification:

Variable	Name
1. Datacode	CSM02
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Trapline	Watershed and trapline
6. Pm	Relative abundance of *Peromyscus maniculatus*
7. Rmeg	Relative abundance of *Reithrodontomys megalotis*
8. Sh	Relative abundance of *Sigmodon hispidus*
9. Bh	Relative abundance of *Blarina hylophaga*
10. Rmon	Relative abundance of *Reithrodontomys montanus*
11. St	Relative abundance of *Spermophilus tridecemlineatus*
12. Mo	Relative abundance of *Microtus ochrogaster*
13. Pl	Relative abundance of *Peromyscus leucopus*
14. Ch	Relative abundance of *Chaetodipus hispidus*
15. Mm	Relative abundance of *Mus musculus*
16. Nf	Relative abundance of *Neotoma floridana*
17. Sc	Relative abundance of *Synaptomys cooperi*

18. Zh	Relative abundance of *Zapus hudsonius*
19. Cp	Relative abundance of *Cryptotis parva*
20. Mp	Relative abundance of *Microtus pinetorum*

Codes used

Season	AU	Autumn
	SP	Spring
	SU	Summer
Line	L1	L1 trapline on limestone ledge
	L2	L2 trapline on limestone ledge
	XP	XP trapline on forest grid
	G	G trapline on forest grid

RECORD TYPE 2 - csm022 Data is for small mammal individual records

Data Format Specification:

Variable	Name
Variable	Name
1. Datacode	Dataset code
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Recmonth	Month of data collected
6. Recday	Day of data collected
7. TrapDay	Trap Day
8. Watershed	Watershed
9. Line	Line of data collected (E, W, N, S, except L1=L, L2=L, XP=X and G=G)
10. Sta	The numbered tag on rebar adjacent to the trap
11. Species	The Two/four letter code used to identify species, please see csm011 for species name. code for 'X' means none of the animal was captured in the trap.
12. Sex	Gender of animal (M or F)
13. Age	Estimated animal's age
14. Preg	Pregnant status of the animal
15. Cond	Scrotal status of the animal
16. Mass	Weight determined to nearest gram
17. Status	Animal alive or not.
18. ToeClip	Position of Toe Clip
19. HairClip	position of Hair Clip
20. REarTag	Right side of of Ear Tag located
21. LEarTag	Left side of of Ear Tag located
22. TailLength	length from the distal portion of the pelvis to the last vertebra of the tail
23. HindFoot	Hind Foot length
24. Comments	Special information related to an observation
25. TakenBy	Who was taken the observation

Data Set Code--CSM03

Title of Data Set: Seasonal summary of numbers of small mammals on the two LTER traplines in planted grassland (Brome fields) habitats

Abstract:

    Data set contains seasonal summaries (spring, summer and autumn) of the number of individuals of each species of small mammal captured (relative abundance) on each planted grassland (brome) trapline. Each record contains year, season, trapline and number of individuals captured of each species. These live trap records are based on daily captures during a single 4-day trapping period in spring (early March to mid-April), summer (early July to early August) and autumn (mid-October to mid-November) for each of two permanent traplines established in two sites (one trapline in each site). Bison did not graze either brome field during the period of study.

Keywords that describe data set:

    brome, planted grasslands, relative abundance, rodents, shrews, small mammals, spring fire, mammals, consumers, species composition

Date data commenced: 11/06/1981
Date data terminated: 10/16/1986

Principal Investigator: Donald W. Kaufman

RECORD TYPE 1

Data Format Specification:

Variable	Name
1. Datacode	CSM03
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Trapline	Watershed and trapline
6. Pm	Relative abundance of *Peromyscus maniculatus*
7. Rmeg	Relative abundance of *Reithrodontomys megalotis*
8. Sh	Relative abundance of *Sigmodon hispidus*
9. Bh	Relative abundance of *Blarina hylophaga*
10. Rmon	Relative abundance of *Reithrodontomys montanus*
11. St	Relative abundance of *Spermophilus tridecemlineatus*
12. Mo	Relative abundance of *Microtus ochrogaster*
13. Pl	Relative abundance of *Peromyscus leucopus*
14. Ch	Relative abundance of *Chaetodipus hispidus*
15. Mm	Relative abundance of *Mus musculus*
16. Nf	Relative abundance of *Neotoma floridana*
17. Sc	Relative abundance of *Synaptomys cooperi*

18. Zh		Relative abundance of *Zapus hudsonius*
19. Cp		Relative abundance of *Cryptotis parva* Codes used
Season	AU	Autumn
	SP	Spring
	SU	Summer
Line	N	North
	S	South

Data Set Code--CSM04

Title of Data Set: Seasonal summary of numbers of small mammals on the eight LTER seasonal burn traplines in prairie habitats

Abstract:

Data set contains seasonal summaries (spring and autumn) of the number of individuals of each species of small mammal captured (relative abundance) on each prairie trapline. Each record contains year, season, trapline and number of individuals captured of each species. These live trap records are based on daily captures during a single 4-day trapping period in spring (early March to early April) and autumn (early October to early November) for each of eight permanent traplines established in four treatment types (two traplines per treatment). These four treatment types are either burned in autumn (2), in winter (2), in spring (2) or in summer (2). Bison do not graze any of the four treatment types.

Keywords that describe data set:

prairie, relative abundance, rodents, seasonal fires, shrews, small mammals, mammals, consumers, species composition

Date data commenced: 10/17/1994
Date data terminated: 12/30/2011

Principal Investigator: Donald W. Kaufman

RECORD TYPE 1

Data Format Specification:

Variable	Name
1. Datacode	CSM04
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Trapline	Watershed and trapline
6. Pm	Relative abundance of *Peromyscus maniculatus*
7. Rmeg	Relative abundance of *Reithrodontomys megalotis*
8. Sh	Relative abundance of *Sigmodon hispidus*
9. Bh	Relative abundance of *Blarina hylophaga*
10. Rmon	Relative abundance of *Reithrodontomys montanus*
11. St	Relative abundance of *Spermophilus tridecemlineatus*
12. Mo	Relative abundance of *Microtus ochrogaster*
13. Pl	Relative abundance of *Peromyscus leucopus*
14. Ch	Relative abundance of *Chaetodipus hispidus*
15. Mm	Relative abundance of *Mus musculus*
16. Nf	Relative abundance of *Neotoma floridana*

17. Sc	Relative abundance of *Synaptomys cooperi*
18. Zh	Relative abundance of *Zapus hudsonius*
19. Cp	Relative abundance of *Cryptotis parva*

Codes used

Season	AU	Autumn
	SP	Spring
Line	A	West
	B	East

RECORD TYPE 2 - csm042 Data is for small mammal individual records

Data Format Specification:

Variable	Name
1. Datacode	Dataset code
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Recmonth	Month of data collected
6. Recday	Day of data collected
7. TrapDay	Trap Day
8. Watershed	Watershed
9. Line	Line of data collected (E, W, N, S, except L1=L, L2=L, XP=X and G=G)
10. Sta	The numbered tag on rebar adjacent to the trap
11. Species	The Two/four letter code used to identify species, please see csm011 for species name. code for 'X' means none of the animal was captured in the trap.
12. Sex	Gender of animal (M or F)
13. Age	Estimated animal's age
14. Preg	Pregnant status of the animal
15. Cond	Scrotal status of the animal
16. Mass	Weight determined to nearest gram
17. Status	Animal alive or not.
18. ToeClip	Position of Toe Clip
19. HairClip	position of Hair Clip
20. REarTag	Right side of of Ear Tag located
21. LEarTag	Left side of of Ear Tag located
22. TailLength	length from the distal portion of the pelvis to the last vertebra of the tail
23. HindFoot	Hind Foot length
24. Comments	Special information related to an observation
25. TakenBy	Who was taken the observation

Data Set Code--CSM05

Title of Data Set: Seasonal summary of numbers of small mammals on the six LTER traplines in prairie habitats on which fire regime has been reversed at Konza Prairie

Abstract:

Data set contains seasonal summaries (spring and autumn) of the number of individuals of each species of small mammal captured (relative abundance) on each grassland trapline. Each record contains year, season, trapline and number of individuals captured of each species. These live trap records are based on daily captures during a single 4-day trapping period in spring (mid-March to early April) and autumn (late October to early December) for each of six permanent traplines established on two fire treatments (three traplines per treatment). These two fire treatments include one treatment that was changed from a 20-year burn to an annual burn and one that was changed from an annual burn to 20 years between fires. Bison do not graze these two habitat types.

Keywords that describe data set:

prairie, relative abundance, reversal trapline, rodents, shrews, small mammals, spring fire, mammals, consumers, species composition

Date data commenced: 12/07/1999
Date data terminated: 12/30/2010

Principal Investigator: Donald W. Kaufman

RECORD TYPE 1

Data Format Specification:

Variable	Name
1. Datacode	CSM05
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Trapline	Watershed and trapline
6. Pm	Relative abundance of *Peromyscus maniculatus*
7. Rmeg	Relative abundance of *Reithrodontomys megalotis*
8. Sh	Relative abundance of *Sigmodon hispidus*
9. Bh	Relative abundance of *Blarina hylophaga*
10. Rmon	Relative abundance of *Reithrodontomys montanus*
11. St	Relative abundance of *Spermophilus tridecemlineatus*
12. Mo	Relative abundance of *Microtus ochrogaster*
13. Pl	Relative abundance of *Peromyscus leucopus*
14. Ch	Relative abundance of *Chaetodipus hispidus*
15. Mm	Relative abundance of *Mus musculus*
16. Nf	Relative abundance of *Neotoma floridana*

17. Sc	Relative abundance of *Synaptomys cooperi*	
18. Zh	Relative abundance of *Zapus hudsonius*	
19. Cp	Relative abundance of *Cryptotis parva*	

Codes used

Season	AU	Autumn
	SP	Spring
Line	A	20-station trapline closest to shared fireguard
	B	20-station trapline farthest from shared fireguard
	C	10 station trapline

RECORD TYPE 2 - csm052 Data is for small mammal individual records

Data Format Specification:

Variable	Name
1. Datacode	Dataset code
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Recmonth	Month of data collected
6. Recday	Day of data collected
7. TrapDay	Trap Day
8. Watershed	Watershed
9. Line	Line of data collected (E, W, N, S, except L1=L, L2=L, XP=X and G=G)
10. Sta	The numbered tag on rebar adjacent to the trap
11. Species	The Two/four letter code used to identify species, please see csm011 for species name. code for 'X' means none of the animal was captured in the trap.
12. Sex	Gender of animal (M or F)
13. Age	Estimated animal's age
14. Preg	Pregnant status of the animal
15. Cond	Scrotal status of the animal
16. Mass	Weight determined to nearest gram
17. Status	Animal alive or not.
18. ToeClip	Position of Toe Clip
19. HairClip	position of Hair Clip
20. REarTag	Right side of of Ear Tag located
21. LEarTag	Left side of of Ear Tag located
22. TailLength	length from the distal portion of the pelvis to the last vertebra of the tail
23. HindFoot	Hind Foot length
24. Comments	Special information related to an observation
25. TakenBy	Who was taken the observation

Data Set Code--CSM06

Title of Data Set: Seasonal summary of numbers of small mammals on miscellaneous traplines in prairie habitats that were trapped from 1 to 11 years at Konza Prairie

Abstract:

Data set contains seasonal summaries (spring, summer and autumn) of the number of individuals of each species of small mammal captured (relative abundance) on each prairie trapline. Each record contains year, season, trapline and number of individuals captured of each species. These live trap records are based on daily captures during 4-day trapping periods in spring (early March to early April), summer (late June to late July) and autumn (early October to mid-November) for each permanent trapline (two traplines per treatment). These treatments include annual burns, 2-year burns, 4-year burns and 10-year burns; none were grazed by bison. This data set includes 14 traplines sampled in autumn and spring and 30 traplines in summer.

Keywords that describe data set:

prairie, relative abundance, rodents, shrews, small mammals, spring fire, mammals, consumers, species composition

Date data commenced: 1981 Fall
Date data terminated: 1993 Spring

Principal Investigator: Donald W. Kaufman

RECORD TYPE 1

Data Format Specification:

Variable	Name
1. Datacode	CSM06
2. Rectype	
3. RecYear	4 digits (e.g., 1981)
4. Season	Sampling season
5. Trapline	Watershed and trapline
6. Pm	Relative abundance of *Peromyscus maniculatus*
7. Rmeg	Relative abundance of *Reithrodontomys megalotis*
8. Sh	Relative abundance of *Sigmodon hispidus*
9. Bh	Relative abundance of *Blarina hylophaga*
10. Rmon	Relative abundance of *Reithrodontomys montanus*
11. St	Relative abundance of *Spermophilus tridecemlineatus*
12. Mo	Relative abundance of *Microtus ochrogaster*
13. Pl	Relative abundance of *Peromyscus leucopus*
14. Ch	Relative abundance of *Chaetodipus hispidus*
15. Mm	Relative abundance of *Mus musculus*
16. Nf	Relative abundance of *Neotoma floridana*

17. Sc	Relative abundance of *Synaptomys cooperi*
18. Zh	Relative abundance of *Zapus hudsonius*
19. Cp	Relative abundance of *Cryptotis parva*

Codes used

Season	AU	Autumn
	SP	Spring
	SU	Summer
Line	E	East
	W	West

Data Set Code--CSM08

Title of Data Set: Small mammal host-parasite sampling data for 16 linear trapping transects located in 8 LTER burn treatment watersheds at Konza Prairie.

Abstract:

Data set contains summaries (summer) of the number of individuals of each species of small mammal captured (relative abundance) on each transect. Each record contains date, treatment, transect, trap station, species, specimen number, recapture status, specimen disposition, external body measurements (where applicable), reproductive information, and miscellaneous associated comments. These sampling records are based on nightly captures during one 4-night trapping period in summer (June through August) for each of 16 permanent transects established on eight fire treatments (two transects per treatment). These treatments include two seasonal burn watersheds (SpB, SuB), two reversal burn watersheds (R1A, R20A), one annual burn watershed (1D), two 4-year burn watersheds (4B, 4F, and one 20-year burn watershed (20B). None of these treatments implement bison grazing.

Keywords that describe data set:

community turnover, consumers, fire, genetic resources, helminth, parasite, prairie, relative abundance, reversal, rodent, seasonal, shrew, shrub, small mammal, species composition, tick.

Date data commenced: 07/01/2016
Date data terminated: ongoing

Principal Investigator: Andrew G Hope

RECORD TYPE 1   Summaries of the number of individuals of small mammal captured (relative abundance) on each transect

Data Format Specification:

Variable	Name
1. Datacode	CSM08
2. Rectype	1
3. Date	dd-mon-yyyy (e.g., 07/01/2016)
4. Watershed	Watershed name (1D=annual burn replicate D; 4B=4-year burn replicate B; 4F=4-year burn replicate F; 20B=20-year burn replicate B; SpB=annual spring seasonal burn replicate B; SuB=annual or biennial summer seasonal burn replicate B; R1A=reversal burn schedule from 20-year to annual burn replicate A; R20A=reversal burn from annual to 20-year burn replicate A. Reversal treatments were initiated in 2000).
5. Transect	N, S, E, W; total transect length is 285m.

6. TrapStation	numbered 1-20 per linear transect; each trap station is spaced 15m apart; two traps are set concurrently at each trap station; station 1 is always northernmost, station 20 is always southernmost for each transect.
7. Species	PMMA=Peromyscus maniculatus; PMLE=Peromyscus leucopus; REME=Reithrodontomys megalotis; REMO=Reithrodontomys montanus; NEFL=Neotoma floridana; MIOC=Microtus ochrogaster; MIPI=Microtus pinetorum; SIHI=Sigmodon hispidus; CHHI=Chaetodipus hispidus; BLHA=Blarina hylophaga; CRPA=Cryptotis parva; SYFL=Sylvalagus floridanus; DIVI=Didelphis virginiana; ZAHU=Zapus hudsonius; ICTR=Ictidomys tridecemlineatus
8. SpecimenNo1	3-digit and 4-digit numbers correspond to ear tag numbers; NA=Not Applicable; generally assigned to escaped individuals.
9. SpecimenNo2	3-digit and 4-digit numbers correspond to ear tag numbers; used in the event of multiple ear tags, where the higher number is Specimen Number 2.
10. VoucherNo	6-digit number prefixed with NK (eg. NK123456) corresponds to specimen accession number for Museum of Southwestern Biology (University of New Mexico) where voucher specimen materials are being deposited.
11. RecaptureStatus	Y=Yes (recapture of same year); N=No (new individual); A=Annual (recapture from a previous year)
12. Disposition	R=Release (capture was released); V=Voucher (capture was collected and processed for museum archive); each treatment watershed has one catch-and-release transect (1D-E, 20B-E, 4B-W, 4F-W, R1A-S, R20A-W, SpB-S, SuB-E) and one specimen removal transect (1D-W, 20B-W, 4B-E, 4F-E, R1A-N, R20A-E, SpB-N, SuB-W); generally all specimens from catch-and-release transects are released unless they are found dead in trap or are otherwise collected for specimen voucher purposes; all specimens from removal transects become vouchers.
13. TotalLength	measurement (mm) from tip of nose to tip of tail when specimen is laid flat on the back, not including tail tuft; brackets indicate inaccurate or incomplete measurement.
14. TailLength	measurement (mm) from base to tip of tail when tail is perpendicular to body laid on stomach, not including tail tuft; brackets indicate inaccurate or incomplete measurement.
15. HFLength	measurement (mm) from heel to tip of longest toe nail on left hind foot.
16. EarLength	measurement (mm) from ear notch to furthest edge of pinna.
17. Weight	measurement (g) of whole body mass.
18. Sex	M=Male; F=Female, M?=putative male, F?=putative female
19 Age	A= Adult; JUV= Juvenile; SA= Youth adult

| 20. ReprodCondition | S=Scrotal male; NS=Non-scrotal male; C=vagina closed; O=vagina perforated; S=nipples small; E=nipples enlarged; N=non-lactating; L=lactating |
| 21. Comments | relevant descriptive comments; OTB=old tail bob; NTB=new tail bob; other. |

NB. Each line of data corresponds to a single capture event. Individuals may be captured multiple times resulting in multiple lines of data for the same individual small mammal. Multiple captures are trackable through Specimen Number. Relative abundance should be considered by removing recaptured individuals (Recapture Status=Y).

RECORD TYPE 2   Georeferenced data

Data Format Specification:

Variable	Name
1. DataCode	CSM08
2. RecType	2
3. ID	ID
4. Watershed	Watershed name (1D=annual burn replicate D; 4B=4-year burn replicate B; 4F=4-year burn replicate F; 20B=20-year burn replicate B; SpB=annual spring seasonal burn replicate B; SuB=annual or biennial summer seasonal burn replicate B; R1A=reversal burn schedule from 20-year to annual burn replicate A; R20A=reversal burn from annual to 20-year burn replicate A. Reversal treatments were initiated in 2000).
5. Transect	N, S, E, W; total transect length is 285m.
6. TrapStation	numbered 1-20 per linear transect; each trap station is spaced 15m apart; two traps are set concurrently at each trap station; station 1 is always northernmost, station 20 is always southernmost for each transect.
7. Latitude	Latitude downloaded from GPS
8. Longitude	Longitude downloaded from GPS
9. Elevation	Elevation downloaded from GPS

Data Set Code--CSM09

Title of Data Set: Small mammal host-parasite sampling data for 16 linear trapping transects located in 8 LTER burn treatment watersheds at Konza Prairie.

Abstract:

Data set contains summaries of the number of individuals of each species of small mammal captured (relative abundance) on each trapping grid. Each record contains date, treatment, grid, trap station, species, specimen number, recapture status, specimen disposition, external body measurements (where applicable), reproductive information, and miscellaneous associated comments. These sampling records are based on nightly captures during one 4-night trapping period in fall (October concurrent with annual bison roundup activites) for each of 4 permanent trapping grids established on two fire/grazing treatments (two grids per treatment). These treatments are both grazed by native grazers (bison) and include one treatment burned annually (N1A) and one treatment burned every 4 years (N4B). In each treatment, sampling grids are arranged as 5 x 10 permanent stakes spaced 10m apart and labeled numerically between 1-50 for grid A and 51-100 for grid B. One grid per treatment (grid A) is sampled using capture-mark-release methods and the other grid in each treatment (grid B) is sampled using specimen removal and subsequent whole body processing and curation.

Keywords that describe data set:

Community turnover, consumers, fire, genetic resources, helminth, parasite, prairie, relative abundance, reversal, rodent, seasonal, shrew, shrub, small mammal, species composition, tick, Primary production, Disturbance, Populations

Date data commenced: 01/04/2016
Date data terminated: ongoing

Principal Investigator: Andrew G Hope

RECORD TYPE 1 Data set contains summaries of the number of individuals of each species of small mammal captured (relative abundance) on each trapping grid

Data Format Specification:

Variable		Name
1. Datacode		CSM091
2. RecYear	Physical quantity	Year of sample
3. Date	Date/time	Date of sample
4. Watershed	Nominal	Watershed name. Watershed (N1A,N4B)
5. Trap	Physical quantity	Trap Station. Numbered 1-50 for the capture-mark-release grids in each treatment; Numbered 51-100 for the specimen removal grids in each treatment.

6. VoucherNo　　　　Nominal　　　Voucher Number. 6-digit number prefixed with NK (eg. NK123456) corresponds to specimen accession number for Museum of Southwestern Biology (University of New Mexico) where voucher specimen materials are being deposited

7. Species　　　　　Nominal　　　　Species code. PMMA=Peromyscus maniculatus; PMLE=Peromyscus leucopus; REME=Reithrodontomys megalotis; REMO=Reithrodontomys montanus; NEFL=Neotoma floridana; MIOC=Microtus ochrogaster; MIPI=Microtus pinetorum; SIHI=Sigmodon hispidus; CHHI=Chaetodipus hispidus; BLHA=Blarina hylophaga; CRPA=Cryptotis parva; SYFL=Sylvalagus floridanus; DIVI=Didelphis virginiana; ZAHU=Zapus hudsonius; ICTR=Ictidomys tridecemlineatus

8. CommonName　　　Nominal　　　Species common name

9. EarTag　　　　　Nominal　　　Ear Tag

10. RecaptureStatus　　　Code list　　　Recapture Status. Y=Yes (recapture of same year); N=No (new individual); A=Annual (recapture from a previous year)

11. Disp　　　　　Code list　　　R=Release (capture was released); V=Voucher (capture was collected and processed for museum archive); generally all specimens from capture-mark-release grids are released unless they are found dead in trap or are otherwise collected for specimen voucher purposes; all specimens from removal grids become vouchers.

12. TotalLength　　　Physical quantity　　　Total Length. measurement (mm) from tip of nose to tip of tail when specimen is laid flat on the back, not including tail tuft; brackets indicate inaccurate or incomplete measurement.

13. TailLength　　　Physical quantity　　　Tail Length.measurement (mm) from base to tip of tail when tail is perpendicular to body laid on stomach, not including tail tuft; brackets indicate inaccurate or incomplete measurement.

14. EarLength　　　Physical quantity　　　Ear Length. measurement (mm) from ear notch to furthest edge of pinna.

15. HindFoot　　　Physical quantity　　　Hind Foot Length. measurement (mm) from heel to tip of longest toe nail on left hind foot.

16. Weight　　　　Physical quantity　　　Weight. measurement (g) of whole body mass.

17. Sex　　　　　Nominal　　　Sex. M=Male; F=Female; M?=putative male, F?=putative female, NA=Missing or Not Measured

18. Age　　　　　Code list　　　Age

19. ReprodCondition　Nominal　　　Reproductive Condition. S=Scrotal male; NS=Non-scrotal male; C=vagina closed; O=vagina perforated; S=nipples small; E=nipples enlarged; N=non-lactating; L=lactating; NA=Missing or Not Measured

20. Waypoint　　　Physical quantity Way Point is the georeferenced locality using a GPS unit

21. Comments　　　Nominal　　　Relevant descriptive comments; OTB=old tail bob; NTB=new tail bob; other.

GIS Data

Data Set Code--GIS00

Title of data set: GIS Coverages Defining the Site Boundary of Konza Prairie

Abstract:

This dataset contains the boundary polygon of the Konza Prairie Biological Station (KPBS). Data type one (GIS000) defines the original KPBS boundary used from 1977 until 1982, type two contains the extended boundary from 1982 (GIS001) to 1997, and type three (GIS002) contains the boundary since 1997. These data are available as zipped (.zip) shapefiles (.shp).

Keywords that describe data set:

Prairie, Ecology, Environment, Boundaries, Grassland, Biota, Konza, GIS, Tallgrass, Geographic Information Systems, Grasses, Grasslands

Date data commenced: 1977/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Konza Prairie boundary between 1977 and 1982

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Konza Prairie boundary after 1982

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS01

Title of data set: GIS Coverages Defining Internal Boundaries of Konza Prairie

Abstract:

This dataset defines the internal boundaries of the Konza Prairie Biological Station (KPBS). Data type one (GIS010) is a record of all fenced areas on KPBS with GIS011 providing locations for all gates and type of gate (exterior, bison, and cattle). Data type three (GIS012) represents various large-scale research areas on Konza including bison grazed, cattle grazed, fire reversal, etc. These data are available as zipped (.zip) shapefiles (.shp).

Keywords that describe data set:

Grazing, GIS, Grasslands, Geographic Information System, Humans, Boundaries, Biota, Environment

Date data commenced: 1977/01/01
Date data terminated: Ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Konza fences

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Konza gates

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Konza internal research areas

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS02

Title of data set: GIS Coverages Defining the Konza Prairie Experimental Watershed Treatments

Abstract:

This dataset defines the experimental watershed treatments for the Konza Prairie Biological Station (KPBS). These treatments have changed over time to represent changes in both physical boundaries as well as changes in watershed treatments. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz).

Keywords that describe data set:

Ecology, Grasses, GIS, Geographic Information Systems, Grasslands, Disturbance, Fires, Burning, Boundaries, Biota, Environment

Date data commenced: 1977/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Pre-1972 Konza land usage

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Konza treatments in 1972

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Konza treatments in 1978

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 Konza treatments in 1984

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 Konza treatments in 1988

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 Konza treatments in 1992

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 7 Konza treatments in 1994

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 8 Konza treatments in 2000

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 9 Konza treatments in 2001

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 10 Konza treatments in 2006

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 11 Konza treatments in 2010

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 12 Konza treatments in 2011

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 13 Konza treatments in 2017

Data Format Specification:
Variable   Name   Columns   Format

Data Set Code--GIS05

Title of data set: GIS Coverages Defining Konza Prairie Burn History: Planned, Prescribed Burns

Abstract:

This dataset contains a comprehensive record of burn histories for the Konza Prairie Biological Station (KPBS) dating from 1972. Burn history data contains date burned, area burned and type of treatment (prescribed burns, complete and partial burns, and wildfires). These data are available as zipped (.zip) shapefiles (.shp).

Keywords that describe data set:

Grasslands, Ecology, Grasses, GIS, Geographic Information Systems, Burning, Fires, Boundaries, Biota, Environment

Date data commenced: 1972/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 1972 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 1973 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 1974 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 1975 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 1976 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 1977 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 7 1978 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 8 1979 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 9 1980 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 10 1981 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 11 1982 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 12 1983 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 13 1984 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 14 1985 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 15 1986 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 16 1987 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 17 1988 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 18 1989 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 19 1990 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 20 1991 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 21 1992 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 22 1993 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 23 1994 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 24 1995 Burn history

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 25 1996 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 26 1997 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 27 1998 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 28 1999 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 29 2000 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 30 2001 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 31 2002 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 32 2003 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 33 2004 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 34 2005 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 35 2006 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 36 2007 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 37 2008 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 38 2009 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 39 2010 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 40 2011 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 41 2012 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 42 2013 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 43 2014 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 44 2015 Burn history

Data Format Specification:

Variable	Name		Columns	Format

RECORD TYPE 45 2016 Burn history

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 46 2017 Burn history

Data Format Specification:
Variable   Name

RECORD TYPE 47 2018 Burn history

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 48 2019 Burn history

Data Format Specification:
Variable   Name   Columns   Format

Data Set Code--GIS10

Title of data set:　　　GIS Coverages Defining Roads in and around Konza Prairie

Abstract:

This dataset defines the roads in and around the Konza Prairie Biological Station (KPBS). The road data shows locations of Konza maintained and county/state/federal access roads as well as defining gravel or paved.These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz).

Keywords that describe data set:

GIS, Geographic Information Systems, Roads, Humans, Boundaries, Biota, Environment

Date data commenced:　　1977/01/01
Date data terminated:　　ongoing

Principle Investigator:　　Pam Blackmore

RECORD TYPE 1 This coverage contains a map of roads in the Konza Prairie Biological Station and along its borders.

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS11

Title of data set: A GIS Coverage Defining Nature Trails on Konza Prairie

Abstract:

This dataset defines the nature trails found at Konza Prairie Biological Station (KPBS). The trails data shows locations of the different Konza maintained walking trails including leg distances and loop names. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz).

Keywords that describe data set:

Grasses, Grasslands, GIS, Geographic Information Systems, Ecology

Date data commenced: 1982/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Konza Prairie nature trails

Data Format Specification:

Variable   Name   Columns   Format

Data Set Code--GIS13

Title of data set: GIS Coverages Defining Konza Prairie Burn History: Wildfires and Supplementary Burns

Abstract:

This dataset contains a comprehensive record of supplemental burns, wildfires, wildfire cleanup burns for the Konza Prairie Biological Station (KPBS) dating from 1972. Burn history data contains date burned, area burned and type of treatment (wildfires, wildfire cleanup, and supplemental burns). Burn histories for planned, prescribed burns are available in dataset GIS05. These data are available to download as zipped shapefiles (.zip), and compressed Google Earth KML layers (.kmz).

Keywords that describe data set:

Grasslands, Ecology, Grasses, GIS, Geographic Information Systems, Burning, Fires, Boundaries, Biota, Environment

Date data commenced: 1972/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Wildfires and supplementary burns for 1973

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Wildfires and supplementary burns for 1976

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Wildfires and supplementary burns for 1978

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 Wildfires and supplementary burns for 1980

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 Wildfires and supplementary burns for 1983

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 Wildfires and supplementary burns for 1984

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 7 Wildfires and supplementary burns for 1985

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 8 Wildfires and supplementary burns for 1986

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 9 Wildfires and supplementary burns for spring of 1991

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 10 Wildfires and supplementary burns for fall of 1991

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 11 Wildfires and supplementary burns for 1993

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 12 Wildfires and supplementary burns for 1994

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 13 Wildfires and supplementary burns for 1996

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 14 Wildfires and supplementary burns for 1997

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 15 Wildfires and supplementary burns for 2002

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 16 Wildfires and supplementary burns for 2004

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 17 Wildfires and supplementary burns for 2005

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 18 Wildfires and supplementary burns for 2008

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 19 Wildfires and supplementary burns for 2010

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 20 Wildfires and supplementary burns for 2011

Data Format Specification:

Data Set Code--GIS19

Title of data set: A GIS Coverage Defining Permanent Structures on Konza Prairie

Abstract:
This dataset defines the permanent buildings located on the Konza Prairie Biological Station (KBPS). The data include building names and addresses. These data are available as zipped (.zip) shapefiles (.shp).

Keywords that describe data set:
grasslands, ecology, grasses, geographic information systems, GIS, buildings, humans, boundaries, biota, environment

Date data commenced: 1977/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Provides locations for all buildings at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Column	Format

Data Set Code--GIS20

Title of data set: GIS Coverages Defining Konza Elevations

Abstract:

These data depict the elevation features of Konza Prairie. Record type 1 is a 2-meter resolution digital elevation model (DEM) of Konza Prairie, generated from 2006 LiDAR DEM data collected to standard USGS specifications (GIS200). Record type 3 is a 2010 10 meter (1/3 arc second) resolution National Elevation Dataset (NED) DEM of Konza Prairie (GIS202). Record type 4 is a 10-meter resolution NED DEM of Konza Prairie with a modified 3 kilometer buffer (GIS203). Record type 5 is a USGS topographic map of Konza Prairie (GIS204). These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz), and associated EML metadata (.xml).

Keywords that describe data set:

Grasslands, Ecology, Grasses, Geographic Information Systems, Digital Elevation Model, Elevation

Date data commenced: 01/02/2006
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 2m LIDAR DEM

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 2 Konza 2m LIDAR DEM

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 3 Konza 10m NED DEM

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 4 Konza 10m NED DEM with 3km buffer

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 5 Konza USGS Topographic Map

Data Format Specification:

Data Set Code--GIS21

Title of data set: GIS Coverages Defining Konza Water Bodies on Konza Prairie

Abstract:

This Coverage Contains the Locations of Streams (GIS210) and Waterbodies (GIS211) within the Konza Prairie Biological Station. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz), and associated EML metadata (.xml).

Keywords that describe data set:

Geographic Information Systems, Grasslands, Streams, Boundaries, Biota, Environment, Water

Date data commenced: 1/1/1972
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Konza streams

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Konza Waterbodies

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS22

Title of data set: GIS Coverage Defining Soils (SSURGO) on Konza Prairie

Abstract:

The Konza Prairie soils dataset is derived from the USDA NRCS SSURGO soils definitions for Riley and Geary Counties (variant ca. 2012; http://soildatamart.nrcs.usda.gov/). The coverage contains MUSYM and Soil Names that correspond to the code. Additional and current SSURGO data is available at: http://soildatamart.nrcs.usda.gov/SSURGOMetadata.aspx.

Associated metadata derived from NRCS SSURGO Metadata for:
Riley County SSURGO Data -
http://soildatamart.nrcs.usda.gov/Metadata.aspx?Survey=KS161&UseState=KS
Geary County SSURGO Data -
http://soildatamart.nrcs.usda.gov/Metadata.aspx?Survey=KS061&UseState=KS

Keywords that describe data set:

Ecology, Soil, Geographic Information Systems, GIS, Grasslands

Date data commenced: 1982/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Konza Prairie SSURGO soils

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS23

Title of data set: GIS Coverages Defining the Global Fiducials Library Imagery of Konza Prairie

Abstract:

These raster data consist of aerial imagery of Konza Prairie. Konza Prairie was chosen as a reference site for study of land surface change as a part of the Global Fiducials Program. These data are available as zipped (.zip) TIFF files (.tif).

All data and metadata for this dataset derived from data and metadata available at: http://gfl.usgs.gov

Keywords that describe data set:

Ecology, Soil, Geographic Information Systems, GIS, Grasslands

Date data commenced: 2003/01/14
Date data terminated: complete

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Fiducial Image of Konza Prairie from 1/14/2003

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Fiducial Image of Konza Prairie from 5/5/2003

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Fiducial Image of Konza Prairie from 7/2/2003

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 Fiducial Image of Konza Prairie from 5/3/2004

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 Fiducial Image of Konza Prairie from 7/3/2004

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 Fiducial Image of Konza Prairie from 5/10/2005

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 7 Fiducial Image of Konza Prairie from 7/2/2005

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 8 Fiducial Image of Konza Prairie from 12/4/2005

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 9 Fiducial Image of Konza Prairie from 5/11/2006

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 10 Fiducial Image of Konza Prairie from 7/4/2006

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 11 Fiducial Image of Konza Prairie from 12/1/2006

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 12 Fiducial Image of Konza Prairie from 5/8/2007

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 13 Fiducial Image of Konza Prairie from 7/4/2007

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 14 Fiducial Image of Konza Prairie from 12/13/2007

Data Format Specification:
Variable	Name	Columns	Format

RECORD TYPE 15 Fiducial Image of Konza Prairie from 5/8/2008

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 16 Fiducial Image of Konza Prairie from 7/1/2008

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 17 Fiducial Image of Konza Prairie from 12/11/2008

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 18 Fiducial Image of Konza Prairie from 5/21/2009

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 19 Fiducial Image of Konza Prairie from 7/8/2009

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 20 Fiducial Image of Konza Prairie from 12/1/2009

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 21 Fiducial Image of Konza Prairie from 6/2/2010

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 22 Fiducial Image of Konza Prairie from 7/2/2010

Data Format Specification:
Variable   Name   Columns   Format

Note: This Data is not online yet, but available upon request.

Data Set Code--GIS26

Title of data set: GIS Coverages Defining National Agriculture Imagery Program (NAIP) Imagery of Konza Prairie

Abstract:

These raster data consist of aerial imagery of Konza Prairie and a surrounding modified 3 kilometer buffer. Images from 1991 (GIS260 and GIS261) were taken by the U.S. Geological Survey. Images from 2002 (GIS262 and GIS263) were taken by the State of Kansas. Images from 2003 to 2012 (GIS264 to 277) were taken as part of the USDA's National Agriculture Imagery Program. These data are available as zipped (.zip) TIFF files (.tif).

All data and metadata for this dataset derived from data and metadata available at: http://www.kansasgis.com/

Keywords that describe data set:

Ecology, Soil, Geographic Information Systems, GIS, Grasslands

Date data commenced: 1991/01/01
Date data terminated: complete

Principle Investigator: Pam Blackmore

RECORD TYPE 1 1991 USGS DOQQ Image of Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 1991 USGS DOQQ Image of Konza Prairie with 3km Buffer

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 2002 State of Kansas DOQQ Image of Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 2002 State of Kansas DOQQ Image of Konza Prairie with 3km Buffer

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 2003 NAIP Image of Konza Prairie

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 6 2003 NAIP Image of Konza Prairie with 3km Buffer

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 7 2004 NAIP Image of Konza Prairie

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 8 2004 NAIP Image of Konza Prairie with 3km Buffer

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 9 2005 NAIP Image of Konza Prairie

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 10 2005 NAIP Image of Konza Prairie with 3km Buffer

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 11 2006 NAIP Image of Konza Prairie

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 12 2006 NAIP Image of Konza Prairie with 3km Buffer

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 13 2008 NAIP Image of Konza Prairie

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 14 2008 NAIP Image of Konza Prairie with 3km Buffer

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 15 2010 NAIP Image of Konza Prairie

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 16 2010 NAIP Image of Konza Prairie with 3km Buffer

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 17 2012 NAIP Image of Konza Prairie

Data Format Specification:
Variable   Name   Columns   Format

RECORD TYPE 18 2012 NAIP Image of Konza Prairie with 3km Buffer

Data Format Specification:
Variable   Name   Columns   Format

Note: This Data is not online yet, but available upon request.

Data Set Code--GIS29

Title of data set: GIS Coverages Defining National Land Cover Database Imagery of Konza Prairie

Abstract:

These raster data depict the National Land Cover Database coverages for Konza Prairie and a surrounding modified 3km buffer.

National Land Cover Dataset 1992 (GIS290 and GIS291) is a 21-class land cover classification scheme that has been applied consistently across the lower 48 United States at a spatial resolution of 30 meters. NLCD92 is based primarily on the unsupervised classification of [Landsat Thematic Mapper](#) (TM) circa 1990's satellite data. Other ancillary data sources used to generate these data included topography, census, and agricultural statistics, soil characteristics, and other types of land cover and wetland maps.

National Land Cover Database 2001 (GIS292 and GIS293) is a 16-class (additional four classes in Alaska only) land cover classification scheme that has been applied consistently across all 50 United States and Puerto Rico at a spatial resolution of 30 meters. NLCD2001 is based primarily on the unsupervised classification of [Landsat Enhanced Thematic Mapper+](#) (ETM+) circa 2001 satellite data.

National Land Cover Database 2006 (GIS294 and GIS295) is a 16-class land cover classification scheme that has been applied consistently across the conterminous United States at a spatial resolution of 30 meters. NLCD2006 is based primarily on the unsupervised classification of [Landsat Enhanced Thematic Mapper+](#) (ETM+) circa 2006 satellite data.

These data are available as zipped (.zip) TIFF files (.tif). All data and metadata for this dataset derived from data and metadata available at: http://www.mrlc.gov and http://seamless.usgs.gov/

Keywords that describe data set:

Maps, imagery, satellite imagery, aerial imagery, land cover, Ecology, Soil, Geographic information systems, Grasses, Grasslands, GIS

Date data commenced: 1991/01/01
Date data terminated: complete

Principle Investigator: Pam Blackmore

RECORD TYPE 1 1992 NLCD Image of Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 1992 NLCD Image of Konza Prairie with 2km Buffer

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 2001 NLCD Image of Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 2001 NLCD Image of Konza Prairie with 2km Buffer

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 2006 NLCD Image of Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 2006 NLCD Image of Konza Prairie with 2km Buffer

Data Format Specification:

Variable	Name	Columns	Format

Note: This Data is not online yet, but available upon request.

Data Set Code--GIS30

Title of data set: GIS Coverage Defining Sample Locations for Abiotic Datasets on Konza Prairie

Abstract:

These data show sample locations for various abiotic data collected on Konza Prairie (rain gauges, soil moisture, and stream data). Included in these data are the locations for 12 rain gauges (GIS300) on Konza Prairie. The Konza headquarters weather station formerly consisted of two gauges which were operated year-round. The Konza headquarters weather station currently consists of one Otto-Pluvio2 gauge which is operated year-round. The remaining Konza-operated gauges run from April 1 to November 1. These data are to be used in conjunction with the APT01 (precipitation) dataset. GIS305 defines the locations where measurements of soil moisture (%volume) are taken on Konza Prairie. These data are to be used in conjunction with the ASM01 (soil moisture) dataset. GIS309 defines the locations within watershed N4D of soil sampler nests. In Jan 2020, we separated the original GIS310 file 'Wells in N4D' into GIS310 'Wells in N4D' and GIS309 'Soil Sampler Nests'. Prior to then, soil sampler nests and wells were combined in GIS310. GIS310 defines the locations within watershed N4D where samples are taken for analyzing the belowground water chemistry of the watershed. These data are to be used in conjunction with the AGW01 dataset. GIS311 defines the locations of 14 wells at two sites along Kings Creek. Depth and nutrient content of groundwater is measured at these sites. These data are to be used in conjunction with the AGW02 dataset. GIS315 defines the locations of stream sampling stations within multiple Konza watersheds. These data are to be used in conjunction with the NWC, ASS, ASD, and ASW datasets. GIS320 defines the locations of the rainfall collectors used to collect the samples analyzed as a part of the National Atmospheric Deposition Program. These data are to be used in conjunction with the ANA01 dataset. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz).

Keywords that describe data set:

Grasslands, Ecology, Grasses, Geographic Information Systems, GIS, Rain, Measurements, Precipitation, Boundaries, Biota, Environment, soil, soil water, soil water content, soil moisture, Water, Streams, Stream discharge, Stream flow, stream ecology, groundwater, water chemistry, dissolved nutrients

Date data commenced: 1972/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Rain gauge stations on Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Soil moisture collection sites at Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Wells in N4D

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 Wells in the Kings Creek watershed

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 defines the locations of stream sampling stations within multiple Konza watersheds.

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 National Atmospheric Deposition Program

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS35

Title of data set: GIS Coverages Defining Sample Locations for Belowground Datasets on Konza Prairie

Abstract:

These data show the locations of research conducted at the below ground plots near Konza Headquarters. Record type 1 (GIS350) describes the 64 belowground plots receiving a variety of nutrient, burn, and mowing treatments. Data for BMS01, BMS02, and BNS01 are collected on these plots. Record type 6 (GIS355) describes the locations of the Micro-Rhizotrons. Two spatial datasets lie on the belowground plots, but are classified separately. These are the Lysimeters on belowground plots (GIS455) and Aboveground biomass on belowground plots (GIS505) datasets. GIS505 may be used alongside the BGPVC dataset, because it shares sample locations with PBB01. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz), and associated EML metadata (.xml).

Keywords that describe data set:

Geographic Information Systems, GIS, Biota, Grasslands, Grasses, Environment, Ecology, Roots, Species Composition, Plant Species Composition, Plants, Boundaries, Biota, Environment

Date data commenced: 01/01/1989
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Belowground Plots

Data Format Specification:

Variable	Name	Column	Format

RECORD TYPE 2 Micro-Rhizotron locations

Data Format Specification:

Variable	Name	Column	Format

Data Set Code--GIS40

Title of data set: GIS Coverages Defining the Sample Locations of Konza Consumer Data

Abstract:

These data show the sampling locations for the consumer datasets at Konza Prairie. GIS400 defines the starting points for sweep samples of grasshoppers across Konza Prairie. These data may be used in conjunction with the sweep sample datasets (CGR02). GIS401 defines the starting points for sweep samples of grasshoppers across Konza Prairie, focusing on grazing impact. These data may be used in conjunction with the sweep sample datasets (CGR02Z). GIS405 defines the trap locations for small mammal sampling across Konza Prairie. These data may be used in conjunction with CSM0X. GIS 406 defines the locations of small mammal host parasite sampling at Konza Prairie. These data may be used in conjunction with CSM08. GIS410 defines the stream stretches for fish sampling across Konza Prairie. These data may be used in conjunction with CFC01. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz), and associated EML metadata (.xml).

