



# Priorities for the Soil and Plant Science Division

## Fiscal Year 2022



The priorities for the Soil and Plant Science Division (SPSD) in fiscal year 2022 are:

- **Inventory Activities;**
- **Soil Services and Information Delivery;** and
- **National Cooperative Soil Survey.**

### Inventory Activities

The priority inventory activities for FY–22 are categorized under the umbrella term Dynamic Soil Survey, which includes the initial static soil survey, updates to the soil survey, collection of dynamic soil properties data, and inventory of ecological sites.

### Dynamic Soil Survey

*Combine information regarding soils, ecology, hydrology, and land use into a single source that provides the knowledge needed to manage the soil resource effectively and efficiently*

Dynamic Soil Survey (DSS) is a new and evolving approach that incorporates temporal soil properties into soil survey. Soil properties that are affected by soil biology and land use management are considered temporal. DSS combines recent advances and long-standing knowledge in pedology, ecology, and hydrology with improvements in digital technology. These advancements allow us to better understand the variability and diversity of soil.

Dynamic Soil Survey integrates:

- Initial Soil Inventory,
- MLRA Soil Survey Updates,
- Dynamic Soil Properties,
- and Ecological Site Inventory.

DSS relies heavily on collaboration with the National Cooperative Soil Survey. Hydrology is determined from the Soil Climate Analysis Network (SCAN) in cooperation with the National Soil Moisture Network.

### Initial Soil Inventory

*Accelerate the authoritative soil inventory on all lands, including private, Tribal, and Federal lands*

Over 450 million acres of soils have not yet been inventoried. Over 70 percent of this acreage, 330 million acres, is Federal land. The remaining 120 million acres include conservation-priority areas, such as Tribal lands in Alaska. The Soil and Plant Science Division, in collaboration with National Cooperative Soil Survey partners and State Conservationists, is implementing the Soils2026 Initiative to complete the inventory for the remaining private, Federal, and Tribal lands by 2026.

### Major Land Resource Area Soil Survey Updates

*Accelerate field activities for Major Land Resource Area (MLRA) updates*

The MLRA process facilitates data collection, mapping, interpretation, and delivery. It provides seamless information on soils, ecological states, and climate across broad geographical areas that have common resource values, land uses, and management concerns. The MLRA update process is driven by collaboration with NCSS partners. These partners are on the technical teams, management teams, and boards of advisors that direct all aspects of planning and field work.

In support of MLRA updates, the Soil and Plant Science Division aids in onsite maintenance and data quality assurance for the 220 sites of the Soil Climate Analysis Network (SCAN). SPSP field operations work in collaboration with the National Water and Climate Center (NWCC) for data transmission and electronics support.

SPSD also conducts non-MLRA projects, such as coastal zone soil surveys, urban surveys, and post-event surveys (e.g., flooding, storms, and landslides).

### Dynamic Soil Properties

*Accelerate the collection of dynamic soil property (DSP) data*

Data on dynamic soil properties, which are those properties that change with land use and management, enhance soil survey products. Dynamic soil properties are collected to frame, measure, and predict the response of soils to disturbances caused by human and non-human factors. Dynamic soil properties link initial and update soil inventories to advancing areas of soil health, conservation, soil carbon, and land management.

Because of increasing demand, the Soil and Plant Science Division now routinely integrates collection of dynamic soil property data into all soil survey projects.

DSP data are needed to:

- inform management activities,
- better assess the effects of those activities on ecosystem services, and
- provide more detailed and site-specific information for model development, climate mitigation planning, and related applications.

## Ecological Site Inventory

*Provide products that broaden the application of ecological site information and support training*

The ecological site inventory, state-and-transition models, and ecological site descriptions are critical for:

- selecting, implementing, and assessing conservation practices;
- recognizing thresholds of irreversible change in managed ecosystems; and
- estimating potentials for soil carbon sequestration.

The Division expects provisional ecological sites to be available for the entire continental United States by 2022 and for the entire country by 2025. Ecological sites are developed in collaboration between NRCS technical staff at the National, Center, and State levels; Federal partners; and NCSS cooperators.

Ecological site information can be seamlessly integrated into existing agency conservation planning tools and standard operating procedures. It can inform multiple steps of the conservation planning process. Examples include inventory of resources, definition of conservation goals and objectives, selection of appropriate conservation practices, and monitoring and evaluation of practice effectiveness.

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## Soil Services and Information Delivery

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*Continue to provide science-based technical soil services (TSS) and information delivery*

The Division works in coordination with NRCS State Offices to deliver soil information that enhances and supports

conservation planning, soil health activities, and program delivery. The Division is committed to assisting State Conservationists by supporting State Soil Scientists. SPSD is also committed to assisting States as they help all customers to understand and properly use the wealth of information from the soil survey.

Technical Soil Services information is used for:

- conservation planning,
- onsite investigations that support conservation practice design and installation,
- assessments of soil health and dynamic soil properties,
- identification of hydric soils for wetland determinations, and
- other conservation technical assistance.

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## National Cooperative Soil Survey

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*Strengthen the National Cooperative Soil Survey (NCSS) through increased transparency and collaboration*

The National Cooperative Soil Survey Program is a partnership of Federal land management agencies, State agricultural experiment stations, universities, private-sector organizations, counties, conservation districts, and other special-purpose districts. The strength of the NCSS derives from collaboration between NCSS partners to achieve common goals in advancing soil science. The Soil and Plant Science Division is responsible for leadership and coordination. This partnership works cooperatively to investigate, inventory, document, classify, and interpret soils and to disseminate, publish, and promote the use of information about the soils of the United States and its trust territories.

