

# Introduction

## ***Background***

The National Resources Inventory (NRI) is a compilation of natural resource characteristics on non-Federal rural land throughout the United States. Conducted by the Natural Resources Conservation Service (NRCS), this inventory captures information on land cover and use, soil erosion, wetlands, habitat diversity, conservation practices, and related resource attributes at over 800,000 random sample sites. The 1997 NRI covers all 50 states, Puerto Rico, the U.S. Virgin Islands, and some Pacific Basin locations.

The NRI provides a record of trends in the Nation's resources over time and documents conservation accomplishments as well. Because the NRI is based on recognized statistical sampling methods and is scientifically designed and executed, NRI data are statistically reliable for national, regional, state, and local analyses. Information derived from the NRI is used by natural resource managers; policy makers and analysts; consultants; the media; other Federal agencies; state governments; universities; environmental, commodity, and farm groups; and the American public. The NRI was instrumental in providing data on natural resources for the USDA publication, *A Geography of Hope*.

The traditional NRI, currently conducted at 5-year intervals, serves as a foundation for other types of inventories, for example, special inventories to assess specific natural resource elements or snapshots of resource conditions. NRI data can also be used for modeling changes in the resource base and for strategic planning. In the future, the NRI will be a nimble, more flexible instrument for monitoring the status of natural resources on a continuous basis.

## ***History***

For more than 60 years, the Natural Resources Conservation Service, through its predecessors the Soil Erosion Service and the Soil Conservation Service (SCS), has conducted periodic inventories of the Nation's soil, water, and related resources. The earliest efforts were reconnaissance studies and the Soil Erosion Inventory of 1934. Six months after the 1934 inventory was completed, Congress passed the Soil Conservation Act of 1935, which established the Soil Conservation Service. Conservation Needs Inventories were completed in 1945, 1958, and 1967. The 1958 and 1967 studies were the Agency's first efforts to use statistical sampling to collect natural resource inventory data at field sites on a national basis. The Rural Development Act of 1972 led to the institution of the National Resources Inventory program by directing the Secretary of Agriculture to implement inventory and monitoring activities to assess the status, conditions, and trends of resources at 5-year intervals. The first NRI was undertaken in 1977, and subsequent inventories were made in 1982, 1987, 1992, and 1996. Historically, thousands of NRCS employees have collected data from random field sites in each county in the Nation.

The 1977 NRI focused on determining the status of the resource base by examining items such as soil erosion, soil capability, land use, conservation treatment needs, and wetlands. The 1982 NRI was more comprehensive than the 1977 inventory, both in terms of the information gathered and the number of sample areas used. At the time, the 1982 NRI was the most comprehensive study of our Nation's non-Federal natural resources ever conducted. The 1987 NRI was designed to obtain data that provided a basis for determining trends in resource conditions since 1982. The primary intent of the 1987 NRI was to update selected data items from a subsample of the 1982 NRI. Almost 30 percent of the 1987 sample data were collected using remote sensing. NRCS teams collected the data and entered it into computers, rather than manually listing data on worksheets.

The 1992 NRI relied more on remote sensing and computer-based technologies to carry out the inventory process on more than 800,000 sample sites. Aerial photography was used, where available, to collect the new data, verify the 1982 and 1987 data, and fill in missing data for those years. The update of the 1982 and 1987 data bases, along with the 1992 data, allowed NRCS to produce a 10-year trend for the Nation's natural resource uses and conditions. The 1996 NRI was a special study to measure and record changes in selected land cover and uses, extent and intensity of production, and soil conservation practices as a result of the Federal Agricultural Improvement and Reform Act of 1996. Passage of the Act and high commodity prices were expected to spawn substantial changes in cropping patterns, land management, and cultural practices in 1996, 1997, and subsequent years. The 1996 NRI was designed to monitor changes due to the provisions of the Act, as well as to provide credible information regarding the 1996 impact.

### ***Data Collection for the 1997 NRI***

The 1997 NRI features some new data collection technologies and some changes in the gathering of specific data elements. The 1997 NRI sample was selected in cooperation with the Iowa State University Statistical Laboratory. An NRI data base server has been established at Iowa State. All 1997 NRI sample data, including historical data from previous NRI's will be requested from and returned to the NRI data base server.

In an effort to reduce the workload on personnel by increasing data collection efficiencies and to ensure consistent, high-quality NRI data, steps have been taken to streamline and modernize the inventory process. Through the utilization of updated data handling technology, data collectors no longer need to re-enter data that already exist and do not change over time. Examples include soils data and general information, such as the MLRA and hydrologic unit identification. New data collection software will render these items "automatic" or "fixed." In addition, several data elements included in the 1992 NRI will be deleted from the 1997 NRI. They include windbreaks, conservation treatment needs, rangeland data, and selected conservation practices.

Data collected in the 1997 NRI will enable an analysis of trends extending over 15 years (1982, 1987, 1992, 1997). Careful consideration has been given to assure that many 1997 NRI data elements are consistent with definitions, categories, and concepts from previous inventories. Trend analyses on data elements added for the 1997 NRI will not be possible until subsequent inventories have been completed.

### ***Goals for the 1997 NRI***

The overall goal of the 1997 NRI is to obtain scientifically valid, timely, and relevant information that will enhance our understanding of natural resource and environmental conditions. This information, in turn, will be used to formulate effective public policies, to fashion agricultural and natural resources legislation, to develop state and national conservation programs, and to allocate USDA financial and technical assistance in addressing natural resource concerns. Additionally, NRI data will be useful in assessing the consequences of existing legislative mandates, such as the 1996 Farm Bill, and in addressing new agency priorities, such as ecosystem parameters and water quality factors.

The 1997 NRI will serve as a transition into a new, continuous, interagency, natural resource oriented procedure for monitoring, modeling, analysis, and assessment. The NRCS vision for resource inventories within the agency identifies four kinds of inventories:

- The traditional NRI, or foundation.
- Continuous inventories, like the 1996 special study.
- Snapshot inventories, which are quick inventories that use secondary data, such as satellite imagery, to address key issues.
- Inventories at local levels to better assist in locally led conservation planning that can be aggregated upward to make state, regional, and national statements.

Modern data handling and communications technology, including personal digital assistants (PDA's) and geographic information systems (GIS), will facilitate the evolution of the NRI into an efficient and valuable continuous inventory process.

NRCS is committed to working with private landowners and managers to assess the state of the land and protect its values. As the Department of Agriculture's lead conservation agency, NRCS speaks for the health and fate of America's private land. The NRI is the most powerful tool available for assessing the Nation's natural resources, evaluating resource health, and monitoring resource trends on private land. In the publication, *A Geography of Hope*, NRCS Chief Paul Johnson states, "We must recognize the needs of America's private land and private landowners for us to truly have a geography of hope...." An overriding goal of the NRI is to serve as the key to interpreting the state of America's land.