Keywords that describe data set:

Measurements, Ecology, Grasses, Grasshoppers, Consumers, Grasslands, GIS, Geographic Information Systems, Mammals, Small Mammals, Trapping, Seasonality, Boundaries, Biota, Environment, Fish, Fishes, Communities, Community Composition, Community Dynamics, Community Patterns, Community Structure, Population and Community Properties

Date data commenced: 1982/01/01
Date data terminated: ongoing
Principle Investigator: Pam Blackmore

RECORD TYPE 1 Sweep sample locations for Konza grasshoppers datasets

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Sweep Sample Locations for Bison Grant Grasshoppers Datasets

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Small mammal traplines in prairie habitats

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 Small Mammal Host Parasite Sample Data for 16 Transects at Konza Prairie (2016 - present)

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 Fish Communities in Konza Streams
Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS45

Title of data set: GIS Coverages Defining the Konza Nutrient Data Sample Locations

Abstract:

These data show the sample locations for soil bulk density and chemical characteristics along LTER vegetation plots. This dataset contains the transect lines (GIS450) and sample locations(GIS451) at which the soil cores are sampled. These data may be used in conjunction with the Soil Chemistry and Bulk Density (NSC01) datasets. GIS455 contains the locations of the lysimeters used to measure soil water chemistry on the belowground plots. These data may be used in conjunction with the NBS01 dataset. GIS460 contains the locations of the bulk precipitation collectors on Konza Prairie. These data may be used in conjunction with the NBP01 dataset. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz), and associated EML metadata (.xml).

Keywords that describe data set:

Grasslands, Ecology, Grasses, Geographic Information Systems, GIS, Soil, Soil Bulk Density, Soil Chemistry, Soil Nutrients, Soil Organic Matter, Measurements, Precipitation, Bulk Deposition, Deposition, Rain, Lysimeter, Water Chemistry, Boundaries, Biota, Environment

Date data commenced: 1982/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Soil chemistry and bulk density transect lines

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Soil chemistry and bulk density core sample locations

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Lysimeters on belowground plots

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 Bulk precipitation

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS50

Title of data set: GIS Coverages Defining the Konza Producer Data Sample Locations

Abstract:

These data show the sample locations for datasets pertaining to primary production at Konza Prairie. These data reference various treatments across Konza including varying burn frequencies, belowground plots, patch burn, exclosures, etc.
Record type one (GIS500) contains sample locations for estimated standing crop biomass in various burning-grazing treatments (PABXX).

Record type six (GIS505) contains sample locations for peak foliage biomass, and belowground species composition measured at the belowground plot experiments (PBB0X and BGPVC respectively).

Record type 11 and 12 contain the transect (GIS510) and plot (GIS511) locations for plots in the patch-burn experiments (PBGXX).

Record type 16 (GIS515) contains the locations of exclosures used to sample primary productivity in bison grazed watersheds (PEB01).

Record type 21 (GIS520) contains the locations of exclosures used to sample primary productivity in cattle grazed watersheds (PEB01_X).

Record type 26 (GIS525) contains the locations of sample sites for litterfall (PGLXX) collectors in the gallery forest.

Record type 31 (GIS530) contains species composition transects for Konza Prairie. These data may be used in conjunction species composition (PVC01 and PVC02), primary production in grazing exclosures (PEB01, PEB01_X), soil chemistry and bulk density (NSC01) and primary production (PAB01).

Keywords that describe data set:

Grasslands, Ecology, Grasses, Geographic Information Systems, GIS, Fires, Disturbance, Disturbances, Production, Aboveground Production, Boundaries, Biota, Environment, Burning, Humans, Measurements, Canopy Cover, Grazing, Litterfall, Forests, Riparian, Forest Floor, Diversity, Plant Species Composition, Forbs, Species Diversity, Species Richness

Date data commenced: 1982/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Aboveground primary production on fire frequency treatments

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 6 Aboveground biomass on belowground plots

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 11 Vegetation changes from patch burning grazed pastures

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 12 Vegetation changes from patch burning grazed pastures

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 16 Primary production in grazing exclosures

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 21 Primary production in cattle grazing exclosures

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 26 Gallery forest litterfall

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 31 Konza plant species transects

Data Format Specification:

Variable   Name   Columns   Format

RECORD TYPE 32 Provides locations for species transect plots at Konza Prairie Biological Station.

Data Format Specification:

Variable   Name   Columns   Format

Data Set Code--GIS55

Title of data set: GIS Coverages Defining the Konza HQ Irrigation System

Abstract:

These data show the components of the irrigation system near Konza Prairie HQ. Record types 1, 2, 3 and 4 demarcate the locations of the study plots heads (GIS550), transect lines (GIS551), irrigation lines (GIS552), and irrigation line joints (GIS553). Record types 5 and 6 describe the location of the storage piles (GIS554) and the irrigation reservoir (GIS555). This data may be used in conjunction with the Irrigation Transect Studies (WATXX) data. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz), and associated EML metadata (.xml).

Keywords that describe data set:

Grasslands, Ecology, Grasses, Geographic Information Systems, GIS, Irrigation, Canopy Cover, Species Composition, Production, Aboveground Production, Reproduction, Biomass, Aboveground Biomass, Boundaries, Biota, Environment

Date data commenced: 1982/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Irrigation transect points

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Irrigation system transect lines

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Irrigation system water lines

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 Irrigation line joints

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 Irrigation storage piles

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 Irrigation system reservoir

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS60

Title of data set: GIS Coverages Defining Other Konza Sample and Research Areas

Abstract:

These data show locations of samples and research areas at Konza that do not fit under our standard classifications.

Record type 1 (GIS 600) contains the locations of the Hulbert plots on Konza Prairie.

Record type 6 (GIS605) contains locations for rainfall shelters, ramps, experimental streams, restoration plots, the weather station, grasshopper cages, the climate extremes project. Currently no associated LTER datasets exist for these locations.

Record type 11 (GIS 610) provides a record of the historic Konza gridded location system. Older datasets may reference these locations with a column letter and row number.

Record type 16 (GIS615) contains the location for the Clean Air Status and Trends Network (CASTNET) site on Konza Prairie. For more information, visit the following link: http://www.epa.gov/castnet/javaweb/site_pages/KNZ184.html.

Record type 21 (GIS620) contains the location for the USGS gauging station. These data may be used in conjunction with the Stream Discharge for Kings Creek Measured at USGS Gauging Station (ASD01) dataset. For more information, visit the following link: http://waterdata.usgs.gov/nwis/nwisman/?site_no=06879650.

Record types 31 (GIS630) and 36 (GIS635) contain the location and treatment information for two bison grant grazing experiments. Currently, no associated LTER datasets exist for these data. These data are available to download as zipped shapefiles (.zip), compressed Google Earth KML layers (.kmz).

Keywords that describe data set:

Grasslands, Ecology, Grasses, Geographic Information Systems, GIS, Irrigation, Canopy Cover, Species Composition, Production, Aboveground Production, Reproduction, Biomass, Aboveground Biomass, Boundaries, Biota, Environment

Date data commenced: 1982/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Konza Hulbert plots

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 Konza Additional research locations on Konza

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 11 Konza Prairie grid reference system

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 16 CASTNET

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 21 Konza USGS weather and stream gauging station

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 31 Bison Grant Bison Grazing Exclosure Experiment

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 36 Bison Grant Grazing Patch Size Experiment

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS68

Title of data set: GIS Coverages of Konza Prairie Research Experiments in 2020

Abstract:

These data show locations for some experiments at Konza Prairie including: Chronic Addition of Nitrogen Gradient Experiment (ChANGE), Ghost Fire, Shrub Rainfall Manipulation Plots (ShRaMPs), sampling locations for ingrowth cores collected as part of the ShRaMPs experiment, Climate Extremes Experiment, Drought-Net, the Experimental Streams Experiment, the Nutrient Network Experiment, Phosphorous Plots experiment, the Vert-Invert experiment, and restoration areas.

GIS680 defines the locations where the ChANGE experiment occurs on Konza Prairie. These data are to be used in conjunction with the NGE01 dataset.

GIS681 defines the locations where the Ghost Fire experiment occurs on Konza Prairie. These data are to be used in conjunction with the GFE01.

GIS682 defines locations where the ShRaMPs shelters occur on Konza Prairie.

GIS683 defines locations where ingrowth cores were installed as part of the ShRaMPs experiment.

GIS684 defines the locations where the Climate Extremes experiment occurs on Konza Prairie. These data are to be used in conjunction with the CEE01 dataset.

GIS685 defines the locations where the Drought-Net experiment occurs on Konza Prairie.

GIS686 defines the site where the Experimental Streams experiments occur on Konza Prairie.

GIS687 defines the locations where the Nutrient Network experiment occurs on Konza Prairie. These data are to be used in conjunction with the NUT01 dataset.

GIS688 defines the locations where the Phosphorous Plots experiment occurs on Konza Prairie. These data are to be used in conjunction with the PPL01 dataset.

GIS689 defines the locations where the Vert-Invert experiment occurs on Konza Prairie. These data are to be used in conjunction with the VIR01 dataset.

GIS690 contains locations of restoration areas. These data are to be used in conjunction with the HRE01, SPR01, and PRP01 datasets.

These data are available to download as zipped shapefiles (.zip), and compressed Google Earth KML layers (.kmz).

Keywords that describe data set:
      Arthropods, drought, Fire, LTER-KNZ, Konza Prairie Biological Station, nutrients, stream, shrubs, geographic information systems

Date data commenced: 2020/01/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Provides locations for all ChANGE plots at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Defines the locations where the Ghost Fire experiment occurs on Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Provides locations for all ShRaMPs rainout shelters at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 4 Provides locations for sampling locations for ingrowth cores collected as part of the ShRaMPs experiment at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 5 Defines the locations where the Climate Extremes Experiment occurs on Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 6 Provides locations for Drought-Net at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 7 Provides the location of the Experimental Streams at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 8 Provides locations for Nutrient Network sites at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 9 Defines the locations where the Phosphorous Plots experiment occurs on Konza Prairie

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 10 Defines the locations where the Vert-Invert experiment occurs at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 11 Provides locations for all restoration plots around headquarters at Konza Prairie Biological Station

Data Format Specification:

Variable	Name	Columns	Format

Data Set Code--GIS70

Title of data set: Konza Prairie Woody Plant Mapping in Core Watersheds (1D, 20B, and 4B) in 2019

Abstract:

This dataset contains the point and polygon boundaries of shrubs and trees mapped in watersheds 1D, 4B, and 20B from May to August 2019. Datatype one (GIS700) defines the point locations of all trees mapped in these watersheds. Datatype two (GIS701) defines the point locations of all shrubs less than one meter wide in these watersheds. Datatype three (GIS702) defines the boundaries of select shrub species greater than one meter wide in these watersheds.

These data are available to download as zipped shapefiles (.zip), and compressed Google Earth KML layers (.kmz).

Keywords that describe data set:

geographic information systems, GIS, Konza Prairie Biological Station, encroachment, Fire, trees, shrub, wood

Date data commenced: 2019/05/01
Date data terminated: ongoing

Principle Investigator: Pam Blackmore

RECORD TYPE 1 Defines the point locations of all trees mapped in these watersheds

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 2 Defines the point locations of all shrubs less than one meter wide in these watersheds

Data Format Specification:

Variable	Name	Columns	Format

RECORD TYPE 3 Defines the boundaries of select shrub species greater than one meter wide in these watersheds

Data Format Specification:

Variable	Name	Columns	Format

Nutrient Data

Data Set Code--NBC01

Title of data set: Belowground Plot Experiment: Soil Chemistry responses to experimental manipulations of fire, nutrients and mowing

Abstract:

To address the potential interactive effects of fire, aboveground biomass removal, and nutrient amendments on above- and belowground responses, a long-term field experiment was initiated in 1986 as part of the Konza Prairie Long-Term Ecological Research (LTER) program. The general goals of this experiment are: 1) to document both short- and long-term responses of plants and soils to fire, aboveground biomass removal (a surrogate for grazing in these small plots), and nutrient amendments (additions of N and/or P); and 2) to provide a better understanding of the mechanisms underlying tallgrass prairie responses to fire, aboveground biomass removal and nutrient enrichment. Effects of burning, mowing, and N + P additions on soil chemistry are measured on the 64 belowground plots at irregular intervals. Variables measured include P, NO3, NH4, Mn, Cu, K, Zn, Ca, Fe, Mg, Na, ph, Organic matter and Organic-N.

Keywords that describe data set:

nutrients, soil nutrients, soil chemistry, nitrate, ammonia, phosphorus, cations, belowground plots, soil properties, soil organic matter

Date data commenced: 01/01/1987
Date data terminated: 12/30/1987

Principle Investigator: John Blair

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode	Dataset code	1-5	A5	
2. Rectype	Record type	6	I1	
3. RecYear	Year of record	7-8	I2	
4. RecMonth	Month of record	9-10	I2	
5. RecDay	Day of record	11-12	I2	
6. Watershed	Watershed of treatment	13-16	A4	
7. PN	Plot number	18-19	I2	
8. Suprplot	Super plot number (Block number)	21	A1	
9. Burn	Burned or unburned	23	A1	
10. Mow	Mowed or unmowed	25	A1	

11. Nutrient	Nutrient in Block	27	A1	
12. Depth	Depth	29-30	I2	cm
13. Nitrate	Nitrate in the plot_ppb	32-36	F5.1	
14. Ammonia	Ammonia in block	38-42	F5.1	
15. Phsphros	Phsphros in block	44-46	I3	
16. Total N	Total Nin Block	48-51	I4	
17. PH	PH	53-55	F3.1	
18. Orgncmat	Orgncmat in Block	57-60	F4.1	
19. K	K in Block	62-65	I4	
20. ZN	ZN in Block	67-69	F3.1	
21. FE	FE in Block	71-73	I3	
22. Line	Line in Block	75-78	I4	

.

Data Set Code--NBP01

Title of data set: Nitrogen and Phosphorus in Bulk Precipitation at Konza Prairie

Abstract:

Measurements include rainfall amounts, nitrate (NO3-N), ammonia (NH4-H), soluble reactive phosphate (SRP), and total nitrogen and phosphorus concentrations in bulk precipitation collected at multiple locations.

Keywords that describe data set:

precipitation, rain, chemistry, bulk deposition, nitrate, ammonia, soluble reactive phosphorus, phosphate, nitrogen, phosphorus, nurients

Date data commenced: 03/19/1982
Date data terminated: ongoing

Principle Investigator: John M. Blair

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Type		18	A1	
8. Amount	Rainfall amount	23-27	F5.1	mm
9. NO3	Conc. of nitrate-N ppb	29-35	F7.1	ppb(ug NO_3-N/l)
10. LimitNO3		36	A1	
11. NH4	Conc. of ammonia-N ppb Can. 12/85	37-42	F6.1	ppb(ugNH_4-N/l)
12. LimitNH4		43	A1	
13. TPN	Conc. of total nitrogen TKN 83/01	44-48	I5	ppb(ugNO_3-N/l)
14. LimitTPN		49	A1	
15. SRP	Conc. of soluble reactive phosphorus began 2/86	50-55	F6.1	ppb(ugPO_4-P/l)
16. LimitSRP		56	A1	
17. TPP	Conc. of Total Phosphorus	57-62	F6.1	
18. LimitTPP		63	A1	
19. Comment		64-80	C22	ppb(ugPO_4-P/l)

Codes used:

Type   B   Bulk precipitation collector
*Below limit of Detection
*Prior to 95 Bulk Precipitation was included with NTF012.

Data Set Code--NBS01

Title of data set: Belowground Plot Experiment

Abstract:

To address the potential interactive effects of fire, aboveground biomass removal, and nutrient amendments on above- and belowground responses, a long-term field experiment was initiated in 1986 as part of the Konza Prairie Long-Term Ecological Research (LTER) program. The general goals of this experiment are: 1) to document both short- and long-term responses of plants and soils to fire, aboveground biomass removal (a surrogate for grazing in these small plots), and nutrient amendments (additions of N and/or P); and 2) to provide a better understanding of the mechanisms underlying tallgrass prairie responses to fire, aboveground biomass removal and nutrient enrichment. Soil water nitrogen composition is measured using porous cup lysimeters from samples from nitrogen fertilized and control plots. Measurements include nitrate, ammonium, phosphate, and organic nitrogen and phosphorus.

Keywords that describe data set:

Lysimeters, soil solution chemistry, nutrients, fertilizer, burning, nitrate, ammonium, phosphate, nitrogen, phosphorus, soil water

Date data commenced: 04/18/1997
Date data terminated: 9/ 3/1998

Principle Investigator: John Blair

RECORD TYPE 1

Data Format Specification:

Variable		Columns	Format
1. Datacode	Dataset code	1-5	A5
2. Rectype	Record type	6	I1
3. RecYear	Year of record	7-8	I2
4. RecMonth	Month of record	9-10	I2
5. RecDay	Day of record	11-12	I2
6. Watershed	Watershed of treatment	13-16	A4
7. Plot	Number of plots	18-19	I2
8. Volume	Volume (m3/sec)	21-24	(m3/sec)
9. NO_3	Conc. of nitrate-N ppb	26-33	ppb
10. NH_4	Conc. of ammonia-N ppb	35-42	ppb
11. TPN	Total persulfate N	44-51	
12. TPP	Conc. of Total Phosphorus	53-56	
13. PO_4	Conc. of Phosphorus	58-62	
14. Comments		64-80	

Data Set Code--NPL01

Title of data set: Litterfall inputs to soil surface in watersheds with different fire treatments

Abstract:

Litter falling to the soil surface of tallgrass prairie was measured using 5 cm x 100 cm litterfall troughs. Mass, nitrogen, and phosphorus content were measured monthly or seasonally. Variables of interest include burning frequency and soil type.

Keywords that describe data set:

litter, detritus, litterfall, nitrogen, phosphorus, organic matter, nutrients

Date data commenced: 07/01/1981
Date data terminated: 12/11/1991

Principle Investigator: John M. Blair

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soil	Soil type	18-19	A2	
8. AD	Accumulation Day	21-23	I3	Days
9. Mass	Oven-dry mass	25-29	F5.2	G/0.5X
10. ID	Collector identification #	31-32	I2	
11. Comments		35-80		

Codes used:

Soil	TU		Tully
Soil	FL		Florence

RECORD TYPE 2

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	

4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soil	Soil type or slope	18-19	A2	
8. CollectDay	Collection days	21-23	I3	Days
9. Mass	Oven-dry mass	25-29	F5.2	
10. N	Nitrogen content 1982;F4.2	31-35	F5.3	
11. P	Phosphorus content	37-41	F5.3	%X
12. Collect	Number of collectors composited	43-44	I2	
13. Rep	Ident. of sample groups w/chemistry Discon. 83	45	A1	
14. Comments		50-80	A31	
15. Block	Samples proc. togeth. w/=blk nos.	50	I1	

Codes used:

Soil	TU		Tully
Soil	FL		Florence

Data Set Code--NSC01

Title of data set: Chemistry and Physical Characteristics of Soils from Konza LTER Watersheds with different fire and grazing treatments

Abstract:

Soil chemical and physical characteristics are quantified on selected LTER watersheds adjacent to LTER vegetation sampling plots. Sampling was initiated in 1982, and is repeated every five years. A subset of variables (e.g., pH, Bray extractable P, total C, exchangeable cations) is measured on all sample dates, while additional specific variables (e.g., bulk density, soil texture, CaCO3 content, trace metals, extractable inorganic N) are measured less frequently. Methods for C and N analysis have changed over time. C content of samples from 1982, 1987 and 1997 was derived from Walkley-Black measurements of % soil organic matter (OM) content, using a conversion factor of 1.72 (%C = %OM / 1.72). Soil C content of samples from 1992, 2002 and later were determined by dry combustion and gas chromatography (i.e., Carlo-Erba C/N analyzer). N content of samples prior to 1992 was based on Kjeldahl digeston. N content of samples from 1992 on were determined by dry combustion and gas chromatography (i.e., Carlo-Erba C/N analyzer). Additional details regarding sampling protocols and analytical methods are available in the Konza LTER Methods Manual.

Keywords that describe data set:

soil, soil chemistry, bulk density, soil texture, nitrogen, carbon, cations, soil organic matter, phosphorus

Date data commenced: 10/01/1981
Date data terminated: ongoing

Principle Investigator: John Blair (initiated by Arthur P. Schwab)

RECORD TYPE 1

Data Format Specification:

Variable		Format	Units
1. Datacode		A5	
2. Rectype		I1	
3. Year		I2	
4. Month		I2	
5. Day		I2	
6. Watershed		A4	
7. Soil		A2	
8. Rep		A1	
9. Depth		I2	cm
10. pH		F3.1	
11. BrayP	Available Phosphorus (P)*	F4.1	ppm

12. Na	Sodium (Na)	I3	ppm
13. K	Potassium (K)	I4	ppm
14. Mg	Magnesium (Mg)	I3	ppm
15. Ca	Calcium (Ca)	I4	ppm
16. TotalC	Total carbon (C)	F4.1	% dry wt.
17. TotalN	Total nitrogen (N)	I4	% dry wt.
18. NH4	KCl-extractable ammonium (NH4-N)		ug N/g
19. NO3	KCl-extractable nitrate (NO3-N)		ug N/g
20. CEC	Cation exchange capacity (CEC)	F4.1	meq/100g
21. CaCO3	Calcium carbonate (CaCO3)	I4	ug/g
22. SO4	Sulfate (SO4-S)		ug S/g
23. ZN	Zinc (Zn)		ug/g
24. Cu	Copper (Cu)		ug/g
25. Fe	Iron (Fe)		ug/g
26. Mn	Manganese (Mn)		ug/g
27. BD	Bulk density (BD)	F5.3	g/cm3
28. H2O	Gravimetric soil water content (%H2O)	F4.2	%
29. Sand	Texture: %sand	F4.1	%
30. Silt	Texture: %silt	F4.1	%
31. Clay	Texture: %clay	F4.1	%
32. Comments			

*1982-2002 used Bray 1, 2010 switched to Mehlich 3.

Data Set Code--NSW01

Title of data set: Soil Water Chemistry from porous cup lysimeters on watersheds with different fire treatments

Abstract:

Soil water nitrogen composition is measured using porous cup lysimeters. Measurements include nitrate, ammonia, phosphate, and organic nitrogen and phosphorus. Variables of interest are rainfall patterns, vegetation types, and time since burning.

Keywords that describe data set:

lysimeters, nitrogen, nitrate, ammonia, organic nitrogen, soil solution chemistry, soil water

Date data commenced: 03/01/1982
Date data terminated: 12/01/1990

Principle Investigator: John M. Blair (initiated by Tim Seastedt)

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Lysident	Lysimeter identification number	21-22	I2	
8. Depth	Depth of sample	24	I1	dm
9. Volume	Volume of sample	26-30	I5	ml
10. Nitrate	Nitrate-nitrogen	32-37	F6.1	µg/l
11. Ammonia	Ammonia-nitrogen End 12/83	39-43	F5.1	µg/l
12. TPN *	= Organic -N+NH4+N03 Int. 01/83	45-48	I4	µg/l
13. Kjeldahl	= Organic -N+NH4 End 12/82	50-53	I5	µg/l
14. TPP	Total Phosphorus			
15. PO4 *	PO4 1986 only	56-60	F5. 1	µg/l
16. Comments		62-80	A25	

* = on monthly composite samples only micrograms/liter

Data Set Code--NTF01

Title of data set: Volume and Chemistry of Throughfall in tallgrass prairie

Abstract:

Amounts and nitrogen content of water passing through the canopy of tallgrass prairie are compared to similar measurements of bulk precipitation (which is available under NBP011). Measurements include nitrate, ammonia, phosphate and organic nitrogen and phosphorus content of throughfall. Variables of interest include vegetation type and amounts, time of year, and time since burning.

Keywords that describe data set:

biogeochemistry, nitrogen, phosphorus, precipitation, canopy, throughfall, interception

Date data commenced: 03/19/1982
Date data terminated: 10/17 /1995

Principle Investigator: John M. Blair (initiated by Tim Seastedt)

RECORD TYPE 1 volumes of precipitation and throughfall

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. PPT	Amount of rainfall	18-22	F5.1	mL
8. ID	Collector identification number	24-25	I2	
9. THR	Amount collected below canopy	27-31	F5.1	mL
10. Comments		34-80	A48	

RECORD TYPE 2 nitrogen and phosphorus concentrations of precipitation and throughfall

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	

7. Type		18	A1	T	
8. ID	Collector identification number	20-21	I2		
9. Amount	Rainfall amount	23-27	F5.1	mm	
10. NO3	Conc. of nitrate-N ppb	29-33	I5	ppb(ug NO_3-N/l)	
11. NH4	Conc. of ammonia-N ppb Can. 12/85	35-39	I5	ppb(ugNH_4-N/l)	
12. TPN	Conc. of Total nitrogen TKN 83/01	41-45	I5	ppb(ugNO_3-N/l)	
13. PO4	Conc. of soluble reactive phosphorus began 2/86	47-51	I5	ppb(ugPO_4-P/l)	
14. TPP	Conc. of Total Phosphorus	53-56	I4		
15. Comment		58-80	C28		

Codes used:

Type	T	Throughfall collector

Data Set Code--NWC01

Title of data set: Stream Water Chemistry for the King's Creek drainage basin on Konza Prairie

Abstract:

Nitrate, ammonium, total N, soluble reactive P, total P, and dissolved organic C are monitored in four streams draining watersheds with 1 (N01B), 2 (N02B), 4 (N04D), and 20 (N20B) year target burn frequencies. Bison have grazed these treatments since May 1992. The number of sites sampled has been expanded since 1992 to include sites that may reflect anthropogenic, groundwater, and bison influences on water chemistry. These sites include the south branch of Kings Creek as it leaves watershed N01A (tube), a site immediately below the NO4D weir at Konza Falls that is heavily influenced by groundwater (kzfl), the north fork of Kings Creek draining watersheds without bison (nfkc), the south fork of Kings Creek that drains the watersheds with bison (sfkc), Kings Creek below the USGS gauging station above the first agricultural field (hokn), a small creek that drains into Kings Creek after flowing past the bison handling facilities, two private residences, the site headquarters and an agricultural field (stck), a pristine prairie groundwater site (edlr), and Kings Creek at the bottom of Konza as it leaves the agricultural land in watershed AL (hikx). Early samples were preserved with phenyl mercuric acetate. Future plans to restore agricultural land to prairie may influence downstream nutrient concentrations.

Keywords that describe data set:

nitrate, ammonium, total nitrogen, soluble reactive phosphorus, total phosphorus, and dissolved organic carbon, stream, stream water, water chemistry, biogeochemistry, nitrogen, carbon, phosphorus

Date data commenced: 04/01/1983
Date data terminated: ongoing

Principle Investigator: Walter Dodds

RECORD TYPE 1

Data Format Specification:

Variable		Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. RecTime		17-20	I4	CST
8. Preservative	preservative	21	A1	

9. NO3	Nitrate concentration	22-28	F7.1	ug/l
10. NH4	Total N concentration	30-35	F6.1	ug/l
11. TN	Total N concentration	37-41	I5	ug/l
12. SRP	Soluble reactive phosphate	42-47	F6.1	ug/l
13 TP	Total P concentration	49-54	F6.1	ug/l
14. DOC	Dissolved organic carbon concentration			mg/l
15. Comments		63-80	C17	

Codes used:

Name	Value	Code Value
Sample site		see abstract above
Preserve	y	preservative added
Preserve	n	no preservative added
	*	below levels of detection

Data Set Code--NWC02

Title of data set: Stream Water Conductivity for the King's Creek drainage basin on Konza Prairie

Abstract:

Conductivity was monitored in four streams draining watersheds with 1 (N01B), 2 (N02B), 4 (N04D), and 20 (N20B) year target burn frequencies. Bison grazed these treatments since May 1992. Early samples were preserved with phenyl mercuric acetate.

Keywords that describe data set:

conductivity, salinity, stream, stream water, water chemistry

Date data commenced: 04/01/1983
Date data terminated: 06/21/1993

Principle Investigator: Walter Dodds

RECORD TYPE 1
Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Site	Sample site	13-16	A4	
7. Type	Type of Sample	17	A1	
8. Timeint	Time interval between bottles	19-20	I2	min
9. Sampool	# of samples/ bottle	21-22	I2	
10. RecTime	Collection time last bottle	23-26	I4	CST
11. Estcode	e = time estimated	27	A1	
12. Preservative	preserve added	28	A1	
13. Conduct.	Specific conductance	29-31	I3	uS/cm
14. Comments		32-80	A48	

Codes used:

Name	Value	Code Value
Sample Site		See abstract above
Type	g	Grab sample
Type	I	Isco (automatic) sample
Estcode	blank	sample time unknown
Estcode	e	sample time estimated
Preserve	y	preservative added
Preserve	n	no preservative added

Producer Data

Data Set Code--PAB01

Title of data set: Aboveground net primary productivity of tallgrass prairie based on accumulated plant biomass on core LTER watersheds (001d, 004b, 020b)

Abstract:
> Data set contains estimates of end-of-season standing crop biomass (grams per square meter) of live graminoids, forbs, woody plants, and previous year's dead vegetation for 2 soil types (shallow and deep) on three core LTER watersheds representing three fire frequency treatmentsthree treatments. Twenty quadrats (0.1 square meters) are harvested for each soil/treatment type. NOTE: Early (April) and mid-season (July) biomass was collected from 1983-1988, and these data are vailable by request.

Keywords that describe data set:
> aboveground biomass, primary productivity, graminoids, grasses, forbs, woody, previous year's dead, net primary productivity, litter, standing crop, detritus, plant biomass, nitrogen, phosphorus

Date data commenced: 04/01/1984
Date data terminated: ongoing

Principle Investigator: John Blair, Jesse Nippert

RECORD TYPE 1- mass of aboveground plant samples

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soil	Soil type Tully or Florence	21-22	A2	
8. Transect	Transect (A, B, C, and D)	24	A1	
9. Plotnum	Plot number (1-5)	27	A1	
10. Lvgrass	Mass of live grass	29-34	F6.2	$g/0.1m^2$
11. Forbs	Mass of forbs	36-41	F6.2	$g/0.1m^2$
12. Cuyrdead*	Mass of current year's dead	43-48	F6.2	$g/0.1m^2$
13. Pryrdead	Mass of previous year's dead	50-55	F6.2	$g/0.1m^2$
14. Woody	Mass of woody plants (As of 24 Aug 1992)	57-62	F6.2	
	Lead plant (Amorpha canescens Pursh)			
	Wild rose (Rosa arkansana)			

Smooth sumac (<u>Rhus glabra</u> L.)
New Jersey tea (<u>Ceanothus herbaceous</u>)
Dogwood (<u>Cornus drummondii</u>)
Buckbrush (<u>Symphoricarpos orbiculatus</u> Moench)

15. Comments   64-   c17

* Due to wildfire in spring of 1991 Current Dead was included with Live Grass. Current Dead has also been included with Live Grass since 2002.

Codes used:
| Soil | TU | Tully soil |
| Soil | Fl | Florence soil |

Data Set Code--PAB02

Title of data set: Biweekly measurement of aboveground net primary productivity on an unburned and annually burned watershed

Abstract:

Data set contains estimates of standing crop biomass (grams per square meter) of live graminoids, forbs, woody plants, current year's dead, and previous year's dead vegetation. Twenty quadrats (0.1 square meters) are harvested for each watershed (001a and 020a) on each sample date.

Keywords that describe data set:

aboveground biomass, primary productivity, graminoids, grasses, forbs, woody, previous year's dead, net primary productivity, litter, standing crop, detritus, plant biomass

Date data commenced: 04/01/1984
Date data terminated: 09/19/2000

Principle Investigator: Alan K. Knapp

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soiltype	Soil type Tully, or Irwin	21-22	A2	
8. Transect	Transect (X)	24	A1	
9. Plotnum	Plot number (1-20)	26-27	A2	
10. Lvgrass	Mass of live grass	29-34	F6.2	$g/0.1m^2$
11. Forbs	Mass of forbs	36-41	F6.2	$g/0.1m^2$
12. Cuyrdead	Mass of current year's dead	43-48	F6.2	$g/0.1m^2$
13. Pryrdead	Mass of previous year's dead	50-55	F6.2	$g/0.1m^2$
14. Woody	Mass of woody (As of 24 Aug 1992)	57-62	F6.2	

Lead plant (<u>Amorpha canescens</u> Pursh)
Wild rose (<u>Rosa arkansana</u>)
Smooth sumac (<u>Rhus glabra</u> L.)
New Jersey tea (<u>Ceanothus herbaceous</u>)
Dogwood (<u>Cornus drummondii</u>)
Buckbrush (<u>Symphoricarpos orbiculatus</u> Moench)

15. Comments		64-	c17

Codes used:

| Soil | TU | Tully soil |
| Soil | IR | Irwin soil |

Data Set Code--PAB03

Title of data set: Aboveground net primary productivity of tallgrass prairie based on accumulated plant biomass on LTER watersheds burned at different seasons

Abstract:

Data set contains estimates of standing crop biomass (grams per square meter) of live graminoids, forbs, woody plants, and previous year's dead vegetation for 2 soil types (shallow and deep) with seasonal burning treatments (spring, summer, fall, winter).

Keywords that describe data set:

aboveground biomass, primary productivity, graminoids, grasses, forbs, woody, previous year's dead, net primary productivity, litter, standing crop, detritus, plant biomass

Date data commenced: 08/12/1994
Date data terminated: ongoing

Principle Investigator: John Blair, Jesse Nippert

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soiltype	Soil type Tully or Florence	21-22	A2	
8. Transect	Transect (A, B, C, and D)	24	A1	
9. Plotnum	Plot number (1-5)	27	A1	
10. Lvgrass	Mass of live grass	29-34	F6.2	g/0.1m^2
11. Forbs	Mass of forbs	36-41	F6.2	g/0.1m^2
12. Cuyrdead*	Mass of current year's dead	43-48	F6.2	g/0.1m^2
13. Pryrdead	Mass of previous year's dead	50-55	F6.2	g/0.1m^2
14. Woody	Mass of woody (As of 24 Aug 1992)	57-62	F6.2	
	Lead plant (<u>Amorpha canescens</u> Pursh)			
	Wild rose (<u>Rosa arkansana</u>)			
	Smooth sumac (<u>Rhus glabra</u> L.)			
	New Jersey tea (<u>Ceanothus herbaceous</u>)			
	Dogwood (<u>Cornus drummondii</u>)			
	Buckbrush (<u>Symphoricarpos orbiculatus</u> Moench)			
15. Comments		64-	c17	

* Included with Live Grass since 2002. Codes used: See PAB011

Data Set Code--PAB04

Title of data set: Aboveground net primary productivity of tallgrass prairie based on accumulated plant biomass on miscellaneous LTER watersheds

Abstract:

Data set contains estimates of end-of-season standing crop biomass (grams per square meter) of live graminoids, forbs, woody plants, current year's dead, and previous year's dead vegetation for 2 soil types (shallow and deep) on watersheds of various burning-grazing treatments. Twenty quadrats (0.1 square meters) are harvested for each soil/treatment type. NOTE: Early (April) and mid-season (July) biomass was collected from 1983-1988, and these data are vailable by request.

Keywords that describe data set:

aboveground biomass, primary productivity, graminoids, grasses, forbs, woody, previous year's dead, net primary productivity, litter, standing crop, detritus, plant biomass

Date data commenced: 04/01/1984
Date data terminated: ongoing

Principle Investigator: Jesse Nippert

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soiltype	Soil type Tully or Florence	21-22	A2	
8. Transect	Transect (A, B, C, and D)	24	A1	
9. Plotnum	Plot number (1-5)	27	A1	
10. Lvgrass	Mass of live grass	29-34	F6.2	$g/0.1m^2$
11. Forbs	Mass of forbs	36-41	F6.2	$g/0.1m^2$
12. Cuyrdead*	Mass of current year's dead	43-48	F6.2	$g/0.1m^2$
13. Pryrdead	Mass of previous year's dead	50-55	F6.2	$g/0.1m^2$
14. Woody	Mass of woody (As of 24 Aug 1992)	57-62	F6.2	
	Lead plant (Amorpha canescens Pursh)			
	Wild rose (Rosa arkansana)			
	Smooth sumac (Rhus glabra L.)			
	New Jersey tea (Ceanothus herbaceous)			
	Dogwood (Cornus drummondii)			

Buckbrush (<u>Symphoricarpos orbiculatus</u> Moench)

15. Comments   64-   c17

* Due to wildfire in spring of 1991 Current Dead was included with Live Grass. Current Dead has also been included with Live Grass since 2002.

Codes used: See PAB011

Data Set Code--PAB05

Title of data set: Aboveground net primary productivity of tallgrass prairie based on accumulated plant biomass on the LTER Fire Reversal Experiment watersheds

Abstract:

Data set contains estimates of end-of-season standing crop biomass (grams per square meter) of live graminoids, forbs, woody plants, and previous year's dead vegetation for 2 soil types (shallow and deep) on the four Fire Reversal Experiment watersheds. This experiment is based on reversing fire treatments on four watersheds, two of which had a history of annual spring burning and two of which had a history of long-term fire suppression. The dataset includes both pre- and post-fire treatments.

Keywords that describe data set:

aboveground biomass, primary productivity, graminoids, grasses, forbs, woody, previous year's dead, net primary productivity, litter, standing crop, detritus, plant biomass

Date data commenced: 8/29 /1997
Date data terminated: ongoing

Principle Investigator: Jesse Nippert

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soiltype	Soil type Tully or Florence	21-22	A2	
8. Transect	Transect (A, B, C, and D)	24	A1	
9. Plotnum	Plot number (1-5)	27	A1	
10. Lvgrass	Mass of live grass	29-34	F6.2	$g/0.1m^2$
11. Forbs	Mass of forbs	36-41	F6.2	$g/0.1m^2$
12. Cuyrdead*	Mass of current year's dead	43-48	F6.2	$g/0.1m^2$
13. Pryrdead	Mass of previous year's dead	50-55	F6.2	$g/0.1m^2$
14. Woody	Mass of woody (As of 24 Aug 1992)	57-62	F6.2	
	Lead plant (Amorpha canescens Pursh)			
	Wild rose (Rosa arkansana)			
	Smooth sumac (Rhus glabra L.)			
	New Jersey tea (Ceanothus herbaceous)			
	Dogwood (Cornus drummondii)			

Buckbrush (<u>Symphoricarpos orbiculatus</u> Moench)

15. Comments   64-   c17
*Included with Live Grass since 2002.
Codes used: See PAB011

Data Set Code--PBB01

Title of data set: Belowground Plot Experiment: Aboveground net primary productivity of tallgrass prairie based on accumulated plant biomass

Abstract:

To address the potential interactive effects of fire, aboveground biomass removal, and nutrient amendments on above- and belowground responses, a long-term field experiment was initiated in 1986 as part of the Konza Prairie Long-Term Ecological Research (LTER) program. The general goals of this experiment are: 1) to document both short- and long-term responses of plants and soils to fire, aboveground biomass removal (a surrogate for grazing in these small plots), and nutrient amendments (additions of N and/or P); and 2) to provide a better understanding of the mechanisms underlying tallgrass prairie responses to fire, aboveground biomass removal and nutrient enrichment. Peak foliage biomass is measured annually in late fall (September to October) on the 64 belowground plots. Effects of burning, mowing and N + P additions on aboveground NPP are measured. Two 0.1m2 quadrats harvested per plot). 2003 was the last year the mowing treatment was implemented.

Keywords that describe data set:

mowing, nitrogen, phosphorus, belowground plots, aboveground biomass, primary productivity, graminoids, grasses, forbs, woody, previous year's dead, net primary productivity, litter, standing crop, detritus, plant biomass, fertilizer

Date data commenced: 11/15/1986
Date data terminated: ongoing

Principle Investigator: John M. Blair (initiated by Tim Seastedt), Lydia Zeglin

RECORD TYPE 1: plant biomass data

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	A1
3. RecYear		7-8	I2
4. RecMonth		9-11	I2
5. RecDay		12-13	I2
6. Plot	Plot number (1-64)	18-19	I2
7. Replicate	Code A or B	21	A1
8. Burn	Burned treatment	25	A1
9. Mow	Mow treatment	27	A1
10. Nutrient	Nutrient treatment	29	A1
11. Lvgrass	Live grass (g/0.1m^2)	31-36	F6.2
12. Forbs	Forbs (g/0.1m^2)	38-43	F6.2

13. Cuyrdd*	Current year's dead (g/0.1m^2)	45-50	F6.2	
14. Pryrdd	Previous years dead (g/0.1m^2)	52-57	F6.2	
15. Woody	(As of 24 Aug 1992)	59-64	F6.2	
	lead plant-Amorpha canescens			
	rose-Rosa arkansas			
	(smooth) sumac-Rhus glabra			
	New Jersey tea-Ceanothus ovatus			
	dogwood-Cornus drummondi			
	buck brush-symphoricarpos orbiculatus			
16 Comments	Comments	66-80	A14	

Codes Used:

Name	Value	Code Value
Replicate	A,B	Code A or B
Plot	1-64	Plot number
Burn treatment	U: B	U=Unburn B=Burn
Mow treatment	U;M	U=unmowed M=mowed
Nutrient treatment	C,N,P,B	C=control, N=nitrogen
		P=Phosphorus B=Both

* Current year's dead no longer separated. It is left in the live grass

RECORD TYPE 2
Data Format Specification: nitrogen and phosphorus concentrations of selected plant samples

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Replicate		18	A1	
8. Plot		20-21	A2	
9. Type	(lv, cd, pd, fb)	24-25	A2	
10. Mass	Mass of sample	28-33	F6.2	g/0.1m^2
11. N	Percent Nitrogen	36-40	F5.3	%
12. P	Percent Phosphorous	43-47	F5.3	%
13. Box	Box Number	50-58	A9	
14. Comments		60-80	A16	

Codes used:

Name	Value	Code Value
Type	lv	Live grass
	cd	Current Dead
	pd	Previous dead
	fb	Forbs

As of 2000, samples were no longer ground for analysis.

Data Set Code--PBB02

Title of data set: Belowground Plot Experiment: Biomass and nutrient content of Rhizomes

Abstract:

To address the potential interactive effects of fire, aboveground biomass removal, and nutrient amendments on above- and belowground responses, a long-term field experiment was initiated in 1986 as part of the Konza Prairie Long-Term Ecological Research (LTER) program. The general goals of this experiment are: 1) to document both short- and long-term responses of plants and soils to fire, aboveground biomass removal (a surrogate for grazing in these small plots), and nutrient amendments (additions of N and/or P); and 2) to provide a better understanding of the mechanisms underlying tallgrass prairie responses to fire, aboveground biomass removal and nutrient enrichment. Standing crops of live and dead rhizomes (0.1 sq. m2 * 20cm deep samples) are taken in late summer periodically from 64 belowground plots. N & P content are determined on live and dead rhizomes. N& P for forb rhizomes are available for some plots in some years.

Keywords that describe data set:

Rhizomes, Belowground Plots, Nitrogen, Phosphorus, nutrients

Date data commenced: 11/15/1986
Date data terminated: 10/10/1994

Principle Investigator: Charles W. Rice

RECORD TYPE 1:

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Plot	Plot Number (1-64)	18-19	A2
8. Live Rhizomes	Mass of Sample	22-26	F2.2
9. % Nitrogen	% N of Live Rhizomes	29-33	F1.3
10. % Phosphorous	% P of Live Rhizomes	35-39	F1.3
11. Dead Rhizomes	Mass of Sample	42-46	F2.2
12. % Nitrogen	% N of Dead Rhizomes	49-53	F1.3
13. % Phosphorous	% P of Dead Rhizomes	55-59	F1.3
14. Live Forbs	Mass of Sample	62-66	F2.2
15. % Nitrogen	% N of Forbs	69-73	F1.3
16. % Phosphorous	% P of Forbs	75-79	F1.3

Data Set Code--PBB03

Title of data set: Belowground Plot Experiment: Biomass and nutrient content of Roots.

Abstract:

To address the potential interactive effects of fire, aboveground biomass removal, and nutrient amendments on above- and belowground responses, a long-term field experiment was initiated in 1986 as part of the Konza Prairie Long-Term Ecological Research (LTER) program. The general goals of this experiment are: 1) to document both short- and long-term responses of plants and soils to fire, aboveground biomass removal (a surrogate for grazing in these small plots), and nutrient amendments (additions of N and/or P); and 2) to provide a better understanding of the mechanisms underlying tallgrass prairie responses to fire, aboveground biomass removal and nutrient enrichment. Standing crops of live and dead grass roots (0.1 sq. m2 * 20cm deep samples) are taken in late summer periodically from 64 belowground plots. N&P content are determined on live and dead grass roots. N & P concentrations for forb roots are available for some plots in some years. **See archived rawdata files in Rm 215 Bushnell.

