Database for Inventory, Monitoring and Assessment (DIMA)

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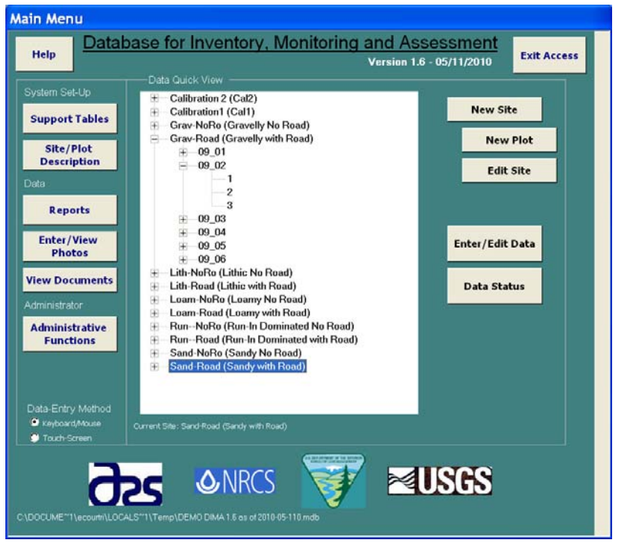
Download site for DIMA and Monitoring Manual:
http://usda-ars.nmsu.edu/monit_assess/monitoring.php



Features

- Simple interface (a MS 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
- Import data from MS Excel into database
- Automated plant species list downloads from USDA/NRCS PLANTS database
- Automated indicator calculations and reports, and ability to create user-defined queries

Future Enhancements

- Integration with GIS
- GPS input
- Improved automatic reports
- Online training modules

Applications

The database is currently used by a number of organizations for short- and long-term monitoring. It also facilitates qualitative and quantitative data collection to assist with developing soil and vegetation-based land classification systems (e.g., ecological site descriptions) and populating them with quantitative soil and vegetation data. Because the tool is extremely flexible, it can be adapted to meet the needs of a diverse group of users, from students compiling data for a course, to scientists developing research projects, and land management agencies responsible for monitoring.

The inclusion of a 17-indicator method for rapid assessment of non-forested ecosystems has facilitated the collection of quantitative data to support qualitative assessments. Current applications include post-fire rehabilitation monitoring and trend monitoring (BLM), research (ARS, USGS, universities), wildlife habitat, and rangeland condition (NRCS, BLM, private consultants).

Acknowledgements

This project was developed in cooperation with the USGS, NRCS and BLM. The following individuals have contributed to the project: Barry Lavine, Laura Burkett, Justin Van Zee, Mike Pellant, Pat Shaver, Jack Alexander, Ryan Meccage, and Kara Hempy Mayer.

Overview

The Database for Inventory, Monitoring and Assessment (DIMA) is a highly customizable tool for data entry, assessment, monitoring, and interpretation. DIMA is a Microsoft Access database that can easily be used without Access knowledge and is available at no cost. Data can be entered for common, nationally accepted (by NRCS, BLM and others) vegetation and soil monitoring methods, including the methods described in the "Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems". Additionally, NRCS ecological site description data can be collected starting at a low intensity (e.g., general site characteristics, waypoints and photos) and building to a high intensity (e.g., detailed soil and vegetation data). Stored data are easily exported to other databases and spreadsheets while previously entered data can be quickly imported into the database via Excel templates. Indicators and reports, including graphs, are automatically generated from entered data. In addition to data, the database stores critical metadata such as field crew personnel, plant species lists downloaded from the USDA/NRCS PLANTS database, driving directions, method rule sets, soil data and links to photos.

Methods

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)*.

Riparian
Channel/Gully Profile*

Soils
Infiltration*
Soil Compaction (Impact Penetrometer)*
Soil Stability*
Soil Profile Characterization

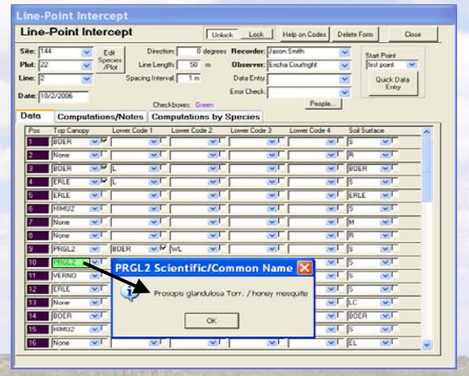
Qualitative Assessment
Rangeland Health

Ecological Inventory Data
NRCS ecological site description data can be collected starting at a low intensity (e.g., general site characteristics, waypoints and photos) and building to a high intensity (e.g., detailed soil and vegetation data)

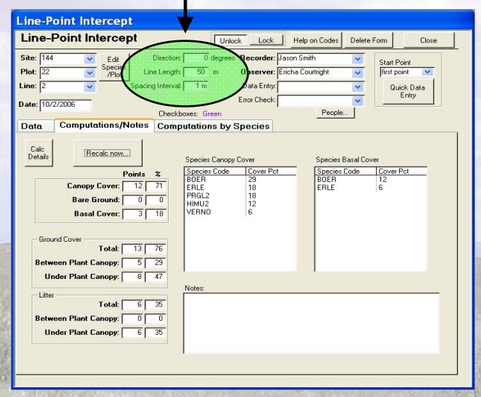
*Methods described in the *Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems, Vol. I and II.* by Jeffrey E. Herrick, Justin W. Van Zee, Kris M. Havstad, Laura M. Burkett and Walter G. Whitford. Available from University of Arizona Press.

Free download site http://usda-ars.nmsu.edu/monit_assess/monitoring.php

Example: Line-Point Intercept



English/metric options for all methods

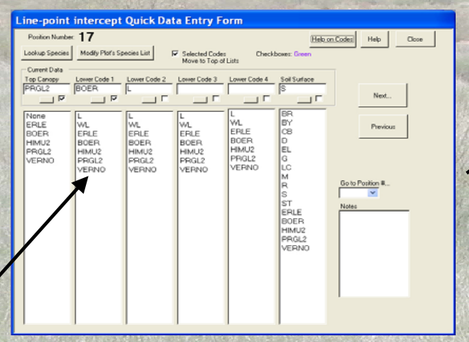


Automatic Calculations on Data Entry Form

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

Multiple Data Entry Options

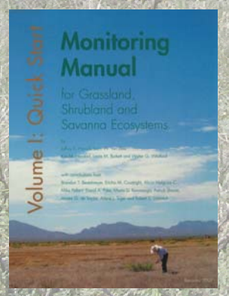


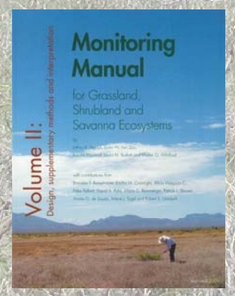
User defined codes or plant species codes imported from USDA/NRCS PLANTS database

Data Entry

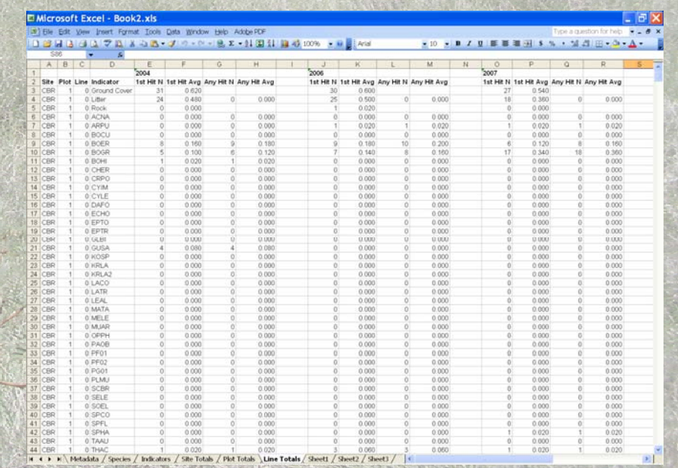
Refine Design

Modify Management





Interpretation



Automatic Reports