



# Rangeland Database and Field Data Entry System



## For Inventory, Assessment, Monitoring and Management

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### Introduction

Databases are becoming increasingly important in managing large datasets. The recently developed Rangeland Database and Field Data Entry System is a Microsoft Access database that can be easily used without Access knowledge. The database was developed to increase data entry speed and precision in both field and office. Data can be rapidly entered in the field using a Tablet PC (touchscreen entry) or in the office on a standard computer (keyboard entry) with user-specified choice lists. The database can be easily customized to suit the user's needs. The database has many applications including: monitoring, collecting quantitative data to support rangeland assessments, collecting qualitative data to assess range health, and documenting ecological site descriptions.

### Methods (more are being added)

#### Vegetation

Dry Weight Rank  
Gap Intercept  
Line-Point Intercept  
Ocular Cover Estimate  
Plant Density/Belt  
Transect  
Plant Production  
Species Richness  
Tree Inventory (includes Density)  
Vegetation Structure (Cover Pole/Board)

#### Soils

Single-Ring Infiltrometer  
Soil Compaction (Impact Penetrometer)  
Soil Stability

#### Riparian

Channel/Gully Profile

#### Qualitative Assessment

Rangeland Health

### Free Download Site:

[http://usda-ars.nmsu.edu/monit\\_assess/monitoring.php](http://usda-ars.nmsu.edu/monit_assess/monitoring.php)

When a database upgrade is available, a simple function helps the user quickly import their current database directly into the new version.

### Additional Resources

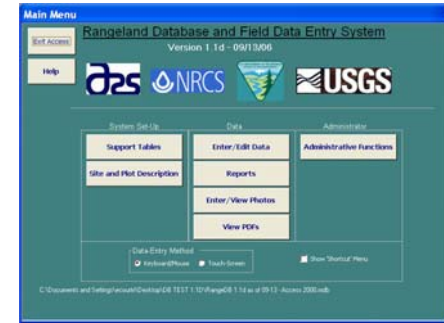
- "Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems, Vol. I and II." by Jeffrey E. Herrick, Justin W. Van Zee, Kris M. Havstad, Laura M. Burkett and Walter G. Whitford. Available from University of Arizona Press.
- "Interpreting Indicators of Rangeland Health (Version 4.0)". Available online at [www.blm.gov/nstc/library/techref.htm](http://www.blm.gov/nstc/library/techref.htm)
- Ecological Site Description Development Database. For additional information, contact Laura Burkett (lburkett@jornada.nmsu.edu).

### Acknowledgements

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### Features

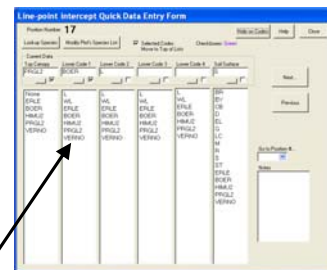
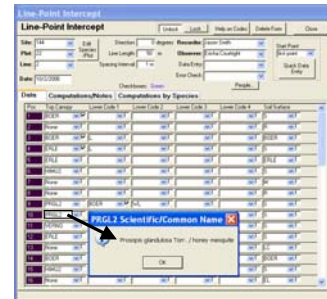
- **Simple interface** (an Access database that doesn't require knowledge of Access to use)
- **Tablet PC** (touchscreen) and **keyboard** modes
- **Flexible** – adapts to most monitoring applications
- Drop-down **choice lists** increase data entry speed and precision
- **Automated** indicator calculations and reports, and ability to create user-defined queries
- **Import** data from Excel into database
- Automated plant species list **downloads** from USDA/NRCS PLANTS database
- Three levels of user-defined **security** to increase data entry consistency



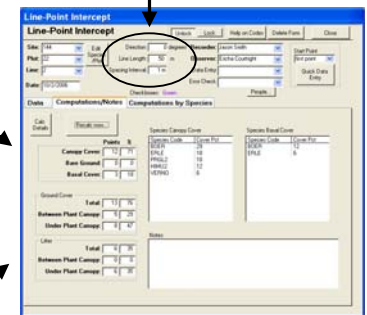
### Example: Line-Point Intercept for Management

### Flexible Design

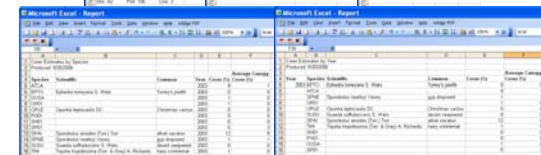
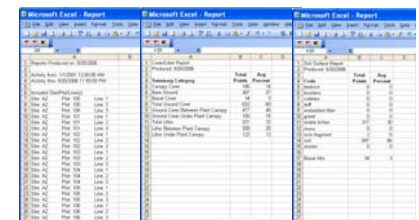
- One-Time Sampling for Assessment: Quick data collection with minimal metadata
- Long-Term Monitoring: Data collection for an established site and plot with extensive metadata



English/metric options for all methods



### Automatic Calculations on Data Entry Form

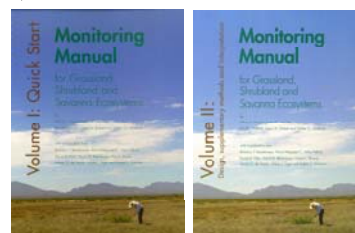


### Automatic Reports

### Refine Design

User defined codes or plant species codes imported from USDA/NRCS PLANTS database

### Modify Management



### Interpretation