Soil Change Guide: Procedures for Soil Survey and Resource Inventory

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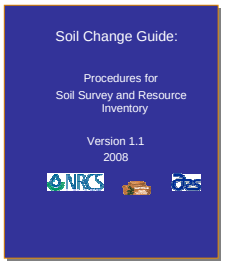
Producers and land managers need information about soil and ecosystem change in order to plan for long-term productivity, conduct monitoring and assessments and predict management effects on soil function. Data collection procedures have been developed by NRCS and the Agricultural Research Service Jornada Experimental Range in cooperation with National Park



The Guide

- For soil survey updates.
- Provides instructions to conduct comparison studies.
- Integrates soil and vegetation data collection.
- Emphasizes functionally important properties, field methods and efficiency.

Six Project Steps

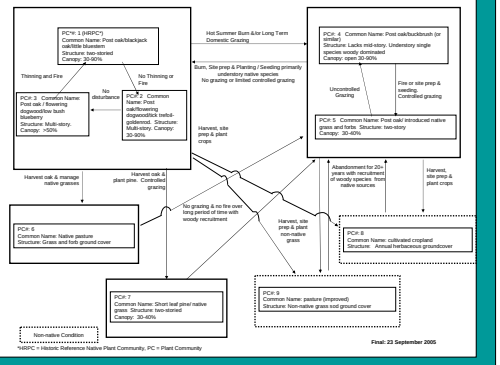
Step 1. Project Planning

Establish project objectives; invite cooperators; select soils and ecological sites or crop management zones to sample.

Step 2. Sampling Design

Establish project details, including 1) selected management systems (2 or 3 state phases from a conceptual model, Figure 1) and soil map unit components to be compared and 2) soil and vegetation properties to be measured.

Figure 1. Missouri Ecological Site-Upland Flatwoods (common name):
Post oak/blackjack oak/little bluestem
Distribution: Ozark Highlands Section - Springfield Plain and Central Plateau subsections



Step 3. Sampling Requirements

Determine 1) plot configuration based on standard methods for vegetation. and 2) number of plots and soil samples per plot that are required to detect functionally important differences.

Step 4. Field Work

Locate plots (minimum of 5 per management system); verify soil and state phase or management system; collect data and management information.

Step 5. Data Preparation

Enter and error check field data (interim storage in spreadsheet or database); merge field and laboratory data; make calculations.

Step 6. Data Analysis and Reports

Summarize and evaluate the data; evaluate sampling sufficiency; test for differences using statistical tests; develop reports.

Getting ready to conduct projects in your MLRA Soil Survey Area

Dynamic soil property data will be collected in soil survey updates and benchmark soil studies. Strategic preparation will ensure efficiency and lower costs. Work with other disciplines and cooperators to get ready: