



# Ecosystem Restoration Tools

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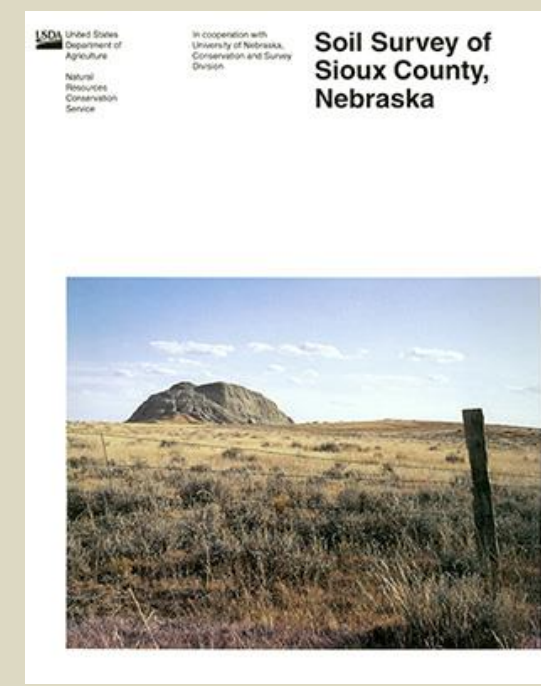
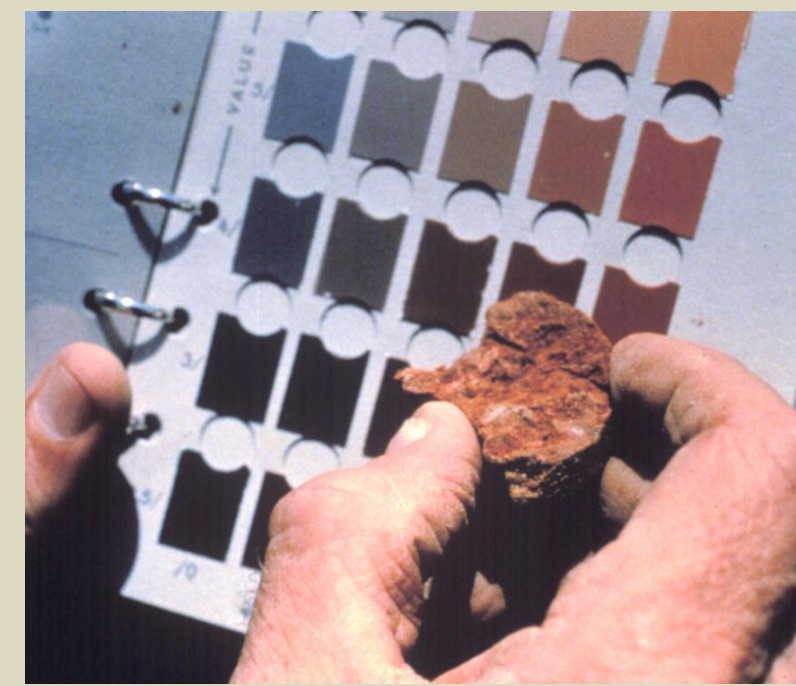
## Introduction

Ecosystem restoration requires many tools to be effective. Some tools are readily available and actively utilized while. Other tools may not be as well-known or utilized to the full extent. The USDA-Natural Resources Conservation Service has developed and utilizes many tools to help our nation's farmers, ranchers and rural communities conserve and restore our nation's private lands.



## Soil Survey

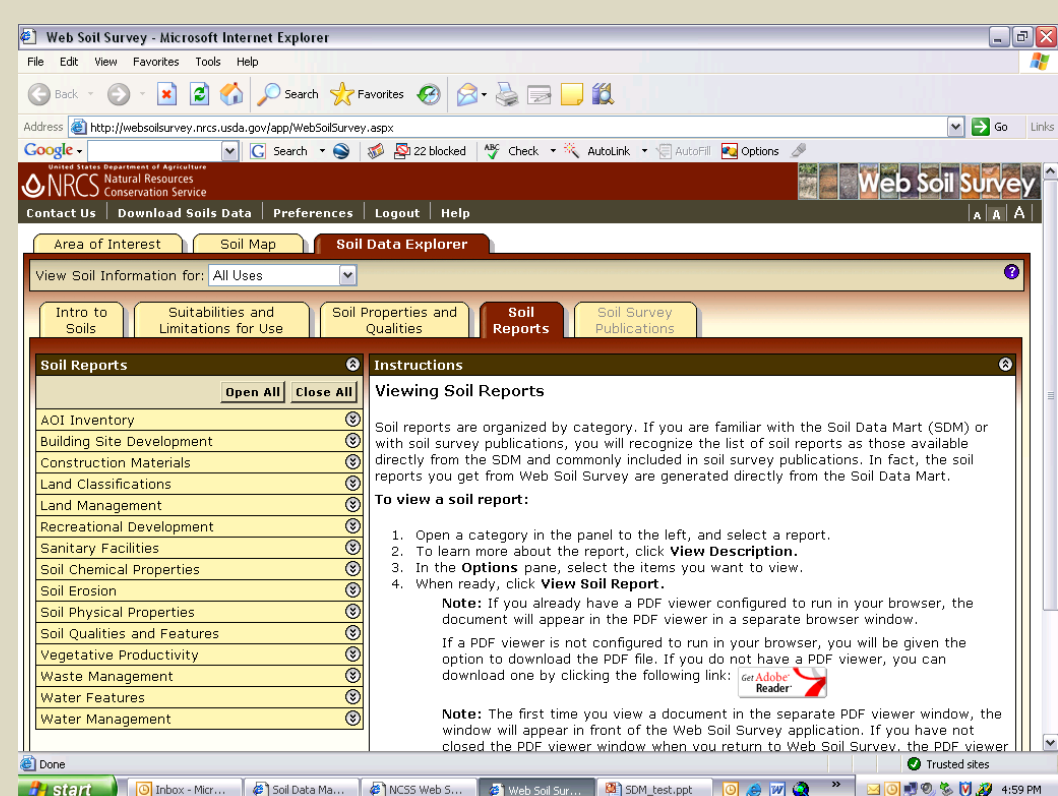
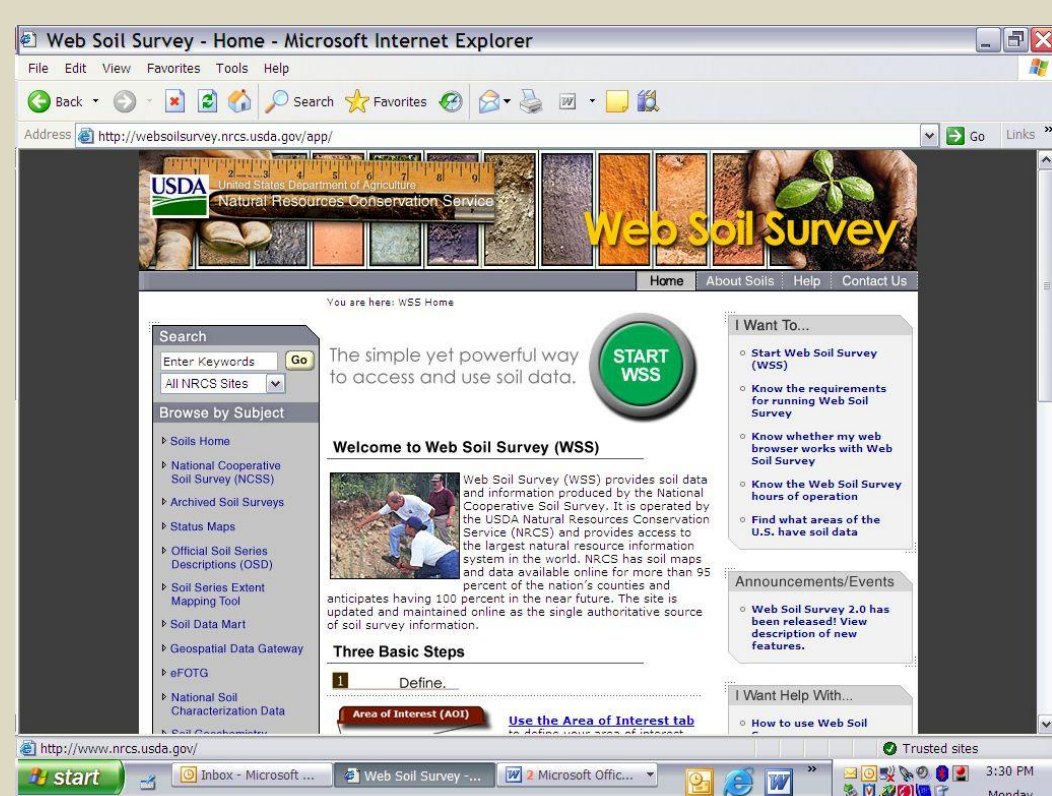
Soil survey in the US has succeeded for over 100 years; setting the standard for the world in classification, mapping and laboratory procedures. The first soil survey began under the USDA Weather Bureau as the Division of Agricultural Soil in 1894. A soil survey is a detailed report on the soils of an area. The soil survey has maps with soil boundaries and photos, descriptions, and tables of soil properties and features; providing detailed information on soil suitability, soil limitations, management and production potential. Soil surveys are used by farmers, real estate agents, land use planners, engineers and others who desire information about the soil resource.



