

Bird Monitoring Protocol for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas

Standard Operating Procedure (SOP) # 7

Data Management

Version 1.00 (July 18, 2003)

Revision History Log:

Prev. Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #

This SOP provides instructions for the development, maintenance and distribution of monitoring data associated with the Bird Monitoring Protocol for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas. Microsoft Access 97 is the primary software environment for managing bird and habitat data. ESRI ArcInfo 8 serves as a tool for validation of spatial data residing in Access. Data products will be posted at the NPS I&M website: <http://science.nature.nps.gov/im/monitor/protocoldb.cfm>. Metadata for grassland bird monitoring data will be available at NPS I&M application server: <http://science.nature.nps.gov/im/apps.htm>. QA/QC guidelines in this document are based on recommendations of DeBacker et al. (2002) and S. Fancy at <http://science.nature.nps.gov/im/monitor> and citations therein.

I. Grassland Bird Database - Metadata

Preliminary notes for metadata were developed using the Electronic Metadata Guide (developed by George Lienkaemper, USGS FRESC, Corvallis, OR - see [Appendix A](#)). Metadata were then entered into the National Park Service Inventory and Monitoring Dataset Catalog (Ver. 2002.1). The Dataset Catalog report tool can be used to generate output in the text-based FGDC-compliant metadata format ([Appendix B](#)). The output file should be validated and parsed into html format using the USGS metaparser command tool with the following syntax “mp -e efile - h hfile infile.” The current html file is included in [Appendix C](#).

II. Grassland Bird Database - Data Model

The general data model for grassland bird monitoring consists of two sets of tables to manage bird abundance and associated habitat data. Abundance and habitat data are linked in time and space by way of standardized event and location tables. For data management

purposes, it is probably easier to manage bird and habitat data separately. When the two are correctly linked, they can be integrated transparently for analysis. One issue that becomes readily apparent when managing the two data sets is that time-scale for bird observation events is in minutes and hours, whereas time-scale for associated habitat data is in days and weeks. While the location linkage is unaffected, this has consequences for the structure of the event-relationships (see Note below).

Bird Monitoring Data Model

Details of the bird monitoring data model are as follows (see Figure 1). The primary table for storing bird abundance data is the table `tbl_BirdObservation`. This table contains information about bird species and bird distance from observer. Distance values are used in Distance analysis (Buckland et al., 1993, 2001) to determine bird density estimates. Other variables in `tbl_BirdObservation` include flock size (if more than one individual), age, sex, whether the observation was a flyover and species code (AOUcode). Supporting tables include water and climatic information (`tbl_TweetyEventConditions`), observers (`tbl_EventObservers`), and the period of observation (`tbl_SamplingPeriod`). The table `tbl_Locations` provides detailed location information associated with each sampling point. Tables `tbl_SamplingPeriod` and `tbl_Locations` provide the necessary links between bird observation data and associated habitat data. Note: `tbl_SamplingPeriod` is used rather than `tbl_SamplingEvents` due to differences in time-scale between birds and habitat.

Habitat Monitoring Data Model

Details of the habitat monitoring data model are given in Figure 2. `tbl_HabitatSubPlot` serves as the star table about which all other habitat information is linked. Small look-up tables are linked to `tbl_HabitatSubPlot` by way of multiple junction tables. This facilitates many-to-many relationships in Microsoft Access. Small look-up tables provide the values for pick-lists on data-entry forms, thereby reducing possible error during data entry (see Data Validation, below).

III. Data Entry

A number of features have been designed into the database to minimize errors that occur when field data is transcribed to the database for storage and analysis. Forms are used as portals for data entry into the database. Standardized identifiers (e.g. sample event or plot) are selected from list of easily interpreted codes. Species and habitat data is entered into fields linked to appropriate tables. Look-up tables contain project specific data and prohibit entry of data into a field if a corresponding value is not included in the look-up table. Consequently, only valid names or measures may be entered and spelling mistakes are eliminated. Species or habitat measures are selected using a pick list or by typing the beginning of the name. While typing, the form searches for a similar entry, typically locating the desired species after typing only a few characters.

If a species name or habitat measure is not accepted during data entry, it may be the result of a name change or it may be a new species or habitat measure. To check the current nomenclature for a data variable, a nomenclature update form is attached to the Access data file via a button. If the species or habitat measure name has changed, the form will indicate the current accepted name. If the species or habitat measure is new to the nomenclature update form, a form is provided to update the nomenclature table with the new attribute data.

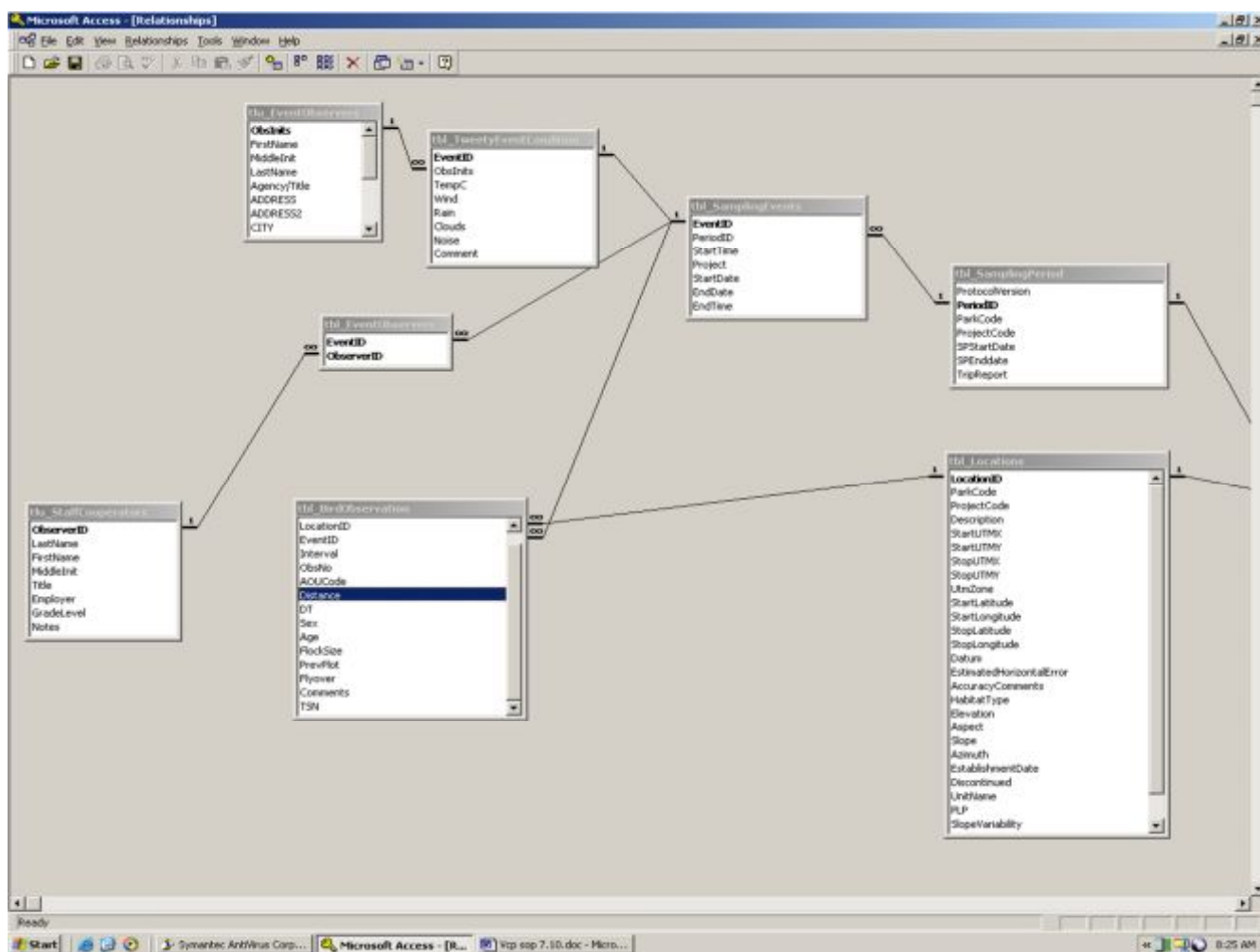


Figure 1. Bird monitoring data model. Note that the primary data table is `tbl_BirdObservation` which contains distance data (highlighted in black) to be used for Distance analysis (Buckland et al., 1993, 2001). `tbl_SamplingPeriod` and `tbl_Locations` provide the links to habitat data.

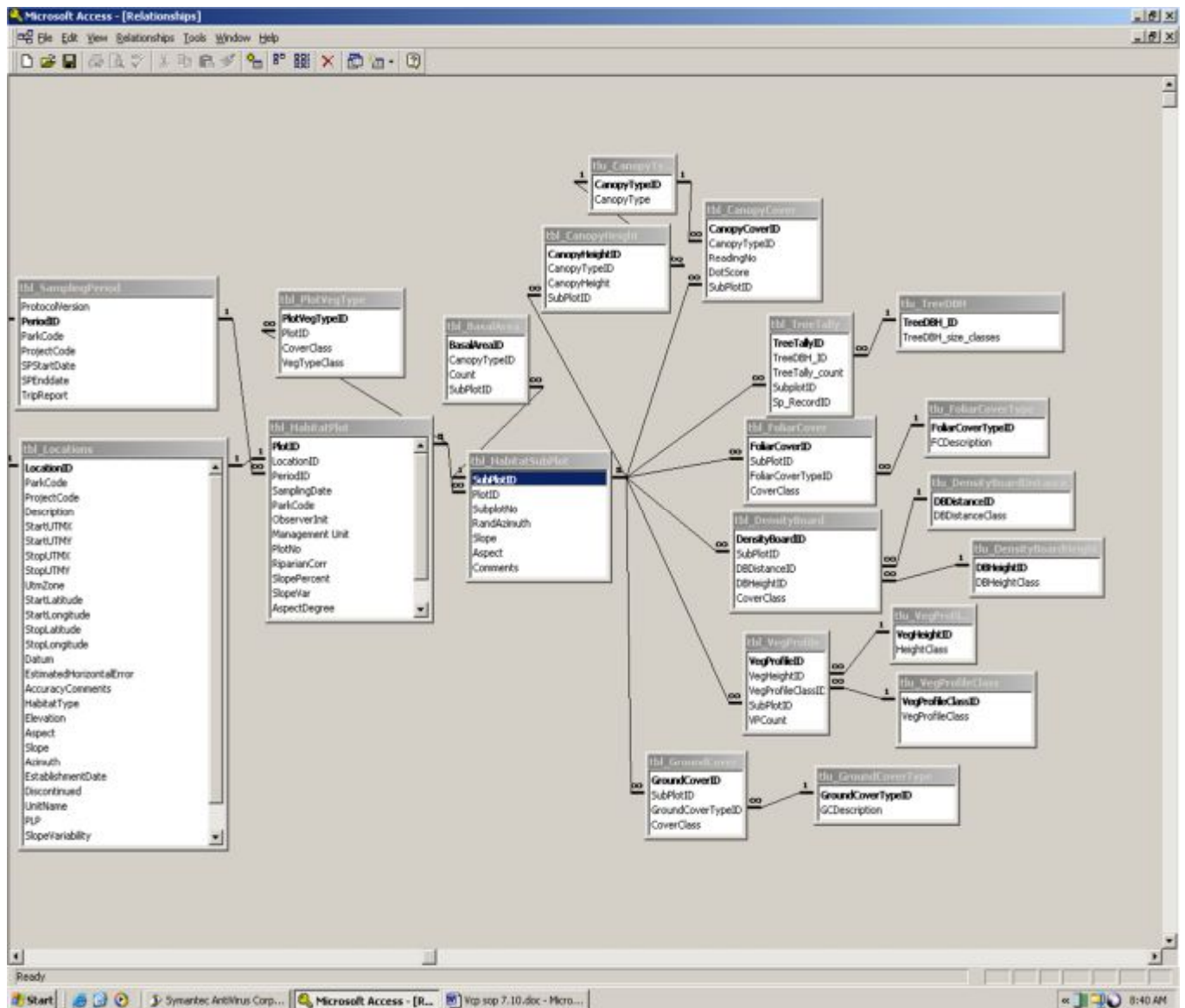


Figure 2. Habitat monitoring data model. **tbl_HabitatSubPlot** serves as the star table linking most of the habitat data to **tbl_HabitatPlot**. **tbl_SamplingPeriod** and **tbl_Locations** provide the links to bird monitoring data.

IV. Data Verification

Data verification immediately follows data entry and involves checking the accuracy of computerized records against the original source, usually paper field records. While the goal of data entry is to achieve 100% correct entries, this is rarely accomplished. To minimize transcription errors, our policy is to verify 100% of records to their original source by staff familiar with project design and field implementation. Further, 10% of records are reviewed a second time by the Project Manager and the results of that comparison reported with the data. If

errors are found in the Project Manager's review, then the entire data set is verified again. Once the computerized data are verified as accurately reflecting the original field data, the paper forms are archived and the electronic version is used for all subsequent data activities.

V. Data Validation

Validation Methods

Although data may be correctly transcribed from the original field forms, they may not be accurate or logical. For example, a canopy height of 1125 m instead of 11.25 m or a temperature of 95°C instead of 9.5°C is illogical and almost certainly incorrect, whether or not it was properly transcribed from field forms. The process of reviewing computerized data for range and logic errors is the validation stage. Certain components of data validation are built into data entry forms (e.g. range limits). Data validation can also be extended into the design and structure of the database. As much as possible, values for data-entry forms have been limited to valid entries stored in the look-up tables.

Additional data validation can be accomplished during verification, if the operator is sufficiently knowledgeable about the data. The Project Manager will validate the data after verification is complete. Validation procedures seek to identify generic errors (e.g. missing, mismatched or duplicate records) as well as errors specific to particular projects. For example, validation of bird data includes database query and comparison of data among years. One query detects records with a location ID from a park and a period ID from a different park. Another query counts the number of subplots per plot (typically there are 4) to assure that all subplots were entered. Finally, data are compared to previous years to identify gross differences. For example, *Sturnella neglecta* or *S. magna* may be recorded this year, but *Sturnella spp.* the previous. During the entry, verification and validation phases, the Project Manager is responsible for the data. The Project Manager must assure consistency between field forms and the database by noting how and why any changes were made to the data on the original field forms. In general, changes made to the field forms should not be made via erasure, but rather through marginal notes or attached explanations. Once validation is complete, the data set is turned over to the Data Manager for archiving and storage.

Spatial Data Validation

Spatial validation of database sample coordinates can be accomplished using ArcInfo 8.x (ESRI, Inc.). Because Tweety is maintained as an Access database, it can be imported directly into ArcCatalog (ArcInfo 8.x, ESRI, Inc.) as an OLE DB object (see Figure 3). Fields "StartUTMX" and "StartUTMY" of tbl_Locations can then be used to validate the UTM coordinate values for point locations stored in Access against the original GPS coordinates.

Procedures for loading the Access database into ArcInfo 8.x are as follows. Open an ArcCatalog session and create a new Database Connection. Select "Microsoft Jet 4.0 OLE DB" under the "Provider" tab. Go to the "Connection" tab and browse to the Access database you are trying to link to. Check "Allow saving password" and hit "Test connection." If the connection

succeeds, hit “Okay.” All tables and queries within the Access database should now be accessible and viewable from ArcCatalog.

To create a coverage from the spatial coordinates stored in Access, start an ArcMap session and load the table “tbl_Locations.” Go to Tools → Add X,Y data. Select tbl_Locations and the fields StartUTMX and StartUTMY in the “Add X,Y, data” form. Edit the Coordinate system by hitting the “Edit” button. Choose “Select” coordinate system, then open the “Projected Coordinate Systems” folder. Open the “UTM” folder, then open the NAD83 folder and select the appropriate coordinate system file for the study area (e.g., UTM Zone 14 for Tallgrass Prairie National Preserve or UTM Zone 13 for Agate Fossil Bed National Monument). Finally, hit apply and the point locations should load into ArcMap. This layer can then be compared against DRG base maps or the original GPS data

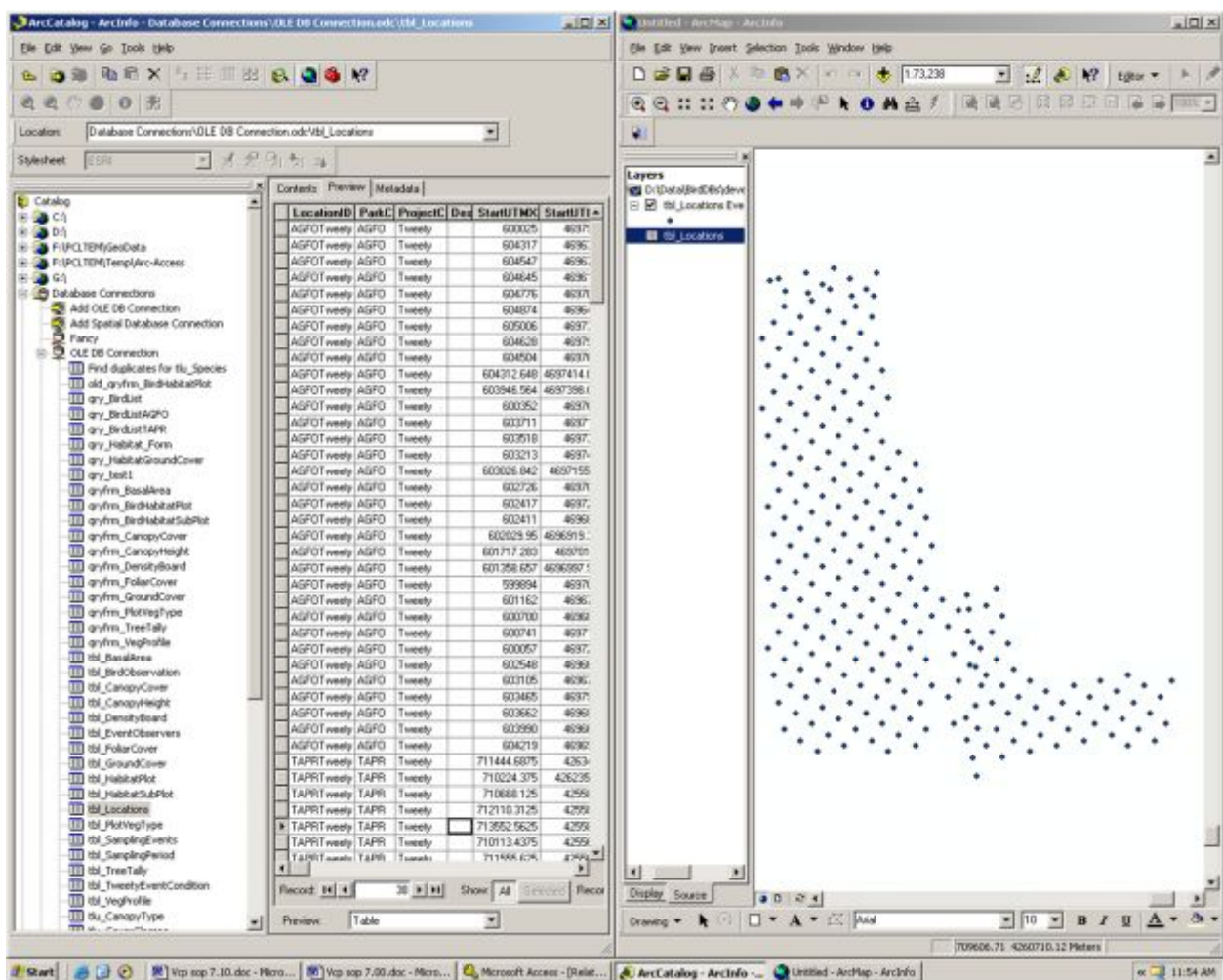


Figure 3. Bird monitoring database linked to ArcInfo 8.1. The table displayed in ArcCatalog is tbl_Locations. The points displayed in ArcMap are the StartUTMX and StartUTMY fields of tbl_Locations.

VI. Database Administration

Data Maintenance

Data sets are rarely static. They often change through additions, corrections, and improvements made following the archival of a data set. There are three main caveats to this process:

- 1) Only make changes that improve or update the data while maintaining data integrity.
- 2) Once archived, document any changes made to the data set.
- 3) Be prepared to recover from mistakes made during editing.

Any editing of archived data is accomplished jointly by the Project Manager and Data Manager. Every change must be documented in the edit log and accompanied by an explanation that includes pre- and post-edit data descriptions. The reader is referred to Tessler & Gregson (1997) for a complete description of prescribed data editing procedures and an example edit log.