Keywords that describe data set:

Roots, Belowground Plots, Nitrogen, Phosphorus, nutrients

Date data commenced: 11/15/1986
Date data terminated: 11/14 /1994

Principle Investigator: Charles W. Rice

RECORD TYPE 1

Data Format Specification:

Variable	Columns		Format	
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed	Location of data collection	13-16	A4	
7. Plot	Plot number	18-19	A2	
8. Lroot	Mass of live root	22-26	F2.2	
9. NLroot	Nitrogen percentage of live root	29-33	F1.3	
10. PLroot	Phosphorous percentage of live root	35-39	F1.3	
11. Droot	Mass of dead root	42-46	F2.2	
12. NDroot	Nitrogen percentage of dead root	49-53	F1.3	
13. PDroot	Phosphorous percentage of dead root	55-59	F1.3	
14. LForb	Mass of live forbs	62-66	F2.2	
15. NLForb	Nitrogen percentage of live forbs	69-73	F1.3	
16. PLForb	Phosphorous percentage of live forbs	75-73	F1.3	

Data Set Code--PEB01

Title of data set: Aboveground net primary productivity of tallgrass prairie based on accumulated plant biomass in grazing exclosures on bison-grazed watersheds

Abstract:

    Data set contains estimates of end-of-season standing crop biomass (grams per square meter) of live graminoids, forbs, woody plants, and previous year's dead vegetation in grazing exclosures. Date from exclosures is used to determine long-term effects of bison grazing on aboveground net primary productivity.

Keywords that describe data set:

    aboveground biomass, primary productivity, graminoids, grasses, forbs, woody, previous year's dead, net primary productivity, litter, standing crop, detritus, plant biomass

Date data commenced: 8/20/1992
Date data terminated: ongoing

Principle Investigator: David Hartnett

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. graze	g=grazed, u=ungrazed	21	A2	
8. Cage	1-32	23-24	A2	
9. Plotnum	Plot number	26-27	A2	
10. Lvgrass	Mass of live grass	30-34	F6.2	$g/0.1m^2$
11. Forbs	Mass of forbs	37-41	F6.2	$g/0.1m^2$
12. Cuyrdead*	Mass of current year's dead	44-48	F6.2	$g/0.1m^2$
13. Pryrdead	Mass of previous year's dead	50-55	F6.2	$g/0.1m^2$
14. Woody	Mass of woody	58-62	F6.2	$g/0.1m^2$
15. Comments		63-80	C18	

* Included with Live Grass since 2002.

Data Set Code--PEC01

Title of data set: Elemental chemistry of plant tissue collected for the Konza LTER aboveground plant biomass on Konza Prairie core watersheds

Abstract:

Dataset contains elemental chemistry (N, C, H, Al, As, B, Ba, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, P, Pb, S, Si, Ti, Zn) of dried and ground end-of-season live grasses collected on Tully soils in watershed 001d. Samples from watersheds 004b and 020b as well as live forbs and woody on Tully soils will be added in the future. Within plant growth type (grasses, forbs, and woody) and year, elemental concentrations were measured on one pooled (2g) sample containing four (0.5g) subsamples of ground and dried plant tissue (subsamples included from recent years were named TA2, TB2, TC2, and TD2; subsamples included from older years were named: TA2, TA4, TB2, TB4). For more information on plant sampling see the description of the Konza LTER PAB01 aboveground plant biomass dataset (Blair & Nippert). Elemental chemistry was analyzed using combustion analysis for percent N and using hot plate digestion and inductively coupled plasma atomic emission spectroscopy (ICP-AES) for concentrations of metals (ppm) at the Cornell Nutrient Analysis Laboratory (https://cnal.cals.cornell.edu/ (link is external).

Keywords that describe data set:

element, plant tissue, grasshopper, food, plant chemistry, plant quality, Konza Prairie, Konza Prairie Biological Station

Date data commenced: 1/7/1985
Date data terminated: ongoing

Principle Investigator: Ellen Welti

RECORD TYPE 1

Data Format Specification:

Variable	Format	Name/Units
1. RecYear	Physical quantity	Year of record
2. Watershed	Nominal	watershed
3. perc_N	Physical quantity	Percent concentration of the N element
4. perc_C	Physical quantity	Percent concentration of the C element
5. perc_H	Physical quantity	Percent concentration of the H element
6. ppm_Al	Physical quantity	Parts per million (ppm) of the Al element
7. ppm_As	Physical quantity	Parts per million (ppm) of the As element
8. ppm_B	Physical quantity	Parts per million (ppm) of the B element
9. ppm_Ba	Physical quantity	Parts per million (ppm) of the Ba element
10. ppm_Be	Physical quantity	Parts per million (ppm) of the Be element
11. ppm_Ca	Physical quantity	Parts per million (ppm) of the Ca element

12. ppm_Cd	Physical quantity	Parts per million (ppm) of the Cd element
13. ppm_Co	Physical quantity	Parts per million (ppm) of the Co element
14. ppm_Cr	Physical quantity	Parts per million (ppm) of the Cr element
15. ppm_Cu	Physical quantity	Parts per million (ppm) of the Cu element
16. ppm_Fe	Physical quantity	Parts per million (ppm) of the Fe element
17. ppm_K	Physical quantity	Parts per million (ppm) of the K element
18. ppm_Li	Physical quantity	Parts per million (ppm) of the Li element
19. ppm_Mg	Physical quantity	Parts per million (ppm) of the Mg element
20. ppm_Mn	Physical quantity	Parts per million (ppm) of the Mn element
21. ppm_Mo	Physical quantity	Parts per million (ppm) of the Mo element
22. ppm_Na	Physical quantity	Parts per million (ppm) of the Na element
23. ppm_Ni	Physical quantity	Parts per million (ppm) of the Ni element
24. ppm_P	Physical quantity	Parts per million (ppm) of the P element
25. ppm_Pb	Physical quantity	Parts per million (ppm) of the Pb element
26. ppm_S	Physical quantity	Parts per million (ppm) of the S element
27. ppm_Si	Physical quantity	Parts per million (ppm) of the Si element
28. ppm_Ti	Physical quantity	Parts per million (ppm) of the Ti element
29. ppm_V	Physical quantity	Parts per million (ppm) of the V element
30. ppm_Zn	Physical quantity	Parts per million (ppm) of the Zn element

Data Set Code--PFS01

Title of data set: Reproductive effort of Big Bluestem, Indiangrass, and Little Bluestem on Belowground Plots

Abstract:

Data collected to assess the effects of burning, mowing and fertilizer treatments in the Belowground Plot Experiment upon flowering stem height and density of big bluestem (Andropogon gerardii), little bluestem (A. scoparious) and Indian grass (Sorghastrum nutans), and total aboveground net primary productivity.

Keywords that describe data set:

flowering, stems, flower stem height, big bluestem, little bluestem, indiangrass, belowground plot experiment, reproduction, graminoids, grasses,

Date data commenced: 07/01/1986

Date data terminated: 10/15/1988

Principle Investigator: David C. Hartnett

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode	Dataset code	1-5	A5	
2. Rectype	Data record type	6	A1	
3. RecYear		7-8	I2	
4. RecMonth		9-11	I2	
5. RecDay		12-13	I2	
6. Watershed		13-16	A4	
7. Plot	Plot number (1-64)	18-19	I2	
8. Subplot	subplot identifier	21	A1	
9. Burn	Burn treatment	23	A1	
10. Mow	Mow treatment	25	A1	
11. Nutrient	Nutrient treatment	27	A1	
12. Species	Species name	29-32	A4	
13. Fstemht	Flower stem height	34-37	F4.2	meters
14. Fsdnsity	Flower density 0.25m squared	39-41	I3	#/M

Codes Used:

Name	Value	Code Value
Plot	1-64	Plot number
Burn treatment	U: B	U=Unburn B=Burn
Mow treatment	U;M	U=unmowed M=mowed

Nutrient treatment	C,N,P,B	C=control, N=Nitrogen
		P=Phosphorus B=Both
Species	Ange	Ange=Andropogon gerardii
Species	ANSC	ANSC=Andropogon scoparius
Species	SONU	SONU=Sorgastrum nutans

Data Set Code--PGL01

Title of data set: Litterfall collection in riparian gallery forest at Konza Prairie

Abstract:

   Litterfall is collected monthly (more frequently during peak litterfall in October and November) at permanent sampling sites in the mixed deciduous gallery forest located along the lower reaches of Kings Creek at the Konza Prairie Biological Station. Thirty litterfall traps, 50 x 50 cm (.25 m2) are located along the north fork of Kings Creek, and two are located on the south fork of Kings Creek. The north fork boxes are numbered 31 to 60 and the south fork boxes are numbered 1 and 2. Originally, the south fork also had boxes 3 to 30 but these samplers were terminated in 1993 due to repeated damage by bison. (Boxes 1 and 2 are located just outside the bison area.) Samples are sorted in the lab, and mass of wood, seeds, and foliage are recorded separately.

Keywords that describe data set:

   forest, leaf litter, litter, litterfall, wood, woody debris, riparian, seed

Date data commenced: 10/06/1981
Date data terminated: ongoing

Principle Investigator: Jesse Nippert

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Branch	Branch of Kings Creek	18	A1
7. ID	Identification number	20-21	I2
8. Mass	Total (include wood & seed)	23-29	F7.2
9. Wood	Woody mass	31-37	F7.2
10. Seed	Seed mass (include husks, hulls	39-44	F6.2
11. Comment*		46-80	A35

*For 1992 and part of 1994 comments include leaf/foliage weights

Codes used:

Name	Value	Code Value
Branch	N	North branch of Kings Creek
	S	South branch of Kings Creek

Data Set Code--PGT01

Title of data set: Konza prairie grass species trait

Abstract:

Evolutionary history plays a key role driving patterns of trait variation across plant species. For scaling and modeling purposes, grass species are typically organized into C3 versus C4 plant functional types (PFTs). PFT groupings may obscure important functional differences among species. Rather, grouping grasses by evolutionary lineage may better represent grass functional diversity.

We measured 11 structural and physiological traits in situ from 75 grass species within the North American tallgrass prairie. We tested whether traits differed significantly among photosynthetic pathways or lineages (tribe) in annual and perennial grass species. We hypothesized that tribe would be the best predictor of traits, more so than photosynthetic pathway. We further hypothesized that there would be substantial variation of traits in species among the seven C4 lineages represented at our site.

Keywords that describe data set:
gas exchange, carbon, graduate student research, grasses, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station, nitrogen, stable isotopes, Primary Production

Date data commenced: 01/01/2020
Date data terminated: 12/31/2020

Principle Investigator: Ryan Donnelly; Jesse Nippert

RECORD TYPE 1 PGT011 - Konza Prairie Grass Species Trait Data

Data Format Specification:

Variable	Name		Columns	Format
1.	DataCode	DataCode	Nominal	Dataset code
2.	RecType	Physical quantity		Record type
3.	Recyear	Physical quantity		Year of sample
4.	Species	Nominal		Species name
5.	Tribe	Nominal		taxonomic rank
6.	Photosynthetic_Pathway		Nominal	Photosynthetic Pathway
7.	C4_Lineage	Nominal		Lineage in which C4 photosynthesis independently evolved
8.	C4_Subtype	Nominal		Biochemical subtype of C4 photosynthesis
9.	SLA	Physical quantity		Specific Leaf Area
10.	LDMC	Physical quantity		Leaf Dry Matter Content
11.	Osmotic_Potential	Physical quantity		Osmotic Potential
12.	Flowering_Height	Physical quantity		Flowering Height
13.	Vegetative_Height	Physical quantity		Vegetative Height

14. Percent_Carbon	Physical quantity	Foliar C (%)	
15. Percent_Nitrogen	Physical quantity	Foliar N (%)	
16. d15_Nitrogen	Physical quantity	Foliar δ15N (‰)	
17. d13_Carbon	Physical quantity	Foliar δ13C (‰)	
18. CN_ratio	Physical quantity	Foliar C:N	
19. Vcmax_25C	Physical quantity	maximum rate of carboxylation of Rubisco at 25 °C (μmol m−2s−1)	
20. Jmax_25C	Physical quantity	maximum rate of electron transport at 25 °C	
21. Vpmax_25C	Physical quantity	maximum rate of carboxylation of PEPc at 25 °C	
22. Leaf_Area	Physical quantity	Leaf Area	
23. Dry_Leaf_Mass	Physical quantity	Dry Leaf Mass	
24. Wet_Leaf_Mass	Physical quantity	Wet_Leaf_Mass	
25. Osmolarity	Physical quantity	Osmolarity	
26. Leaf_Thickness	Physical quantity	Leaf Thickness	
27. comments	Nominal	comments about the data	

RECORD TYPE 2 PGT012 - Konza Prairie Grass Species A-Ci Curve Data

Data Format Specification:

Variable	Name	Columns	Format
DataCode	Nominal	Data set Code	
RecType	Physical quantity	Record type	
Date	Date/time	Record date	
Photosynthetic_Pathway	Nominal	Photosynthetic Pathway	
M6400	Physical quantity	Machine identity	
Species_Acronym	Nominal	Species Acronym	
Species	Nominal	Species Name	
Rep	Physical quantity	Machine identity number	
Obs	Physical quantity	# observation stored in log file	
RecTime	Date/time	Sample collect time	
Photo	Physical quantity	Photosynthetic rate (μmol CO_2 m−2s−1)	
Cond	Physical quantity	Conductance to H2O (mol H_2O m−2s−1)	
Ci	Physical quantity	Intercellular CO_2 concentration (μmol CO_2 mol−1)	
Trmmol	Physical quantity	Transpiration rate (mmol H_2O m−2s−1)	
VpdL	Physical quantity	Vapor pressure deficit based on Leaf temp (kPa)	
CTleaf	Physical quantity	Computed leaf temp (℃)	
Area	Physical quantity	In-chamber leaf area	
BLC_1	Physical quantity	One sided boundary layer conductance for the leaf (mol m−2s−1)	
StmRat	Physical quantity	Stomatal ratio estimate	
BLCond	Physical quantity	Total boundary layer conductance for the leaf (includes stomatal ratio) (mol m−2s−1)	
Tair	Physical quantity	Chamber Air Temp	
Tleaf	Physical quantity	Leaf Temp, measured with the thermocouple (℃)	

TBlk	Physical quantity	IRGA Block Temp (°C)
RH_R	Physical quantity	Reference Relative Humidity (%)
RH_S	Physical quantity	Sample Relative Humidity (%)
Flow	Physical quantity	Flow Rate (μmol s-1)
PARi	Physical quantity	In-chamber PAR (μmol m−2s−1)
PARo	Physical quantity	External PAR (μmol m−2s−1)
Press	Physical quantity	Atmospheric Press (kPa)
Ci_Pa	Physical quantity	Intercellular CO_2 concentration (kPa)
CiCa	Physical quantity	Intercellular CO_2 / Ambient CO

Data Set Code--PPH01

Title of data set: Phenology of selected plant species at Konza Prairie

Abstract:

Twenty-nine selected species of grasses, forbs, and woody vegetation characteristic of a variety of habitats on Konza Prairie are used for phenological measurements. These species are observed weekly for the entire growing season and changes in their phenological states are recorded. The following phenological states are used for this survey: (1) initiation of growth, (2) first anthesis, (3) duration of anthesis, (4) fruits mature, (5) leaves more than 90% dry.

Keywords that describe data set:

plant phenology, phenology, reproduction, senescence, flowering

Date data commenced: 06/13/1981
Date data terminated: 10/31/1987

Principle Investigator: Jesse Nippert

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1
3. RecYear		7-8	I2
4. RecMonth		9-10	I2
5. RecDay		11-12	I2
6. Watershed		13-16	A4
7. Site	Soil type of other site code	21-22	A2
8. Burn	Burned or unburned	24	A1
9. Specode*	Species code	26-28	I3
10. Genus	6-character abbreviation of genus	30-36	A6
11. Species	5-character abbreviation of species	37-41	A5
12. Variety	4-character abbreviation of variety	43-46	A4
13. Growth	% of plants that have inititated growth	48	I1
14. Anthesis	% of plants that have newly opened	50	I1
15. Fruit	% of plants that have mature fruit	52	I1
16. Lvsdry	% of plants that have leaves > 90%	54	I1
17. Comments		56-80	A25

Codes used:

Name	Value	Code Value
Site	Fl	Florence soil

Site	Tu	Tully soil
Site	Dw	Dwight soil
Site	Rs	Rocky slope
Site	Gf	Gallery forest (Kings Creek)
Site	Hq	Northeast of Headquarters
Site	SE	South end
Burn	B	Burned
Burn	U	Unburned
Growth	1	0-5% plants initiated growth
Growth	2	5-20% plants initiated growth
Growth	3	> 20% plants inititated growth
Anthesis	1	0-5% plants w/new open flower
Anthesis	2	5-20% plants w/new open flower
Anthesis	3	0-5% plants have mature fruit
Fruit	2	5-20% plants have mature fruit
Fruit	3	> 20% plants have mature fruit
Lvsdry	1	0-5% plants leaves > 90% dry
Lvsdry	2	5-20% plants leaves > 90% dry
Lvsdry	3	> 20% plants leaves > 90% dry

For list of Species codes used, see PPH011_species_list.

Data Set Code--PPL01

Title of data set:　　　Konza Prairie Long-Term Phosphorus Plots Study

Abstract:

Increased nutrient inputs is one of many global change factors predicted to affect the composition and ecosystem function of plant communities. In general, nitrogen deposition decreases diversity and increases productivity. The effects of phosphorus addition have received less attention, however, and the interactive effect of both nutrients is likely to exacerbate diversity loss over time. Here we addressed whether chronic nutrient additions changed community structure and ecosystem productivity of a native tallgrass prairie. This study took place in an ungrazed watershed that is burned every two years. Two N treatments, 0 and 10 g m^{-2}, and four P treatments, 0, 2.5, 5 and 10 g m^{-2} were crossed in a fully factorial experimental design. The experiment was initiated in 2002 and starting in 2003 nutrients were added at the beginning of each growing season. Plant species composition was surveyed both in the spring and late summer each year, and aboveground biomass was harvested at the end of each summer to estimate aboveground net primary productivity (ANPP).

Keywords that describe data set:

Popultations, Primary Production, Inorganic Nutrients, plant species composition, biodiversity, ANPP, aboveground biomass, community composition

Date data commenced:　　　05/01/2002
Date data terminated:　　　ongoing

Principle Investigators:　　　Meghan Avolio, Sally Koerner, Kimberly La Peirre, Kevin Wilcox

RECORD TYPE 1

Data Format Specification:

Variable	Name	Units
1. Datacode	Data set code	
2. Rectype	Record type	
3. RecYear	Year of record	
4. PlotID	Plot number	
5. Treatment	Treatment code	
6. spnum	A unique numeric value assigned to each of the species in the data set.	
7. Genus	Genus	
8. Species	Species	
9. Abundance	Plant abundance	

RECORD TYPE 2. Plant ANPP for phosphorus plots study

Data Format Specification:

Variable	Name	Units
1. Datacode	Data set code	
2. Rectype	Record type	
3. RecYear	Year of record	
4. PlotID	Plot number	
5. Treatment	Treatment code	
6. ANPP	ANPP	gram/m2

Data Set Code--PPS01

Title of data set: Konza Prairie Plant Species List

Abstract:

This data set contains a list of Konza Prairie plant species numeric codes, full plant species names, and some general information about plant growth and life form, and photosynthetic pathway as well. Konza plant species data sets (PVC01, PVC02, WAT012, etc.) use those numeric codes and abbreviations for all of the plant species recorded.

Keywords that describe data set:

Popultations, Primary Production, Disturbance, biodiversity, grasslands, terrestrial ecosystems, vegetation dynamics, plant communities, plant phenology, plant species, species diversity, species composition, species list

Date data commenced: 01/02/1971
Date data terminated: ongoing

Principle Investigators: Jesse Nippert, John M. Blair, Jeffrey Taylor

RECORD TYPE 1

Data Format Specification:

Variable	Name	Units

1. Code — A unique numeric value assigned to each of the species in the data set.
2. Gen — A short code of the plant genus name.
3. Spec — A short code of the plant species name.
4. Genus — The genus as published in USDA PLANTS database.
5. Species — Specific epithet.
6. Family — Plant species family name
7. Growthform — Plant growth form (a = annual, b = biennial, p = perennial)
8. Lifeform — Species life span (f = forb, g = grass, m = non-grass monocot, o = other, s = sedge, w = woody)
9. Origin — Native or non-native species (i = non-native, n = native)
10. Photo — Photosynthetic pathway (c3 = c3 photosynthesis, c4 = c4 photosynthesis, CAM = Crassulacean acid metabolism photosynthesis)

Data Set Code--PRE02

Title of data set: Reproductive effort of Big Bluestem, Indiangrass and Little Bluestem on selected Konza Prairie LTER watersheds

Abstract:

This data set focuses on seed production, flowering stem mass, height, and population densities of three dominant prairie grasses: Andropogon gerardii (ANGE), Sorgastrum nutans (SONU), and Schizachyrium scoparium (ANSC) in selected Konza Prairie LTER watersheds. Data set includes measurements of flowering stem height (m), density (no. per sq. m) and production (grams per sq. m) and total seed weight (grams) and production (grams per sq. m) on 2 soil types (shallow and deep) in watersheds representing 6 different burning-grazing treatment combinations. Specific watersheds sampled have varied over time. Current watersheds include: 001d, R01a, R01b, 002c, 002d, 004a, 004b, 020b, R20a, R20b, 0SpA, 0SpB, 0SuA, 0SuB, 00FA, 00FB, 00WA and 00WB Sampling is done once a year in October/November (end of growing season). (Sampling design slightly altered from PRE01.)

Keywords that describe data set:

seed weight, flowering, stems, flower stem density, flower stem height, big bluestem, little bluestem, indiangrass, grasses, graminoid, reproduction

Date data commenced: 10/01/1982
Date data terminated: ongoing

Principle Investigator: David C. Hartnett

RECORD TYPE 1 Flowering stem height and seed weight and number (for years 1982-1993)

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soil	Soil type (Florence or Tully)	18-19	A2	
8. Species	Species name	21-24	A4	
9. Transect	Transect (A, B, C, D)	26	A1	
10. Point	Point number (1-20)	28-29	I2	#
11. Flwstht	Flowering stalk height	31-34	F4.2	Meters
14. Comments*		36-80	C35	

*Includes Seed Weight and Number of Seeds for years 1982-1993.

Codes used:

Name	Value		Code Value
Species	ANGE		Andropogon gerardii
Species	ANSC		Schizachyrium scoparius
Species	SONU		Sorgastrum nutans
Soil	TU		Tully soil
Soil	FL		Florence soil

RECORD TYPE 2

Data Format Specification: (Flowering stem densities and mass)

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soil	Soil type (Fl or Tu)	18-19	A2	
8. Species	Species name	21-24	A4	
9. Transect	Transect (A,B,C,D)	26	A1	
10. Plot	Quadrat number	28-29	I1	
11. Stalk	Number of flowering stalks/0.25 sq. m	31-33	I3	#/.25 m^2
12. Flwstht	Flowering stalk weight/0.25 sq m	35-40	P6.2	g/.25 m^2
13. Comments		42-80	A40	

Codes Used:

Name	Value		Code Value
Species	ANGE		Andropogon gerardii
Species	ANSC		Schizachyrium scoparius
Species	SONU		Sorgastrum nutans
Soil	TU		Tully soil
Soil	FL		Florence soil

Data Set Code--PRP01

Title of data set: Konza prairie long term restoration study of aboveground annual net primary productivity (ANPP)

Abstract:

The experiment is a randomized complete block design with four whole plot hetereogeneity treatments replicated within each of four blocks (n=16 whole plots). The whole plot treatments were created using different combinations of soil depth and nutrient manipulations. The control plots contained no depth or nutrient manipulations. The "maximum hetereogeneity" plots contained three 2 m x 8 m vertical strips assigned to ambient, enriched and reduced N treatments and four 2 m x 6 m horizontal strips assigned to deep and shallow soil to result in six treatment combinations. The maximum heterogeneity plots are a split-block design. Each plot contained 12 subplots (2 m x 2 m) for sampling. All of the plots had surface soil temporarily removed to a depth of approximately 25 cm and natural limestone slabs were laid in strips assigned to the shallow soil treatment. The soil from all plots was then replaced, leveled, and disked (2-3 cm deep). In February 1998, we incorporated sawdust (49% C; C:N ratio=122) into the strips assigned to the reduced-N treatment. The average C concentration and bulk density in the surface 15 cm following long-term cultivation was 1.5% and 1.2 g cm-3, respectively. Sawdust was tilled into the soil at a rate of 5.5 kg dry wt./m2 to achieve a C concentration representative of native prairie soil (approx. 3% C). Surface applications of granular sugar were initiated in 2004 at a rate of 200 g sucrose m-2 (84.22 g C/m2) 3-4 times each growing season. Strips assigned to the enriched-N treatment were fertilized with 5 g N m2/y (applied as ammonium-nitrate) in July of the first growing season and early June of each subsequent year.

Keywords that describe data set:

Nutrients; primary productivity, restoration, heterogeneity, aboveground biomass

Date data commenced: 02/02/1998
Date data terminated: ongoing

Principle Investigators: Sara G. Baer, John M. Blair, Scott L. Collins

RECORD TYPE 1: Restoration study of aboveground annual net primary productivity.

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode				
2. RecType	Record type			
3. RecYear	Data record Year			
4. Treatment				
5. Block	Block number of plots			

6. plot   Plot number
7. SubPlot   subplot number
8. WPHetTrt   treatment
9. Depth   depth
10. Nutrient   nutrient
11. ANPP   above net primary production
12. Comments

Comments: Data available from this procedure include the root lengths measured on specific dates, and the estimates of new lengths and decomposed lengths for each quadrat (see methods manual for details on how these estimates were derived). The original data (the mylar sheets) is stored for each window for each year. The pre-LTER sheets have been archived, but the pre-LTER encoded data is not available.

Data Set Code--PRW01

Title of data set: Fine root density and turnover based on root window observations

Abstract:

Eight root windows (40cm X 40cm) were used to measure fine root production and decay over three years in a 2 factor-factorial experiment (Burning, Mowing). Root lengths were traced every two weeks during the growing season. Production, disappearance and standing crops (lengths) were calculated by 10 cm increments.

Keywords that describe data set:

fine roots, root lengths, root growth, root, root decomposition, belowground

Date data commenced: 02/01/1986
Date data terminated: 10/03/1989

Principle Investigator: John M. Blair

RECORD TYPE 1: Root windows on a burning and mowing experiment. Mowing treatment was added in the experiment from 1987.

Data Format Specification:

Variable	Name	Format	Units
1. RecType	Record type		
2. RecYear	Data record Year		
3. RecMonth	Data record Month		
4. Recday	Data record Date		
5. Window	Window number		
6. Depth	Depth to bottom of square(incremented by 10cm)		cm
7. Total	Total root length in the window		cm
8. New	New root length in the window		cm
9. Disappear	Disappeared root length in the window		cm

Comments: Data available from this procedure include the root lengths measured on specific dates, and the estimates of new lengths and decomposed lengths for each quadrat (see methods manual for details on how these estimates were derived). The original data (the mylar sheets) is stored for each window for each year. The pre-LTER sheets have been archived, but the pre-LTER encoded data is not available.

Data Set Code--PTN01

Title of data set:　　　Aboveground net primary productivity along transects spanning topographic gradients on an annually burned and unburned watershed at Konza Prairie

Abstract:

In 1989, single transects spanning upland-lowland-upland topographic positions were established in a long-term unburned (0020B) and an annually burned (001D) watershed. Standing crop biomass data were collected in late season at 11 sites along each transect and sorted into live graminoids, forbs and woody plants, current year's dead, and previous years' dead vegetation. Four 0.1 m2 quadrats were harvested at each of the 11 sites per watershed and all data except previous years' dead were combined to provide an estimate of aboveground NPP. In 1993, soil moisture measurements began along each transect at 15 and 30 cm depths (where possible) with a Time Domain Reflectomerty (TDR) system. Measurements were made twice a month from March - October and intermittently during the winter months.

Keywords that describe the data set:

aboveground biomass, primary productivity, graminoids, grasses, forbs, woody, previous year's dead, net primary productivity, litter, standing crop, detritus, plant biomass, topography, landscape, soil moisture.

Date data commenced:　　　08/15/1989
Date data terminated:　　　09/26/1997

Principle Investigator:　　　John Blair

RECORD TYPE 1 Aboveground biomass

Data Format Specification-1989-1997

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
8. Transect	Transect (1-11)	23-24	I2	
9. Plotnum	Plot number (a,b,c,d)	27	A1	
10. Lvgrass	Mass of live grass	29-34	F6.2	$g/0.1m^2$
11. Forbs	Mass of forbs	36-41	F6.2	$g/0.1m^2$
12. Cuyrdead	Mass of current year's dead	43-48	F6.2	$g/0.1m^2$
13. Pryrdead	Mass of previous year's dead	50-55	F6.2	$g/0.1m^2$
14. Woody	(As of 24 Aug 1992) lead plant-Amorpha canescens	57-62	A23	

rose-Rosa arkansas
(smooth) sumac-Rhus glabra
New Jersey tea-Ceanothus ovatus
dogwood-Cornus drummondi
buckbrush-Symphoricarpos orbiculatus

15. Comments*   64-80

* The comments section of PTN011.90 contains in this order: Standard Error of LiveGrass, Standard Error of Forbs, Standard Error of Current Year Dead, Standard Error of Previous Year Dead, Total (LiveGrass+Forbs+Current Years Dead), and Standard Error of Total.

RECORD TYPE 2 Aboveground biomass with live graminoids, forbs, current year's dead, previous year's dead vegetation, and their standard errors for 1990

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Transect	Transect (1-11)	23-24	I2	
8. Lvgrass	Mass of live grass $g/0.1m^2$	29-34	F6.2	
9. Lvgrse	standard error of live grass			
10. Forbs	Mass of forbs $g/0.1m^2$	36-41	F6.2	
11. Forbse	standard error of forbs			
12. Cuyrdead	Mass of current year's dead $g/0.1m^2$	43-48	F6.2	
13. Cuyrdese	standard error of currents years dead			
14. Pryrdead	Mass of previous year's dead $g/0.1m^2$	50-55	F6.2	
15. Pryrdese	standard error of previous years dead			
16. Total	total aboveground biomass (livegrass + forbs + current years dead) $g/0.1m^2$			
17. Totalse	standard error of total aboveground biomass			

RECORD TYPE 3   Soil water content at 15-cm and 30-cm depth from 1993 to 1996

Data Format Specification:

Variable	Name	Format
1. Datacode		

2. Rectype
3. RecYear
4. RecMonth
5. RecDay
6. Watershed
7. Depth   Soil depth to collect data
8. Tag   Tag number
9. Reading   Reading from TDR
10. H2O   % volumetric H2O based on the TOPP equation
11. Comments Comments

Data Set Code--PVC01

Title of data set: Plant species composition on selected watersheds at Konza Prairie (1981 only)

Abstract:

Canopy coverage and frequency of plant species were estimated visually in 20 circular 10 sq m plots. Six treatments were sampled, three ungrazed and three to be grazed (in the future) by native grazers (bison). In each case, one of the three watersheds was unburned, another burned annually in April, and the third burned every four years in April. In each treatment two soils were sampled: a lower slope deep fertile non-rocky soil (Tully silty clay loam) and a shallow rocky soil (Florence cherty silt loam) on level to gently sloping ridges.

Keywords that describe data set:

plant cover, species, canopy coverage, plant species composition, biodiversity

Date data commenced: 04/01/1981
Date data terminated: 09/29/1981

Principle Investigator: David C. Hartnett, Zak Ratajczak

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Rectype		6	I1	
3. RecYear		7-8	I2	
4. RecMonth		9-10	I2	
5. RecDay		11-12	I2	
6. Watershed		13-16	A4	
7. Soil	Soil type	18	A1	
8. Specode	Species code	20-22	I3	
9. Genus	Abbreviation of genus	24-29	A6	*
10. Speci	Abbreviation of species	31-35	A5	*
11. Vari	Abbreviation of variety	37-40	A4	*
12. Plot 1-20	Plot 1-20 Cover class for plots 1-20	42-80	I20 (even)	

Codes used:

Name	Value		Code Value
Soil	F		Florence
	T		Tully
Spcode	1		Agropyron smithii
(see attached list)			

	etc.	
Plot 1-20	1	0-1% Cover
	2	2-5% Cover
	3	5-25% Cover
	4	25-50% Cover
	5	50-75% Cover
	6	75-95% Cover
	7	95-100% Cover

For list of Species codes used, see PVC011_species_list.1981.1

Data Set Code--PVC02

Title of data set: Plant Species Composition on selected watersheds at Konza Prairie

Abstract:

Canopy coverage and frequency were recorded in 20 circular 10 sq m plots. Six treatments were sampled, three ungrazed and three to grazed by native grazers. In each case one of the three watersheds was unburned, another burned annually in April, the third burned every four years in April. In each treatment two soils were sampled: a lower-slope deep fertile nonrocky soil (tully silty clay loam), and a shallow rocky soil (florence cherty silt loam) on level to gently sloping ridges. In 1983 another ungrazed annual burn area (1c) was added (both tully and florence soils) because original area (1d) appeared aberrant.

Keywords that describe data set:

Plant cover, species, canopy coverage, plant species composition, biodiversity, ANPP, aboveground biomass, community composition

Date data commenced: 06/29/1983
Date data terminated: ongoing

Principle Investigators: David C. Hartnett, Scott L. Collins, Zak Ratajczak

RECORD TYPE 1.

Data Format Specification:

Variable	Name	Units
1. Datacode	Data set code	
2. Rectype	Record type	
3. RecYear	Year of record	
4. RecMonth	Month of record	
5. RecDay	Day of record	
6. Watershed	Watershed of treatment	
7. SoilType	Soil type in which data were collected (Florence or Tully)	
8. Transect	Transect of A-E	
9. Plot	Plot number 1-5	
10. SpeCode	Species code	
11. AB_genus	Abbreviation of genus	
12. AB_species	Abbreviation of species	
13. Cover	Cover class	coverclass/percentage
14. Pid	Personnel id who collected the data	
15. Comments	Comments	

Vegetation species composition from 1983. The transects were permanently layed out in the current format of 4 transects (A-D), each with 5 plots. Transect E only occurred on watershed

N20B florence in 1986 and 1987. This transect is the same as the current transect D for this watershed and soil type. The old transect D was abandoned in 1987 prior to bison reintroduction. Seven cover classes were used to estimate species canopy coverage. 1 - 0-1% cover; 2 - 2-5% cover; 3 - 5-25% cover; 4 - 25-50% cover; 5 - 50-75%; 6 - 75-95% cover; 7 - 95-100% cover. (Note: for the watershed r20b, no data were collected in the transect A & B in the fall of 2011 due to wildfire occurred.)

*Transect 'E' occurred only on the N20b florence site in 1986 and 1987 and was renamed the new 'D' transect in 1988. The old 'D' transect was sampled from 1983 to 1987 and then abandoned when the bison fence was constructed. Thus, plots d1-d5 from 1983-1987 are NOT the same d1-d5 plots in subsequent years.

Codes used in the data set:
    t = tully (lowland) soil
    f = florence (upland) soil
    s = slopes

A value of 1 to 7 in plots a1-d5 indicates the estimated cover class value for the species. Blank values indicate that the plant was not observed in the plot.

Cover class	Canopy cover
1	<1%
2	1-5%
3	5-25%
4	25-50%
5	50-75%
6	75-95%
7	95-100%

Data Set Code--PWV01

Title of data set: Cover of woody vegetation at Konza Prairie

Abstract:

This data set relates effects of soil, grazing intensity and burning treatments on the establishment and subsequent expansion of woody plants in prairie communities. The locations of woody vegetation are marked on a mylar overlay of an aerial photograph of the area being surveyed with a unique symbol for each species and a number for the size. For trees, size is the height to the nearest meter. For shrubs, the number of stems is recorded as a measure of size if the number is less than 25. For large patches of shrubs, the diameter is recorded and the shape of the patch is drawn on the overlay. Files are named according to the name of the watershed and year the data was collected (e.g. 004b86.one = first data file for 004b in 1986). For 1986, the files also exist as coverages in PC ARC/INFO files.

Keywords that describe data set:

woody plant cover, shrubs, trees, plant cover

Date data set commenced: 06/01/1981
Date data set terminated: 06/01/1986

Principle Investigator: Jesse Nippert, Zak Ratajczak

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Format
1. RecYear			
2. Specode	6-digit code representing species		
3. Watershed	or watershed boundary	1-6	A5
4. x	x coordinate	8-12	I5
5. y	y coordinate	14-18	I5
6. height	Height of tree to nearest meter*	21-22	I2
7. Comments			
8. Comments2			

Codes used: For list of Species codes used, see PWV011_species_list.1981.1
| * Height | 99 | Used to mark beginning and end of shrub patches |

Data Set Code--PWV02

Title of data set: Importance values of gallery forest vegetation at Konza Prairie, 1983

Abstract:

Eighteen gallery forest stands, representing nearly all of the nondisturbed forests on Konza Prairie, were sampled during the 1983 growing season. The point-quarter method at 20 sample points was used to sample overstory vegetation. Species names and diameter were recorded for the four sampled trees in each plot. From these data frequency, density and dominance were calculated to derive importance values for each species in a stand.

Keywords that describe data set:

importance value, gallery forests, point-quarter method, ordination

Date data set commenced: 05/23/1983
Date data set terminated: 08/17/1983

Principle Investigator: John M. Briggs

RECORD TYPE 1

Data Format Specification:

Variable	Name	Columns	Units
1. Datacode	dataset code		
2. Rectype	data record type	1-6	
3. Recyear	year of sample	8-12	
4. Recmonth	month of sample	14-18	
5. Recday	day of sample	21-22	
6. Stand	stand identificaiton number		
7. Point	point (1-20)		
8. Quadrant	quadrant (1-4)		
9. Speccode	species code –see code list		
10. Genus	abbreviation of genus		
11. Species	abbreviation of species		
12. Variety	abbreviation of variety		
13. Distance	distance from tree to point		(cm)
14. Diameter	diameter of tree at breast height		(cm)
15. Age	age based on ring count years		
16. Comments			

Codes used: For list of Species codes used, see PWV011_species_list.1981.1

Other Data

Data Set Code--AOP01

Title of data set**:** Correspondence between plant traits and NEON Airborne Observatory Platform (AOP) data at Konza Prairie (2017)

Abstract:
Understanding spatial and temporal variation in plant traits is needed to accurately predict how communities and ecosystems will respond to global change. The National Observatory Ecological Network (NEON) Airborne Observation Platform (AOP) provides hyperspectral images and associated data products at numerous field sites at 1 m spatial resolution, allowing high-resolution trait mapping. However, the reliability of these data depends on establishing rigorous links with in-situ field measurements. We tested the accuracy of NEON's readily available AOP derived data products – Leaf Area Index, Total biomass, Ecosystem structure (Canopy height model; CHM), and Canopy Nitrogen by comparing them to spatially extensive field measurements from a mesic tallgrass prairie. Correlations with AOP data products exhibited generally weak or no relationships with corresponding field measurements. The weakest relationships were between AOP Canopy Nitrogen and ground-based measures of Nitrogen, as well as the CHM and ground-based canopy height measurements. We also examined how well the full reflectance spectra (380-2500 nm), as opposed to derived products, could predict vegetation traits using partial least-squares regression models. Only one of the eight traits examined, Nitrogen, had an R^2 of more than 0.25. For all vegetation traits, R^2 ranged from 0.08-0.29 and the root mean square error of prediction ranged from 14-64%. Our results suggest that currently available AOP derived data products are unreliable, at least at this grassland site, and should not be used without extensive ground-based validation. Relationships using the full reflectance spectra may be more promising, although additional assessment of varying spatial scales of field and AOP data, as well as corrections and data pre-processing to improve data quality, are recommended. Finally, grassland sites may be especially challenging for airborne spectroscopy because of their high species diversity within a small area, mixed functional types of plant communities, and heterogenous mosaics of disturbance and resource availability. Remote sensing observations are one of the most promising approaches to understanding ecological patterns across space and time, yet the opportunity to engage a diverse community of NEON data users will depend on establishing empirical relationships with field measurements across a diversity of sites.

Keywords that describe data set:
Airborne Observation, Platform, NEON, Prairie Biological Station, plant biomass, Primary Production

Date data commenced: 2017
Date data terminated: 2017

Principle Investigator: Stephanie Pau, and Jesse Nippert

RECORD TYPE 1: Correspondence between plant traits and NEON Airborne Observatory Platform (AOP) data.

Data Format Specification:

Variable	Name	
1. RecDate	Date/time	Date of sample
2. Plot	Physical quantity	Plot number
3. Latitude	Physical quantity	Latitude
4. Longitude	Physical quantity	Longitude
5. Zone	Nominal	UTM Zone
6. mE	Physical quantity	UTM easting
7. mN	Physical quantity	UTM northing
8. Datum	Nominal	Datum plane (World Geodetic System of 1984 - WGS 84, The North American Datum of 1983 -NAD 83).
9. Type	Nominal	Waypoint type
10. LAI_file	Physical quantity	LAI file
11. LAI_sensor	Nominal	LAI leaf sensor
12. RecTime	Date/time	Sample collect time
13. LAI	Physical quantity	AOP LAI
14. Canopy_Height_Herbaceous	Physical quantity	Canopy Height Herbaceous
15. Canopy_Height_Woody	Physical quantity	Canopy Height Woody
16. Grass_biomass	Physical quantity	Grass biomass
17. Forb_biomass	Physical quantity	Forb biomass
18. Litter_biomass	Physical quantity	Litter biomass
19. Woody_biomass	Physical quantity	Woody plant biomass
20. Grasses	Nominal	Grasses name
21. Grass_like	Nominal	Grass like species
22. Forbs	Nominal	Forbs name
23. Woody	Nominal	Woody plant species
24. ID	Physical quantity	ID number
25. C_leaf	Physical quantity	plant leaf for carbon
26. N_leaf	Physical quantity	Plant leaf for nitrogen
27. d15N_leaf	Physical quantity	Plant leaf d15N
28. d13C_leaf	Physical quantity	Plant leaf d13C
29. C_forb	Physical quantity	Carbon in forb
30. N_forb	Physical quantity	Nitrogen in the forb
31. d15N_forb	Physical quantity	d15N in the forb
32. d13C_forb	Physical quantity	d13C in the forb
33. C_woody	Physical quantity	Carbon in the woody plant
34. N_woody	Physical quantity	Nitrogen in the woody plant
35. d15N_woody	Physical quantity	d15N in the woody plant
36. d13C_woody	Physical quantity	d13C in the woody plant
37. C_dead	Physical quantity	Carbon in the dead plant

38. N_dead	Physical quantity	Nitrogen in the dead plant
39. d15N_dead	Physical quantity	d15N in the dead plant
40. d13C_dead	Physical quantity	d13C in the dead plant

Data Set Code--BGPVC

Title of data set: Plant Species Composition in the Belowground Plot Experiment at Konza Prairie

Abstract:

Two permanent plant composition plots were marked with conduit in each of the 64 plots. Canopy cover was recorded in a 5 m^2 circular area surrounding each of the plots. At approximately 5-year intervals, coverage is assessed in late July, using visual estimates of cover by species, based on a modified Daubenmire scale. NOTE: In 1989, sampling was done once in early July after mowing using one 10 m^2 plot placed randomly in the approximate center of each plot. In 1994, plant composition sampling was done in early June in the unmowed plots; sampling in the mowed plots occurred in August. In 1999, two permanent conduits were placed in each plot, and sampling was conducted in June, before mowing, and again in August using 5 m^2 plot sizes. In 2005 and afterward, sampling was reduced to one time in late July. Sampling occurred once every five years until 2015. Plots have been sampled annually since 2016.

