

■ Natural Resources Conservation Service—A Productive Nation in Harmony with a Quality Environment

Introduction

As USDA's lead Agency for conservation technical assistance, the Natural Resources Conservation Service (NRCS) works closely with other USDA agencies involved in conservation, including the Farm Service Agency (FSA); Agricultural Research Service; Forest Service; and the Cooperative State Research, Education, and Extension Service. Through these agencies, USDA administers a wide range of programs to solve this country's natural resource problems as they affect private lands in agricultural and other uses.

Our well-being depends on healthy, productive, and diverse ecosystems and their sustainable use. Just as soil, water, and habitat are interrelated, the programs that address these resources are interrelated, and programs that help one resource also benefit others. If you stop erosion, for example, you also enhance soil productivity and protect water and air quality. Improving the environment can enhance the economic future of communities throughout the United States.

The mission of NRCS is to provide leadership and administer programs to help landowners and land users to conserve, improve, and sustain our natural resources and the environment, while enabling the United States to continue as the world's preeminent producer of food and fiber.

A Partnership Approach to Resource Conservation

For six decades NRCS employees have worked side-by-side with landowners, conservation districts, State and local governments, and urban and rural partners to restore and enhance the American landscape. The Agency helps landowners and communities take a comprehensive approach in conservation planning, going beyond soil to an understanding of how all natural resources—soil, water, air, plants, animals—relate to each other and to humans. The Agency works to solve the natural resource challenges on the Nation's private lands—reducing soil erosion, improving soil health and rangeland health, protecting water quality and supply, conserving wetlands, and providing fish and wildlife habitat.

Most NRCS employees serve in USDA's network of local, county-based offices, including those in Puerto Rico and the Pacific Basin. The rest are at State, regional, and national offices, providing technology, policy, and administrative support. They serve all people who live and work on the land. Nearly three-fourths of the Agency's technical assistance goes to helping farmers and ranchers develop conservation systems uniquely suited to their land and their ways of doing business.

The agency helps rural and urban communities curb erosion, conserve and protect water, and solve other resource problems. American Indian tribes, Alaska Natives, Pacific Islanders, and other native groups work with NRCS on a variety of initiatives that include resource inventories and the adaptation of conservation programs to fit the special needs of their people and their land. Also, countries around the globe seek NRCS advice on building their own conservation delivery systems and in coping with severe natural resource problems.

Conservation is the work of many—no one can do it alone. NRCS relies on many partners to help set conservation goals, work with people on the land, and provide services. In addition to local conservation districts, State conservation agencies, and other State and Federal agencies, the partners include NRCS Earth Team volunteers, AmeriCorps members, agricultural and environmental groups, and professional societies.

NRCS Programs

Through various programs, NRCS provides conservation technical assistance to land users, communities, units of State and local government, and other Federal agencies in planning and implementing natural resource solutions to reduce erosion, improve soil and water quantity and quality, improve and conserve wetlands, enhance fish and wildlife habitat, improve air quality, improve pasture and range conditions, reduce upstream flooding, and improve woodlands. The purpose is to sustain agricultural productivity and protect and enhance the natural resource base. This assistance is based on voluntary local landowner cooperation and recognizes the value of educational, technical, and financial assistance.

Conservation Provisions of the 1996 Farm Bill

The conservation provisions of the Federal Agriculture Improvement and Reform Act of 1996—also known as the 1996 Farm Bill—simplified existing conservation programs and improved their flexibility and efficiency. The bill also created new programs to address high-priority environmental protection goals.

The 1996 Farm Bill authorized more than \$2.2 billion in additional funding for conservation programs, extended the Conservation Reserve Program and Wetland Reserve Program, and created new initiatives to improve natural resources on America's private lands.

Environmental Conservation Acreage Reserve Program

The Environmental Conservation Acreage Reserve Program (ECARP) encompasses the FSA's Conservation Reserve Program (CRP) and NRCS's Wetlands Reserve Program (WRP) and Environmental Quality Incentives Program (EQIP). Under ECARP, the Secretary of Agriculture may designate watersheds, multistate areas, or regions of special environmental sensitivity as conservation priority areas. These areas may be eligible for special assistance to get them into compliance with nonpoint source pollution requirements of the Clean Water Act and other Federal and State environmental laws and to meet other conservation needs.