Data Organization

The various databases, reports, GIS coverages, etc. used and generated by the monitoring program create a large number of files and folders to manage. Several experiences from the PC-LTEM reinforce the complicated nature of file management. For example, databases are occasionally stored in two versions of MS Access in order to accommodate data users with different software versions. Further, GIS data are sometimes stored in two projections – one for navigation, the other for use with existing base GIS data. Poor file organization can lead to confusion and data corruption. Figure 4 depicts the file organization structure for the monitoring project.

Version Control

Prior to any major changes of a data set, a copy is stored with the appropriate version number. This allows for the tracking of changes over time. With proper controls and communication, versioning ensures that only the most current version is used in any analysis. Versioning of archived data sets is handled by adding a three digit number to the file name, with the first version being numbered 001. Each additional version is assigned a sequentially higher number. Frequent users of the data are notified of the updates, and provided with a copy of the most recent archived version.

Data Logs and Backups

Once the data are archived, any changes made to the data must be documented in an edit log. At this point forward, original field forms are not altered. Field forms can be reconciled to

the database through the use of the edit log. Secure data archiving is essential for protecting data files from corruption. Once a data set has passed the QA/QC procedures specified in the protocol, a formal entry is made in the I&M Data Set Catalog. Subsequently, an electronic version of the data set is maintained in a read-only format on the program server. Backup copies of the data are maintained at the Wilson's Creek visitor center, and an additional digital copy is forwarded to the NPS Inventory and Monitoring Program Archive. Tape backups of all project databases are made twice weekly. A total of four tape copies are maintained at any given time, two at the PC-LTEM building and two and two at the Wilson's Creek NB Visitor Center. Once-a-month, one tape copy is placed into permanent archive.

Figure 4. File structure for monitoring projects.



VII. Data Availability

Currently, data are available for research and management applications on request, for database versions where all QA/QC has been completed and the data have been archived. Data can also be transferred using e-mail (most Access files are smaller than 10 Mbytes or can be compressed into .zip files) or ftp where available. As mentioned in the introduction, the plan is to make grassland bird monitoring data available for download directly from the NPS I&M

Monitoring webpage. In addition, metadata will become available directly from the NPS I&M metadata server. Data requests should be directed to:

Gareth Rowell, Data Manager
Wilson's Creek National Battlefield
6424 W. Farm Road 182
Republic, MO 65738-9514
gareth_rowell@nps.gov

VIII. Tables – Functional List

Event and Location Tables

Table: tbl_SamplingEvents

Description: Core event table which manages bird observation data.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
SamplingEventID	AutoNumber	Primary key
EventID	Text	Unique Event ID code
PeriodID	Text	Data collection period
StartTime	Date/Time	Time event begins
Project	Text	Project name
StartDate	Date/Time	Date event begins

Table: tbl_SamplingPeriod

Description: Core event table which manages field-season trip information.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
ProtocolVersion	Text	Bird monitoring protocol version used
PeriodID	Text	Primary key
ParkCode	Text	Links to Parkcode look-up table
ProjectCode	Text	Links to Projectcode look-up table
SPStartDate	Date/Time	Sampling period start date
SPEndDate	Date/Time	Sampling period end date
TripReport	OLE Object	Survey trip report

Table: tbl_Locations

Description: Core locations table which manages field-site locality data

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
LocationID	Text	Primary key
ParkCode	Text	4-character Park Code
ProjectCode	Text	6-character Project Code
Description	Text	unused

Management Unit	Text	Park management unit
StartUTMX	Number (double)	UTM X for sampling site
StartUTMY	Number (double)	UTM Y for sampling site
UtmZone	Number (integer)	UTM zone
HabitatType	Text	Habitat type (prairie or riparian)
Aspect	Number (integer)	Aspect (degrees) of sampling site
Slope	Number (integer)	Slope (degrees) of sampling site
SlopeVariability	Text	Categorical description slope variability over the entire sample site
AspectVariability	Text	Categorical description aspect variability over the entire sample site
TopoPosition	Text	Categorical description of sample site in relation to the surrounding landscape
RiparianCorr	Yes/No	Riparian Stratum

Table: tlu_Parks

Description: Look-up table for National Park codes, used by tbl_Locations (above).

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
ParkCode	Text	4-character park code
ParentParkCode	Text	4-character park code pointing to parent park
ParkName	Text	Park name
Region	Text	NPS region
ParkType	Text	Park type (National Park, Monument, etc.)

Table: tbl_Projects

Description: Look-up table for Prairie Cluster Program Projects, used by tbl_Locations (above).

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
ProjectCode	Text	6-character code of the monitoring project (primary key)
ProjectTitle	Text	Full project title
ProjectManager	Text	Person designated project manager
StartDate	Date/Time	When monitoring project was initiated
Comments	Text	Comments on the project
DatabaseName	Text	Name of database supporting project
Format	Text	Type of database
DatabasePath	Text	Directory path of database
DataTypes	Text	Indicates types of data stored in the database

Bird Observation Tables

Table: tbl_BirdObservations

Description: Table storing bird observation and distance data.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
RecID	AutoNumber	Primary key
SamplingEventID	Number	no longer used
LocationID	Text	Links to tbl_Locations
EventID	Text	Links to tbl_SamplingEvents
Interval	Text	Duration of sampling interval
ObsNo	Number	Observation numbers from field sheets
AOUCode	Text	American Ornithologist's Union Code
Distance	Number	Distance estimate for VCP analysis
DT	Number	Detection type, heard vs. seen (See SOP #5).
Sex	Text	Female, male or unknown
Age	Text	Adult, juvenile or unknown
FlockSize	Number	Flock size
PrevPlot	Yes/No	Bird detected in previous plot
Flyover	Number	No. birds fly over top of vegetation
Comments	Memo	Comments
TSN	Number	ITIS Taxonomic Serial Number

Table: tblObservers

Description: List of observers for each sampling event.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
EventID	Text	Foreign key to tbl_SamplingEvents
ObserverID	Text	Foreign key to tlu_StaffCooperators

Table: tbl_TweetyEventCondition

Description: Table storing weather conditions during bird observations.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
TEC_ID	AutoNumber	Primary key
EventID	Text	Programmatic Event ID code
SamplingEventID	Number	Foreign key to tbl_SamplingEvents
ObsInits	Text	Foreign key to tlu_EventObservers
TempC	Number	Ambient temp. °C
Wind	Number	Based on Beaufort scale
Rain	Number	Precipitation conditions
Clouds	Number	% cloud cover
Noise	Number	Background noise conditions, see SOP#5
Comment	Text	Comments

Table: tlu_NoiseCode

Description: Background noise associated with bird count work

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
NoiseCode	Number	Code used to record background noise as it

Description	Text	affects observer's ability to hear birds Explanation of background noise code
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Table: tlu_RainCode

Description: Precipitation conditions

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
RainCode	Number	Code used to record precipitation conditions during count (rain)
Description	Text	Explanation of rain code

Table: tlu_WindCode

Description: Wind speed as it relates to bird count activity

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
WindCode	Number	Code used to record wind strength (Beaufort Scale)
Description	Text	Explanation of wind code

Table: tblExportToDistance

Description: Export table created from Data Summaries and Reports form. Table to estimate bird abundance using distance sampling analysis. Each record represents individual bird (compare with qryExportToDistance).

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
Site*ParkCode	Text	Park 4-letter identifier
Site*Area	Number	not used
Location*LocationID	Text	Unique location identifier
Event*EventID	Text	Unique event identifier
Event*Observer	Text	Initials of observer(s)
Event*Temperature	Number	Temperature (°C) during event sampling period
Event*Wind	Number	Wind based on Beaufort scale
Event*Rain	Number	Rain codes, see SOP#5
Event*Clouds	Number	% cloud cover
Event*Noise	Number	Background noise conditions, see SOP#5
Event*Effort	Number	Weighting factor (not used, default =1)
Observation*RecordID	Autonumber	Unique identifier
Observation*Species	Text	AOUCode
Observation*DetectionType	Number	Detection type, heard vs. seen (See SOP #5).
Observation*Distance	Number	Distance estimate (m) for VCP analysis
Observation*FlockSize	Number	Flock size

Table: tblSumStats

Description: Summary statistics for bird observations

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
PeriodID	Text	Survey name
Species	Text	4-character species code
TotalDetected	Number	Total number of this species detected during the survey
Mean	Number	Mean number of this species per plot
SE	Number	Standard Error of the mean per plot
PctOccurrence	Number	Percent of plots where this species was present
Present	Number	Number of plots where this species was present

Habitat Data Tables

Table: tbl_HabitatPlot

Description: Top-level table for habitat plots.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
PlotID	AutoNumber	Primary key
LocationID	Text	Foreign key to tbl_Locations
PeriodID	Text	Foreign key to tbl_SamplingPeriod
SamplingDate	Date/Time	Foreign key to sampling events LUT
ObserverInit	Text	Observer(s) Initials
PlotNo	Number	Permanent id number assigned to variable circular plot

Table: tbl_PlotVegType

Description: Habitat type by ocular estimate using modified Daubenmire cover classes. Applies to overall 50 m radius plots.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
PlotVegTypeID	AutoNumber	Primary key for tbl_PlotVegType
PlotID	Number	Foreign key to tbl_HabitatPlot (many to 1 relationship)
CoverClass	Text	Foreign key to tlu_CoverClass (1 to many relationship) - modified Daubenmire cover classes
VegTypeClass	Text	Veg type classes

Table: tbl_HabitatSubPlot

Description: Star table organizing most of the habitat data. Relates many-to-many to look-up attribute tables via junction tables.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
SubPlotID	AutoNumber	SubPlot primary key

PlotID	Number	Foreign key to tbl_HabitatPlot (many to one)
SubplotNo	Number	Value between 1 and 4 assigned to 5m radius subplots located within plot
Comments	Text	
SubPlotFeatureID	Number	Foreign key to Permanent Subplot Features LUT

Table: tlu_SubPlotFeatures

Description: Permanent features associated with subplots. Measured only once.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
SubPlotFeatureID	AutoNumber	Primary key
LocationID	Text	LocationID of 50m Plot
SubplotNo	Number	SubPlot No Range: 1 – 4
RandAzimuth	Text	Direction of SubPlot
Slope	Number	Slope at 5 m plot
Aspect	Aspect	Value between 1 and 360

Table: tbl_BasalArea

Description: Basal area of hardwood and conifer species using 10-factor English cruz-all.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
BasalAreaID	AutoNumber	Primary key
CanopyTypeID	Number	Foreign key for tlu_CanopyType (many to one)
Count	Number	Tree count for basal area using 10-Factor English cruz-all angle gauge
SubPlotID	Number	Foreign key for SubPlotID

Table: tbl_CanopyHeight

Description: Canopy heights of hardwood and coniferous trees measured with metric clinometer.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
CanopyHeightID	AutoNumber	Primary key
CanopyTypeID	Number	Foreign key to tlu_CanopyType (many to one)
CanopyHeight	Number	Canopy height in meters measured with a clinometer
SubPlotID	Number	Foreign key to tbl_HabitatSubPlot (many to one)

Table: tbl_CanopyCover

Description: Canopy cover estimated using spherical densitometer.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
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CanopyCoverID	AutoNumber	Primary key
CanopyTypeID	Number	Foreign key to tlu_CanopyType (many to one)
ReadingNo	Number	Spherical densiometer reading no.: value must be 1 - 4 (limit to list)
DotScore	Number	Densiometer readings: Value must be 1 – 96 (limit to list)
SubPlotID	Number	Foreign key to tbl_HabitatSubPlot (many to one)

Table: tlu_CanopyType

Description: Canopy-type values available for combo-box controls in data-entry forms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
CanopyTypeID	AutoNumber	Primary key
CanopyType	Text	Canopy type: Hardwood or Conifer

Table: tbl_TreeTally

Description: Tree species counts by dbh size class.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
TreeTallyID	AutoNumber	Primary key
TreeDBH_ID	Number	Foreign key to tlu_TreeDBH (many to one)
TreeTally_count	Number	Observed frequency (dot tally method)
SubplotID	Number	Foreign key to tbl_SubPlot (many to one)
Sp_RecordID	Number	Foreign key to tlu_Species (many to one)

Table: tlu_TreeDBH

Description: Tree dbh class values available for combo-box controls in data-entry forms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
TreeDBH_ID	AutoNumber	Primary key
TreeDBH_size_classes	Text	DBH size classes

Table: tbl_FoliarCover

Description: Ocular estimate of foliar cover with modified Daubenmire cover classes.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
FoliarCoverID	AutoNumber	Primary key
SubPlotID	Number	Foreign key to tbl_HabitatSubPlot (many to one)
FoliarCoverTypeID	Number	Foreign key to tlu_FoliarCoverType (many to one)
CoverClass	Text	Foreign key to tlu_CoverClasses (many to one)

Table: tlu_FoliarCoverType

Description: Foliar cover-type values available for combo-box controls in data-entry forms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
FoliarCoverTypeID	AutoNumber	Primary key
FCDescription	Text	Description of Foliar Cover Types

Table: tbl_DensityBoard

Description: Horizontal vegetation profile using vegetation profile board.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
DensityBoardID	AutoNumber	Primary key
SubPlotID	Number	Foreign key to tbl_HabitatSubPlot (many to one)
DBDistanceID	Number	Foreign key to tlu_DensityBoardDistance
DBHeightID	Number	Foreign key to tlu_DensityBoardHeight
CoverClass	Text	Foreign key to tlu_CoverClasses

Table: tlu_DensityBoardDistance

Description: Density-board distance values available for combo-box controls in data-entry forms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
DBDistanceID	AutoNumber	Primary key
DBDistanceClass	Text	Density Board Distance Class

Table: tlu_DensityBoardHeight

Description: Density-board height values available for combo-box controls in data-entry forms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
DBHeightID	AutoNumber	Primary key
DBHeightClass	Text	Density Board Height Class

Table: tbl_VegProfile

Description: Vertical profile of vegetation from 1 to 7.5 m.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
VegProfileID	AutoNumber	Primary key
VegHeightID	Number	Foreign key to tlu_VegProfileHeight (many to one)
VegProfileClassID	Number	Foreign key to tlu_VegProfileClass (many to one)
SubPlotID	Number	Foreign key to tbl_HabitatSubPlot (many to one)
VPCount	Number	Measurements taken in four cardinal directions (Range 1 - 4 per class type)

Table: tlu_VegProfileHeight

Description: Vegetation height-class values available for combo-box controls in data-entry forms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
VegHeightID	AutoNumber	Primary key
HeightClass	Text	VegProfile Height Class

Table: tlu_VegProfileClass

Description: Horizontal vegetation profile class types available for combo-box controls in data-entry forms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
VegProfileClassID	AutoNumber	primary key
VegProfileClass	Text	Horizontal vegetation profile class types

Table: tbl_GroundCover

Description: Ocular estimate of ground cover with modified Daubenmire cover classes

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
GroundCoverID	AutoNumber	Primary key
SubPlotID	Number	Foreign key to tbl_HabitatSubPlot (many to one)
GroundCoverTypeID	Number	Foreign key to tlu_GroundCoverType (many to one)
CoverClass	Text	Foreign key to tlu_CoverClasses (many to one)

Table: tlu_GroundCoverType

Description: Ground cover-type values available for combo-box controls in data-entry forms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
GroundCoverTypeID	AutoNumber	Primary key
GCDescription	Text	Ground Cover Description

Program Support Tables

Table: tlu_StaffCooperators

Description: Lookup table, comprehensive list of staff, field workers, and cooperators.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
ObserverID	Text	Initials of observer
LastName	Text	Last name of observer
FirstName	Text	First name of observer

MiddleInit	Text	Middle initial of observer
Title	Text	Position/title of observer
Employer	Text	Employer of observer: default is NPS-PCPrototype
GradeLevel	Text	GS level, or equivalent for non-federal employees
Notes	Memo	Comments regarding the observer

Table: tlu_CoverClasses

Description: Lookup table, cover classes for estimating percent cover within a defined area.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
CoverClass	Text	Cover class for estimating percent cover in a defined area. The program standard is the modified Daubenmire 7-class scale, alternatives are Kelrick's scale described in the original protocol, and North Carolina Vegetation Survey's 10-class scale.
NumericClass	Number	Numeric equivalent of the cover class, used for analysis of log-scaled data.
Range	Text	Range of cover values contained by each cover class.
MidpointValue	Number	Midpoint of the cover class range.
PC-LTEM_CoverClass	Number	Corresponding functional cover classes used to make data compatible with PC-LTEM data collected using the modified Daubenmire 7-class scale.
PC-LTEM_Range	Text	Corresponding range of cover values indicated by the functional cover class.
PC-LTEM_MidpointValue	Number	Corresponding midpoint of the functional cover class; original class midpoints were used for Kelrick's classes, where the original classes do not line up well with those of PC-LTEM

Table: tlu_Species

Description: Lookup table, list of species observed and cross-referenced synonyms.

Fields:

<u>Name</u>	<u>Data Type</u>	<u>Description</u>
RecordID	AutoNumber	Unique identifier of the record
TSN	Number	ITIS taxonomic serial number
TaxonCode	Text	Locally-unique code for taxa without an assigned TSN
GroupCode	Number	Group of organisms of which this is a member: birds, fish, etc.
ScientificName	Text	Scientific name of the taxon

CommonName	Text	Common or vernacular name for the species
IsProvisional	Yes/No	Indicates that the species name represents a temporary identification which will be revised once the identity has been better resolved
IsValid	Yes/No	Indicates whether or not this name is currently accepted as the valid name
ValidTaxon	Text	Indicates the valid name of this synonym.

IX. Queries – Functional List

Queries for Habitat Data Entry Forms

Query: qryfrm_HabitatPlot

Description: Selects fields from tbl_locations and tbl_HabitatPlot for top-level habitat data entry form.

SQL:

```
SELECT tbl_HabitatPlot.PlotID, tbl_Locations.ParkCode,
       tbl_HabitatPlot.SamplingDate, tbl_HabitatPlot.ObserverInit,
       tbl_Locations.[Management Unit], tbl_HabitatPlot.PlotNo,
       tbl_Locations.RiparianCorr, tbl_Locations.Slope,
       tbl_Locations.SlopeVariability, tbl_Locations.Aspect,
       tbl_Locations.AspectVariability, tbl_Locations.TopoPosition
FROM tbl_Locations
INNER JOIN tbl_HabitatPlot
ON tbl_Locations.LocationID = tbl_HabitatPlot.LocationID;
```

Query: qryfrm_PlotVegType

Description: Selects fields from tbl_PlotVegType and tlu_CoverClasses for data entry form of habitat types in sampling plots.

SQL:

```
SELECT tbl_PlotVegType.PlotVegTypeID, tbl_PlotVegType.PlotID,
       tbl_PlotVegType.CoverClass, tbl_PlotVegType.VegTypeClass,
       tlu_CoverClasses.NumericClass, tlu_CoverClasses.Range,
       tlu_CoverClasses.MidpointValue
FROM tlu_CoverClasses
INNER JOIN tbl_PlotVegType
ON tlu_CoverClasses.CoverClass = tbl_PlotVegType.CoverClass;
```

Query: qryfrm_SubHabitatPlot

Description: Selects fields from tbl_HabitatSubPlot and tlu_SubPlotFeatures for subplot-level habitat data entry forms.

SQL:

```
SELECT tbl_HabitatSubPlot.SubPlotID, tbl_HabitatSubPlot.PlotID,
       tbl_HabitatSubPlot.SubplotNo, tbl_HabitatSubPlot.Comments,
```

```
tbl_HabitatSubPlot.SubPlotFeatureID,  
tlu_SubPlotFeatures.SubPlotFeatureID,  
tlu_SubPlotFeatures.LocationID,  
tlu_SubPlotFeatures.SubplotNo,  
tlu_SubPlotFeatures.RandAzimuth, tlu_SubPlotFeatures.Slope,  
tlu_SubPlotFeatures.Aspect  
FROM tlu_SubPlotFeatures  
INNER JOIN tbl_HabitatSubPlot  
ON tlu_SubPlotFeatures.SubPlotFeatureID =  
tbl_HabitatSubPlot.SubPlotFeatureID;
```

Query: qryfrm_TreeTally

Description: Selects fields from tbl_TreeTally, tlu_TreeDBH and tlu_Species for data entry form of tree species counts by dbh size class.

SQL:

```
SELECT tbl_TreeTally.TreeTallyID, tbl_TreeTally.TreeTally_count,  
tbl_TreeTally.Sp_RecordID, tlu_Species.TaxonCode,  
tlu_Species.ScientificName,  
tlu_TreeDBH.TreeDBH_size_classes, tbl_TreeTally.TreeDBH_ID,  
tbl_TreeTally.SubplotID  
FROM tlu_TreeDBH  
INNER JOIN(tlu_Species  
INNER JOIN tbl_TreeTally  
ON tlu_Species.RecordID = tbl_TreeTally.Sp_RecordID)  
ON tlu_TreeDBH.TreeDBH_ID = tbl_TreeTally.TreeDBH_ID;
```

Query: qryfrm_CanopyHeight

Description: Selects fields from tbl_CanopyHeight and tlu_CanopyType for data entry form of canopy heights of hardwood and coniferous trees.

SQL:

```
SELECT tbl_CanopyHeight.CanopyHeightID,  
tbl_CanopyHeight.CanopyTypeID,  
tbl_CanopyHeight.CanopyHeight, tbl_CanopyHeight.SubPlotID,  
tlu_CanopyType.CanopyType  
FROM tlu_CanopyType  
INNER JOIN tbl_CanopyHeight  
ON tlu_CanopyType.CanopyTypeID = tbl_CanopyHeight.CanopyTypeID;
```

Query: qryfrm_CanopyCover

Description: Selects fields from tbl_CanopyCover and tlu_CanopyType for data entry form of canopy cover.

SQL:

```
SELECT tbl_CanopyCover.CanopyCoverID,  
tbl_CanopyCover.CanopyTypeID, tbl_CanopyCover.ReadingNo,  
tbl_CanopyCover.DotScore, tbl_CanopyCover.SubPlotID,  
tlu_CanopyType.CanopyType  
FROM tlu_CanopyType
```

```
INNER JOIN tbl_CanopyCover
ON tlu_CanopyType.CanopyTypeID = tbl_CanopyCover.CanopyTypeID;
```

Query: qryfrm_BasalArea

Description: Selects fields from tbl_BasalArea and tlu_CanopyType for data entry form of basal area of hardwood and conifer species.

SQL:

```
SELECT tbl_BasalArea.BasalAreaID, tbl_BasalArea.CanopyTypeID,
       tbl_BasalArea.Count, tbl_BasalArea.SubPlotID,
       tlu_CanopyType.CanopyType
FROM tlu_CanopyType
INNER JOIN tbl_BasalArea
ON tlu_CanopyType.CanopyTypeID = tbl_BasalArea.CanopyTypeID;
```

Query: qryfrm_GroundCover

Description: Selects fields from tbl_GroundCover, tlu_GroundCoverType and tlu_CoverClasses for data entry form of ground cover.

SQL:

```
SELECT tbl_GroundCover.GroundCoverID,
       tbl_GroundCover.GroundCoverTypeID,
       tbl_GroundCover.CoverClass,
       tlu_GroundCoverType.GCDescription, tlu_CoverClasses.[PC-
       LTEM_Range], tbl_GroundCover.SubPlotID
FROM tlu_GroundCoverType
INNER JOIN(tlu_CoverClasses
INNER JOIN tbl_GroundCover
ON tlu_CoverClasses.CoverClass = tbl_GroundCover.CoverClass)
ON tlu_GroundCoverType.GroundCoverTypeID =
   tbl_GroundCover.GroundCoverTypeID;
```

Query: qryfrm_FoliarCover

Description: Selects fields from tbl_FoliarCover, tlu_FoliarCoverType and tlu_CoverClasses for data entry form of foliar cover.

SQL:

```
SELECT tbl_FoliarCover.FoliarCoverID, tbl_FoliarCover.SubPlotID,
       tbl_FoliarCover.FoliarCoverTypeID,
       tlu_FoliarCoverType.FCDescription,
       tbl_FoliarCover.CoverClass, tlu_CoverClasses.[PC-
       LTEM_Range]
FROM tlu_FoliarCoverType
INNER JOIN(tlu_CoverClasses
INNER JOIN tbl_FoliarCover
ON tlu_CoverClasses.CoverClass = tbl_FoliarCover.CoverClass)
ON tlu_FoliarCoverType.FoliarCoverTypeID =
   tbl_FoliarCover.FoliarCoverTypeID;
```

Query: qryfrm_DensityBoard

Description: Selects fields from tbl_DensityBoard, tlu_DensityBoardDistance, tlu_DensityBoardHeight and tlu_CoverClasses for data entry form of horizontal vegetation profile using vegetation profile board.

SQL:

```
SELECT tbl_DensityBoard.DensityBoardID,
       tbl_DensityBoard.DBDistanceID,
       tlu_DensityBoardDistance.DBDistanceClass,
       tbl_DensityBoard.DBHeightID,
       tlu_DensityBoardHeight.DBHeightClass,
       tbl_DensityBoard.CoverClass, tlu_CoverClasses.[PC-
       LTEM_Range], tbl_DensityBoard.SubPlotID
FROM tlu_DensityBoardHeight
INNER JOIN(tlu_DensityBoardDistance
INNER JOIN (tlu_CoverClasses
INNER JOIN tbl_DensityBoard
ON tlu_CoverClasses.CoverClass = tbl_DensityBoard.CoverClass)
ON tlu_DensityBoardDistance.DBDistanceID =
    tbl_DensityBoard.DBDistanceID)
ON tlu_DensityBoardHeight.DBHeightID =
    tbl_DensityBoard.DBHeightID;
```

Query: qryfrm_VegProfile

Description: Selects fields from tbl_VegProfile, tlu_VegProfileHeight, and tlu_VegProfileClass for data entry form of vertical vegetation profile.

SQL:

```
SELECT tbl_VegProfile.VegProfileID, tbl_VegProfile.VegHeightID,
       tlu_VegProfileHeight.HeightClass,
       tbl_VegProfile.VegProfileClassID,
       tlu_VegProfileClass.VegProfileClass,
       tbl_VegProfile.SubPlotID, tbl_VegProfile.VPCount
FROM tlu_VegProfileHeight
INNER JOIN (tlu_VegProfileClass
INNER JOIN tbl_VegProfile
ON tlu_VegProfileClass.VegProfileClassID =
    tbl_VegProfile.VegProfileClassID)
ON tlu_VegProfileHeight.VegHeightID =
    tbl_VegProfile.VegHeightID;
```

Queries for Bird Summary Reports

Query: qrySurveyStats

Description: Selects fields from tbl_SamplingEvents and tbl_TweetyEventCondition to calculate number of VCP plots, and start and end date of each survey period.

SQL:

```
SELECT tbl_SamplingEvents.PeriodID,  
       Count(tbl_TweetyEventCondition.EventID) AS Plot,  
       Min(tbl_SamplingEvents.StartDate) AS StartingDate,  
       Max(tbl_SamplingEvents.StartDate) AS EndingDate  
FROM tbl_TweetyEventCondition  
INNER JOIN tbl_SamplingEvents  
ON tbl_TweetyEventCondition.EventID = tbl_SamplingEvents.EventID  
GROUP BY tbl_SamplingEvents.PeriodID;
```

Query: qryrpt_LocEventSummary

Description: Selects fields from qrySelectLocationEvent, qryrpt_Evenness_Step2 and qryrpt_BirdSppRichness. Values are used in bird summary report for Number of Individuals, Species Richness, Diversity and Evenness organized by survey.

SQL:

```
SELECT qrySelectLocationEvent.PeriodID,  
       qrySelectLocationEvent.LocationID,  
       qrySelectLocationEvent.EventID,  
       qrySelectLocationEvent.Birds_Detected,  
       qryrpt_BirdSppRichness.SppRichness,  
       qryrpt_Evenness_Step2.Hprime, qryrpt_Evenness_Step2.Jadj  
FROM qryrpt_BirdSppRichness  
INNER JOIN (qrySelectLocationEvent  
INNER JOIN qryrpt_Evenness_Step2  
ON (qrySelectLocationEvent.EventID =  
    qryrpt_Evenness_Step2.EventID)  
AND (qrySelectLocationEvent.LocationID =  
    qryrpt_Evenness_Step2.LocationID))  
ON (qryrpt_BirdSppRichness.EventID =  
    qryrpt_Evenness_Step2.EventID)  
AND (qryrpt_BirdSppRichness.LocationID =  
    qryrpt_Evenness_Step2.LocationID);
```

Query: qrySelectLocationEvent

Description: Selects fields from tbl_BirdObservations, tbl_SamplingEvents, and tbl_TweetyEventCondition to calculate sum of birds detected by observation event. This query restricts observations to flocks (interacting with habitat) and eliminates flyovers. Values used as input in qryrpt_LocEventSummary.

SQL:

```
SELECT DISTINCTROW tbl_BirdObservations.LocationID,  
       tbl_BirdObservations.EventID, tbl_SamplingEvents.PeriodID,  
       Sum(tbl_BirdObservations.FlockSize) AS Birds_Detected  
FROM tbl_TweetyEventCondition  
INNER JOIN (tbl_SamplingEvents  
INNER JOIN tbl_BirdObservations  
ON tbl_SamplingEvents.EventID = tbl_BirdObservations.EventID)  
ON tbl_TweetyEventCondition.EventID = tbl_SamplingEvents.EventID
```

```
WHERE (((tbl_BirdObservations.Flyover) Is Null Or  
      (tbl_BirdObservations.Flyover)=0)  
AND ((tbl_BirdObservations.FlockSize) Is Not Null))  
GROUP BY tbl_BirdObservations.LocationID,  
         tbl_BirdObservations.EventID, tbl_SamplingEvents.PeriodID;
```

Query: qryrpt_Evenness_Step2

Description: Selects fields from qryrpt_Evenness_Step1 and calculates a J index and an adjusted J index.. Values are used in qryrpt_LocEventSummary.

SQL:

```
SELECT qryrpt_Evenness_Step1.LocationID,  
       qryrpt_Evenness_Step1.EventID,  
       qryrpt_Evenness_Step1.Hprime, qryrpt_Evenness_Step1.Hmax,  
       [Hmax]+0.000001 AS Hmax_adj, [Hprime]/[Hmax] AS J,  
       [Hprime]/[Hmax_adj] AS Jadj  
FROM qryrpt_Evenness_Step1;
```

Query: qryrpt_Evenness_Step1

Description: Selects fields from qryrpt_BirdSppRichness and qryrpt_Shannon_Bird_Final. and calculates a J index and an adjusted J index.. Values are used in qryrpt_LocEventSummary. Calculates Hmax for the Pielou Evenness statistic. Values are used in qryrpt_Evenness_Step2.

SQL:

```
SELECT qryrpt_BirdSppRichness.LocationID,  
       qryrpt_BirdSppRichness.EventID,  
       qryrpt_BirdSppRichness.SppRichness,  
       qryrpt_Shannon_Bird_Final.Hprime, Log([SppRichness]) AS  
       Hmax  
FROM qryrpt_BirdSppRichness  
INNER JOIN qryrpt_Shannon_Bird_Final  
ON (qryrpt_BirdSppRichness.EventID =  
    qryrpt_Shannon_Bird_Final.EventID)  
AND (qryrpt_BirdSppRichness.LocationID =  
     qryrpt_Shannon_Bird_Final.LocationID);
```

Query: qryrpt_BirdSppRichness

Description: Selects fields from qryrpt_#birdsPerSpp. and calculates species richness by location. Values are used in qryrpt_Evenness_Step1 to calculate Evenness index.

SQL:

```
SELECT [qryrpt_#birdsPerSpp].LocationID,  
       [qryrpt_#birdsPerSpp].EventID,  
       Count([qryrpt_#birdsPerSpp].AOUCode) AS SppRichness  
FROM [qryrpt_#birdsPerSpp]  
GROUP BY [qryrpt_#birdsPerSpp].LocationID,  
         [qryrpt_#birdsPerSpp].EventID;
```

Query: qryrpt_#birdsPerSpp

Description: Selects fields from tbl_BirdObservations and calculates number of individual birds by species by location. Values are used in qryrpt_BirdSppRichness to count number of species by location by event.

SQL:

```
SELECT tbl_BirdObservations.LocationID,  
       tbl_BirdObservations.EventID, tbl_BirdObservations.AOUCode,  
       Sum(tbl_BirdObservations.FlockSize) AS [# by Spp]  
FROM tbl_BirdObservations  
WHERE (((tbl_BirdObservations.Flyover) Is Null Or  
       (tbl_BirdObservations.Flyover)=0))  
GROUP BY tbl_BirdObservations.LocationID,  
         tbl_BirdObservations.EventID, tbl_BirdObservations.AOUCode;
```

Query: qryrpt_Shannon_Bird_Final

Description: Selects fields from qryrpt_Shannon_Bird_Terms3 and calculates Shannon diversity index by event and by location. Values are used in qryrpt_Evenness_Step1 to determine Pielou Evenness statistic.

SQL:

```
SELECT qryrpt_Shannon_Bird_Terms3.EventID,  
       qryrpt_Shannon_Bird_Terms3.LocationID, -1*[SumOfpln(p)] AS  
       Hprime  
FROM qryrpt_Shannon_Bird_Terms3;
```

Query: qryrpt_Shannon_Bird_Terms3

Description: Selects fields from qryrpt_Shannon_Bird_Terms2 and calculates sum of terms for Shannon diversity index. Values are used in qryrpt_Shannon_Final to determine Shannon diversity index.

SQL:

```
SELECT qryrpt_Shannon_Bird_Terms2.EventID,  
       qryrpt_Shannon_Bird_Terms2.LocationID,  
       Sum(qryrpt_Shannon_Bird_Terms2.[pln(p)]) AS [SumOfpln(p)]  
FROM qryrpt_Shannon_Bird_Terms2  
GROUP BY qryrpt_Shannon_Bird_Terms2.EventID,  
         qryrpt_Shannon_Bird_Terms2.LocationID;
```

Query: qryrpt_Shannon_Bird_Terms2

Description: Selects fields from qryrpt_Shannon_Bird_Terms and calculates proportions and Shannon index terms based species data. Values are used in qryrpt_Shannon_Bird_Term3.

SQL:

```
SELECT qryrpt_Shannon_Bird_Terms.LocationID,  
       qryrpt_Shannon_Bird_Terms.EventID,  
       qryrpt_Shannon_Bird_Terms.AOUCode,  
       qryrpt_Shannon_Bird_Terms.p, [p]*Log([p]) AS [pln(p)]  
FROM qryrpt_Shannon_Bird_Terms;
```

Query: qryrpt_Shannon_Bird_Terms

Description: Selects fields from qryrpt_Shannon_#birdsPerSpp and qrySelectLocationEvent. Calculates proportions of birds observed by species. Values are used in qryrpt_Shannon_Bird_Term2.

SQL:

```
SELECT [qryrpt_#birdsPerSpp].LocationID,  
       [qryrpt_#birdsPerSpp].EventID,  
       [qryrpt_#birdsPerSpp].AOUCode, [qryrpt_#birdsPerSpp].[# by  
       Spp] AS ni, qrySelectLocationEvent.Birds_Detected AS Nt, [#  
       by Spp]/[Birds_Detected] AS p  
FROM [qryrpt_#birdsPerSpp]  
INNER JOIN qrySelectLocationEvent  
ON ([qryrpt_#birdsPerSpp].EventID =  
    qrySelectLocationEvent.EventID)  
AND ([qryrpt_#birdsPerSpp].LocationID =  
    qrySelectLocationEvent.LocationID);
```

Query: qryBirdVCPbySurvey

Description: Selects fields from tbl_BirdObservations and tbl_SamplingEvents and uses VB function GetSurvey() which defaults to *. Values are used in rptListAllData which lists all of the bird observation data.

SQL:

```
SELECT tbl_BirdObservations.*, tbl_SamplingEvents.PeriodID  
FROM tbl_SamplingEvents  
INNER JOIN tbl_BirdObservations  
ON tbl_SamplingEvents.EventID = tbl_BirdObservations.EventID  
WHERE (((tbl_SamplingEvents.PeriodID) Like GetSurvey()));
```

Query: qryBirdVCPbySurvey_Crosstab

Description: Selects fields from qryBirdVCPbySurvey and uses VB function GetSurvey() to filter data for specific survey seasons or Periods (see tbl_SamplingPeriods). Values are used in next user-control to calculate summary statistics by bird species.

SQL (with Microsoft Access crosstab functions):

```
TRANSFORM Val(Nz(Sum(qryBirdVCPbySurvey.FlockSize),0)) AS [The  
Value]  
SELECT qryBirdVCPbySurvey.PeriodID,  
       qryBirdVCPbySurvey.LocationID,  
       Sum(qryBirdVCPbySurvey.FlockSize) AS [Total Detections]  
FROM qryBirdVCPbySurvey  
WHERE (((qryBirdVCPbySurvey.PeriodID) Like GetSurvey()))  
GROUP BY qryBirdVCPbySurvey.PeriodID,  
         qryBirdVCPbySurvey.LocationID  
PIVOT qryBirdVCPbySurvey.AOUCode;
```

Query: qryExportToDistance

Description: Selects fields from tbl_BirdObservations, tbl_Locations and tbl_TweetyEventConditions to provide an export file for distance sampling analysis. Format essentially same as tblExportToDistance except individual record may represent flocksize > 1.

SQL (with Microsoft Access crosstab functions):

```
SELECT tbl_Locations.ParkCode AS [Site*ParkCode], 0 AS
    [Site*Area], tbl_BirdObservations.LocationID AS
    [Location*LocationID], tbl_TweetyEventCondition.EventID AS
    [Event*EventID], tbl_TweetyEventCondition.ObsInits AS
    [Event*Observer], tbl_TweetyEventCondition.TempC AS
    [Event*Temperature], tbl_TweetyEventCondition.Wind AS
    [Event*Wind], tbl_TweetyEventCondition.Rain AS
    [Event*Rain], tbl_TweetyEventCondition.Clouds AS
    [Event*Clouds], tbl_TweetyEventCondition.Noise AS
    [Event*Noise], 1 AS [Event*Effort],
    tbl_BirdObservations.RecID AS [Observation*RecordID],
    tbl_BirdObservations.AOUCode AS [Observation*Species],
    tbl_BirdObservations.DT AS [Observation*DetectionType],
    tbl_BirdObservations.Distance AS [Observation*Distance],
    tbl_BirdObservations.FlockSize AS [Observation*FlockSize]
FROM tbl_Locations
INNER JOIN (tbl_BirdObservations
LEFT JOIN tbl_TweetyEventCondition
ON tbl_BirdObservations.EventID =
    tbl_TweetyEventCondition.EventID)
ON tbl_Locations.LocationID = tbl_BirdObservations.LocationID;
```

Queries for Habitat Summary Reports

Query: qryrpt_50mSlopeAspect

Description: Selects fields from tbl_Locations for listing of plot permanent features (slope, aspect, topography).

SQL:

```
SELECT tbl_Locations.LocationID, tbl_Locations.RiparianCorr,
    tbl_Locations.Slope, tbl_Locations.SlopeVariability,
    tbl_Locations.Aspect, tbl_Locations.AspectVariability,
    tbl_Locations.TopoPosition
FROM tbl_Locations;
```

Query: qryrpt_GeneralCoverClass

Description: Selects fields from tbl_Locations, tbl_HabitatPlot, tbl_PlotVegType, and tlu_CoverClasses for listing of semi-permanent plot features (riparian, cover type, % cover).

SQL:

```
SELECT tbl_HabitatPlot.PeriodID, tbl_Locations.RiparianCorr,
    tbl_HabitatPlot.LocationID, tbl_PlotVegType.VegTypeClass AS
    [Cover Type], tlu_CoverClasses.MidpointValue
```

```
FROM tbl_Locations
INNER JOIN (tbl_HabitatPlot
INNER JOIN (tbl_PlotVegType
INNER JOIN tlu_CoverClasses
ON tbl_PlotVegType.CoverClass = tlu_CoverClasses.CoverClass)
ON tbl_HabitatPlot.PlotID = tbl_PlotVegType.PlotID)
ON tbl_Locations.LocationID = tbl_HabitatPlot.LocationID;
```

Query: qryrpt_5mSlopeAspect

Description: Selects fields from tlu_SubPlotFeatures for listing of subplot permanent features (azimuth, slope, aspect).

SQL:

```
SELECT tlu_SubPlotFeatures.LocationID,
       tlu_SubPlotFeatures.SubplotNo,
       tlu_SubPlotFeatures.RandAzimuth, tlu_SubPlotFeatures.Slope,
       tlu_SubPlotFeatures.Aspect
FROM tlu_SubPlotFeatures;
```

Query: qryrpt_TreeTallyFreq_Crosstab

Description: MS-Access crosstab query selects fields from qryrpt_TreeTallyFreq and tlu_Species to create report of tree tally – species frequency by size class.

SQL (with Microsoft Access crosstab functions):

```
TRANSFORM Count(qryrpt_TreeTallyFreq.TreeTally_count)
AS [The Value]
SELECT qryrpt_TreeTallyFreq.PeriodID,
       qryrpt_TreeTallyFreq.LocationID,
       qryrpt_TreeTallyFreq.ScientificName,
       Count(qryrpt_TreeTallyFreq.TreeTally_count) AS [Total of
       TreeTally_count]
FROM qryrpt_TreeTallyFreq
INNER JOIN tlu_Species
ON qryrpt_TreeTallyFreq.TaxonCode = tlu_Species.TaxonCode
GROUP BY qryrpt_TreeTallyFreq.PeriodID,
         qryrpt_TreeTallyFreq.LocationID,
         qryrpt_TreeTallyFreq.ScientificName
PIVOT qryrpt_TreeTallyFreq.TreeDBH_size_classes;
```

Query: qryrpt_TreeTallyFreq

Description: Selects fields from tbl_HabitatPlot, tbl_HabitatSubPlot, tbl_TreeTally, tlu_TreeDBH and tlu_Species to create provide input data for report query qryrpt_TreeTallyFreq_Crosstab.

SQL:

```
SELECT tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,
       tlu_Species.TaxonCode, tlu_Species.ScientificName,
       tlu_TreeDBH.TreeDBH_size_classes,
       tbl_TreeTally.TreeTally_count
FROM tlu_TreeDBH
```

```
INNER JOIN ((tbl_HabitatPlot
INNER JOIN tbl_HabitatSubPlot
ON tbl_HabitatPlot.PlotID = tbl_HabitatSubPlot.PlotID)
INNER JOIN (tbl_TreeTally
INNER JOIN tlu_Species
ON tbl_TreeTally.Sp_RecordID = tlu_Species.RecordID)
ON tbl_HabitatSubPlot.SubPlotID = tbl_TreeTally.SubplotID)
ON tlu_TreeDBH.TreeDBH_ID = tbl_TreeTally.TreeDBH_ID;
```

Query: qryrpt_WoodlandMeasures

Description: Selects fields from qryrpt_CanCoverAve, qryrpt_CanHeightAve, and qryrpt_BasalAve to report woodland measures including average height, % canopy, and basal area by location.

SQL:

```
SELECT qryrpt_CanCoverAve.PeriodID,
       qryrpt_CanCoverAve.LocationID, qryrpt_CanCoverAve.Ave AS
       [%Canopy], qryrpt_CanHeightAve.Ave AS [Ave Height],
       qryrpt_BasalAve.Ave AS BasalArea
FROM qryrpt_BasalAve
INNER JOIN (qryrpt_CanCoverAve
INNER JOIN qryrpt_CanHeightAve
ON (qryrpt_CanCoverAve.CanopyType =
    qryrpt_CanHeightAve.CanopyType)
AND (qryrpt_CanCoverAve.LocationID =
    qryrpt_CanHeightAve.LocationID)
AND (qryrpt_CanCoverAve.PeriodID =
    qryrpt_CanHeightAve.PeriodID))
ON (qryrpt_BasalAve.CanopyType = qryrpt_CanCoverAve.CanopyType)
AND (qryrpt_BasalAve.LocationID = qryrpt_CanCoverAve.LocationID)
AND (qryrpt_BasalAve.PeriodID = qryrpt_CanCoverAve.PeriodID);
```

Query: qryrpt_CanCoverAve

Description: Selects fields from qryrpt_CanCoverSums to calculate average value for % canopy at four subplots. Values to provide input to the report query qryrpt_WoodlandMeasures.

SQL:

```
SELECT qryrpt_CanCoverSums.PeriodID,
       qryrpt_CanCoverSums.LocationID,
       qryrpt_CanCoverSums.CanopyType,
       [SumOfAvgOfPercent_Canopy]/4 AS Ave
FROM qryrpt_CanCoverSums;
```

Query: qryrpt_CanCoverSums

Description: Selects fields from qryrpt_CanCover_SubplotAve to calculate sum value for % canopy at four subplots. Values to provide input to the query qryrpt_CanCoverAve.

SQL:

```
SELECT qryrpt_CanCover_SubplotAve.PeriodID,
       qryrpt_CanCover_SubplotAve.LocationID,
```

```
        qryrpt_CanCover_SubplotAve.CanopyType,  
        Sum(qryrpt_CanCover_SubplotAve.AvgOfPercent_Canopy) AS  
        SumOfAvgOfPercent_Canopy  
FROM qryrpt_CanCover_SubplotAve  
GROUP BY qryrpt_CanCover_SubplotAve.PeriodID,  
        qryrpt_CanCover_SubplotAve.LocationID,  
        qryrpt_CanCover_SubplotAve.CanopyType;
```

Query: qryrpt_CanCoverSubplotAve

Description: Selects fields from qryrpt_CanCoverPercent to calculate average value of % canopy from 4 measures (North, South, East, West) at given subplot. Values to provide input to the query qryrpt_CanCoverSums.

SQL:

```
SELECT qryrpt_CanCoverPercent.PeriodID,  
        qryrpt_CanCoverPercent.LocationID,  
        qryrpt_CanCoverPercent.SubplotNo,  
        qryrpt_CanCoverPercent.CanopyType,  
        Avg(qryrpt_CanCoverPercent.Percent_Canopy) AS  
        AvgOfPercent_Canopy  
FROM qryrpt_CanCoverPercent  
GROUP BY qryrpt_CanCoverPercent.PeriodID,  
        qryrpt_CanCoverPercent.LocationID,  
        qryrpt_CanCoverPercent.SubplotNo,  
        qryrpt_CanCoverPercent.CanopyType;
```

Query: qryrpt_CanCoverPercent

Description: Selects fields from tbl_HabitatPlot, tbl_HabitatSubPlot, tbl_CanopyCover and tlu_CanopyType. Values to provide input to the query qryrpt_CanCoverSubplotAve.

SQL:

```
SELECT tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,  
        tbl_HabitatSubPlot.SubplotNo, tlu_CanopyType.CanopyType,  
        tbl_CanopyCover.DotScore, 1.04*[tbl_CanopyCover].[DotScore]  
        AS Percent_Canopy  
FROM tlu_CanopyType  
INNER JOIN ((tbl_HabitatPlot INNER JOIN tbl_HabitatSubPlot  
ON tbl_HabitatPlot.PlotID = tbl_HabitatSubPlot.PlotID)  
INNER JOIN tbl_CanopyCover  
ON tbl_HabitatSubPlot.SubPlotID = tbl_CanopyCover.SubPlotID)  
ON tlu_CanopyType.CanopyTypeID = tbl_CanopyCover.CanopyTypeID;
```

Query: qryrpt_CanHeightAve

Description: Selects fields from qryrpt_CanHeightSums to calculate average canopy height across four 5-m sample plots. Values provide input to the query qryrpt_WoodlandMeasures.

SQL:

```
SELECT qryrpt_CanHeightSums.PeriodID,  
        qryrpt_CanHeightSums.LocationID,
```

```
    qrryprt_CanHeightSums.CanopyType, [SumOfCanopyHeight]/4 AS  
    Ave  
FROM qrryprt_CanHeightSums;
```

Query: qrryprt_CanHeightSums

Description: Selects fields from tbl_HabitatPlot, tbl_HabitatSubPlot, tbl_CanopyHeight and tlu_CanopyType to calculate sum of canopy height across four 5-m sample plots. Values provide input to the query qrryprt_CanHeightAve.

SQL:

```
SELECT tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,  
       tlu_CanopyType.CanopyType,  
       Sum(tbl_CanopyHeight.CanopyHeight) AS SumOfCanopyHeight  
FROM tlu_CanopyType  
INNER JOIN ((tbl_HabitatPlot  
INNER JOIN tbl_HabitatSubPlot  
ON tbl_HabitatPlot.PlotID = tbl_HabitatSubPlot.PlotID)  
INNER JOIN tbl_CanopyHeight  
ON tbl_HabitatSubPlot.SubPlotID = tbl_CanopyHeight.SubPlotID)  
ON tlu_CanopyType.CanopyTypeID = tbl_CanopyHeight.CanopyTypeID  
GROUP BY tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,  
         tlu_CanopyType.CanopyType;
```

Query: qrryprt_BasalAve

Description: Selects fields from qrryprt_BasalSums to calculate average basal area from four 5-m sample plots. Values provide input to the query qrryprt_WoodlandMeasures.

SQL:

```
SELECT qrryprt_BasalSums.PeriodID, qrryprt_BasalSums.LocationID,  
       qrryprt_BasalSums.CanopyType,  
       qrryprt_BasalSums.SumOfArea, [SumOfArea]/4 AS Ave  
FROM qrryprt_BasalSums;
```

Query: qrryprt_BasalSums

Description: Selects fields from qrryprt_BasalArea to calculate sum of basal area. Values provide input to the query qrryprt_BasalAve.

SQL:

```
SELECT qrryprt_BasalArea.PeriodID, qrryprt_BasalArea.LocationID,  
       qrryprt_BasalArea.CanopyType, Sum(qrryprt_BasalArea.Area) AS  
       SumOfArea  
FROM qrryprt_BasalArea  
GROUP BY qrryprt_BasalArea.PeriodID, qrryprt_BasalArea.LocationID,  
         qrryprt_BasalArea.CanopyType;
```

Query: qrryprt_BasalArea

Description: Selects fields from tbl_HabitatPlot, tbl_HabitatSubPlot, tbl_BasalArea, and tlu_CanopyType to calculate basal area. Values provide input to the query qrryprt_BasalSums.

SQL:

```
SELECT tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,
       tlu_CanopyType.CanopyType, tbl_BasalArea.Count, [Count]*2.5
       AS Area
FROM (tbl_HabitatPlot
INNER JOIN tbl_HabitatSubPlot
ON tbl_HabitatPlot.PlotID = tbl_HabitatSubPlot.PlotID)
INNER JOIN (tbl_BasalArea
INNER JOIN tlu_CanopyType
ON tbl_BasalArea.CanopyTypeID = tlu_CanopyType.CanopyTypeID)
ON tbl_HabitatSubPlot.SubPlotID = tbl_BasalArea.SubPlotID;
```

Query: qryrpt_GcoverClass_Crosstab2

Description: Selects fields from qryrpt_GroundcoverClass_Crosstab to average percent cover for each groundcover class across four 5-m sample plots. Values are used in percent ground cover report.

SQL:

```
SELECT qryrpt_GroundcoverClass_Crosstab.PeriodID,
       qryrpt_GroundcoverClass_Crosstab.LocationID, [Bare Soil]/4
       AS BareSoilAve, [Conifer Litter]/4 AS ConiferLitterAve,
       [Deciduous Litter]/4 AS DeciduousLitterAve, [Grass
       Litter]/4 AS GrassLitterAve, [Rock]/4 AS RockAve,
       [Unvegetated]/4 AS UnvegetatedAve, [Woody Debris]/4 AS
       [Woody Debris (>2_5 cm dbh)Ave]
FROM qryrpt_GroundcoverClass_Crosstab;
```

Query: qryrpt_GroundcoverClass_Crosstab

Description: Selects fields from qryrpt_GroundcoverClass to set up a crosstab query for the sum of each groundcover class across four 5-m sample plots. Values are used as input to qryrpt_GroundcoverClass_Crosstab2.

SQL (with Microsoft Access crosstab functions):

```
TRANSFORM Sum(qryrpt_GroundcoverClass.MidpointValue) AS [The
Value]
SELECT qryrpt_GroundcoverClass.PeriodID,
       qryrpt_GroundcoverClass.LocationID,
       Sum(qryrpt_GroundcoverClass.MidpointValue) AS [Total Of
       MidpointValue]
FROM qryrpt_GroundcoverClass
GROUP BY qryrpt_GroundcoverClass.PeriodID,
         qryrpt_GroundcoverClass.LocationID
PIVOT qryrpt_GroundcoverClass.GCDescription;
```

Query: qryrpt_GroundcoverClass

Description: Selects fields from tbl_HabitatPlot, tbl_HabitatSubPlot, tbl_GroundCover, tlu_GroundCoverType, and tlu_CoverClasses. Values are used as input to qryrpt_GroundcoverClass_Crosstab.

SQL:

```
SELECT tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,
       tlu_GroundCoverType.GCDescription,
       tlu_CoverClasses.MidpointValue
FROM tlu_GroundCoverType
INNER JOIN ((tbl_HabitatPlot
INNER JOIN tbl_HabitatSubPlot
ON tbl_HabitatPlot.PlotID = tbl_HabitatSubPlot.PlotID)
INNER JOIN (tbl_GroundCover
INNER JOIN tlu_CoverClasses
ON tbl_GroundCover.CoverClass = tlu_CoverClasses.CoverClass)
ON tbl_HabitatSubPlot.SubPlotID = tbl_GroundCover.SubPlotID)
ON tlu_GroundCoverType.GroundCoverTypeID =
   tbl_GroundCover.GroundCoverTypeID;
```

Query: qryrpt_FoliarC_Crosstab2

Description: Selects fields from qryrpt_FoliarCoverClass_Crosstab and calculated averages for each foliar class across four 5-m plots. Values are used for report on percent foliar cover.

SQL:

```
SELECT qryrpt_FoliarCoverClass_Crosstab.PeriodID,
       qryrpt_FoliarCoverClass_Crosstab.LocationID, [Cool Season
Grass]/4 AS [Cool Season GrassAve], [Forbs]/4 AS ForbsAve,
[Moss and Lichen]/4 AS [Moss and LichenAve], [Shrubs and
Vines]/4 AS [Shrubs and VinesAve], [Total Foliar Cover (<
1_5 m tall)]/4 AS [Total Foliar Cover (< 1_5 m tall)Ave],
[Tree Seedlings]/4 AS [Tree SeedlingsAve], [Warm Season
Grass]/4 AS [Warm Season GrassAve]
FROM qryrpt_FoliarCoverClass_Crosstab;
```

Query: qryrpt_FoliarCoverClass_Crosstab

Description: Selects fields from qryrpt_FoliarCoverClass and sets up crosstab query for the sum of each foliar class across four 5-m plots. Values are used as input for qryrpt_FoliarC_Crosstab2.

SQL (with Microsoft Access crosstab functions):

```
TRANSFORM Sum(qryrpt_FoliarCoverClass.MidpointValue) AS [The
Value]
SELECT qryrpt_FoliarCoverClass.PeriodID,
       qryrpt_FoliarCoverClass.LocationID,
       Sum(qryrpt_FoliarCoverClass.MidpointValue) AS [Total Of
MidpointValue]
FROM qryrpt_FoliarCoverClass
GROUP BY qryrpt_FoliarCoverClass.PeriodID,
         qryrpt_FoliarCoverClass.LocationID
PIVOT qryrpt_FoliarCoverClass.FCDescription;
```

Query: qryrpt_FoliarCoverClass

Description: Selects fields from tbl_HabitatPlot, tbl_HabitatSubPlot, tbl_FoliarCoverType, and tlu_CpverClasses. Values are used as input for qryrpt_FoliarCoverClass_Crosstab.

SQL:

```
SELECT tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,
       tlu_FoliarCoverType.FCDescription,
       tlu_CoverClasses.MidpointValue
FROM tlu_FoliarCoverType
INNER JOIN ((tbl_HabitatPlot
INNER JOIN tbl_HabitatSubPlot
ON tbl_HabitatPlot.PlotID = tbl_HabitatSubPlot.PlotID)
INNER JOIN (tbl_FoliarCover
INNER JOIN tlu_CoverClasses
ON tbl_FoliarCover.CoverClass = tlu_CoverClasses.CoverClass)
ON tbl_HabitatSubPlot.SubPlotID = tbl_FoliarCover.SubPlotID)
ON tlu_FoliarCoverType.FoliarCoverTypeID =
    tbl_FoliarCover.FoliarCoverTypeID;
```

Query: qryrpt_HorizP_Crosstab2

Description: Selects fields from qryrpt_HorizontalProf_Crosstab and calculates the average coverage for each height class recorded at 15 m. Values are used in report for Horizontal Vegetation Profile.

SQL:

```
SELECT qryrpt_HorizontalProf_Crosstab.PeriodID,
       qryrpt_HorizontalProf_Crosstab.LocationID, [0_50 m]/4 AS
       [0_50 mAve], [0_75 m]/4 AS [0_75 mAve], [1_0 m]/4 AS [1_0
       mAve], [1_25 m]/4 AS [1_25 mAve], [1_5 m]/4 AS [1_5 mAve],
       [2_0 m]/4 AS [2_0 mAve]
FROM qryrpt_HorizontalProf_Crosstab;
```

Query: qryrpt_HorizontalProf_Crosstab

Description: Selects fields from qryrpt_HorizontalProf and sets up a crosstab query to calculate the sum of the coverage for each height class taken at four subplots. Values are as input for qryrpt_HorizP_Crosstab2.

SQL (with Microsoft Access crosstab functions):

```
TRANSFORM Sum(qryrpt_HorizontalProf.MidpointValue) AS [The
Value]
SELECT qryrpt_HorizontalProf.PeriodID,
       qryrpt_HorizontalProf.LocationID,
       Sum(qryrpt_HorizontalProf.MidpointValue) AS [Total Of
MidpointValue]
FROM qryrpt_HorizontalProf
GROUP BY qryrpt_HorizontalProf.PeriodID,
       qryrpt_HorizontalProf.LocationID
```

PIVOT qryrpt_HorizontalProf.DBHeightClass;

Query: qryrpt_HorizontalProf

Description: Selects fields from tbl_HabitatPlot, tbl_habitatSubPlot, tbl_DensityBoard, tlu_DensityBoardDistance, tlu_DensityBoardHeight and tlu_CoverClasses . Values are as input for qryrpt_HorizontalProf_Crosstab.

SQL:

```
SELECT tbl_HabitatPlot.LocationID, tbl_HabitatPlot.PeriodID,
       tlu_DensityBoardDistance.DBDistanceClass,
       tlu_DensityBoardHeight.DBHeightClass,
       tlu_CoverClasses.MidpointValue
FROM tlu_DensityBoardHeight
INNER JOIN (tlu_DensityBoardDistance
INNER JOIN ((tbl_HabitatPlot
INNER JOIN tbl_HabitatSubPlot
ON tbl_HabitatPlot.PlotID = tbl_HabitatSubPlot.PlotID)
INNER JOIN (tbl_DensityBoard
INNER JOIN tlu_CoverClasses
ON tbl_DensityBoard.CoverClass = tlu_CoverClasses.CoverClass)
ON tbl_HabitatSubPlot.SubPlotID = tbl_DensityBoard.SubPlotID)
ON tlu_DensityBoardDistance.DBDistanceID =
    tbl_DensityBoard.DBDistanceID)
ON tlu_DensityBoardHeight.DBHeightID =
    tbl_DensityBoard.DBHeightID
WHERE (((tlu_DensityBoardDistance.DBDistanceClass)="15 m
distance"));
```

Query: qryrpt_ShannonCombo

Description: Selects fields from tbl_Locations and qryrpt_Shannon to combine riparian corridor data with Shannon Diversity index for vegetation height . Values are used by Vegetation Structural Diversity Index report.

SQL:

```
SELECT qryrpt_Shannon.PeriodID, qryrpt_Shannon.LocationID,
       tbl_Locations.RiparianCorr, qryrpt_Shannon.H
FROM qryrpt_Shannon
INNER JOIN tbl_Locations
ON qryrpt_Shannon.LocationID = tbl_Locations.LocationID;
```

Query: qryrpt_Shannon

Description: Selects fields from qryrpt_VPSumofLogs and calculates the negative of the Sum of terms of the Shannon index for each location. Values are used as input by qryrpt_ShannonCombo.

SQL:

```
SELECT qryrpt_VPSumofLogs.PeriodID,
       qryrpt_VPSumofLogs.LocationID, -1*[SumOfp(ln(p))] AS H
FROM qryrpt_VPSumofLogs;
```

Query: qryrpt_VPSumofLogs

Description: Selects fields from qryrpt_VPLogVals and calculates the sum of terms of the Shannon index for vertical profile data at each location. Values are used as input by qryrpt_ShannonCombo.

SQL:

```
SELECT qryrpt_VPLogVals.PeriodID, qryrpt_VPLogVals.LocationID,  
       Sum(qryrpt_VPLogVals.[p(ln(p))]) AS [SumOfp(ln(p))]  
FROM qryrpt_VPLogVals  
GROUP BY qryrpt_VPLogVals.PeriodID, qryrpt_VPLogVals.LocationID;
```

Query: qryrpt_VPLogVals

Description: Selects fields from qryrpt_VPprop and calculates terms of the Shannon index for vertical profile data at each location. Values are used as input by qryrpt_VPSumofLogs.

SQL:

```
SELECT qryrpt_VPprop.PeriodID, qryrpt_VPprop.LocationID,  
       qryrpt_VPprop.HeightClass, qryrpt_VPprop.p, [p]*Log([p]) AS  
       [p(ln(p))]  
FROM qryrpt_VPprop;
```

Query: qryrpt_VPprop

Description: Selects fields from qryrpt_VPHeightClassSum and qryrpt_VPPlotSum to determine proportions “p” for each vertical profile height class at each location and season. Values are used as input by qryrpt_VPLogVals.

SQL:

```
SELECT qryrpt_VPHeightClassSum.PeriodID,  
       qryrpt_VPHeightClassSum.LocationID,  
       qryrpt_VPHeightClassSum.HeightClass,  
       qryrpt_VPHeightClassSum.SumOfVPCount,  
       qryrpt_VPPlotSum.SumOfSumOfVPCount,  
       [SumOfVPCount]/[SumOfSumOfVPCount] AS p  
FROM qryrpt_VPPlotSum  
INNER JOIN qryrpt_VPHeightClassSum  
ON (qryrpt_VPPlotSum.LocationID =  
    qryrpt_VPHeightClassSum.LocationID)  
AND (qryrpt_VPPlotSum.PeriodID =  
    qryrpt_VPHeightClassSum.PeriodID);
```

Query: qryrpt_VPPlotSum

Description: Selects fields from qryrpt_VPHeightClassSum to calculate sum of sums for all vertical profile height classes at each location and season. Values are used as input by qryrpt_VPProp.

SQL:

```
SELECT qryrpt_VPHeightClassSum.PeriodID,  
       qryrpt_VPHeightClassSum.LocationID,  
       Sum(qryrpt_VPHeightClassSum.SumOfVPCount) AS  
       SumOfSumOfVPCount
```

```
FROM qryrpt_VPHeightClassSum
GROUP BY qryrpt_VPHeightClassSum.PeriodID,
        qryrpt_VPHeightClassSum.LocationID;
```

Query: qryrpt_VPHeightClassSum

Description: Selects fields from tbl_HabitatPlot, tbl_HabitatSubPlot, tbl_VegProfile, tlu_VegProfileHeight, and tlu_VegProfileClass to calculate sum of counts for each vertical profile height class at each location and season. Values are used as input by qryrpt_VPPlotSum and qryrpt_VPProp.

SQL:

```
SELECT tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,
       tlu_VegProfileHeight.HeightClass,
       Sum(tbl_VegProfile.VPCount) AS SumOfVPCount
FROM tlu_VegProfileHeight
INNER JOIN (tlu_VegProfileClass
INNER JOIN ((tbl_HabitatPlot
INNER JOIN tbl_HabitatSubPlot
ON tbl_HabitatPlot.PlotID = tbl_HabitatSubPlot.PlotID)
INNER JOIN tbl_VegProfile
ON tbl_HabitatSubPlot.SubPlotID = tbl_VegProfile.SubPlotID)
ON tlu_VegProfileClass.VegProfileClassID =
    tbl_VegProfile.VegProfileClassID)
ON tlu_VegProfileHeight.VegHeightID = tbl_VegProfile.VegHeightID
GROUP BY tbl_HabitatPlot.PeriodID, tbl_HabitatPlot.LocationID,
        tlu_VegProfileHeight.HeightClass;
```

X. Literature Cited

DeBacker, M.D., B. Witcher, and J.R. Boetsch. 2002. Prairie Cluster Prototype Long-term Ecological Monitoring Program. Data Management Plan. Prairie Cluster Prototype LTEM Program, National Park Service. Wilson's Creek National Battlefield. Republic, MO 65738.

Buckland, S.T., D.R. Anderson, K.P. Burnham, J.L. Laake. 1993. *Distance Sampling: Estimating Abundance of Biological Populations*. Chapman and Hall, London. 446pp.

Buckland, S.T., D.R. Anderson, K.P. Burnham, J.L. Laake, D.L. Borchers and L. Thomas. 2001. Introduction to distance sampling: Estimating abundance of biological populations. Oxford University Press, Oxford. 448 pp.

APPENDIX A.

Electronic Metadata Guide

1. Have you already prepared metadata for this data set?
 - a. If yes, please send a copy of the documentation or a reference to where it can be found and skip to item **17**.
2. What is the title of the data set?
3. Who is the originator(s)/ owner of the data set? (Include address and telephone number)
 - a. If someone else should answer questions about the data, please list the name, address, and telephone number.
 - b. Are there other organizations or individuals who should get credit for support, funding, or data collection and analysis?
4. Is the data set published or part of a larger publication?
 - a. If so, what is the reference?
5. Include a brief (no more than a few sentences) description of the data set.
6. Why were the data collected in the first place?
7. What is the time period represented by the data set?
8. Were the data developed primarily through:
 - a. Field visits
 - b. Remote instrumentation (*i.e.* temperature recorders, etc)
 - c. Existing data sources
9. What is the status of the data set you are documenting? – *complete, in progress, planned*
 - a. Will the data set be updated? If so, how frequently?
10. Where were the data collected? Include description and coordinates, if known.
11. List some keywords to help search for this data set.
 - a. Thematic, Place, Temporal, Strata, Taxonomy
 - b. If a controlled vocabulary was used, what is the reference?
12. List any related data sets that could be documented for cross-reference.
13. The FGDC Biological Profile includes the means to document tabular data sets, taxonomy, field methods, and the use of analytical tools or models.
 - a. Was your data set developed using a model or other analytical tool?
 - i. If so, what is the reference
 - ii. If the model or tool is available include a contact and/or URL
 - b. Does the data set contain biological information? If no, skip to item **14**.
 - i. What species or communities were examined?
 - ii. Did you use a taxonomic authority or field guide for identification?
 1. If so, what is the reference?

- iii. Briefly summarize your field methods (cut&paste from other documents!)
 - 1. If you used existing protocols or methods, list the references
14. Is your data set archived in a databank or data catalog? If yes, please include a reference to the documentation and skip to item **15**. If No:
- a. What tests did you conduct to be certain your attributes actually represent field observations? Date of tests?
 - b. What measures did you take to make certain that your data set was as nearly correct as possible?
 - c. Were there any things that you excluded from your data collection? *i.e.* stems less than a certain diameter or streams without surface flow
 - d. What is the form of your data set? - *spreadsheet, ascii file, gis layer, database, other*
 - e. What is the filename for your data set?
 - i. For each file or table, list the fields in the data set and for each field list:
 - ii. The definition of the field
 - iii. If the data are coded (Enumerated Domain), list the codes and the definitions
 - iv. If the codes come from a published code set (Codeset Domain), list the reference.
 - v. If the data are measured (Range Domain), list the units and the minimum and maximum allowable values ("no limit" is acceptable).
 - vi. Otherwise, the domain is unrepresentable. Include a brief description of what is in the field
15. Is this a GIS data set? If no, skip to item **16**.
- a. Send a copy of the ArcInfo export file, an ArcView shapefile, or an ArcCatalog exported metadata file (txt or xml).
 - i. Include projection parameters, if necessary.
 - b. List any source data sets you used. For each source list:
 - i. Source name, originator and publication date
 - ii. Source time period and scale
 - iii. Source presentation form and media type
 - iv. Contribution of source to your analysis
 - c. List the processing steps you used to create your data set, including the approximate date of processing.
 - d. What tests did you use to determine horizontal or vertical positional accuracy of your data set? Date of tests?
16. Is the data set available for distribution? If no, go to **17**
- a. Are there legal restrictions on who may use the data?
 - b. Do you have any advice for potential users of the data set?
 - c. What are your distribution instructions?
17. You are done. Send a text file containing the responses to this interview to your metadata coordinator.

METADATA COLLECTION GUIDE

1. Have you already prepared metadata for this data set?

No.

- a. If yes, please bring a copy of the documentation or a reference to where it can be found and skip to item 17.

2. What is the title of the data set?

** Tweety: The Saga of Grassland Bird Monitoring at Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas

3. Who is the originator(s)/ owner of the data set? (Include address and telephone number)

David G. Peitz, Ecologist, Prairie Cluster Prototype Monitoring Program, Wilson's Creek National Battlefield, 6424 West Farm Road 182, Republic, MO 65738. Tel. 417-732-6438 ext. 276.

Dr. Steven G. Fancy, National Monitoring Coordinator, Inventory and Monitoring Program, National Parks Service, 1201 Oak Ridge Drive, Suite 200, Fort Collins, CO 80525. Tel. (970) 225-3571.

- a. If someone else should answer questions about the data, please list the name, address, and telephone number.

Gareth A. Rowell, Data Manager, Prairie Cluster Prototype Monitoring Program, Wilson's Creek National Battlefield, 6424 West Farm Road 182, Republic, MO 65738. Tel. 417-732-6438 ext. 272.

- b. Are there other organizations or individuals who should get credit for support, funding, or data collection and analysis?

Lisa P. Thomas, former Program Coordinator of Prairie Cluster Prototype Monitoring Program, Wilson's Creek National Battlefield.

Brian Witcher, former Data Manager of Prairie Cluster Prototype Monitoring Program, Wilson's Creek National Battlefield.

Michael D. DeBacker, Program Coordinator, Prairie Cluster Prototype Monitoring Program, Wilson's Creek National Battlefield

Jennifer Haack, Geography/Geology student at Southwestern Missouri State University in Springfield.

J. Tyler Cribbs, Biology student at Southwestern Missouri State University in Springfield.

4. Is the data set published or part of a larger publication?

a. If so, what is the reference?

Peitz, David G., Steven G. Fancy, Lisa P. Thomas, and Brian Witcher. 2002. Bird Monitoring Protocol for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas. National Park Service, Prairie Cluster Prototype Monitoring Program, Wilson's Creek National Battlefield, Republic MO.

5. Include a brief (no more than a few sentences) description of the data set.

Tweety consists of grassland bird monitoring data and associated habitat data for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas. We monitor multiple grassland and other bird species using a variable circular plot sampling methods. The sampling locations are permanent sites based on 400 X 400 m systematic grid. GPS is used to navigate to sampling locations. We gather habitat data at each sampling location using a 50 m radius plot centered on each sampling point. Additional vegetative sampling is taken from each of 4 subplots within the plot.

6. Why were the data collected in the first place?

- a. To determine annual changes in species composition and abundance of bird species that occur at Agate Fossil Beds National Monument and Tallgrass Prairie National Preserve during the breeding season.
- b. To improve our understanding of breeding bird - habitat relationships and the effects of management actions such as grazing and prescribed fire regimes on bird populations by correlating changes in bird species composition and abundance with changes in specific habitat variables.

7. What is the time period represented by the data set?

May 2001 – present.

8. Were the data developed primarily through:

- a. Field visits
- b. Remote instrumentation (*i.e.* temperature recorders, etc)
- c. Existing data sources

a. The data were developed primarily through field visits.

9. What is the status of the data you are documenting? – *complete, in progress, planned*

In progress

a. Will the data set be updated? If so, how frequently?

The data will be updated annually or bi-annually, depending on available resources.

10. Where were the data collected? Include description and coordinates in longitude and latitude.

Agate Fossil Beds National Monument, Nebraska

	Containing Rectangle	
	Latitude	Longitude
Lower left	42° 24' 35" N	103° 47' 17" W
Upper right	42° 25' 51" N	103° 43' 21" W

Tallgrass Prairie National Preserve, Kansas

	Containing Rectangle	
	Latitude	Longitude
Lower left	38° 24' 14" N	96° 35' 51" W
Upper right	38° 29' 50 "N	96° 30' 10" W

11. List some keywords to help search for this data set?

a. Thematic, Place, Temporal, Strata, Taxonomy

Monitoring, abundance, bird, avian, species, variable circular plot, sampling, Agate Fossil Beds National Monument, Tallgrass Prairie National Preserve

b. If a controlled vocabulary was used, what is the reference?

None,

12. List any related data sets that could be documented for cross-reference.

NPSpecies, National Park Service, Inventory and Monitoring Program.
ITIS, Integrated Taxonomic Information System, USDA-NRCS and Partners.

13. The FGDC Biological Profile includes the means to document tabular data sets, taxonomy, field methods, and the use of analytical tools or models.

a. Was your data set developed using a model or other analytical tool?

Yes.

i. If so, what is the reference

Buckland, S. T., et al. 2001. Introduction to distance sampling: estimating abundance in biological populations. Oxford Univ. Press.

Fancy, S. G. 1997. A new approach for analyzing bird densities from variable circular-plot counts. *Pacific Science* 51:107 – 114.

Nelson, J. T. and S. G. Fancy. 1999. A test of the variable circular-plot method when exact density of a bird population is known. *Pacific Conservation Biology* 5:139 – 143.

ii. If the model or tool is available include a contact and/or URL

<http://www.nature.nps.gov/im/monitor/birds.htm>

b. Does the data set contain biological information? If no, skip to item 14.

Yes.

i. What species or communities were examined?

Grassland bird species and their associated habitats.

ii. Did you use a taxonomic authority or field guide for identification?

Yes.

1. If so, what is the reference?

Stokes, D. and L. Stokes. 1996. *Stokes Field Guide to Birds: Western Region*. Little, Brown and Co. Boston.

Stokes, D. and L. Stokes. 1996. *Stokes Field Guide to Birds: Eastern Region*. Little, Brown and Co. Boston.

National Geographic. 1987. *Field Guide to the Birds of North America*. National Geographic Society. Washington, D.C.

iii. Briefly summarize your field methods (cut&paste from other documents!)

Major elements of our field methods include (a) field season preparations, field schedule and equipment setup, (b) establishing the sampling grid of 400 X 400 m cells on the park map, (c) conducting variable circular plot counts to measure bird species abundance, (d) collecting associated habitat data. Extensive detail for the bird monitoring protocol is given in the reference below.

1. If you used existing protocols or methods, list the references

Peitz, David G., Steven G. Fancy, Lisa P. Thomas, and Brian Witcher. 2002. Bird Monitoring Protocol for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas. National Park Service, Prairie Cluster Prototype Monitoring Program, Wilson's Creek National Battlefield, Republic MO.

14. Is your data set archived in a databank or data catalog? If yes, please include a reference to the documentation and skip to item 15.

Bird Monitoring Protocol for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas: Standard Operating Procedure (SOP) #7 Data Management, Version 1.0 (In Preparation). National Park Service, Prairie Cluster Prototype Monitoring Program, Wilson's Creek National Battlefield, Republic MO.

If No:

- a. What measures did you take to make certain that your data set was as nearly correct as possible? Tests? Date of tests?
- b. Were there any things that you excluded from your data collection *i.e.* stems less than a certain diameter or streams without surface flow
- c. What is the form of your data set? - *spreadsheet, ascii file, gis layer, database, other*
- d. What is the filename for your data set?
 - i. For each file or table, list the field names in the data set and for each field list:
 - ii. A description of what is recorded in the field
 - iii. If the data are coded (Enumerated Domain), list the codes and the definitions
 - iv. If the codes come from a published code set (Codeset Domain), list the reference.
 - v. If the data are measured (Range Domain), list the units and the minimum and maximum allowable values ("no limit" is acceptable).
 - vi. Otherwise, the domain is unrepresentable. Include a brief description of what is in the field

15. Is this a GIS data set?

No.

If no, skip to item 16.

- a. Include a path to where the data can be accessed over the network or bring a copy of the ArcInfo export file, an ArcView shapefile, or an ArcCatalog exported metadata file (txt or xml).
 - i. Include projection parameters, if necessary.

- b. List any source data sets you used. For each source list:
 - i. Source name, originator and publication date
 - ii. Source time period and scale
 - iii. Source presentation form and media type
 - iv. Contribution of source to your analysis
- c. List the processing steps you used to create your data set, including the approximate date of processing.

16. Is the data set available for distribution?

Yes.

If no, go to 17.

- a. Are there legal or policy restrictions on who may use the data?
No.
- b. Do you have any advice for potential users of the data set?

The dataset is in Microsoft Access format.

For additional information, please refer to our website at:

<http://www.nature.nps.gov/im/units/prcl/index.htm>

- c. What are your distribution instructions?

Please see the contact information for the Prairie Cluster Prototype Program in the URL above.

17. You are done. Bring a text file containing the responses to this guide to the workshop on a floppy disk or CD.

APPENDIX B.

Tweety: Grassland Bird Monitoring Database

**FGDC Metadata
Created Using
NPS Dataset Catalog**

Identification_Information:

Citation:

Citation_Information:

Originator: David G. Peitz

Publication_Date: 2003

Publication_Time:

Title: Tweety: Grassland Bird Monitoring Protocol

Edition: Ver. 2.1.x

Geospatial_Data_Presentation_Form: ArcInfo 8, ESRI, Inc.

Series_Information:

Series_Name:

Issue_Identification:

Publication_Information:

Publication_Place: Wilson's Creek National Battlefield

Publisher: unpublished

Other_Citation_Details:

Online_Linkage: <http://www.nature.nps.gov/im/units/prcl/index.htm>

Larger_Work_Citation:

Description:

Abstract: Tweety consists of grassland bird monitoring data and associated habitat data for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas. We monitor multiple grassland and other bird species using a variable circular plot sampling methods. The sampling locations are permanent sites based on 400 X 400 m systematic grid. GPS is used to navigate to sampling locations. We gather habitat data at each sampling location using a 50 m radius plot centered on each sampling point. Additional vegetative sampling is taken from each of 4 subplots within the plot.

Purpose: 1. To determine annual changes in species composition and abundance of bird species and their associated habitats that occur at Agate Fossil Beds National Monument and Tallgrass Prairie National Preserve during the breeding season.

Supplemental_Information: , LOCATION: Agate Fossil Beds National Monument

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 20010501

Ending_Date: present

Currentness_Reference: Active

Status:

Progress: In Work

Maintenance_and_Update_Frequency: Annually

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -103.7968

East_Bounding_Coordinate: -103.6913

North_Bounding_Coordinate: 42.43642

South_Bounding_Coordinate: 42.40784

Keywords:

Theme:

Theme_Keyword_Thesaurus:

Theme_Keyword: monitoring

Theme_Keyword: abundance

Theme_Keyword: bird

Theme_Keyword: avian

Theme_Keyword: species

Theme_Keyword: variable circular plot

Theme_Keyword: sampling

Theme_Keyword: Agate Fossil Beds

Theme_Keyword: Tallgrass Prairie

Access_Constraints:

Use_Constraints: No

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Rowell, Gareth A.

Contact_Organization:

Contact_Position: Data Manager

Contact_Address:

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Address_Type: mailing and physical
Address: Prairie Cluster Prototype LTEM Program, Wilson's Creek Nat.
Battlefield 6424 W. Farm Rd. 182,
City: Republic
State_or_Province: Missouri
Postal_Code: 65738-9514
Country: United States of America
Contact_Voice_Telephone: 417-732-6438 x. 272
Contact_TDD/TTY_Telephone:
Contact_Facsimile_Telephone: 417-732-7660
Contact_Electronic_Mail_Address: gareth_rowell@nps.gov
Hours_of_Service: 8:00 am - 5:00 pm
Native_Data_Set_Environment: MS Access 97
Contact_Instructions: Use e-mail if possible.

Security_Information:

Security_Classification_System:

Security_Classification: N/A

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report: +VAL

Quantitative_Attribute_Accuracy_Assessment:

Attribute_Accuracy_Value:

Attribute_Accuracy_Explanation: Checked for Valid Values, Range, Etc.

Logical_Consistency_Report:

Completeness_Report: Bird abundance data and associated habitat data are in final form. User-Interface is work in progress.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Quantitative_Horizontal_Positional_Accuracy_Assessment:

Horizontal_Positional_Accuracy_Value:

Horizontal_Positional_Accuracy_Explanation:

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

Quantitative_Vertical_Positional_Accuracy_Assessment:

Vertical_Positional_Accuracy_Value:

Vertical_Positional_Accuracy_Explanation:

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Peitz, David G.