Keywords that describe data set:

canopy cover, plant species, plant species composition, plant communities, community composition, biodiversity, Belowground Plot Experiment

Date data commenced: 1989
Date data terminated: ongoing

Principle Investigator: John Blair

RECORD TYPE 1: Vegetation species composition for below ground plots

Data Format Specification:

Variable	Name
1. Datacode	
2. RecYear	
3. RecMonth	
4. RecDay	
5. RepSite*	Replicate A or B for RecType 2
6. SpeciesCode	Species code
7. Ab_genus	Abbreviation of genus
8. Ab_species	Abbreviation of species
9. Plot	Plot number of treatment (1-64)
10. CoverClass	Estimated cover class
11. Pid	Personnel id who collected the data
11. Comments	Comments about data collection

*Subplots a and b were added in 1999 and are 5 meter square plots that are in a different location from the 10 meter square plots that were sampled previously.

For list of Species codes used, see Konza species list at:
http://lter.konza.ksu.edu/sites/default/files/species_list_pvc02.pdf

A value of 1 to 7 indicates the estimated cover class value for the species.

Cover class	Canopy cover
1	<1%
2	1-5%
3	5-25%
4	25-50%
5	50-75%
6	75-95%
7	95-100%

Data Set Code--BMS01

Title of data set: Mycorrhizae spore density and composition in the Belowground Plot Experiment at Konza Prairie

Abstract:

Spore densities of 14 groups (13 species + unknown) were measured on the 64 belowground plots (record type 1). Effects of burning, mowing, and N+P additions on spore densities (an index of AM fungi infection rates). Community indices and percent root colonization (record type 2). Effects of burning, mowing, and N+ P additions on mycorrhizal community composition and root colonization.

Keywords that describe data set:

mycorrhizae, spores, burning, mowing, nitrogen, phosphorus, Belowground Plot Experiment

Date data commenced: 06/11/1987
Date data terminated: 12/31/1987

Principle Investigator: David C. Hartnett

RECORD TYPE 1 (spore densities)

Data Format Specification:

Variable	Name	Columns	Format
1. DATACODE		1	A5
2. RECTYPE		2	I1
3. YEAR		3	I2
4. MONTH		4	I2
5. DAY		5	I2
6. BELO		6	A4
7. PLOT	Belowground Plot id (1-64)	7	I2
8. BLOCK	Super Plot (block) H A	8	A1
9. BURN	Burn Treatment	9	A1
10. MOW	Mow Treatment	10	A1
11. NUTRIENT	Nutrient Treatment	11	A1
12. AGGREGAT	# spores Glomus aggregatum	12	I3
13. FUSCICDA	# spores Glomus fuscicdatum	13	I3
14. MOSSEAL	# spores Glomus mosseal	14	I3
15. CLAROIDE	# spores Glomus claroideum	15	I2
16. CONSTRIC	# spores Glomus constrictum	16	I2
17. TORTUOSU	# spores Glomus tortuosum	17	I2
18. ALBIDUM	# spores Glomus albidum	18	I2
19. ETUNICAT	# spores Glomus etunicatum	19	I2
20. UNIDENT	# unidntfd glomus spp.	20	I2

21. GIGPELLU	# spores Gigaspora pellucida	21	I2
22. GIGGIGAU	# spores Gigaspora gigautea	22	I2
23. GIGCALOS	# spores Gaspora calospira	23	I2
24. SCLCOROM	# spores scler. corom	24	I2
25. ENTOFRAP	# spores entoph. freques	25	I2

Codes Used:

Name	Value	Code Value
Plot	1-64	Plot number
Burn treatment	U: B	U=Unburn B=Burn
Mow treatment	U; M	U=unmowed M=mowed
Nutrient treatment	C, N, P, B	C=control, N=nitrogen
		P=Phosphorus B=Both

RECORD TYPE 2 (community indices)

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1	A5
2. Rectype		2	A1
3. RecYear		3	I2
4. RecMonth		4	I2
5. RecDay		5	I2
6. Watershed		6	A4
7. Plot	Plot number (1-64)	7	I2
8. Subplot	Sub plot	8	A1
9. Burn	Burned treatment	9	A1
10. Mow	Mow treatment	10	A1
11. Nutrient	Nutrient treatment	11	A1
12. SporeRichness	Myc. spore species richness	12	I2
13. SporeEveness	Myc. Spore species eveness	13	F1.3
14. SporeDiversity	Myc. Spore species diversity	14	F1.3
15. SporeTotal	Myc.Spore species total number	15	I4
16. Colonization	Myc. Root Colonization (%)	16	I2

Codes Used:

Name	Value	Code Value
Plot	1-64	Plot number
Burn treatment	U: B	U=Unburn B=Burn
Mow treatment	U; M	U=unmowed M=mowed
Nutrient treatment	C, N, P, B	C=control, N=nitrogen
		P=Phosphorus B=Both

Data Set Code--BNS01

Title of data set: Nematodes density and composition in the Belowground Plot Experiment at Konza Prairie

Abstract:

The effects of burning, mowing, and nitrogen (N) and phosphorus (P) fertilization on the trophic structure of a tallgrass prairie nematode community were examined in a long-term field experiment established in 1986. Nematode densities and trophic composition were determined in October of 1987, 1989, and 1994 following 2, 4, and 9 years of treatment, respectively.

Keywords that describe data set:

nematodes, trophic structure, soil invertebrates, mowing, nitrogen, phosphorus, Belowground Plot Experiment

Date data commenced: 1987
Date data terminated: 1994

Principle Investigator: Timothy C. Todd

RECORD TYPE 1

Data Format Specification:

Variable		Columns
1. Observation number		1-6
2. RecYear		9-10
3. Burn	Burn type (0-unburn;1-burn)	15
4. Mow	Mow type (0-unmow;1-mow)	20
5. N	nitrogen treatment (0-untreatment;1-treatment)	24
6. P	Phosphorus treatment (0-untreatment;1-treatment)	27
7. Block	Block number of plots	31
8. Herbivores	Herbivores	34-44
9. Fungivores	Fungivores	46-56
10. Microbivores	Microbivores	58-68
11. Omnivorous	Omnivorous/predators	70-80
12. Total	Total number of nematodes	82-93

Data Set Code--CCE01

Title of data set: The Climate Extremes Experiment (CEE): Assessing ecosystem resistance and resilience to repeated climate extremes at Konza Prairie

Abstract:

Climate extremes, such as drought, are increasing in frequency and intensity, and the ecological consequences of these extreme events can be substantial and widespread. Yet, little is known about the factors that determine recovery (or resilience) of ecosystem function post-drought. Such knowledge is particularly important because post-drought recovery periods can be protracted depending on drought legacy effects (e.g., loss key plant populations, altered community structure and/or biogeochemical processes). These drought legacies may alter ecosystem function for many years post-drought and may impact future sensitivity (both resistance and resilience) to climate extremes. With forecasts of more frequent drought, there is an imperative to understand whether and how post-drought legacies will affect ecosystem response to future drought events. To address this knowledge gap, we experimentally imposed over an eight year period two extreme growing season droughts, each two years in duration followed by a two-year recovery period, in annually burned tallgrass prairie.

Keywords that describe data set:
Konza Prairie, ANPP, climate, climate change, drought, extreme events, nitrogen, soil moisture, temperature, rainfall manipulation, precipitation

Date data commenced: 1/4/2010
Date data terminated: ongoing

Principle Investigators: Dr. Melinda D. Smith, Dr. Alan K. Knapp

RECORD TYPE 1 Treatments Table CEE011

Data Format Specification:

Variable	Name	units
1. DataCode	Data set code	
2. Rectype	Record type	
3. Plot	match with treatments, spcomp, stemdensity, ANPP tables	
4. heat	treatment designations (1 = control, 2 = level 2, 3 = level 3, 4 = level 4)	
5. precip	treatment designations (1 = control, 2 = drought)	
6. subject	number 1-40	
7. rep	match with spcomp, stemdensity, ANPP tables	

RECORD TYPE 2 Species Composition CEE012

Data Format Specification:

Variable	Name	units
1. DataCode	Data set code	
2. Rectype	Record type	
3. Year		
4. Plot	match to treatments, spcomp, stemdensity, ANPP	
5. Spnum2	Species number from Konza taxa list	
6. Cover	percent cover of taxa (0-100)	

RECORD TYPE 3   Stemdensity CEE013

Data Format Specification:

Variable	Name	units
1. Datacode	Data set code	
2. Rectype	Record type	
3. Season	early (spring) or late (fall) stem density value	
4. Year	year stem density was collected	
5. Plot	match with spcomp, stemdensity, ANPP tables	
6. Sample	number 1-40	
7. AndroL	number of live stems of Andropogon gerardii	
8. AndroD	number of dead stems of Andropogon gerardii	
9. AndroT	total number of stems of Andropogon gerardii	
10. SorgL	number of live stems of Sorghastrum nutans	
11. SorgD	number of dead stems of Sorghastrum nutans	
12. SorgT	total number of stems of Sorghastrum nutans	
13. SolidagoL	number of live stems of Solidago canadensis	
14. SolidgoD	number of ldead stems of Solidago canadensis	
15. SolidagoT	total number of stems of Solidago canadensis	
16. GrassL	number of live other grass stems	
17. GrassD	number of dead other grass stems	
18. GrassT	total number of other grass stems	
19. ForbL	number of live forb stems	
20. ForbD	number of dead forb stems	
21. ForbT	total number of forb stems	
22. WoodL	number of live woody stems	
23. WoodD	number of dead woody stems	
24. WoodT	total number of woody stems	
25. Total	total number of all stems	

RECORD TYPE 4   ANPP CEE014

Data Format Specification:

    Variable   Name
    1. Datacode   Data set code
    2. Rectype   Record type
    3. Year   year anpp was collected
    4. Plot   match with spcomp, stemdensity, ANPP tables
    5. Andro   dried mass of Andropogon gerardii in grams per 1m2
    6. Sorg   dried mass of Sorghastrum nutans in grams per 1m2
    7. Grass   dried mass of other grass in grams per 1m2
    8. Solidago   dried mass of Solidago canadensis in grams per 1m2
    9. Forbs   dried mass of other forbsi in grams per 1m2
    10. Woody   dried mass of woody taxa in grams per 1m2
    11. Grass_Lit   dried mass of grass litter in grams per 1m2
    12. Other_Lit   dried mass of other litter in grams per 1m2
    13. Total   total dried mass in grams per 1m2
    14. Tgrass   total dried mass of grass in grams per 1m2
    15. Tother   total dried mass of other in grams per 1m2

Data Set Code--CME01

Title of data set: The Consumer Size Manipulation Experiment (ConSME) at Konza Prairie

Abstract:
Herbivores of varying size classes exist with the grassland biome (large mammals, small mammals, insects), however their independent and interactive effects on grassland plant species composition and function are understudied. Here we aim to tease apart the effects of three size classes of herbivores within the Konza Prairie system, and whether these effects vary across fire regimes.

Keywords that describe data set:
aboveground biomass, insects, Prairie Biological Station, plant biomass, plant communities, plant cover, Primary Production, Disturbance, Populations

Date data commenced: 1/4/2019
Date data terminated: ongoing

Principle Investigators: Kimberly Komatsu, Meghan Avolio, Andrew Hope, Sally Koerner, Allison Louthan, and Kevin Wilcox

RECORD TYPE 1   Plant cover data – CME011

Data Format Specification:

Variable		Name
1. DataCode	Nominal	Dataset code
2. RecType	Nominal	Record type
3. RecYear	Physical quantity	Year of record
4. Season	Nominal	Season of record
5. RecDate	Date/time	Date that data was collected
6. Watershed	Nominal	watershed
7. Block	Nominal	Block code (A- R)
8. Plot	Physical quantity	Plot Number (1- 6)
9. Sppnum	Physical quantity	Species number
10. Cover	Physical quantity	Plant Cover
11. Comments		Comments

RECORD TYPE 2   Above-ground Biomass data– CME012

Data Format Specification:

Variable		Name
1. RecType	Nominal	Record type
2. RecYear	Physical quantity	Year of record
3. Watershed	Nominal	watershed

4.	Block	Nominal	Block (A- R)
5.	Plot	Physical quantity	Plot Number (1- 6)
6.	Strip	Physical quantity	Strip number (1, 2)
7.	Lvgrass	Physical quantity	Dried lvgrass biomass of taxa in grams per m2
8.	Forb	Physical quantity	dried mass of forb taxa in grams per 1m2
9.	Woody	Physical quantity	Dried woody biomass of taxa in grams per m2
10.	Pdead	Physical quantity	Dried pryrdead biomass of taxa in grams per m2
11.	Comments	Nominal	Comments for the data

Data Set Code--DEM01

Title of data set: Demographic studies of four forb species at Konza Prairie

Abstract:

Plant survival, growth, reproduction, and recruitment of 4 forb species (Amorpha canescens, Echinacea angustifolia, Aster oblongifolius, Kuhnia eupatorioides) were estimated annually within permanent transects in 20 watersheds, starting in 2020.

Keywords that describe data set:

aboveground, biomass, Bison, demography, forbs, grazing, LTER-KNZ, Konza Prairie, Konza Prairie Biologica Station, species, Population

Date data commenced: 6/1/2021
Date data terminated: ongoing

Principle Investigators: Allison Louthan

RECORD TYPE 1 Size, fruiting effort, and recruitment data for Amorpha canescens in 2020, and 2021- DEM011

Data Format Specification:

Variable   Name
1. RecYear   Physical quantity   Year of record
2. Forb   Nominal   Forb species
3. Watershed   Nominal   watershed at which transect was located
4. Plant_id   Physical quantity   plant ID number, consistent across years. Each watershed-plant_id references a unique individual
5. X   Physical quantity   Position of plant, in cm, along the transect in the x direction (i.e., parallel to the long side of the transect)
6. Y   Physical quantity   Position of plant, in cm, along the transect in the y direction (i.e., perpendicular to the long side of the transect)
7. Mrk   Nominal   Information used to relocate the plant in the field
8. H   Physical quantity   Height of the plant in cm (not measured in 2020)
9. N   Physical quantity   Number of basal stems that are longer than 5 cm
10. D   Nominal   Diameter of tallest basal stem at the base, in mm (some times with multiple measures)
11. L_f   Nominal   length(s) of the panicle(s); multiple lengths are separated by a semicolon and a space
12. Cov   Physical quantity   percent (living) ground cover in a 15 cm radius around the plant
13. Note   Nominal   a piece of information about the plant that is permanent. Important notes include: ddXX (died in XX, where XX is the 2-digit year); mpdXX (missing in XX, and should be assumed to be dead, where XX is the 2-digit year); and d < 0.5 (diameter is under 0.5 mm, and thus the diameter was not measured)

14. Comments   Nominal   a piece of information about the plant that is temporary, and only applies for one year. Important comments include: sen (senesced, indicating measurements are missing, but plant was alive); qsAA-BB: we conducted a search for unmarked individuals, between 400-500 (y direction) and AA-BB (x direction); missed: we found this unmarked plant in the search, but it is more than one year old, and thus is not a new recruit since the last survey; new: we found this unmarked plant in the search, and it is a new recruit since the last survey.

RECORD TYPE 2 Size, fruiting effort, and recruitment data for Aster oblongifolius in 2020, and 2021 – DEM012

Data Format Specification:

Variable   Name   units
1. RecYear   Physical quantity   Year of record
2. Forb   Nominal   Forb species
3. Watershed   Nominal   watershed at which transect was located
4. Transect   Nominal   If applicable, transect at which plant was located
5. Plant_id   Physical quantity   plant ID number, consistent across years. Each watershed-plant_id references a unique individual
6. X   Physical quantity   Position of plant, in cm, along the transect in the x direction (i.e., parallel to the long side of the transect)
7. Y   Physical quantity   Position of plant, in cm, along the transect in the y direction (i.e., perpendicular to the long side of the transect)
8. Mrk   Nominal   Information used to relocate the plant in the field
9. H   Physical quantity   Height of the plant in cm (not measured in 2020)
10. D   Nominal   Diameter of tallest basal stem at the base, in mm (some times with multiple measures)
11. F   Nominal   Number of flowers or fruits (some times with multiple measures)
12. Cov   Physical quantity   percent (living) ground cover in a 15 cm radius around the plant
13. Note   Nominal   a piece of information about the plant that is permanent. Important notes include: ddXX (died in XX, where XX is the 2-digit year); mpdXX (missing in XX, and should be assumed to be dead, where XX is the 2-digit year); and d < 0.5 (diameter is under 0.5 mm, and thus the diameter was not measured
14. Comments   Nominal   a piece of information about the plant that is temporary, and only applies for one year. Important comments include: sen (senesced, indicating measurements are missing, but plant was alive); qsAA-BB: we conducted a search for unmarked individuals, between 400-500 (y direction) and AA-BB (x direction); missed: we found this unmarked plant in the search, but it is more than one year old, and thus is not a new recruit since the last survey; new: we found this unmarked plant in the search, and it is a new recruit since the last survey.

RECORD TYPE 3 Size, fruiting effort, and recruitment data for Echinacea angustifolia in 2020, and 2021 – DEM013

Data Format Specification:

Variable   Name   units
   1. RecYear   Physical quantity   Year of record
   2. Forb   Nominal   Forb species
   3. Watershed   Nominal   watershed at which transect was located
   4. Transect   Nominal   If applicable, transect at which plant was located
   5. Plant_id   Physical quantity   plant ID number, consistent across years. Each watershed-plant_id references a unique individual
   6. X   Physical quantity   Position of plant, in cm, along the transect in the x direction (i.e., parallel to the long side of the transect)
   7. Y   Physical quantity   Position of plant, in cm, along the transect in the y direction (i.e., perpendicular to the long side of the transect)
   8. Mrk   Nominal   Information used to relocate the plant in the field
   9. N_ros   Nominal   Number(s) of leaves in the rosette(s); if a plant has multiple rosettes, they are separated by a semicolon and a space
   10. L_ros   Nominal   Length of the longest leaf (leaves) in the rosette(s), in cm; if a plant has multiple rosettes, lengths are separated by a semicolon and a space
   11. F   Nominal   Number of flowers or fruits (some times with multiple measures)
   12. N_f   Nominal   Number(s) of leaves on flowering or fruiting rosettes; if a plant has multiple flowering or fruiting rosettes, they are separated by a semicolon and a space
   13. L_f   Nominal   length(s) of the panicle(s); multiple lengths are separated by a semicolon and a space
   14. Cov   Physical quantity   percent (living) ground cover in a 15 cm radius around the plant
   15. Note   Nominal   a piece of information about the plant that is permanent. Important notes include: ddXX (died in XX, where XX is the 2-digit year); mpdXX (missing in XX, and should be assumed to be dead, where XX is the 2-digit year); and d < 0.5 (diameter is under 0.5 mm, and thus the diameter was not measured
   16. Comments   Nominal   a piece of information about the plant that is temporary, and only applies for one year. Important comments include: sen (senesced, indicating measurements are missing, but plant was alive); qsAA-BB: we conducted a search for unmarked individuals, between 400-500 (y direction) and AA-BB (x direction); missed: we found this unmarked plant in the search, but it is more than one year old, and thus is not a new recruit since the last survey; new: we found this unmarked plant in the search, and it is a new recruit since the last survey.

RECORD TYPE 4 Size, fruiting effort, and recruitment data for Kuhnia eupatorioides in 2020, and 2021 – DEM014

Data Format Specification:

Variable   Name   units

1. RecYear   Physical quantity   Year of record
2. Forb   Nominal   Forb species
3. Watershed   Nominal   watershed at which transect was located
4. Transect   Nominal   If applicable, transect at which plant was located
5. Plant_id   Physical quantity   plant ID number, consistent across years. Each watershed-plant_id references a unique individual
6. X   Physical quantity   Position of plant, in cm, along the transect in the x direction (i.e., parallel to the long side of the transect)
7. Y   Physical quantity   Position of plant, in cm, along the transect in the y direction (i.e., perpendicular to the long side of the transect)
8. Mrk   Nominal   Information used to relocate the plant in the field
9. N   Physical quantity   Number of basal stems that are longer than 5 cm
10. H   Physical quantity   Height of the plant in cm (not measured in 2020)
11. F   Nominal   Number of flowers or fruits (some times with multiple measures)
12. Cov   Physical quantity   percent (living) ground cover in a 15 cm radius around the plant
13. Note   Nominal   a piece of information about the plant that is permanent. Important notes include: ddXX (died in XX, where XX is the 2-digit year); mpdXX (missing in XX, and should be assumed to be dead, where XX is the 2-digit year); and d < 0.5 (diameter is under 0.5 mm, and thus the diameter was not measured
14. Comments   Nominal   a piece of information about the plant that is temporary, and only applies for one year. Important comments include: sen (senesced, indicating measurements are missing, but plant was alive); qsAA-BB: we conducted a search for unmarked individuals, between 400-500 (y direction) and AA-BB (x direction); missed: we found this unmarked plant in the search, but it is more than one year old, and thus is not a new recruit since the last survey; new: we found this unmarked plant in the search, and it is a new recruit since the last survey.

RECORD TYPE 5 Size, fruiting effort, and recruitment data for Amorpha canescens in 2020 and 2021 in ConSME – DEM015

Data Format Specification:

Variable   Name   units

1. RecYear   Physical quantity   Year of record
2. Forb   Nominal   Forb species
3. Block   Nominal   letter of ConSME block
4. Plot   Physical quantity   Plot Number
5. Bp   Code list   were bison present in that plot

6. Sp   Code list   were small mammals present in that plot
7. Insctcde   Insctcde   Code list   was insecticide applied to that plot
8. X   Physical quantity   Position of plant, in cm, along the transect in the x direction (i.e., parallel to the long side of the transect)
9. Y   Physical quantity   Position of plant, in cm, along the transect in the y direction (i.e., perpendicular to the long side of the transect)
10. Mrk   Nominal   Information used to relocate the plant in the field
11. H   Physical quantity   Height of the plant in cm (not measured in 2020)
12. N   Physical quantity   Number of basal stems that are longer than 5 cm
13. D   Nominal   Diameter of tallest basal stem at the base, in mm (some times with multiple measures)
14. L_f   Nominal   length(s) of the panicle(s); multiple lengths are separated by a semicolon and a space
15. Cov   Physical quantity   percent (living) ground cover in a 15 cm radius around the plant
16. Note   Nominal   a piece of information about the plant that is permanent. Important notes include: ddXX (died in XX, where XX is the 2-digit year); mpdXX (missing in XX, and should be assumed to be dead, where XX is the 2-digit year); and d < 0.5 (diameter is under 0.5 mm, and thus the diameter was not measured
17. Comments   Nominal   a piece of information about the plant that is temporary, and only applies for one year. Important comments include: sen (senesced, indicating measurements are missing, but plant was alive); qsAA-BB: we conducted a search for unmarked individuals, between 400-500 (y direction) and AA-BB (x direction); missed: we found this unmarked plant in the search, but it is more than one year old, and thus is not a new recruit since the last survey; new: we found this unmarked plant in the search, and it is a new recruit since the last survey.

RECORD TYPE 6 Size, fruiting effort, and recruitment data for Echinacea angustifolia in 2020 and 2021 in ConSME – DEM016

Data Format Specification:

Variable   Name   units
1. RecYear   Physical quantity   Year of record
2. Forb   Nominal   Forb species
3. Block   Nominal   letter of ConSME block
4. Plot   Physical quantity   Plot Number
5. Bp   Code list   were bison present in that plot
6. Sp   Code list   were small mammals present in that plot
7. Insctcde   Insctcde   Code list   was insecticide applied to that plot
8. X   Physical quantity   Position of plant, in cm, along the transect in the x direction (i.e., parallel to the long side of the transect)
9. Y   Physical quantity   Position of plant, in cm, along the transect in the y direction (i.e., perpendicular to the long side of the transect)
10. Mrk   Nominal   Information used to relocate the plant in the field

11. N_ros   Nominal   Number(s) of leaves in the rosette(s); if a plant has multiple rosettes, they are separated by a semicolon and a space
12. L_ros   Nominal   Length of the longest leaf (leaves) in the rosette(s), in cm; if a plant has multiple rosettes, lengths are separated by a semicolon and a space
13. F   Nominal   Number of flowers or fruits (some times with multiple measures)
14. N_f   Nominal   Number(s) of leaves on flowering or fruiting rosettes; if a plant has multiple flowering or fruiting rosettes, they are separated by a semicolon and a space
15. L_f   Nominal   length(s) of the panicle(s); multiple lengths are separated by a semicolon and a space
16. Cov   Physical quantity percent (living) ground cover in a 15 cm radius around the plant
17. Note   Nominal   a piece of information about the plant that is permanent. Important notes include: ddXX (died in XX, where XX is the 2-digit year); mpdXX (missing in XX, and should be assumed to be dead, where XX is the 2-digit year); and d < 0.5 (diameter is under 0.5 mm, and thus the diameter was not measured
18. Comments   Nominal   a piece of information about the plant that is temporary, and only applies for one year. Important comments include: sen (senesced, indicating measurements are missing, but plant was alive); qsAA-BB: we conducted a search for unmarked individuals, between 400-500 (y direction) and AA-BB (x direction); missed: we found this unmarked plant in the search, but it is more than one year old, and thus is not a new recruit since the last survey; new: we found this unmarked plant in the search, and it is a new recruit since the last survey.

RECORD TYPE 7 Size, fruiting effort, and recruitment data for Kuhnia eupatorioides in 2020 and 2021 in ConSME – DEM017

Data Format Specification:

Variable   Name   units
1. RecYear   Physical quantity Year of record
2. Forb   Nominal   Forb species
3. Block   Nominal   letter of ConSME block
4. Plot   Physical quantity Plot Number
5. Bp   Code list   were bison present in that plot
6. Sp   Code list   were small mammals present in that plot
7. Insctcde   Insctcde   Code list   was insecticide applied to that plot
8. X   Physical quantity Position of plant, in cm, along the transect in the x direction (i.e., parallel to the long side of the transect)
9. Y   Physical quantity Position of plant, in cm, along the transect in the y direction (i.e., perpendicular to the long side of the transect)
10. Mrk   Nominal   Information used to relocate the plant in the field
11. H   Physical quantity Height of the plant in cm (not measured in 2020)
12. N   Physical quantity Number of basal stems that are longer than 5 cm

13. F   Nominal   Number of flowers or fruits (some times with multiple measures)
14. Cov   Physical quantity   percent (living) ground cover in a 15 cm radius around the plant
15. Note   Nominal   a piece of information about the plant that is permanent. Important notes include: ddXX (died in XX, where XX is the 2-digit year); mpdXX (missing in XX, and should be assumed to be dead, where XX is the 2-digit year); and d < 0.5 (diameter is under 0.5 mm, and thus the diameter was not measured
16. Comments   Nominal   a piece of information about the plant that is temporary, and only applies for one year. Important comments include: sen (senesced, indicating measurements are missing, but plant was alive); qsAA-BB: we conducted a search for unmarked individuals, between 400-500 (y direction) and AA-BB (x direction); missed: we found this unmarked plant in the search, but it is more than one year old, and thus is not a new recruit since the last survey; new: we found this unmarked plant in the search, and it is a new recruit since the last survey.

Data Set Code--EJR01

Title of data set: Foraging decisions underlying restricted space-use: effects of fire and forage maturation on large herbivore nutrient uptake on Konza Prairie

Abstract:

Recent models suggest that herbivores optimize nutrient intake by selecting patches of low to intermediate vegetation biomass. We assessed the application of this hypothesis to plains bison (Bison bison) in an experimental grassland managed with fire by estimating daily rates of nutrient intake in relation to grass biomass and by measuring patch selection in experimental watersheds in which grass biomass was manipulated by prescribed burning. Digestible crude protein content of grass declined linearly with increasing biomass, and the mean digestible protein content relative to grass biomass was greater in burned watersheds than watersheds not burned that spring (intercept; $F_{1,251} = 50.57$, $P < 0.0001$). Linking these values to published functional response parameters, ad libitum protein intake, and protein expenditure parameters, Fryxell's (Am. Nat., 1991, 138, 478) model predicted that the daily rate of protein intake should be highest when bison feed in grasslands with 400–600 kg/ha. In burned grassland sites, where bison spend most of their time, availability of grass biomass ranged between 40 and 3650 kg/ha, bison selected foraging areas of roughly 690 kg/ha, close to the value for protein intake maximization predicted by the model. The seasonal net protein intake predicted for large grazers in this study suggest feeding in burned grassland can be more beneficial for nutrient uptake relative to unburned grassland as long as grass regrowth is possible. Foraging site selection for grass patches of low to intermediate biomass help explain patterns of uniform space use reported previously for large grazers in fire-prone systems.

This data set was used to test the forage maturation hypothesis in the Konza Prairie bison enclosure from 2012-2013. Our objectives were to quantify foraging site selection of Plains bison in order to determine if bison in a fire-prone grassland selected sites of low-to-intermediate forage biomass as posited by Fryxell's (1991) forage maturation hypothesis. Additionally, to understand how foraging patterns shifted when grass regrowth was not possible, we quantified the annual diet of four GPS-collared bison via stable isotope analysis of tail hair plucked during roundup.

Keywords that describe data set:

Konza Prairie, graduate student research, isotope, biomass, Bison, Consumers, Fire, Herbivores

Date data commenced: 4/1/2012
Date data terminated: 12/30/2013

Principle Investigators: Edward Raynor, Anthony Joern

RECORD TYPE 1 Foraging site vegetation data EJR011

Data Format Specification:

Variable	Name	units
1. DataCode		
2. Rectype		
3. RecMonth	Month that data collected	
4. RecDate	Date that data was collected	
5. DaysSinceMay1	The number of days since 1 May of that year	
6. Strata	sample group	
7. Status	On for grazed site, Off for site not grazer during observation	
Biomass	Dried biomass(averaged across three sub-plots) of all vegetation in 0.1 m2 clipping extrapolated to g/m2	
8. CP	Graminoid crude protein content derived from NIRS analysis, percentage	
9. DCP	Graminoid adjusted crude protein content derived from NIRS analysis	
10. Watershed	Name of bison watershed that sample was collected	
11. Green	Percentage of green of all vegetation in plot (averaged)	
12. Grass	Percentage of grass in plot (averaged).	
13. Forbs	Percentage of forbs in plot (averaged).	
14. Litter	Percentage of litter in plot (averaged)	
15. Burn	Whether or not watershed burned that spring	
16. Grassweight	Mass of 0.1 g/m2 grass clippings extrapolated to g m2 for use in FMH simulation.	

RECORD TYPE 2 Bison tail hair stable isotope data (EJR012)
Data Format Specification:

Variable	Name	units
1. Datacode		
2. RecType		
3. RecYear	Year that data was collected	
4. Animal	Animal ear tag number	
5. D13c	Value of d13C from the segement analyzed	

Data Set Code--ESM01

Title of data set: Fire and grazing modulate the structure and resistance of plant–floral visitor networks in a tallgrass prairie

Abstract:

Data from the study: Welti, E.A.R. and Joern, A. 2017. Fire and Grazing modulate the structure and resistance of plant-floral visitor networks in a tallgrass prairie. Oecologia 186: 447-458.

EMS011 dataset contains counts of blooming inflorescences of plant species on 12 Konza watersheds in June-July of 2014; ESM012 dataset contains associations between flower-visiting insects and insect-pollinated flowering plants on 12 Konza watersheds collected in May-July of 2014; ESM013 dataset describes insects belonging to the orders of Coleoptera, Diptera, Lepidoptera and Hymenoptera collected in pantrap transects on 12 Konza watersheds collected in June-July of 2014.

Keywords that describe data set:

 Konza Prairie, Konza Prairie Biological Station, pollinator, pollination, flower visitor, ecological network, Consumers, insects

Date data commenced: 2014-5-29
Date data terminated: 2014-07-30

Principle Investigators: Ellen Welti, Anthony Joern

RECORD TYPE 1   Inflorescence counts of insect-pollinated plants on 12 Konza watersheds in 2014 ESM011

Data Format Specification:

Variable	Name
1. Datacode	Data set code
2. Rectype	Record type
3. Watershed	Watershed
4. Date	Date of sample collection
5. Plant	Plant genus and species
6. InflorescenceCT	Number of blooming inflorescences of a plant species within a transect
7. Comments	Comments on data collection

RECORD TYPE 2   Insect flower-visitor and plant associations on 12 Konza watersheds

in 2014 ESM012
Data Format Specification:

	Variable	Name
	Variable	Name
1.	Datacode	Data set code
2.	Rectype	Record type
3.	Watershed	Watershed
4.	Date	Date of sample collection
5.	Plant	Plant genus and species on which insect was collected
6.	PollinatorOrder	Order of collected flower-visiting insectComments
7.	PollinatorID	Lowest taxonomic level flower-visiting insect was identified to
8.	PollinatorAbundance number of individual flowering-visiting insects collected on a given flowering plant species
9.	Comments	Comments on data collection

RECORD TYPE 3   Insects collected in pantraps on 12 Konza watersheds in 2014 ESM013

Data Format Specification:

	Variable	Name
1.	Datacode	Data set code
2.	Rectype	Record type
3.	Watershed	Watershed
4.	Date	Date of sample collection
5.	InsectOrder	Order of collected insect
6.	InsectID	Lowest taxonomic level insect was identified to
7.	InsectAbundance	Number of insects collected in a transect
8.	Comments	Comments on data collection

Data Set Code--FWE01

Title of data set: Effects of Browsing and Fire on Woody Encroachment at Konza Prairie

Abstract:

> Woody encroachment into grasslands, savannas, and steppes have become a management and conservation concern worldwide because of the ability of woody plants to change ecosystems through decreases in biodiversity, alterations in water and nutrient cycles as well as decreases in forage production and quality. In grasslands, woody encroachment can be categorized into two groups: non-resprouting species that can be killed with fire and resprouting species that cannot be killed with fire. Resprouting species require additional active management strategies to remove them from encroached grasslands. In this study we investigate physiological, population and community effects of continuous browsing and fire on Cornus drummondii, a resprouting woody species. Through monitoring the shrub's physiology, population and the surrounding plant community composition within these treatments we hope to understand how to best prescribe restoration methods for restoring the tallgrass prairie.

Keywords that describe data set:

   Konza Prairie, graduate student research,

Date data commenced: 2015-5-04
Date data terminated: 2018-10-30

Principle Investigators: Jesse Nippert, Rory O'Connor

RECORD TYPE 1 - Plant cover data: this table gives plant community composition and cover data within each shrub at each site.

Data Format Specification:

	Variable	Name	U
1.	Recyear	Year of sample	
2.	Watershed	Watershed	
3.	Shrub_id	Plot number at each site (1 to 20)	
4.	Treatment	Treatments of browsing (~50% removal of new meristematic growth), or control (no removal of plant material)	
5.	SpeCode	Species code	
6.	Family	Taxa family name	
7.	Genus	Taxa associated with plant composition and cover class	
8.	Species	Abbreviated species name	
9.	Growth_form	Plant life history trait (a = annual, b = biennial, p = perennial)	
10.	Life_form	Plant functional type (f = forb, g = grass, s = sedge, w = woody, o = ferns and allies)	

11. Origin   Plant species native (n) or invasive (i)
12. Cover_class   Vegetation cover classes (1-7)
13. Cover   Percent cover (%) calculated from cover class (1 = 0-1%, 2 = 2-5%, 3 = 5-25%, 4 = 25-50%, 5 = 50-75%, 6 = 75-95%, 7 = 95-100%)

RECORD TYPE 2 - Plant Gas Exchange data: this table gives leaf level gas exchange data for each shrub at each site.

Data Format Specification:

Variable	Name	U
1. RecDate	Date gas exchange samples were collected (YYYY-MM-DD)	
2. RecYear	Year of record	
3. Watershed	Watershed	
4. Shrub_id	Plot number at each site (1 to 20)	
5. Treatment	Treatments of browsing (~50% removal of new meristematic growth), or control (no removal of plant material)	
6. SpeCode	Species code	
7. Genus	Taxa associated with plant composition and cover class	
8. Species	Abbreviated species name	
9. Sample_location	Location in shrub where gas exchange rates were taken (1 = shrub edge, 2 = shrub center)	
10. A_net	Net photosynthetic rate	(μmole/m²/s)
11. Conduct_s	Stomatal conductance	(mol/m²/s)
12. Transpiration	Transpiration	(mmol/m²/s)

RECORD TYPE 3 - Nonstructural carbohydrate data: this table gives Cornus drummondii root glucose, sucrose and starch values for each shrub at each site in technical replicates (glucose and sucrose are in triplicate; starch in duplicate), not corrected for shrub area.

Data Format Specification:

Variable	Name	U
1. Recyear	Year of sample	
2. Watershed	Watershed	
3. Shrub_id	Plot number at each site (1 to 20)	
4. Treatment	Treatments of browsing (~50% removal of new meristematic growth), or control (no removal of plant material)	
5. SpeCode	Species code	
6. Genus	Taxa associated with plant composition and cover class	
7. Species	Abbreviated species name	
8. nsc_type	Nonstructural carbohydrate data: this table give root glucose, sucrose and starch value for each shrub at each site	
9. Concentration	These values are on a per mass dry weight basis	(mg/g)
10. DryWT	These values are on a percent by dry weight basis	(%)

Data Set Code--GFE01

Title of data set: Ghost Fire (formerly known as Carbon Addition Experiment): an experimental manipulation of fire effects on multi-trophic community dynamics in the ungrazed uplands of unburned and annually burned watersheds of Konza Prairie

Abstract:
Frequent burning is a common land practice in many grasslands worldwide, and this land use strategy has large impacts on a wide variety of ecosystem functions and services. Fire in tallgrass prairie, in the absence of grazing, alters plant community composition, decreases richness, and increases plant production. Proposed mechanisms for the changes in community composition and function are that fire decreases N availability (through volatilization) and removes litter (thereby increasing light availability and decreasing soil moisture). However, few experiments explicitly test these mechanisms, and those that do monitor short-term effects. Yet, the strength of these mechanisms likely differ over longer time scales, as other ecosystem attributes (e.g., plant community composition) change through time. Ghost Fire aims to determine the mechanisms behind community and ecosystem differences between annually burned grassland and 20-year burned grassland (hereafter called unburned) by experimentally manipulating N availability and litter. We impose litter and N conditions found in unburned grassland onto annually burned grassland, and litter and N conditions typically found in annually burned grassland onto unburned grassland. Importantly, Ghost Fire monitors both below- and above-ground plant community and ecosystem dynamics as well other dimensions of the ecosystem including microbial and mycorrhizal communities and insect community composition and biomass.

Keywords that describe data set:
Konza Prairie, Fire, Biodiversity, Disturbance, Populations, Primary production

Date data commenced: 4/1/2014
Date data terminated: ongoing

Principle Investigators: Lydia Zeglin, Sally Koerner, Meghan Avolio, Kim La Pierre, Kevin Wilcox, Dave Hoover, Melinda Smith.

RECORD TYPE 1 Plant species composition (Spring and Fall)
Data Format Specification:

Variable	Name		units
1. DataCode	Dataset Code		
2. RecType	Physical quantity	Record type	
3. RecYear	Physical quantity	Year of record	
4. Season	Nominal	The month of data were collected	
5. BurnTrt	Nominal	Burn treatment (Annual or Unburned)	
6. Block	Nominal	Block code (A, B, C, D, E, F)	
7. Plot	Physical quantity	Plot number (1, 2, 3, 4, 5, 6)	
8. Spnum	Physical quantity in the data set.	A unique numeric value assigned to each of the species	
9. Cover	Physical quantity	Percent aerial cover	
10. Genus	Nominal	Taxa associated with plant composition and cover class	
11. Species	Nominal	Species name	
12. Subspecies	Nominal	Subgroups within a species	
13. Family	Nominal	Plant species family name.	
14. Lifespan	Nominal	The life cycle of plant	
15. Funcgroup	Nominal	Plant functional types	
16. N_fixer	Nominal	Nitrogen fixation type	
17. Photo_pathway	Nominal	Photosynthesis pathway	

*Fire type code:
PP- prescriptive planned; PU- prescriptive unplanned; WP- wildplanned; WU- wild unplanned

RECORD TYPE 2 Plant stem density by species composition (Spring only)
Data Format Specification:

Variable	Name	
1. RecType	Physical quantity	Record type
2. RecYear	Physical quantity	Year of record
3. BurnFreq	Physical quantity	Burn frequency (20,1)
4. Watershed	Nominal	Watershed
5. Block	Nominal	Block code (A, B, C, D, E, F)
6. Plot	Physical quantity	Plot number (1, 2, 3, 4, 5, 6)
7. Spnum	Physical quantity	A unique numeric value assigned to each of the species in the data set.
8. Stems	Physical quantity	Stems
9. Genus	Nominal	Taxa associated with plant composition and cover class
10. Species	Nominal	Species name
11. Subspecies	Nominal	Subgroups within a species
12. Family family	Nominal	Plant species family name.
13. Lifespan	Nominal	The life cycle of plant
14. Funcgroup	Nominal	Plant functional types
15. N_fixer	Nominal	Nitrogen fixation type
16. Photo_pathway	Nominal	Photosynthesis pathway

RECORD TYPE 3 ANPP (Above-ground Net Primary Production)
Data Format Specification:

1. RecType   Physical quantity Record type
2. RecYear   Physical quantity Year of record
3. BurnFreq   Physical quantity Burn frequency (20,1)
4. Watershed   Nominal Watershed
5. Block   Nominal Block code (A, B, C, D, E, F)
6. Plot   Physical quantity Plot number (1, 2, 3, 4, 5, 6)
7. Replicate   Physical quantity Replicate (1, 2)
8. Grass   Physical quantity Above-ground biomass of (grasses and sedges)
9. Forb   Physical quantity Above-ground biomass of forbs
10. Woody   Physical quantity Dried woody biomass of taxa in grams per m2
11. PreDead   Physical quantity mass of previous years dead

RECORD TYPE 4 Disc pasture meter
Data Format Specification:

1. RecType   Physical quantity Record type
2. RecYear   Physical quantity Year of record
3. Watershed   Nominal Watershed
4. Block   Nominal Block code (A, B, C, D, E, F)
5. Plot   Physical quantity Plot number (1, 2, 3, 4, 5, 6)
6. Height   Physical quantity Height

RECORD TYPE 5 Light provides a percentage of photosynthetically active radiation that reaches the soil surface
Data Format Specification:

1. RecType   Physical quantity Record type
2. RecYear   Physical quantity Year of record
3. Season   Nominal Season of the data measured
4. BurnFreq   Physical quantity Burn frequency (20,1)
5. Watershed   Nominal Watershed
6. Block   Nominal Block code (A, B, C, D, E, F)
7. Plot   Physical quantity Plot number (1, 2, 3, 4, 5, 6)
8. AboveCanopy Physical quantity Above canopy (one reading), PAR readings per plot
9. BelowCanopy Physical quantity Below canopy (mean of four readings), PAR readings per plot
10. CanopyEffect   Physical quantity Canopy effect
11. LitterCanopyEffect Physical quantity Litter canopy effect
12. meanBelowLitter Physical quantity mean of Below Litter

RECORD TYPE 6 Data summary of all variables at block level for each year
Data Format Specification:

1. RecYear   Physical quantity   Year of record

1. RecYear   Physical quantity   Year of record
2. BurnTrt   Nominal   Burn treatment (Annual or Unburned)
3. Block   Nominal   Block code (A, B, C, D, E, F)
4. ANPP_Total   Physical quantity   average of all 6 plot level measurements for total biomass
5. ANPP_Grass   Physical quantity   average of all 6 plot level measurements for grass
6. ANPP_Forb   Physical quantity   average of all 6 plot level measurements for forb
7. ANPP_Woody   Physical quantity   average of all 6 plot level measurements for woody plants
8. TotalStems   Physical quantity   average stems of all 6 plot level measurements
9. PlantNMDS1   Physical quantity   Plant Composition average of all 6 plot level measurements
10. PlantNMDS2   Physical quantity   average of all 6 plot level measurements
11. PlantShannon   Physical quantity   using codyn function, average of all 6 plot level measurements
12. PlantRichness   Physical quantity   average of all 6 plot level measurements, using codyn function.
13. PlantEvar   Physical quantity   average of all 6 plot level measurements, using codyn function.
14. PlantTotalCover   Physical quantity   average of total cover at all 6 plot level measurements
15. GrassRelCov   Physical quantity   average of all 6 plot level measurements for grass. Using three categories of g, f, w
16. ForbRelCov   Physical quantity   average of all 6 plot level measurements for forbs. Using three categories of g, f, w
17. WoodyRelCov   Physical quantity   Woody plants average of all 6 plot level measurements. Using three categories of g, f, w
18. ForbRelCov2   Physical quantity   Forb plants average of all 6 plot level measurements, using 5 categories of f, w, unk g, c3 g, c4 g
19. WoodyRelCov2   Physical quantity   Woody plant average of all 6 plot level measurements, using 5 categories of f, w, unk g, c3 g, c4 g
20. UnkGrassCov2   Physical quantity   Unknown grass average of all 6 plot level measurements, using 5 categories of f, w, unk g, c3 g, c4 g
21. C4GrassRelCov   Physical quantity   C4 grass average of all 6 plot level measurements, using 5 categories of f, w, unk g, c3 g, c4 g
22. DryMass   Physical quantity   This is from Root In Growth Cores - two cores were placed per plot. This is the average of the 2 replicates per plot for Dry Mass converted to g/m2, and then averaged across all 6 plots
23. AFDM   Physical quantity   One replicate (out of two) were ashed. This is the AFDM converted to g/m2
24. RSC_DM   Physical quantity   One soil core was taken per plot. This is the Dry Mass converted to g/m2
25. RSC_AFDM   Physical quantity   Only half the plots were Ashed, (plots 1, 3, 5). This is AFDM converted to g/m2, and then averaged across the 3 plots
26. Insect_Biomass   Physical quantity   The average biomass of 6 plots per block. Each 1m2 plot was vacuum sampled - this is the biomass of this sample

taking into account and adding back in the number of grasshoppers that jumped away and were counted visually

27. Insect_NMDS1   Physical quantity   The average of 6 plots per block

28. Insect_NMDS2   Physical quantity   The average of 6 plots per block

29. Insect_Shannon   Physical quantity   The average of 6 plots per block

30. Insect_Rich   Physical quantity   The average of 6 plots per block

31. Insect_Evar   Physical quantity   The average of 6 plots per block, one plot in one block was a 0, so this was dropped and the average of that block is just for 5 plots (there was only one species collected in that plot)

32. Mycorr_Count   Physical quantity   Average of 3 plots (2, 4, 6) per Block. 1 soil core was taken in 3 plots per block (2, 4,6) and this number is the average of between 3-5 counts taken per root core per plot

33. lnBG   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

34. lnPhos   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

35. lnNAG   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

36. lnCBH   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

37. lnLAP   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

38. lnPHX   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

39. lnPOX   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

40. BG   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

41. Phos   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

42. NAG   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

43. CBH   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

44. LAP   Physical quantity   Average of 6 plots per block. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

45. PHX   Physical quantity   Sampled on a per plot basis. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

46. POX   Physical quantity   Sampled on a per plot basis. USE ln transformed version of the variable for ALL stats, but graph non ln transformed for graphs

47. PC1   Physical quantity   Synthesis of all ln transformed variables (these should not be included in network model if using in transformed variable or ratios)

48. PC2   Physical quantity   Synthesis of all ln transformed variables (these should not be inlucded in network model if using ln transformed variable or ratios)

49. PC3   Physical quantity   Synthesis of all ln transformed variables (these should not be inlucded in network model if using ln transformed variable or ratios)

50. C_N   Physical quantity   Ratios of certain ln tranformed variables to others - probably cannot include ratios in network model if also using base ln transformed variables or PCs

51. N_P   Physical quantity   Ratios of certain ln tranformed variables to others - probably cannot include ratios in network model if also using base ln transformed variables or PCs

52. Light_May Physical quantity   In May we used a ceptometer to measure 1 Above canopy and 2 below canopy (at soil surface) PAR readings per plot. We averaged the two below readings and calculated the (Below/Average)*100 to get a measure of % light transmittance to soil surface .We averaged all 6 plots per block

53. Light_Aug   Physical quantity   In August we used a ceptometer to measure 1 Above canopy and 2 below canopy (at soil surface) PAR readings per plot. We averaged the two below readings and calculated the (Below/Average)*100 to get a measure of % light transmittance to soil surface.