Conservation Reserve Program

The Conservation Reserve Program (CRP), which is administered by FSA, with technical assistance given by NRCS, protects highly erodible and environmentally sensitive lands with grass, trees, and other long-term cover. Now under CRP:

- Up to 36.4 million acres can be enrolled at any one time;
- New enrollments must focus on the most environmentally sensitive land;
- Expired or terminated contracts may be replaced with new enrollments; and
- Landowners who entered into a contract before January 1, 1995, may terminate contracts after giving written notice. Contracts must have been in effect at least 5 years and meet other eligibility criteria.

Wetlands Reserve Program

The Wetlands Reserve Program (WRP) is a voluntary program to restore and protect wetlands on private property. It is an opportunity for landowners to retire marginal agricultural land in exchange for receiving financial incentives to enhance wetlands.

Congress authorized WRP with the Food Security Act of 1985 and amended it in the 1990 and 1996 Farm Bills. NRCS administers the program in consultation with other Federal agencies.

Landowners who choose to participate in WRP may sell a conservation easement or enter into a cost-share restoration agreement with USDA to restore and protect wetlands. The landowner voluntarily limits future use of the land, yet retains private ownership. The landowner and NRCS develop a plan for the restoration and maintenance of the wetland.

The program offers landowners three options: permanent easements, 30-year easements, and restoration cost-share agreements of a minimum 10-year duration.

Permanent Easement. This is a conservation easement in perpetuity. Easement payment will be the lesser of: the agricultural value of the land, an established payment cap, or an amount offered by the landowner. In addition to paying for the easement, USDA pays 100 percent of the costs of restoring the wetland.

30-Year Easement. This is a conservation easement lasting 30 years. Easement payments are 75 percent of what would be paid for a permanent easement. USDA also pays 75 percent of restoration costs.

Restoration Cost-Share Agreement. This is an agreement (generally for a minimum of 10 years in duration) to re-establish degraded or lost wetland habitat. USDA pays 75 percent of the cost of the restoration activity. This does not place an easement on the property. The landowner provides the restoration site without reimbursement.

Other agencies and private conservation organizations may provide additional assistance for easement payment and wetland restoration costs as a way to reduce the landowner's share of the costs. Such special partnership efforts are encouraged.

States were authorized to begin a continuous sign-up as of October 1, 1996. To offer a conservation easement, the landowner must have owned the land for at least 1 year prior to enrolling the land in the program unless the land was inherited or the landowner can prove the land was not obtained for the purpose of enrolling it in the program. To participate in a restoration cost-share agreement, the landowner must show evidence of ownership.

To be eligible for WRP, land must be restorable and be suitable for wildlife benefits. This includes:

- Wetlands farmed under natural conditions;
- Farmed wetlands;
- Prior converted cropland;
- Farmed wetland pasture;
- Farmland that has become a wetland as a result of flooding;
- Rangeland, pasture, or production forestland where the hydrology has been significantly degraded and can be restored;
- Riparian areas which link protected wetlands;
- Lands adjacent to protected wetlands that contribute significantly to wetland functions and values; and
- Previously restored wetlands (Conservation Reserve Program [CRP] land is eligible if it meets WRP requirements).

Ineligible land includes wetlands converted after December 23, 1985; lands with timber stands established under a CRP contract; Federal lands; and lands where conditions make restoration impossible.

New Programs Authorized

The 1996 Farm Bill created new initiatives to improve natural resources on America's private lands:

Environmental Quality Incentives Program

The Environmental Quality Incentives Program (EQIP) was established in the 1996 Farm Bill to provide a single, voluntary conservation program for farmers and ranchers who face serious threats to soil, water, and related natural resources. It provides technical, financial, and educational assistance.

EQIP also represents USDA's commitment to streamlining and improving its services. USDA combined four of its conservation programs into EQIP: the Agricultural Conservation Program, Water Quality Incentives Program, Great Plains Conservation Program, and the Colorado River Basin Salinity Control Program.

NRCS has leadership for EQIP. It works with FSA to set the program's policies, priorities, and guidelines. Conservation districts and FSA county committees have important roles in implementing the program at the local level. State Technical Committees offer advice on establishing EQIP activities at the State level.

EQIP will:

- Focus on conservation priority areas where there are significant natural resource problems;
- Provide technical assistance and up to 75 percent of the costs of applying conservation practices;
- Give high priority to assisting areas where State or local governments also offer assistance or where conservation practices will help meet water quality objectives; and
- Be administered through multiyear contracts based on conservation plans.

EQIP was funded at \$130 million in fiscal year 1996 and \$200 million thereafter until 2002. Fifty percent of funding is marked for livestock-related conservation practices. Total cost shares and incentive payments to any person may not exceed \$10,000 for any fiscal year. There is a \$50,000 limit for multiyear contracts.

Wildlife Habitat Incentives Program

The Wildlife Habitat Incentives Program (WHIP) helps participants develop and improve wildlife habitat on private lands. WHIP is authorized to provide cost sharing to participants to offset expenses incurred for developing habitat for fish and wildlife. NRCS administers the program. The Chief of NRCS may implement WHIP in any of the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the U.S. Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific.

WHIP will provide cost sharing to develop habitat for upland and wetland wildlife, threatened and endangered species, fish, and other types of wildlife. Funds for cost sharing total \$50 million to the year 2002.

Under WHIP, participants or leasees who have a lease for the duration of the contract agree to implement a wildlife habitat development plan for lands that are made available, without cost, to NRCS. In turn, NRCS agrees to provide cost-share assistance for the initial implementation of wildlife habitat development practices. In some States, other wildlife agencies or nongovernment organizations may provide expertise or additional funding to carry out a project.

Farmland Protection Program

The Farmland Protection Program provides funds to help purchase development rights to keep productive farmland in use. Working through existing programs, USDA joins with State, tribal, or local governments to acquire conservation easements or other interests from landowners. USDA provides up to 50 percent of the costs of purchasing the easements. To qualify, farmland must: be part of a pending offer from a State, tribe, or local farmland protection program; be privately owned; have a conservation plan; be large enough to sustain agricultural production; be accessible to markets for what the land produces; have adequate infrastructure and

services; and have surrounding parcels of land that can support long-term agricultural production.

Conservation of Private Grazing Land

Conservation of Private Grazing Land, which is administered by NRCS, will ensure that technical, educational, and related assistance is provided to those who own private grazing lands. The Nation's more than 600 million acres of private grazing lands produce food and fiber, hold and carry important water resources, and offer wildlife habitat and recreational opportunities.

This assistance will offer opportunities for:

- Better grazing land management;
- Protecting soil from erosive wind and water;
- Using more energy-efficient ways to produce food and fiber;
- Conserving water;
- Providing habitat for wild animals;
- Sustaining forage and grazing plants;
- Using plants to clear carbon dioxide and other greenhouse gasses from the air; and
- Using grazing lands as a source of biomass energy and raw materials for industrial products.

In fiscal year 1996, \$20 million was authorized from conservation technical assistance funds. The amount increases to \$60 million by the third year.

Additional Conservation Provisions

Conservation Compliance

The 1996 Farm Bill has brought changes to how conservation compliance operates. These changes will encourage land users to slow soil erosion on highly erodible land (HEL), protect wetlands, and build on conservation compliance successes achieved under previous Farm Bills.

Conservation compliance policies are now more farmer friendly than those of previous Farm Bills while still achieving high levels of environmental protection. Farmers have greater flexibility in choosing the conservation methods that can protect their highly erodible land. More decisions regarding conservation compliance can be made at the local level and decisions can now be made faster and with fewer staff resources.

Swampbuster

Swampbuster prevents wetlands from being altered for agricultural purposes for those seeking USDA program benefits by preserving the environmental functions and values of wetlands. These values include wildlife habitat, flood control, esthetics, recreation, sediment control, groundwater recharge, and improving water quality.

The 1996 Farm Bill changed Swampbuster to give farmers greater flexibility in complying with wetland conservation requirements and in making wetlands more valuable and functional. The following Swampbuster provisions have changed:

- Wetland determinations will be made upon request. These determinations stay in effect as long as the land is used for agricultural purposes (unless a violation occurs) or until the owner or operator requests a review.
- There are more options for mitigation. These options include the kinds and locations of restoration, enhancement, or creation activities that maintain a wetland's functions and values.
- Landowners who desire to convert or alter wetlands may enhance existing wetlands, restore former wetlands, or create new wetlands to offset functions and values that are lost from conversions or alterations.
- Wetland conversions authorized by Section 404 of the Clean Water Act will be accepted if the conversion activities were properly mitigated.
- A pilot program for wetland mitigation banking may be established. This program would allow USDA to assess how well mitigation banking assists USDA participants comply with Swampbuster.
- Practices that alter wetlands can now be put on a "fast track" for completion if NRCS determines that a planned activity will have a minimal effect on the wetland functions and values in the area under the "categorical" minimal-effect exemption.

Agricultural Air Quality

The 1996 Farm Bill includes a provision requiring the establishment of a Task Force on Agricultural Air Quality to make recommendations to the Secretary of Agriculture with regard to the scientific basis for agriculture's impact on air quality. The Task Force is to be chaired by the NRCS Chief, and, unless renewed, the Task Force will be terminated 2 years from the date of establishment.

The Task Force is to strengthen and coordinate USDA air quality research efforts to determine the extent to which agricultural activities contribute to air pollution and to identify cost-effective ways in which the agricultural industry can improve air quality. The Task Force also is charged with ensuring that data quality and interpretation are sound. The Farm Bill states that policy recommendations made by any Federal Agency with respect to agricultural air quality issues are to be based on sound scientific findings, subject to peer review, and should consider economic feasibility.

The Task Force will work to ensure intergovernmental (Federal, State, and local) cooperation to establish policy for agricultural air quality and to avoid duplication.

The Task Force is to be convened and chaired by the Chief of NRCS and comprised of USDA employees, industry representatives, and outside experts in the fields of agriculture, air quality, and human health. The Task Force will be an advisory committee and will operate under the terms of the Federal Advisory Committee Act.

Other Programs

Soil Surveys

NRCS conducts soil surveys cooperatively with other Federal agencies, land-grant universities, State agencies, and local units of government. Soil surveys provide the public with local information on the uses and capabilities of their soil resource. Soil surveys are based on scientific analysis and classification of the soils, and are used to determine land capabilities and conservation treatment needs. The published soil survey for a county or designated area includes maps and interpretations with explanatory information that is the foundation of resource policy, planning, and decisionmaking for Federal, State, county, and local community programs.

■ **Major Accomplishments - FY 1995**

- *Decisions receiving technical services annually - 814,000*
- *Acres treated annually through conservation technical assistance - 28.2 million*
- *Tons of soil erosion reduced annually through conservation technical assistance - 258 million*
- *Acres mapped annually by NRCS - 21.9 million*
- *Number of soil surveys ready for production - 59*

Snow Survey and Water Supply Forecasts

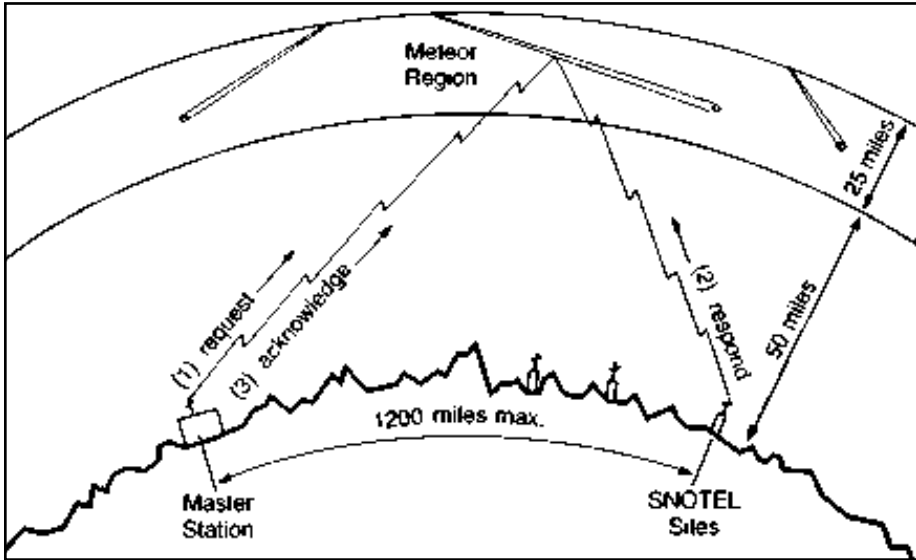
NRCS field staff collect snow information through a network of about 600 Snow Telemetry (SNOTEL) and 850 traditional snow courses to provide 11 Western States and Alaska with water supply forecasts. The data are collected, assembled, and analyzed to make about 4,000 annual water supply forecasts, which provide estimates of available annual yield, spring runoff, and summer stream flow. Water supply forecasts are used by individuals, organizations, and State and Federal agencies to make decisions relating to agricultural production, fish and wildlife management, flood control, recreation, power generation, and water quality management. The National Weather Service presently includes the snow information in its river forecasting.

Plant Materials Centers

NRCS employees at 26 Plant Materials Centers assemble, test, and encourage increased plant propagation and usefulness of plant species for biomass production, carbon sequestration, erosion reduction, wetland restoration, water quality improvement, streambank and riparian area protection, coastal dune stabilization, and to meet other special conservation treatment needs. The work is carried out cooperatively with State and Federal agencies, commercial businesses, and seed and nursery associations. After species are proven, they are released to the private sector for commercial production. In 1995, NRCS developed cultivars that were turned over to others to produce plant stock that generated more than \$88 million in revenue for private sector nurseries and seed companies.

Figure 10-3.

Snow surveys and meteor burst technology



Water supply forecasting is enhanced by automated snow survey data collection through a snowpack telemetry (SNOTEL) network. This figure depicts the meteor burst technique used to transmit data from remote SNOTEL sites.

Billions of sand-sized meteorites enter the atmosphere daily. As each particle heats and burns in the region 50 to 75 miles above the Earth's surface, its disintegration creates a trail of ionized gases. The trails diffuse rapidly, usually disappearing within a second, but their short lifespan is adequate for SNOTEL communications to be completed.

The process has three major steps: (1) master stations request data from remote sites; (2) sites respond by transmitting their current data; and (3) finally a master station acknowledges receipt and signals the site transmitter to stop. This complex exchange, taking place in a fraction of a second, is possible thanks to microprocessors.

Watershed Surveys and Planning

NRCS provides assistance to local communities in watershed planning in response to requests by sponsoring local organizations. The Agency works with sponsors to develop watershed plans which meet sponsors' priorities and provide natural resource benefits.

Small Watersheds Projects.

NRCS provides technical and financial assistance, in cooperation with local sponsoring organizations, State, and other public agencies, to voluntarily plan and install watershed-based projects on private lands. The program empowers local people or decisionmakers, builds partnerships, and requires local and State funding con-

tributions. The purposes of watershed projects include watershed protection; flood prevention; water quality improvements; soil erosion reduction; rural, municipal, and industrial water supply; irrigation water management; sedimentation control; fish and wildlife habitat enhancement; and creation and restoration of wetlands and wetland functions.

Emergency Watershed Protection

Under the Emergency Watershed Protection (EWP) program, NRCS provides assistance to reduce hazards to life and property in watersheds damaged by severe natural events. An emergency exists when floods, fire, drought, or other natural causes result in life or property being endangered. During the past 8 years, the program has been needed and used in an average of 26 States per year. Emergency work includes establishing quick vegetative cover on denuded land, sloping steep land, and eroding banks; opening dangerously restricted channels; repairing diversions and levees; and other emergency work. The emergency area need not be declared a national disaster area to be eligible for technical and financial assistance. Emergency watershed protection is applicable to small-scale, localized disasters as well as disasters of national magnitude. NRCS provides technical and financial assistance for disaster cleanup and subsequent rebuilding; stream corridor, wetland, and riparian area restoration; and urban planning and site location assistance to the Federal Emergency Management Agency (FEMA) when relocating communities out of floodplains. Local people are generally employed on a short-term basis to assist with disaster recovery.

Watershed Operations

Under the Flood Control Act of 1944, NRCS is authorized to administer watershed works of improvement. Flood prevention operations include planning and installing works of improvement and land treatment measures for flood prevention; for the conservation, development, utilization, and disposal of water; and for the reduction of sedimentation and erosion damages. This may also include the development of recreational facilities and the improvement of fish and wildlife habitat. Activities are authorized in 11 specific flood prevention projects covering about 35 million acres in 11 States.

■ Watershed Surveys and Planning Major Accomplishments - FY 1995

<i>Applications available for planning</i>	274
<i>Approved for planning</i>	17
<i>Planning completed</i>	17
<i>Planning in process</i>	91
<i>Cooperative studies initiated</i>	37
<i>Cooperative studies completed</i>	15
<i>Cooperative studies in progress at end of year</i>	136
<i>Floodplain management studies completed (cumulative total)</i>	668
<i>Floodplain management studies completed during fiscal year</i>	8
<i>Floodplain management studies in progress at end of year</i>	87

River Basin Surveys and Investigations

NRCS cooperates with other Federal, State, and local agencies in conducting river basin surveys and investigations, flood hazard analysis, and flood plain management assistance to aid in the development of coordinated water resource programs, including the development of guiding principles and procedures. Cooperative river basin studies are made up of agricultural, rural, and upstream water and land resources to identify resource problems and determine corrective actions needed. These surveys address a variety of natural resource concerns including water quality improvement, opportunities for water conservation, wetland and water storage capacity, agricultural drought problems, rural development, municipal and industrial water needs, upstream flood damages, and water needs for fish, wildlife, and forest-based industries. Flood plain management assistance includes the identification of flood hazards and the location and use of wetlands. NRCS represents the Department on river basin regional entities and River Basin Interagency Committees for coordination among Federal departments and States.

Forestry Incentives Program

The objectives of this program are to increase the Nation's production of sawtimber and pulpwood on nonindustrial, private forest lands; to decrease expected shortages and rising prices of timber; and to help ensure effective use of available forest lands. Program objectives are met by providing cost-share and technical assistance to landowners to encourage voluntary installation of forestry practices. The program shares up to 65 percent of the cost incurred by the landowner for tree planting and timberstand improvement.

Resource Conservation and Development (RC&D) Program

The Resource Conservation and Development (RC&D) Program helps people care for and protect their natural resources in a way that will improve an area's economy, environment, and living standards. The RC&D Program is a unique blend of private enterprise and creative federalism. It is based on a number of concepts including the value of public/private partnerships in making the best use of limited resources; the value of grassroots involvement in making decisions about local areas; the need to bring USDA agencies together to focus on the same problems and opportunities; the need to leverage limited Federal dollars with private funds to accomplish goals; and the importance of achieving a balance between rural economic development and natural resource protection. RC&D involves more than a single project effort and builds upon long-range resource development plans. To implement RC&D, diverse groups of local people are brought together in an RC&D Council in an RC&D Area. An RC&D Area can include one or more adjacent counties that are big enough to have substantial natural resources to use for economic improvement and community betterment. The RC&D Councils, nationwide, are comprised of more than 20,000 volunteers. There are currently 289 authorized RC&D areas involving 2,092 counties across the country.

National Resources Inventory

Every 5 years, NRCS issues a report card on how well the Nation is sustaining natural resources on non-Federal land. Called the “National Resources Inventory,” or NRI, this report card contains the most comprehensive and statistically reliable data of its kind in the world. It measures trends in soil erosion by water and wind, wetland losses, prime farmland acreage, irrigation, and conservation treatment needs at national, regional, State, and sub-State levels.

In 1994, NRCS released the NRI data comparing resource conditions and trends in 1982 and 1992. Key findings include:

- Between 1982 and 1992, the Nation’s cropland acreage decreased by about 9 percent (from 421 million to 382 million acres), most of it going into the Conservation Reserve Program; rangeland acreage decreased by about 2 percent (from 409 million to 399 million acres); and developed land increased by 18 percent (from 78 million to 92 million acres).

- The average annual rate of soil erosion for the Nation dropped substantially between 1982 and 1992, largely attributable to the success of the Nation’s farmers in meeting the conservation provisions of the 1985 farm bill.

- Prime farmland decreased by 6 million acres between 1982 and 1992, with most of the losses due to rural and urban development.

- Wetland loss due to agriculture has slowed significantly.

The NRI contributes to resource appraisals authorized by the Soil and Water Resources Conservation Act of 1977. These “RCA” appraisals, led by NRCS, are the basis for USDA’s National Conservation Program as well as farm and environmental legislation.

In 1994, NRI data and analytical software were made available to the public on CD-ROM for the first time. To obtain the NRI database, Data Analysis Software, and spatial data sets, contact: NRCS National Cartography and Geospatial Center, Fort Worth Federal Center, Bldg. 23, Room 60, P.O. Box 6567, Fort Worth, TX 76115-0567; telephone (817) 334-5559, extension 3135.

Each NRI has built and improved upon the previous one. For example, the 1992 NRI added a data element to look specifically at Earth cover. Major improvements planned for the 1997 NRI include a broader resource assessment focus to address emerging Agency initiatives, such as soil quality and grazing lands health. The NRI and other data collection efforts are being coordinated to achieve a continuous assessment of natural resource conditions and trends.

NRI information can be used to formulate policy and evaluate programs at national, regional, and State levels. Because the NRI’s 800,000 sample points are linked to geographic coordinates, natural resource estimates and maps can be produced for user-defined areas of interest. When combined with other Federal, State, and local government inventories, the NRI can provide a snapshot of the state of the land and identify natural resource trends. NRCS field offices and new information dissemination systems, such as the Internet, will become increasingly important in getting this information to the people who most need it: landowners and natural resource managers.