## Web Soil Survey

Early into the 21<sup>st</sup> century, USDA-Natural Resources Conservation Service transitioned from the published soil survey books to electronic soil surveys which are available free of charge online at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

The online soil survey provides instant access to site specific soils information. The use of this information is critical in determining basic soils limitations and developing a plan of action for successful ecological site restoration projects.



## Ecological Site Descriptions

Ecological Sites provide a consistent framework for classifying and describing rangeland and forestland soils and vegetation; thereby delineating land units that share similar capabilities to respond to management activities or disturbance.

Ecological Site Descriptions (ESDs) are reports that provide detailed information about a particular kind of land - a distinctive Ecological Site.

ESDs provide land managers the information needed for evaluating the land as to suitability for various land-uses, capability to respond to different management activities or disturbance processes, and ability to sustain productivity over the long term



ESD information is presented in four major sections:

- Site Characteristics - physiographic, climate, soil, and water features
- Plant Communities – plant species, vegetation states, and ecological dynamics
- Site Interpretations – management alternatives for the site and its related resources
- Supporting Information – relevant literature, information and data sources



NRCS Ecological Site Description (ESD) reports are stored and accessed within the [Ecological Site Information System \(ESIS\)](https://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD). <https://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD>

All completed and approved ESDs, both rangeland and forestland sites, are available to the general public from ESIS.

If your interest is to obtain soil and ESD information for your farm, ranch, or other lands, then use the [NRCS WEB Soil Survey](https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm) application. You can create your personal Area of Interest (AOI) and view, save, and print maps and reports providing soil and Ecological Site information defining your specific piece of land.

## Plant Materials Program Products

The NRCS operates 25 Plant Materials Centers (PMCs), each based in ecologically distinct areas, to evaluate plants and vegetative technologies to support USDA conservation programs and practices.

PMC products include:

- Conservation Technical Notes
  - Identifying vegetative techniques and practices for ecological site restoration and conservation.
  - Evaluating plant and planting characteristics and parameters for successful site establishment.



- Replicated studies on plant attributes to support decision making.
- Plant collection and evaluation for identifying new conservation plant releases.
  - Collect identified native plants which have special characteristics to address defined resource concerns.
  - Evaluate and select plants based upon effectiveness of the plant to address the identified resource concern.



- Formally release conservation plant material for production and distribution within the commercial seed industry.