Publication_Date:

Publication_Time:

Title:

Edition:

Geospatial_Data_Presentation_Form:

Series_Information:

Series_Name:

Issue_Identification:

Publication_Information:

Publication_Place:

Publisher:

Other_Citation_Details: Ecologist, 417-732-6538 x. 276, , 417-732-7660,
david_peitz@nps.gov, 8:00 am - 5:00 pm Central Time Zone, Please see contact,
mailing and physical, Prairie Cluster Prototype LTEM Program, Wilson's Creek Nat.
Battlefield 6424 W. Farm Rd. 182,, Republic, Missouri, 65738-9514, United States
of America

Online_Linkage:

Larger_Work_Citation:

Source_Information:

Source_Citation:

Citation_Information:

Originator: David G. Peitz

Publication_Date: 2003

Publication_Time:

Title: Tweety: Grassland Bird Monitoring Protocol

Edition: Ver. 2.1.x

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Geospatial_Data_Presentation_Form: ArcInfo 8, ESRI, Inc.

Series_Information:

Series_Name:

Issue_Identification:

Publication_Information:

Publication_Place: Wilson's Creek National Battlefield

Publisher: unpublished

Other_Citation_Details:

Online_Linkage:

Larger_Work_Citation:

Source_Citation_Abbreviation:

Source_Contribution:

Spatial_Data_Organization_Information:

Indirect_Spatial_Reference:

Direct_Spatial_Reference_Method:

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Database

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition: UTM

Geographic:

Latitude_Resolution:

Longitude_Resolution:

Geographic_Coordinate_Units:

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label:

Entity_Type_Definition:

Entity_Type_Definition_Source:

Attribute:

Attribute_Label:

Attribute_Definition:

Attribute_Definition_Source:

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

Enumerated_Domain_Value_Definition:

Detailed_Description:

Entity_Type:

Entity_Type_Label:

Entity_Type_Definition:

Entity_Type_Definition_Source:

Attribute:

Attribute_Label:

Attribute_Definition:

Attribute_Definition_Source:

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value:

Enumerated_Domain_Value_Definition:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_BasalArea

Entity_Type_Definition: Basal area of hardwood and conifer species using

10-factor English cruz-all

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: BasalAreaID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CanopyTypeID

Attribute_Definition: Foreign key for tlu_CanopyType (many to one); Field

Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

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Attribute:
Attribute_Label: Count
Attribute_Definition: Tree count for basal area using 10-Factor English cruz-all angle gauge; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SubPlotID
Attribute_Definition: Foreign key for SubPlotID; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_BirdObservation
Entity_Type_Definition: Bird counts using variable circular plot methods
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: RecID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: LocationID
Attribute_Definition: Foreign key for tbl_Locations; Field Type: dbText, Field Size: 255.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: EventID
Attribute_Definition: Foreign key for tbl_SamplingEvents; Field Type: dbText, Field Size: 255.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Interval
Attribute_Definition: Duration of sampling interval; Field Type: dbText, Field Size: 10.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ObsNo
Attribute_Definition: Observation numbers from field sheets; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: AOUCode
Attribute_Definition: American Ornithologist's Union Code; Field Type: dbText, Field Size: 12.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Distance
Attribute_Definition: Distance estimate for VCP analysis; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: DT
Attribute_Definition: Detection type (see Bird; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Sex
Attribute_Definition: Female, Male or Unk.; Field Type: dbText, Field Size: 50.

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Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Age
Attribute_Definition: Adult, Juv. or Unk.; Field Type: dbText, Field Size:
50. Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: FlockSize
Attribute_Definition: Flock Size; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PrevPlot
Attribute_Definition: Bird detected in previous plot; Field Type:
dbBoolean, Field Size: 1.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Flyover
Attribute_Definition: No. birds fly over top of veg.; Field Type: dbLong,
Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Comments
Attribute_Definition: Comments; Field Type: dbMemo, Field Size: 0.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: TSN
Attribute_Definition: ITIS Taxonomic Serial Number; Field Type: dbDouble,
Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_CanopyCover
Entity_Type_Definition: Canopy cover estimated using spherical densiometer
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: CanopyCoverID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CanopyTypeID
Attribute_Definition: Foreign key to tlu_CanopyType (many to one); Field
Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ReadingNo
Attribute_Definition: Spherical densiometer reading no.: value must be 1 -
4 (limit to list); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: DotScore
Attribute_Definition: Densiometer readings: Value must be 1 - 96 (limit to
list); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SubPlotID
Attribute_Definition: Foreign key to tbl_HabitatSubPlot (many to one);
Field Type: dbLong, Field Size: 4.

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Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_CanopyHeight
Entity_Type_Definition: Canopy heights of hardwood and coniferous trees
measured with metric clinometer
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: CanopyHeightID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CanopyTypeID
Attribute_Definition: Foreign key to tlu_CanopyType (many to one); Field
Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CanopyHeight
Attribute_Definition: Canopy height in meters measured with a clinometer;
Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SubPlotID
Attribute_Definition: Foreign key to tbl_HabitatSubPlot (many to one);
Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_DensityBoard
Entity_Type_Definition: Horizontal vegetation profile using vegetation
profile board
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: DensityBoardID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SubPlotID
Attribute_Definition: Foreign key to tbl_HabitatSubPlot (many to one);
Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: DBDistanceID
Attribute_Definition: Foreign key to tlu_DensityBoardDistance; Field Type:
dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: DBHeightID
Attribute_Definition: Foreign key to tlu_DensityBoardHeight; Field Type:
dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CoverClass
Attribute_Definition: Foreign key to tlu_CoverClasses; Field Type: dbText,
Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:

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Entity_Type_Label: tbl_EventObservers

Entity_Type_Definition: List of observers for each sampling event

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: EventID

Attribute_Definition: Foreign key to tbl_SamplingEvents; Field Type: dbText, Field Size: 35.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ObserverID

Attribute_Definition: Foreign key to tlu_StaffCooperators; Field Type: dbText, Field Size: 3.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_FoliarCover

Entity_Type_Definition: Ocular estimate of foliar cover with modified Daubenmire cover classes

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: FoliarCoverID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubPlotID

Attribute_Definition: Foreign key to tbl_HabitatSubPlot (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FoliarCoverTypeID

Attribute_Definition: Foreign key to tlu_FoliarCoverType (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CoverClass

Attribute_Definition: Foreign key to tlu_CoverClasses (many to one); Field Type: dbText, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_GroundCover

Entity_Type_Definition: Ocular estimate of ground cover with modified Daubenmire cover classes

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: GroundCoverID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubPlotID

Attribute_Definition: Foreign key to tbl_HabitatSubPlot (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: GroundCoverTypeID

Attribute_Definition: Foreign key to tlu_GroundCoverType (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

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Attribute_Label: CoverClass
Attribute_Definition: Foreign key to tlu_CoverClasses (many to one); Field
Type: dbText, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_HabitatPlot
Entity_Type_Definition: Top-level table for habitat plots
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: PlotID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: LocationID
Attribute_Definition: Foreign key to tbl_Locations; Field Type: dbText,
Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PeriodID
Attribute_Definition: Foreign key to tbl_SamplingPeriod; Field Type:
dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SamplingDate
Attribute_Definition: Foreign key to sampling events LUT; Field Type:
dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ParkCode
Attribute_Definition: Used to create LocationID; Field Type: dbText, Field
Size: 24.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ObserverInit
Attribute_Definition: Observer(s) Initials; Field Type: dbText, Field Size:
50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Management Unit
Attribute_Definition: Pasture name where circular plot is found; Field
Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PlotNo
Attribute_Definition: Permanent id number assigned to variable circular
plot; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: RiparianCorr
Attribute_Definition: Riparium stratum; Field Type: dbBoolean, Field Size:
1.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SlopePercent
Attribute_Definition: Percent slope across entire 50m plot radius; Field
Type: dbLong, Field Size: 4.
Attribute_Definition_Source:

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Attribute_Domain_Values:
Attribute:
Attribute_Label: SlopeVar
Attribute_Definition: Slope variability across entire 50m plot radius;
Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: AspectDegree
Attribute_Definition: Direction in which 50m radius plots slope faces;
Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: AspectVar
Attribute_Definition: Variability in direction of slope across entire 50m plot radius; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: TopoPosition
Attribute_Definition: Description of nature of topography; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_HabitatSubPlot
Entity_Type_Definition: Star table organizing most of the habitat data.
Relates many-to-many to look-up attribute tables via junction tables.
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: SubPlotID
Attribute_Definition: SubPlot primary key; Field Type: dbLong, Field Size:
4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PlotID
Attribute_Definition: Foreign key to tbl_HabitatPlot (many to one); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SubplotNo
Attribute_Definition: Value between 1 and 4 assigned to 5m radius subplots located within plot; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: RandAzimuth
Attribute_Definition: direction from center plot (limit to range, <360);
Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Slope
Attribute_Definition: general slope of plot (limit to range, <= 90);
Field Type: dbInteger, Field Size: 2.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Aspect
Attribute_Definition: general aspect of plot (limit to range, <360);
Field Type: dbInteger, Field Size: 2.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:

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Attribute_Label: Comments
Attribute_Definition: <no description>; Field Type: dbText, Field Size: 200.

Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_Locations
Entity_Type_Definition: Core location table
Entity_Type_Definition_Source: Microsoft Access 97

Attribute:
Attribute_Label: LocationID
Attribute_Definition: Unique Location ID code (when combined with ParkCode and Program); Field Type: dbText, Field Size: 24.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ParkCode
Attribute_Definition: 4-character Park Code (limit to list); Field Type: dbText, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ProjectCode
Attribute_Definition: Code for component of monitoring project (Weather, Birds, Fish, Veg Plots, etc.) (limit to list); Field Type: dbText, Field Size: 6.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Description
Attribute_Definition: Description of this location; Field Type: dbText, Field Size: 200.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartUTMX
Attribute_Definition: UTM X (northing) coordinate for the center of the plot or location OR starting point of a line or polygon (double precision to15 significant digits); Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartUTMY
Attribute_Definition: UTM Y (easting) coordinate for the center of the plot or location OR starting point of a line or polygon (double precision to15 significant digits); Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StopUTMX
Attribute_Definition: UTM X coordinate (northing) of ending point of line or polygon (double precision to15 significant digits); Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StopUTMY
Attribute_Definition: UTM Y coordinate (easting) of ending point of line or polygon (double precision to15 significant digits); Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: UtmZone
Attribute_Definition: UTM zone; Field Type: dbInteger, Field Size: 2.
Attribute_Definition_Source:
Attribute_Domain_Values:

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Attribute:
Attribute_Label: StartLatitude
Attribute_Definition: Latitude in decimal degrees for the center of the plot or location OR starting point of a line or polygon (double precision to15 significant digits); Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartLongitude
Attribute_Definition: Longitude in decimal degrees for the center of the plot or location OR starting point of a line or polygon (double precision to15 significant digits); Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StopLatitude
Attribute_Definition: Latitude in decimal degrees for the ending point of a line or polygon (double precision to15 significant digits); Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StopLongitude
Attribute_Definition: Longitude in decimal degrees for the ending point of a line or polygon (double precision to15 significant digits); Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Datum
Attribute_Definition: Datum of mapping ellipsoid (limit to list); Field Type: dbText, Field Size: 5.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: EstimatedHorizontalError
Attribute_Definition: Estimated horizontal accuracy error--see users guide for complete details and examples; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: AccuracyComments
Attribute_Definition: Comments about how positional (horizontal) accuracy was estimated; Field Type: dbMemo, Field Size: 0.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: HabitatType
Attribute_Definition: Habitat type (limit to list); Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Elevation
Attribute_Definition: Elevation in meters; Field Type: dbSingle, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Aspect
Attribute_Definition: Aspect (N, S, E, W) (limit to list); Field Type: dbText, Field Size: 5.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Slope
Attribute_Definition: Slope in degrees; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:

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Attribute_Domain_Values:
Attribute:
Attribute_Label: Azimuth
Attribute_Definition: Compass bearing between start and stop coordinates;
Field Type: dbSingle, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: EstablishmentDate
Attribute_Definition: Date site was established; Field Type: dbDate, Field
Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Discontinued
Attribute_Definition: Date site was discontinued; Field Type: dbDate, Field
Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: UnitName
Attribute_Definition: Management unit in which site is located; Field Type:
dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PLP
Attribute_Definition: Indicates whether location is a point, line, or
polygon (limit to list); Field Type: dbText, Field Size: 10.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SlopeVariability
Attribute_Definition: Categorical description slope variability over the
entire sample site; Field Type: dbText, Field Size: 10.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: AspectVariability
Attribute_Definition: Categorical description aspect variability over the
entire sample site; Field Type: dbText, Field Size: 10.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: TopoPosition
Attribute_Definition: Categorical description of sample site in relation to
the surrounding landscape; Field Type: dbText, Field Size: 20.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_PlotVegType
Entity_Type_Definition: Habitat type by ocular estimate using modified
Daubenmire cover classes. Applies to overall 50 m radius plots.
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: PlotVegTypeID
Attribute_Definition: Primary key for tbl_PlotVegType; Field Type: dbLong,
Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PlotID
Attribute_Definition: Foreign key to tbl_HabitatPlot (many to 1
relationship); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:

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Attribute_Label: CoverClass
Attribute_Definition: Foreign key to tlu_CoverClass (1 to many relationship) - modified Daubenmire cover classes; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: VegTypeClass
Attribute_Definition: Veg type classes; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_SamplingEvents
Entity_Type_Definition: Core event table
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: EventID
Attribute_Definition: Sampling event ID code; Field Type: dbText, Field Size: 35.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PeriodID
Attribute_Definition: Unique identifier for the data collection period; Field Type: dbText, Field Size: 28.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartTime
Attribute_Definition: Time event begins; Field Type: dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Project
Attribute_Definition: Project name; Field Type: dbText, Field Size: 10.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartDate
Attribute_Definition: Date event begins; Field Type: dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: EndDate
Attribute_Definition: Date event ends; Field Type: dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: EndTime
Attribute_Definition: Time event ends; Field Type: dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_SamplingPeriod
Entity_Type_Definition: Core table describing the time, duration & location of each data collection period
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: ProtocolVersion
Attribute_Definition: <no description>; Field Type: dbText, Field Size: 255.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PeriodID
Attribute_Definition: Unique identifier for the data collection period,

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based on the park code, project code, and start date of the sampling period;
Field Type: dbText, Field Size: 28.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ParkCode

Attribute_Definition: 4-character park code; Field Type: dbText, Field

Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ProjectCode

Attribute_Definition: 6-character code for the monitoring program component
(Weather, Birds, Fish, Veg Plots, etc.); Field Type: dbText, Field Size: 6.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SPStartDate

Attribute_Definition: Date when sampling began; Field Type: dbDate, Field

Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SPEnddate

Attribute_Definition: Date when sampling ended; Field Type: dbDate, Field

Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TripReport

Attribute_Definition: Trip report in MS Word format, describing protocol
implementation details and special circumstances; Field Type: dbLongBinary, Field
Size: 0.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_TreeTally

Entity_Type_Definition: Tree species counts by dbh size class

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: TreeTallyID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TreeDBH_ID

Attribute_Definition: Foreign key to tlu_TreeDBH (many to one); Field Type:
dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TreeTally_count

Attribute_Definition: Observed frequency (dot tally method); Field Type:
dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubplotID

Attribute_Definition: Foreign key to tbl_SubPlot (many to one); Field Type:
dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Sp_RecordID

Attribute_Definition: Foreign key to tlu_Species (many to one); Field Type:
dbLong, Field Size: 4.

Attribute_Definition_Source:

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Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_TweetyEventCondition
Entity_Type_Definition: Weather conditions associated with bird count
events
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: EventID
Attribute_Definition: Primary key; Field Type: dbText, Field Size: 35.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ObsInits
Attribute_Definition: Foreign key to tlu_EventObservers; Field Type:
dbText, Field Size: 3.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: TempC
Attribute_Definition: Ambient temp. °C; Field Type: dbSingle, Field Size:
4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Wind
Attribute_Definition: Based on Beaufort scale; Field Type: dbLong, Field
Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Rain
Attribute_Definition: Rain codes, see SOP#5; Field Type: dbLong, Field
Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Clouds
Attribute_Definition: % cloud cover; Field Type: dbInteger, Field Size: 2.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Noise
Attribute_Definition: Background noise conditions, see SOP#5; Field Type:
dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Comment
Attribute_Definition: Comments; Field Type: dbText, Field Size: 255.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_VegProfile
Entity_Type_Definition: Vertical profile of vegetation from 1 to 7.5 m
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: VegProfileID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: VegHeightID
Attribute_Definition: Foreign key to tlu_VegProfileHeight (many to one);
Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:

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Attribute:
Attribute_Label: VegProfileClassID
Attribute_Definition: Foreign key to tlu_VegProfileClass (many to one);
Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SubPlotID
Attribute_Definition: Foreign key to tbl_HabitatSubPlot (many to one);
Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: VPCount
Attribute_Definition: Measurements taken in four cardinal directions (Range
1 - 4 per class type); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_CanopyType
Entity_Type_Definition: Canopy-type values available for combo-box controls
in data-entry forms
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: CanopyTypeID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CanopyType
Attribute_Definition: Canopy type: Hardwood or Conifer; Field Type: dbText,
Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_CoverClasses
Entity_Type_Definition: modified Daubenmire cover-class values available
for combo-box controls in data-entry forms
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: CoverClass
Attribute_Definition: Cover class for estimating percent cover in a defined
area. The program standard is the modified Daubenmire 7-class scale,
alternatives are Kelrick's scale described in the original protocol, and North
Carolina Vegetation Survey's 10-class scale.; Field Type: dbText, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: NumericClass
Attribute_Definition: Numeric equivalent of the cover class, used for
analysis of log-scaled data; Field Type: dbInteger, Field Size: 2.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Range
Attribute_Definition: Range of cover values contained by each cover class;
Field Type: dbText, Field Size: 20.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: MidpointValue
Attribute_Definition: Midpoint of the cover class range; Field Type:
dbSingle, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:

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Attribute_Label: PC-LTEM_CoverClass
Attribute_Definition: Corresponding functional cover classes used to make data compatible with PC-LTEM data collected using the modified Daubenmire 7-class scale; Field Type: dbSingle, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PC-LTEM_Range

Attribute_Definition: Corresponding range of cover values indicated by the functional cover class; Field Type: dbText, Field Size: 21.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PC-LTEM_MidpointValue

Attribute_Definition: Corresponding midpoint of the functional cover class; original class midpoints were used for Kelrick's classes, where the original classes do not line up well with those of PC-LTEM; Field Type: dbSingle, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_DensityBoardDistance

Entity_Type_Definition: Density-board distance values available for combo-box controls in data-entry forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: DBDistanceID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DBDistanceClass

Attribute_Definition: Density Board Distance Class; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_DensityBoardHeight

Entity_Type_Definition: Density-board height values available for combo-box controls in data-entry forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: DBHeightID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DBHeightClass

Attribute_Definition: Density Board Height Class; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_EventObservers

Entity_Type_Definition: Core look-up table

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: ObsInits

Attribute_Definition: Observer initials (max. 3 characters); Field Type: dbText, Field Size: 3.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FirstName

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

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Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: MiddleInit

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: LastName

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Agency/Title

Attribute_Definition: <no description>; Field Type: dbText, Field Size:

255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ADDRESS

Attribute_Definition: <no description>; Field Type: dbText, Field Size:

255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ADDRESS2

Attribute_Definition: <no description>; Field Type: dbText, Field Size:

255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CITY

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: State

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 2.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ZipCode

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 10.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: EmailAddress

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: HomePhone

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 20.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: WorkPhone

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 20.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: WorkExtension

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 5.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FaxNumber

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 20.

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Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Notes
Attribute_Definition: <no description>; Field Type: dbMemo, Field Size: 0.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_FoliarCoverType
Entity_Type_Definition: Foliar cover-type values available for combo-box controls in data-entry forms.
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: FoliarCoverTypeID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: FCDescription
Attribute_Definition: Description of Foliar Cover Types; Field Type: dbText, Field Size: 100.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_GroundCoverType
Entity_Type_Definition: Ground cover-type values available for combo-box controls in data-entry forms.
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: GroundCoverTypeID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: GCDescription
Attribute_Definition: Ground Cover Description; Field Type: dbText, Field Size: 100.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_Projects
Entity_Type_Definition: Lookup table, information on project supervision, initiation dates, data types
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: ProjectCode
Attribute_Definition: 6-character code for the monitoring project; Field Type: dbText, Field Size: 6.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ProjectTitle
Attribute_Definition: Full project title; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ProjectManager
Attribute_Definition: Individual in charge of monitoring project implementation; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartDate
Attribute_Definition: When monitoring project was initiated; Field Type:

dbDate, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Comments

Attribute_Definition: Comments on the project; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DatabaseName

Attribute_Definition: Name of the data warehouse; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Format

Attribute_Definition: Type of database; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DatabasePath

Attribute_Definition: Directory path of database; Field Type: dbText, Field Size: 100.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DataTypes

Attribute_Definition: Indicates types of data stored in the database; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_Species

Entity_Type_Definition: Lookup table, list of species observed and cross-referenced synonyms

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: RecordID

Attribute_Definition: Unique identifier of the record; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TSN

Attribute_Definition: ITIS taxonomic serial number; Field Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TaxonCode

Attribute_Definition: Locally-unique code for taxa without an assigned TSN; Field Type: dbText, Field Size: 12.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: GroupCode

Attribute_Definition: Group of organisms of which this is a member: birds, fish, etc.; Field Type: dbByte, Field Size: 1.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ScientificName

Attribute_Definition: Scientific name of the taxon; Field Type: dbText, Field Size: 60.

Attribute_Definition_Source:

Attribute_Domain_Values:

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Attribute:
Attribute_Label: CommonName
Attribute_Definition: Common or vernacular name for the species; Field
Type: dbText, Field Size: 100.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: IsProvisional
Attribute_Definition: Indicates that the species name represents a
temporary identification which will be revised once the identity has been better
resolved; Field Type: dbBoolean, Field Size: 1.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: IsValid
Attribute_Definition: Indicates whether or not this name is currently
accepted as the valid name; Field Type: dbBoolean, Field Size: 1.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ValidTaxon
Attribute_Definition: Indicates the valid name of this synonym; Field Type:
dbText, Field Size: 12.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_StaffCooperators
Entity_Type_Definition: Lookup table, comprehensive list of staff, field
workers, and cooperators
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: ObserverID
Attribute_Definition: Initials of observer; Field Type: dbText, Field Size:
3.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: LastName
Attribute_Definition: Last name of observer; Field Type: dbText, Field
Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: FirstName
Attribute_Definition: First name of observer; Field Type: dbText, Field
Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: MiddleInit
Attribute_Definition: Middle initial of observer; Field Type: dbText, Field
Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Title
Attribute_Definition: Position/title of observer; Field Type: dbText, Field
Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Employer
Attribute_Definition: Employer of observer: default is NPS-PCPrototype;
Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:

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Attribute_Label: GradeLevel
Attribute_Definition: GS level, or equivalent for non-federal employees;
Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Notes
Attribute_Definition: Comments regarding the observer; Field Type: dbMemo,
Field Size: 0.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_TreeDBH
Entity_Type_Definition: Tree dbh class values available for combo-box
controls in data-entry forms.
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: TreeDBH_ID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: TreeDBH_size_classes
Attribute_Definition: DBH size classes; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_VegProfileClass
Entity_Type_Definition: Horizontal vegetation profile class values
available for combo-box controls in data-entry forms.
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: VegProfileClassID
Attribute_Definition: <no description>; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: VegProfileClass
Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_VegProfileHeight
Entity_Type_Definition: Vegetation height-class values available for
combo-box controls in data-entry forms.
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: VegHeightID
Attribute_Definition: <no description>; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: HeightClass
Attribute_Definition: VegProfile Height Class; Field Type: dbText, Field
Size: 100.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tluBirdSpecies
Entity_Type_Definition: Variation on tlu_species
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: Species
Attribute_Definition: 4-character AOU code for bird species; Field Type:

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dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CommonName

Attribute_Definition: Common or vernacular name for the species; Field

Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SciName

Attribute_Definition: Scientific name for the species; Field Type: dbText,

Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TSN

Attribute_Definition: Taxonomic Serial Number for the species as assigned

by ITIS (Integrated Taxonomic Info System); Field Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tluNoiseCode

Entity_Type_Definition: Background noise associated with bird count work

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: NoiseCode

Attribute_Definition: Code used to record background noise as it affects observer's ability to hear birds; Field Type: dbByte, Field Size: 1.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Description

Attribute_Definition: Explanation of background noise code; Field Type:

dbText, Field Size: 250.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tluParkCode

Entity_Type_Definition: Core look-up table

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: PARKCODE

Attribute_Definition: <no description>; Field Type: dbText, Field Size:

255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PARKNAME

Attribute_Definition: <no description>; Field Type: dbText, Field Size:

255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PARKTYPE

Attribute_Definition: <no description>; Field Type: dbText, Field Size:

255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tluRainCode

Entity_Type_Definition: Precipitation conditions

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: RainCode

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Attribute_Definition: Code used to record precipitation conditions during count (rain); Field Type: dbByte, Field Size: 1.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Description

Attribute_Definition: Explanation of rain code; Field Type: dbText, Field Size: 250.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tluWindCode

Entity_Type_Definition: Wind speed as it relates to bird count activity

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: WindCode

Attribute_Definition: Code used to record wind strength (Beaufort Scale); Field Type: dbByte, Field Size: 1.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Description

Attribute_Definition: Explanation of wind code; Field Type: dbText, Field Size: 250.

Attribute_Definition_Source:

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum:

Range_Domain_Maximum:

Attribute_Units_of_Measure:

Attribute_Measurement_Resolution:

Codeset_Domain:

Codeset_Name:

Codeset_Source:

Unrepresentable_Domain:

Beginning_Date_of_Attribute_Values:

Ending_Date_of_Attribute_Values:

Attribute_Value_Accuracy_Information:

Attribute_Value_Accuracy:

Attribute_Value_Accuracy_Explanation:

Attribute_Measurement_Frequency:

Overview_Description:

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary: Rowell, Gareth A.

Contact_Person: Rowell, Gareth A.

Contact_Organization:

Contact_Position: Data Manager

Contact_Address:

Address_Type: mailing and physical

Address: Prairie Cluster Prototype LTEM Program, Wilson's Creek Nat. Battlefield 6424 W. Farm Rd. 182,

City: Republic

State_or_Province: Missouri

Postal_Code: 65738-9514

Country: United States of America

Contact_Voice_Telephone: 417-732-6438 x. 272

Contact_TDD/TTY_Telephone:

Contact_Facsimile_Telephone: 417-732-7660

Contact_Electronic_Mail_Address: gareth_rowell@nps.gov

Hours_of_Service: 8:00 am - 5:00 pm

Contact_Instructions: Use e-mail if possible.

Standard_Order_Process:

Non-digital_Form:

Fees: Share

Ordering_Instructions: I&M (Contact Name)

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Digital_Form:

Digital_Transfer_Information:

Format_Name: MS Access 97

Transfer_Size: 18.8

Access_Instructions: Prairie Cluster Prototype LTEM Program, Wilson's
Creek Nat. Battlefield, Data at park?: no

Fees: Share

Ordering_Instructions: I&M (Contact Name)

Technical_Prerequisites: None

Metadata_Reference_Information:

Metadata_Date: 20030324

Metadata_Review_Date: 20030324

Metadata_Contact:

Contact_Information:

Contact_Person_Primary: Rowell, Gareth A.

Contact_Person: Rowell, Gareth A.

Contact_Organization:

Contact_Position: Data Manager

Contact_Address:

Address_Type: mailing and physical

Address: Prairie Cluster Prototype LTEM Program, Wilson's Creek Nat.
Battlefield 6424 W. Farm Rd. 182,

City: Republic

State_or_Province: Missouri

Postal_Code: 65738-9514

Country: United States of America

Contact_Voice_Telephone: 417-732-6438 x. 272

Contact_TDD/TTY_Telephone:

Contact_Facsimile_Telephone: 417-732-7660

Contact_Electronic_Mail_Address: gareth_rowell@nps.gov

Hours_of_Service: 8:00 am - 5:00 pm

Contact_Instructions: Use e-mail if possible.

Metadata_Standard_Name: NPS DCAT

Metadata_Standard_Version: v2002.1

Metadata_Access_Constraints:

Metadata_Use_Constraints:

Metadata_Security_Information:

Metadata_Security_Classification_System:

Metadata_Security_Classification:

Metadata_Security_Handling_Description:

APPENDIX C.

Tweety: Grassland Bird Monitoring Database

Html version of FGDC Metadata File

Tweety: Grassland Bird Monitoring Protocol

Metadata also available as

Metadata:

- [Identification Information](#)
 - [Data Quality Information](#)
 - [Spatial Data Organization Information](#)
 - [Spatial Reference Information](#)
 - [Entity and Attribute Information](#)
 - [Distribution Information](#)
 - [Metadata Reference Information](#)
-

Identification_Information:

Citation:

Citation_Information:

Originator: David G. Peitz

Publication_Date: 2003

Publication_Time:

Title: Tweety: Grassland Bird Monitoring Protocol

Edition: Ver. 2.1.x

Geospatial_Data_Presentation_Form: ArcInfo 8, ESRI, Inc.

Series_Information:

Series_Name:

Issue_Identification:

Publication_Information:

Publication_Place: Wilson's Creek National Battlefield

Publisher: unpublished

Other_Citation_Details:

Online_Linkage: <http://www.nature.nps.gov/im/units/prcl/index.htm>

Larger_Work_Citation:

Description:

Abstract:

Tweety consists of grassland bird monitoring data and associated habitat data for Agate Fossil Beds National Monument, Nebraska and Tallgrass Prairie National Preserve, Kansas. We monitor multiple grassland and other bird species using a variable circular plot sampling methods. The sampling locations are permanent sites based on 400 X 400 m systematic grid. GPS is used to navigate to sampling locations. We gather habitat data at each sampling location using a 50 m radius plot centered on each sampling point. Additional vegetative sampling is taken from each of 4 subplots within the plot.

Purpose:

1. To determine annual changes in species composition and abundance of bird species and their associated habitats that occur at Agate Fossil Beds National Monument and Tallgrass Prairie National Preserve during the breeding season.

Supplemental_Information: , LOCATION: Agate Fossil Beds National Monument

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 20010501

Ending_Date: present
Currentness_Reference: Active
Status:
 Progress: In Work
 Maintenance_and_Update_Frequency: Annually
Spatial_Domain:
 Bounding_Coordinates:
 West_Bounding_Coordinate: -103.7968
 East_Bounding_Coordinate: -103.6913
 North_Bounding_Coordinate: 42.43642
 South_Bounding_Coordinate: 42.40784
Keywords:
 Theme:
 Theme_Keyword_Thesaurus:
 Theme_Keyword: monitoring
 Theme_Keyword: abundance
 Theme_Keyword: bird
 Theme_Keyword: avian
 Theme_Keyword: species
 Theme_Keyword: variable circular plot
 Theme_Keyword: sampling
 Theme_Keyword: Agate Fossil Beds
 Theme_Keyword: Tallgrass Prairie
Access_Constraints:
Use_Constraints: No
Point_of_Contact:
 Contact_Information:
 Contact_Person_Primary:
 Contact_Person: Rowell, Gareth A.
 Contact_Organization:
 Contact_Position: Data Manager
 Contact_Address:
 Address_Type: mailing and physical
 Address:
 Prairie Cluster Prototype LTEM Program, Wilson's Creek Nat.
 Battlefield 6424 W. Farm Rd. 182,
 City: Republic
 State_or_Province: Missouri
 Postal_Code: 65738-9514
 Country: United States of America
 Contact_Voice_Telephone: 417-732-6438 x. 272
 Contact_TDD_TTY_Telephone:
 Contact_Facsimile_Telephone: 417-732-7660
 Contact_Electronic_Mail_Address: gareth_rowell@nps.gov
 Hours_of_Service: 8:00 am - 5:00 pm
 Native_Data_Set_Environment: MS Access 97
 Contact_Instructions: Use e-mail if possible.
Security_Information:
 Security_Classification_System:
 Security_Classification: N/A

Data_Quality_Information:
 Attribute_Accuracy:

Attribute_Accuracy_Report: +VAL

Quantitative_Attribute_Accuracy_Assessment:

Attribute_Accuracy_Value:

Attribute_Accuracy_Explanation: Checked for Valid Values, Range, Etc.

Logical_Consistency_Report:

Completeness_Report:

Bird abundance data and associated habitat data are in final form. User-Interface is work in progress.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Quantitative_Horizontal_Positional_Accuracy_Assessment:

Horizontal_Positional_Accuracy_Value:

Horizontal_Positional_Accuracy_Explanation:

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

Quantitative_Vertical_Positional_Accuracy_Assessment:

Vertical_Positional_Accuracy_Value:

Vertical_Positional_Accuracy_Explanation:

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Peitz, David G.

Publication_Date:

Publication_Time:

Title:

Edition:

Geospatial_Data_Presentation_Form:

Series_Information:

Series_Name:

Issue_Identification:

Publication_Information:

Publication_Place:

Publisher:

Other_Citation_Details:

Ecologist, 417-732-6538 x. 276, , 417-732-7660,
david_peitz@nps.gov, 8:00 am - 5:00 pm Central Time Zone,
Please see contact, mailing and physical, Prairie Cluster
Prototype LTEM Program, Wilson's Creek Nat. Battlefield
6424 W. Farm Rd. 182,, Republic, Missouri, 65738-9514,
United States of America

Online_Linkage:

Larger_Work_Citation:

Source_Information:

Source_Citation:

Citation_Information:

Originator: David G. Peitz

Publication_Date: 2003

Publication_Time:

Title: Tweety: Grassland Bird Monitoring Protocol

Edition: Ver. 2.1.x

Geospatial_Data_Presentation_Form: ArcInfo 8, ESRI, Inc.

Series_Information:

Series_Name:

Issue_Identification:
Publication_Information:
Publication_Place: Wilson's Creek National Battlefield
Publisher: unpublished
Other_Citation_Details:
Online_Linkage:
Larger_Work_Citation:
Source_Citation_Abbreviation:
Source_Contribution:

Spatial_Data_Organization_Information:
Indirect_Spatial_Reference:
Direct_Spatial_Reference_Method:
Point_and_Vector_Object_Information:
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Database

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Geographic:
Latitude_Resolution:
Longitude_Resolution:
Geographic_Coordinate_Units:

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Entity_Type_Definition:
Entity_Type_Definition_Source:
Attribute:
Attribute_Label:
Attribute_Definition:
Attribute_Definition_Source:
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value:
Enumerated_Domain_Value_Definition:
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Entity_Type_Definition:
Entity_Type_Definition_Source:
Attribute:
Attribute_Label:
Attribute_Definition:
Attribute_Definition_Source:
Attribute_Domain_Values:
Enumerated_Domain:

Enumerated_Domain_Value:
Enumerated_Domain_Value_Definition:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_BasalArea

Entity_Type_Definition:

Basal area of hardwood and conifer species using 10-factor English cruz-all

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: BasalAreaID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CanopyTypeID

Attribute_Definition:

Foreign key for tlu_CanopyType (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Count

Attribute_Definition:

Tree count for basal area using 10-Factor English cruz-all angle gauge;
Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubPlotID

Attribute_Definition: Foreign key for SubPlotID; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_BirdObservation

Entity_Type_Definition: Bird counts using variable circular plot methods

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: RecID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: LocationID

Attribute_Definition:

Foreign key for tbl_Locations; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: EventID

Attribute_Definition:

Foreign key for tbl_SamplingEvents; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Interval

Attribute_Definition:

Duration of sampling interval; Field Type: dbText, Field Size: 10.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ObsNo

Attribute_Definition:

Observation numbers from field sheets; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: AOUCode

Attribute_Definition:

American Ornithologist's Union Code; Field Type: dbText, Field Size: 12.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Distance

Attribute_Definition:

Distance estimate for VCP analysis; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DT

Attribute_Definition: Detection type (see Bird; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Sex

Attribute_Definition: Female, Male or Unk.; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Age

Attribute_Definition: Adult, Juv. or Unk.; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FlockSize

Attribute_Definition: Flock Size; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PrevPlot

Attribute_Definition:

Bird detected in previous plot; Field Type: dbBoolean, Field Size: 1.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Flyover

Attribute_Definition:

No. birds fly over top of veg.; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:
Attribute:
Attribute_Label: Comments
Attribute_Definition: Comments; Field Type: dbMemo, Field Size: 0.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: TSN
Attribute_Definition:
 ITIS Taxonomic Serial Number; Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_CanopyCover
Entity_Type_Definition: Canopy cover estimated using spherical densiometer
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: CanopyCoverID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CanopyTypeID
Attribute_Definition:
 Foreign key to tlu_CanopyType (many to one); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ReadingNo
Attribute_Definition:
 Spherical densiometer reading no.: value must be 1 - 4 (limit to list); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: DotScore
Attribute_Definition:
 Densiometer readings: Value must be 1 - 96 (limit to list); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SubPlotID
Attribute_Definition:
 Foreign key to tbl_HabitatSubPlot (many to one); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_CanopyHeight
Entity_Type_Definition:
 Canopy heights of hardwood and coniferous trees measured with metric

clinometer

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: CanopyHeightID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CanopyTypeID

Attribute_Definition:

Foreign key to tlu_CanopyType (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CanopyHeight

Attribute_Definition:

Canopy height in meters measured with a clinometer; Field Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubPlotID

Attribute_Definition:

Foreign key to tbl_HabitatSubPlot (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_DensityBoard

Entity_Type_Definition: Horizontal vegetation profile using vegetation profile board

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: DensityBoardID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubPlotID

Attribute_Definition:

Foreign key to tbl_HabitatSubPlot (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DBDistanceID

Attribute_Definition:

Foreign key to tlu_DensityBoardDistance; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DBHeightID

Attribute_Definition:

Foreign key to tlu_DensityBoardHeight; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CoverClass

Attribute_Definition:

Foreign key to tlu_CoverClasses; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_EventObservers

Entity_Type_Definition: List of observers for each sampling event

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: EventID

Attribute_Definition:

Foreign key to tbl_SamplingEvents; Field Type: dbText, Field Size: 35.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ObserverID

Attribute_Definition:

Foreign key to tlu_StaffCooperators; Field Type: dbText, Field Size: 3.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_FoliarCover

Entity_Type_Definition:

Ocular estimate of foliar cover with modified Daubenmire cover classes

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: FoliarCoverID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubPlotID

Attribute_Definition:

Foreign key to tbl_HabitatSubPlot (many to one); Field Type: dbLong,
Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FoliarCoverTypeID

Attribute_Definition:

Foreign key to tlu_FoliarCoverType (many to one); Field Type: dbLong,
Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CoverClass

Attribute_Definition:

Foreign key to tlu_CoverClasses (many to one); Field Type: dbText, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_GroundCover

Entity_Type_Definition:

Ocular estimate of ground cover with modified Daubenmire cover classes

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: GroundCoverID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubPlotID

Attribute_Definition:

Foreign key to tbl_HabitatSubPlot (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: GroundCoverTypeID

Attribute_Definition:

Foreign key to tlu_GroundCoverType (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CoverClass

Attribute_Definition:

Foreign key to tlu_CoverClasses (many to one); Field Type: dbText, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_HabitatPlot

Entity_Type_Definition: Top-level table for habitat plots

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: PlotID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: LocationID

Attribute_Definition:

Foreign key to tbl_Locations; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PeriodID

Attribute_Definition:

Foreign key to tbl_SamplingPeriod; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SamplingDate
Attribute_Definition:
Foreign key to sampling events LUT; Field Type: dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ParkCode
Attribute_Definition: Used to create LocationID; Field Type: dbText, Field Size: 24.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ObserverInit
Attribute_Definition: Observer(s) Initials; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Management Unit
Attribute_Definition:
Pasture name where circular plot is found; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PlotNo
Attribute_Definition:
Permanent id number assigned to variable circular plot; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: RiparianCorr
Attribute_Definition: Riparium stratum; Field Type: dbBoolean, Field Size: 1.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SlopePercent
Attribute_Definition:
Percent slope across entire 50m plot radius; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SlopeVar
Attribute_Definition:
Slope variability across entire 50m plot radius; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: AspectDegree

Attribute_Definition:

Direction in which 50m radius plots slope faces; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: AspectVar

Attribute_Definition:

Variability in direction of slope across entire 50m plot radius; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TopoPosition

Attribute_Definition:

Description of nature of topography; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_HabitatSubPlot

Entity_Type_Definition:

Star table organizing most of the habitat data. Relates many-to-many to look-up attribute tables via junction tables.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: SubPlotID

Attribute_Definition: SubPlot primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PlotID

Attribute_Definition:

Foreign key to tbl_HabitatPlot (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubplotNo

Attribute_Definition:

Value between 1 and 4 assigned to 5m radius subplots located within plot; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: RandAzimuth

Attribute_Definition:

direction from center plot (limit to range, <360); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Slope