54. nitrate   Physical quantity   2 resin bags were placed into each plot (except plot 1 & 6 which only got 1). We present the average of the 2 resins per plot, then averaged all 6 plots per block

55. ammonium   Physical quantity   2 resin bags were placed into each plot (except plot 1 & 6 which only got 1). We present the average of the 2 resins per plot, then averaged all 6 plots per block

Data Set Code--HRE01

Title of data set: Environmental Heterogeneity Restoration Experiment at Konza Prairie

Abstract:

We manipulated key resources that influence plant diversity in tallgrass prairie (i.e., soil depth and nitrogen availability) to increase environmental heterogeneity prior to sowing native prairie species into a former agricultural field. We compared variability in nutrient availability, aboveground annual net primary productivity (ANPP), and the composition of species between replicate plots containing soil heterogeneity manipulations and plots with no resource manipulations (n = 4 per treatment) during the first 15 yr of community assembly as a test of the "environmental heterogeneity hypothesis."

Keywords that describe data set:

Date data commenced: 1/5/1998
Date data terminated: ongoing

Principle Investigators: Sara G. Baer

RECORD TYPE 1 For subplot

Data Format Specification:

Variable	Name	units
RecYear	Year of record	
BLOCK	The experiment contained 4 blocks	
PLOT	The experiment consisted of 16 plots; plots 1, 3, 6, 8, 9, 10, 14 and 15 were used in this study.	
SUBPLOT	Each plot contained 12 subplots.	
WPTRT	Whole-plot heterogeneity treatment (maxhet and control)	
DEPTH	Two soil depth treatments were deep (=1) and shallow (=2).	
NUTRIENT	Three soil nutrient treatments were ambient (=1), enriched (=2), and reduced (=3).	
TRTCOMB	Indicates treatment combination resulting from the combination of soil depth and nutrient manipulations (deep soil at ambient N = control, deep soil enriched with N = N; deep soil with reduced N = C; shallow soil at	

	ambient N = stone shallow soil enriched with N = stoneN, and shallow soil with reduced N = stoneC).
RESTORE_YR	Growing season since restored from agriculture
ANPP	Aboveground annual net primary productivity (g/m2/y).
RESIN_NO3	Resin collected nitrate over the growing season (µg/bag). Values represent the average of two bags/subplot; a period indicates missing data
H	Average subplot diversity (Shannon's index); values are unit-less.
R	Average subplot richness (number of species/0.5 m2)
ANGE	Andropogon gerardii Vitman
SCSC	Schizachyrium scoparium (Michx.) Nash (Michx.) Nash
BOCU	Bouteloua curtipendula (Michx.) Torr.
KOMA	Koeleria macrantha (Ledeb.) Schult.
PAV12	Panicum virgatum L.
SONU2	Sorghastrum nutans (L.) Nash
AMCA6	Amorpha canescens Pursh
ARLU	Artemisia ludoviciana Nutt
ASVE	Asclepias verticillata L.
BAAU	Baptisia australis (L.) R. Br.
BABR2	Baptisia bracteata Muhl. ex Elliott
CAIN2	Callirhoe involucrata (Torr. & A. Gray) A. Gray
DACA7	Dalea candida Michx. ex Willd.
DAPU5	Dalea purpurea Vent.
DEIL	Desmanthus illinoensis (Michx.) MacMill. ex B.L. Rob. & Fernald
BREU	Brickellia eupatorioides (L.) Shinners
LEDE	Lepidium densiflorum Schrad
LECA8	Lespedeza capitata Michx
LIPU	Liatris punctata Hook
OEMA	Oenothera macrocarpa Nutt
PSTE5	Psoralidium tenuiflorum (Pursh) Rydb
RACO3	Ratibida columnifera (Nutt.) Woot. & Standl
ROAR3	Rosa arkansana Porter
RUHU	Ruellia humilis Nutt
SAAZ	Salvia azurea Michx. ex Lam
MINU6	Mimosa nuttallii (DC. ex Britton & Rose) B.L. Turner
SPAS	Sporobolus asper (P. Beauv.) Kunth
VEFA2	Vernonia fasciculata Michx
UNWD	Unidentified woody species
UNLEG	Unidentified legume
UNFB1	Unidentified forb 1 (annual/perennial not known)
UNFB2	Unidentified forb 2 (annual/perennial not known)
UNGR	Unidentified grass (C3/C4, annual/perennial unknown)
MANE	Malva neglecta Wallr
ABTH	Abutilon theophrasti Medik
AMRE	Amaranthus retroflexus L
AMTU	Amaranthus tuberculatus (Moq.) Sauer
AMPS	Ambrosia psilostachyia DC

CHAL7	Chenopodium album L
CUFO	Cucurbita foetidissima Kunth
COCA5	Conyza canadensis (L.) Cronquist
BASC5	Bassia scoparia (L.) A.J. Scott
MEOF	Melilotus officinalis (L.) Lam
GAAP2	Galium aparine L
PHV15	Physalis virginiana Mill
PHAM4	Phytolacca americana L
SORO	Solanum rostratum Dunal
SYOR	Symphoricarpos orbiculatus Moench
VIAM	Vicia americana Muhl. ex Willd
BRIN2	Bromus inermis Leyss
CYDA	Cynodon dactylon (L.) Pers
DISA	Digitaria sanguinalis (L.) Scop
ECMU2	Echinochloa muricata (P. Beauv.) Fernald
ELIN3	Eleusine indica (L.) Gaertn
ERCI	Eragrosti cilianensis (All.) Vign. ex Janchen
UNFZG	Unknown grass (described fuzzy)
PACA6	Panicum capillare L.
PADI	Panicum dichotomiflorum Michx
UNPAN	Panicum spp. (unidentified)
SEFA	Setaria faberi Herrm
SEPU8	Setaria pumila (Poir.) Roem. & Schult
UNSET	Setaria spp. (unidentified)
UNC4G	Unknown C4 grass
ASTU	Asclepias tuberosa L.
HEHE5	Heliopsis helianthoides (L.) Sweet
MOFI	Monarda fistulosa L.
ACMI2	Achillea millefolium L.
SYLA3	Symphyotrichum laeve (L.) Á. Löve & D. Löve
DEIL2	Desmodium illinoense A. Gray
EUAL3	Eupatorium altissimum L.
TECA3	Teucrium canadense L.
TRBR	Tradescantia bracteata Small
UNSD	Unknown seedling
UNUC	Unknown unclassified
ASSY	Asclepias syriaca L.
UNMAL	Unknown nightshade (Malvaceae)
UNFRAG	Fragaria spp. (unidentified)
MESA	Medicago sativa L.
TAOF	Taraxacum officinale F.H. Wigg.
TRRE3	Trifolium repens L.

RECORD TYPE 2 for whole plot

Data Format Specification:

Variable	Name	units
RecYear	Year samples were taken	
BLOCK	The experiment contained 4 blocks	
WPTRT	Whole-plot heterogeneity treatment (maxhet and control	
RESTORE_YR	Growing season since restored from agriculture	
PLOT	The experiment consisted of 16 plots; plots 1, 3, 6, 8, 9, 10, 14 and 15 were used in this study	
CVNO3	Whole-plot coefficient of variation in resin collected nitrate over the growing season (%).	
CVANPP	Whole-plot coefficient of variation in ANPP (%)	
WP_H	Shannon's diversity (H') at the whole-plot scale calculated from the average cover of each species using all subplots; measurement is unit-less	
WP_R	Whole-plot richness; number of species observed from all 0.25 m2 sampling quadrats within a plot	
ANGE	Andropogon gerardii Vitman	
SCSC	Schizachyrium scoparium (Michx.) Nash (Michx.) Nash	
BOCU	Bouteloua curtipendula (Michx.) Torr	
KOMA	Koeleria macrantha (Ledeb.) Schult	
PAV12	Panicum virgatum L.	
SONU2	Sorghastrum nutans (L.) Nash	
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SYOR	Symphoricarpos orbiculatus Moench
VIAM	Vicia americana Muhl. ex Willd
BRIN2	Bromus inermis Leyss
CYDA	Cynodon dactylon (L.) Pers
DISA	Digitaria sanguinalis (L.) Scop
ECMU2	Echinochloa muricata (P. Beauv.) Fernald
ELIN3	Eleusine indica (L.) Gaertn
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ASTU	Asclepias tuberosa L.
HEHE5	Heliopsis helianthoides (L.) Sweet
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UNSD	Unknown seedling
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UNFRAG	Fragaria spp. (unidentified)
MESA	Medicago sativa L.
TAOF	Taraxacum officinale F.H. Wigg
TRRE3	Trifolium repens L.

Data Set Code--KBN01

Title of data set: Konza Bird Nests

Abstract:

This data set is a compilation of data collected by multiple researchers describing nests of 48 bird species from across Konza Prairie. Compiled and edited into consistent format by Emma B. Smith, and included in her Master's thesis. The goal of this dataset is to compile as much data on bird nests at Konza as possible. This data set includes data from other KNZ datasets CBN01 and PBG05, as well as data contributed by Page Klug, Jim Rivers, John Zimmerman, Bill Jensen, Brett Sandercock, Alice Boyle, Bram Verheijen, Bridget Sousa, Aaron Pearse, Karl Kosciuch, and Scott Hatch. These nests were found by rope dragging, opportunistically during other activities, within nest boxes, and/or via behavioral observations. We described nest contents, and some were monitored via repeated visits. Some data are freely available, and other data are restricted access, at the discretion of each individual contributor.

Methods: These nests were found by rope dragging, opportunistically during other activities, within nest boxes, and/or via behavioral observations. We described nest contents, and some were monitored via repeated visits. This dataset contains data collected by numerous researchers throughout the history of the site, so the individual methods vary. Some data are freely available, and other data are restricted access, at the discretion of each individual contributor.

Keywords that describe data set:

brood parasitism, Brown-headed Cowbird, Molothrus ater, nest predator, graduate student research, Konza Prairie Biological Station, nest parasitism, nests, partial brood loss, partial egg loss, phenology, species, reproduction, Disturbance, Populations

Date data commenced: 1/3/1972
Date data terminated: ongoing

Principle Investigator: Emma B. Smith, and Alice Boyle

RECORD TYPE 1

Data Format Specification:

Variable	Name	units
2. NestAutoID	Physical quantity	Unique identification
3. DataOwner	Nominal	Name of the person providing the data
4. NestID	Unique name for nest with the pattern watershed-observer-number	
5. Species	four-letter species code, obtained from Pyle and DeSantis 2009	
6. SingleVisit	TRUE if nest was only visited a single time.	

7. NestOrientation   Compass bearing facing out from the nest in the direction of the nest opening. Only applicable for species with directional nests (e.g., dome- shaped ground nests, cavities).   E.g., if a nest opening is facing due south, the nest orientation would be 180.

8. Watershed   Watershed where nest was found

9. GridCell   For older records, if watershed is not known, list the row and column from grid system.

10. OldWatershed   Konza watershed at the time the nest was found, if not the same as the watershed name in 2020. All watersheds in this column were converted to the current watershed name, and the current watershed is in the "Watershed" column.

11. YearsSinceBurn   The number of years since the watershed the nest was located in was burned. If the watershed was burned in the same year the nest was found, this value will be a zero. All of Konza was assumed to have been burned in the year before Konza's inception (1970).

12. Grazing   Grazing treatment in the watershed the nest was found in, at the time the nest was found. Will be either "N" for bison, "C" for cattle, or "U" for ungrazed.

13. PreviousTract   Tract of land the watershed was located in before it was added to Konza. Can be used to account for differences in management pre-Konza.

14. YearsSinceAdded   Number of years since the watershed the nest was located on was added to

15. YearsSinceGrazed   Nominal   : Number of years since the watershed the nest was located in was grazed. If the watershed was grazed at the time the nest was found, this value will be a zero. This column does not distinguish   between bison or cattle grazing. All of Konza was assumed to have been grazed in the year before Konza's inception (1970).

16. PositionRegion   Nominal   UTM region the nest was located in. All of Konza, and therefore all of the nests located on Konza, are in zone 14 S

17. PositionX   Physical quantity   Easting, or x position for UTM format

18. PositionY   Physical quantity   Northing, or y position for UTM format

19. Altitude   Physical quantity   Altitude in meters

20. Year   Physical quantity   Year that the nest was found

21. DateFound   Date/time   Date the nest was found

22. StageFound   Nominal   Stage of nest when discovered

23. Eggseasured   Nominal   TRUE if eggs were measured

24. EggLength   Physical quantity   Length of egg by calipers, Length is defined as the distance between the widest points of the longer axis of the egg.

25. EggWidth   Physical quantity   Width of egg by calipers, Width is defined as the distance between the widest points of the shorter axis of the egg.

26. Eggass   mass of the egg, in grams, usually to the hundredth of a gram

27. MaxNHostEggs   Physical quantity   Highest number of host (i.e., not cowbird) eggs observed in a nest at any point.

28. NCowbirdEggs   Physical quantity   Highest number of cowbird eggs observed in a nest at any point

29. TotalClutchSize   Physical quantity   Highest number of eggs (of any species) observed in the nest at any point

30. NestlingsBanded   Nominal   TRUE if the nestlings were banded

31. NestlingBandDate   Date/time   date nestlings were banded, if they were
32. Nestlingseasureents   Nominal   TRUE if the nestlings were measured
33. NHostNG   Physical quantity   Highest number of host (i.e., not cowbird) nestlings observed in a nest at any point
34. NCowbirdNG   Physical quantity   Highest number of cowbird nestlings observed in the nest at any point
35. NHostFledge   Physical quantity   Number of host young that fledged
36. NCowbirdsFledge   Physical quantity   Number of cowbird young that fledged
37. DateHatch   Date/time   Date of first egg hatched
38. HatchDayInferred   Nominal   TRUE if hatch day is inferred
39. Date1stEgg   Date/time   Date of first egg layed
40. 1stEggDayInferred   Nominal   TRUE if egg data estimated
41. DateFledgeFail   Date/time   Date of last nest check
42. InferredFateField   Nominal   Fate of nest deduced in field
43. InferredFateLab   Fate of nest deduced after reviewing iButton data in the lab
44. NestFateDescription   Description of nest fate. Include how fate was inferred, if applicable
45. PartialEggLoss   Nominal   TRUE if some eggs disappear without reason and without complete nest failure
46. DateCheckBeforeEggLoss   Date/time   Date checked before partial egg loss, i.e., last date that all eggs were present. If nest experienced partial egg loss multiple times, this should be for the first instance
47. DateCheckAfterEggLoss   Date/time   Date checked after partial egg loss, i.e., first date that an egg was missing. If nest experienced partial egg loss multiple times, this should be for the first instance
48. PartialBroodLoss   Nominal   TRUE if some nestlings disappear without reason and without complete nest failure
49. DateCheckBeforeBroodLoss   Date/time   Date checked before partial brood loss, i.e., last date that all nestlings were present. If nest experienced partial brood loss multiple times, this should be for the first instance.
50. DateCheckAfterBroodLoss   Date/time   Date checked after partial brood loss, i.e., first date that a nestling was missing. If nest experienced partial brood loss multiple times, this should be for the first instance
51. DateCheckBeforeNestCopletion   Date/time   Last nest check before nest completion (fledge or fail), i.e., the last date that the nest was not empty
52. DateCheckAfterNestCopletion   Date/time   Last nest check after nest completion (fledge or fail), i.e., the first date that the nest was empty.
53. PredatorType   Predator species, if known (i.e. from video or observation).
54. OtherNotes   Nominal   Any additional pertinent information recorded
55. Experientalanip   Nominal   TRUE if nest was under any sort of experimental manipulation. If part of an experimental study but in the control group, this should be FALSE. Analysis of nest survival should generally exclude these nests.
56. ExperientalanipDescription   Description of experimental manipulation used in study
57. FreeAccess   Nominal   TRUE if data can be used freely, or FALSE if permission from data owner required for subsequent data use

58. AccessRestrictions   Nominal   Description of restrictions on data use, e.g.,
        free to use after a certain date, not free to use for future studies at all, etc

*Changes and notes:

Part of the data from Bridget Sousa is not public available untill (2030), please contact us if you
have any questions.

Data Set Code--KFH01

Title of data set: Konza Prairie Fire History

Abstract:

The Konza burn history database is downloadable by year. Watershed names and codes listed in downloaded file are the current watershed designations (2010). Please note that several watershed designations have changed over the history of Konza. This is inevitable due to changes in research objectives but is problematic for those wanting to discover the full burn history of a given area. In some cases, watersheds have simply been renamed to reflect changes in experimental burn treatments (e.g. R20A was formerly 1A). In other cases, watersheds have been subdivided or aggregated from smaller watersheds (eg. in 1994 3B3UA was added to 20A (currently R1A) to form a larger watershed). In a few cases watershed names have been moved to new areas (e.g. 1D was moved from its original location in 1978 after the acquisition of new property. The original 1D watershed is now part of WB and 20C). Investigators should consult the proper watershed map for a given year to see watershed designations at the time of burning. Maps with watershed treatments for different time periods are available on the KNZ spatial data portal (http://www.konza.ksu.edu/knz/map/index.html).

Keywords that describe data set:

Konza Prairie, Fire History, Biodiversity, burning, cattle

Date data commenced: 4/23/1972
Date data terminated: ongoing

Principle Investigator: John M. Blair, Patrick R. O'Neal

RECORD TYPE 1

Data Format Specification:

Variable	Name	units
1. Watershed	Watershed code	
2. HName	History of watershed name	
3. Hectares	Burning area in hectares	ha
4. Acres	Burning area in Acres	km²
5. Date	Buring Date	
6. Type	Fire type code	
7. Year	Buring Year	
8. Code	Watershed code	
9. Comments	Comments	

*Fire type code:
PP- prescriptive planned; PU- prescriptive unplanned; WP- wildplanned; WU- wild unplanned

Data Set Code--KIC01

Title of data set: Konza Prairie Terrestrial Arthropods Species List

Abstract:

Konza Prairie Terrestrial Arthropods Species List. This species list has been modified since 1977, last modified by Ellen Welti and Anthony Joern in 2014.

Keywords that describe data set:

Terrestrial, Arthropods, Insects, Pinned-specimens, Species List

Date data set commenced: 1977
Date data set terminated: ongoing

Principle Investigator: Anthony Joern

RECORD TYPE 1-- Konza Prairie Terrestrial Arthropods Species List

Data Format Specification:

Variable		Columns	Format
1. Phylum	Phylum Arthropoda		1-24
2. Class	Classification of arthropoda		25-49
3. Subclass	Subclass of Classification of arthropoda		50-74
4. Byorder	an order of arthropoda		75-99
5. Family	The categorization of arthropoda in which family		100-124
6. Subfamily	The categorization of arthropoda in which subfamily		125-149
7. Tribe	The categorization of arthropoda in which Tribe		150-174
8. Genus	The taxonomic category		175-199
9. Species	The name of Species		200-224
10. Subspecies	The name of Subspecies		225-249
11. Numspecimens	number of specimens		250-274
12. Describer	Describer		
13. Source	Source		
14. Comments	Comments		

Data Set Code--KKE01

Title of data set: The Konza-Kruger Experiment: A cross-continental fire and grazing experiment at Konza Prairie

Abstract:

For more than a decade, we have compared responses of mesic (subhumid) savanna grasslands (>500 mm MAP in the tropics and >600 mm MAP outside the tropics) in North America and South Africa to alterations in both fire and grazing regimes. The long-term, comparative experiment that forms the centerpiece of this cross-continental research program is located in tallgrass prairie at the Konza Prairie Biological Station (Kansas, USA) and in knob-thorn marula savanna at the Kruger National Park (Limpopo and Mpumalanga provinces, South Africa). We refer to this study as the Konza-Kruger (K-K) Experiment. At both sites, we have been manipulating grazing by removing all large herbivores (>5 kg) from research plots with permanent exclosures (each with a paired plot that grazers can freely access). These exclosures were established in replicated fire frequency experiments ongoing at each site (treatments range from >25-50 yrs of annual burning, burning every 3-4 yrs, or complete fire exclusion).

Keywords that describe data set:

Konza Prairie, Konza Prairie Biological Station, ANPP, Fire, grazing

Date data commenced: 2006-01-01
Date data terminated: 2013-12-30

Principle Investigators: Melinda D. Smith, Sally Koerner

RECORD TYPE 1   plant species composition and ANPP KKE011

Data Format Specification:

Variable	Name
1. Datacode	Data set code
2. Rectype	Record type
3. Recyear	Year of the cover data was collected
4. Fire	Fire treatments (1, 4, 20)
5. Watershed	Watershed
6. Block	Blocks per fire treatment (A, B, C)
7. Treatment	Grazing treatments per block (grazed, ungrazed)
8. Plot	plots per treatment (126 total plots)
9. Sppcode	Species code
10. Species	Species genus and species name
11. Cover	Cover (percentage)
12. Comments	Comments on data collection

Data Set Code--KKE02

Title of data set: The Konza-Kruger Experiment: Net Primary Production Data (2010-2011)

Abstract:

The distribution, structure and function of mesic savanna grasslands are strongly driven by fire regimes, grazing by large herbivores, and their interactions. This research addresses a general question about our understanding of savanna grasslands globally: Is our knowledge of fire and grazing sufficiently general to enable us to make accurate predictions of how these ecosystems will respond to changes in these drivers over time? Some evidence suggests that fire and grazing influence savanna grassland structure and function differently in South Africa (SA) compared to North America (NA). These differences have been attributed to the contingent factors of greater biome age, longer evolutionary history with fire and grazing, reduced soil fertility, and greater diversity of plants and large herbivores in SA. An alternative hypothesis is that differences in methods and approaches used to study these systems have led to differing perspectives on the role of these drivers. If the impacts of shared ecosystem drivers truly differ between NA and SA, this calls into question the generality of our understanding of these ecosystems and our ability to forecast how changes in key drivers will affect savanna grasslands globally. Since 2006, an explicitly comparative research program has been conducted to determine the degree of convergence in ecosystem (productivity, N and C cycling) and plant community (composition, diversity, dynamics) responses to fire and grazing in SA and NA. Thus far, initial support has been found for convergence at the ecosystem level and divergence at the community level in response to alterations in both fire regimes and grazing. However, there have also been two unexpected findings (1) the ways in which fire and grazing interact differed between NA and SA, and (2) the rate of change in communities when grazers were removed was much greater in NA than in SA. These unexpected findings raise a number of important new questions: (Q1) Will exclusion of grazing eventually affect community structure and composition across all fire regimes in SA? (Q2) Will these effects differ from those observed in NA? (Q3) What are the determinants of the different rates of community change? (Q4) How will these determinants influence future trajectories of change? (Q5) Will the different rates and trajectories of community change be mirrored by responses in ecosystem function over time? This project is based on a large herbivore exclusion study established within the context of long-term (25-50+ yr) experimental manipulations of fire frequency at the Konza Prairie Biological Station (KPBS) in NA and the Kruger National Park (KNP) in SA. The suite of core studies and measurements include plant community composition, ANPP, and herbivore abundance and distribution at both study sites to answer these research questions

Keywords that describe data set:

Primary Production, Populations; aboveground biomass; annual net primary production; biology; biomass; communities; disturbance; ecology; net primary productivity; plant ecology; population and community properties; terrestrial ecosystems; vegetation

Date data commenced: 2010-02-01

Date data terminated: 2011-12-30

Principle Investigators: John Blair; Melinda Smith; Scott Collins; Alan Knapp;

RECORD TYPE 1   KNP Net Primary Production Data

Data Format Specification:

	Variable	Name
1.	year	The year in which data was collected.
2.	site	Samples are collected from four different sites
3.	Treatment	A code denoting burn treatment.
4.	Plot	A code indicating sample plot 1-7, specified as A-G.
5.	sample_num	Replicate (1-5) clipped plots.
6.	string_num	There are three blocks of seven sample plots (A-G) at each site (B, S, M, N)
7.	plant_category	Biomass sample for specific plant category.
8.	Weight	Weight of dried, sorted sample.
9.	complete_code	A code that combines site, block, plot, fire treatment, etc.

Data Set Code--KKE03

Title of data set: The Konza-Kruger Experiment: Net Primary Production Data (2010-2011)

Abstract:

The distribution, structure and function of mesic savanna grasslands are strongly driven by fire regimes, grazing by large herbivores, and their interactions. This research addresses a general question about our understanding of savanna grasslands globally: Is our knowledge of fire and grazing sufficiently general to enable us to make accurate predictions of how these ecosystems will respond to changes in these drivers over time? Some evidence suggests that fire and grazing influence savanna grassland structure and function differently in South Africa (SA) compared to North America (NA). These differences have been attributed to the contingent factors of greater biome age, longer evolutionary history with fire and grazing, reduced soil fertility, and greater diversity of plants and large herbivores in SA. An alternative hypothesis is that differences in methods and approaches used to study these systems have led to differing perspectives on the role of these drivers. If the impacts of shared ecosystem drivers truly differ between NA and SA, this calls into question the generality of our understanding of these ecosystems and our ability to forecast how changes in key drivers will affect savanna grasslands globally. Since 2006, an explicitly comparative research program has been conducted to determine the degree of convergence in ecosystem (productivity, N and C cycling) and plant community (composition, diversity, dynamics) responses to fire and grazing in SA and NA. Thus far, initial support has been found for convergence at the ecosystem level and divergence at the community level in response to alterations in both fire regimes and grazing. However, there have also been two unexpected findings (1) the ways in which fire and grazing interact differed between NA and SA, and (2) the rate of change in communities when grazers were removed was much greater in NA than in SA. These unexpected findings raise a number of important new questions: (Q1) Will exclusion of grazing eventually affect community structure and composition across all fire regimes in SA? (Q2) Will these effects differ from those observed in NA? (Q3) What are the determinants of the different rates of community change? (Q4) How will these determinants influence future trajectories of change? (Q5) Will the different rates and trajectories of community change be mirrored by responses in ecosystem function over time? This project is based on a large herbivore exclusion study established within the context of long-term (25-50+ yr) experimental manipulations of fire frequency at the Konza Prairie Biological Station (KPBS) in NA and the Kruger National Park (KNP) in SA. The suite of core studies and measurements include plant community composition, ANPP, and herbivore abundance and distribution at both study sites to answer these research questions

Keywords that describe data set:

Primary Production, Populations; aboveground biomass; annual net primary production; biology; biomass; communities; disturbance; ecology; net primary productivity; plant ecology; population and community properties; terrestrial ecosystems; vegetation

Date data commenced: 2006-01-02
Date data terminated: 2010-11-30

Principle Investigators: John Blair; Melinda Smith; Scott Collins; Alan Knapp;

RECORD TYPE 1   KNP Net Primary Production Data

Data Format Specification:

Variable	Name
1. year	The year in which data was collected.
2. block	Samples are located in three blocks (Marheya, Nwanetsi, or Satara) of seven sample points in each watershed.
3. fire	fire
4. trt	A numeric code indicating grazing treatment..
5. plot	A numeric value indicating plot numbers 1-8 within each block. There are a total of seven plots per block.
6. Spnum	A unique numeric value assigned to each of the species in the data set.
7. Genus	The genus as published in USDA PLANTS database
8. species	Specific epithet.
9. Cover	The percent cover of an observation (or vegetative unit) for a given species.

Data Set Code--NGE01

Title of data set: Chronic Addition of Nitrogen Gradient Experiment (ChANGE): Assessing threshold responses of plant community composition and ecosystem processes at Konza Prairie

Abstract:

Chronic nutrient additions can lead to drastic shifts in the plant community through time, both within tallgrass prairie in other grassland ecosystems worldwide. Nutrient addition experiments have answered many questions about patterns of diversity loss and community shifts; however, the level of nutrients which must be added to cause community shifts is unknown. To date, all nitrogen (N) addition experiments at Konza have added 10 g m-2 (e.g., NutNet Plots; Phosphorus (P) Plots; Belowground Plots), yet current rates of N deposition are one-tenth of that level. Even predicted rates of future N deposition in grasslands are not expected to exceed 5 g m-2 by the year 2050 and will likely be around 2 g m-2 for most of the US. This mismatch begs the question will 10 g/m2 affect grasslands the same way 2 or 5 g m-2 will? There are two main goals for this long-term experiment (1) to identify the nutrient threshold needed to drive plant community change with nutrient additions, and (2) to determine what factors underlie those threshold responses (build up of nutrients, mycorrhizal loss, invertebrate herbivory). Konza ChANGE is part of a multi-site experiment spanning grasslands on two different continents: North America – tallgrass prairie (KNZ) and shortgrass steppe (SGS), and China – three sites in Inner Mongolia. By including multiple grasslands, we expand our ability to make generalizations about how grasslands are affected by N additions, and whether thresholds, if they exist, vary with precipitation, natural nutrient availability, and species identity/composition. Research Questions: (1) Do ecosystems have N tolerance thresholds above which community composition will change, and does that differ between grassland types (i.e. mesic and xeric grasslands)? (2) Does adding a large amount of nutrients in one season result in an equivalent community change as adding a small amount over multiple years? (For example does 5 g m-2 for 6 years create the same community change as 30 g m-2 for 1 year or 15 g m-2 for 2 years?) (3) Will predicted levels of N deposition (2.5 g m-2 or 5 g m-2) elicit a community change? (4) Are there different thresholds for different plant functional types? For example, does a small amount of nutrients cause a decrease in N-fixing forb composition, while a larger amount of nutrients are necessary to reduce the abundance of the dominant C4 grasses? At what point does the community change state from a perennial grassland to the predicted annual forb community? Is it a gradual linear change or an abrupt transition? (5) Is decreased light availability due to increased ANPP the primary determinant leading to community shifts (like it is for species loss), or do other factors determine when nutrients cause a shift in community composition and structure such as interactions with invertebrate herbivory or loss of mycorrhizal symbionts.

Keywords that describe data set:

Konza Prairie, Konza Prairie Biological Station, fertilization, insect herbivory, nitrogen, nitrogen enrichment, primary productivity, species composition

Date data commenced: 2013-01-01
Date data terminated: ongoing

Principle Investigators: Melinda D. Smith, Sally Koerner

RECORD TYPE ANPP NGE011

Data Format Specification:

	Variable	Name
1.	Datacode	Data set code
2.	Rectype	Record type
3.	Recyear	RecYear ANPP was collected
4.	Block	block designation: A-F
5.	Plot	plot designation: 1-48
6.	grass	dried mass of grass taxa in grams per 1m2
7.	forb	dried mass of forb taxa in grams per 1m2
8.	woody	dried mass of woody taxa in grams per 1m2
9.	trt	nitrogen addition treatment designation: amount of nitrogen added in g N per m2 in eight levels (1-8 trt: 0; 2.5; 5; 7.5; 10; 15; 20; 30)

Data Set Code--NUT01

Title of data set: Nutrient Network: Investigating the roles of nutrient availability and vertebrate herbivory on grassland structure and function at Konza Prairie

Abstract:

The goals and focal research questions are copied below from the Nutrient Network website. More information can be found at nutnet.org.

NutNet focal research questions:

(1) How general is our current understanding of productivity-diversity relationships?

(2) To what extent are plant production and diversity co-limited by multiple nutrients in herbacoues-dominated communities?

(3) Under what conditions do grazers or fertilization control plant biomass, diversity, and composition?

NutNet goals:

(1) To collect data from a broad range of sites in a consistent manner to allow direct comparisons of environment-productivity-diversity relationships among systems around the world. This is currently occurring at each site in the network and, when these data are compiled, will allow us to provide new insights into several important, unanswered questions in ecology.

(2) To implement a cross-site experiment requiring only nominal investment of time and resources by each investigator, but quantifying community and ecosystem responses in a wide range of herbaceous-dominated ecosystems (i.e., desert grasslands to arctic tundra).

Keywords that describe data set:

populations, primary production, inorganic nutrients, nitrogen, phosphorus, potassium, herbivory

Date data commenced: 5/1/2007
Date data terminated: ongoing

Principle Investigator: Kimberly La Pierre, Melinda Smith

RECORD TYPE 1: Plant Species Composition

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear	The year of data were collected	
4. Season	The season of data were collected	
5. Date	The date of data were collected	
6. Site	Site name	
7. Block	Block number	

Variable	Name	
8. Plot	Plot number	
9. Subplot	Subplot letter (A-Z), default value is 'A'. Other values may not be unique between sites.	
10. Sppnum	Species number from NUT species list	
11. Taxa	Taxa associated with cover value	
12. Cover	Percent cover of taxa (0-100)	
13. Comments	Comments on data	

RECORD TYPE 2: Aboveground Standing Crop (Biomass)

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear	The year of data were collected	
4. Site	Site name	
5. Plot	Plot number	
6. Subplot	Subplot letter (A-Z), default value is 'A'. Other values may not be unique between sites.	
7. Lvgrass	Dried lvgrass biomass of taxa in grams per m2	
8. Forbs	Dried forbs biomass of taxa in grams per m2	
9. Woody	Dried woody biomass of taxa in grams per m2	
10. Pryrdead	Dried pryrdead biomass of taxa in grams per m2	
11. Total	Dried total biomass of taxa in grams per m2	
12. Comments Comments on data		

RECORD TYPE 3: Plant Species Composition

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. RecYear	The year of data were collected	
5. Date	The date of data were collected	
6. RecMonth	The month of data were collected	
7. Site	Site name	
8. Block	Block number	
9. Plot	Plot number	
10. Subplot	Subplot letter (A-Z), default value is 'A'. Other values may not be unique between sites.	
11. Replicate	Replicate measurement of 2	
12. Ground	PAR in mmol m-2 s-1 at ground level	
13. Above	PAR in mmol m-2 s-1 above the canopy	
14. Par	ground/above	
15. Comments	Comments on data	

Data Set Code--OMB01

Title of data set: Microbial biomass in the Belowground Plot Experiment at Konza Prairie (1989-1999)

Abstract:

The purpose of this data set is to monitor long-term changes in microbial biomass on the belowground plots due to the effect on annual burning, mowing and nitrogen and phosphorus fertilization.

Keywords that describe data set:

microbial biomass, inorganic N, microbial biomass C and N, soil water content, nitrogen flush

Data data commenced: 04/15/1989
Data data terminated: 10/2/1999

Principle Investigator: Dr. Charles W. Rice

RECORD TYPE 1
Data Format Specification:

Variable	Name	Units
1. Datacode	Dataset code	
2. Rectype	Record type	
3. Year	Year of sample	
4. Month	month of record	
5. Day	day of record	
6. Watershed	Watershed of treatment	
7. Plot #	plot number of sample	
8. Depth	depth of sample	
9. Burn	burned or unburned	
10. Mow	mowed or unmowed	
11. Nutrient	nutrient	
12. SoilW	soil water content	g/g
13. Cflush	carbon flush	mg C/Kg
14. BMC	BMC	mg C/Kg
15. Nflush	N flush	mg C/Kg
16. BMN	BMN	mg N/Kg
17. TotalIO	Total inorganic N	

Codes Used:

Name	Value	Code Value
Plot	1-64	Plot number
Depth	1,2,3	1=0-5, 2=5-15, 3=15-30
Burn treatment	U: B	U=Unburn B=Burn

Mow treatment   U;M   U=unmowed M=mowed
Nutrient treatment   C,N,P,B   C=control, N=nitrogen
                                                                  P=Phosphorus B=Both

Data Set Code--OMS01

Title of data set: Microbial and soil data in the Belowground Plot Experiment at konza prairie since 2017

Abstract:

Data describe the soil chemistry and microbial diversity at the Belowground Plot Experiment (BGP) from the 2017 summer growing season. Whole plot-scale nitrogen fertilization at the BGP ceased in 2017. Four subplots within each historically fertilized plot were established to continue the annual fertilization treatment for soil chemistry and microbial diversity.

Keywords that describe data set:

Inorganic Nutrients, Populations, inorganic soil chemistry, microbial diversity, nitrogen cycle, Belowground Plot Experiment,

Data data commenced: 04/29/2017
Data data terminated: 09/23/2017

Principle Investigator: Matthew Nieland, Lydia Zeglin

RECORD TYPE 1 Soil chemistry and microbial diversity at the Belowground Plot Experiment (BGP)

Data Format Specification:

Variable	Name	Units
1. Datacode	Dataset code	
2. Rectype	Record type	

3. TrtID   Unique ID for every sample composed of treatment (burn and fertilization) combination, plot number, and date (YYYYMMDD)
4. Plot   Field Plot IDs.
5. Block   Field Block IDs.
6. Burn   Plots are either annually burned (B) or unburned since 1986 (UB), B = annually burned since 1986 | UB = no fire since 1986.
7. Nadd   C = unfertilized control, N = fertilized (10 g N as NH4NO3 per square meter per year), R = recovery (history of fertilization, but fertilization was ceased).
8. NaddBurn   Combination of burn (U or B) and fertilization (C or N or R) treatment. There are 6 combinations: UC, UN, UR, BC, BN, BR
9. RecMonth   Month of record
10. RecDate   Date that data was collected
11. Resin_NH4   Mass of nitrogen as ammonium accumulated late April to early September in micrograms per resin bag (included only in September samples)
12. Resin_NO3   Mass of nitrogen as nitrate accumulated late April to early September in micrograms per resin bag (included only in September samples)
13. TOC   Total extractable organic carbon in micrograms carbon per gram dry soil

14. TN   Total extractable nitrogen in micrograms nitrogen per gram dry soil
15. Soil_C   Total soil carbon as percent by weight carbon per weight dry soil
16. Soil_N   Total soil nitrogen as percent by weight nitrogen per weight dry soil
17. GWC   Gravimetric water content: field water content in grams water gram soil
after drying overnight at 105 degrees C.
18. pH   Soil pH
19. NP   Nitrification potential: rate of nitrate production in saturing ammonium
solution in micrograms nitrogen per gram dry soil per hour
20. N2O_none   Denitrification potential: rate of nitrous oxide production from ambient
soil nutrients in micrograms nitrogen per kilogram dry soil per hour
21. N2O_CN   N2O_CN
22. Mic_Resp   Microbial respiration: rate of carbon dioxide respired from bulk soil in
micrograms carbon per gram dry soil per hour
23. MBC   Microbial biomass carbon released from chloroform fumigation in
micrograms carbon per gram dry soil
24. MBN   Microbial biomass nitrogen released from chloroform fumigation in
micrograms nitrogen per gram dry soil
25. Arch_amoA   Archaeal amoA gene abundance in gene copy number per gram dry soil
26. Bact_amoA   Bacterial amoA gene abundance in gene copy number per gram dry soil
27. nosZ_I   nosZ clade I gene abundance in gene copy number per gram dry soil
28. nosZ_II   nosZ clade II associated with Anaeromyxobacter dehalogenans gene
abundance in gene copy number per gram dry soil
29. rrn   Bacterial 16S rRNA gene abundance in gene copy number per gram dry soil
30. DNA   Quanitity of DNA in micrograms DNA per gram dry soil
31. Biosample   Biosample identification under NCBI Sequence Read Archive Bioproject
accession PRJNA577961 (NA = not collected or samples missing)

RECORD TYPE 2   Annual fertilization treatment for soil chemistry

Data Format Specification:

Variable   Name   Units
   1. DataCode   Nominal   Dataset Code
   2. RecType   Physical quantity   Record type
   3. TrtID   Nominal   Unique ID for every sample composed of treatment (burn
      and fertilization) combination, plot number, and date (YYYYMMDD)
   4. Plot   Nominal   Field Plot IDs
   5. Block   Nominal   Field Block IDs
   6. Burn   Code list   Plots are either annually burned (B) or unburned since 1986
      (UB)
   7. NaddBurn   Nominal   Combination of burn (U or B) and fertilization (C or N or
      R) treatment. There are 6 combinations: UC, UN, UR, BC, BN, BR
   8. Month   Nominal   Month of sample collection
   9. Date   Date/time   Date of sample collected

10. Resin_NH4   Physical quantity   Mass of nitrogen as ammonium accumulated late April to early September in micrograms per resin bag (included only in September samples)
11. Resin_NO3   Physical quantity   Mass of nitrogen as nitrate accumulated late April to early September in micrograms per resin bag (included only in September samples)
12. GWC   Physical quantity   Gravimetric water content: field water content in grams water gram soil after drying overnight at 105 degrees C
13. NP   Physical quantity   Nitrification potential: rate of nitrate production in saturing ammonium solution in micrograms nitrogen per gram dry soil per hour
14. N2O_none   Physical quantity   Denitrification potential: rate of nitrous oxide production from ambient soil nutrients in micrograms nitrogen per kilogram dry soil per hour
15. N2O_CN   Physical quantity   Denitrification enzyme assay: rate of nitrous oxide production when unlimiting substrates of glucose and nitrate were added in micrograms nitrogen per kilogram dry soil per hour

Data Set Code--OPD01

Title of data set: Konza Prairie standing dead and litter decomposition (1981-1983)

Abstract:

Standing dead and litter decomposition of big bluestem foliage and flowering stems were measured for two years using litterbag methods. Mass, nitrogen and phosphorus content were measured.

Keywords that describe data set:

standing dead, nitrogen, phosphorus, litterbag, decomposition

Date data commenced: 10/31/1981
Date data terminated: 10/26/1983

Principle Investigator: John. M. Blair

RECORD TYPE 1 Foliage and stem weight

Data Format Specification:

Variable	Name	Columns	Format	Units
1. Datacode		1-5	A5	
2. Year		6-9	I2	
3. Month		9-10	I2	
4. Day		11-12	I2	
5. Watershed		13-16	A4	
6. Age	Length of time spent in field-days	21-23	I3	Days
7. IFWT	Initial foliage weight	25-28	F4.2	gX
8. FFWT	Final foliage weight	30-33	F4.2	gX
9. ISWT	Initial stem weight	35-39	F5.2	gX
10. FSWT	Final stem weight	41-45	F5.2	gX
11. Type	Organic matter type (standing dead, or litter)	47	A1	

RECORD TYPE 2: Decomposition of bluestem foliage and flowering stems

Data Format Specification:

Variable	Name	Columns	Units
1. Datacode	dataset code	1-5	
2. Rectype	data record type		6
3. RecYear	year of burn	7-8	
4. RecMonth	month of burn	9-10	
5. RecDay	day of murn		
6. Watershed	watershed code	13-16	
7. Soil	soil type		

8. Age	Length of time spent in field- days	21-24	I3	Days
9. Type	Dead matter typ e	26	A1	
10. Foln	% nitrogen in foliage	28-32	F5.3	%
11. Folp	% phosphorus in foliage	34-38	F5.3	%
12. Stmn	% nitrogen in stem	40-44	F5.3	%
13. Stmp	% phosphorus in stem	46-50	F5.3	%
14. Ifwt	Initial foliage weight	52-55	F4.2	g
15. Ffwt	Final foliage weight	57-60	F4.2	g
16. Iswt	Initial stem weight	62-65	F4.2	g
17. Fswt	Final stem weight	67-70	F4.2	g
18. ID		72-74	I3	

Codes used:

Name	Value	Code Value
Type	L	Litter
	S	Standing dead

Data Set Code--PBG01

Title of data set:　　Plant species composition in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated PVC021x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.

This data set includes canopy cover of all plant species is recorded in 20 circular 10 m^2 plots in watersheds of the patch-burn grazing experiment. Plots are arranged in 4 transects (A-D) of 5 plots each.

Keywords that describe the data set:

　 Grazing, cattle, herbivory, plant species composition, patch-burn grazing

Date data commenced:　　5/1/2008
Date data terminated:　　ongoing

*Pre-treatment data was collected in 2008 from all units except C1SB (a, b, c, d), C03A(c, d) and C03C (a, b). Data was collected all units in 2009. Cattle grazing started in 2010 in C03A/C03B/C03C and C01A and in 2011 in C3SA/C3SB/C3SC and C1SB.

Principle Investigator:　　John M. Blair

RECORD TYPE 1:

Data Format Specification:

Variable	Name	Columns	Format
1. Datacode		1-5	A5
2. Rectype		6	I1

3. RecYear		7-8
4. RecMonth		9-10
5. RecDay		11-12
6. Watershed	watershed of treatment	13-16
7. SoilType	Soil type in which data were collected	18-19
8. Transect	Transect	20-22
9. Plot	Plot Number	24-29
10. SpeCode	Species code	31-35
11. AB_genus	Abbreviation of genus	37-40
12. Ab_species	Abbreviation of species	42-50
13. CoverClass	Species cover class	52-60
14. Pid	Personnel id who collected the data	
15. Comments	comments for the data	

For list of species codes used, see PVC021_species_list
lter.konza.ksu.edu/sites/default/files/species_list_pvc02.pdf
A value of 1 to 7 in plots a1-d5 is the estimated cover class value for the species. Blank values
indicate that the plant was not observed in the plot.

Cover class	Canopy cover
1	<1%
2	1-5%
3	5-25%
4	25-50%
5	50-75%
6	75-95%
7	95-100%

Data Set Code--PBG02

Title of data set: Aboveground primary productivity within permanent and rotating grazing exclosures in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated PEB011x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.

This data set includes measurement of aboveground net primary productivity based upon end-of-season standing crop biomass (grams per square meter) of live graminoids, forbs, woody plants, and previous year's dead vegetation within permanent ("ungrazed") and rotating ("grazed) sections of grazing exclosures to determine long term effects of bison grazing on aboveground primary production. The permanent section of the exclosure is fixed, while the movable section is rotated every 6 years among the four possible compass coordinates relative to the fixed section.

Exclosures were erected in 2010 in all PBG watersheds. However, C3SA/C3SB/C3SC did not have a history of grazing, and sampling did not begin in those watersheds until 2012. Therefore, the "grazing" treatments in those watersheds were not previously, and should be interpreted as reference data until the movable sections are rotated into grazed areas in 2015.

Keywords that describe the data set:

aboveground biomass, grazing, cattle, herbivory, patch-burn grazing, primary productivity, plant community

Date data commenced: 5/1/2010
Date data terminated: ongoing

Principle Investigators: David Hartnett

RECORD TYPE 1:

Data Format Specification:

Variable	Name	Units
1. Datacode		
2. Rectype		
3. Year		
4. Month		
5. Day		
6. Watershed	watershed of collection	
7. Treatment	u=ungrazed, g#=grazed, #=yrs since last grazed	
8. Cage	1-32	
9. Plotnum	Plot number1-5	
10. Lvgrass	Mass of live grass	$g/.1m^2$
11. Forbs	Mass of forbs	$g/.1m^2$
12. Cuyrdead	Mass of current year's dead	$g/.1m^2$
13. Pryrdead	Mass of previous year's dead	$g/.1m^2$
14. Woody	Mass of woody plants	$g/.1m^2$
15. Comments		

*See PEB01 illustration1
*Sampling methods are identical to PAB01 except five $0.1m^2$ plots randomly located within each section, grazed vs. ungrazed; total of 10 samples per exclosure. Grazed and ungrazed sides of the exclosure are clipped at the same time. The plant biomass for each clipped plot is bagged, dried at 60º C and weighed.
*Samples are not kept for further analysis.

Data Set Code--PBG03

Title of data set:　　　Disk pasture meter measurements to estimate plant standing biomass in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated PPM011x and PPM012x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.

This dataset includes both the annual calibration data for the disk pasture meter measurements (PBG031) and the actual disk pasture meter measurements in the PBG experiment (PBG032). Measurements were taken at a total of 64 transects (8 watersheds x 4 sites per watershed x 2 pasture meter transects per site). Each cattle-grazed watershed (designated as of May 2011 C3A, C3B, C3C, and C1A) and the four Shane cattle-grazed watersheds (C1B, C3SA, C3SB, and C3SC) includes 4 plant composition sampling transects (A-D). Pasture meter measurements were taken along two transects adjacent and parallel to the plant composition transects in each of these watersheds. Standing biomass samples for pasture meter calibration were also collected near the plant composition transects in the same 8 watersheds.

Keywords that describe data set:

　　　Standing plant biomass, vegetation structure, disk pasture meter, patch-burn grazing

Date data commenced:　　　1/05/2011
Date data terminated:　　　ongoing

Principle Investigators:　　　Tony Joern, Jesse Nippert

RECORD TYPE 1: Data used to calibrate the disk pasture meter to estimate plant standing biomass in the patch-burn grazing experiment at Konza Prairie (PBG031)

Data Format Specification:

Variable	Description	nits
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. SampleNum	Sample number (1-35)	
7. Lvgrass	Mass of live grass	$g/0.1m^2$
8. Forbs	Mass of forbs	$g/0.1m^2$
9. Pdead	Mass of previous year's dead	$g/0.1m^2$
10. Woody	Mass of woody plants	$g/0.1m^2$
12. Diskht	Disk Height	cm
13. Comments		

* To calibrate the pasture meter, standing biomass was collected at 1-35 different locations across multiple watersheds
* Starting 2013, data was standardized; 2011-2012 data was measured differently, those sample plots might be different from 2013.

RECORD TYPE 2: Disk pasture meter measurements used to estimate plant standing biomass in the patch-burn grazing experiment at Konza Prairie (PBG032)

Data Format Specification:

Variable	Description	Units
1. Datacode		
2. Rectype	dataset record type	
3. RecYear	Year of the sample collected	
4. RecMonth	Month of record	
5. RecDay	Day of record	
6. Watershed	watershed name	
7. Transect	A, B	
8. Plotnum	Plot number	
9. Diskht	Disk Height	cm
10. Woody	presence/absence of woody vegetation, we didn't start collecting this data until 2016, so 2010-2015 should be all missing.	
11. Comments		

Data Set Code--PBG04

Title of data set: Reproductive effort of Big Bluestem, Indiangrass and Little Bluestem in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated PRE021x and PRE022x)

Abstract:

‘PBG’ datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis. PBG041 includes data on flowering stem height (m) of three dominant prairie grasses: *Andropogon gerardii* (ANGE), *Sorghastrum nutans* (SONU), and *Schizachyrium scoparium* (ANSC). PBG042 includes flowering stem density (no. per sq. m) and mass (grams per sq. m) for the same grass species.

Keywords that describe data set:

seed weight, flowering, stems, flower stem density, flower stem height, big bluestem, little bluestem, indiangrass, grasses, graminoid, reproduction

Date data commenced: 5/01/2011
Date data terminated: ongoing

Principle Investigators: David C. Hartnett

RECORD TYPE 1: Flowering stem height on the Patch-Burn Grazed watersheds at Konza Prairie (PBG041)

Data Format Specification:

Variable	Name	Units
1. Datacode	Dataset code	
2. Rectype	Record type	

Variable	Name		Units
3. RecYear	Year of record		
4. RecMonth	Month of record		
5. RecDay	Day of record		
6. Watershed	Watershed		
7. SoilType	Soil type (FL)		
8. Species	Species name		
9. Transect	Transect (A,B,C,D)		
10. Point	Point number (1-25)		
11. Flwstht	Flowering stalk height		Meters
12. Comments			

Codes used:

Name	Value	Code Value
Species	ANGE	Andropogon gerardii
Species	ANSC	Schizachyrium scoparius
Species	SONU	Sorghastrum nutans
Soil	FL	Florence soil

RECORD TYPE 2: Flowering stem densities and mass on the Patch-Burn Grazed watersheds at Konza Prairie (PBG042)

Data Format Specification:

Variable	Name	Units
1. Datacode	Dataset code	
2. Rectype	Record type	
3. RecYear	Year of record	
4. RecMonth	Month of record	
5. RecDay	Day of record	
6. Watershed	Watershed	
7. SoilType	Soil type (FL)	
8. Species	Species name	
9. Transect	Transect (A,B,C,D)	
10. Plot	Quadrat number	
11. Stalk	Number of flowering stalks/0.25 sq. m	#/.25
12. Flwstwt	Flowering stalk weight/0.25 sq m	G/.25
13. Comments		

Codes Used:

Name	Value	Code Value
Species	ANGE	Andropogon gerardii
Species	ANSC	Schizachyrium scoparius
Species	SONU	Sorghastrum nutans
Soil	FL	Florence soil

*for more info, please check PRE02

Data Set Code--PBG05

Title of data set: Response of bird abundance to the Patch-Burn Grazing experiment at Konza Prairie (formerly designated CBS01_x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.

This data set focuses on variation in avian abundance, diversity, and nesting activity between patch-burned and uniformly-burned pastures at Konza Prairie Biological Station. Three watershed units (C3A, C3B, C3C) constitute "patches" that are alternately burned in a 3-year rotation within a single, fenced pasture (i.e., patch-burn grazing). Two additional watersheds serve as controls: a grazed, annually/uniformly-burned watershed (C1A) and an ungrazed, annually/uniformly-burned watershed (1D). Eight, 300-m line transects were established in each watershed from which observers record the numbers of individuals per bird species and the perpendicular distance of individual birds from each transect. Three visits are made to each watershed between the last week in May through the end of June, where two "core" transects per watershed are sampled each visit. Six additional transects per watershed are sampled, but only once in a given year (two peripheral transects are sampled per watershed, per visit). The survey data will allow estimates of relative abundance, absolute density (determined from distance sampling), and species composition and diversity among the patch-burned and control watersheds. Vegetation structure is sampled along survey transects to characterize management-specific variation in physical attributes of avian habitat. Nest data are collected through systematic searches of nests throughout watersheds or from inclusion of nests found haphazardly by observers. Nest data are being analyzed for variation in daily nest survival and levels of brood parasitism of various species among the watershed units.

Keywords that describe data set:

avian abundance, birds, consumers, survey, patch-burn grazing, population dynamics

Date data commenced: 05/23/2011
Date data terminated: ongoing

Principle Investigators: William E. Jensen, Bram Verheijen

RECORD TYPE 1 Bird survey data in the Patch-Burn Grazing study (PBG051)

Data Format Specification:

Variable	Description	Units
1. Recyear	Physical quantity	Recyear
2. Watershed	Nominal	Watershed Name
3. Transect	Nominal	Transect name assigned by Brett. First capital alphanumeric characters = watershed ID. Next lowercase letter = cardinal direction of topographic bolck within watershed (n, s, e, w). Last capital alphanumeric characters = transect ID # ("Core" = regularly surveyed "core" transect per block; "P_" transects are one-time surveyed "peripheral" transects).
4. TransectName	Nominal	Alice added this field and updated by matching Brett's transects to the new names assigned to them in 2017 (missing values = transects not continued past 2016)
5. Direction	Nominal	Cardinal direction from which survey began
6. DayofYear	Physical quantity	Julian date
7. SurveyDate	Date/time	Date formatted more normally from the year and dayofyear fields
8. StartTime	Physical quantity	24-hr time survey began
9. EndTime	Physical quantity	24-hr time survey completed
10. Obs	Nominal	3-letter initials of observer
11. StartCloud	Physical quantity	% of sky covered by clouds. AB populated this field based on "sky" field in original PBG51 data (0 assigned 15%, 1 assigned 50%, 2 assigned 85%, 3 and higher assigned 100%
12. Sky	Physical quantity	0=clear, few clouds; 1=partly cloudy, scattered or variable sky; 2=cloudy, broken, or overcast; 3=rain; 4-6=fog/smoke; 7=snow; 8=showers (intermittent rain); 9=light rain or drizzle; 10=tree leaf drip
13. Wind_Beaufort	Physical quantity	Wind speeds converted to Beaufort scale to integrate into main DB
14. Wind_Speed	Physical quantity	Wind speed average kmh
15. Temp	Physical quantity	Temperature in Centigrade
16. Species	Nominal	Species code, 4-letter AOU alpha code
17. Sex	Nominal	Sex status. M, F, or MF; "u" or blank if unknown
18. Vdetection	Code list	Visual detection. Enter 1 if visual detection, else leave blank
19. Sdetection	Code list	Song detection. Enter 1 if song of bird heard, else leave blank
20. Cdetection	Code list	Call/alarm detectio. Enter 1 if Call/alarm detectio, else leave blank

21. AudioOnly	Nominal	Added this field and updated based on Sdetection and Cdetection fields. Check yes if the observer only heard and did not see the bird
22. Fly	Code list	Fly, Enter 1 if flyover only (no distance measured within survey spacce, but bird flew over habitat); else leave blank
23. Flyover	Nominal	Added this field and updated based on FLY. Check yes if the bird did not interact with the watershed other than flying over
24. Flush	Code list	Flush. Bird may have been flushed by observer
25. Distance	Physical quantity	Distance. Perpendicular distance (m)
26. GroupSize	Physical quantity	Group size of birds. Assume "1" of not entered.
27. NumOfMale	Physical quantity	Num Of Male. male birds seen if a group (>1 bird)
28. NumOfFemale	Physical quantity	Num Of Female. Number of female birds seen if a group (>1 bird)
29. Comments	Nominal	Comments for the survey

Codes used:

Name	Value	Definition of code value
Sky	0	Clear, few clouds
	1	Partly cloudy, scattered or variable sky
	2	Cloudy, broken, or overcast
	3	Rain
	4	Light fog/smoke
	5	Fog/smoke
	6	Dense fog/smoke
	7	Snow
	8	Showers (intermittent rain)
	9	Light rain or drizzle
	10	Tree leaf drip
Sex	M	Male
	F	Female
	MF	Male and female
	U	Unknown

*May use the codes listed below instead of an average speed.

Wind (if used)	0	<1mph, smoke rises vertically
	1	1-3mph, wind direction shown by smoke drift
	2	4-7mph, wind felt on face, leaves rustle
	3	8-12mph, leaves, twigs in constant motion
	4	13-18mph, raises dust and loose paper, branches sway
	5	>18mph, trunks of small trees in leaf sway

RECORD TYPE 2 Song Bird nest data in the Patch-Burn Grazing study (PBG052)

Data Format Specification:

Variable	Name
1. Flag	Whether nest information was complete (when marked "Okay")
2. RecYear	Year collected (2011-2016)
3. Nest ID	Unique nest ID, but no consistency between years
4. Species	4-digit AOU (now AOS) approved bird species code
5. Unit	Konza watershed
6. Graze	Grazed by cattle (Y or N)
7. Burn	Years since last prescribed burn (0, 1, 2)
8. Patch	Effective management regime and year since burn, includes patch-burn grazing (PBG0-2), annually burning and grazing (ABG), and annually burning but no grazing (ABN)
9. Treatment	Effective management regime, includes patch-burn grazing (PBG), annually burning and grazing (ABG), and annually burning but no grazing (ABN)
10. UTM1	East/West coordinate
11. UTM2	North/South coordinate
12. Method	Method that was used to first locate the nest
13. StageFound	At what stage the nest was first located (Building, Laying, Incubation, or Brooding)
14. Surv_Till_Incub	Whether the nest survived until at least one egg hatched (Y or N)
15. DateFirstFound	The date on which the nest was first located
16. DateLastPresent	The last date on which a nest was still considered active
17. DateLastChecked	The final date a nest was visited and nest fate was determined
18. FirstFound	The Julian date on which the nest was first located
19. LastPresent	The last Julian date on which a nest was still considered active
20. LastChecked	The final Julian date a nest was visited and nest fate was determined
21. NestFate	The final fate of the nest, includes Successful (S), Failed (F), or Unknown (U)
22. Fate	The numerical final fate of the nest for nest survival analyses, includes Successful (0), Failed (1), or Unknown (2)
23. Cause	Whether a nest was successful or not, and lists the cause of failure if the nest was not successful. A failed nest could have been Abandoned, Depredated, Trampled, or have an Unknown cause of failure
24. Parasitized	Whether a nest was parasitized by Brown-headed Cowbirds (*Molothrus ater*) or not
25. Maxhosteggs	The maximum number of host eggs present in the nest cup at one time
26. MaxBHCOeggs	The maximum number of parasitic eggs present in the nest cup at one time
27. Hosthatched	The total number of host eggs that successfully hatched
28. BHCOhatched	The total number of parasitic eggs that successfully hatched
29. Maxhostyoung	The maximum number of host young present in the nest cup at one time
30. MaxBHCOyoung	The maximum number of parasitic young present in the nest cup at one time

31. Hostfledged nest	The total number of host young that successfully fledged from the	
32. BHCOfledged the nest	The total number of parasitic young that successfully fledged from	

RECORD TYPE 3 Bird habitat data in the Patch-Burn Grazing study (PBG053)

Data Format Specification:

Variable	Description	Units
1. RecYear		
2. RecDate	Julian calendar day	
3. Observer	Observer's initials	
4. Watershed		
5. TransectID	Transect code	
6. Point	Point in transect (1-5)	
7. UTM_X	GPS coordinates (UTM; x)	
8. UTM_Y	GPS coordinates (UTM; y)	
9. FramePoint	1-12	
10. PCTgrass	Grass coverage	%
11. PCTforb	Forb coverage	%
12. PCTshrub	Shrub coverage	%
13. PCbare	Bare coverage	%
14. PCTlitter	Litter coverage	%
15. litDepth	Litter depth	cm
16. vorPT	VOR point (1-4)	
17. VOR	Visual Obstruction Reading	dm
18. Elevation		m
19. Aspect	Cardinal direction	
20. Comments	Comments	

Data Set Code--PBG06

Title of data set: Cattle grazing and cattle performance in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated CCC01_x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.
This data set focuses on monitoring (1) the dynamics of cattle grazing on each of two sets of three pastures burned each year on a rotating basis and (2) cattle performance including cow weight gain, body condition, and reproductive performance and calf weight gains.

Keywords that describe data set:

cattle, calf weight gain, cow weight gain, reproduction, cattle grazing, patch-burn grazing

Date data commenced: 04/01/2010
Date data terminated: ongoing

Principle Investigator: KC Olson

RECORD TYPE 1: Stocking Rate in the Patch-Burn Grazing experiment (PBG061)

Data Format Specification:

Variable	Column	Description	units
1. RecYear	Physical quantity	Year of record	
2. Pasture	Nominal	Pasture location (North Konza, South Konza, Shane Creek, Texas Hog)	
3. Treatment	Nominal	Burning treatment (Annual, Patch)	
4. Class	Nominal	Class category (Bull, Cow, Calf)	

5. Number	Physical quantity	Number of cattle	
6. OnDate	Date/time	On Date	
7. OffDate	Date/time	Off date	

RECORD TYPE 2: Weights data in the Patch-Burn Grazed experiment at Konza Prairie (PBG062)

Variable	Column	Description	units
1. RecYear	Physical quantity	Year of record	
2. CowID	Nominal	Cow tag	
3. Pasture	Nominal	Pasture location (North Konza, South Konza, Shane Creek, Texas Hog)	
4. Treatment	Nominal	Burning treatment (Annual, Patch)	
5. Class	Nominal	Class category (Bull, Cow, Calf)	
6. Date	Date/time	Date of weight measured	
7. Type	Nominal	Birth type	
8. Weight	Physical quantity	Cow weight	
9. BCS	Physical quantity	Body condition scores	

Sampling:
Cow BCS is assigned (1 to 9 scale; 1 = emaciated, 9 = morbidly obese) by 3 trained observers that are blinded to treatment; the average of 3 scores is recorded. Calf BW 1s recorded at birth, at the time of fixed-time AI, and at weaning

RECORD TYPE 3: Cow data in the Patch-Burn Grazed experiment at Konza Prairie (PBG063)

Variable	Column	Description	units
1. RecYear	Physical quantity	Year of record	
2. CowID	Nominal	Cow tag	
3. Pasture	Nominal	Pasture location (North Konza, South Konza, Shane Creek, Texas Hog)	
4. Parity	Physical quantity	Parity class	
5. HideColor	Nominal	Hide Color	
6. CalvingDate	Date/time	Calving Date	
7. CalfID	Nominal	Calf tag ID	
8. Aipregnancy	Physical quantity	AI Pregnancy	
9. FinalPregnancy	Physical quantity	Final Pregnancy	

Change logs:
2010: South Unit initiated along with adjacent control plot (watersheds C3A, C3B C3C and C1A).
Spring 2011: North Unit initiated (watersheds C3SA, C3SB, C3SC and C1SB).

RECORD TYPE 4: Calf data in the Patch-Burn Grazed experiment at Konza Prairie (PBG064)

Variable	Column	Description	units
1. RecYear	Physical quantity	Year of record	
2. CalfID	Nominal	Calf ID	
3. Sex	Nominal	Calf sex	
4. Pasture	Nominal	Pasture location (North Konza, South Konza, Shane Creek, Texas Hog)	
5. DamID	Nominal	Dam ID = Cow ID	
6. HideColor	Nominal	Hide Color	
7. BirthDate	Date/time	Calf birth date	

Data Set Code--PBG07

Title of data set: Grasshopper species abundances in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated CRG02_x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.

This data set focuses on determining grasshopper density on upland topographic locations in the following patch-burn grazing plots: C3A, C3B, C3C, C1A, C3SA, C3SB, C3SC, C1B. Samples are taken in four sites per watershed, and each site has four transects. Samples are taken once in late fall. Grasshopper densities are sampled using the ring count method.

Keywords that describe data set:

Consumers, grasshoppers, Acrididae, insects, relative abundance, sweep sampling, species, species composition, patch-burn grazing

Date data commenced: 5/08/2011
Date data terminated: ongoing

Principle Investigator: Anthony Joern

RECORD TYPE1: Weather conditions at the time of grasshopper sampling in the Patch-Burn Grazing experiment (PBG071, formerly CGR021x)

Data Format Specification:

Variable	Description	Units
1. Datacode		
2. Rectype		

Variable	Description	Units
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. Soiltype	Soil Type (Florence)	
8. Repsite	Replicate site for a treatment	
9. Time	Time sampling began	24-hour clock
10. W 1	1st wind speed	mph
11. W 2	2nd wind speed	mph
12. W 3	3rd wind speed	mph
13. W 4	4th wind speed	mph
14. W 5	5th wind speed	mph
15. MPH	Mean of 5 measurements	mph
16. AirtempF	Air temperature	Degrees Fahrenhiet
17. AirtempC	Air temperature	Degrees Celsius
18. Cloudcov	Cloud cover directly overhead	%
29. Comments		

Codes used:

1. Soiltype	FL	Florence soil
2. Soiltype	TU	Tully soil
3. Repsite	A	Replicate site A for treatment
4. Repsite	B	Replicate site B for treatment

RECORD TYPE 2: Relative abundance of grasshoppers in the Patch-Burn Grazing experiment estimated by sweep netting (PBG072, formerly CGR022x)

Data Format Specification:

Variable	Description	Units
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. Repsite	Replication site for a watershed/soil	
8. Spcode	Species Code	
9. Genus	Abbreviated genus name	
10. Species	Abbreviated species name	
11. S1	# of individuals in sample 1	
12. S2	# of individuals in sample 2	
13. S3	# of individuals in sample 3	
14. S4	# of individuals in sample 4	
15. S5	# of individuals in sample 5	
16. S6	# of individuals in sample 6	

17. S7	# of individuals in sample 7 #
18. S8	of individuals in sample 8 #
19. S9	of individuals in sample 9 #
20. S10	of individuals in sample 10
21. Total	Total # of individuals/all samples
22. Comments	

Codes used:

1. Repsite	A	Replicate site A for treatment
2. Repsite	B	Replicate site B for treatment
3. Repsite	C	Replicate site C for treatment
4. Repsite	D	Replicate site D for treatment

Species lists:
Current Code used:
See CGR022-23_species_list

RECORD TYPE 3: Species composition and age structure of grasshoppers in the Patch-Burn Grazing experiment estimated by sweep netting (PBG073, formerly CGR023x)

Data Format Specification:

Variable	Name	Columns
1. Datacode		
2. Rectype		
3. RecYear		
4. RecMonth		
5. RecDay		
6. Watershed		
7. Repsite	Replication site for a treatment	
8. Spcode	Species code	
9. Genus	Abbreviated genus name	
10. Species	Abbreviated species name	
11. First	# of individuals 1st instar	
12. Secthird	# of individuals 2nd & 3rd instars	
13. Forth	# of individuals 4th instar	
14. Fifth	# of individuals 5th instar	
15. Female	# of individuals of adult females	
16. Male	# of individuals of adult males	
17. Total	Total # of individuals/all samples	
18. Comments		

Current Code used: See CGR022-23_species_list

Data Set Code--PBG08

Title of data set: Grasshopper density survey in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated CPR011x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.

This data set focuses on measuring grasshopper density using ring count method (Onsager 1977*) at watersheds C03A, C03B, C03C, C01A, C3SA, C3SB, C3SC, and C01B. Grazing intensity is estimated (Joern 2005) at each site at time of density measurements to model how grasshopper populations respond to grazing.

Keywords that describe data set:

Consumers, grasshoppers, Acrididae, insects, relative abundance, sweep sampling, species, species composition, patch-burn grazing, grasshopper density, grazing intensity

Date data commenced: 08/01/2010
Date data terminated: ongoing

Principle Investigator: Anthony Joern, Jesse Nippert

RECORD TYPE 1: Grasshopper density in the Patch-Burn Grazing experiment estimated using ring count method

Data Format Specification:

Variable	Description	Units
1. Datacode	Dataset code	
2. Rectype	Record type	
3. Recyear	The year of sample was collected	

4. Recmonth   The month of sample was collected
5. Recday   The day of sample was collected
6. recordedws   The location of sample recorded
7. Watershed   Watershed code
8. Site   Site A-D
9. Grazing Intensity   Grazing Intensity 0-5
10. Ring   Ring# 1-80
11. Count   Count Number
12. Comments   Comments

Codes used:
Grazing Intensity   0 Ungrazed
            5 Highly grazed

Data Set Code--PBG10

Title of data set: Soil physical and chemical characteristics in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated NSC011x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.

This data set focuses on measuring bulk density, soil organic matter, pH, cation exchange capacity, soil cations (Ca^{++}, Mg^{++}, Na^+), phosphorous and total Kjeldahl nitrogen of soils at the vegetation transects in C3SA, C3SB, C3SC. C1SB, C3A, C3B, C3C, and C1A.

Keywords that describe data set:

bulk density, soil organic matter, pH, cation exchange capacity, soil cations (Ca^{++}, Mg^{++}, Na^+), phosphorous, total nitrogen, patch-burn grazing, grazing intensity

Date data commenced: 10/06/2010
Date data terminated: ongoing

Principle Investigators: John M. Blair

RECORD TYPE 1: Physical and Chemical Characteristics of Soil

Data Format Specification:

Variable	Name	Units
1. Datacode	Dataset code	
2. Rectype	Record type	
3. RecYear	Year of record	
4. RecMonth	Month of record	

5. RecDay	Day of record	
6. Watershed	watershed (C3SA, C3SB, C3SC. C1SB, C3A, C3B, C3C, and C1A)	
7. Soil	soil type	
8. Rep	replication	
9. Depth	depth	cm
10. pH	ph	
11. BrayP	bray p ((Available Phosphorus)	ppm
12. Na	Sodium (Na)	ppm
13. K	Potassium (K)	ppm
14. Mg	Magnesium (Mg)	ppm
15. Ca	Calcium (Ca)	ppm
16. TotalC	Total carbon (C)	% dry wt.
17. TotalN	Total nitrogen (N)	% dry wt.
18. NH4	KCl-extractable ammonium (NH4-N)	ug N/g
19. NO3	KCl-extractable nitrate (NO3-N)	ug N/g
20. Comments	Comments	

Data Set Code--PBG11

Title of data set: Stream Water Chemistry for the Shane Creek drainage basin in the Patch-Burn Grazing experiment at Konza Prairie (formerly designated NWC011x)

Abstract:

'PBG' datasets are associated with a long-term, large-scale study that is addressing the effects of fire-grazing interactions in the context of a Patch-Burn Grazing management system designed to promote grassland heterogeneity. Effects of patch-burn grazing management on plant and animal diversity and the nature and variety of wildlife habitat are being assessed in two replicate management units, each consisting of three pastures (watersheds) designated C03A/C03B/C03C and C3SA/C3SB/C3SC. In each patch-burn grazing unit, one watershed is burned and two that are left unburned in a given year. The burning treatments are rotated annually so that each pasture is burned every third year. Each patch-burn grazing unit is paired with an annually-burned pasture for comparison with traditional grazing systems (C01A and C1SB). All grazing units are stocked with cow/calf pairs from approximately 1 May until 1 Oct at a stocking density equal to 3.2 ha per cow/calf. To examine the impact of patch burning and grazing in all 8 units, we monitor changes in plant species composition, residual biomass, grassland bird populations, insect populations, small mammal populations, soil nutrients, and stream water quality[1] ([1]C3SA/C3SB/C3SC unit only). The KSU Department of Animal Science monitors cattle performance, including weight gain and body condition to assess the economic feasibility of using patch-burn management on a widespread basis.
This data set focuses on measuring Nitrate, ammonium, total N, soluble reactive P, total P, and dissolved organic C in four streams draining watersheds with 1 (N01B), 2 (N02B), 4 (N04D), and 20 (N20B) year target burn frequencies.

Keywords that describe data set:

nitrate, ammonium, total nitrogen, soluble reactive phosphorus, total phosphorus, dissolved organic carbon, stream, stream water, water chemistry, biogeochemistry, nitrogen, carbon, phosphorus, patch-burn grazing, grazing intensity

Date data commenced: 06/01/2010
Date data terminated: ongoing

Principle Investigator: Walter Dodds

RECORD TYPE 1:

Data Format Specification:

Variable	Name	Units
1. Datacode	Dataset code	
2. Rectype	record type	
3. RecYear	Year of record	
4. RecMonth	Month of record	

5. RecDay	Day of record	
6. RecTime	time of record	CST
7. Temp	temperature at start of sampling	
8. Depth	depth of sample in centimeters	
9. FilterID	Filter ID	
10. Pre1	replicate mass determination	
11. Pre2	replicate mass determination	
12. water	water in mil	(ug/l)
13. TSS1	mass of filter after	gram
14. TSS2	replicate mass after	gram
15. VS1	ass of filter after combustion	gram
16. VS2	replicate after combustion	gram
17. TSS	total suspended solid	(ug/l)
18. VSS	voliatile suspended solids	(ug/l)
19. Preservatives	preservative	
20. NO3	Nitrate concentration	(ug/l)
21. NH4	ammonium-nitrogen	(ug/l)
22. TN	Total N concentration	(ug/l)
23. SRP	Soluble reactive phosphate	(ug/l)
24. TP	Total P concentration	(ug/l)
25. DOC	Dissolved Organic Carbo	(ug/l)

Codes used:

Name	Value	Code Value
Sample site		see abstract above
Preserve	y	preservative added
Preserve	n	no preservative added

*below levels of detection

Data Set Code--PCN01

Title of data set: Plant and soil carbon and nitrogen pool data from the Belowground Plot Experiment at Konza Prairie

Abstract:

Data describe the carbon and nitrogen pools in combustible aboveground litter, and in shoots, roots, litter, and soil at the end of the growing season at the Belowground Plot Experiment in 2021.

Keywords that describe data set:

Organic Matter, Belowground Plot Experiment, carbon, nitrogen, graduate student research, LTER-KNZ, Konza Prairie Biological Station

Date data commenced: 3/01/2021
Date data terminated: 09/30/2021

Principle Investigator: Matthew Nieland, Lydia Zeglin

RECORD TYPE 1 PCN011 Litter carbon and nitrogen in burned prairie

Data Format Specification:

Variable	Name		Columns	Format	Units
1. DataCode	Nominal		Dataset code		
2. RecType	Physical quantity		Record type		
3. RecYear	Physical quantity		Year of sample		
4. Plot	Nominal		Field plot IDs		
5. Replicate	Nominal		Code A or B		
6. Nutrient	Nominal		Fertilization treatment. (C = control; R = previously fertilize with nitrogen (annual fertilization ceased in 2017)		
7. PlantFunctionalGroup	Nominal		Plant Functional Group. Grass (G) or forb (F) litter		
8. Position	Nominal		Standing (S) or down (D) litter.		
9. LitterMass	Physical quantity		Litter biomass (g/0.1m2)		
10. C_litter	Physical quantity		Percent carbon in litter (percent)		
11. N_litter	Physical quantity		Percent nitrogen in litter		

RECORD TYPE 2 PCN012 Carbon and nitrogen in aboveground plant biomass

Data Format Specification:

Variable Name	Columns	Format	Units
1. DataCode	Nominal	Dataset code	
2. RecType	Physical quantity	Record type	
3. RecYear	Physical quantity	Year of sample	
4. Plot	Nominal	Field plot IDs	

5.	Replicate	Nominal	Code A or B	
6.	Burn	Nominal	Burned (B) or unburned (UB)	
7.	Nutrient	Nominal	Fertilization treatment. (C = control; R = previously	

fertilize with nitrogen (annual fertilization ceased in 2017)

8.	PlantFunctionalGroup	Nominal	Plant Functional Group. Lvgrass, Forb,	

PreviousDead, or Woody

9.	C_anpp	Physical quantity	Percent carbon in aboveground biomass
10.	N_anpp	Physical quantity	Percent nitrogen in aboveground biomass

RECORD TYPE 3 PCN013 Carbon and nitrogen in roots

Data Format Specification:

Variable Name		Columns	Format	Units
1.	DataCode	Nominal	Dataset code	
2.	RecType	Physical quantity	Record type	
3.	RecYear	Physical quantity	Year of sample	
4.	Plot	Nominal	Field plot IDs	
5.	Replicate	Nominal	Code A or B	
6.	Burn	Nominal	Burned (B) or unburned (UB)	
7.	Nutrient	Nominal	Fertilization treatment. C = control R = previously	

fertilized with nitrogen (annual fertilization ceased in 2017) N = continuously fertilized with nitrogen in sub-plots (initiated in 2017)

8.	RootMass	Physical quantity	Root biomass (mg/cm3) top 15 cm
9.	C_root	Physical quantity	Percent carbon in root biomass (percent)
10.	N_root	Physical quantity	Percent nitrogen in root biomass (percent)

RECORD TYPE 4 PCN014 Carbon and nitrogen in soil

Data Format Specification:

Variable Name			Columns	Format	Units
1.	DataCode	DataCode	Nominal	Dataset code	
2.	RecType		Physical quantity	Record type	
3.	RecYear		Physical quantity	Year of sample	
4.	Plot	Nominal	Field plot IDs		
5.	Burn	Nominal	Burned (B) or unburned (UB)		
6.	Nutrient		Nominal	Fertilization treatment. C = control R = previously	

fertilized with nitrogen (annual fertilization ceased in 2017) N = continuously fertilized with nitrogen in sub-plots (initiated in 2017)

7.	C_soil	Physical quantity	Percent carbon in soil (percent)
8.	N_soil	Physical quantity	Percent nitrogen in soil (percent)

Data Set Code--RCS01

Title of data set: Recovery and relative influence of root, microbial, and structural properties of soil on physically sequestered carbon stocks in restored grassland at Konza Prairie

Abstract:

Managing soil to sequester C can help mitigate increasing CO2 in the atmosphere. To maximize this ecosystem service, more knowledge of factors influencing C sequestration is needed. The objectives of this study were to (i) quantify recovery of the roots, microbial biomass and composition, and soil structure across a chronosequence of grassland restorations and (ii) use a structural equation model to develop a data-based hypothesis on the relative influence of physical and biological soil properties on the soil C aggregate fraction diagnostic of sequestered C. We hypothesized measured variables would recover with restoration age. Belowground plant biomass and tissue quality (C/N ratio), soil microbial biomass C, phospholipid fatty acid (PLFA) concentrations, soil structure, and soil C stocks in the bulk soil and each aggregate fraction were quantified from a cultivated field, prairies restored for 1 to 35-yr (n = 6), and a never-cultivated (native) prairie. Root biomass, microbial biomass C, arbuscular mycorrhizal fungi (AMF) PLFA biomass across the chronosequence increase to resemble native prairie following 35 yr of restoration. Many aspects of soil structure (i.e., bulk density, proportional mass of aggregate fractions, and aggregate mean weighted diameter) and the distribution C among soil fractions, including C in the micro-within-macro aggregate fraction (sequestered C), also became representative of native prairie within 35 yr of restoration. Total soil C stock and physically protected C increased at a similar rate (23 and 27 g C m-2 yr-1) respectively, across the chronosequence. After 35 yr of restoration, 50% of the total C pool was physically protected. The structural equation modeling developed by these data hypothesizes that microbial biomass C and AMF biomass (microbial composition) have the strongest causal influence on physically protected C. This model needs to be tested using independent sites to achieve greater inference.

Keywords that describe data set:

Konza Prairie, Konza Prairie Biological Station, aggregates, arbuscular mycorrhizal fungi, belowground plots, graduate student research, microbial biomass, phospholipid fatty acid profiles, root, Soil C sequestration, structural equation modeling

Date data commenced: 2013-08-01
Date data terminated: 2017-01-31

Principle Investigators: Drew Scott, Sara G. Baer, John M. Blair

RECORD TYPE 1 Belowground Biomass and Tissue Quality RCS011

Data Format Specification:

Variable	Name
1. Datacode	Data set code
2. Rectype	Record type
3. Age	Restoration age (number of growing seasons) of the field
4. Plot	Plot number- Each field contained 4 plots
5. Biomass	Belowground plant biomass, i.e. roots and rhizomes (g/m2)
6. Quality	C:N ratio of belowground plant biomass
7. MBC	Microbial biomass C
8. Surrogate	Surrogate recovery for correcting PLFA concentrations (%)
9. PLFA	Total PLFA biomass (nmol/g soil)
10. AMF	Arbuscular mycorrhizal fungi PLFA biomass (nmol/g soil)
11. FB	PLFA fungi:bacteria biomass ratio
12. Comments	Comments for the data

RECORD TYPE 2   Bulk Density, Aggregate Structure, and Soil C Stocks RCS012

Data Format Specification:

Variable	Name
1. Datacode	Data set code
2. Rectype	Record type
3. Age	Restoration age (number of growing seasons) of the field
4. Plot	Plot number- Each field contained 4 plots
5. pLgMacro	Percent large macroaggregates (> 200 μm) by mass
6. pSmMacro	Percent small macroaggregates (> 150-200 μm) by mass
7. pMacro	Percent combined macroaggregates (> 150 μm) by mass
8. CMacro	C stock of macroaggregates (g/m2)
9. pCMacro	Percent total C in macroaggregates
10. pMicro	Percent microaggregates (50-150 μm) by mass
11. CMicro	C stock of microaggregates (g/m2)
12. pCMicro	Percent total C in microaggregates
13. pSC	Percent silt/clay (< 50 μm) by mass
14. CSC	C stock of silt/clay (g/m2)
15. pCSC	Percent total C in silt/clay
16. piCPOM	Percent intra-aggregate CPOM by mass
17. CiCPOM	C stock of intra-aggregate CPOM (g/m2)
18. pCiCPOM	Percent total C in intra-aggregate CPOM
19. piSC	Percent intra-aggregate silt/clay by mass
20. CiSC	C stock of intra-aggregate silt/clay (g/m2)
21. pCiSC	Percent total C in intra-aggregate silt/clay
22. piMicro	Percent intra-aggregate microaggregates by mass
23. CiMicro	C stock of intra-aggregate microaggregates (g/m2)
24. pCiMicro	Percent total C in intra-aggregate microaggregates
25. Comments	Comments for the data

RECORD TYPE 3 Phospholipid Fatty Acid Biomass and Microbial Biomass C - RCS013

Data Format Specification:

Variable	Name
	Name
1. Datacode	Data set code
2. Rectype	Record type
3. Age	Restoration age (number of growing seasons) of the field
4. Plot	Plot number- Each field contained 4 plots
5. iCPOMQual	C:N ratio of intra-aggregate CPOM
6. MWD	Aggregate mean-weight diameter (cm)
7. BD	Soil bulk density (g/m3)
8. CTotal	Total C of whole soil (g/m2)
9. Comments	Comments for the data

Data Set Code--RFP01

Title of data set: Recovery and relative influence of root, microbial, and structural properties of soil on physically sequestered carbon stocks in restored grassland at Konza Prairie

Abstract:

This data is a collection of point observations and measurments of large rock fragments on grassland hillslopes. Data was collected from 30 hillslope transects that extend downslope perpidicular from the bedrock cliff formed from the Cottonwodd limestone. Transects are 30 meters long and 1 meter wide. Observations of blocks include properites such as size, shape, and surface weathering. This data set also includes observtions of cliff properties associated with each transpect location. Measurments we made in field by hand for rock fragments larger than pebble (>64mm).

Keywords that describe data set:

Date data commenced: 06/01/2019
Date data terminated: 08/31/2021

Principle Investigators: Nicholas McCarroll, Arnaud Temme

RECORD TYPE 1: Block Property Table (RFP011)

Data Format Specification:

Variable		Name
1. RecType	Physical quantity	record type
2. intermediate_axis	Physical quantity	length of intermediate axis of slope block
3. long_axis	Physical quantity	length of long axis of slope block
4. surface_weathering	Physical quantity	% of total surface of block occupied by pitting features
5. block_dip	Physical quantity	the inclination of the block on the hillslope
6. distance_from_cliff	Physical quantity	distance of block downslope from the modern cliff face
7. stability	Nominal	classification on if block movement was caused by the push of a human foot (s= block doesn't move when force is applied by foot | u = block moves when forece is applied by foot)
8. burial	Nominal	classification on if a block as embedded in the hillslope soil or was sitting on the surface (y = block is embedded in surface | n = block is sitting on the hillslope surface)
9. burial_type	Nominal	classification of if a block was embedded how the soil is distributed around the block (all = block is embedded in surface soil on all

sides of block | us = block is embedded in surface soil on only the upslope side of blocks| ds = block is embedded in surface soil only on the downslope side of soil)

10. shape   Nominal   classification of overall block shape (b = block is "block" or cubic shaped | t = block is tile or plate shaped | u = unknown shape)
11. veg_cover   Nominal   classification of the vegetation cover of the hillslope (g = grassland| f = forest | t = transition between forest and grassland)
12. transect_num   Physical quantity   The call number of the transect
13. latitude   Physical quantity   latitute of slope survey transect head
14. longitute   Physical quantity   longitude of slope transect head

RECORD TYPE 2: Cliff Dimmensions Table (RFP012)

Data Format Specification:

Variable   Name

1. RecType   Physical quantity   Record type
2. cliff_num   Physical quantity   The call number of the cliff survey location
3. height   Physical quantity   The height of the cliff face, measured from the top of the cliff to the soil cover
4. length_to_soil   Physical quantity   The distance on top of the cliff from the cliff edge to the soil cover in the upslope direction
5. latitude   Physical quantity   latitute of slope survey transect head
6. longitute   Physical quantity   longitude of slope transect head

RECORD TYPE 3: Cliff Properties Table (RFP013)

Data Format Specification:

Variable   Name

1. RecType   Physical quantity   Record type
2. cliff_num   Physical quantity   The call number of the cliff survey location
3. surface_weathering   Physical quantity   The amount of cliff face surface that is occupied by surface pitting
4. Frac_space_1   Physical quantity   The distance between one set of fractures. Frac_space_1 is roughly perpiduclar to Frac_space_2. Each fracture space entry is a pair measured at the same location
5. Frac_space_2   Physical quantity   The distance between one set of fractures
6. Orientation_1   Physical quantity   The azimuth direction that the rock fracture (Frac_Space_1) is orientented in.
7. Orientation_2   Physical quantity   The azimuth direction that the rock fracture (Frac_Space_2) is orientented in.
8. latitude   Physical quantity   latitute of slope survey transect head
9. longitute   Physical quantity   longitude of slope transect head

Data Set Code--RIV01

Title of data set: Stream water isotopes in wooded riparian areas and areas where canopy had been cut at Konza Prairie

Abstract:

The stream water samples are the same as collected for the NWC01 dataset. Water samples are frozen (-3 C) in sealed polyvinyl bottles until time of processing. These water samples are thawed, subsampled at 1 mL, and analyzed for delta18O and delta2H using a Picarro L2130-i isotopic water analyzer. Samples are corrected using in-house standards calibrated to the international standard, V-SMOW. The long-term precision for delta18O is 0.1 permil and for delta2H is 1 permil.

Keywords that describe data set: inorganic soil chemistry, soil isotopes, canopy cover, dissolved organic carbon, isotope, Konza Prairie Biological Station, stream water

Date data commenced: 01/01/2010
Date data terminated: 12/31/2020

Principle Investigators: Jesse Nippert

RECORD TYPE 1: Stream Isotopes Data (RIV011)

Data Format Specification:

Variable		Name
1. watershed	Nominal	watershed of collection
2. RecYear	Physical quantity	Year of record
3. delO	Nominal	The ratio of stable isotopes oxygen
4. A_stddev	Nominal	The standard deviation of the sample
5. A_stderr	Nominal	The standard error of the sample

Data Set Code--RIV02

Title of data set: Plant transect data for the N2B experiment at Konza Prairie

Abstract:

    Woody plant expansion is well-known to alter plant community composition, often including a decrease in plant biodiversity, such as species richness. This dataset was used to determine if plant communities are able to "bounce back" after repeated woody plant removal, returning to plant community more similar to tallgrass prairie without woody plant encroachment. Woody plant encroachment can affect plant communities in two key ways: increasing competition for light and limiting grassland propagules (if woody encroachment is widespread). Therefore, we also included a treatment in the riparian removal where seeds of native prairie plants were added to reduce propagule limitation. This data suggests that despite repeated tree removal, the plant community has not returned to a grassland state. Instead, shrubs and herbaceous woodland plants are dominant. Adding grassland propagules had no discernable impact.

Keywords that describe data set: plant species, Disturbance, Populations, Konza Prairie Biological Station

Date data commenced: 07/01/2010
Date data terminated: 10/01/2020

Principle Investigators: Walter K. Dodds

RECORD TYPE 1: pvc_woody_removal data (RIV021)

Data Format Specification:

Variable   Name

1. RecYear   Physical quantity   Year of sample
2. plot   Physical quantity   denotes the plot number
3. transect   Physical quantity   denotes the transect number within a plot
4. dist   Physical quantity   denotes the subplot location within a transect.
5. spcode   Physical quantity   denotes an internal numerical code assigned to each unique species
6. gen   Nominal   denotes the species' genus
7. spec   Nominal   denotes the species' species
8. trt   Nominal   denotes the three treatments
9. coverclass   Physical quantity   denotes the cover class of the species, where 1=0 to 1% cover, 2=1 to 5% cover, 3=5 to 25% cover, 4=25 to 50% cover, 5=50 to 75% cover, 6=75% to 95% cover, and 7=95 to 100% cover.

Data Set Code--RIV03

Title of data set: Channel morphology in streams in wooded riparian areas and areas before and after canopy cutting at Konza Prairie

Abstract:

Our project was designed to test if woody removal in a riparian zone allowed the system to rebound to a grassland stream state. We hypothesized that removal would increase stream width due to increased erosion without plant cover.

Keywords that describe data set: Konza Prairie Biological Station, canopy, woody vegetation, Disturbance

Date data commenced: 01/01/2010
Date data terminated: 12/31/2019

Principle Investigators: Bart Grudzinski, and Walter K. Dodds

RECORD TYPE 1: Geomorph data summary (RIV031)

Data Format Specification:

Variable		Name
1. Watershed	Nominal	watershed
2. RecYear	Physical quantity	Year of record
3. Transect	Physical quantity	transect number (1-8)
4. Width	Physical quantity	Width (m)
5. Depth	Physical quantity	Depth (m)
6. WD	Physical quantity	depth/width
7. Area	Physical quantity	Area (m2)

Data Set Code--RIV04

Title of data set: Moss cover in streams in wooded riparian areas and areas where canopy had been cut at Konza Prairie

Abstract:

Our project was designed to test if woody removal in a riparian zone allowed the system to rebound to a grassland stream state. We hypothesized that removal would increase light and decrease moss biomass.

Keywords that describe data set: canopy, Konza Prairie, Konza Prairie Biological Station, Mass

Date data commenced: 01/01/2010
Date data terminated: 12/31/2020

Principle Investigators: Walter K. Dodds

RECORD TYPE 1: Moss surveys before and after (RIV041)

Data Format Specification:

Variable		Name
1. Watershed	Nominal	watershed
2. Period	Nominal	before or after 10 years of removal
3. Proportion	Physical quantity	proportion cover in quadrat

Data Set Code--RIV05

Title of data set: Leaf mass in streams in wooded riparian areas and areas where canopy had been cut at Konza Prairie

Abstract:

Our project was designed to test if woody removal in a riparian zone allowed the system to rebound to a grassland state. We hypothesized that removal would decrease organic matter input into streams.

Keywords that describe data set: canopy, Konza Prairie, Konza Prairie Biological Station, Mass

Date data commenced: 01/01/2010
Date data terminated: 12/31/2020

Principle Investigators: Walter K. Dodds

RECORD TYPE 1: Leaf survey woody removal channel and others - RIV051

Data Format Specification:

Variable		Name
1. Sample	Physical quantity	Sample
2. T_wetMass	Physical quantity	total wet mass (g)
3. WetMass	Physical quantity	Subsample wet mass (g)
4. DryMass	Physical quantity	dry mass (g)
5. BagMass	Physical quantity	bag mass (g)
6. Prop_dry	Physical quantity	proportion sub sample of total sample (unit less)
7. T_organic_dry	Physical quantity	total organic material dry mass (g/m2)

Data Set Code--RIV06

Title of data set: Remote sensing in and around riparian zones at Konza Prairie

Abstract:

The goal of this project was the measure changes in woody vegetation cover over time, in riparian and non-riparian locations. The study was retrospective, using high resolution aerial imagery to identify areas dominated by grasslands, shrubs, trees, and woody plant that could not be differentiated as shrubs or trees (referred to as "unk" or "unknown"). These data help us understand rates of woody plant cover over time and how these changes might affect other populations (e.g., avifauna) and processes (e.g. hydrology). These data show and increase in woody plant cover across all three watersheds up until 2010, but with less woody plants expansion in the non-riparian zone of watershed and N1B. Through 2020, woody plant expansion continued in watersheds N1B and N4D. In N2B, tree cover decreased sharply in 2011 and remained low through 2020. This was expected due to the tree removal treatment. However, shrub cover increased rapidly over this same time frame, resulting in little net change in total woody cover (tree plus shrub cover). These results suggest that even an extreme intervention of repeated tree removal is not enough to return the riparian zone to a grassland state.

Keywords that describe data set: Konza Prairie, Konza Prairie Biological Station, riparian

Date data commenced: 09/01/2020
Date data terminated: 09/01/2022

Principle Investigators: Zak Ratajczak

RECORD TYPE 1: Remote sensing data in and around riparian zones - RIV061

Data Format Specification:

Variable		Name
1. Watershed	Nominal	Describes what watershed the plot is in.
2. RecYear	Physical quantity	Year of record
3. Plot_num	Nominal	a numerical identifier of the permanent plot.
4. shrub_area	Physical quantity	The total shrub cover within a plot, with units of m2.
5. tree_area	Physical quantity	The total tree cover within a plot, with units of m2.
6. unk_area	Physical quantity	The total shrub cover within a plot, with units of m2
7. total_area	Physical quantity	The total area of all woody plant cover types, with units of m2
8. rip_open	Nominal	denotes whether the plot was located in a riparian or non-riparian location

Data Set Code--RIV07

Title of data set: Seeding rates woody removal of a tallgrass prairie stream and riparian zone after a decade of woody vegetation removal

Abstract:

In fall of 2010 in watershed N2B (39.088976°, -96.588599°), we established plant community plots to assess the potential ability of the riparian zone to shift to a grassland state based on cutting alone and cutting with replanting. The three treatments were 1) naturally open riparian grassland before the removal, 2) areas cleared of woody vegetation, and 3) areas cleared of woody vegetation and seeded with prairie plant species. The addition of the seeded treatment was designed to address if recovery of grassland vegetation is hindered by propagule limitation. The seeded and non-seeded removal plots were adjacent to each other and randomly assigned. In each community type, there were four plots, each of which was 10 m parallel along and 3 m perpendicular to the stream channel. Each plot had four plant composition transects along which we sampled four one m2 subplots along each transect. Vegetative cover of vascular plant species was determined using a modified Daubenmire scale (Gibson and Hulbert 1987).

Keywords that describe data set: aboveground biomass, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station, seed weight

Date data commenced: 01/01/2010
Date data terminated: 12/31/2020

Principle Investigators: Walter K. Dodds

RECORD TYPE 1: Seeding rates Woody removal - RIV071

Data Format Specification:

Variable		Name
1. Species	Nominal	Species
2. pounds_plot	Physical quantity	pounds per plot
3. grams_plot	Physical quantity	grams per plot
4. acres_plot	Physical quantity	acres per plot
5. pounds_acre	Physical quantity	pounds per acre
6. oz_acre	Physical quantity	oz per acre

Data Set Code--RMP01

Title of data set: Rainfall manipulation plot study at Konza Prairie

Abstract:

Rainfall Manipulation Plots facility (RaMPs) is a unique experimental infrastructure that allows us to manipulate precipitation events and temperature, and assess population community, and ecosystem responses in native grassland. This facility allows us to manipulate the amount and timing of individual precipitation events in replicated field plots at the Konza Prairie Long-Term Ecological Research (LTER) site.

We used data from a unique 15-year long rainfall manipulation experiment at the Konza Prairie Biological Station in northeastern Kansas, USA, to determine how altered precipitation patterns (fewer, larger events) impacted plant species composition and structure in an annually burned, ungrazed, native tallgrass prairie. We tested two hypotheses. First, based on the HRF, we predicted that directional change in grass and forb cover and richness and community composition would eventually occur after a lag period under the altered precipitation treatment. Second, we predicted that change in cover and composition under altered precipitation would be driven by the response of forbs more so than grasses because the dominant grasses are reported to be buffered against precipitation variability[1,44] and changes in the cover and richness of forbs contribute disproportionately to community responses to other drivers in this grassland.

Keywords that describe data set:

Date data commenced: 01/01/1997
Date data terminated: 12/30/2012

Principle Investigators: Melinda D. Smith, Scott L. Collins, John M. Blair

RECORD TYPE 1: Annual aboveground net primary productivity (ANPP)

Data Format Specification:

Variable	Name
1. RecYear	The calendar year during which the biomass was collected
2. Season	Season (S or F)
3. RampNo	Ramp number (1-15)
4. Species	Plant species name
5. A	Plot A
6. B	Plot B
7. C	Plot C
8. D	Plot D
9. Average	Average of plots
10. Date	Date/Time, Date was collected

Data Set Code--SDR01

Title of data set: Intra-clonal stem demography of Cornus drummondii in response to fire and browsing at Konza Prairie

Abstract:

Intra-clonal stem density, natality, mortality, flowering and relative growth rate within discrete Cornus drummondii shrubs in response to fire frequency (4- vs 20-yr burn intervals) and simulated browsing. Tagged stems within individual shrubs were tracked and measured at the beginning and end of each growing season in 2018 and 2019 to assess the interactions of fire and browsing on stem demography.

Keywords that describe data set:

clonal plant, woody encroachment, graduate student research, Konza Prairie Biological Station, Disturbance, Populations,

Date data commenced: 5/01/2018
Date data terminated: 9/15/2019

Principle Investigator: Emily Wedel, Jesse Nippert, and David C. Hartnett

RECORD TYPE1: Data for clusters.

Data Format Specification:

Variable	Description	Units
1. DataCode	Nominal	Dataset code
2. RecType	Physical quantity	Record type
3. RecYear	Physical quantity	Year of record
4. Watershed	Nominal	watershed
5. Shrub_id	Physical quantity	unique ID of each shrub
6. Treatment	Nominal	browsing treatment
7. Stem_id	Physical quantity	ID of each stem in the center and periphery of each shrub
8. Location		stem located in the center or on the periphery of each shrub.Clusters-number of inflorescences on each stem
9. Clusters	Physical quantity	number of inflorescences on the stem

RECORD TYPE 2: Data for stem counts.

Data Format Specification:

Variable	Description	Units
1. DataCode	Nominal	Dataset code
2. RecType	Nominal	dataset record type

3. RecYear	Physical quantity	Year of sample
4. Watershed	Nominal	watershed
5. Shrub_ID	Physical quantity	Unique ID of each shrub
6. Treatment	Nominal	Treatment
7. Early_live	Physical quantity	number of live stems that were tagged at the beginning of the season
8. Late_live	Physical quantity	number of tagged stems still alive at the end of the season.
9. Late_dead	Physical quantity	number of tagged stems that died throughout the growing season
10. Late_new	Physical quantity	number of new stems at the end of the season
11. Flowering_stems	Physical quantity	number of flowering stems within each transect
12. Transect_length	Physical quantity	the length each transect
13. Transect_width	Physical quantity	width of each transect
14. Transect_area	Physical quantity	area of each transect
15. Shrub_length	Physical quantity	length of longest axis of each shrub measured at the end of the growing season
16. Shrub_width	Physical quantity	perpendicular width of each shrub at the end of the growing season
17. Initial_stem_density	Physical quantity	stems m-2 within each transect at the beginning of the growing season
18. Final_stem_density	Physical quantity	stems m-2 within each transect at the end of the growing season
19. Shrub_area	Physical quantity	shrub area

RECORD TYPE 3: Data for stem heights and diameters.

Data Format Specification:

Variable		Description
1. DataCode	Nominal	Dataset code
2. RecType	Physical quantity	Dataset record type
3. RecYear	Physical quantity	Year of sample
4. RecMonth	Nominal	Month of sample
5. RecDay	Physical quantity	Day of sample
6. Watershed	Nominal	Watershed of sample location
7. Time	Physical quantity	timepoint of sample for each year where time 1 was collected in May, and time 2 was collected in August or September.
8. Shrub_ID	Physical quantity	Unique ID of each shrub
9. Treatment	Nominal	browsing treatment
10. Stem_id	Physical quantity	ID of each stem in the center and periphery of each shrub
11. Location	Nominal	stem located in the center or on the periphery of each shrub. Clusters - number of inflorescences on each stem
12. Height	Physical quantity	height of stem

13. Diameter   Physical quantity   basal diameter of stem

RECORD TYPE 4: Data for leaf area.

Data Format Specification:

Variable		Description
1. DataCode	Nominal	Dataset code
2. RecType	Physical quantity	Record type
3. RecYear	Physical quantity	Year of sample
4. Watershed	Nominal	Watershed of sample collection
5. Shrub_id	Physical quantity	Unique ID of each shrub
6. Treatment	Nominal	Browsing treatment
7. Leaf_Area	Physical quantity	Fresh leaf area cm2

Data Set Code--SEA01

Title of data set: Soil extracellular enzyme activity data from the Belowground Plot Experiment

Abstract:

Data describe the activity of soil extracellular enzymes collected approximately every month in 2015 from the Belowground Plot Experiment. The measured enzymes depolymerize soil organic matter to release labile carbon, nitrogen, and phosphorus. Soil carbon and nitrogen were measured in July 2015 only, since these soil variables are not expected to change monthly.

Keywords that describe data set: Organic Matter, extracellular enzyme activity, Belowground Plot Experiment, fertilization, Fire, graduate student research, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station, nitrogen, phosphorus

Date data commenced: 01/05/2015
Date data terminated: 05/18/2015

Principle Investigators: Matthew Nieland, Lydia Zeglin

RECORD TYPE 1: Soil extracellular enzyme activity data

Data Format Specification:

Variable Name		Definition
DataCode	Nominal	Dataset code
RecType	Physical quantity	Record type
Recyear	Physical quantity	Year of sample
RecMonth	Nominal	Month of sample collection
Plot	Nominal	Field plot IDs
Burn	Nominal	Burned (B) or unburned (UB)
Nutrient	Code list	Fertilization treatment
BG	Physical quantity	Betaglucosidase activity (nmol substrate / g dry soil / hr)
CBH	Physical quantity	Cellobiohydrolase activity (nmol substrate / g dry soil / hr)
NAG	Physical quantity	N-acetylglucosaminidase activity (nmol substrate / g dry soil / hr)
LAP	Physical quantity	Leucyl aminopeptidase activity (nmol substrate / g dry soil / hr)
PHOS	Physical quantity	Phosphatase activity (nmol substrate / g dry soil / hr)
PHX	Physical quantity	Phenol oxidase activity (nmol substrate / g dry soil / hr)
GWC	Physical quantity	Gravimetric water content (g water / g dry soil)
PercentC	Physical quantity	Percent carbon in soil
PercentN	Physical quantity	Percent nitrogen in soil

Data Set Code--SIC01

Title of data set: Isotopic composition of select archived soil cores from Konza Prairie

Abstract:

The concentration and isotopic composition of soil carbon and nitrogen were measured from select archived soil cores originally collected for the NSC01 dataset using an isotope ratio mass spectrometer coupled with an elemental analyzer. These soil cores were collected from the lowlands (25 cm depth) of four experimental watersheds in 1982, 1987, 2002, 2010, and 2015. The four experimental watersheds are 001d, n01b, 020b, and n20b.

Keywords that describe data set: Organic Matter, Inorganic Nutrients, soil isotopes, soil nutrients, Konza Prairie Biological Station

Date data commenced: 10/01/1982
Date data terminated: 09/01/2015

Principle Investigators: Kent Connell, Dr. Jesse Nippert, Dr. John M. Blair

RECORD TYPE 1: The concentration and isotopic composition of soil carbon and nitrogen.

Data Format Specification:

Variable	Name
1. Sample_ID	Unique identifier for each sample
2. RecYear	Year in which soil sample was collected
3. Watershed	Name of watershed where sample was collected
4. Transect	Sampling transect (corresponds with PVC02 dataset)
5. Burn	Watershed-level burn treatment
6. Graze	Watershed-level grazing treatment
7. d15N	δ15N value of soil sample
8. N_percent	Soil nitrogen concentration
9. d13C	δ13C value of soil sample
10. C_percent	soil carbon concentration

Data Set Code--SLP01

Title of data set: Leaf physiology in response to fire and climate within Cornus drummondii shrubs at Konza prairie

Abstract:

Woody encroachment threatens the loss of remaining grasslands. Clonal shrubs are of particular concern because of their ability to resprout after disturbance, spread vegetatively, and share resources among interconnected stems. These traits contribute to the encroachment of deep-rooted clonal shrubs in tallgrass prairie. In this study, we investigated how leaf physiological traits differ among interconnected stems within a dominant encroaching shrub in tallgrass prairie, Cornus drummondii. Accounting for intra-clonal differences among stems in response to disturbance may be useful to more accurately parameterize models that predict the effects of shrub encroachment on ecosystem processes. Gas exchange rates, water potential, carbon isotopes, and leaf traits were collected from the periphery to the center of discrete C. drummondii shrubs. Measurements took place in the summers of 2015 and 2018.

Keywords that describe data set:

clonal plant, gas exchange, woody encroachment, Fire, graduate student research, Konza Prairie Biological Station, Disturbance, Populations,

Date data commenced: 01/01/2015
Date data terminated: 12/31/2018

Principle Investigator: Emily Wedel, Kim O'Keefe, Rory O'Connor, and Jesse Nippert

RECORD TYPE1: Gas exchange data.

Data Format Specification:

Variable	Description		Units
1. RecYear	Physical quantity	Year of sample	
2. RecMonth	Physical quantity	Month of sample	
3. DOY	Physical quantity	Day of Year	
4. Watershed	Nominal	Watershed of sample location	
5. Shrub_ID	Nominal	Unique ID of each shrub	
6. Location_ID	Physical quantity	Unique ID of sampling location within each shrub. 1 = outermost ramet on the periphery. 5 = innermost ramet in the center.	
7. Photo	Physical quantity	Photosynthetic rates μmol CO_2 m-2 s-1	
8. Cond	Physical quantity	Stomatal conductance to vapor mol H_2O m-2 s-1	
9. Trmmol	Physical quantity	Transpiration rates mol H_2O m-2 s-1	

RECORD TYPE 2: Water potential data.

Data Format Specification:

Variable	Description	Units
1. RecYear	Physical quantity	Year of sample
2. RecMonth	Physical quantity	Month of record
3. DOY	Physical quantity	Day of Year, where January 1 = 1
4. Watershed	Nominal	watershed
5. Shrub_ID	Nominal	Unique ID of each shrub
6. Location_ID	Physical quantity	Unique ID of sampling location within each shrub. 1 = outermost ramet on the periphery. 5 = innermost ramet in the center.
7. PD_Mpa	Physical quantity	Predawn water potential MPa
8. MD_Mpa	Physical quantity	Midday water potential MPa
9. Area	Physical quantity	Shrub area m2

RECORD TYPE 3: 2018 dogwood isotope data.

Data Format Specification:

Variable	Description	
1. RecYear	Physical quantity	Year of sample
2. RecMonth	Physical quantity	Month of record
3. DOY	Physical quantity	Day of Year, where January 1 = 1
4. Watershed	Nominal	watershed
5. Shrub_ID	Nominal	Unique ID of each shrub
6. Location_ID	Physical quantity	Unique ID of sampling location within each shrub. 1 = outermost ramet on the periphery. 5 = innermost ramet in the center.
7. c_perc	Physical quantity	Percent carbon of leaf tissue %
8. n_perc	Physical quantity	Percent nitrogen of leaf tissue %
9. n_sam	Physical quantity	$\delta15N\text{‰}$
10. c_sam	Physical quantity	$\delta13C\text{‰}$

RECORD TYPE 4: 2018 leaf traits data.

Data Format Specification:

Variable	Description	
1. RecYear	Physical quantity	Year of sample
2. RecMonth	Physical quantity	Month of record
3. DOY	Physical quantity	Day of Year, where January 1 = 1
4. Watershed	Nominal	watershed
5. Shrub_ID	Nominal	Unique ID of each shrub
6. Leaf_ID	Physical quantity each shrub (1-4)	unique ID of each leaf taken at each location within

7. Location_ID	Physical quantity	Unique ID of sampling location within each shrub. 1 = outermost ramet on the periphery. 5 = innermost ramet in the center.
8. Dry_g	Physical quantity	Weight of dried leaf g
9. Leaf_Area	Physical quantity	Fresh leaf area cm2
10. Shrub_Area	Physical quantity	Shrub area m2

Data Set Code--SMB01

Title of data set: Variation in soil respiration and bacterial community due to species-specific plant-soil history at konza prairie

Abstract:

We conducted a "home vs. away" plant-soil feedback greenhouse experiment using two C3 grass species (Bromus inermis and Pascopyrum smithii) grown in soil collected from Konza Prairie. We used a closed-circuit CO_2 trapping method and isotopic analysis to differentiate between root-derived and SOM-derived CO_2 production. We investigated how soil chemistry and soil bacterial communities differed in soils with a history of B. inermis vs soils with a history of P. smithii.

Keywords that describe data set:

legacy effects, microbial communities, plant-soil feedbacks, Konza Prairie Biological Station, soil organic matter, restoration, Organic Matter, Inorganic Nutrients

Date data commenced: 01/01/2015
Date data terminated: 05/01/2017

Principle Investigator: Kent Connell, Lydia Zeglin, and John M. Blair

RECORD TYPE1: plant-soil feedback greenhouse experiment data.

Data Format Specification:

Variable	Description		Units
1. ID	Nominal	Unique identifier for each sample	
2. Round	Physical quantity	Identifies during which experimental round measurements were taken	
3. RecMonth	Physical quantity	Identifies during which month of the experimental phase measurements were taken	
4. PlantLegacy	Nominal	Identifies which plant species conditioned the soil during the conditioning phase (smooth = Bromus inermis, west = Pascopyrum smithii)	
5. CurrentPlant	Nominal	Identies which plant species was growing in the soil at the time of measurement (smooth = Bromus inermis; west = Pascopyrum smithii; none = no plant)	
6. AG	Physical quantity	Aboveground biomass of the plant growing in the pot	
7. BG	Physical quantity	Belowground biomass of the plant growing in the pot	
8. TotalCarbon	Physical quantity	Total concentration of soil carbon (milligramsPerGramSoil)	
9. TotalNitrogen	Physical quantity	Total concentration of soil nitrogen (milligramsPerGramSoil)	

10. NH4   Physical quantity Concentration of soil ammonium (milligramsPerGramSoil)

11. NO3   Physical quantity Concentration of soil nitrate (milligramsPerGramSoil)

12. MBC   Physical quantity Concentration of microbial biomass carbon (milligramsPerGramSoil)

13. TotalCO2 Physical quantity Total belowground CO_2 captured during the 24-hour assay (microgramsPerGramSoilPerDay)

14. SoilCO2 Physical quantity CO_2 attributable to the breakdown of SOM (standardized by soil C, microgramsPerGramSoilCarbonPerDay)

15. RootCO2 Physical quantity CO_2 attributable to root respiration or the breakdown of root-derived C (standardized by pot, milligramsPerPotPerDay)

16. Richness Physical quantity Number of unique bacterial OTUs in the pot

17. Evenness Physical quantity Evenness of the bacterial community in the pot

Data Set Code--SMP01

Title of data set: Spatial variation of soil microbial processes under Cornus drummondii shrubs of varying size at Konza Prairie, 2017

Abstract:

Soil was collected from multiple locations under individual Cornus drummondii shrub islands of varying size to measure within-shrub heterogeneity in soil microbial processes. Soil chemistry (Total C, Total N, extractable inorganic N, extractable P, and organic matter cotent), microbial biomass C and N, and potential extracellular enzymatic activity of β-glucosidase, phosphatase, NAG-ase, and LAP-ase were measured. Potential carbon mineralization and the isotopic composition of respired soil carbon was measured over a 77-day laboratory incubation.

Keywords that describe data set: Organic Matter, stable isotopes, soil isotopes, soil respiration, woody encroachment,

Date data commenced: 06/10/2017
Date data terminated: 08/26/2017

Principle Investigators: Kent Connell, Rory O'Connor, Jesse Nippert, John M. Blair

RECORD TYPE 1: Spatial variation of soil chemistry and potential enzyme activity under Cornus drummondii shrubs of varying size.

Data Format Specification:

Variable   Name
   1. RecYear   Year of observation
   2. ID   unique identifier for each soil sample
   3. Island   identifies which shrub island the soil sample came from
   4. location   indicates which sampling location within each island that the soil sample came from
   5. total_IN   concentration of extractable inorganic nitrogen (microgramNitrogenPerGramSoil)
   6. mbc   concentration of microbial biomass carbon (micogramCarbonPerGramSoil)
   7. shrub_size   areal cover of shrub island (metersSquared)
   8. neighbor_dist distance between the canopy edge and the nearest shrub's edge (meter)
   9. P   concentration of Mehlich-3 extractable phosphorus (microgramPhosphorusPerGramSoil)
   10. OM   concentration of organic matter
   11. total_N   total concentration of nitrogen (percent)
   12. total_C   total concentration of carbon (percent)

13. BG   potential activity of the β-glucosidase enzyme
(nanomolePerGramOrganicMatterPerHour)
14. PHOS potential activity of the phosphatase enzyme
(nanomolePerGramOrganicMatterPerHour)
15. NAG   potential activity of the N-acetyl-glucosaminidase enzyme
(nanomolePerGramOrganicMatterPerHour)
16. LAP   potential activity of the leucine-aminopeptidase enzyme
(nanomolePerGramOrganicMatterPerHour)
17. mbn   concentration of microbial biomass nitrogen
(microgramNitrogenPerGramSoil)

RECORD TYPE 2: patial variation of potential carbon mineralization under Cornus drummondii shrubs of varying size.

Data Format Specification:
Variable   Name
1. RecYear   Year of record
2. ID   unique identifier for each soil sample
3. island   identifies which shrub island the soil sample came from
4. shrub_size   areal cover of the shrub island
5. location   indicates which sampling location within each island that the soil sample came from
6. day   indicates which day within the 77-day incubation that the measurement was taken
7. rate   potential soil carbon mineralization rate
(microgramsCarbonPerGramSoilPerHour)
8. delta   isotopic signature of the carbon respired as carbon dioxide (permille)

Data Set Code--SMR01

Title of data set: Konza Prairie grassland soil microbial responses to long-term management of N availability

Abstract:

Anthropogenic actions have significantly increased biological nitrogen (N) availability on a global scale. In tallgrass prairies, this phenomenon is exacerbated by land management changes, such as fire suppression. Historically, tallgrass prairie fire removed N through volatilization, but fire suppression has contributed to increased soil N availability as well as woody encroachment. Because soil microbes respond to N availability and plant growth, these changes may alter microbial composition and important microbially-mediated functions. Grassland management affects the soil environment on multiple time scales including short (fertilization or fire event), seasonal (growing vs. non-growing season), and long-term (decadal plant turnover and nutrient accumulation), therefore my goal was to understand community variability at different time scales affecting the population and community dynamics of soil microbes. I predicted soil microbes would be sensitive to environmental changes at all time scales, seasonal variation would reflect increased plant rhizodeposit-supported populations during summer and decomposers during winter, and long-term fire suppression and chronic fertilization would drive soil microbial community turnover associated with accumulation of plant litter and N.

Soil microbial responses to short-term fire/fertilization events were minimal, while microbial population sizes fluctuate seasonally and synchronously, and microbial community composition varied more with management history than at shorter time scales. Bacterial populations increased 10x during growing-season plant rhizodeposition, while fungal populations were less dynamic, but decreased in fall, possibly reflecting a shift to subsistence on soil organic matter. In contrast, microbial community composition was seasonally stable, but distinct between long-term management treatments, which may indicate accumulation of niche-defining plant or soil properties over decades. Prokaryotic communities responded to altered N availability via both fertilization and loss due to fire, with the highest abundance of "copiotrophic" (r-selected) taxa in unburned, fertilized soils. Fungal communities responded to N fertilization with higher abundance of arbuscular mycorrhizal fungi, pathogens, and saprotrophs, possibly due to changes in nutrient stoichiometry and litter availability in fertilized plots. However, fungal response to fire was largely independent of N availability, and plant community differences were correlated with fungal, but not bacterial, community composition, highlighting the likely nutritional codependence of fungi and plants, and fungal competitive advantages for plant litter substrates. The timing of changes in soil microbial communities is critical for plant nutrition and nutrient cycling in prairies, and this novel dataset on the temporal resolution of microbial responses to environmental variability contributes to the broader understanding of ecosystem responses to global change.

Keywords that describe data set:

bacteria, soil, archaea, fertilization, Fire, fungi, Konza Prairie

Date data commenced: 1/01/2014
Date data terminated: 12/12/2015

Principle Investigators: Lydia Zeglin, Christine Carson

RECORD TYPE 1: Grassland soil microbial responses to long-term management of N availability
Data Format Specification:

1. Sample   Nominal   Unique sample number
2. Year   Physical quantity   Year of sample was collected
3. Month   Nominal   Month of sample collection (NOV = November 2014, all other months 2015)
4. Plot   Nominal   Field Plot IDs
5. Block   Nominal   Field Block IDs
6. Nadd   Nominal   N addition treatment: no = unfertilized control, yes = fertilized (10 g N as NH4NO3 per square meter per year in early May since 1986).
7. Burn   Nominal   Fire treatment: yes = annually burned (in March or April) or no = unburned since 1986.
8. NaddBurn   Nominal   Combination of fire (U = unburned or B = annually burned) and fertilization (C = unfertilized or N = fertilized) treatment. There are 4 combinations: UBC, UBN, BC, BN.
9. GWC   Physical quantity   Gravimetric Water Content: field water content in grams water per gram soil after drying overnight at 105 degrees C.
10. DNA   Physical quantity   DNA yield in micrograms DNA per gram dry soil; CTAB, P:C:IAA, PEG extraction method (DeAngelis et al. 2010, Environmental Microbiology 12, 3137-3149; Zeglin et al. 2016, Environmental Microbiology 18, 146-158).
11. 16SrRNAgeneCopy   Physical quantity   copies of the bacterial 16S rRNA gene per g dry soil, using protocols in Fierer et al. 2005, AEM 71: 4117-4120 and Zeglin et al. 2016, Environmental Microbiology 18, 146-158. "." is missing data due to insufficient template DNA.
12. fungalITScopy   Physical quantity   copies of the fungal ITS region per g dry soil, using protocols in Fierer et al. 2005, AEM 71: 4117-4120 and Zeglin et al. 2016, Environmental Microbiology 18, 146-158. "." is missing data due to insufficient template DNA.
13. 16S_bioproject_accession   Physical quantity   Biosample accession number in NCBI SRA Bioproject PRJNA398249.
14. ITS_bioproject_accession   Physical quantity   Biosample accession number in NCBI SRA Bioproject PRJNA509462. "." is missing data due to insufficient sequencing depth

Data Set Code--SPW01

Title of data set: Spatial and physical characteristics of bison wallows on Konza Prairie since 2011

Abstract:

The objective of this study was to characterize spatial and physical attributes of bison wallows at the Konza Prairie Biological Station in northeastern Kansas. We used aerial imagery from two different years (2011 and 2019) to assess the abundance and spatial distribution of wallows in relation to fire frequency, elevation, and slope. We also recorded physical characteristics for a randomly selected subset of wallows (n = 966) and analyzed these data in relation to the same landscape features. Results indicate that wallows are more abundant on areas characterized by combinations of more frequent burning, higher elevations, and little or no slope. Wallows were smaller in areas burned more often and shallower at higher elevations, particularly when located on grazing lawns. Terrestrial plants were found in approximately 72.1% of the wallows sampled, and their prevalence increased with increasing slope. We found some quantity of aquatic plants in approximately 7.1% of the sampled wallows. The probability of finding aquatic vegetation in wallows was higher on grazing lawns and in areas burned less frequently, particularly every 20 years.

Keywords that describe data set:
Disturbance, Population, swallows, Bison, Fire, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station

Date data commenced: 01/03/2011
Date data terminated: 12/31/2020

Principle Investigators: Eva Horne

RECORD TYPE 1: Wallows data for 2011 and 2019

Data Format Specification:

DataCode	Nominal	Dataset code
RecType	Physical quantity	Record type
RecYear	Physical quantity	Year of sample
OBJECTID	Physical quantity	number assigned to each unique polygon of area
Slope	Physical quantity	Slope (degrees) - category of slope to which the polygon belonged (1 = 0 to <6 degrees; 2 = 6 to 12 degrees; 3 = >12 degrees)
Elevation	Physical quantity	Elevation (meters above sea level) - category of elevation to which each polygon belonged (1 = 333 to <360 meters; 2 = 360 to <388 meters; 3 = 388 to <415 meters; 4 = 415 to 443 meters)
Watershed	Nominal	Watershed designation

FireFreq	Physical quantity	Frequency watershed was burned (1 = burned annually; 2 = burned every 2 years; 4 = burned every 4 years; 20 = burned every 20 years)
Surface	Physical quantity	Surface size (in hectares) of each polygon
Nwallows	Physical quantity	Number of wallows identified in each polygon
Density	Physical quantity	Density of wallows per hectare for each polygon
comments	Nominal	comments

RECORD TYPE 2: Wallows data for 2020

Data Format Specification:

DataCode	DataCode	Nominal	Dataset code

RecType Physical quantity Record type

RecYear Physical quantity Year of sample

DateTime Date/time day and time data was collected

UniqueID Physical quantity number assigned to each wallow by person collecting data

SampleWeek Physical quantity week of the summer of 2020 in which the wallow was sampled (1 = 8-12 Jun; 2 = 15-19 Jun; 3 = 22-26 Jun; 4 = 29 Jun - 3 Jul; 5 = 6-10 Jul; 6 = 13-17 Jul; 7 = 20-24 Jul; 8 = 27-31 Jul; 10 = 10-14 Jul)

Latitudey Physical quantity latitude coordinates of wallow

Longitudex Physical quantity logitude coordinates of wallow

Elevation_mean Physical quantity elevation of wallow in meters above sea level

Slope Physical quantity slope of wallow in degrees

Watershed Nominal the watershed management treatment in which wallow was found

FireFrequency Physical quantity how often the watershed was burned (1 = every year; 2 = every other year; 4 = every four years; 20 = every 20 years)

AquaticPlants Nominal how much of the wallow was covered with aquatic vegetation - for statistical analysis, "none" was counted as 0, all other categories were counted as 1 (having some quantity of plants)

TerrestrialPlants Nominal how much of the wallow was covered with terrestrial vegetation - for statistical analysis, "none" was counted as 0, all other categories were counted as 1 (having some quantity of plants)

GrazingLawn Nominal whether a wallow was located on a grazing lawn (this was "yes" or "no" for statistical analysis)

Length_mean Physical quantity average of two measurements of the wallow's long axis in meters

Width_mean Physical quantity average of two measurements of the wallow's short axis in meters

Depth_median Physical quantity median measurement in centimeters of depth taken every 61 cm across the long axis of the wallow

Area Physical quantity surface area of wallow in meters2

Volume Physical quantity volume of wallow in meters3

Data Set Code--SRP01

Title of data set: Sequential Prairie Restoration Experiment at Konza Prairie

Abstract:

Annual aboveground net primary productivity (ANPP) from the Sequential Prairie Restoration Experiment at the Konza Prairie Long-Term Ecological Research site in Manhattan, KS USA. The data include ANPP from the first three years of restoration in each of three restoration sequences initiated in different years. Data correspond to subplot and whole-plot analyses. The Sequential Prairie Restoration Experiment is a block design with 4 subplots (labeled A - D) within 4 main plots (numbered 1 – 4) sequentially replicated in three blocks (Sequences 1, 2 and 3), with the restoration in each block initiated in a different year (Sequence 1 initiated in 2010, Sequence 2 initiated in 2012, and Sequence 3 initiated in 2014). 'NO-COLL' indicates that variable was not measured, A period in the dataset indicates missing data.

Keywords that describe data set:

aboveground biomass, ANPP, primary productivity, restoration, primary productivity, Konza Prairie

Date data commenced: 01/01/2016
Date data terminated: ongoing

Principle Investigators: Sara Baer, George Manning, Katie Manning

RECORD TYPE 1: Annual aboveground net primary productivity (ANPP) from the Sequential Prairie Restoration Experiment – SRP011

Data Format Specification:

Variable   Name

1. RecYear   The calendar year during which the biomass was collected
2. Sequence   Restoration sequence number (1-3)
3. Age   The number of years since initiation of the restoration (Year 1=first growing season)
4. Plot   The plot from which the biomass was collected (1-4)
5. Subplot   The subplot (located in each plot) from which the biomass was collected (A-D); In subplots with deer exclosures, EX=samples collected with exclosures and NON=samples collected outside of exclosures.
6. Quad   The quadrat, within a subplot, from which the biomass was collected
7. NP   Non-planted or volunteer species (species not included in the original seed mix) biomass
8. P   Planted species (species included in the original seed mix) biomass

9. Total   The summation of non-planted and planted species biomass
10. Litter   Dead plant material from the current or previous year

RECORD TYPE 2: Plant species composition in the first two sequences of the Sequential Restoration Plots at Konza Prairie (2010-2020) - SRP012

Data Format Specification:

Variable   Name
1. RecYear   RecYear   Physical quantity   Year of record
2. Sequence   Nominal   Sequence (I, II)
3. Plot   Physical quantity   The plot from which the biomass was collected (1-4).
4. Subplot   Nominal   The subplot (within each plot) that species composition was collected (A.B.C.D).
5. Age   Physical quantity   The number of years since restoration (year 1=first growing season, 1-11).
6. TRT   Nominal   Indicates subplots that have deer exclosures, Ex = samples collected with exclosures, and N = samples collected outside of exclosures.
7. Ab_genus   Nominal   Abbreviation of genus
8. Ab_species   Nominal   Abbreviation of species
9. CoverClass   Code list   Cover class of species composition. There are 7 classes from 1 to 7.

RECORD TYPE 3: Plant species composition in the first four sequences of the Sequential Restoration Plots at Konza Prairie for the first five growing seasons in each sequence (2010-2020) - SRP013

Data Format Specification:

Variable   Name
1. RecYear   RecYear   Physical quantity   Year of record
2. Sequence   Nominal   Sequence (I-IV)
3. Plot   Physical quantity   The plot from which the biomass was collected (1-4).
4. Subplot   Nominal   The subplot (within each plot) that species composition was collected (A.B.C.D).
5. Age   Physical quantity   The number of years since restoration (year 1=first growing season, 1-5).
6. TRT   Nominal   Indicates subplots that have deer exclosures, Ex = samples collected with exclosures, and N = samples collected outside of exclosures.

7. Ab_genus   Nominal   Abbreviation of genus
8. Ab_species   Nominal   Abbreviation of species
9. CoverClass   Code list   Cover class of species composition. There are 7
    classes from 1 to 7.

Data Set Code--VIR01

Title of data set:　　Effects of invertebate and vertebrate herbivory on tallgrass prairie plant community composition and biomass, Konza Prairie LTER

Abstract:

The effects of herbivores and their interactions with nutrient availability on primary production and plant community composition in grassland systems is expected to vary with herbivore type. Although nutrient additions are known to affect plant species diversity and primary productivity, the role of herbivores in mediating the strength of these effects also remains unclear. Herbivores may alter plant responses to nutrient additions in several ways. First, herbivores can alter the plant community response to nutrient additions by either selectively feeding on particular groups of species (e.g. grasses versus forbs) or by generally opening up space, allowing for species turnover and immigration. Second, feeding by herbivores may reduce the production response to nutrient additions if the plants cannot compensate for tissue lost to herbivory. As the functional effects of vertebrate and invertebrate herbivores on plant community composition and production may vary, the interactive effects of vertebrate versus invertebrate herbivores with nutrient additions may also vary. Here we are experimentally assessing the independent and interactive effects of removing vertebrate and invertebrate herbivores on aboveground biomass and plant community composition in native tallgrass prairie. Further, we are examining whether the removal of vertebrate and invertebrate herbivores interacts with nutrient availability. By doing this, we address three related questions: 1) what is the relative strength of the effects of invertebrate versus vertebrate herbivory in a grassland system; 2) how does herbivory (invertebrate and/or vertebrate) affect the relative abundances of grasses and forbs, the two dominant plant functional types within the ecosystem; and 3) what are the consequences of these changes in composition for aboveground net primary productivity, an important ecosystem function? NutNet focal research questions:

(1) How general is our current understanding of productivity-diversity relationships?
(2) To what extent are plant production and diversity co-limited by multiple nutrients in herbacoues-dominated communities?
(3) Under what conditions do grazers or fertilization control plant biomass, diversity, and composition?

Keywords that describe data set:

populations, primary production, inorganic nutrients, nitrogen, phosphorus, potassium, herbivory

Date data commenced:　　05/01/2007
Date data terminated:　　ongoing

Principle Investigators:　　Kimberly Komatsu and Melinda Smith

RECORD TYPE 1: Plant Cover Data

Data Format Specification:

1. Variable	Name	Units
2. Datacode		
3. Rectype		
4. RecYear	The year of data were collected	
5. RecSeason	The season of data were collected	
6. Block	Block number	
7. Plot	Plot number	
8. Subplot	Subplot letter	
9. Specode	Species number from NUT species list	
10. Ab_genus	Abbreviation of genus	
11. AB_species	Taxa associated with cover value	
12. Cover	Percent cover of taxa (0-100)	
13. Comments	Comments on data	

RECORD TYPE 2: Aboveground biomass for each plot at a site.

Data Format Specification:

1. Variable	Name	Units
2. Datacode		
3. Rectype		
4. RecYear	The year of data were collected	
5. RecSeason	The season of data were collected	
6. Plot	Plot number	
7. Subplot	Subplot letter	
8. Lvgrass	mass of live grass	
9. Forbs	mass of forbs	
10. Pryrdead	mass of previous years dead	
11. Woody	mass of woody (as of 24 aug 1992)	
12. Comments	Comments on data collection	

Data Set Code--WAT01

Title of data set: Konza Prairie Long-Term Irrigation Transect Study

Abstract:

In 1991, an irrigation transect experiment was established near the Konza Prairie HQ to assess the effects of supplemental water on ecological processes in tallgrass prairie. The site is burned annually in the spring. The transect spans upland, hillside and lowland topographic positions with irrigation and sampling points (12) located at 10 m intervals. Adjacent control transects are marked on both sides of the irrigation transect. Irrigation is scheduled according to estimates of actual evapotranspiration and measures of plant water status. In 1992, an additional 4 irrigation sprinklers were added to the transect (2 at each end). In 1993, a second line of sprinklers and control plots was added (#16-31). At the time of peak aboveground biomass (late August to October), six 0.1 m2 quadrats are harvested at each of the 30 sites (no #9 due to rock outcrop) for the irrigated and control/non-irrigated lines. Biomass is separated into live grass, forb and woody. As of 2006, c.dead is no longer separated from live grass. Vegetative species composition was initially measured in 1991 at each site, and continues to be measured at midseason by using a modified Daubenmire canopy coverage technique in a 10 m2 circular plot. At approximately 10 day intervals, predawn and midday plant water potentials are measured in Andropogon gerardii at each site in both irrigated and control transects. Since 1992, reproductive effort of the dominant grasses Andropogon gerardii (ANGE), Sorghastrum nutans (SONU), Schizachyrium scoparius (ANSC) has been assessed in irrigated and control transects by measuring heights (n=9) and densities (n=4) of flowering stalks. In 1993, soil moisture measurements at 15 and 30 cm depths were begun with a Time Domain Reflectometry system. Data set also includes measured natural precipitation and supplemental water added to the site.

Keywords that describe data set:

Irrigation, water stress, aboveground biomass, ANPP, graminoids, forbs, current year dead, primary productivity, plant species composition, reproductive effort, soil water, soil water content, plant water potential.

Date data set commenced: 06/01/1991
Date data set terminated: ongoing

Principle Investigator: John Blair

RECORD TYPE 1--Natural Precipitation and supplemental water added (Including 1991 and 1992). In 1991 and 1992 only one transect was established. The irrigations in 1991 and 1992 can be used for both the upper and lower portionsof the transect because the entire transect was irrigated at the same time.)

Data Format Specification:

Variable	Name	Units

1. RecYear	Year of sample		
2. RecMonth	month of record		
3. RecDay	day of record		
4. Julian	julian day		
5. Rain	rain	mm
6. IrrigU	irrigation upper land	mm
7. IrrigL	irrigation lower land	mm
8. RIU	rain and irrigation upper land	mm
9. RIL	rain and irrigration lower land	mm
10. AccumR	accumation	mm

RECORD TYPE 2: Plant species composition for irrigation transect studies

Data Format Specification:

Variable	Name	Units
1. Datacode	dataset code	
2. Rectype	dataset record type	
3. RecYear	Year of record	
4. RecMonth	month of record	
5. RecDay	day of record	
6. Trt	Treatments (irrigation transect or ambient)	
7. Transect	transact number (i or c)	
8. Plot *	Plot number, 1-31, no plot #9	
9. Spcode	Species code**	
10. Genus	abbreviated genus	
11. Species	abbreviated specific epithet	
12. Cover	Cover 1-7	
*1991&1992	12 sampling locations, no plot 9	
13. Pid	Personnel id who collected the data	
14. Comments Comments		

      **For list of Species codes used, see konza species list at:
http://lter.konza.ksu.edu/sites/default/files/species_list_pvc02.pdf

***A value of 1 to 7 indicates the estimated cover class value for the species.

Cover class	Canopy cover
1	<1%
2	1-5%
3	5-25%
4	25-50%
5	50-75%
6	75-95%
7	95-100%

RECORD TYPE 3: Aboveground biomass for irrigation transect studies

Data Format Specification:

Variable	Name	Units
1. Datacode	dataset code	
2. Rectype	record type	
3. RecYear	Year of sample	
4. RecMonth	month of record	
5. RecDay	day of record	
6. Watershed	watershed (always HQ)	
7. Transect	transect I (irrigated) or C(control)	
8. Plot	plot number (1-8)(10-31) (1993-on)	
	(1-8)(10-13) (1991&1992)	
9. Replicate	replicate (a-f)	
10. Livegrass	mass of live grass	Gram
11. Forbs	mass of forbs	Gram
12. CurrentDead*	Mass of current year's dead	Gram
13. PreviousDead	Mass of previous year's dead	Gram
	(no p. dead, plots burned annually)	
14. Woody	Mass of Woody(As of 24 Aug 1992)	
	lead plant-Amorpha canescens	
	rose-Rosa arkansas	
	(smooth) sumac-Rhus glabra	
	New Jersey tea-Ceanothus ovatus	
	dogwood-Cornus drummondi	
	buckbrush-Symphoricarpos orbiculatus	
15. Comments	comments	

* Included with Live Grass since 2006.

RECORD TYPE 4--Water Potential Measurements of Big Bluestem (1991-1998)

Data Format Specification:

Variable	Name	Units
1. Datacode	dataset code	
2. Rectype	record type	
3. RecYear	Year of sample	
4. RecMonth	month of record	
5. RecDay	day of record	
6. Watershed	watershed (always HQ)	
7. Treatment	treatment (i or c)	
8. Transect	transect (1 or 2)	
9. Location	location (up or lw)	
10. Plot	plot (1 or 2)	

11. TimeAP	time indicator Always p
12. Rep1	Replication 1
13. Rep2	Replication 2
14. Rep3	Replication 3
15. Rep4	Replication 4
16. Rep5	Replication 5
17. Rep6	Replication 6
18. Rep7	Replication 7
19. Rep8	Replication 8
20. Comments	comments

Codes used:

Name	Value	Code Value
Treatment	i	irrigated
	c	control
Transect	1	first transect
	2	second transect
Location	up	upland
	lw	lowaland
Plot	1	first plot sampled
	2	second plot sampled
Time	a	AM
	p	PM

RECORD TYPE 5--Reproductive Effort of Three Grasses

Data Format Specification:

Variable	Name	Units
1. Datacode	dataset code	
2. Rectype	record type	
3. RecYear	Year of sample	
4. RecMonth	RecMonth	
5. RecDay	RecDay	
6. Watershed	Watershed Always HQ	
7. Transect	Transect i or c	
8. Plot	Plot (1-8)(10-13) skip #9 (1991&1992)	
	(1-8)(10-31) skip #9 (1993-on)	
9. Quadrant	quadrant (1-4)	
10. Species	Species code	
11. NumberofStalks	Number of Flowering Stalks	
12. Height1	Height measurement 1	meters
13. Height2	Height measurement 2	meters

Variable			Units
14. Height3	Height measurement 3		meters
15. Height4	Height measurement 4		meters
16. Height5	Height measurement 5		meters
17. Height6	Height measurement 6		meters
18. Height7	Height measurement 7		meters
19. Height8	Height measurement 8		meters
20. Height9	Height measurement 9		meters
21. Comments			

Codes used:

Name	Value	Code Value
Species	ANGE	Andropogon gerardii
Species	ANSC	Schizachyrium scoparius
Species	SONU	Sorgastrum nutans

RECORD TYPE 6 -- Soil Chemistry

Data Format Specification:

Variable		Format	Units
1. Datacode	dataset code		
2. Rectype	record type		
3. RecYear	Year of sample		
4. RecMonth	month of record		
5. RecDay	day of record		
6. Watershed	watershed		
7. Treatment	treatment		
8. Location	location		
9. Depth	depth		cm
10. CEC	Cation exchange capacity		meq/100g
11. pH		F3.1	
12. P	Available Phosphorus	F4.1	ppm
13. Na	Sodium	I3	ppm
14. K	Potassium	I4	ppm
15. Mg	Magnesium	I3	ppm
16. Ca	Calcium	I4	ppm
17. C	Total carbon	F4.1	% dry wt.
18. N	Total nitrogen	I4	% dry wt.

19. NH4	KCl-extractable ammonium		ug N/g
20. NO3	KCl-extractable nitrate		ug N/g
21. SO4	Sulfate		ug S/g
22. HO2	Gravimetric soil water content	F4.2	%
23. Sand	Texture of % Sand	F4.1	%
24. TSilt	Texture of % silt	F4.1	%
25. Clay	Texture of %clay	F4.1	%
26. Comments			

RECORD TYPE 7 -- Soil Moisture for irrigation transect studies

Data Format Specification:

Variable		Units
1. Datacode	dataset code	
2. Rectype	record type	
3. RecYear	Year of sample	
4. RecMonth	month of record	
5. RecDay	day of record	
6. RecTime	time sampling began	
7. Plot	Plot Number	
8. OldTrt	Old treatment	
9. Trt	Current treatment	
10. Position	Position	
11. Transect	transect (A, B, C, D)	
12. VWC	Volumetric Water Content	gramsPerCubicCentimeter
13. PeriodValue	Period value	
14. Comments	Comments	

Data Set Code--WAT02

Title of data set: Climate legacies determine grassland responses to future rainfall regimes

Abstract:

Climate variability and periodic droughts have complex effects on carbon (C) fluxes, with uncertain implications for ecosystem C balance under a changing climate. Responses to climate change can be modulated by persistent effects of climate history on plant communities, soil microbial activity, and nutrient cycling (i.e., legacies). To assess how legacies of past precipitation regimes influence tallgrass prairie C cycling under new precipitation regimes, we modified a long-term irrigation experiment that simulated a wetter climate for >25 years. We reversed irrigated and control (ambient precipitation) treatments in some plots and imposed an experimental drought in plots with a history of irrigation or ambient precipitation to assess how climate legacies affect aboveground net primary productivity (ANPP), soil respiration, and selected soil C pools. Legacy effects of elevated precipitation (irrigation) included higher C fluxes and altered labile soil C pools, and in some cases altered sensitivity to new climate treatments. Indeed, decades of irrigation reduced the sensitivity of both ANPP and soil respiration to drought compared with controls. Positive legacy effects of irrigation on ANPP persisted for at least 3 years following treatment reversal, were apparent in both wet and dry years, and were associated with altered plant functional composition. In contrast, legacy effects on soil respiration were comparatively short-lived and did not manifest under natural or experimentally-imposed "wet years," suggesting that legacy effects on CO_2 efflux are contingent on current conditions. Although total soil C remained similar across treatments, long-term irrigation increased labile soil C and the sensitivity of microbial biomass C to drought. Importantly, the magnitude of legacy effects for all response variables varied with topography, suggesting that landscape can modulate the strength and direction of climate legacies. Our results demonstrate the role of climate history as an important determinant of terrestrial C cycling responses to future climate changes.

Keywords that describe data set:

ANPP, graduate student research, Irrigation, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station, plant species, Soil water content

Date data set commenced: 07/01/2017
Date data set terminated: 12/31/2020

Principle Investigator: Caitlin Broderick, Kate Wilkins, Melinda D. Smith, and John M. Blair

RECORD TYPE 1-- ANPP data - WAT021

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	

2. RecYear	Physical quantity	Year of record
3. Plot_2017 lines were shifted	Nominal	Plot designation in 2017, after irrigation
4. REP	Nominal	One of six 0.1 m2 subsamples of each plot
5. Livegrass sample.	Physical quantity	Biomass in grams of live grass in 0.1 m2
6. Forbs	Physical quantity	Biomass in grams of forbs in 0.1 m2 sample.
7. Woody sample.	Physical quantity	Biomass in grams of woody plants in 0.1 m2
8. Current were shifted.	Nominal	Treatment in 2017, after irrigation lines
9. Replicate started in 1993.	Nominal	Irrigation line: (A) started in 1991, (B)
10. Replicate_ed into uplands and lowlands to yield spatial "blocks".	Nominal	Irrigation lines as in "Replicate", but divided
11. Transect_1993	Nominal	Previous treatment (1991-2016).
12. Plot_1993	Nominal	Plot designation 1991-2017, before

irrigation lines were shifted. Plots that are currently in the reduced (R) treatment did not have plot numbers during this time

13. Plot_1992	Nominal	Plot designations in 1992, while second

irrigation line was being added. These plot designations are not typically used.

RECORD TYPE 2-- Microbial biomass data - WAT022

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	
2. RecYear	Physical quantity	Year of record	
3. RecMonth	Physical quantity	Month of record	
4. RecDay	Physical quantity	Day of record	
5. doy	Physical quantity	Day of year	
6. Plot_2017 shifted	Nominal	Plot designation in 2017, after irrigation lines were	
7. gwc used to measure extractable C and microbial biomass C.	Physical quantity	gravimetric water content on soil sample	
8. ppm_micbio depth) measured on a TOC analyzer using chloroform fumigation extraction	Physical quantity	Soil microbial biomass C (ppm) (0-10 cm	
9. init_soilppm depth) from unfumigated soil samples measured on a TOC analyzer	Physical quantity	Soil extractable organic C (ppm) (0-10 cm	
10. Current were shifted.	Nominal	Treatment in 2017, after irrigation lines	
11. Replicate started in 1993.	Nominal	Irrigation line: (A) started in 1991, (B)	
12. Transect_1993	Nominal	Previous treatment (1991-2016).	

13. Plot_1993   Nominal   Plot designation 1991-2017, before irrigation lines were shifted. Plots that are currently in the reduced (R) treatment did not have plot numbers during this time
14. Plot_1992   Nominal   Plot designations in 1992, while second irrigation line was being added. These plot designations are not typically used.

RECORD TYPE 3-- Root biomass and chemistry data - WAT023

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	
2. RecYear	Physical quantity	Year of record	
3. RecMonth	Physical quantity	Month of record	
4. RecDay	Physical quantity	Day of record	
5. Plot_2017	Nominal	Plot designation in 2017, after irrigation lines were shifted	
6. Depth	Nominal	Depth of soil sampling: "u" is 0-10 cm, "l" is 10-20 cm. The lower sampling was only possible in the uplands	
7. Live	Physical quantity	Oven-dried mass of live roots in a 5-cm radius, 10-cm depth cylindrical soil sample.	
8. Dead	Physical quantity	Oven-dried mass of dead roots in a 5-cm radius, 10-cm depth cylindrical soil sample.	
9. N_live	Physical quantity	Nitrogen concentration by mass of live roots in a 5-cm radius, 10-cm depth cylindrical soil sample.	
10. C_live	Physical quantity	Carbon concentration by mass of live roots in a 5-cm radius, 10-cm depth cylindrical soil sample	
11. Current	Nominal	Treatment in 2017, after irrigation lines were shifted.	
12. Replicate	Nominal	Irrigation line: (A) started in 1991, (B) started in 1993.	
13. Replicate_ed	Nominal	Irrigation lines as in "Replicate", but divided into uplands and lowlands to yield spatial "blocks".	
14. Transect_1993	Nominal	Previous treatment (1991-2016).	
15. Plot_1993	Nominal	Plot designation 1991-2017, before irrigation lines were shifted. Plots that are currently in the reduced (R) treatment did not have plot numbers during this time	
16. Plot_1992	Nominal	Plot designations in 1992, while second irrigation line was being added. These plot designations are not typically used.	
17. notes	Nominal	Any notes about samples.	

RECORD TYPE 4-- Soil CO2 flux data - WAT024

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	
2. RecDate	Date/time	Date that data was collected	
3. Flux	Physical quantity	Soil CO_2 flux measured by a LI-6800, in $\mu mol/m2/s$	
4. Current	Nominal	Treatment in 2017, after irrigation lines were shifted.	
5. Replicate	Nominal	Irrigation line: (A) started in 1991, (B) started in 1993.	
6. Replicate_ed	Nominal	Irrigation lines as in "Replicate", but divided into uplands and lowlands to yield spatial "blocks".	
7. Transect_1993	Nominal	Previous treatment (1991-2016).	
8. Plot_1993	Nominal	Plot designation 1991-2017, before irrigation lines were shifted. Plots that are currently in the reduced (R) treatment did not have plot numbers during this time	
9. Plot_1992	Nominal	Plot designations in 1992, while second irrigation line was being added. These plot designations are not typically used.	

RECORD TYPE 5-- Total soil carbon data - WAT025

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	
2. RecYear	Physical quantity	Year of record	
3. Plot_2017	Nominal	Plot designation in 2017, after irrigation lines were shifted	
4. PercentN	Physical quantity	Percent N by mass of soil 0-10 cm.	
5. PercentC	Physical quantity	Percent C by mass of soil 0-10 cm.	
6. Current	Nominal	Treatment in 2017, after irrigation lines were shifted.	
7. Replicate	Nominal	Irrigation line: (A) started in 1991, (B) started in 1993.	
8. Replicate_ed	Nominal	Irrigation lines as in "Replicate", but divided into uplands and lowlands to yield spatial "blocks".	
9. Transect_1993	Nominal	Previous treatment (1991-2016).	
10. Plot_1993	Nominal	Plot designation 1991-2017, before irrigation lines were shifted. Plots that are currently in the reduced (R) treatment did not have plot numbers during this time	
11. Plot_1992	Nominal	Plot designations in 1992, while second irrigation line was being added. These plot designations are not typically used.	

Record type Data Set Code--WAT03

Title of data set: Climate legacy effects shape tallgrass prairie nitrogen cycling

Abstract:

Climate change is expected to shift precipitation regimes in the North American Central Plains with likely impacts on ecosystem functioning. In tallgrass prairies, water and nitrogen (N) can co-limit ecosystem processes, so changes in precipitation may have complex effects on carbon (C) and N cycling. Rates of N supply such as N mineralization and nitrification respond differently to short- and long-term patterns in water availability, and previous climate patterns may exert legacy effects on current N cycling that could alter ecosystem sensitivity to current precipitation regimes. We used a long-term precipitation manipulation at Konza Prairie (Kansas, USA) to assess how previous and current precipitation influence tallgrass prairie N cycling. Supplemental irrigation was applied across upland and lowland prairie for ~25 years to reduce water deficits; in 2017, we reversed some of these treatments and added a reduced rainfall treatment across both historic rainfall regimes, allowing us to assess how previous climate and current rainfall patterns interact to shape N cycling. In lowland prairie, previous irrigation doubled N mineralization and nitrification rates the year following cessation of irrigation. Reduced microbial C/N ratio and lower relative investment in N-acquiring enzymes in previously irrigated lowlands suggested that a wetter climate created a legacy of increased N availability for microbes. Internal plant N resorption increased under short-term irrigation but recovered to ambient levels following previous irrigation. Together, these results suggest that a history of wetter conditions prairie can create a legacy of accelerated N cycling and with consequences for both plant and microbial functioning.

Keywords that describe data set:

Climate legacies, Tallgrass prairie, graduate student research, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station

Date data set commenced: 01/01/2018
Date data set terminated: 12/31/2019

Principle Investigator: Caitlin Broderick, Kiona Freeman, Lydia Zeglin, John M. Blair

RECORD TYPE 1--Plant N concentrations - WAT031

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	
2. Plot_2017	Nominal	Plot designation in 2017, after irrigation	
lines were shifted			
3. RecYear	Physical quantity	Year of record	
4. Month_g	Nominal	Month of green leaf sample collection	
5. Month_s	Physical quantity	Month of senesced leaf sample collection	

6. Current	Nominal	Treatment in 2017, after irrigation lines were shifted.	
7. Transect_1993	Nominal	Previous treatment (1991-2016)	
8. Position	Nominal	Landscape position in the upland or lowland	
9. Replicate	Nominal	Irrigation line: (A) started in 1991, (B) started in 1993	
10. Replicate_ed	Nominal	Irrigation lines as in 'Replicate', but divided into uplands and lowlands to yield spatial 'blocks'	
11. Plot_1992	Nominal	Plot designations in 1992, while second irrigation line was being added. These plot designations are not typically used	
12. Plot_1993	Nominal	Plot designation 1991-2017, before irrigation lines were shifted. Plots that are currently in the reduced (R) treatment did not have plot numbers during this time	
13. PercentC_g	Physical quantity	Percent C of green A. gerardii leaf as determined on a C/N analyzer	
14. PercentN_g	Physical quantity	Percent N of green A. gerardii leaf as determined on a C/N analyzer	
15. PercentC_s	Physical quantity	Percent C of senesced A. gerardii leaf as determined on a C/N analyzer	
16. PercentN_s	Physical quantity	Percent N of senesced A. gerardii leaf as determined on a C/N analyzer. This is also N resorption proficiency	
17. res_eff	Physical quantity	N Resorption efficiency (PercentN.g - PercentN.s) / PercentN.g * 100	

RECORD TYPE 2-- Extracellular enzymes - WAT032

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity		
2. Plot_2017	Nominal	Plot designation in 2017, after irrigation lines were shifted	
3. Current	Nominal	Treatment in 2017, after irrigation lines were shifted.	
4. Position	Nominal	Landscape position in the upland or lowland	
5. Replicate	Nominal	Irrigation line: (A) started in 1991, (B) started in 1993	
6. Replicate_ed	Nominal	Irrigation lines as in 'Replicate', but divided into uplands and lowlands to yield spatial 'blocks'	
7. Transect_1993	Nominal	Previous treatment (1991-2016)	
8. Plot_1993	Nominal	Plot designation 1991-2017, before irrigation lines were shifted. Plots that are currently in the reduced (R) treatment did not have plot numbers during this time	
9. Plot_1992	Nominal	Plot designations in 1992, while second irrigation line was being added. These plot designations are not typically used	
10. Date_collected	Date/time	Date of soil collection	
11. Date_enzymes	Nominal	Date enzyme assays were conducted	

Variable		Name	Units
12. Batch	Physical quantity	Batch samples were run in	
13. Wet	Physical quantity	Wet wt of soil sample used	
14. GWC	Physical quantity	Gravimetric water content: field water content in grams water gram soil after drying overnight at 105 degrees C.	
15. Dry_wet	Physical quantity	Dry/wet conversion	
16. Phos	Physical quantity	Activity of phosphatase (nmol/gDrySoil/h)	
17. BG	Physical quantity	Activity of B-glucosidase (nmol/gDrySoil/h)	
18. NAG	Physical quantity	Activity of N-acetylglucosaminidase (nmol/gDrySoil/h)	
19. CBH	Physical quantity	Activity of cellobiohydrolasen(nmol/gDrySoil/h)	
20. LAP	Physical quantity	Activity of leucyl aminopeptidase (nmol/gDrySoil/h)	
21. cndemand	Physical quantity	log(BG) / (log(NAG) + log(LAP))	

RECORD TYPE 3-- Inorganic N - WAT033

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	
2. Plot_2017	Nominal	Plot designation in 2017, after irrigation lines were shifted	
3. initial_date	Date/time	date initial soil cores were taken and incubated cores were buried	
4. DOY	Physical quantity	Day of year	
5. Current	Nominal	Treatment in 2017, after irrigation lines were shifted.	
6. Position	Nominal	Landscape position in the upland or lowland	
7. Replicate	Nominal	Irrigation line: (A) started in 1991, (B) started in 1993	
8. Replicate_ed	Nominal	Irrigation lines as in 'Replicate', but divided into uplands and lowlands to yield spatial 'blocks'	
9. Transect_1993	Nominal	Previous treatment (1991-2016)	
10. Plot_1992	Nominal	Plot designations in 1992, while second irrigation line was being added. These plot designations are not typically used	
11. nh4ppm_soil	Physical quantity	NH4-N concentration in soil	
12. no3ppm_soil	Physical quantity	NO3-N concentration in soil	

RECORD TYPE 4-- Microbial biomass N - WAT034

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	
2. RecYear	Physical quantity	Year of sample	
3. RecMonth	Physical quantity	Month of sample	

4.	RecDay	Physical quantity	Day of sample
5.	Plot_2017	Nominal	Plot designation in 2017, after irrigation lines were shifted
6.	DOY	Physical quantity	Day of year
7.	Position	Nominal	Landscape position in the upland or lowland
8.	Replicate	Nominal	Irrigation line: (A) started in 1991, (B) started in 1993
9.	Plot_1992	Nominal	Plot designations in 1992, while second irrigation line was being added. These plot designations are not typically used
10.	Replicate_ed	Nominal	Irrigation lines as in 'Replicate', but divided into uplands and lowlands to yield spatial 'blocks'
11.	mbc_ppm	Physical quantity	Soil microbial biomass C (ppm) (0-10 cm depth) measured on a TOC analyzer using chloroform fumigation extraction
12.	mbn_ppm	Physical quantity	Soil microbial biomass N (ppm) (0-10 cm depth) measured using chloroform fumigation extraction, followed by persulfate digestion, and finally analysis for NO3-N on an Autoanalyzer
13.	cn_ratio	Physical quantity	mbc_ppm / mbn_ppm

RECORD TYPE 5-- N mineralization and nitrificat - WAT035

Data Format Specification:

Variable		Name	Units
1.	initial_date	Date/time	date initial soil cores were taken and incubated cores were buried
2.	DOY	Physical quantity	Day of Year
3.	Current	Nominal	Treatment in 2017, after irrigation lines were shifted.
4.	Position	Nominal	Landscape position in the upland or lowland
5.	Transect_1993	Nominal	Previous treatment (1991-2016)
6.	Replicate_ed	Nominal	Irrigation lines as in 'Replicate', but divided into uplands and lowlands to yield spatial 'blocks'
7.	nh4ppm_soil_init	Physical quantity	NH4-N concentration in soil
8.	nh4ppm_soil_final	Physical quantity	NH4-N concentration in soil
9.	no3ppm_soil_init	Physical quantity	NO3-N concentration in soil
10.	no3ppm_soil_final	Physical quantity	NO3-N concentration in soil
11.	minrate_daily	Physical quantity	Net N mineralization rate (micrograms N / gram soil / day)
12.	nitrifrate_daily	Physical quantity	Net nitrification rate (micrograms N / gram soil / day)
13.	minratedaily_yeo	Physical quantity	Yeo-johnson transformed net N min rate (lambda = -0.15)
14.	nitrifratedaily_yeo	Physical quantity	Yeo-johnson transformed net nitrif rate (lambda = -0.25)

Data Set Code--WAT04

Title of data set: Root decomposition and nutrient dynamics are resistant to rainfall legacies in tallgrass prairie

Abstract:

Purpose: Litter decomposition is an important component of carbon (C) and nitrogen (N) cycling, and rates of mass loss and nutrient release are sensitive to current climate conditions. Growing evidence suggests that past climate conditions can exert legacies on soil C and N cycling, but little is known about how belowground decomposition dynamics relate to these climate legacies.

Results: Root litter mass loss was resistant to most climate treatments. Contrary to expectations, decomposition rates were slowest in plots with a history of long-term irrigation and fastest under drought in lowland prairie. Similarly, mass loss rates were overall faster in the drier uplands. Changes in N concentration as a function of mass loss were similar across treatments and patterns of litter N release largely tracked mass loss.

Conclusions: Changes in the decomposer community with long-term release from water stress may have led to slowed root decomposition, but these effects were subtle. Our results suggest that changes in decomposition rates are not a cause of observed climate legacy effects on C and N cycling in prairies.

Keywords that describe data set:

Organic Matter, Inorganic Nutrients, carbon cycling, decomposition, grasslands, nitrogen cycling, legacy effects, climate change, graduate student research, LTER-KNZ, Konza Prairie Biological Station,

Date data set commenced: 06/01/2019
Date data set terminated: 06/30/2021

Principle Investigator: Caitlin Broderick, John M. Blair

RECORD TYPE 1--Plant N concentrations - WAT041

Data Format Specification:

Variable		Name	Units
1. RecType	Physical quantity	Record type	
2. RecYear	Physical quantity	Year of sample collection	
3. RecMonth	Physical quantity	Month of sample collection	
4. RecDay	Physical quantity	Day of sample collection	
5. Plot	Physical quantity	Plot designation in 2017, after irrigation lines were shifted	
6. Current	Nominal	Treatment in 2017, after irrigation lines were shifted	
7. Historic	Nominal	Previous treatment (1991-2016)	
8. Position	Nominal	Landscape position in the upland or lowland	

9. Replicate   Nominal   Irrigation line: (A) started in 1991, (B) started in 1993
10. Replicate_ed   Nominal   Irrigation lines as in "Replicate", but divided into uplands and lowlands to yield spatial "blocks"
11. timept   Physical quantity   Timepoint of data collection (1-6)
12. daysburied   Physical quantity   Number of days bags were buried
13. yearburied   Physical quantity   Number of years bags were buried
14. ovendry_wt   Physical quantity   Mass of remaining litter in grams
15. ovendry_wt_adj   Physical quantity   Mass of remaining litter in grams, adjusted for soil contamination using the equations in the main text and in Norris et al 2001
16. prop_bag_litter   Physical quantity   Proportion of bag weight that is litter, not soil, calculated using the equations in the main text and in Norris et al. 2001
17. mass_remain   Physical quantity   Proportion of litter remaining (using adjusted oven dry weight)
18. carbon   Physical quantity   Carbon concentration of remaining litter (%)
19. nitrogen   Physical quantity   Nitrogen concentration of litter (%)
20. nitrogen_adj   Physical quantity   Nitrogen concentration of litter (%), adjusted for soil contamination using the equations in the main text and in Norris et al. 2001
21. cnratio   Physical quantity   Carbon concentration / nitrogen concentration (adjusted)
22. N_mass_remain   Physical quantity   Percent of N from original bags remaining, calculated using the N concentrations of initial litter and remaining litter
23. comments   Nominal   Notes about collected bags, especially if there was a visible layer of fungi on the litter.

Data Set Code--WER01

Title of data set: Elevated CO2 counteracts effects of water stress on woody rangeland-encroaching species at Konza Prairie

Abstract:

Woody plants are increasing prevalence and dominance in many rangelands around the world. The reason for their increase is various but two common drivers that have changed are an increase in CO2 concentrations and alteration to precipitation dynamics. We asked what the physiological growth dynamics of four juvenile woody plant species (Cornus drummondii, Rhus glabra, Gleditsia triacanthos and Juniperus osteosperma) when grown in elevated CO2 and chronically water stressed. We found that elevated CO2 counteracts much of the physiological effects of chronic water stress in the four different woody plant species measured. The alleviation of water stress from increased CO2 concentrations will result in juvenile woody plants continuing to expand and establish in North American rangelands. This information will aid land managers in making long-term management objectives for reducing woody plants in rangelands.

Keywords that describe data set:

carbon dioxide, elevated CO2, intrinsic water-use efficiency (iWUE), non-structural carbohydrates, woody encroachment, climate change, graduate student research, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station, water stress

Date data set commenced: 11/01/2016
Date data set terminated: 04/30/2017

Principle Investigator: Rory O'Connor, Troy Ocheltree, Dana Blumenthal, Jesse Nippert

RECORD TYPE 1-- Plant Gas Exchange data: this table give leaf level gas exchange data for a subset of the total individuals for each woody plant species from each treatment - WER011

Data Format Specification:

Variable		Name	Units
1. RecDate	Date/time (YYYY-MM-DD)	Date gas exchange samples were collected	
2. Project_Day	Physical quantity	Day since start of growing woody plant juveniles in the two different CO2 concentration treatments.	
3. Unit	Nominal	LI-6400 unit used for making the gas exchange measurements.	
4. CO2_trt	Physical quantity	CO2 concentration treatments (400 ppm & 800 ppm)	
5. H2O_trt	Nominal	Water stress treatment (< 10% VWC for Juniperus osteosperma & < 20% VWC for Cornus drummondii, Gleditsia triacanthos, Rhus glabra), or control (well-watered)	

6. Species   Nominal   Woody plant species: Cornus drummondii, Gleditsia triacanthos, Juniperus osteosperma, and Rhus glabra

7. Block   Physical quantity   Block of woody plant species in each greenhouse bay

8. Replicate   Physical quantity   The sample of each woody plant species randomly chosen for gas exchange measurements

9. A_net   Physical quantity   Net photosynthetic rate (μmol m^-2 s^-1)

10. g_s   Physical quantity   Stomatal conductance (mols m^-2 s^-1)

11. Ci   Physical quantity   Intercellular CO2 concentration (μmol mol^-1)

RECORD TYPE 2-- Biomass data: this table gives end of experiment biomass for each woody plant species from each treatment - WER012

Data Format Specification:

Variable   Name   Units

1. RecDate   Date/time   Date gas exchange samples were collected (YYYY-MM-DD)

2. Species   Nominal   Woody plant species: Cornus drummondii, Gleditsia triacanthos, Juniperus osteosperma, and Rhus glabra

3. CO2_trt   Physical quantity   CO2 concentration treatments (400 ppm & 800 ppm)

4. H2O_trt   Nominal   Water stress treatment (< 10% VWC for Juniperus osteosperma & < 20% VWC for Cornus drummondii, Gleditsia triacanthos, Rhus glabra), or control (well-watered)

5. Block   Physical quantity   Block of woody plant species in each greenhouse bay

6. Replicate   Physical quantity   The sample of each woody plant species randomly chosen for gas exchange measurements

7. WaterLoss   Physical quantity   Calculated water loss values from last watering event prior to end of experiment (current pot weight - target pot weight), values are given in grams.

8. Leaf_biomass   Physical quantity   Dried biomass of woody plant species in grams.

9. Stem_biomass   Physical quantity   Dried biomass of woody plant species in grams.

10. Root_biomass   Physical quantity   Dried biomass of woody plant species in grams.

RECORD TYPE 3-- Total starch data: this table gives root, stem, and leaf starch values for each woody plant species from each treatment - WER013

Data Format Specification:

Variable   Name   Units

1. RecDate   Date/time   Date gas exchange samples were collected (YYYY-MM-DD)
2. Species   Nominal   Woody plant species: Cornus drummondii, Gleditsia triacanthos, Juniperus osteosperma, and Rhus glabra
3. CO2_trt   Physical quantity CO_2 concentration treatments (400 ppm & 800 ppm)
4. H2O_trt   Nominal   Water stress treatment ($< 10\%$ VWC for Juniperus osteosperma & $< 20\%$ VWC for Cornus drummondii, Gleditsia triacanthos, Rhus glabra), or control (well-watered)
5. Block   Physical quantity   Block of woody plant species in each greenhouse bay
6. Replicate   Physical quantity   The sample of each woody plant species randomly chosen for gas exchange measurements
7. WaterLoss   Physical quantity   Calculated water loss values from last watering event prior to end of experiment (current pot weight - target pot weight), values are given in grams.
8. Leaf_starch   Physical quantity   These values are on a per mass dry weight basis (mg g^-1).
9. Stem_starch   Physical quantity   These values are on a per mass dry weight basis (mg g^-1).
10. Root_starch   Physical quantity   These values are on a per mass dry weight basis (mg g^-1).

Data Set Code--WPE01

Title of data set: Assessing the value added of NEON for using machine learning to quantify vegetation mosaics and woody plant encroachment at Konza Prairie

Abstract:

Woody encroachment, or invasion of woody plants, is rapidly shifting tallgrass prairie into shrub and evergreen dominated ecosystems, mainly due to exclusion of fire. Tracking the pace and extent of woody encroachment is difficult because shrubs and small trees are much smaller than the coarse resolution (>10m2) of common remote sensed images. However, the US government has been investing in finer resolution (<2m2) remote sensing through USDA NAIP and the National Ecological Observatory Network (NEON), both of which cost multi-million dollars each year and contain different remote sensed products. We compared two methods of classification (random forests and support vector machines) with these two freely available remotely sensed aerial images to determine if and how much NEON adds to classification accuracy and determine which method of machine learning was more accurate. All models have very high overall classification accuracy (>91%), with the NEON image a few percent more accurate than NAIP. The NEON image significantly relies on canopy height (LiDAR) to make classifications, but the importance of bands is more evenly distributed during NAIP classification. Lastly, accuracy for Eastern Red Cedar specifically is high with NEON (78-84%), compared to the relatively low classification accuracy using NAIP imagery (55-61%).

Keywords that describe data set:

Land Cover Classification, Machine Learning, Remote Sensing, graduate student research, Kansas, LTER-KNZ, Konza Prairie, Konza Prairie Biological Station

Date data set commenced: 06/01/2022
Date data set terminated: 12/31/2022

Principle Investigator: Brynn Noble, Zak Ratajczak

RECORD TYPE 1-- For the training and evaluation data, values indicate the intensity of each band - WPE011

Data Format Specification:

Variable		Name	Units
DataCode	Nominal	Dataset code	
RecType	Nominal	dataset record type	
Species_classification	Nominal	classification of species	
X2019_NAIP_hc_konza1	Physical quantity	Value of near-infrared pixel in rs_stack.1	
X2019_NAIP_hn_konza1	Physical quantity	Redness of each pixel in rs_stack.2	
X2019_NAIP_hn_konza2	Physical quantity	Greenness of each pixel in rs_stack.3	
X2019_NAIP_hn_konza3	Physical quantity	Blueness of each pixel in rs_stack.4	

evi_2020_neon_mosaic greenness and biomass in rs_stack.5	Physical quantity	Similar to NDVI, estimates vegetation
ndni_mosaic rs_stack.6	Physical quantity	Relative nitrogen concentration in canopy in
ndli_2020_neon_mosaic in canopy in rs_stack.7	Physical quantity	Uses shortwave IR to estimate water content
savi_mosaic vegetation cover is low - rs_stack.8	Physical quantity	Reduces soil brightness in areas where
arvi_2020_neon_mosaic smoke, rain, etc. in rs_stack.9	Physical quantity	Reduces atmospheric noise from dust,
ndvi_2020_neon_mosaic indicates live green vegetation density in rs_stack.10	Physical quantity	Calculated from NIR and red bands,
can_height_2020 rs_stack.11	Physical quantity	Height of canopy above bare earth in
layer1 pixels - rs_stack.12	Physical quantity	Avg. values of near-infrared of surrounding
layer2 rs_stack.13	Physical quantity	Avg. redness of surrounding pixels in
layer3 rs_stack.14	Physical quantity	Avg. greenness of surrounding pixels in
layer4 rs_stack.15	Physical quantity	Avg. blueness of surrounding pixels in
layer5 rs_stack.16	Physical quantity	Avg. NDVI values of surrounding pixels in
point	Nominal	Training points vs evaluation points
Comments	Nominal	Comments

Data Set Code--WRV01

Title of data set: Riparian woody removal vegetation survey on watershed N2B at Konza Prairie

Abstract:

Woody riparian vegetation was cut in watershed N2B in winter 2010 for 30 m on each side of the stream channel. These vegetation surveys are from before and after removal. The treatments are naturally open (grassland), woody riparian removed, and re-planted after woody riparian removed.

Keywords that describe data set:

Prairie, riparian, woody, woody vegetation

Date data set commenced: 05/01/2010
Date data set terminated: 12/31/2012

Principle Investigator: Walter K. Dodds, Dan Carter, Jeff H. Taylor

RECORD TYPE 1--Woody riparian removal vegetation data

Data Format Specification:

Variable	Name	Units
1. RecYear	Physical quantity	Year of sample
2. Recmonth	Physical quantity	The month of data was sampled
3. openwoody	Code list	A categorical variable where open (no removal occurred)
4. Trt	Nominal	Treatment refers to whether plots were open (so open to start with, no removal, no seeding), or treated with woody removal alone (not seeded), or treated with woody removal and seeded (seeded)
5. Plot	Physical quantity	Plot number from 1-12. plots are 1's (4 of these) and woody removal plots are 2's (8 of these)
6. Transect	Physical quantity	Transect number from 1-4.
7. Dist	Physical quantity	Distance along the transect towards the stream
8. Species	Nominal	Plant species name
9. Cover	Physical quantity	Canopy cover class: Percentage Range, midpoint

Valueless than 0.5 for 0-1% canopy cover, and 62.5 for 50-75% canopy cover, 85 for 75-95% canopy cover, and 97.5 for 95-100% canopy cover. (see more from here- 1: 0-1, 0.5; 2: 1-5, 3 ; 3: 5-25, 15; 4: 25-50, 37.5; 5: 50-75, 62.5; 6: 75-95, 85; 7: 95-100, 97.5).

Note on revision of Catalog:

1. KPL01 – Removed from DC on December 7, 2011
2. Added: AET01, ASD04, ASD05, ASD06, CBH01, CFP01, KFH01
3. Changed XNS01→ BNS01
4. Updated all the contents based on Catalog2012_JB5.doc
5. Added PBG02-PBG12 on May 2017
6. Added CFC011 on May 2017
7. BMS02 – Changed to BMS012, on July 2017
8. CAA01, CAA02, CAA03 removed from DC on July 2017
9. CSM07 removed from DC, on July 2017
10. CSM10 removed from DC, on July 2017
11. OGD01 removed from DC, on July 2017
12. CGR04 removed from DC, on July 2017
13. Removed Apt02 from DC, on July 2017
14. Removed ASD01from DC, on July 2017
15. Removed CSA01 from DC, on July 2017
16. Add PPL01 on Feb 2017
17. Add AGW03 on Feb 2017
18. Added CSM08 on Jun 2017
19. Added CBS01 – CBS05 Mar 2017
20. Added GIS00 – GIS65 18 projects in 2017
21. Added VIR01 on Mar 2017
22. Added NUT01 on Jul 2017
23. Added GFE01 on Jul 2017
24. Moved all the dataset from Belowground to Other, and removed Belowground category from DC on Jul 2017
25. Added EJR01 on Jul 2017
26. Added RMP01 on Aug 2017
27. Added CBM01 on Aug 2017
28. Added HRE01 on Aug 2017
29. Added SPR01 on Aug 2017
30. Added AMC01 on Aug 2017
31. Added FWE01 on Aug 2017
32. Added KKE01 on Sep 2017
33. Added CEE01 on Nov 2017
34. Added ESM01 on Mar 2018
35. Added NGE01 on Mar 2018
36. Added RCS01 on Mar 2018
37. Updated PBG08 on Jan 2019
38. Added PPS01 on Jun 2019
39. Added KKE02 on Jun 2019
40. Added KKE03 on Jun 2019
41. Updated CSB01 to CSB051 on Jun 2019
42. Updated PBG11 on Jun 2019
43. Removed AWT01 on Jan 2020
44. Removed PBG09 on Jan 2020

45. Removed PBG12 on Jan 2020
46. Added back ASD01 on Jan 2020
47. Added back APT02 on Jan 2020
48. Added PEC01 on Jan 2020
49. Added SMR01 on Jan 2020
50. Added GIS68 on Feb 2020
51. Added GIS70 on Feb 2020
52. Added WRV01 on Jan 2020
53. Updated GFE01 on Jan 2020
54. Updated PBG06 on Jan 2020
55. Updated All GIS projects on Feb 2020
56. Added SIC01 on Jun 2020
57. Added OMS01 on Jul 2020
58. Added SMP01 on Jul 2020
59. Added SMB01 on Dec 2020
60. Updated PBG05 on Jan 2021
61. Added AOP01 on Mar 2021
62. Added SLP01 on Apr 2021
63. Added KBN01 on May 2021
64. Added SDR01 on Jun 2021
65. Added CME01 on Jun 2021
66. Added WER01 on Nov 2021
67. Added WAT02 on Mar 2022
68. Added RFP01 on May 2022
69. Added WAT03 on Jul 2022
70. Added RIV01 on Aug 2022
71. Added RIV02 on Aug 2022
72. Added RIV03 on Aug 2022
73. Added RIV04 on Aug 2022
74. Added RIV05 on Aug 2022
75. Added RIV06 on Aug 2022
76. Added RIV07 on Aug 2022
77. Updated SRP01 on Oct 2022
78. Added WPE01 on Nov 2022
79. Added DEM01 on Dec 2022
80. Added WAT04 on Feb 2023
81. Added SPW01 on Mar 2023
82. Added CBC02 on Apr 2023
83. Added CBS06 on Apr 2023
84. Added PGT01 on Apr 2023
85. Added CSM09 on Apr 2023
86. Updated OMS01 on May 2023
87. Added PCN01 on May 2023
88. Added SEA01 on May 2023