SOIL SURVEYS AND THEIR USE

How can people learn about soils in their counties?

The National Cooperative Soil Survey (NCSS) is a county-by-county scientific inventory of U.S. soils on nearly all public and private land. A soil survey includes soil maps and descriptions of each type of soil in the county, as well as interpretations of the soil's characteristics and potential for community planning, agricultural land management, engineering and wildlife management.

Who does the survey?

NCSS is a nationwide partnership involving federal, regional, state, and local agencies and institutions. These partners work together to inventory and interpret U.S. soils and to publish and distribute soil surveys for public use.

The Natural Resources Conservation Service (NRCS) leads soil survey activities for the U.S. Department of Agriculture and coordinates the work of NCSS.

What can be learned about soils from soil survey reports?

Maps show the location of soils in a county. Descriptions of each soil type include:

- Depth of each major soil layer.
- How well water will infiltrate the soil and how easily roots can penetrate it.
- The rate at which water moves downward through the soil.
- How much water the soil can store for plants.
- How acid or alkaline the soil is.
- The soil's susceptibility to erosion by water and wind.

How can the soil survey help people manage their land?

The survey describes a soil's potential for many uses, such as agriculture or forestry. More importantly, the survey highlights a soil's limitations for some uses, and the risk of damaging the soil or the environment through improper use.

For example, the survey includes interpretations of a soil's potential and limitations for agricultural uses. It includes definitions of common agricultural crops and land characteristics that may affect soil management. The survey identifies:

- Areas where wind or water erosion is a major concern, and what can be done to control it.
- The most suitable hay and pasture plants for specific soils, and practices that can overcome shortcomings in a particular soil.
- Average expected yields per acre of principal crops raised under a high degree of management over time.

Soils are also rated for their potential to produce trees, support livestock and provide habitat for wildlife.

In addition, soils are rated for their suitability for recreation, such as camping areas, picnic areas, playgrounds, paths and trails for hiking and horseback riding, and golf fairways.

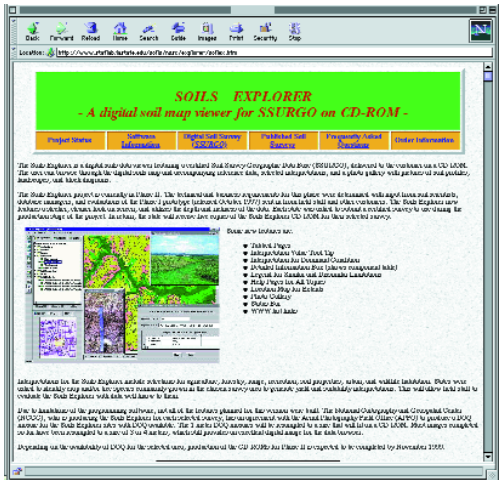
How does the survey help with community planning?

The survey interprets the suitability of soils for the construction of dwellings and small commercial buildings, local roads and streets, septic tank absorption fields, sewage lagoons, landfills, ponds, and dikes and levees.

Historic timeline of the Cooperative Soil Survey

1896 – Soil surveys authorized in the USDA Appropriations Act.
1899 – First official surveys in Utah, Maryland, New Mexico, Connecticut and Massachusetts.
1920s – Discipline of soil science takes off in the United States, based on the work of Russian scientists.
1930s – Emphasis on morphology (the properties and characteristics of soil) rather than genesis (formation of soil) takes hold. Surveys emphasize soil erosion on farms.
1938 – First USDA soil classification system published.
1940s – Using aerial photography as the base for maps becomes universal.
1950s – Soil Survey Manual published by USDA; Soil Conservation Service is given responsibility.
1960s – Use of soil surveys for no-farm purposes explodes.
1965 – Survey adopts new classification system of 10 soil orders.
1975 – Soil Taxonomy published, recognizing the 10 soil orders.
1998 – Soil Taxonomy revised, recognizing 12 soil orders.
1999 – Centennial of the National Cooperative Soil Survey.

Where can I get a soil survey report?



They are available from several sources:

- The state or local office of the NRCS, county extension office or Congressional representatives may offer free reports.
- Public libraries and conservation district offices generally have reference copies available.
- The National Soil Survey Center Web site: www.statlab.iastate.edu/soils/nssc
- Soils Explorer, an interactive, Windows-based, CD-ROM format with all the survey information. This new technology, available for selected areas, can generate maps in seconds that illustrate a soil's physical and chemical properties, and its potentials and limitations for various land uses. You can also select and view photos of landscapes and soil profiles. Explore the capabilities of Soils Explorer online at www.statlab.iastate.edu/soils/nssc/explorer/soilex.

For more information, contact:

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Sources:

USDA-NRCS National Soil Survey Center
USDA-NRCS Soil Survey Manual
"Soil Survey Then & Now", by Kivi Leroux, Conservation Voices, April/May 1999