Attribute_Definition:

general slope of plot (limit to range, <= 90); Field Type: dbInteger, Field

Size: 2.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: Aspect
 Attribute_Definition:
 general aspect of plot (limit to range, <360); Field Type: dbInteger, Field
 Size: 2.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: Comments
 Attribute_Definition: <no description>; Field Type: dbText, Field Size: 200.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Detailed_Description:
 Entity_Type:
 Entity_Type_Label: tbl_Locations
 Entity_Type_Definition: Core location table
 Entity_Type_Definition_Source: Microsoft Access 97
 Attribute:
 Attribute_Label: LocationID
 Attribute_Definition:
 Unique Location ID code (when combined with ParkCode and Program);
 Field Type: dbText, Field Size: 24.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: ParkCode
 Attribute_Definition:
 4-character Park Code (limit to list); Field Type: dbText, Field Size: 4.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: ProjectCode
 Attribute_Definition:
 Code for component of monitoring project (Weather, Birds, Fish, Veg Plots,
 etc.) (limit to list); Field Type: dbText, Field Size: 6.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: Description
 Attribute_Definition:
 Description of this location; Field Type: dbText, Field Size: 200.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: StartUTMX
 Attribute_Definition:
 UTM X (northing) coordinate for the center of the plot or location OR
 starting point of a line or polygon (double precision to 15 significant digits);
 Field Type: dbDouble, Field Size: 8.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:

Attribute_Label: StartUTMY

Attribute_Definition:

UTM Y (easting) coordinate for the center of the plot or location OR
starting point of a line or polygon (double precision to15 significant digits);
Field Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: StopUTMX

Attribute_Definition:

UTM X coordinate (northing) of ending point of line or polygon (double
precision to15 significant digits); Field Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: StopUTMY

Attribute_Definition:

UTM Y coordinate (easting) of ending point of line or polygon (double
precision to15 significant digits); Field Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: UtmZone

Attribute_Definition: UTM zone; Field Type: dbInteger, Field Size: 2.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: StartLatitude

Attribute_Definition:

Latitude in decimal degrees for the center of the plot or location OR starting
point of a line or polygon (double precision to15 significant digits); Field
Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: StartLongitude

Attribute_Definition:

Longitude in decimal degrees for the center of the plot or location OR
starting point of a line or polygon (double precision to15 significant digits);
Field Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: StopLatitude

Attribute_Definition:

Latitude in decimal degrees for the ending point of a line or polygon
(double precision to15 significant digits); Field Type: dbDouble, Field Size:
8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: StopLongitude

Attribute_Definition:

Longitude in decimal degrees for the ending point of a line or polygon
(double precision to15 significant digits); Field Type: dbDouble, Field Size:

8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Datum

Attribute_Definition:

Datum of mapping ellipsoid (limit to list); Field Type: dbText, Field Size:

5.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: EstimatedHorizontalError

Attribute_Definition:

Estimated horizontal accuracy error--see users guide for complete details and examples; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: AccuracyComments

Attribute_Definition:

Comments about how positional (horizontal) accuracy was estimated; Field Type: dbMemo, Field Size: 0.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: HabitatType

Attribute_Definition:

Habitat type (limit to list); Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Elevation

Attribute_Definition:

Elevation in meters; Field Type: dbSingle, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Aspect

Attribute_Definition:

Aspect (N, S, E, W) (limit to list); Field Type: dbText, Field Size: 5.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Slope

Attribute_Definition:

Slope in degrees; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Azimuth

Attribute_Definition:

Compass bearing between start and stop coordinates; Field Type: dbSingle, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: EstablishmentDate

Attribute_Definition: Date site was established; Field Type: dbDate, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Discontinued

Attribute_Definition: Date site was discontinued; Field Type: dbDate, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: UnitName

Attribute_Definition:

Management unit in which site is located; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PLP

Attribute_Definition:

Indicates whether location is a point, line, or polygon (limit to list); Field Type: dbText, Field Size: 10.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SlopeVariability

Attribute_Definition:

Categorical description slope variability over the entire sample site; Field Type: dbText, Field Size: 10.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: AspectVariability

Attribute_Definition:

Categorical description aspect variability over the entire sample site; Field Type: dbText, Field Size: 10.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TopoPosition

Attribute_Definition:

Categorical description of sample site in relation to the surrounding landscape; Field Type: dbText, Field Size: 20.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_PlotVegType

Entity_Type_Definition:

Habitat type by ocular estimate using modified Daubenmire cover classes. Applies to overall 50 m radius plots.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: PlotVegTypeID

Attribute_Definition:

Primary key for tbl_PlotVegType; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PlotID
Attribute_Definition:
Foreign key to tbl_HabitatPlot (many to 1 relationship); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CoverClass
Attribute_Definition:
Foreign key to tlu_CoverClass (1 to many relationship) - modified Daubenmire cover classes; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: VegTypeClass
Attribute_Definition: Veg type classes; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_SamplingEvents
Entity_Type_Definition: Core event table
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: EventID
Attribute_Definition: Sampling event ID code; Field Type: dbText, Field Size: 35.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: PeriodID
Attribute_Definition:
Unique identifier for the data collection period; Field Type: dbText, Field Size: 28.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartTime
Attribute_Definition: Time event begins; Field Type: dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Project
Attribute_Definition: Project name; Field Type: dbText, Field Size: 10.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartDate
Attribute_Definition: Date event begins; Field Type: dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: EndDate

Attribute_Definition: Date event ends; Field Type: dbDate, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: EndTime

Attribute_Definition: Time event ends; Field Type: dbDate, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_SamplingPeriod

Entity_Type_Definition:

Core table describing the time, duration & location of each data collection period

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: ProtocolVersion

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PeriodID

Attribute_Definition:

Unique identifier for the data collection period, based on the park code, project code, and start date of the sampling period; Field Type: dbText, Field Size: 28.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ParkCode

Attribute_Definition: 4-character park code; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ProjectCode

Attribute_Definition:

6-character code for the monitoring program component (Weather, Birds, Fish, Veg Plots, etc.); Field Type: dbText, Field Size: 6.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SPStartDate

Attribute_Definition: Date when sampling began; Field Type: dbDate, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SPEnddate

Attribute_Definition: Date when sampling ended; Field Type: dbDate, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TripReport

Attribute_Definition:

Trip report in MS Word format, describing protocol implementation details and special circumstances; Field Type: dbLongBinary, Field Size: 0.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_TreeTally

Entity_Type_Definition: Tree species counts by dbh size class

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: TreeTallyID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TreeDBH_ID

Attribute_Definition:

Foreign key to tlu_TreeDBH (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TreeTally_count

Attribute_Definition:

Observed frequency (dot tally method); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SubplotID

Attribute_Definition:

Foreign key to tbl_SubPlot (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Sp_RecordID

Attribute_Definition:

Foreign key to tlu_Species (many to one); Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tbl_TweetyEventCondition

Entity_Type_Definition: Weather conditions associated with bird count events

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: EventID

Attribute_Definition: Primary key; Field Type: dbText, Field Size: 35.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ObsInits

Attribute_Definition:

Foreign key to tlu_EventObservers; Field Type: dbText, Field Size: 3.

Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: TempC
Attribute_Definition: Ambient temp. °C; Field Type: dbSingle, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Wind
Attribute_Definition: Based on Beaufort scale; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Rain
Attribute_Definition: Rain codes, see SOP#5; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Clouds
Attribute_Definition: % cloud cover; Field Type: dbInteger, Field Size: 2.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Noise
Attribute_Definition:
 Background noise conditions, see SOP#5; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Comment
Attribute_Definition: Comments; Field Type: dbText, Field Size: 255.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tbl_VegProfile
Entity_Type_Definition: Vertical profile of vegetation from 1 to 7.5 m
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: VegProfileID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: VegHeightID
Attribute_Definition:
 Foreign key to tlu_VegProfileHeight (many to one); Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: VegProfileClassID
Attribute_Definition:
 Foreign key to tlu_VegProfileClass (many to one); Field Type: dbLong,

Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: SubPlotID
Attribute_Definition:
Foreign key to tbl_HabitatSubPlot (many to one); Field Type: dbLong,
Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: VPCount
Attribute_Definition:
Measurements taken in four cardinal directions (Range 1 - 4 per class type);
Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_CanopyType
Entity_Type_Definition:
Canopy-type values available for combo-box controls in data-entry forms
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: CanopyTypeID
Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CanopyType
Attribute_Definition:
Canopy type: Hardwood or Conifer; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_CoverClasses
Entity_Type_Definition:
modified Daubenmire cover-class values available for combo-box controls
in data-entry forms
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: CoverClass
Attribute_Definition:
Cover class for estimating percent cover in a defined area. The program
standard is the modified Daubenmire 7-class scale, alternatives are Kelrick's
scale described in the original protocol, and North Carolina Vegetation
Survey's 10-class scale.; Field Type: dbText, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: NumericClass
Attribute_Definition:
Numeric equivalent of the cover class, used for analysis of log-scaled data;
Field Type: dbInteger, Field Size: 2.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Range

Attribute_Definition:

Range of cover values contained by each cover class; Field Type: dbText,
Field Size: 20.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: MidpointValue

Attribute_Definition:

Midpoint of the cover class range; Field Type: dbSingle, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PC-LTEM_CoverClass

Attribute_Definition:

Corresponding functional cover classes used to make data compatible with
PC-LTEM data collected using the modified Daubenmire 7-class scale;
Field Type: dbSingle, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PC-LTEM_Range

Attribute_Definition:

Corresponding range of cover values indicated by the functional cover
class; Field Type: dbText, Field Size: 21.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PC-LTEM_MidpointValue

Attribute_Definition:

Corresponding midpoint of the functional cover class; original class
midpoints were used for Kelrick's classes, where the original classes do not
line up well with those of PC-LTEM; Field Type: dbSingle, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_DensityBoardDistance

Entity_Type_Definition:

Density-board distance values available for combo-box controls in data-
entry forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: DBDistanceID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DBDistanceClass

Attribute_Definition:

Density Board Distance Class; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_DensityBoardHeight

Entity_Type_Definition:

Density-board height values available for combo-box controls in data-entry forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: DBHeightID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: DBHeightClass

Attribute_Definition: Density Board Height Class; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_EventObservers

Entity_Type_Definition: Core look-up table

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: ObsInits

Attribute_Definition:

Observer initials (max. 3 characters); Field Type: dbText, Field Size: 3.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FirstName

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: MiddleInit

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: LastName

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Agency/Title

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ADDRESS

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ADDRESS2

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CITY

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: State

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 2.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ZipCode

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 10.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: EmailAddress

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: HomePhone

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 20.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: WorkPhone

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 20.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: WorkExtension

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 5.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FaxNumber

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 20.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Notes

Attribute_Definition: <no description>; Field Type: dbMemo, Field Size: 0.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_FoliarCoverType

Entity_Type_Definition:

Foliar cover-type values available for combo-box controls in data-entry

forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: FoliarCoverTypeID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FCDescription

Attribute_Definition:

Description of Foliar Cover Types; Field Type: dbText, Field Size: 100.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_GroundCoverType

Entity_Type_Definition:

Ground cover-type values available for combo-box controls in data-entry forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: GroundCoverTypeID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: GCDDescription

Attribute_Definition: Ground Cover Description; Field Type: dbText, Field Size: 100.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_Projects

Entity_Type_Definition:

Lookup table, information on project supervision, initiation dates, data types

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: ProjectCode

Attribute_Definition:

6-character code for the monitoring project; Field Type: dbText, Field Size: 6.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ProjectTitle

Attribute_Definition: Full project title; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: ProjectManager

Attribute_Definition:

Individual in charge of monitoring project implementation; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: StartDate
Attribute_Definition:
 When monitoring project was initiated; Field Type: dbDate, Field Size: 8.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Comments
Attribute_Definition: Comments on the project; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: DatabaseName
Attribute_Definition: Name of the data warehouse; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: Format
Attribute_Definition: Type of database; Field Type: dbText, Field Size: 50.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: DatabasePath
Attribute_Definition:
 Directory path of database; Field Type: dbText, Field Size: 100.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: DataTypes
Attribute_Definition:
 Indicates types of data stored in the database; Field Type: dbText, Field Size: 255.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_Species
Entity_Type_Definition:
 Lookup table, list of species observed and cross-referenced synonyms
Entity_Type_Definition_Source: Microsoft Access 97
Attribute:
Attribute_Label: RecordID
Attribute_Definition:
 Unique identifier of the record; Field Type: dbLong, Field Size: 4.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: TSN
Attribute_Definition:
 ITIS taxonomic serial number; Field Type: dbDouble, Field Size: 8.
Attribute_Definition_Source:

Attribute_Domain_Values:
Attribute:
Attribute_Label: TaxonCode
Attribute_Definition:
 Locally-unique code for taxa without an assigned TSN; Field Type: dbText,
 Field Size: 12.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: GroupCode
Attribute_Definition:
 Group of organisms of which this is a member: birds, fish, etc.; Field Type:
 dbByte, Field Size: 1.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ScientificName
Attribute_Definition:
 Scientific name of the taxon; Field Type: dbText, Field Size: 60.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: CommonName
Attribute_Definition:
 Common or vernacular name for the species; Field Type: dbText, Field
 Size: 100.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: IsProvisional
Attribute_Definition:
 Indicates that the species name represents a temporary identification which
 will be revised once the identity has been better resolved; Field Type:
 dbBoolean, Field Size: 1.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: IsValid
Attribute_Definition:
 Indicates whether or not this name is currently accepted as the valid name;
 Field Type: dbBoolean, Field Size: 1.
Attribute_Definition_Source:
Attribute_Domain_Values:
Attribute:
Attribute_Label: ValidTaxon
Attribute_Definition:
 Indicates the valid name of this synonym; Field Type: dbText, Field Size:
 12.
Attribute_Definition_Source:
Attribute_Domain_Values:
Detailed_Description:
Entity_Type:
Entity_Type_Label: tlu_StaffCooperators
Entity_Type_Definition:
 Lookup table, comprehensive list of staff, field workers, and cooperators

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: ObserverID

Attribute_Definition: Initials of observer; Field Type: dbText, Field Size: 3.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: LastName

Attribute_Definition: Last name of observer; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: FirstName

Attribute_Definition: First name of observer; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: MiddleInit

Attribute_Definition: Middle initial of observer; Field Type: dbText, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Title

Attribute_Definition: Position/title of observer; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Employer

Attribute_Definition:

Employer of observer: default is NPS-PCPrototype; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: GradeLevel

Attribute_Definition:

GS level, or equivalent for non-federal employees; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Notes

Attribute_Definition:

Comments regarding the observer; Field Type: dbMemo, Field Size: 0.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_TreeDBH

Entity_Type_Definition:

Tree dbh class values available for combo-box controls in data-entry forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: TreeDBH_ID

Attribute_Definition: Primary key; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TreeDBH_size_classes

Attribute_Definition: DBH size classes; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_VegProfileClass

Entity_Type_Definition:

Horizontal vegetation profile class values available for combo-box controls in data-entry forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: VegProfileClassID

Attribute_Definition: <no description>; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: VegProfileClass

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 50.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tlu_VegProfileHeight

Entity_Type_Definition:

Vegetation height-class values available for combo-box controls in data-entry forms.

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: VegHeightID

Attribute_Definition: <no description>; Field Type: dbLong, Field Size: 4.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: HeightClass

Attribute_Definition: VegProfile Height Class; Field Type: dbText, Field Size: 100.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tluBirdSpecies

Entity_Type_Definition: Variation on tlu_species

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: Species

Attribute_Definition:

4-character AOU code for bird species; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: CommonName

Attribute_Definition:

Common or vernacular name for the species; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: SciName

Attribute_Definition:

Scientific name for the species; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: TSN

Attribute_Definition:

Taxonomic Serial Number for the species as assigned by ITIS (Integrated Taxonomic Info System); Field Type: dbDouble, Field Size: 8.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tluNoiseCode

Entity_Type_Definition: Background noise associated with bird count work

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: NoiseCode

Attribute_Definition:

Code used to record background noise as it affects observer's ability to hear birds; Field Type: dbByte, Field Size: 1.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: Description

Attribute_Definition:

Explanation of background noise code; Field Type: dbText, Field Size: 250.

Attribute_Definition_Source:

Attribute_Domain_Values:

Detailed_Description:

Entity_Type:

Entity_Type_Label: tluParkCode

Entity_Type_Definition: Core look-up table

Entity_Type_Definition_Source: Microsoft Access 97

Attribute:

Attribute_Label: PARKCODE

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PARKNAME

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:

Attribute_Domain_Values:

Attribute:

Attribute_Label: PARKTYPE

Attribute_Definition: <no description>; Field Type: dbText, Field Size: 255.

Attribute_Definition_Source:
 Attribute_Domain_Values:
 Detailed_Description:
 Entity_Type:
 Entity_Type_Label: tluRainCode
 Entity_Type_Definition: Precipitation conditions
 Entity_Type_Definition_Source: Microsoft Access 97
 Attribute:
 Attribute_Label: RainCode
 Attribute_Definition:
 Code used to record precipitation conditions during count (rain); Field
 Type: dbByte, Field Size: 1.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: Description
 Attribute_Definition: Explanation of rain code; Field Type: dbText, Field Size:
 250.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Detailed_Description:
 Entity_Type:
 Entity_Type_Label: tluWindCode
 Entity_Type_Definition: Wind speed as it relates to bird count activity
 Entity_Type_Definition_Source: Microsoft Access 97
 Attribute:
 Attribute_Label: WindCode
 Attribute_Definition:
 Code used to record wind strength (Beaufort Scale); Field Type: dbByte,
 Field Size: 1.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Attribute:
 Attribute_Label: Description
 Attribute_Definition: Explanation of wind code; Field Type: dbText, Field Size:
 250.
 Attribute_Definition_Source:
 Attribute_Domain_Values:
 Range_Domain:
 Range_Domain_Minimum:
 Range_Domain_Maximum:
 Attribute_Units_of_Measure:
 Attribute_Measurement_Resolution:
 Codeset_Domain:
 Codeset_Name:
 Codeset_Source:
 Unrepresentable_Domain:
 Beginning_Date_of_Attribute_Values:
 Ending_Date_of_Attribute_Values:
 Attribute_Value_Accuracy_Information:
 Attribute_Value_Accuracy:
 Attribute_Value_Accuracy_Explanation:
 Attribute_Measurement_Frequency:
 Overview_Description:

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Rowell, Gareth A.

Contact_Organization:

Contact_Position: Data Manager

Contact_Address:

Address_Type: mailing and physical

Address:

Prairie Cluster Prototype LTEM Program, Wilson's Creek Nat.
Battlefield 6424 W. Farm Rd. 182,

City: Republic

State_or_Province: Missouri

Postal_Code: 65738-9514

Country: United States of America

Contact_Voice_Telephone: 417-732-6438 x. 272

Contact_TDD/TTY_Telephone:

Contact_Facsimile_Telephone: 417-732-7660

Contact_Electronic_Mail_Address: gareth_rowell@nps.gov

Hours_of_Service: 8:00 am - 5:00 pm

Contact_Instructions: Use e-mail if possible.

Standard_Order_Process:

Non-digital_Form:

Fees: Share

Ordering_Instructions: I&M (Contact Name)

Digital_Form:

Digital_Transfer_Information:

Format_Name: MS Access 97

Transfer_Size:

Access_Instructions Prairie Cluster Prototype LTEM Program,
Wilson's Creek Nat. Battlefield, Data at park?: no

Fees: Share

Ordering_Instructions: I&M (Contact Name)

Technical_Prerequisites: None

Metadata_Reference_Information:

Metadata_Date: 20030324

Metadata_Review_Date: 20030324

Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Rowell, Gareth A.

Contact_Organization:

Contact_Position: Data Manager

Contact_Address:

Address_Type: mailing and physical

Address:

Prairie Cluster Prototype LTEM Program, Wilson's Creek Nat.
Battlefield 6424 W. Farm Rd. 182,

City: Republic

State_or_Province: Missouri
Postal_Code: 65738-9514
Country: United States of America
Contact_Voice_Telephone: 417-732-6438 x. 272
Contact_TDD/TTY_Telephone:
Contact_Facsimile_Telephone: 417-732-7660
Contact_Electronic_Mail_Address: gareth_rowell@nps.gov
Hours_of_Service: 8:00 am - 5:00 pm
Contact_Instructions: Use e-mail if possible.
Metadata_Standard_Name: NPS DCAT
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Access_Constraints:
Metadata_Use_Constraints:
Metadata_Security_Information:
Metadata_Security_Classification_System:
Metadata_Security_Classification:
Metadata_Security_Handling_Description: