



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

September 2000

# Natural Resources Conservation Service Strategic Plan 2000-2005



## List of Acronyms Used

AFO	Animal Feeding Operation	GIS	Geographic Information System
ARS	Agricultural Research Service, USDA	GPRA	Government Performance and Results Act of 1993
BIA	Bureau of Indian Affairs, DOI	LESA	Land Evaluation and Site Assessment
BLM	Bureau of Land Management, DOI	MOU	Memorandum of Understanding
BoR	Bureau of Reclamation, DOI	NASS	National Agricultural Statistics Service, USDA
CAFO	Concentrated Animal Feeding Operation	NEPA	National Environmental Policy Act
CCC	Commodity Credit Corporation, USDA	NOAA	National Oceanic and Atmospheric Administration, DOC
CNMP	Comprehensive nutrient management plan	NPDES	National Pollutant Discharge Elimination System
COE	Army Corps of Engineers, U.S. Department of Defense	NPS	National Park Service, DOI
CRP	Conservation Reserve Program	NRCS	Natural Resources Conservation Service, USDA
CSREES	Cooperative State Research, Education, and Extension Service, USDA	NRI	National Resources Inventory
CWA	Clean Water Act (Federal Water Pollution Control Act)	PM-	Particulate matter
DOC	U.S. Department of Commerce	RC&D	Resource Conservation and Development
DOI	U.S. Department of Interior	RD	Rural Development, USDA
DOQ	Digital orthophoto quad	SCAN	Soil Climate Access Network
ECP	Emergency Conservation Program	SCS	Soil Conservation Service, USDA
EPA	U.S. Environmental Protection Agency	SNOTEL	Snow Telemetry Network
EQIP	Environmental Quality Incentives Program	SSURGO	Soil Survey Geographic database
ERS	Economic Research Service, USDA	T	Tolerable rate
ESA	Endangered Species Act	TMDL	Total maximum daily load
EWP	Emergency Watershed Protection Program	USAID	U.S. Agency for International Development, U.S. Department of State
FAS	Foreign Agricultural Service, USDA	USDA	U.S. Department of Agriculture
FOTG	Field Office Technical Guide	USGS	U.S. Geological Survey, DOI
FS	Forest Service, USDA	WLA	National Partnership Workload Analysis
FSA	Farm Service Agency, USDA	WLMA	Workload Management Analysis
FWS	Fish and Wildlife Service, U.S. Department of the Interior		

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# Natural Resources Conservation Service Strategic Plan, FY 2000-2005

## Introduction

Agriculture and the quality of America's soil and water resources are vital to the Nation's welfare. About 60 percent (1.5 billion acres) of the United States is non-Federal land—almost 90 percent of these acres are cropland, rangeland, pastureland, and private non-industrial forestland. Developed and other rural land accounts for another 160 million acres. The care of these lands is in the hands of millions of individuals.

The Natural Resources Conservation Service (NRCS) is proud to be a partner in conservation with private land managers; conservation districts; resource conservation and development (RC&D) councils; State and local conservation agencies; State, local, and Tribal governments; rural communities, businesses; and others. This partnership has helped conserve natural resources, increase agricultural productivity, improve the environment, and enhance the quality of life.

## Background

NRCS is the lead Federal agency for conservation on private land. It is part of the U.S. Department of Agriculture (USDA) and serves the United States, its territories and commonwealths, and Tribal governments. In 1935, Congress established the Soil Conservation Service (SCS) to carry out a continuing program of soil and water conservation on the Nation's private and non-Federal land. NRCS, established by the Federal Crop Insurance Reform and

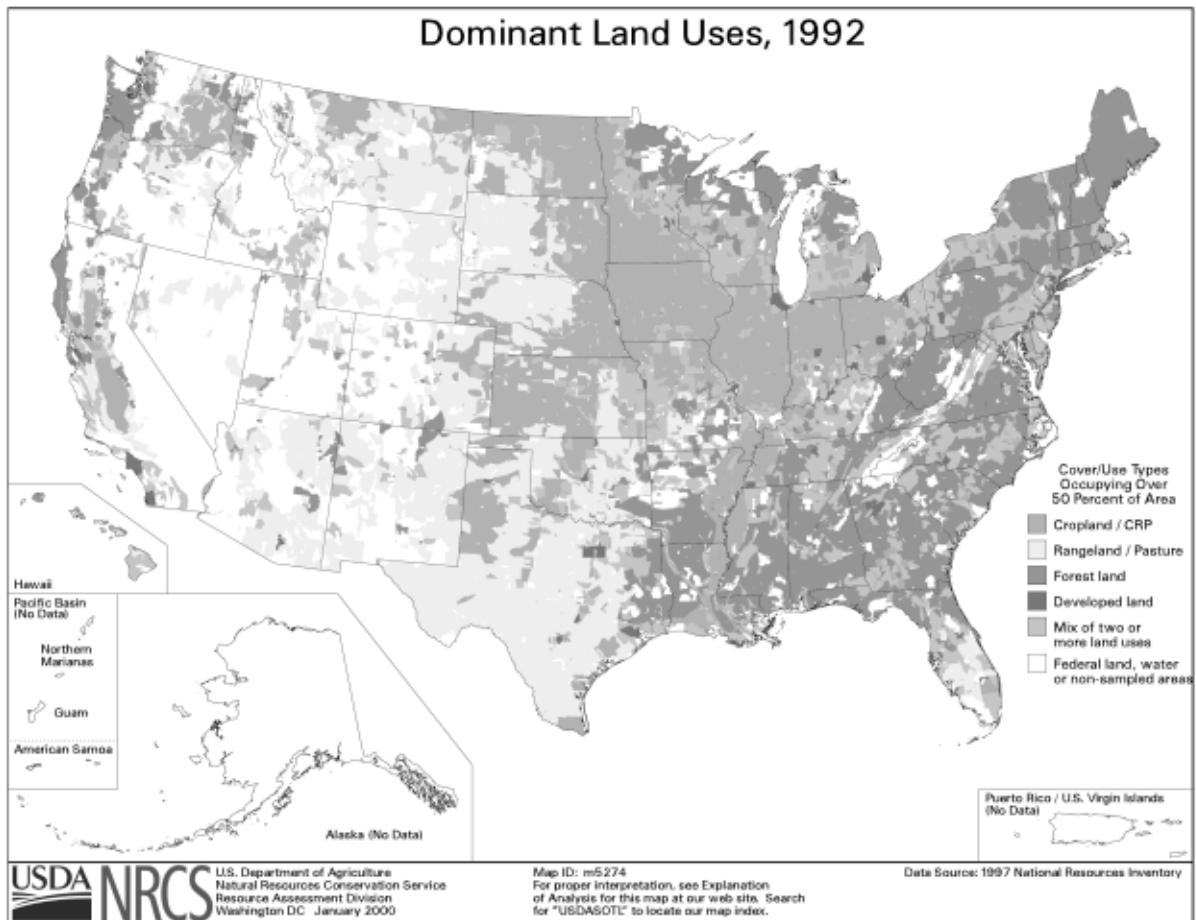


Figure 1—About 1.3 billion acres of the contiguous United States, or about 90 percent of all non-Federal land, are in natural resource uses managed by millions of individuals. The decisions made each day on the care and management of these lands profoundly influence the Nation's natural resources and their quality. Source: NRI, 1992

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Department of Agriculture Reorganization Act of 1994 (7 U.S.C. 6962), combines the authorities of SCS and directs the establishment of additional financial or technical assistance programs for natural resource conservation and rural development.

NRCS provides conservation technical assistance through local conservation districts, which are units of government created by State law. NRCS, conservation districts, State conservation agencies, and RC&D councils represent a unique Federal, State, and local partnership dedicated to natural resource conservation. NRCS staff at the local level work in partnership with State and local conservation staff and volunteers to assist individuals and communities to care for natural resources. NRCS also develops technical information and provides guidance for conservation planning and assistance. This technical guidance is based on sound science, tailored to local conditions.

### **Authorized Activities**

NRCS employees provide technical, educational, and financial assistance through field offices where they work directly with individuals; communities; State, local, and Tribal governments; and others. Specifically, NRCS:

- Helps individual land users plan, apply, and maintain conservation systems that are site-specific and economically and environmentally sound. Assistance in applying conservation systems includes advice in the design, layout, construction, management, operation, maintenance, and

evaluation of the systems in a conservation plan. Practices may be applied with cost-share assistance from USDA or other Federal, State, or local programs or entirely with private funds. Planning and application of resource management systems help land users improve their resources and maintain their long-term productivity.

- Administers programs that provide financial incentives for protecting natural resources and environmental quality. These programs are implemented to obtain maximum natural resource and environmental benefits for the dollars expended. NRCS also administers financial assistance programs for activities such as watershed protection, farmland protection, and rural development.
- Helps units of government and community groups protect the environment and improve the standard of living and quality of life for the people they represent. This includes providing information and technical assistance to local officials so that they can set standards and develop plans for resource management and development and providing technical training to employees of State, local, and Tribal agencies.
- Conducts inventories such as soil and snow surveys, assesses natural resource conditions and trends, conducts basic and applied soil science research in support of soil survey, and makes this information available to individuals and commu-

nities for use in resource planning. NRCS monitors resource conditions through the National Resources Inventory (NRI) and conservation needs assessments. These science-based efforts present an unbiased look at the condition of natural resources to assess if they are stable, declining, or improving.

- Develops conservation standards, specifications, and guidelines to ensure that conservation systems are technically sound. These technical standards ensure that conservation is based on sound and up-to-date science. NRCS technical guides are used by conservation partnership staff, as well as by private consultants and engineers, State and Federal agencies, and others.

### **Legislative Authorities**

Congress provides funds through appropriations and through the Commodity Credit Corporation (CCC) for NRCS to provide technical and financial assistance to individuals, communities, Tribes, State and local governments, and other customers. Table 1 lists congressionally authorized programs through which NRCS delivers services.

## Partnerships and Coordination

NRCS works in a long-standing partnership with conservation districts, State agencies, RC&D councils, land grant institutions, Federal agencies, Tribal governments, and private sector organi-

zations. In addition to traditional partners, NRCS collaborates with many others in pursuit of the agency mission:

- In research and education, NRCS works primarily with USDA's Agricultural Research Service (ARS); Economic

Research Service (ERS); Cooperative State Research, Education, and Extension Service (CSREES); and Forest Service (FS); the U.S. Department of the Interior's (DOI) U.S. Geological Survey (USGS), National Park Service (NPS), Bureau of Land

**Table 1: Legislative Authorities**

Authority	NRCS Program
Agricultural Appropriation Act of 1896 (29 STAT 103) Soil Conservation and Domestic Allotment Act of 1935 (P.L.74-46) Soil Surveys for Resource Planning and Development Act of 1966 (P.L.89-560) Rural Development Act of 1972 Soil and Water Resources Conservation Act of 1977 (P.L.95-192) Federal Agriculture Improvement and Reform Act of 1996 (P.L.104-127)	Conservation Operations Conservation Technical Assistance Soil Survey Snow Survey and Water Supply Forecasting National Resources Inventory Conservation Plant Materials Centers Grazing Lands Conservation Initiative
Watershed Protection and Flood Prevention Act of 1954 (P.L.83-566)	Watershed Surveys and Planning
Flood Control Act of 1944 (P.L.78-534) Watershed and Flood Prevention Act of 1954 (P.L.83-566), as amended Agricultural Credit Adjustment Act of 1978 (P.L.95-334, Sec. 403-405)	Watershed and Flood Prevention Operations Watershed Operations
Emergency Operations authorizations of 1950 (P.L.81-516, Sec. 216) Agricultural Credit Act of 1978 (P.L.95-334, Sec. 403) Federal Agricultural Improvement and Reform Act of 1996 (P.L.104-127 Sec. 382)	Emergency Watershed Protection
Cooperative Forestry Assistance Act of 1978 (P.L.95-313), as amended	Forestry Incentives Program
Food and Agriculture Act of 1962 (P.L.87-703, Sec. 102) Agriculture and Food Act of 1981 (P.L.97-98, Sec. 1528-1538)	Resource Conservation and Development Program
Food Security Act of 1985 (P.L.99-198, Sec. 1237) Food, Agriculture, Conservation, and Trade Act (P.L.101-624, Title XVI, Sec. 1438) Omnibus Budget Reconciliation Act of 1993 (P.L.103-66) Federal Agriculture Improvement and Reform Act of 1996 (P.L.104-127)	Wetlands Reserve Program
Federal Agriculture Improvement and Reform Act of 1996 (P.L.104-127, Sec. 334)	Environmental Quality Incentives Program
Federal Agriculture Improvement and Reform Act of 1996 (P.L.104-127, Sec. 388) Farmland Protection Policy Act of 1981 (P.L. 97-98, Sec. 1539-1549)	Farmland Protection Program
Federal Agriculture Improvement and Reform Act of 1996 (P.L.104-127, Sec.387)	Wildlife Habitat Incentives Program
Federal Agriculture Improvement and Reform Act of 1996 (P.L.104-127, Sec. 335)	Conservation Farm Option
Food, Agriculture, Conservation, and Trade Act of 1990 (P.L.101-624, Sec. 2501)	Outreach and Assistance for Socially Disadvantaged Farmers and Ranchers

Management (BLM), Bureau of Indian Affairs (BIA), Fish and Wildlife Service (FWS), and Bureau of Reclamation (BoR); U.S. Department of Defense, Army Corps of Engineers (COE); U.S. Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA); and the U.S. Environmental Protection Agency (EPA).

- Major collaborators in data collection and analysis include FS, National Agricultural Statistics Service (NASS), ERS, USGS, FWS, BLM, EPA, COE, NPS, and land grant institutions.
- For program delivery, NRCS primarily works with FS, Rural Development (RD), Farm Service Agency (FSA), and CSREES. Internationally, NRCS cooperates with agencies such as FS, Foreign Agricultural Service (FAS), ARS, U.S. Agency for International Development (USAID), International Union of Soil Sciences, and other organizations such as the Inter-American Development Bank, World Bank, Food and Agriculture Organization of the United Nations, and the Inter-American Institute of Cooperation in Agriculture.

Many Federal and State agencies rely on NRCS technical expertise to plan and implement their natural resource programs. NRCS works closely on conservation objectives with other USDA agencies. FSA administers the Conservation Reserve Program (CRP) and the Emergency Conservation Program (ECP), and NRCS provides the technical assistance that individuals need to accomplish the program conservation goals. NRCS has signed Memoranda of Under-

standing (MOU) with CSREES for water quality data and training and with ARS for cooperation on water quality research. Examples of coordination with non-USDA agencies include: the Surface Mine Control and Reclamation Programs of the DOI; the Coastal Zone Management Program of the DOC; and the Chesapeake Bay Agreement, National Estuary Program, and Clean Lakes Program of EPA. NRCS has signed an MOU with EPA for cooperation on non-point source pollution control and air quality research, and with USGS for cooperation on water quality research. NRCS, through the USDA RC&D Policy Advisory Board, has signed an MOU with seven USDA agencies to collaborate on conservation and development issues affecting communities and to work with RC&D councils.

### **Guiding Principles**

Four fundamental principles guide how NRCS conducts business today and will continue to conduct business in the future.

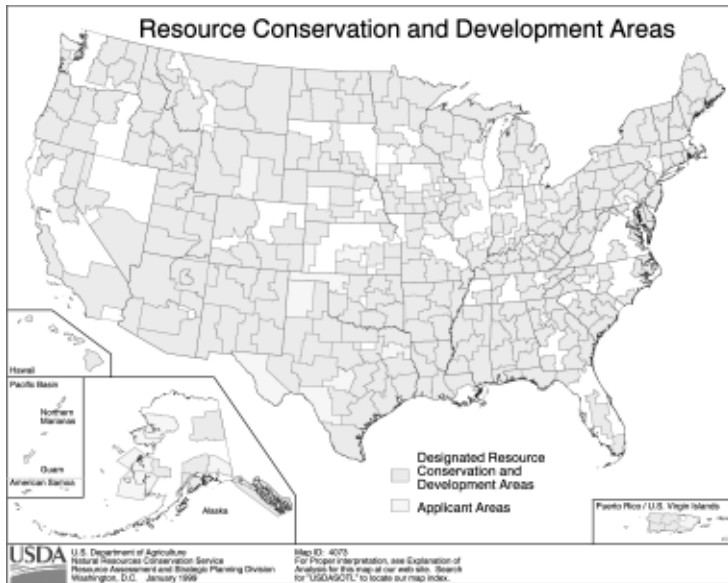
### **Service**

We serve, either directly or indirectly, all of the people of the Nation. We respect the dignity and worth of every person we serve, treat each individual fairly and equitably, listen to their views, and respond with advice that is tailored to their needs and is technically accurate. We will continually strive to anticipate the public need and to improve our service and measure our efforts against the highest professional standards. Our managers at all levels will be held accountable for the delivery of services to the public on a non-discriminatory

basis. Our appreciation of the needs of people is as important to successful conservation efforts as is our understanding of natural resources. We recognize the important contributions made by the stewards of privately owned, Tribal, and other non-Federal lands to the Nation's economy and quality of life. We find that the majority of private land users make responsible resource management decisions when equipped with appropriate data, technical assistance, and incentives.

### **Partnership**

We value our relationships with other Federal, State, and local resource agencies that share common objectives, although our missions may differ. NRCS, conservation districts, State agencies, and RC&D councils represent a unique Federal-State-local partnership dedicated to conservation of natural resources and environmental protection. NRCS is committed to keeping this core partnership strong. NRCS also works in consultation with American Indian Nations to provide appropriate services at their request. We will seek to strengthen this partnership by enhancing the technical capacity of conservation districts and RC&D councils and by bringing in new partners to work toward common conservation goals.



## Community Action

We have confidence that a locally led, watershed-based, voluntary approach to resource management on private lands is key to maintaining healthy watersheds. Local action and leadership—neighbors working together—are the foundation for effective land stewardship. NRCS and our partners will work to foster the discussion needed to bring people together in a shared vision for their land and communities. We will help achieve agreement based on sound science, sensible economics, appropriate technology, respect for diverse cultures, and current information. NRCS will seek opportunities for government, communities, institutions, Tribes, and individuals to work together to achieve common conservation goals.

## Technical Excellence

NRCS' success depends upon the technical expertise of its employees and volunteers and upon their ability to work effectively with a diverse customer base. The agency will strengthen its management, technical, and other training

Figure 2-NRCS, conservation districts, RC&D councils, and State agencies form a core conservation partnership that covers the Nation. The focal point for locally led assistance and technical help for individuals and communities is the network of NRCS field offices maintained at nearly 2,500 locations across the country. NRCS staff, working with conservation district staff and other partners, assist in developing conservation plans and applying conservation measures on all private land - agricultural and non-agricultural.



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activities to ensure that all employees acquire the skills to be successful. We will provide our workforce the best work environment possible by creating an institutional climate that welcomes diversity, encourages innovation and self-development, and rewards creativity and achievement.

## Key External Factors

Factors beyond the control of NRCS may strongly influence the ability of the agency and the conservation partnership to meet the goals outlined in this strategic plan. Under each objective in this plan, strategies are identified that work to diminish or prevent the potential for these factors to weaken progress toward conservation goals. The most influential external factors include:

- **Economic forces affecting agricultural structure and land use decisions.** Economic forces, such as global and domestic market fluctuations, competition, and economies of scale, historically have dominated agriculture; affecting profitability, product mix decisions, technology advances, and operation complexity, among others. These influences contribute to geographic shifts in production, the increase in small and large production units and decrease in mid-size units, agricultural land conversion and fragmentation, and the vertical integration of many industries, particularly livestock production. Continuing demand for new home, industrial, business, transportation, and recreation sites affect land use decisions. Growing proximity of developed and agricultural land uses affect the conserva-

tion systems and practices needed to address natural resource concerns. Strategies in this plan seek to diminish the potential destabilizing effects of these economic forces through: 1) comprehensive conservation planning that helps maintain long-term resource productivity, 2) meeting the needs for economically viable conservation practices and systems, 3) ensuring that conservation technologies keep pace with changing demands, and 4) working to bring natural resource information to local land use decisionmaking processes.

- **Increasing complexity of the conservation agenda.** The conservation agenda continues to expand as a result of greater scientific understanding as well as increasing number of policy actions. New Federal, State, and local laws and policies on environmental quality increase requirements on landowners and land managers. These policies increase the complexity of natural resource management and create a framework within which NRCS conservation objectives must fit. Workload increases, as coordination and consultation needs grow in response to regulatory requirements, to ensure that actions comply with risk reduction policies (e.g., National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and Clean Water Act (CWA)) and public sentiment. Strategies in this plan seek to help the conservation partnership prepare to meet the new demands from an increasingly complex conservation agenda by: 1) strengthening the conser-

vation partnership including bringing in new partners with new skills and abilities, 2) focusing on training and retaining skilled staff capable of addressing the new and emerging issues in conservation, and 3) maintaining the commitment to locally led conservation to ensure that local priorities are central to conservation planning.

- **Demographic pressures driving use of resources.**

Global population continues to increase exponentially. In combination with increasing mobility, our Nation's communities are characterized by increasing social, economic, racial, and ethnic diversity. Nearly 80 percent of the U.S. population lives in urban and suburban areas. The rate of growth is unequally distributed across the Nation, with the highest growth rates being experienced in the West. Urban sprawl continues to consume agricultural land. As a result, pressure increases on the resource base, and agricultural land specifically. These demographic characteristics also have implications for the appropriate delivery of conservation assistance to a diverse customer base and one that is no longer primarily rural. Strategies in this plan seek to help the conservation partnership prepare to meet the new demands from an increasingly diverse and growing urban and suburban population by: 1) improving outreach to minority, underserved, or non-traditional individuals and groups; 2) strengthening ties to minority serving academic institutions and community based organizations;

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3) strengthening attention to addressing conservation needs in urban and rapidly developing areas; and 4) providing areawide planning and coordinated assistance to address conservation needs on a watershed basis.

- **Dependence on external sources of conservation technologies.** NRCS depends heavily on technology developed by other agencies, land grant institutions, and the private sector. Their continued investment in research and development for conservation technology is, therefore, essential for conservation to keep pace with changes in the agricultural sector. If conservation technology does not continue to be responsive to changing environmental and agricultural conditions, the partnership may be poorly equipped to meet emerging needs and achieve conservation targets identified in this plan. Strategies in this plan seek to strengthen agency partnerships in technology development by: 1) working closely with cooperating agencies and partners to ensure continued emphasis in technology development; 2) strengthening investment in the agency's technical components; and 3) integrating expertise from the field, partners, and others in technology development.
- **Unusual or prolonged adverse environmental conditions.** Weather extremes always have posed a challenge to agriculture and conservation. Recent episodic events such as drought, flooding, hurricanes, and major wildfires have

caused substantial damage to soil, water, and related natural resources, resulting in severe impacts across the country. Global environmental change is projected to increase the variability and intensity of weather extremes, potentially shifting greater portions of agency resources to emergency response. If these events occur on a large scale, or are unusually frequent during the next five years, it will be extremely difficult to achieve the natural resource improvements envisioned in this plan. Strategies in this plan seek to help reduce the effects of unusual or prolonged environmental conditions by: 1) assisting in the application of conservation systems that not only improve productivity but improve resilience to natural disturbances, 2) promoting watershed level planning to address water supply and drought mitigation, and 3) providing information and tools to individuals and communities to plan and undertake proactive mitigation to lessen potential impacts of natural disasters.

- **Financial resources available to the agency.** Budget resources available to NRCS to achieve its general goals, strategic objectives, and performance targets profoundly influence the ability of the agency and partnership to achieve the outlined objectives. Over the past 15 years, agency staffing has dropped as available resources fail to keep pace with inflation and pay cost increases. Our partners face similar resource issues. If fewer

resources are available, progress toward goals will be slowed correspondingly. Strategies in this plan seek to increase the contributions to conservation by: 1) strengthening and expanding the partnership, 2) strengthening outreach to customers to increase the application of conservation measures on the land, 3) providing information and tools to communities and individuals to build natural resource concerns into local decisionmaking processes, and 4) improving communication to build understanding of the benefits provided by natural resource conservation.

## **Mission**

**Providing leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.**

Healthy land is fundamental to supporting agricultural production and communities, a healthy natural environment, and human health and well being. Making land healthy—and keeping it healthy—requires a commitment to land stewardship on the part of individuals and communities, locally and nationally. Effective stewardship must be supported by conservation planning, technical and financial assistance, resource assessment, and technology development.

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## Conservation Planning

Conservation planning seeks to address natural resource conservation at the watershed scale—in an integrated fashion. Agency technical experts help individuals and communities take a comprehensive approach to planning the use and protection of natural resources on private and other non-Federal land across the Nation. The planning process integrates social, economic, and ecological considerations to meet private and public needs. It involves more than considering individual resources; it focuses on the natural systems and ecological processes that maintain the resources.

## Technical and Financial Assistance

NRCS provides technical and financial assistance to individuals and communities, on a voluntary basis, for the application of conservation management systems that are economically and environmentally sound and that comply with existing Federal, State, and local regulations. Implementation includes the design, layout, construction, inspection, management, operation, maintenance, and evaluation of planned practices.

## Resource Assessment

The first step in conservation is assessing the condition of natural resources. The condition of the land is assessed through soil surveys, conservation needs assessments, and resource inventories. These efforts, all based on the best available science, present an accurate, unbiased look at the Nation's natural resources. This information is provided to individuals; communities; State, local,

and Tribal governments; and others to help them make land use decisions.

## Technology Development

NRCS develops conservation standards, specifications, and guidelines to ensure that conservation systems recommended to individuals and communities nationwide are technically sound. These technical standards are used by NRCS and others to ensure that conservation is based on sound and up-to-date science.

## General Goals

As a Nation, our prospects for the future are bound to the quality of our natural resources. Hugh Hammond Bennett, the first chief of the agency, observed that “poor land makes poor people.” NRCS will work with our customers and partners to:

- **Prevent** damage to the land. Restoring land is often very expensive, and in some cases, the damage is irreversible. Prevention means working with our customers and partners to ensure that good conservation is practiced broadly across the land.
- **Restore** the land. Where damage to natural resources already has occurred, NRCS is committed to working with our customers and partners to identify priority local problems and design solutions. We will strive to ensure that an extra measure of conservation assistance is available to individuals and communities that face urgent conservation problems.
- **Maintain** conservation on the land over the long term. NRCS is committed to working with our customers and partners to keep conservation on the land, as it is the most effective way to protect the land and to ensure the maximum return from landowner and public investment in conservation.

This strategic plan reflects the agency's continuing commitment to helping individuals, communities, units of government, and Tribes as they make decisions about managing their lands and resources for productivity and long-term use. This plan describes agency objectives under four goals:

- **Enhance natural resource productivity** to enable a strong agricultural and natural resource sector.
- **Reduce unintended adverse effects of natural resource development and use** to ensure a high quality environment.
- **Reduce risks from drought and flooding** to protect individual and community health and safety.
- **Deliver high quality services to the public** to enable natural resource stewardship.

Together, these goals and their objectives will help achieve healthy watersheds that support a strong agricultural sector, a high quality environment, and healthy communities.

Separating conservation into clearly differentiated goals and objectives is essential to planning. But, on the ground, where conservation occurs, resources are intertwined. The basis for achieving any of these goals and their objectives is conservation planning that considers the full range of resource concerns. The real

challenge for conservationists is to work with individuals and communities to bring all the pieces together on the landscape to achieve the larger vision of conservation.

### **Goal 1-Enhance natural resource productivity to enable a strong agricultural and natural resource sector.**

Privately owned cropland, rangeland, pastureland, and forestland form the foundation of a substantial and vibrant agricultural economy that provides food and fiber for the Nation, contributes to global food security, and is an important component of the national trade balance. Conservation helps ensure that these important lands remain productive and can support strong and healthy communities. These uses of the land also can help sequester greenhouse gases, protect water quality and quantity, provide vegetation and habitat for wildlife, and increase opportunities for recreation.

Cropland productivity is threatened by erosion, decreasing soil organic matter, invasive species, and variability in weather patterns and water availability (e.g., flood and drought cycles). Progress in controlling erosion has leveled off since 1992, suggesting that past strategies have achieved their limit and further progress may require new approaches. Land fragmentation and development pressure on our best land poses another threat. The rate of conversion of prime and unique farmland continues to rise, increasing by over 50 percent between 1987 and 1992.

### **How Our Land is Used, 1992**

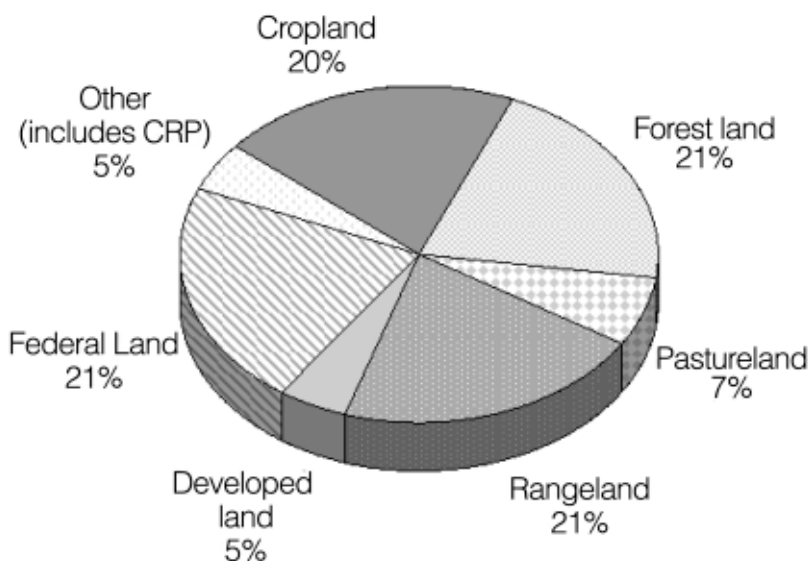


Figure 3-There are 1.891 billion acres of land in the contiguous United States, 1,483 billion acres of which are non-federal. Privately owned cropland, rangeland, pastureland, and forestland account for almost 70 percent of the total land area of the contiguous United States, and about 90 percent of the Nation's non-Federal land. Source: NRI, 1992

In 1992, about 62 million acres of the Nation's agricultural land had irrigation systems in place. Irrigation is the most significant use of the Nation's freshwater resources, accounting for more than 95 percent of withdrawals in several western States and about 80 percent nationally. States with substantial irrigated land face concerns about water quality, water shortages, groundwater depletion, and salinity. Availability of irrigation water, groundwater depletion and saltwater intrusion, salt accumulation in the soil, and the quality of return water are key challenges facing irrigators.

Grazing land-rangeland, pastureland, and grazed forest-account for about 526 million acres. Today, productivity of our grazing land resources are challenged by land conversion, erosion, brush and weeds, wildlife damage, weather patterns, and invasive species. The effects of declining grazing land health also contribute to concerns emerging in connected resources, for example, water quality and habitat declines.

Non-Federal forestland is distributed across 395 million acres. While overall forestland acres have remained relatively steady, the fragmentation of those acres pose a serious resource concern. Invasive species, airborne pollutants, and conversion to other uses among other challenges threaten the quality of private, non-industrial forestland.

This goal sets out four objectives to help address land productivity: 1) maintaining and improving cropland, 2) maintaining and improving irrigated land, 3) maintaining and improving

grazing land, and 4) maintaining and improving forestland. These objectives describe only part of the overall conservation picture, as any strategy to address land health goes beyond the immediate on-site benefits and considers consequences to connected resources. This goal directly supports the USDA Strategic Plan Goal 3—Maintain and enhance the Nation's natural resources and environment, Objective 3.1—Maintain the productivity of the natural resource base for future generations.

**Objective 1.1—Maintain, restore, and enhance cropland productivity.**

High quality soils can increase cropland productivity, provide for effective use of nutrients and

pesticides, help store carbon, and contribute to good water and air quality. Maintaining soil quality depends on controlling erosion and maintaining organic content, till, soil fauna, soil chemical balance, and a balance of plants.

**Challenges**

Treating cropland resources to ensure long-term productivity is a continuing process. Progress toward the goal of addressing cropland conservation needs in a consistent and thorough manner may be influenced by many factors, including:

- The farm economy has a substantial influence on producer decisions on land management. A weak farm economy may hamper or delay the ability to implement

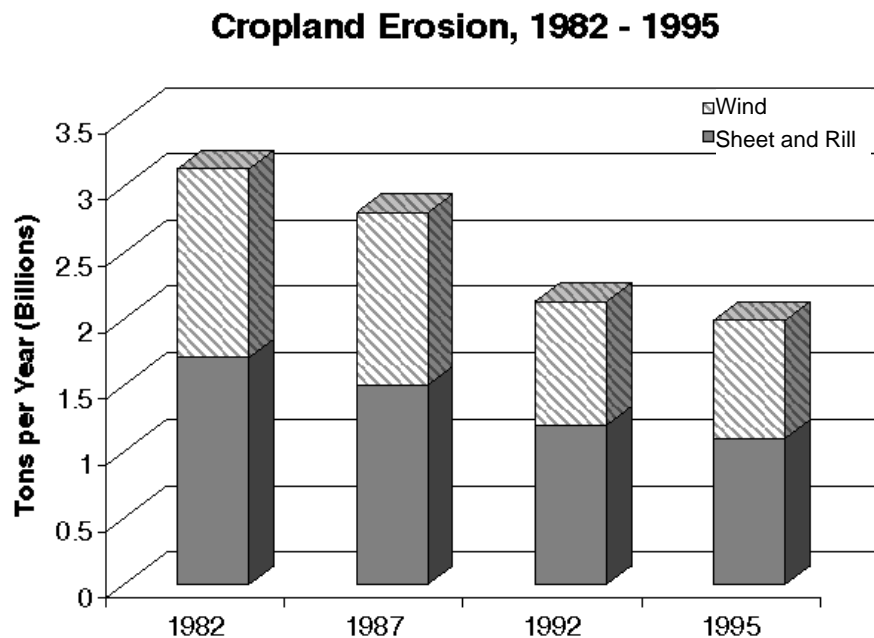


Figure 4—Average erosion rates on cropland were substantially lower in 1992 than rates in 1982. A 1995 special inventory showed that progress in controlling erosion had begun to level off since 1992. While highly erodible land is a significant concern, for some States non-highly erodible land is the most significant source of erosion.  
Source: NRI, 1992

practices that require new equipment or skills. A strong economy may encourage expansion and bring previously retired or new land into production, presenting conservation challenges.

- The affordability and ease of technologies influence their adoption. New technologies relying on costly equipment or specialized skills may not be widely adopted despite their benefits to the environment. This may be a substantial challenge to operators with limited resources.
- Trade policy changes that couple agricultural support programs with environmental goals could encourage greater numbers of producers to adopt conservation practices.
- Declines in Federal, State, and local sources of financial assistance for operators may reduce the ability to implement certain conservation practices that help improve soil quality.

### Means and Strategies

NRCS will work with the conservation partnership to:

- Provide coordinated assistance in watersheds with pervasive soil health problems. Watershed scale planning can help land managers identify opportunities to address soil concerns that extend across field boundaries (e.g., noxious weed infestations).
- Promote conservation planning and management approaches that improve multiple soil factors (e.g., extend the reach

of erosion controlling crop rotations, improve organic content and chemical balance of the soil). Focus efforts on the most serious soil health problems. In some States this means intensifying efforts on non-highly erodible cropland, while in others it may mean strengthening attention on highly erodible land.

- Help USDA program participants remain in compliance with requirements to protect highly erodible cropland and to take additional steps to improve the land.
- Help operators examine alternatives to crop production, such as enterprise diversification or conversion to hay or grazing, so that the economic productivity of the farm is enhanced. Provide assistance to

help producers transition to lower impact activities (e.g., biomass production for energy, wildlife habitat) for lands where existing soil management systems cannot economically address soil problems.

- Provide assistance to landowners and land managers who are removing land from CRP to plan and apply systems with suitable plant materials that adequately control erosion and address other soil health issues.
- Ensure that small, limited-resource and minority farmers and ranchers receive appropriate conservation planning and management assistance.
- Improve technical capacity and develop and implement a method to determine soil health and monitor changes. An appropriate measure and

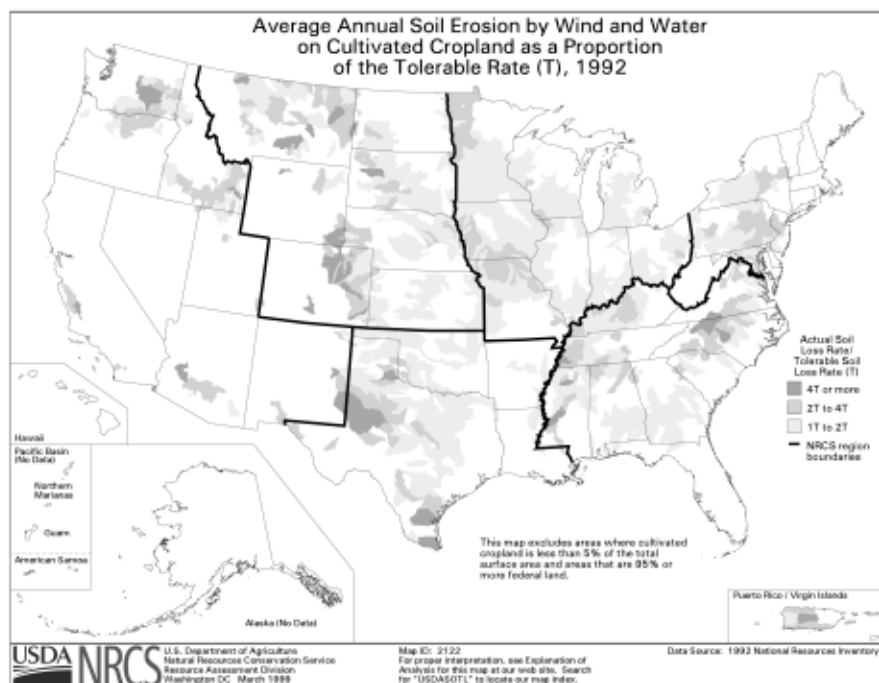


Figure 5-Between 1982 and 1992, the acreage eroding from wind and water at greater than the tolerable rate (T) decreased by 5 percent. In 1992, 72.8 million cropland acres experienced water erosion at rates greater than T, and 53.7 million cropland acres experienced wind erosion at rates greater than T. The areas shown in darkest gray on this map were eroding at 2T to greater than 4T. The areas shown in light gray were eroding at rates between 1 T and 2 T.

Source: NRI, 1992

tracking system is needed in order to evaluate the effects of conservation approaches on the overall health of the soil resource.

- Use appropriate communication strategies to educate the public, landowners, land managers, and government entities about the production benefits of conservation practices.

**Baseline**

- In 1999, 232 million acres of cropland were in need of conservation treatment to address resource problems degrading their quality and long-term productivity.

**Performance Target**

The performance target is to meet the total conservation need. At the current rate of investment, about 30 percent of the annual conservation need is met (6.5 million acres treated). To address the total conservation need, a continuing investment of 5,900 staff years would be needed for planning and application of conservation systems on about 22.5 million acres of cropland each year.

- By 2005, 89 percent of the annual conservation need on cropland will be met — 20 million acres will be treated each year to protect their quality and ensure long-term productivity.

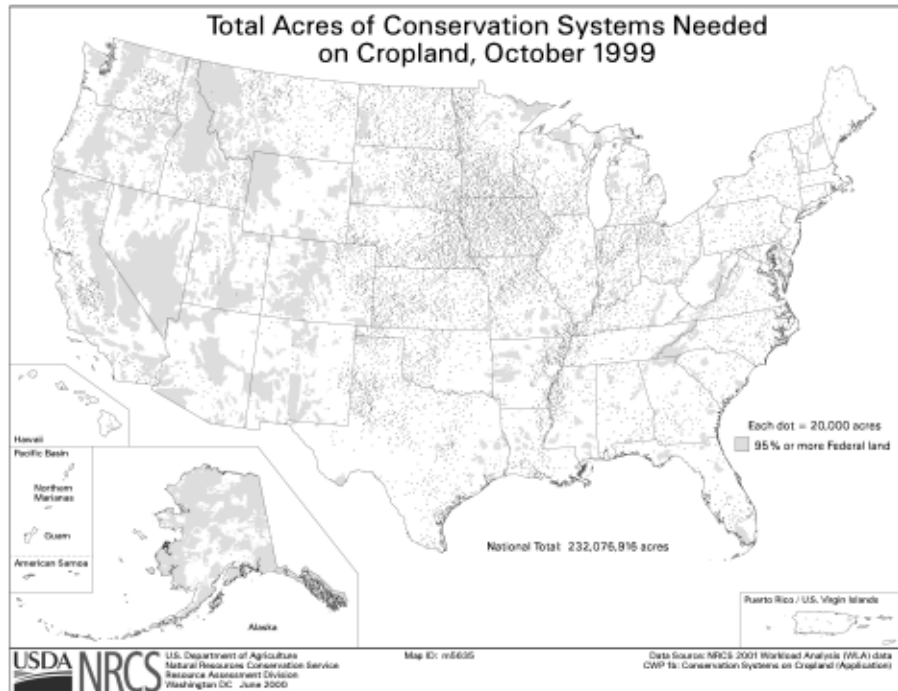


Figure 6 - An estimated 232 million acres of cropland need conservation treatment. These acres either do not have a conservation system in place or the system in place is not being maintained. Each dot represents 20,000 acres in need of treatment. Gray shaded areas indicate Federal land is greater or equal to 95 percent of the county.  
Source: 2001 National Partnership Workload Analysis (WLA), October 1999

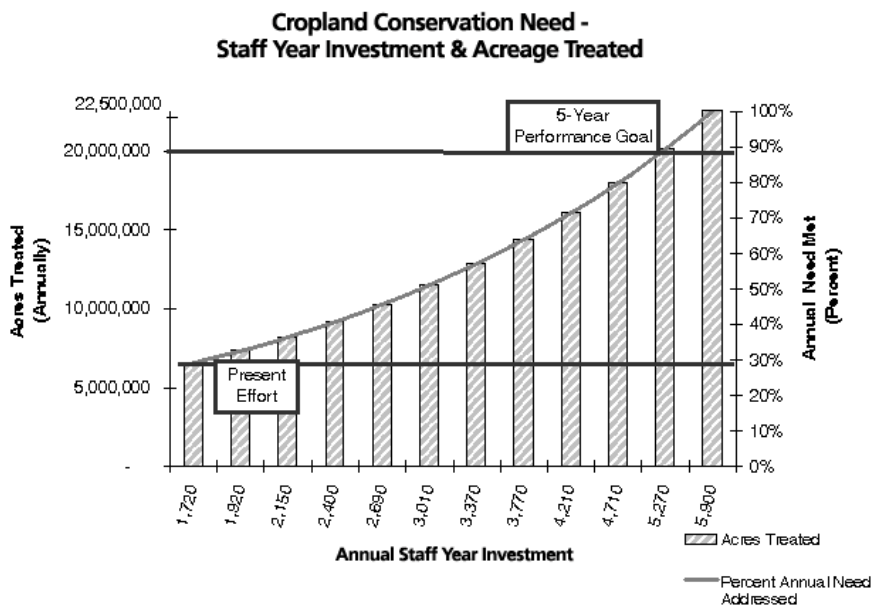


Figure 7 - This graph shows the present level of effort under current staffing and 5-year performance goal assuming increased staff for conservation on cropland. The annual conservation need reflects best local estimates of the number of acres needing treatment each year in order to address conservation problems and maintain the resource.  
Source: 2001 WLA, October 1999; Workload Management Analysis (WLMA), July 2000.

### Objective 1.2-Maintain, restore, and enhance irrigated land.

Irrigated agriculture makes a significant contribution to the U.S. farm economy—nearly 40 percent of total crop sales come from irrigated acreage, which accounts for only about 15 percent of all cropland. Improvements in irrigation water management can help maintain the viability of the irrigated agricultural sector and help protect and improve soil and water quality.

### Challenges

Treating irrigated land to ensure long-term use is a continuing process. Progress toward the goal of addressing the conservation needs on irrigated land in a consistent and thorough manner may be challenged by many factors:

- Public concern about water quality may stimulate greater interest in adoption of irrigation water management systems that reduce sediment, salts, and other pollutants in irrigation return water.
- Drought, particularly in the Western States, is likely to increase public debate over the use of scarce water supplies for crop production. Producers may adopt improved irrigation technologies to respond to increasing water costs. If profitability is reduced substantially, some producers may leave the agricultural sector.
- Increasing demand for water for environmental, municipal, and industrial purposes increases pressure on irrigated agriculture.

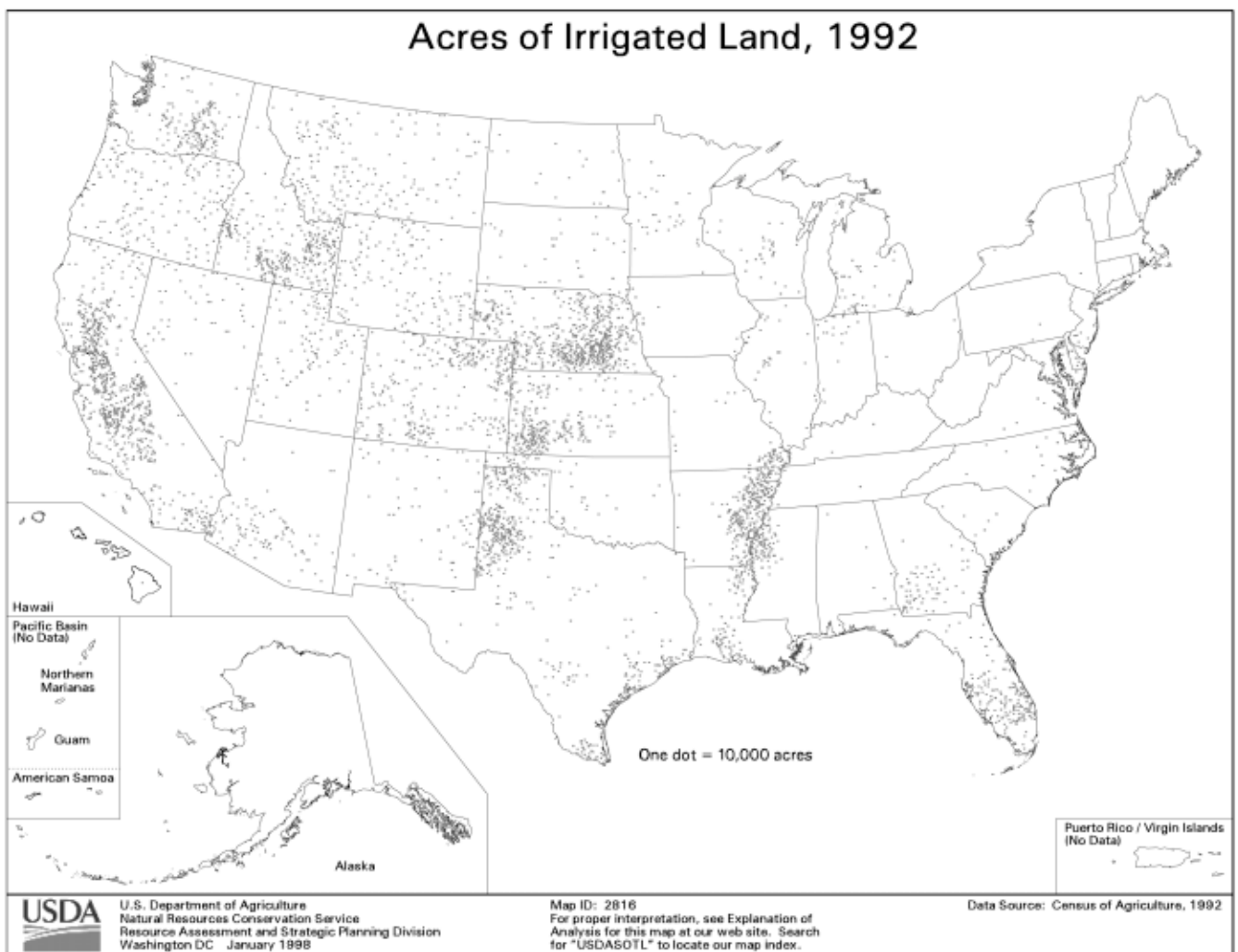


Figure 8 - In 1992, about 62 million acres of agricultural land were irrigated, down slightly from 1982. But, a regional shift was evident as irrigated acreage in the western States declined while it expanded in the eastern States. Source: NRI, 1992



- The agricultural economy affects the ability or willingness of producers to adopt improved technology. Many irrigation enhancements, which contribute to improvements in uniform water application, are high cost, (e.g., land leveling, a primary method for improving water use in gravity systems).

### Means and Strategies

NRCS will work with the conservation partnership to:

- Encourage long-range water management planning to help communities develop strategies to address future water needs for irrigation and municipal and rural water use.
- Provide coordinated assistance in watersheds with substantial irrigated acreage. Many Federal and State agencies have roles in conservation and management of water resources important to irrigators.
- Promote comprehensive irrigation and water management systems that increase

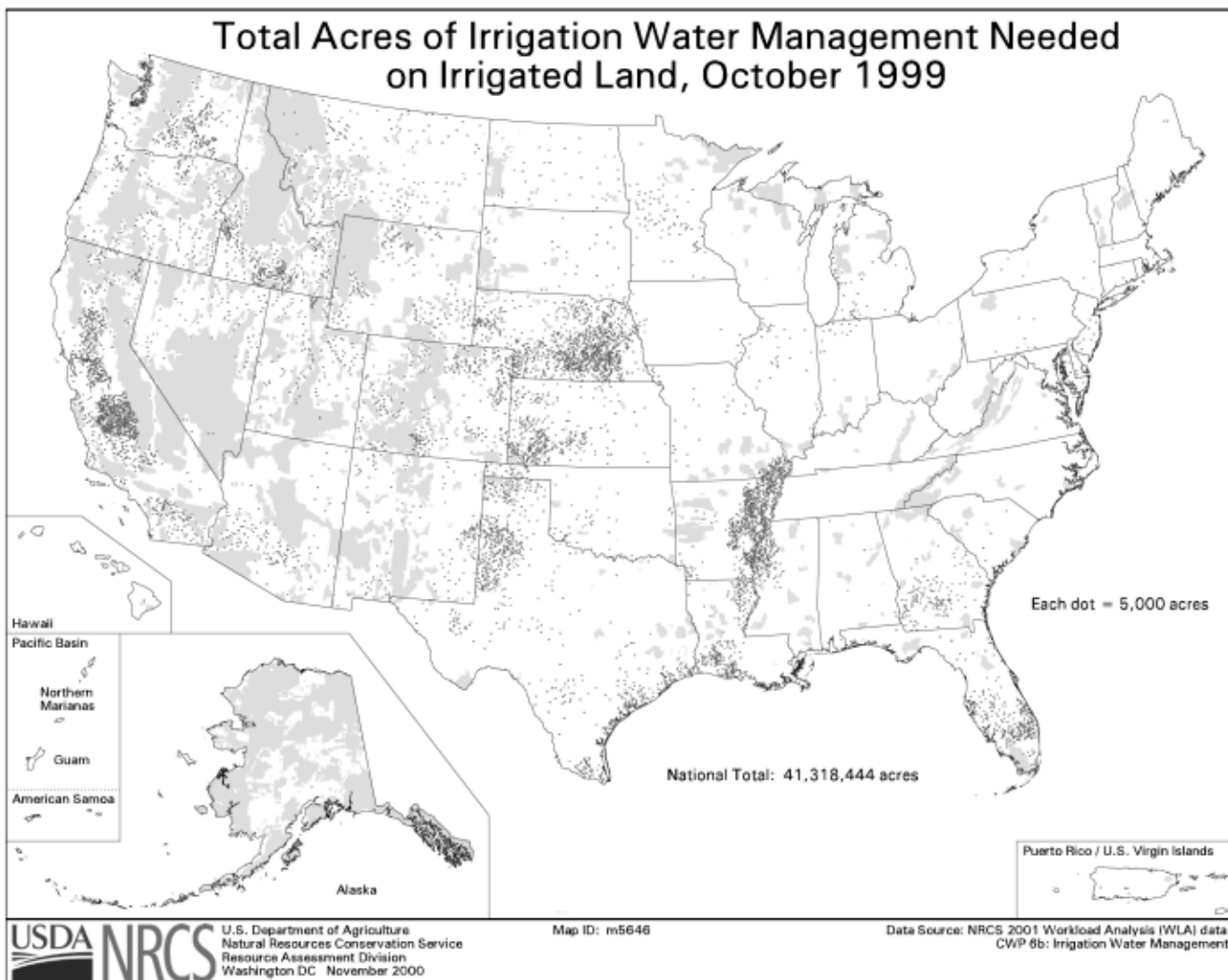


Figure 9 - An estimated 41 million acres of irrigated land need irrigation water management to help ensure water use efficiency, minimize soil erosion, and protect water quality. Each dot represents 5,000 acres in need of irrigation water management. Gray shaded areas indicate Federal land is greater or equal to 95 percent of the county.  
Source: 2001 WLA, October 1999.

irrigation efficiency, address nutrient and pest management, and, otherwise, manage irrigation return flow to reduce potential adverse effects. New technologies and management practices can reduce the use of irrigation water by improving the timing and application, reducing evaporation, or increasing precision of application. Mixing these measures with other water conserving practices such as conservation tillage and management of other production inputs may increase benefits.

- Provide technical assistance to facilitate conversion to alternative crops or to dryland farming systems for those operators transitioning from irrigated agriculture. Facilitating this conversion process can help operators retain their land in agricultural use and remain profitable.
- Provide training to help irrigation equipment suppliers and contractors plan equipment installation and provide services to help operators increase efficiencies in irrigation water delivery and application systems.
- Use appropriate, targeted communication strategies to educate irrigators, farmers, and others about the importance of water management and the availability of assistance.

### Baseline

- In 1999, 41 million acres of irrigated land were in need of irrigation water management to manage and control the moisture environment of the plants, promote desired response, minimize soil erosion and loss

of nutrients or pesticides, control undesirable water loss, and protect water quality.

### Performance Target

The performance target is to meet the total conservation need. At the current rate of investment, about 17 percent of the annual need for irrigation water management is met (1.2 million acres treated). To address the total need in an appropriate time frame, a continuing investment of 590 staff years would be needed for planning and application of irrigation water management on 7.2 million acres of irrigated land each year.

- By 2005, 85 percent of the annual conservation need for irrigation water management will be met — 6 million acres

will be treated each year to apply irrigation water management to improve water use and protect soil and water quality.

### Objective 1.3-Maintain, restore, and enhance grazing land productivity.

Healthy and productive grazing land-rangeland, pastureland, and grazed forest-is a substantial component of the agricultural economy and is the largest of all agricultural land uses. U.S. grazing land is the foundation of a productive and profitable livestock sector. In 1995, animal agriculture accounted for nearly 47 percent of the total cash receipts from agricultural products, and for two of the Nation's top six agricultural exports.

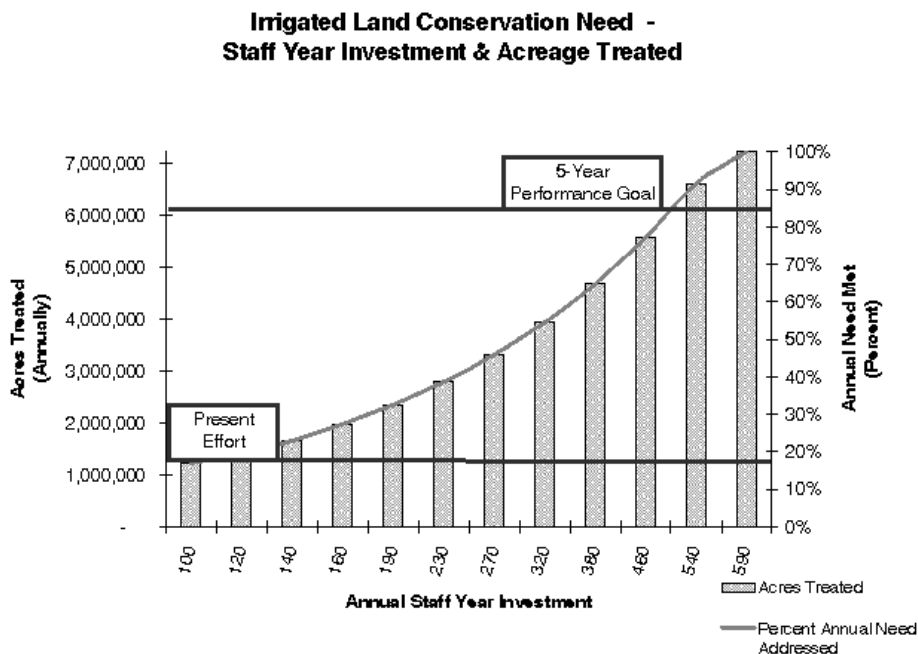


Figure 10 - This graph shows the present level of effort under current staffing and 5-year performance goal assuming increased staff for water management on irrigated land. The annual conservation need reflects best local estimates of the number of acres needing treatment each year in order to address conservation problems and maintain the resource.

Source: 2001 WLA, October 1999; WLMA, July 2000.

## Challenges

Addressing conservation needs on grazing land in a consistent and thorough manner may be challenged by many factors:

- Cyclical economic patterns in the livestock sector affect how intensively grazing land resources are used.
- Pressure is increasing for the conversion of grazing land to non-agricultural or natural resource uses. Since 1982, grazing land has declined by 26 million acres, over half of which occurred between 1992 and 1997. Rapidly growing areas in the West and Southwest are particularly affected.

- The need to integrate public and private goals for managing grazing land is growing. In much of the West and Southwest, private grazing land is intermingled with areas of public land administered by the Federal land management agencies. Livestock operations typically include private and public land and public grazing land use decisions may affect how privately owned lands are used.
- Increasing weather variability, particularly the frequency and severity of droughts, has a substantial impact on grazing land productivity. Small farm

and ranch operations may not have the risk management tools needed and may require cooperative efforts to survive severe weather and other environmental extremes.

- Invasive species threaten grazing land condition. Invasive weeds and brush affect nearly 70 million acres of western rangeland.
- The growing proximity of grazing land to non-agricultural communities or activities increase the complexity in land management decisions and the range of concerns to be addressed.

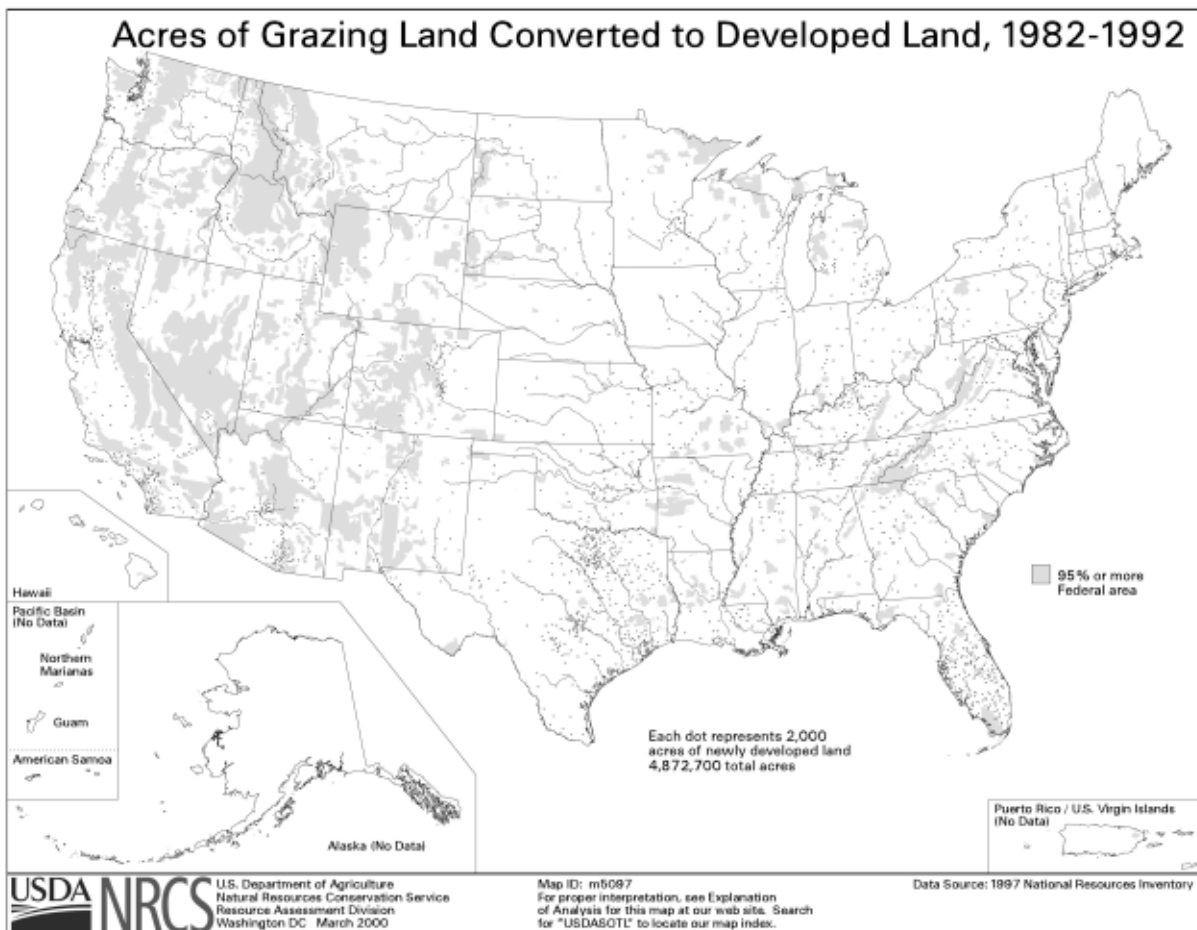


Figure 11 - Grazing land resources are increasingly under pressure from development. Between 1982 and 1992, about 4.8 million acres of grazing land were converted to developed uses. Each dot represents 2,000 acres.  
Source: NRI, 1992.

## Means and Strategies

NRCS will work with the conservation partnership to:

- Promote conservation planning and management approaches that prevent grazing land damage, reduce the impact of drought, and help ensure that resources can remain healthy and productive. Promote practices that prevent overgrazing, maintain the vigor and diversity of the plant community, discourage invasion of weeds, prevent erosion, and protect streambanks and water quality.
- Promote grazing practices that provide multiple benefits for operators, including productivity, wildlife habitat, and water quality. Intensive rotational grazing is a beneficial practice for dairy farms, beef cattle, sheep, and even hogs.
- Promote cooperative, watershed or regional approaches to grazing lands conservation and reclamation. Strengthen cooperation with Federal and State agencies, Tribes, and partners to maintain the productivity of grazing land. In the West, where much of the grazing resource is a mixture of private and public lands, cooperative efforts are required to control noxious and invasive species and manage other productivity concerns.
- Strengthen inventory and assessment capabilities throughout NRCS to improve the ability to determine the status and condition of grazing land resources. Develop grazing land health indicators that can be used to validate trends in the health of the resource.

- Increase efforts to develop approaches for suppression of noxious and invasive species. Develop and use suitable plant materials for restoring deteriorated grazing land and to move land toward a good condition and maintain that condition.
- Strengthen assistance to small, limited-resource and minority owned farms and ranches.
- Use appropriate communication strategies to educate the public, landowners, land managers, and government entities about grazing land productivity and water quality benefits of conservation practices.

## Baseline

- In 1999, 280 million acres of rangeland were in need of conservation treatment to address resource problems degrading their quality and long-term productivity.
- In 1999, 75 million acres of pastureland were in need of conservation treatment to address resource problems degrading their quality and long-term productivity.

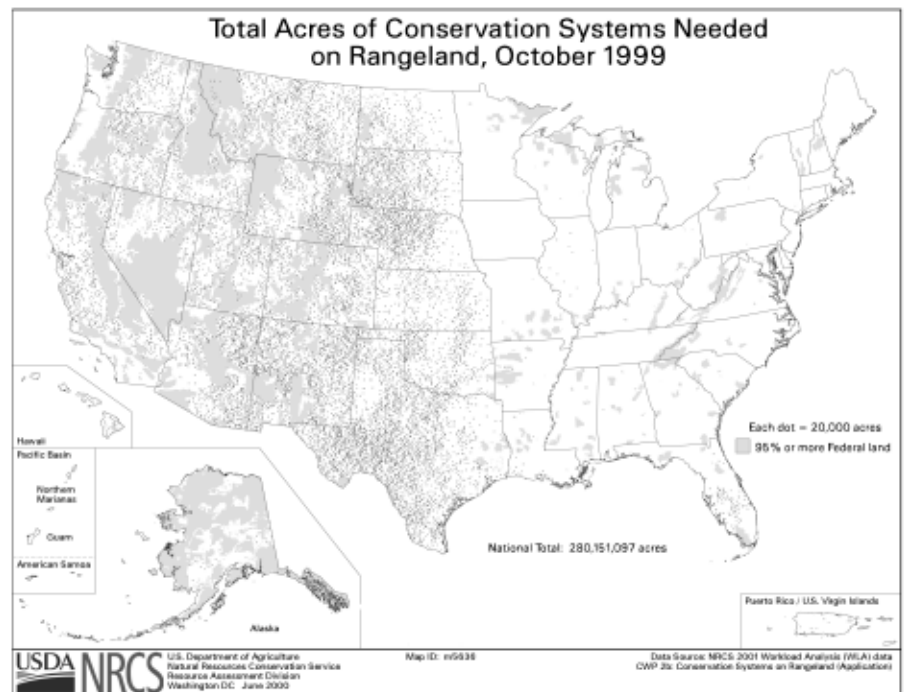


Figure 12 - An estimated 280 million acres of rangeland need conservation treatment. These acres either do not have a conservation system in place or the system in place is not being maintained. Each dot represents 20,000 acres in need of treatment. Gray shaded areas indicate Federal land is greater or equal to 95 percent of the county.  
Source: 2001 WLA, October 1999.

## Performance Target

The performance target is to meet the total conservation need. At the current rate of investment, about 31 percent of the annual conservation need on rangeland is met (10.7 million acres treated) and 22 percent of the annual conservation need on pastureland is met (1.8 million acres treated). To address the total conservation need in an appropriate time frame, a continuing investment of

1,280 staff years would be needed for planning and application of conservation systems on 34.2 million acres of rangeland annually, and a continuing investment of 2,600 staff years would be needed for planning and application of conservation systems on 8 million acres of pastureland annually.

- By 2005, 95 percent of the annual conservation need on rangeland will be met — 32

million acres of rangeland will be treated each year to protect their quality and ensure long-term productivity.

- By 2005, 100 percent of the annual conservation need on pastureland will be met — 8 million acres of pastureland will be treated each year to protect their quality and ensure long-term productivity.

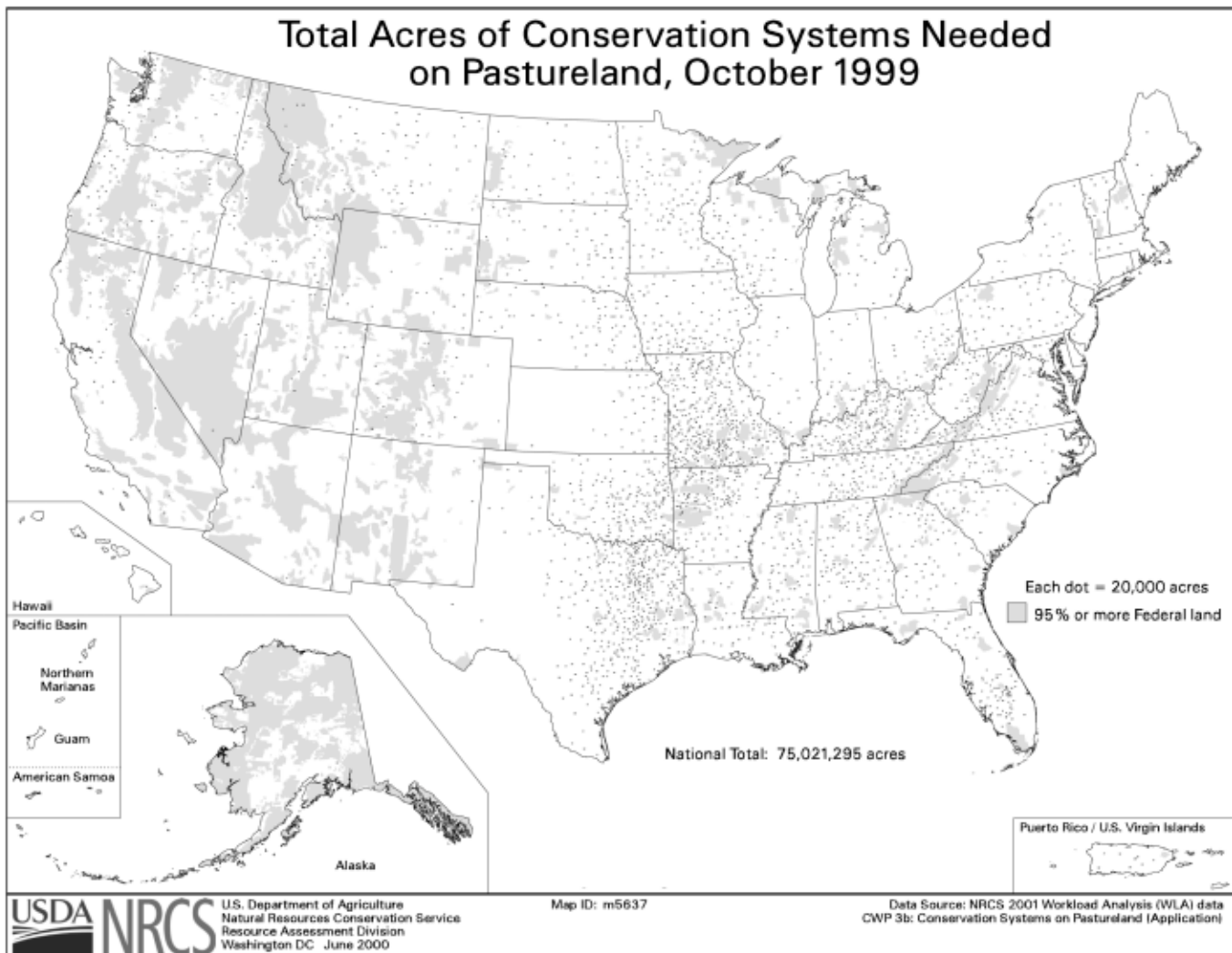
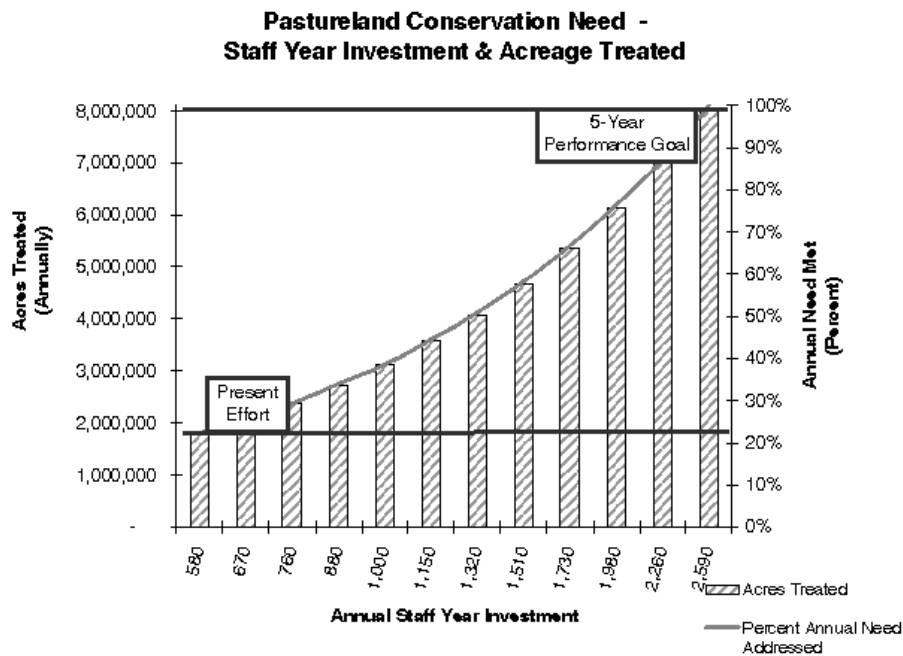
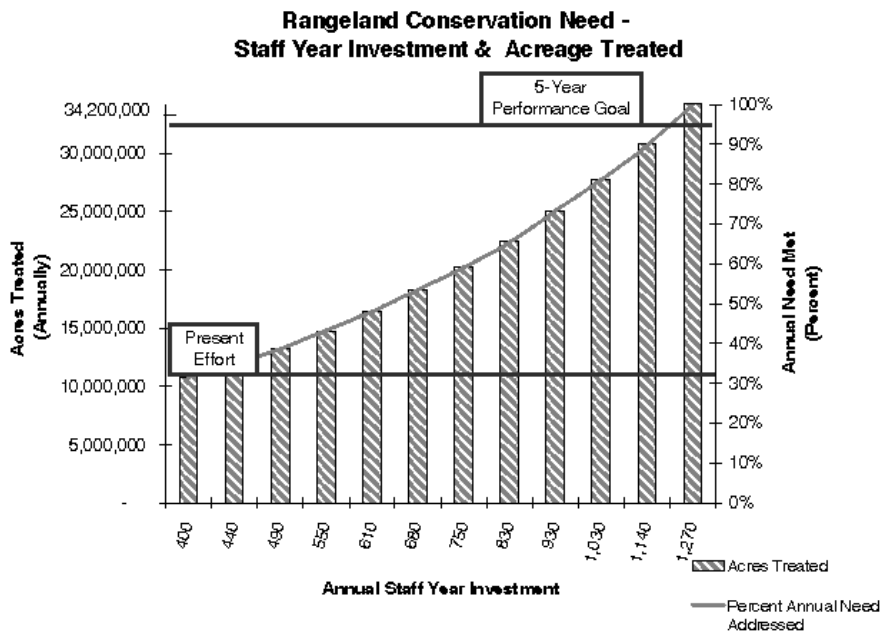


Figure 13 - An estimated 75 million acres of pastureland need conservation treatment. These acres either do not have a conservation system in place or the system in place is not being maintained. Each dot represents 20,000 acres in need of treatment. Gray shaded areas indicate Federal land is greater or equal to 95 percent of the county.

Source: 2001 WLA, October 1999.



Figures 14 & 15 - These graphs show the present level of effort under current staffing and the 5-year performance goal assuming increased staff for conservation on rangeland (above) and pastureland (below). The annual conservation need reflects best local estimates of the number of acres needing treatment each year in order to address conservation problems and maintain the resource.  
Source: 2001 National Partnership WLA, October 1999; WLMA, July 2000.

## Objective 1.4-Maintain, restore, and enhance forest-land productivity.

Private, non-industrial forestland acreage is second only to grazing land in area. It accounts for about one-half of the total timber supply and its importance is expected to increase.

### Challenges

Addressing the conservation needs on forestland in a consistent and thorough manner may be challenged by many factors:

- Pressures for the conversion of forestland to non-agricultural or natural resource uses continue to grow. Recent forest declines in the area surrounding the Washington, DC-Baltimore metropolitan area, for example, have been attributed to increasing development pressure.
- Although there has been little change in overall forestland acreage, fragmentation is increasing, which threatens long-term use and the multiple benefits forest systems provide.
- Fuel loading, the build-up of flammable materials, in forests can increase the potential threat from wildfires and can challenge the health and long-term use of private non-industrial forests.
- Weather variability and frequency of drought or flood events pose risks to forestland. Small ownerships may not have the risk management tools needed to survive severe weather and other environmental extremes.
- Invasive and non-indigenous species may rapidly affect the health of large areas of forest. Aging overcrowded stands are

more likely to be stressed by insect and disease attacks and environmental changes.

### Means and Strategies

NRCS will work with the conservation partnership to:

- Promote conservation planning and management approaches that prevent forestland damage and help ensure that resources can remain healthy and productive.
- Promote forest management that maintains yield of forest products with protection of watersheds for clean water, wildlife habitat, fiber production, and mixed land uses.
- Promote cooperative, watershed, or regional approaches to forestland conservation. Cooperative efforts are required to control noxious and invasive species and manage other productivity concerns.

Expand technical assistance and undertake studies on suppression of noxious and invasive species.

- Strengthen inventory and assessment capabilities to improve the ability to determine the status and condition of forestland. Work with partners and others to develop and apply forestland health indicators that can be used to validate trends in resource health.

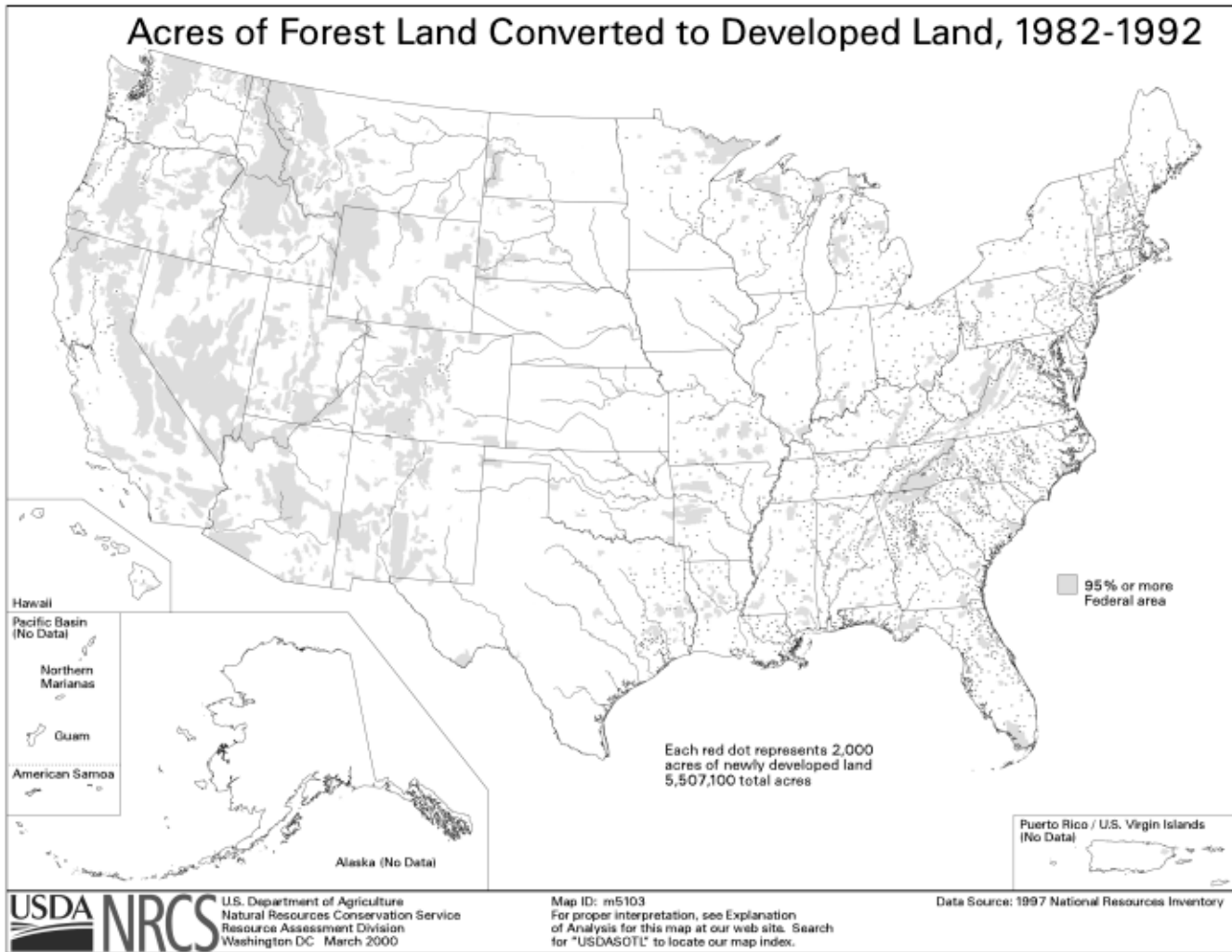


Figure 16 - Private, non-industrial forestland has remained relatively stable in total acreage, but increasing fragmentation is a challenge. About 5.5 million acres of forestland were converted to developed uses between 1982 and 1992.  
Source: NRI, 1992

- Strengthen assistance to small, limited-resource and minority owners of private, non-industrial forestland.
- Use appropriate communication strategies to educate the public, landowners, land managers, and government entities about forestland productivity and water quality benefits of conservation practices.

### Baseline

- In 1999, 222 million acres of private, non-industrial forestland were in need of conservation treatment to address resource problems degrading their quality and long-term productivity.

### Performance Target

The performance target is to meet the total conservation need. At the current rate of investment, about 10 percent of the annual conservation need on private, non-industrial forestland is met (1.2 million acres treated). To address the total conservation need in an appropriate time frame, a continuing investment of 3,500 staff years would be needed for conservation planning and application on 12.3 million acres of private, non-industrial forestland annually.

- By 2005, 81 percent of the annual conservation need on forestland will be met — 10 million acres of forestland will be treated annually to protect their quality and ensure long-term productivity.

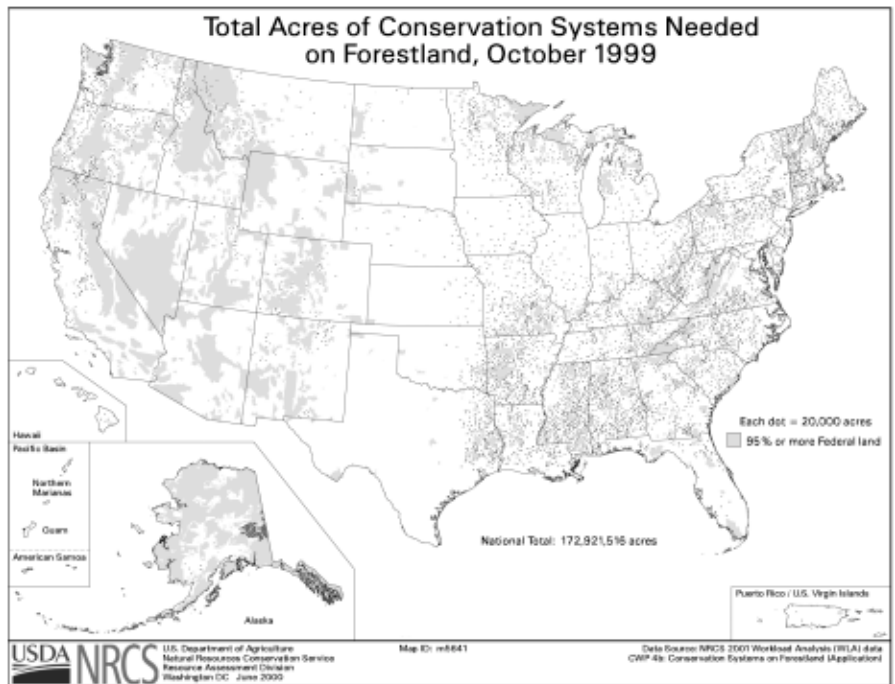


Figure 17 - An estimated 222 million acres of forestland need conservation treatment. The acres identified as needing treatment are those where the conservation partnership would have a role in providing technical assistance, the acreage does not have a conservation system in place, or the system is not being maintained. The acreage presented here is not a comprehensive estimate of the forestland acres needing treatment, as many forestland acres are the responsibility of agencies outside the conservation partnership. Each dot represents 20,000 acres in need of treatment. Gray shaded areas indicate Federal land is greater or equal to 95 percent of the county.

Source: 2001 WLA, October 1999.

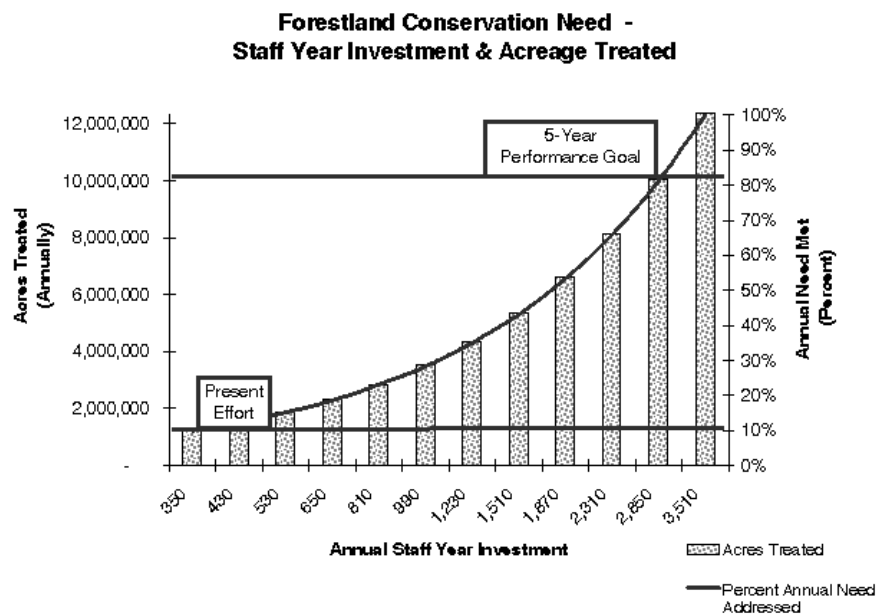


Figure 18 - This graph shows the present level of effort under current staffing and 5-year performance goal assuming increased staff for conservation on forestland. The annual conservation need reflects best local estimates of the number of acres needing treatment each year in order to address conservation problems and maintain the resource.

Source: 2001 WLA, October 1999; and WLMA, July 2000



**Goal 2-Reduce unintended adverse effects of natural resource development and use to ensure a high quality environment.**

Development and sprawl, non-point sources of pollution, special concerns over animal feeding operations (AFOs), continued loss of wetlands, and decline of important wildlife populations all challenge the quality of our environment. Conservation helps protect the environment and

improve rural and urban landscapes. Despite accomplishments, challenges continue to multiply.

Rapid development and sprawl affects environmental quality in many parts of the country. About 40 percent of the 3,000 conservation districts reported that at least 50 percent of their workload was associated with urban resource issues. In drought-prone western States, development and sprawl are exerting new pressure on limited, seasonally variable water

supplies. A growing portion of the population continues to concentrate in coastal areas where conservation challenges also are great. The rate of development has risen steadily since 1982 and with it, so has the conversion of agricultural and forestland to developed uses. Results include: loss of open space, diminished water recharge area, and growing population in vulnerable environments creating risks for people and resource conditions. For

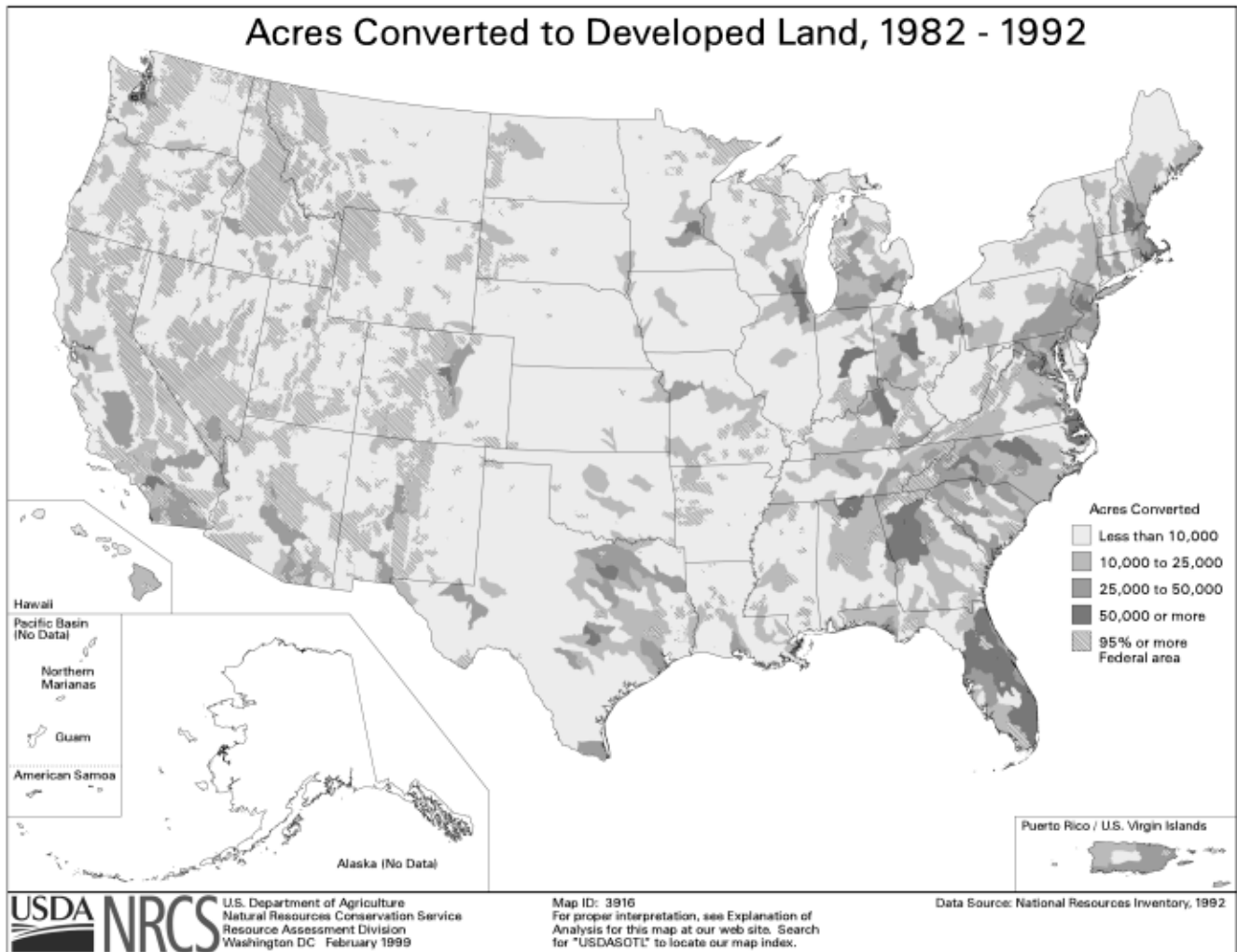


Figure 19 - Development and sprawl are major concerns in many parts of the country. Between 1982 and 1992, about 13.8 million acres were converted to developed uses. Presently, 19 states have enacted laws and appropriated funds to protect prime and unique agricultural lands from conversion to non-agricultural uses. Source: NRI, 1992

example, the U.S.-Mexico border has experienced high population growth and economic expansion. This area, along with others experiencing similar growth booms, is suffering basic problems related to infrastructure, economic prosperity, social well being, and environmental deterioration. Development that does not consider resource capability and long-term community goals can limit economic opportunities and quality of life.

Pesticides, nutrients, sediment, fugitive dust, odors, and other emissions from agricultural and urban activities adversely affect water and air quality. State water quality agencies report that runoff from agricultural and urban areas are the primary sources of the silt, bacteria, nutrients, and metals that impair our Nation's streams, lakes, and estuaries. Excess pesticides and nutrients applied to farm fields, urban lawns, and golf courses may reach water sources through runoff-attached to soil particles-and leaching from the application sites. Runoff from streets and highways, parking lots, landfills, junk yards, and septic systems carries a broad range of pollutants. Increased peak flows damage streambanks and accelerate the siltation of lakes, bays, and wetlands.

Of special concern in non-point source pollution is the animal agriculture sector. Animal agriculture has been transformed from a land-based activity to a specialized capital-intensive activity, creating specific natural resource concerns. USDA and EPA jointly developed a Unified National Strategy for Animal Feeding Operations that established a national expectation that all AFOs will develop and be

implementing comprehensive nutrient management plans (CNMPs) to manage manure properly and protect the environment by 2009. Many States have developed more stringent requirements than the national expectation in order to address public concerns.

The total maximum daily load (TMDL) requirement of the 1972 Clean Water Act addresses the full extent of water quality concerns from pesticides, nutrients, sediment, temperature, and pathogens. There are about 1,000 TMDLs developed or under development nationwide and potentially, about 40,000 TMDLs for 20,000 listed water bodies that have been identified. Implementation of TMDLs is expected to have a substantial impact on agency workload and demands for

watershed planning skills, implementation programs, and technical assistance.

State health agencies and EPA have identified air quality non-attainment zones across the country where particulates, sulfur and nitrogen compounds, lead, and other emissions exceed acceptable levels. Eroded soil particles may contribute to fugitive dust and burning of vegetation may also contribute coarse and fine particulates to air resources. Burning is a highly charged issue in range and forest management where it can be a necessary management practice to maintain the health and vigor of plant communities. Less information exists about the potential health risks posed by emissions from agriculture, which tend to

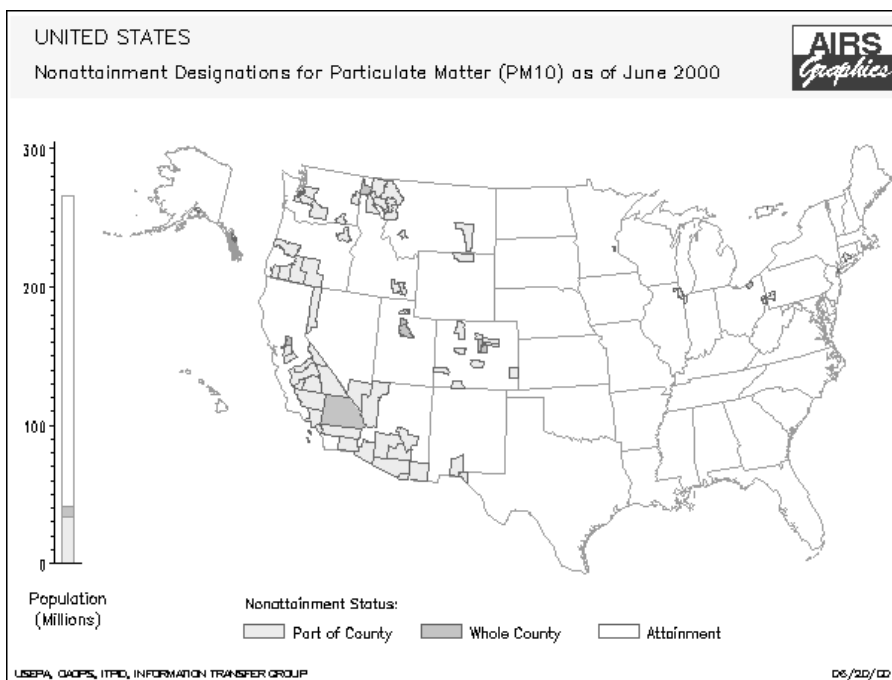


Figure 20 - Almost 30 million citizens across the country live in areas where particulate matter (PM)-10 standards are exceeded. Both coarse (PM-10) and fine particles (PM-2.5) are health concerns. In 1997, PM-2.5 standards were developed by EPA. Beginning in 2002 EPA will designate nonattainment areas based on the PM-2.5 standard. Source: EPA, 2000

focus on noxious odors from concentrated AFOs including waste storage and land application of manure sludge. However, communities across the Nation have identified that emissions reduce the quality of life and adversely affect their property values.

While wetland losses continue to decline, continued efforts are needed to maintain or increase the amount and quality of wetlands on private lands. Development pressure continues to drive wetland and forestland conversion. Agricultural wetlands remain among the most vulnerable wetlands for conversion. The net loss of wetlands has decreased since 1992, however, losses vary geographically. Between 1982 and 1992, 39 percent of the wetland losses occurred in the NRCS

Southeast region. During this same period, wetland losses also were high in the South Central and Midwest NRCS regions—17 and 20 percent, respectively, of national wetland losses. In addition, wetland functional condition—the ability of a wetland to provide ecosystem-level functions, such as maintenance of surface water storage, that generate benefits to individuals and society—is threatened or impaired due to land use practices in the surrounding landscape.

Fish and wildlife declines resulting from habitat loss continue to be identified, most recently with the proposed listing of some Atlantic salmon stocks as threatened species. The extent and quality of habitat have a substantial impact on the distribution and abundance of wildlife

across the Nation. Many threatened and endangered species are listed at least in part because of habitat loss or alteration. Native grassland habitat remains particularly vulnerable. Throughout the Southeast, loss of native grassland and widespread establishment of non-native cool-season grasses in pastureland have resulted in steep declines in 10 of 13 grassland bird species. In the Great Plains, 83 percent of grassland bird species showed decreasing population trends from 1966 to 1993. Many grassland communities are suffering from the decline of wildfires and insufficient use of controlled burning.

To address the most pressing concerns that challenge a high quality environment, NRCS will work to: 1) protect farmland from conversion, 2) promote sound rural and urban community development, 3) protect air and water resources from non-point sources of impairment, 4) assist livestock producers to manage wastes properly, and 5) maintain, restore, and enhance wetlands and fish and wildlife habitat. This goal directly supports the USDA Strategic Plan Goal 3—Maintain and enhance the Nation’s natural resources and environment and its Objective 3.2—Protect the quality of the environment.

**Objective 2.1—Protect farmland from conversion to non-agricultural uses.**

Some of our most valuable and important farmlands are diminishing as they are converted to non-agricultural uses. Fragmentation of agricultural lands, particularly in rapidly developing areas, often results from pressures that outstrip the economic value of agriculture.

**Average Annual Wetland Loss Due to Agriculture**

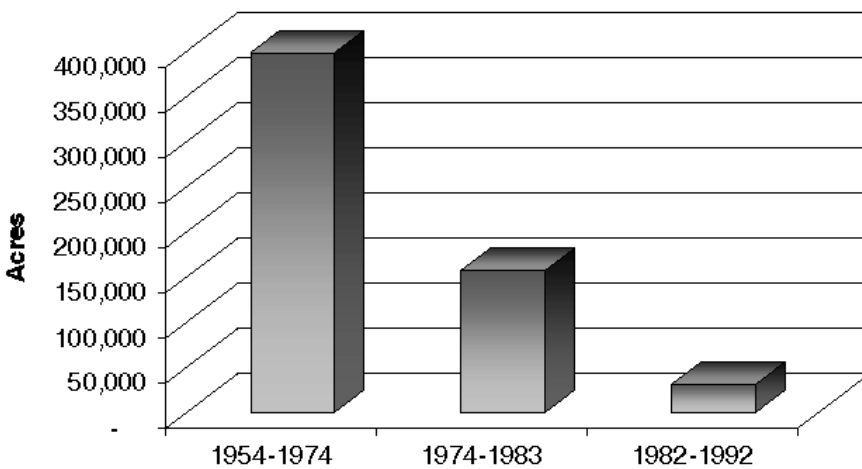


Figure 21 - Conversion of wetlands has declined steadily since the 1950s. Agriculture’s contribution to wetland conversion has declined from an estimated 87 percent in the mid-1950s to about 20 percent between 1982 and 1992. Nevertheless, wetland losses from all sources exceeded gains in nearly all regions between 1982 and 1992. Source: NRI Summary Report, 1992

About 36 percent of local communities are affected by the loss of farmland. However, rapidly developing areas present special opportunities for preventing natural resource problems through locally developed strategies that use natural resource, social, economic, and other data to guide development to meet community needs while protecting desired community characteristics. NRCS works closely with local conservation districts, RC&D councils, Tribal governments, communities, and other local entities to help plan and implement natural resources management plans that meet local needs. The Farmland Protection Policy Act and Farmland Protection Program offer opportunities to stem the conversion of land to non-agricultural uses.

### Challenges

Working with individuals and communities to help lessen the loss of our important farmlands to non-agricultural uses is a continuing process. Progress toward the goals for protecting these lands may be challenged by many factors:

- Increasing population and economic growth spurs development and sprawl. The ability to encourage alternative paths for this development is hindered by the economic values of the alternatives.
- Low income, high unemployment rural areas actively recruit industry. The taxes generated surpass revenues collected from agriculture and forestry, reducing agricultural land values relative to the development value of land.
- The rate of development continues to increase. In the

five years between 1987 and 1992, the rate of development increased by over 50 percent from that of the previous five years.

### Means and Strategies

NRCS will work with the conservation partnership to:

- Provide technical assistance to units of government to assist them with development of policies and programs to protect farmland.
- Complete and implement the Computer Assisted Land Evaluation System to provide a tool for local government units, Tribes, and others to effectively evaluate the potentials and limitations of their land resources relative to proposed uses.
- Provide training and support to relevant agencies to undertake site assessments in accordance with the Farmland Protection Policy Act requirements.
- Strengthen local partnerships and other mechanisms to increase the availability of technical assistance in rapidly developing areas (e.g., RC&D Border Coalition Esperanza y Poder effort on the U.S.-Mexico border).
- Ensure that local, State, and Tribal governments and non-government organizations have the information on natural resource and environmental issues needed to help guide balanced growth management decision making. Support regional planning efforts to balance growth (economic and

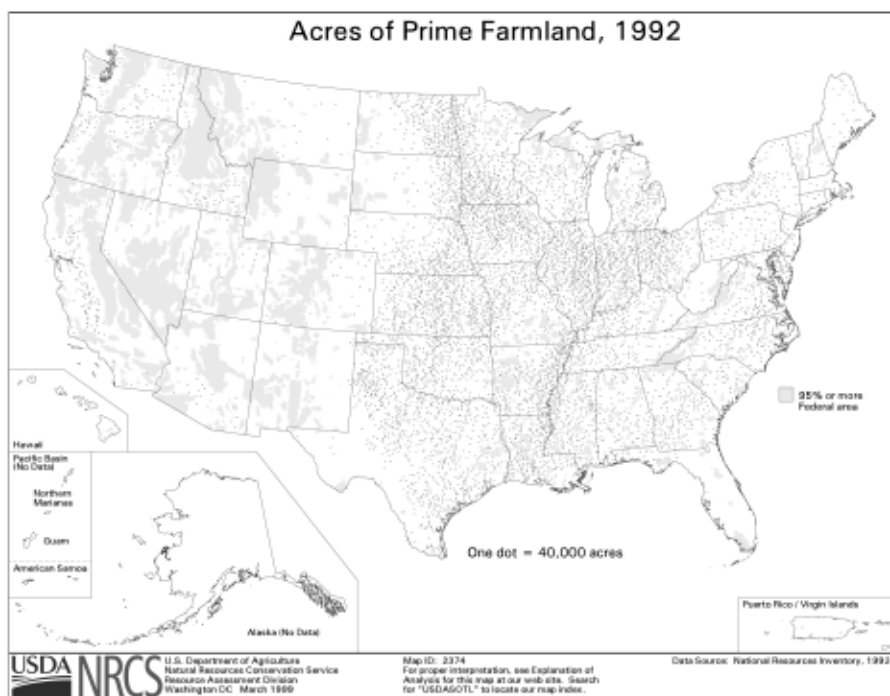


Figure 22 - Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and also is available for these uses. There were 334 million acres of prime farmland in 1992, which was down 6 million acres from 1982. Source: NRI, 1992

developed uses of land) with natural resource conservation and social objectives of the area.

- Help individuals and communities, through the locally led process, identify resource concerns and develop and implement watershed-based plans to ensure that their quality of life is protected.
- Assist Tribal, State, and local governments; non-government organizations; communities; and others to protect their locally important lands through a variety of approaches, including easements, zoning, and other growth management strategies.
- Use appropriate communication strategies to educate the public, landowners, land managers, and government entities about the natural resource and agricultural production benefits of conserving rural land and other green space.

### Baseline

- An estimated 20 percent of all counties presently have land evaluation and site assessment (LESA) systems developed. This estimate will be validated and a baseline will be established in early FY 2001.

### Performance Targets

- By 2005, 90 percent of all counties will have LESA systems developed and placed on the State's list of approved systems.

### Objective 2.2-Promote sound urban and rural community development.

Three-fourths of the people in the United States live on 16 percent of the land. These areas face challenges to environmental quality, which include sedimentation, urban warming, soil compaction, increased runoff, flooding, water pollution, loss of open space, loss of wetlands, and disruption of plant and animal habitat. RC&D councils with fast-growing centers in their designated areas are undertaking projects related to urban/suburban sprawl and its impacts on the resource base.

### Challenges

Treating land to ensure that natural resources are protected is a continuing process. Progress toward the goal of sound urban and rural community development may be influenced by many factors:

- An increasing and diverse population contributes to a dramatic need for new and often very different approaches to providing conservation technical assistance, information, and locally led processes.
- Runoff from streets and highways, parking lots, landfills, junkyards, and septic systems carries a broad range of pollutants.

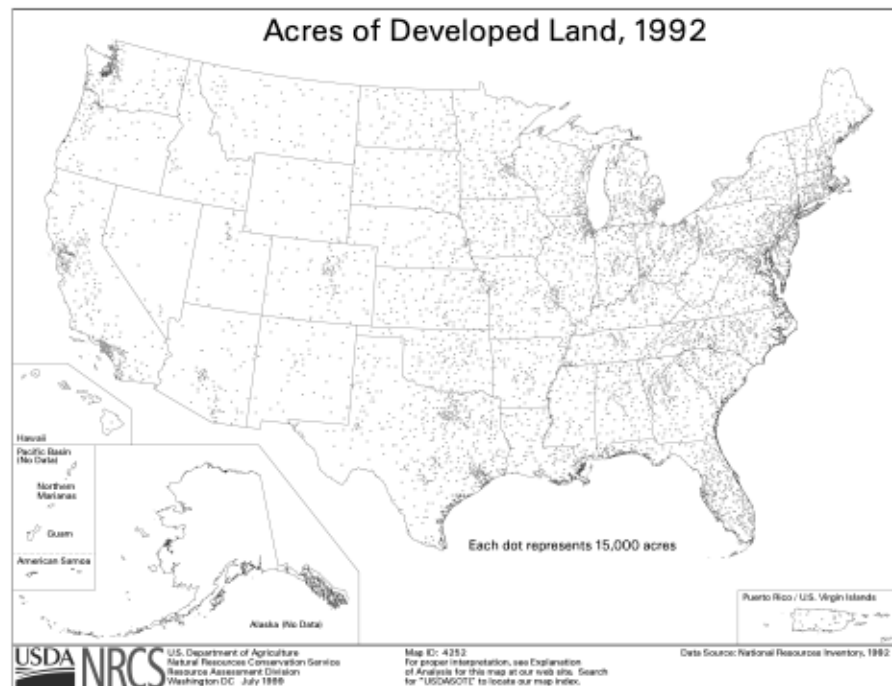


Figure 23-About 40 percent of the 3,000 conservation districts reported that at least 50 percent of their workload was associated with urban resource issues. In 1992, over 92 million acres of the Nation's landscape was in a developed use (urban, built-up, and rural transportation uses). Preliminary inventory data suggests this has increased appreciably. Erosion and sedimentation are a significant resource concern in urban areas, particularly in rapidly developing areas. Each dot represents 15,000 acres of developed land. Source: NRI, 1992

- Increased peak flows result in increased runoff from urbanized areas, damaging streambanks and accelerating the siltation of lakes, bays, and wetlands.

### Means and Strategies

NRCS will work with the conservation partnership to:

- Ensure that designated, trained staff are available to provide conservation assistance to communities on soil erosion prevention and control, land use planning, engineering support, open space conservation, floodplain protection, stormwater management, soil survey, and natural resource inventories.
- Develop specialized training, guidance, and practices for employees and partners.
- Extend coverage of RC&D areas nationwide.
- Enhance efforts in urban and suburban areas, particularly newly developing areas, to undertake comprehensive watershed planning that addresses the potential offsite impacts of development.
- Work with long-standing and new partners to promote technologies and improved practice standards for reducing runoff of nutrients, pesticides, and sediment from rural and urban residential and community facility sites.
- Promote conservation activities that can help address air quality problems in non-attainment areas. Intensify efforts to reduce nonpoint sources of nutrients and other contaminants in coastal areas and estuaries of national significance.

- Use appropriate communication strategies to educate the public, landowners, land managers, and government entities about the benefits of conservation for urban and suburban areas.

### Baseline

- Baselines for the performance targets below will be developed in 2001.

### Performance Targets

- By 2005, 2,000 communities will have been assisted in preparing natural resource plans to address farmland protection, erosion and sedimentation from developed sites, stormwater management, or natural resource protection.
- By 2005, 500 communities will have implemented natural resource plans that address farmland protection, erosion and sedimentation from developed sites, stormwater management, or natural resource protection.

### Objective 2.3-Protect water and air resources from agricultural non-point sources of impairment.

Agriculture is a source of pollutants in the Nation's streams, lakes, and estuaries. Runoff from agricultural land carries silt, bacteria, nutrients, and pesticides that can compromise the quality of recipient waters. Air quality concerns center on particulates, greenhouse gases (nitrous oxides, etc.), and noxious odors from agriculture, as well as the effects of ozone and airborne pollutants on agriculture.

### Challenges

Treating land to ensure that water and air resources are protected is a continuing process. Progress toward the goal of addressing the conservation needs on agricultural land that affect air and water quality in a consistent and thorough manner may be influenced by many factors:

- In mixed land use areas, such as the rural-urban fringe, the non-point issue is complex. Addressing identified problems means working across sectors and communities, which may be difficult. Successful work with one sector may be easily masked by discharge from another.
- In agricultural settings, the farm economy may limit the ability of producers to adopt new measures to address emerging pollutant/emission concerns.
- Progress in finalizing emission/sequestration goals to support climate change agreements may affect how rapidly individuals or businesses become interested in carbon sequestration.
- Implementation of the total maximum daily load (TMDL) requirement of the 1972 Clean Water Act is likely to have a profound impact, particularly on the agricultural sector, and is likely to place substantial demands for NRCS watershed planning skills, implementation programs, and technical assistance.

### Means and Strategies

NRCS will work with the conservation partnership to:

- Provide areawide planning and coordinated assistance in watersheds with non-point source pollution problems on

all non-Federal and Tribal lands. Watershed level planning can help managers identify opportunities to work across boundaries to identify and mitigate specific pollutant sources, reduce pathogen/ bacteria transport, and coordinate buffer establishment efforts.

- Promote innovative watershed level approaches in areas where the rural-urban interface may constitute unique challenges and offer different opportunities for mixed solutions to locally identified problems.
- Intensify efforts to protect rivers and streams from the effects of excess nutrient loading and siltation.

- Intensify efforts to protect rivers and streams from the effects of hydrologic alterations and structural changes to natural geomorphic characteristics, including loss of streamside vegetation, that affect the quality of aquatic habitat.
- Evaluate the potential to abate sources of air quality impairment and greenhouse gas emissions and increase carbon sequestration on U.S. forest, range, and croplands (e.g., emissions from AFOs, fugitive dust from erosion, agricultural burning). Identify and validate carbon credits for agriculture and forest conservation practices that enhance carbon sequestration and contribute to improving air quality.

- Develop accurate, scientifically validated soil carbon measurement models.
- Develop economical methods/practices to control erosion and mitigate greenhouse gas emissions on a wide variety of parcel sizes and for landowners and land managers with limited financial resources.
- Promote streambank restoration and riparian area establishment in locally important watersheds. Stabilizing and restoring streambanks and riparian corridors with appropriate plant materials can substantially reduce sediment load and stream temperature, filter out pollutants, make streams more resilient, and improve fish and wildlife habitat.
- Support the National Conservation Buffer Initiative to help reduce movement of eroded soil and attached chemicals into waterways. Develop and use suitable plant materials to establish effective filter strips.
- Use appropriate communication strategies to educate the public, landowners, land managers, and government entities about the role of conservation practices and programs in protecting water and air quality.

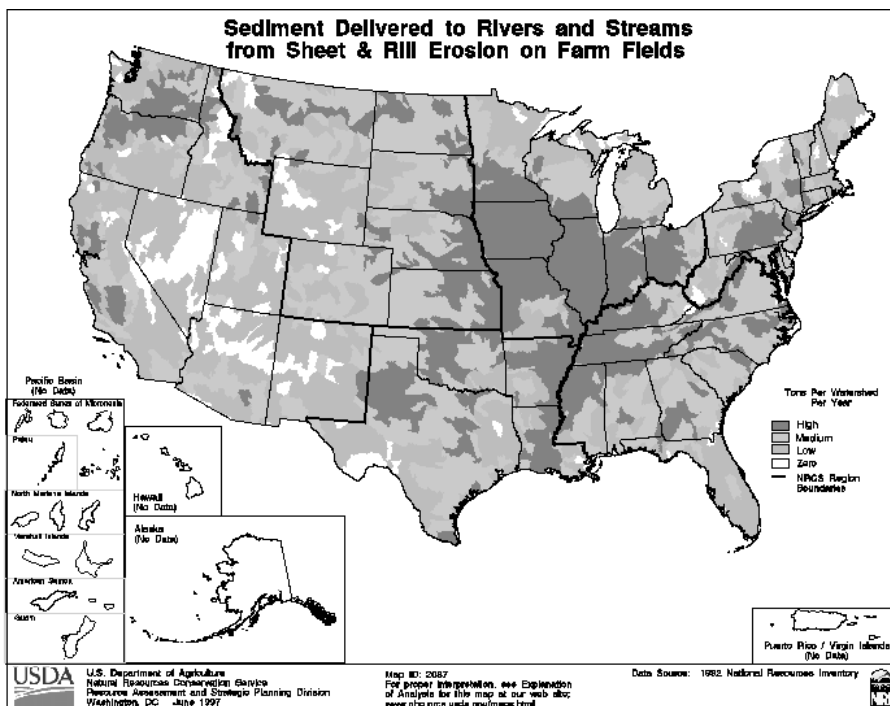


Figure 24-This map shows estimates of sediment delivered to rivers and streams by watershed for the contiguous United States. The watersheds shown in darkest gray are those identified by the model as having the potential for delivering the greatest amount of sediment to streams each year. The Universal Soil Loss Equation was used to estimate water erosion; other erosion processes are not included in this estimate. Source: NRCS, 1997

### Baseline

- By 1999, NRCS had assisted individuals in installing 741,000 miles (2.7 million acres) of conservation buffers to protect water and air quality.

### Performance Targets

- By 2005, an additional 2 million acres (555,000 miles) of buffers will be installed to help reduce the movement of potential pollutants into water and air resources.

### Objective 2.4-Enhance animal feeding operations to protect the environment.

Animal agriculture operations can be the source of silt, nutrients, organic matter, and pathogens that can impair water quality and pose risks to human and environmental health, posing specific concerns in some parts of the country. Helping livestock producers to improve management of the large volume of manure produced and reduce emissions are substantial challenges for the conservation partnership over the next decade. Increased investment is being made to improve farm income and reduce offsite effects through animal waste conversion to bioenergy, fuels, and other products.

Concentrated animal feeding operations (CAFOs) may pose the greatest potential risk because of the magnitude of the waste management task. These operations are regulated under the National Pollutant Discharge Elimination System (NPDES). Small operations also may pose risks to the environment, but on a lesser scale. However, when many operations are concentrated within a single watershed, the cumulative effects become of greater concern. Similarly, large land-based operations also may pose risks despite having low animal unit to land area densities. Land-based operations may be a major influence along streams.

### Challenges

Addressing the complex conservation needs of AFOs to reduce or eliminate the potential risks they may pose to the environment may be challenged by a number of factors, including:

- The dynamic nature of the sector may change the total conservation need as well as the complexity of the conservation task. If the trend in consolidation continues, we may expect fewer overall numbers of operations with greater numbers of animal units per operation.
- Economic factors that contribute to a weak farm economy could reduce producer ability to implement the needed systems. Waste management systems require a significant investment; operators might choose to defer actions that they might have taken under better economic conditions. Major commodity prices have fallen in each of the past 3 years and are now at 10-year lows.
- Public sector factors that reduce cost share available to operators for implementing needed technologies could reduce adoption and implementation of comprehensive nutrient management plans.
- Increasing local and State control over the largest AFOs/CAFOs could encourage operators to adopt improved technologies for managing waste, or may encourage attrition from the sector resulting in a decline in the number of units requiring assistance. The latter possibility might be accompanied by further consolidation and increase in operation size in remaining production units and could result in a change in the mix and magnitude of potential conservation concerns.

**Confined Livestock Waste Problems on the Rise - Number of Counties Where Manure Nutrients Exceed Potential Plant Uptake and Removal (Including Pastureland Application)**

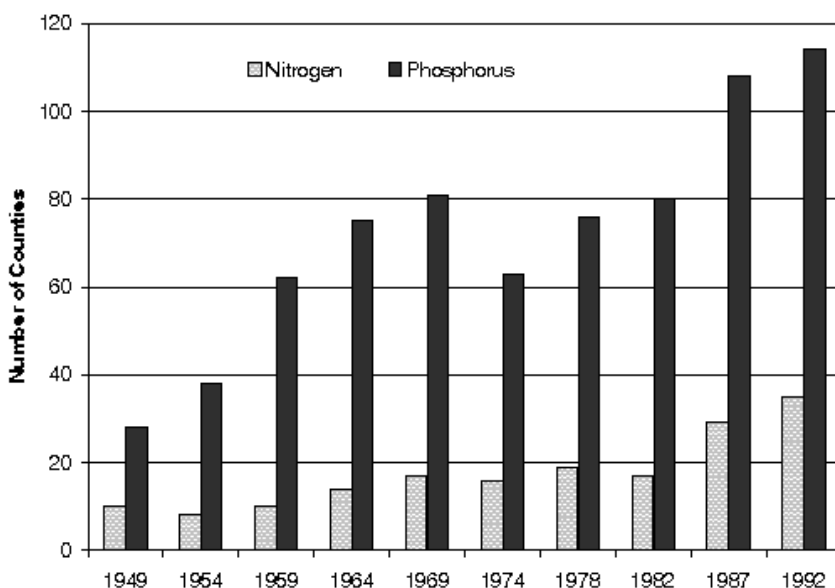


Figure 25 - The amount of nitrogen and phosphorus available from livestock manure has risen steadily since the late 1940s. At the same time, the sector has experienced increasing concentration of production in certain areas. Many counties now have insufficient land area to make agronomic use of the nutrients available from livestock manure.

Source: Kellogg, R.L., and Lander, C.H. NRCS, 1999



## Means and Strategies

NRCS will work with the conservation partnership to:

- Promote innovative watershed level approaches in areas where animal waste is a key concern to consider centralized nutrient accounting, storage and distribution of manure nutrients, and other approaches that can link nutrient-rich and nutrient-poor areas.
- Provide coordinated assistance in watersheds with AFO concentrations. Watershed planning can help managers identify opportunities to work across

operation boundaries to identify and mitigate specific pollutant sources, reduce pathogen/bacteria transport, and coordinate efforts.

- Invest in development of technology and practice standards to support improved waste management. Work with ARS, CSREES, and others to encourage development and adoption of improved animal waste management technologies. Train employees, partners, and the private sector in new technology.

- Foster greater private sector capacity to develop and implement animal waste management and riparian technology. Invest in development of technology and practice standards to support improved riparian management.
- Develop innovative partnerships to advance alternatives for animal waste management. Affordable and effective alternatives are needed in many areas where agronomic uses of animal waste are insufficient to handle the quantity produced.

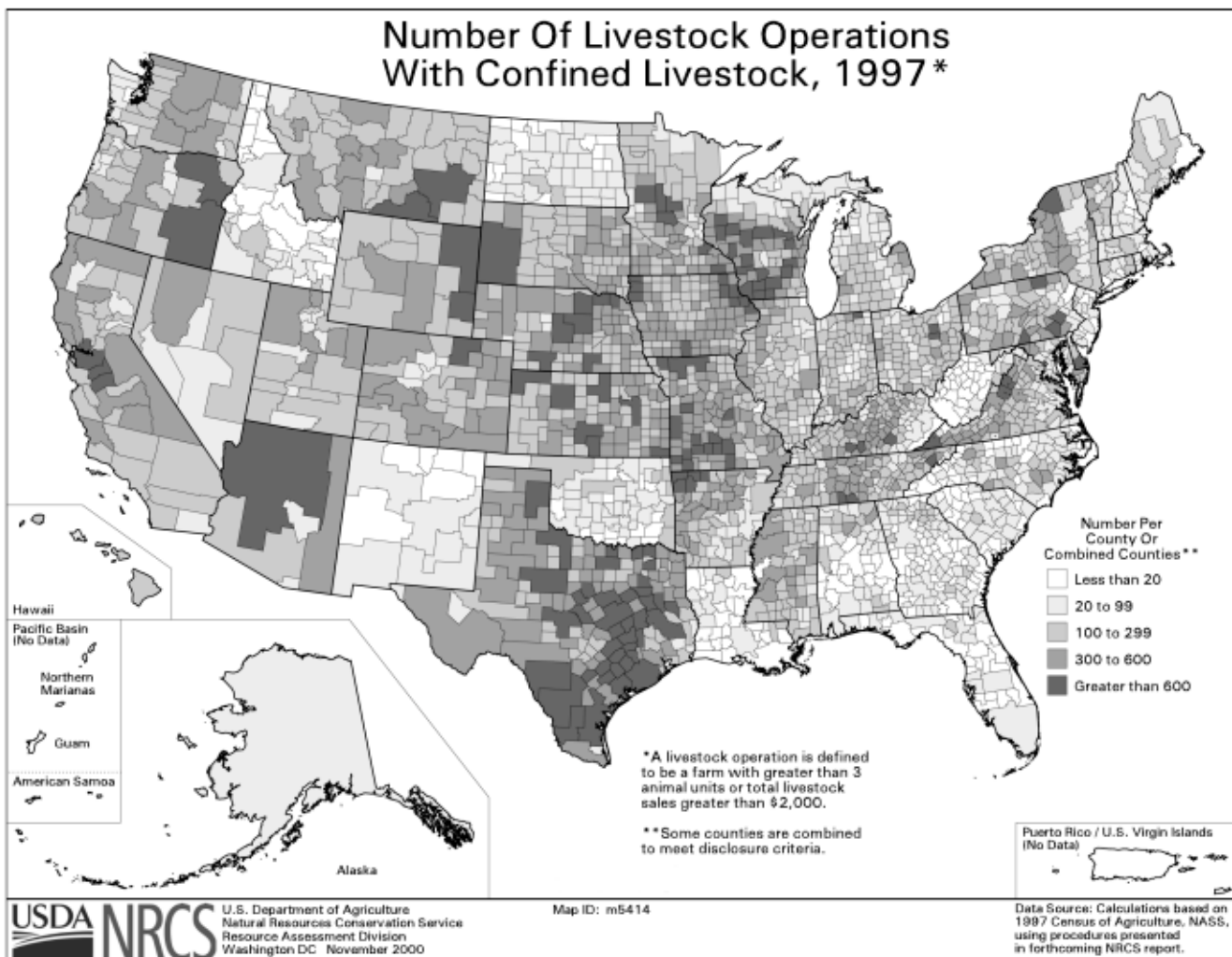


Figure 26 - This map shows counties by their concentration of AFOs, based on Census of Agriculture data gathered in 1997. Presently, an estimated 272,600 of these AFOs need assistance in developing and implementing a comprehensive nutrient management plan.

Source: Kellogg, R.L., NRCS, October 2000

- Work with partners to encourage integrator-supported cooperative efforts for waste management and utilization where production is concentrated.
- Coordinate with EPA, partners, Tribes, individuals, and communities to identify TMDL program requirements and integrate these with NRCS watershed level planning and technical assistance activities.
- Work with operators to increase adoption of waste management practices that address water and air quality concerns. Work with appropriate research entities to assist in the development of technology and practice standards to limit and manage livestock operation odors.
- Strengthen assistance to small, limited-resource and minority owned farms and ranches and develop and provide low cost alternatives that meet their needs.
- Use appropriate communication strategies to publicize traditional and alternative solutions for managing animal waste. Publicize the availability and applicability of NRCS assistance and programs in helping operators address local concerns.

### Baseline

- An estimated 272,600 AFOs will need assistance to develop and implement CNMPs. This estimate is based on the 2001 WLA and reflects the 1997 Census of Agriculture data adjusted to exclude operations that: 1) are too small to pose an environmental risk, 2) are not located in an environmentally sensitive area, 3) already meet NRCS

CNMP technical standards, 4) are unwilling to participate voluntarily, and/or 5) will do their own work or seek assistance from private sources.

### Performance Target

- By 2009, 272,600 AFOs will have been assisted to develop CNMPs to manage animal waste properly.

### Objective 2.5-Maintain, restore, or enhance wetland ecosystems and fish and wildlife habitat.

For more than a century, wetlands on private lands have been modified or eliminated to grow crops, raise livestock, harvest timber, build infrastructure, support development, and, in recent times, farm fish (aquaculture). Federal, State, and local government agencies and public and private organizations have worked together over the last several decades to reverse the decline of wetland acreage. Recently, interest in protecting and restoring wetland functions has grown. Although wetland losses have declined, continued efforts are needed to maintain or increase the amount and quality of wetlands on private lands.

Habitat fragmentation, particularly in forests and wetland ecosystems, is a major factor affecting wildlife populations. Agriculture, timber harvest, and land conversion have all been factors in wetland and wildlife declines. Agriculture has the potential to help maintain wildlife populations. Achieving targets for soil and water conservation can produce significant benefits for wildlife, yet the challenge remains that many practices sufficient to

conserve soil or water may fall short of the need for high quality habitat. Contiguity of habitat, for example, is a key factor in maintaining wildlife populations. Locally led planning, where communities work together to identify and address concerns on a watershed scale, can help identify opportunities to fit wildlife and wetland conservation into the landscape.

### Challenges

Maintaining and enhancing wetland and fish and wildlife resources is a continuing process. Progress toward the goal is challenged by many factors:

- The effectiveness of achieving conservation across the landscape will be a major determinant on our ability to enhance wildlife populations and improve wetlands functions. Wetlands and wildlife habitat quality are profoundly influenced by the condition of surrounding landscapes and land uses. Studies relating wetland condition with activities in surrounding areas have concluded that if wetlands are to provide benefits at an optimum level, activities beyond the wetland boundary also must be considered and be part of the management approach.
- Wetland restoration occurs in landscapes that do not resemble historical conditions, which poses technical and ecological obstacles. Historical and current land use practices result in degradation to wetland systems that is often difficult and costly to repair.

- Functional linkages between landscapes and wetlands is not always well understood and activities to restore functional condition may not be sound or economically feasible. Wetlands are hydrogeomorphically different and, therefore, the functions derived from each wetland class are different as is their functional capacity.
- Wetland systems change in relation to natural disturbances and human alterations. Degradation processes, such as sedimentation, fragmentation, hydrologic modifications, nutrient enrichment, and pesticide and heavy metal deposition, can occur at multiple scales and have differential effects upon wetland

functioning. Human alterations can heighten and often overshadow natural disturbances.

- Many of the programmatic opportunities to protect and enhance wetlands and wildlife habitat are reaching statutory limits for enrollment in 2002. To make further progress in improving these resources, these policy issues will need to be resolved either through increasing limits or through State and local programs or private sector support. Without financial incentives, it will be difficult to achieve increases in acreage or in the quality of existing acreage.
- Wetland restoration science and techniques have lagged behind the demand for participation in some wetland protection programs.

- Wildlife health depends on complexes of habitat varying by lifestage. Adequate availability of quality habitat of many types is needed to support healthy wildlife populations. For migratory species, this becomes an even more difficult problem as habitat may be divided across political/national boundaries over which there is little control.
- Increasing variability in weather may produce significant effects on the viability of certain species. Migratory waterfowl habitat, for example, is linked to precipitation levels, which increase the extent of the needed habitat—seasonal wetlands. Extended drought cycles can introduce a substantial challenge to populations.
- Competition from nonindigenous species may have a strong influence on the health of native species. Kudzu, the brown tree snake, melaleuca, and zebra mussel, to name a few invasive species, all have had a tremendous impact on indigenous wildlife populations. With an increasingly mobile global population, this challenge may increase.

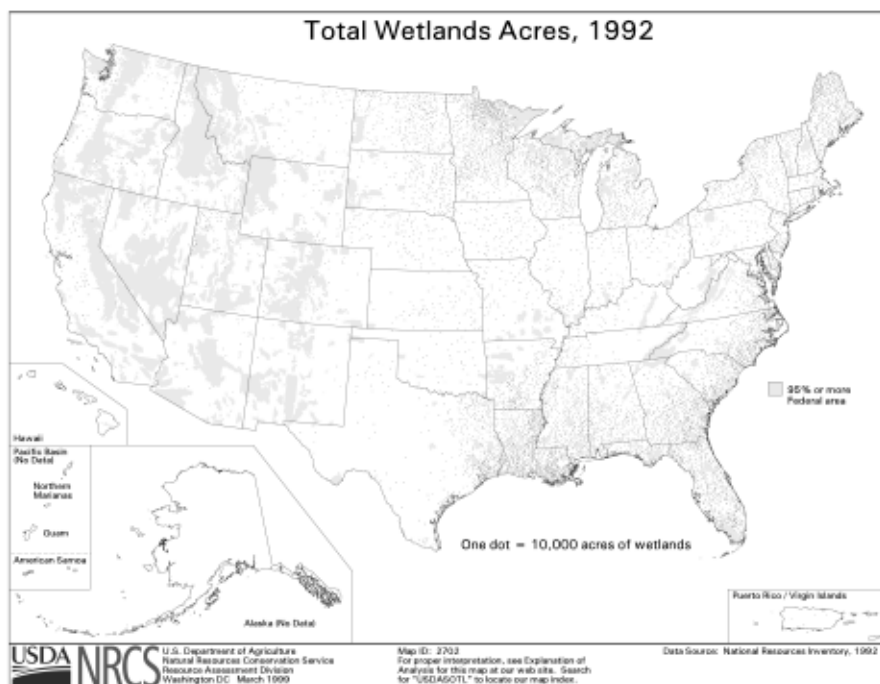


Figure 27 - This map shows the broad spatial distribution of wetlands on non-Federal land in 1992. Wetland losses exceeded gains in nearly all regions between 1982 and 1992 (1.56 million acres lost and 0.77 million acres gained). The Southeast, South Central and Midwest regions experienced the greatest percentage losses during this period. Source: NRI, 1992

## Means and Strategies

NRCS will work with the conservation partnership to:

- Work with partners, State agencies, other Federal agencies, and private conservation organizations to identify priority wetlands that could benefit from application of conservation practices in the surrounding landscape to improve wetland habitat and wetland-landscape habitat linkages.

- Work through the locally led process to identify community goals for fish and wildlife and wetland conservation. Engage partners in identification of 1) lands in need of conservation practices to eliminate and reduce degradation processes, and 2) regionally important wetlands potentially threatened by degradation processes originating on private lands.
- Conduct functional assessments on wetlands before and after conservation treatment to validate conservation practice effects in support of outcome measurement. Strive for functional condition in wetlands affected by land use practices on private lands.
- Focus efforts on “no-net loss of wetlands” and on the most highly vulnerable areas of the Southeast, South Central, Midwest, and Northeast regions.
- Integrate multiple use planning in wetland and wildlife conservation approaches that consider recreation and other nonconsumptive uses of resources in conservation planning.
- Provide needed technical assistance for delineation of wetland areas and ensure continued compliance with Swampbuster requirements.
- Provide coordinated assistance to promote conservation in watersheds with important wildlife populations. Identify geographic areas of greatest need and opportunities for conservation. Integrate wildlife conservation with other conservation priorities such as water quality goals and wetland conservation.

- Work with partners and private groups to enhance habitat for important game species.
- Develop and use adapted native plant materials for wetland restoration and improved wildlife habitat.
- Use appropriate communication strategies to promote the value and benefits of healthy wetlands and fish and wildlife habitat. Use targeted communications to educate the public, landowners, land managers, and government entities about the availability of assistance to restore and enhance habitat and wetlands.

#### **Baseline**

- Between 1982 and 1992, wetland gross losses declined from 27,000 to 24,000 acres annually. The Southeast, South Central, and Midwest regions experienced the greatest percentage of losses during this period. However, the Northeast region ranked fourth in acreage lost among the six NRCS regions and sixth in the amount of wetlands gained between 1982 and 1992. Nontidal forested wetlands, particularly in the Southeast, South Central, and Midwest regions, are continuing to experience high loss rates. Wetland losses to development in coastal States exceed that calculated for inland States. Sources of wetland losses are development and agricultural activities.
- Work continues to develop an appropriate method to track functional condition of wetlands to allow reporting of progress toward a net improvement in wetland function. Functional

condition of wetlands was sampled in an NRCS pilot during 1999. Results from that effort indicate that functional condition in wetland systems is dependent on many factors, including the condition and activities in the surrounding landscape. Functional condition on a small sample of restored wetlands in the Northern Prairie Pothole region, the Lower and Central Mississippi Valley and the High Plains is variable (dependent on hydrogeomorphic class and subclass) and shows small mean increases in functional condition, although it is unknown whether the increases will reach optimum levels over time.

- A baseline for wildlife habitat will be developed in 2001.

#### **Performance Targets**

The performance target is to meet the total conservation need. At the current rate of investment, about 23 percent of the annual conservation need is met (2.3 million acres treated). To address the total conservation need in an appropriate time frame, a continuing investment of 3,200 staff years would be needed for conservation planning and application on 9.6 million acres annually.

- By 2005, 82 percent of the annual conservation need for wetlands and fish and wildlife habitat will be met — 7.6 million acres will be treated annually to maintain and enhance locally and regionally important fish and wildlife populations.
- By 2005, wetlands will be maintained, restored, or enhanced to meet the “no net loss” goal.

### Goal 3-Reduce risks from drought and flooding to protect individual and community health and safety.

Each year, droughts and floods adversely affect farms, ranches, and communities, and public health and safety. In recent years, floods have devastated the Midwest, Mid-Atlantic, and Pacific Northwest regions. Hurricanes and other coastal storms have caused billions of dollars in damages through flooding. As more development is concentrated along the coast, smaller or less intense storms cause more extensive and expensive damage. Droughts have

taken their toll in some of the same areas, as well as the Southwest, Southeast, and Northeast.

NRCS has provided technical and financial assistance to local sponsors in the development of water resources since the 1940s. Nearly 2,000 projects covering 160 million acres and including a network of 10,000 small watershed structures exist across the Nation to help prevent and mitigate flooding to protect human health and safety. These projects also have contributed to improving water quality and supplies, creating wildlife habitat, and providing recreational opportunities. Today, the ability of this infrastructure to continue provid-

ing desired benefits is challenged by: 1) aging structures in need of rehabilitation, 2) development that has placed individuals and communities at risk in case of structure failure, and 3) sediment buildup in reservoirs threatening capacity and affecting water quality.

Severe drought can challenge individual and community livelihoods, damage the environment, contribute to widespread wildfires, and result in millions of dollars of damages. Drought devastates those that make their living from the land and water. In rural communities, the economic downturn can be substantial as agricultural supply markets dissolve. Drought can result in water quality impairment and reduce availability of water for municipal needs, such as fire-fighting or waste treatment. Drought also leads to water use conflicts and tough decisions on water allocation. In large managed river basins and water systems, the conflicts often pit established uses such as agriculture and navigation against newer uses such as recreation and water for growing municipal populations, and water for direct human use against water for environmental purposes. In its recent report, the National Drought Commission stresses the need for drought preparedness—especially drought planning, plan implementation, and proactive mitigation—a finding underscored in the National Drought Policy Act of 1998 (P.L.105-199). USDA is one of three Federal entities with the greatest responsibilities related to drought (with the Bureau of Reclamation, and the U.S. Army Corps of Engineers).

**Wetlands and Fish and Wildlife Habitat Conservation Need - Staff Year Investment & Acreage Treated**

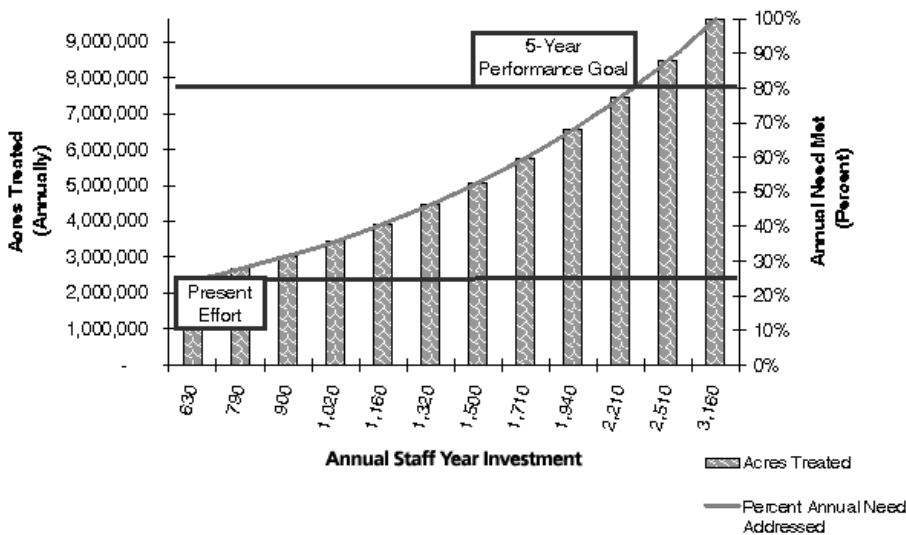


Figure 28 - This graph shows the present level of effort under current staffing and 5-year performance goal assuming increased staff in addressing wetlands and fish and wildlife habitat resource concerns. The annual conservation need reflects best local estimates of the number of acres needing treatment each year in order to address conservation problems and maintain the resource. Source: 2001 WLA, October 1999; WLMA, July 2000.

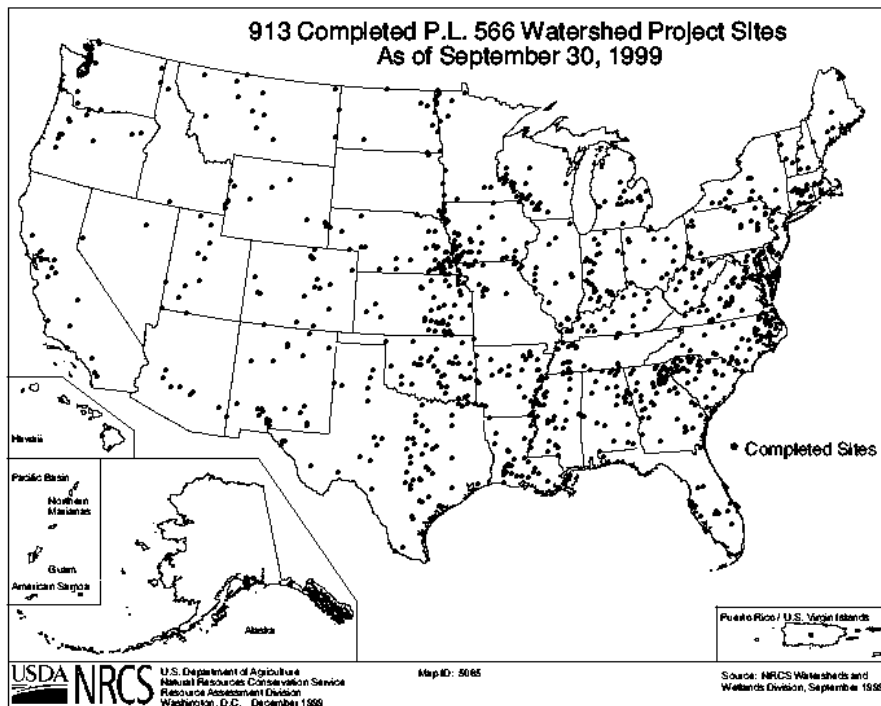


Figure 29 - Some 10,000 small watershed structures have been installed through 2,000 watershed projects across the Nation. About 2,200 of these structures are nearing the end of their design life and are in need of evaluation and rehabilitation or decommissioning to protect communities and ensure continued benefits from the Federal investment.

Source: NRCS, Report to Congress on Aging Watershed Infrastructure, 2000

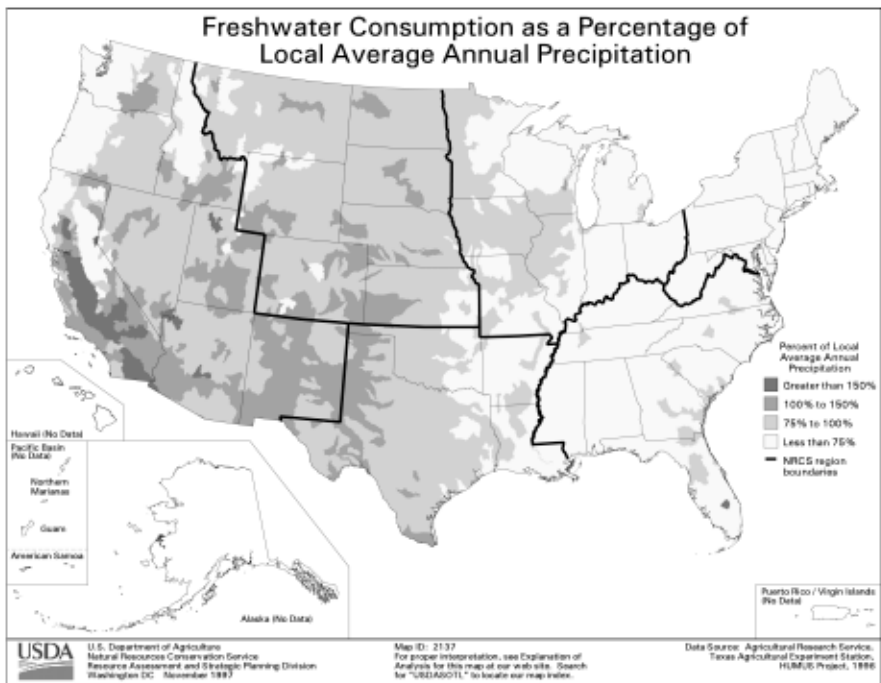


Figure 30 - Water availability may be the most significant national water issue in the coming decade. Certain areas of the country already use more than 100 percent of their annual average precipitation and depend on groundwater mining or imports from other areas. Water use debates also are emerging in water-rich areas where demand is increasing. Drought heightens these challenges across the country.

Source: NRCS, 1997

NRCS has a major role in assisting individuals, Tribes, and communities undertake comprehensive water resources planning and implementation. Individual landowners and land managers improve the resiliency of their lands by applying conservation systems and contribute to lessening the potential impact of water shortages by increasing soil moisture and promoting aquifer recharge. Communities mitigate drought through watershed planning that balances supply and demand and development of nonstructural and structural approaches to manage their water resources as a whole.

This goal lays out two objectives to address the risks posed by flooding and drought: 1) flood protection in upstream watersheds, and 2) protection from chronic water shortages and drought. This goal directly supports the USDA Strategic Plan Goal 3—Maintain and enhance the Nation’s natural resources and environment and its Objective 3.3—Provide multiple benefits to people from the Nation’s natural resources.

**Objective 3.1-Protect up-stream watersheds from flood risks.**

NRCS is authorized to provide technical and financial assistance to local sponsors to help them design, construct, operate, and maintain projects for water management and use. The need for watershed protection continues to grow as increases in population and changes in land use affect the hydrology and increase the risks of flooding in many areas. Watershed protection requires a wide range of actions, including structures, local land use planning,

critical area treatment, purchase of easements, and early warning and emergency response plans. Floodwater retarding structures are a key component of many watershed protection projects. Nearly 10,000 small watershed structures have been installed across the country to protect communities from flooding, ensure water supplies, and provide recreational and other benefits. Land treatment enhances the benefits provided by these structures and helps protect water quality and provide the open area needed for aquifer recharge.

Ensuring continued safety of lives and property in these watersheds will be a growing challenge over the next decade. Prevention of flooding is more economical than cleaning up after it.

**Challenges**

Working with individuals and communities to help reduce the risk of flood damage is a continuing process. Progress toward the goal of meeting the needs for flood damage protection in a consistent and thorough manner is challenged by many factors:

**Table 2: Significant Floods, 1990 - 1999**

Flood Type	Date	Area or Stream with Flooding	Reported Deaths	Approximate Cost (uninflated)
<b>Regional Flood</b>	April 1990	Trinity, Arkansas, and Red Rivers in Texas, Arkansas, and Oklahoma	17	\$ 1 billion
	Jan. 1993	Gila, Salt, and Santa Cruz Rivers in Arizona	Unknown	\$400 million
	May - Sept. 1993	Mississippi Basin in Central United States	48	\$20 billion
	May 1995	South Central United States	32	\$5 to \$6 billion
	Jan. - Mar. 1995	California	27	\$3 billion
	Feb. 1996	Pacific Northwest and western Montana	9	\$1 billion
	Dec. 1996 - Jan. 1997	Pacific Northwest and Montana	36	\$2 to \$3 billion
	Mar. 1997	Ohio River and tributaries	> 50	\$500 million
	April - May 1997	Red River of the North in North Dakota and Minnesota	8	\$2 billion
	Sept. 1999	Eastern North Carolina	42	\$6 billion
<b>Ice-Jam Flood</b>	May 1992	Yukon River in Alaska	0	Unknown

During the 20<sup>th</sup> century, floods were the number-one natural disaster in the United States in terms of numbers of lives lost and property damage. Nearly 40 percent of the significant floods of the century have occurred since 1990.

Source: USGS, Fact Sheet 024-00, March 2000

- Development in areas prone to flooding continues, increasing the number of individuals and communities at risk. Increase in impervious surfaces promotes runoff and reduces infiltration and aquifer recharge.
- Many of the structures presently in place to protect individuals and communities from flood risks are nearing the end of their design life. Within the next 10 years, over 2,000 of these structures will require rehabilitation or other action to ensure continued public health and safety.
- Local entities responsible for the structures may not have technical assistance or funding

strategies developed to undertake the major repair, rehabilitation, or decommissioning that will be needed.

### Means and Strategies

NRCS will work with the conservation partnership to:

- Help watershed project sponsors to evaluate and assess the need to repair, upgrade, or decommission watershed structures. Continue to work with local sponsors to develop and implement watershed protection plans to protect high priority watersheds. Conduct pilot projects in small dam rehabilitation or decommissioning.

- Provide the information and tools communities need so that they can guide development to reduce potential damages from natural disasters (e.g., easements on floodplains, floodwater retention structures) and develop strategies to mitigate effects. Geographic Information System (GIS) technology will be used to complete risk assessments for communities.
- Increase snow data collection and the use of water supply forecasting information to reduce potential damages from flooding or drought. The Snow Telemetry Network (SNOTEL) and Soil Climate Access Network (SCAN) will be expanded

### Age of Watershed Dams

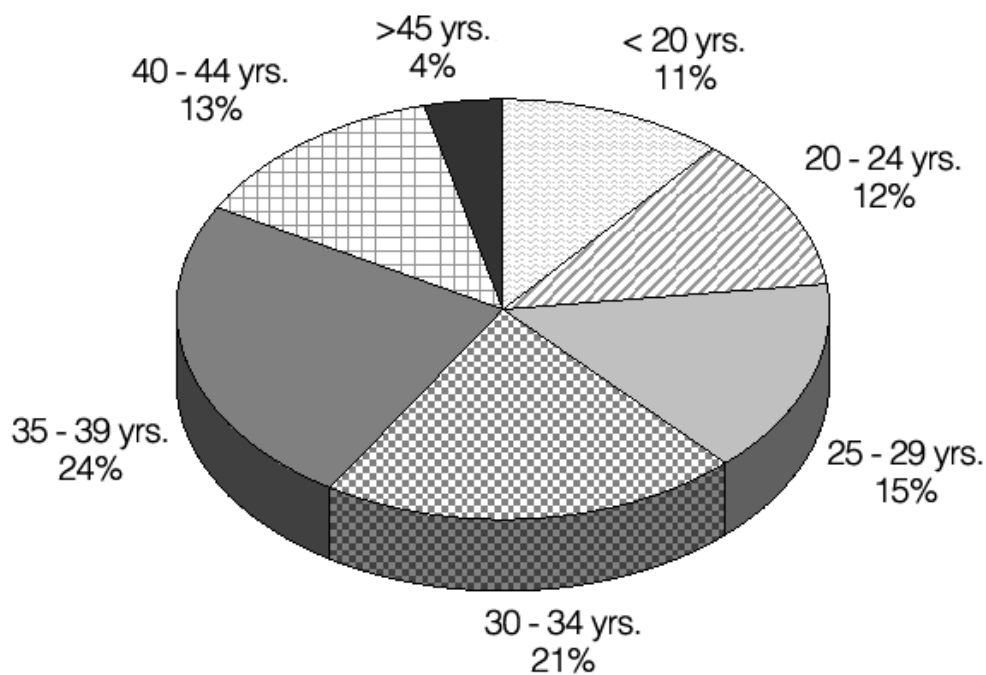


Figure 31 - Almost two-thirds of the small flood control dams constructed to date are more than 30 years old. Thirty-five dams have reached the end of their design life and another 450 will do the same within 5 years. About 2,200 structures will reach the end of their life span in the next decade. Source: NRCS, Report To Congress on Aging Watershed Infrastructure, June 2000



across the Nation to increase the availability of weather condition information.

- Address flood prevention in the context of comprehensive watershed planning designed to protect or restore water quality and quantity. Multiple purpose planning can help communities develop upstream flood prevention plans that consider water conservation, along with flood control, to meet their long-term needs.
- Enhance the Emergency Watershed Protection Program (EWP) to improve its ability to address natural disasters.
- Use appropriate communications techniques to educate communities about the importance of watershed planning to reduce risks from flooding and protect future economic growth and resource health.

### Baseline

- In 1999, nearly 2,200 flood control structures entered the last years of their design life.
- In FY 1999, annual benefits from existing flood protection infrastructure exceeded \$900 million.

### Performance Targets

The performance target is to meet the total conservation need.

- By 2010, plans will be developed and implementation begun to rehabilitate or decommission 2,200 watershed structures that have reached or are near the end of their design life.
- By 2005, flood damage reduction benefits in watershed project areas will exceed \$1 billion annually.

### Objective 3.2-Protect watersheds from the effects of chronic water shortages and risks from drought

The availability of adequate supplies of usable water is the major resource concern in many areas. Finding solutions to balance the increasing demands for water and the limited supply is made difficult by the severe and prolonged drought that has affected wide areas in recent years. Competing demands for water among municipal, industrial, agricultural, and instream uses (e.g., endangered species) are increasing. The potential for water shortages is increasing in some areas, as populations grow in areas already experiencing limited water supplies. Areas with previously plentiful water supplies are now beginning to experience shortages because of rising demand. Developing watershed plans that

address water shortages and incorporate practices that minimize the effects of drought are critical to long term watershed health. The National Drought Policy Commission found that the Nation's vulnerability to the impacts of drought, and thus the need for emergency relief, could be reduced by making preparedness the cornerstone of national drought policy.

### Challenges

Working with individuals and communities to help reduce risk from drought is a continuing process. Progress toward the goal of meeting the needs for drought damage protection in a consistent and thorough manner may be influenced by many factors:

- Availability and accessibility of information about local climate and drought conditions and

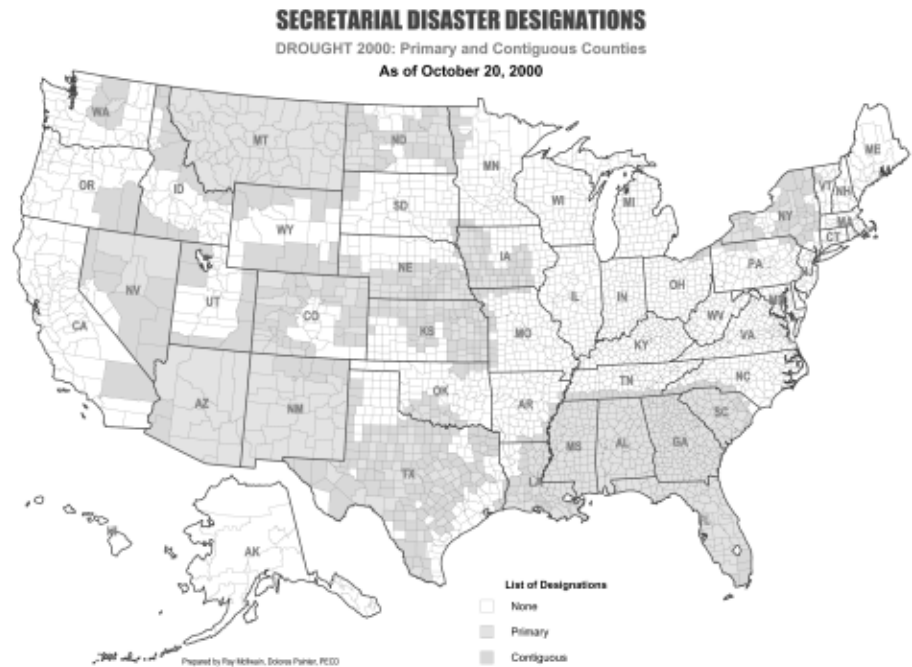


Figure 32 - Natural disaster is a constant, yet unpredictable, threat to America's farmers and ranchers. Drought costs an average of \$6 billion annually in loss of income to farmers and ranchers across the Nation. The map shows the primary (dark gray) counties and contiguous (light gray) counties designated as disasters due to losses from drought.

Source: USDA Drought Information Web Page, 2000

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predictions. Also needed is basic soils information—75 percent of the soil survey job is complete. Without these critical data, landowners and land managers cannot make timely production decisions nor can communities and individuals implement proactive mitigation strategies.

- Funding available for development and implementation of drought mitigation plans. Only a fraction of landowners and land managers receive technical assistance to develop and implement a water conservation/drought plan. Availability of financial assistance to help implement plans may be inadequate.
- Insufficient information exists on management practices that can limit the impacts of drought conditions on crop and forage production. Lack of information can be a substantial problem on American Indian and Native Alaskan lands. Some Tribal lands lack soil survey, streamflow, and range condition information, which are critical to planning.
- Small farms and ranch operations may not have the risk management tools needed to endure severe weather and other environmental extremes; appropriate technologies and assistance are needed.
- Inability to interpret data regarding long-term use of ground water resources and associated impacts of irrigated agriculture on ground water supplies. In some cases, the availability or accessibility of information regarding ground water resources is limited, hindering effective planning.

- Knowledge and selection of plants able to persist under drought conditions is limited. Without an adequate information base, land users are limited in exercising sound management decisions.

### **Means and Strategies**

NRCS will work with the conservation partnership to:

- Promote watershed level planning to address water supply and drought mitigation, including land treatment as well as structure development or enhancement. Many conservation practices provide benefits for drought mitigation by increasing soil moisture storage and aquifer recharge. Comprehensive planning that identifies the full range of demands and supply can bring these elements together to meet individual and community needs.
- Help communities assess conditions and needs and develop plans to prepare for and minimize the effects of drought. Intensify assistance to Tribal governments to protect their lands and manage water resources to meet reservation needs. The National Drought Policy Commission recommendations call for development of decision support information and implementation of plans and mitigation measures, resource stewardship, environmental considerations, and public education.
- Provide science-based information to help individuals and communities plan and undertake proactive mitigation to lessen the potential impacts of drought. Ensure that accurate information on current water supply and reliable predictions of future supplies are available. SNOTEL data for the 13 western States and the SCAN will provide essential drought monitoring information across the Nation. Completed soil survey work on all non-Federal lands is needed to support water supply and drought mitigation planning.

- Promote cooperative approaches to conservation of ground water resources. Strengthen cooperation with Federal and State agencies to maintain productivity of ground water resources.
- Acquire, develop, and transfer applicable technology on plant species that can survive drought conditions and mitigate its impact.
- Encourage locally led efforts to define water needs and priorities that integrate agricultural needs in the decision-making process.
- Inform and educate NRCS specialists regarding interpretation of ground water data including rates of decline, recharge, safe yield, and potential for contamination.
- Strengthen assessment and interpretation capabilities within NRCS to improve ability to determine condition of ground water resources.
- Evaluate opportunities to improve programs to increase their flexibility for responding to drought emergencies.
- Use appropriate communications techniques to educate communities about the importance of watershed planning on water conservation and drought preparedness planning.

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## Baseline

- A preliminary baseline for drought preparedness will be established in FY 2001.

## Performance Targets

The performance target is to meet the total conservation need.

- By 2005, the conservation partnership will assist 500 communities each year to develop, revise, or implement group or area plans that address water supply concerns to help with drought preparedness.
- By 2005, the conservation partnership will provide drought risk information on a regular basis, education, and decision support assistance to 500 drought prone areas, including Indian reservations.

## Goal 4-Deliver high quality services to the public to enable natural resource stewardship.

Modern agriculture is remarkably diverse. Enterprises vary widely in size, production practices, level of modernization, commodities produced, and employment. Adding to this complexity are rural-urban interface issues. As communities become more diverse, locally led conservation involves a broader array of stakeholders—groups with markedly different perceptions and conservation information and technology needs. NRCS, conservation districts, State conservation agencies, and RC&D councils form a strong network that can respond to the conservation needs of individuals, Tribes, and communities across the country. This partnership has the flexibility and

authority to develop and implement conservation solutions based on local conditions. Commitment to maintaining a strong conservation delivery system, one-on-one technical assistance, and current and effective science-based conservation technologies and resource information remain NRCS priorities. These tools are the basis for enabling good land stewardship upon which conservation depends.

The workforce of the conservation delivery system includes as many State and local employees as Federal, although the Federal segment still includes a higher proportion of highly trained technical specialists. NRCS depends on the assistance of the partners in the field offices to administer NRCS programs. The system faces many and complex challenges. Over the past 15 years, budget resources have not kept pace with pay costs and inflation resulting in a continuing drain on the number of staff. Our partners often face the same dilemma. At the same time, the conservation agenda has become more complex and the range of conservation needs has grown exponentially. State and local employees must focus on delivery of programs and rules enacted at the State or local level. Those programs provide financial assistance funded by State governments, either with State taxes or with funds from Federal environmental rather than agricultural agencies. The State and local partners need more NRCS technical expertise to design effective solutions to highly complex problems, but their employees have less time available to relieve NRCS technical staff of administrative tasks.

NRCS and the conservation partnership will have to assist a diverse customer base to achieve goals for conservation and environmental quality. This means improving service to traditional customers while reaching out to nontraditional and underserved customers. It also means understanding customers' values, needs, and attitudes. This goal lays out three objectives that together describe the agency's commitment to: 1) fair and equitable delivery of services, 2) a strong conservation delivery system, and 3) timely natural resource information to support decision making. This goal directly supports the USDA Strategic Plan Goal 5-Operate an efficient, effective, and discrimination-free organization and its objectives: Objective 5.1-Ensure that USDA provides fair and equitable service to all customers and upholds the civil rights of its employees, and Objective 5.2-Improve organizational productivity, accountability, and performance.

### Objective 4.1-Deliver services fairly and equitably.

NRCS is committed to providing equivalent service to all customers. The conservation need is not limited to certain groups or locations. Engaging nontraditional and other underserved groups is essential to achieving the Nation's conservation goals.

### Challenges

Working with individuals and communities to ensure fair and equitable delivery of service is a continuing process. Achieving this objective may be influenced by many factors:

- Effective outreach to nontraditional customers depends on having appropriate information, materials, and conservation solutions.
- The diversity of groups and individuals that NRCS needs to direct efforts to is rapidly growing, challenging the agency's ability to keep astride of these new needs.
- Some groups may be disinclined to participate in Federal programs as a result of past discrimination or other adverse association with the government. Successful outreach is difficult under such conditions and the need for specialized skills is heightened.
- Locating and contacting minority, underserved, and nontraditional groups and individuals can present a challenge because of their low community profiles, generally dispersed locations, and the need to fit into nontraditional work hours.
- Program rules may pose unintended barriers to participation. Participation in most USDA financial assistance programs requires that participants invest some funds of their own and may involve actions that reduce the producer's income in the short term. Producers with limited income or small operations, may not be able to take advantage of opportunities to participate in cost-share programs.
- Increasing focus on electronic methods for providing information inadvertently may diminish access for some groups.

## Means and Strategies

NRCS will work with the conservation partnership to:

- Engage in a continuing review of all agency activities, including program requirements, to ensure that discriminatory aspects do not exist.
- Increase program flexibility to allow innovative strategies using existing authorities to reach historically underserved landowners and land managers and seek new authorities.
- Strengthen ties with minority serving academic institutions and community based organizations to develop and deliver services to meet the needs of minority, underserved, and nontraditional customers (e.g., Historically Black Colleges and Universities, Hispanic Association of Colleges and Universities, 1994 Institutions, Native Alaskan, people with disabilities, and others).
- Encourage incorporation of environmental justice issues and equal delivery of services into annual plans of operation, by issuing appropriate national guidance on performance goals and needs for delivery of services to underserved groups.
- Work with Tribal governments to establish offices and assistance delivery approaches that meet their needs.
- Undertake an assessment of the progress made in meeting the Civil Rights Action Team objectives of improving assistance and service to minority, underserved, and nontraditional customers.
- Encourage innovative strategies using existing authorities to reach historically underserved

landowners and land managers and seek new authorities to broaden and strengthen the conservation partnership.

- Conduct active outreach programs to inform all underserved groups of the availability of services.
- Recognize the multilingual and multicultural needs of our customers. Ensure that agency information, tools, and technologies are in formats that can be used effectively by minority, underserved, and nontraditional groups. Produce communications materials, such as multilingual publications, specifically targeted to reach underserved groups.

## Baseline

- In fiscal year 1999, a total of 54,800 minority, underserved, and nontraditional customers were served. Performance data suggests that effort is needed to evaluate the baseline and validate assistance provided.

## Performance Target

- By 2005, 100,000 members of minority, underserved, and nontraditional groups will receive NRCS conservation assistance annually to help them plan and apply conservation on their lands and the lands that they manage.

## Objective 4.2-Strengthen the conservation delivery system.

To achieve its mission, NRCS and the conservation partners must work to strengthen the conservation delivery system. Fundamental to effective delivery of services is a highly skilled, diverse, and

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experienced workforce that is supported with efficient and effective tools, technology, and access to information.

## Challenges

Maintaining a strong and effective conservation delivery system is a continuing process. Progress toward the goal of strengthening the conservation infrastructure may be influenced by many factors:

- Maintaining technical excellence in the entire range of needed disciplines will be difficult in the next decade with many technical staff reaching retirement age. Almost 50 percent of the NRCS field-level workforce will be eligible to retire in 5 years. As these employees leave, the agency will suffer major losses of knowledge, experience, institutional memory, and the credibility that long-term employees have built with the customers they served.
- Finding and committing the necessary resources to training will continue to be difficult under present budget constraints. Developing alternative training opportunities or improving the efficiency with which the agency delivers training are key needs.
- Ability to maintain a first-rate workforce will depend on our ability to attract and retain highly qualified candidates from varied cultural backgrounds.
- Making needed information, forms, and other guidance electronically available to the partnership as well as customers will require a firm commitment of resources over the next few years.

## Means and Strategies

NRCS will work with the conservation partnership to:

- Strengthen our ability to deliver assistance to our diverse customer base by providing our employees innovative training in cross-cultural relations, outreach, and communication.
- Accurately identify new or updated technical skills needed by our workforce to deliver sound technical assistance to an increasingly diverse customer base through timely queries of partners, employees, employee groups, and customers. Develop a strategy to certify staff who successfully complete technical training.
- Work with partners to identify incentives and develop a program to retain experienced employees to train and mentor new staff.
- Provide our workforce the best work environment possible by creating an institutional culture that welcomes diversity, encourages innovation, and rewards creativity and achievement.
- Ensure adequate investment in employee development to maintain technical excellence in an environment of rapidly expanding knowledge and technology.
- Enhance communication and coordination within the conservation partnership and with other Federal agencies and the private sector to ensure the availability of adequate technical expertise as the workforce of NRCS and other Federal partners changes.

- Ensure that local conservation district leaders and RC&D councils have the skills and information they need to lead their communities toward effective stewardship.
- Acquire and deploy the electronic communications and information technology needed to ensure easy, rapid, reliable flow of information within the partnership, considering the diversity of technology used by State and local partners and the differing levels of computer use of our diverse customer base.
- Ensure that essential data about resource condition and conservation treatment collected and maintained by NRCS are collected according to consistent definitions and methodology and stored in systems that permit merging of data from many sources.
- Ensure that the public and others have easy, electronic access to agency directives, technical information, and forms. Implement an electronic application process to allow customers to submit applications and information without physically visiting an agency office.
- Encourage American Indian and Native Alaskan participation on conservation district boards and RC&D councils.

## Baseline

- Baselines for training, skills, and information accessibility were developed in FY 2000 with the completion of the workforce planning system. The system was planned for implementation in 2000 and is to be updated annually with information on workforce skills.

## Performance Targets

- By 2005, NRCS will have in place a workforce recruitment plan that will include criteria for the agency's workforce to reflect the diversity of the Nation.
- By 2005, NRCS will have in place an agency-wide training and certification system to maintain professional competency of its workforce.

## Objective 4.3-Ensure timely, science-based information and technologies.

Effective stewardship depends on having science-based information and technology that are up to date with current conditions, easily accessible, and designed to meet user needs. Developing the appropriate tools requires a substantial and consistent investment in natural resource inventory and assessment. These data inputs, used to develop and update technical guides, performance standards, and conservation technology, are critical to customer service.

## Challenges

Developing and providing timely science-based information and technologies is a continuing process. Progress toward the goal may be influenced by many factors, including:

- Natural resource inventory and assessment data and analysis requires a consistent and substantial investment to ensure high quality and continuity.
- Many different types of natural resource information are needed to meet the diversity of uses and users. A shrinking workforce makes supporting many formats and products

more difficult. With increasing use of electronic information transfer, some users may be left out, increasing the gap between adopters and non-adopters. Maintaining capacity to deliver information and assistance in multiple formats and through multiple mechanisms may have a high cost.

- Keeping pace with new information technology is a challenge in the Federal workforce, but essential to effective data sharing among agencies, individuals, and the private sector.
- Ensuring that information and delivery systems are relevant to customers may require substantial investment of agency resources in information technology.

## Means and Strategies

NRCS will work with the conservation partnership to:

- Strengthen the investment in the agency's technical components to ensure that they are able to provide needed technologies and tools to support conservation.
- Integrate expertise from the field, partners, and others in the technology development and transfer process.
- Develop conservation practices designed around traditional methods of Tribes or other minority, underserved, and nontraditional customers to improve their use and acceptability.
- Complete, update, and maintain soil surveys for all private and non-Federal lands. Com-

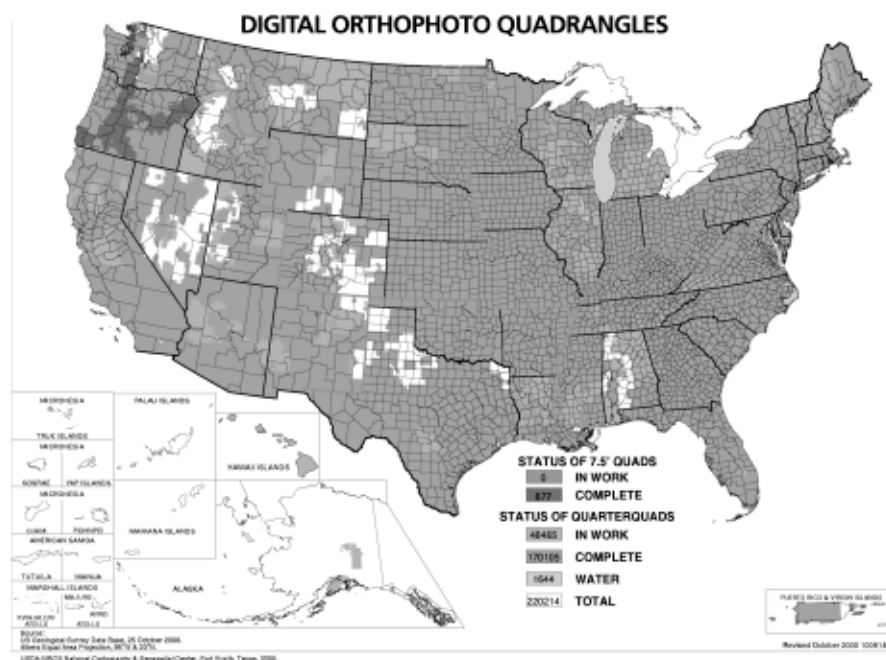


Figure 33 - DOQs provide our field offices with the basic analysis of the landscape. DOQs also will support full implementation of the Customer Service Toolkit-the new NRCS conservation planning support software. Source: NCGC DOQ Status Map, September 2000

plete the production of soils information in digital form. Ensure easy access to the data with state-of-the-art information systems that are increasingly used by our customers and partners.

- Enhance ability to provide soils information and interpretations by fully populating data in the National Soil Information System.
- Cooperate with other Federal agencies in joint inventory activities and data management

agreements to ensure compatibility and consistency of resource information. Integrate data collected by NRCS with data collected by other Federal agencies, State and local governments, agribusiness, and customers.

- Ensure that the field staff are provided with the needed technology, tools, and additional technical support to deliver conservation. Field Office Technical Guides (FOTGs) should reflect current

technology and knowledge. Make digital orthophoto quads (DOQs) available at the field level for use as a basic conservation planning tool with land users.

- Develop planning and resource assessment tools and data collection systems for resource planning and to assess resource status, conditions, and trends. Develop field and analytical methods and techniques for assessing soils and landscapes. Develop methods and indica-

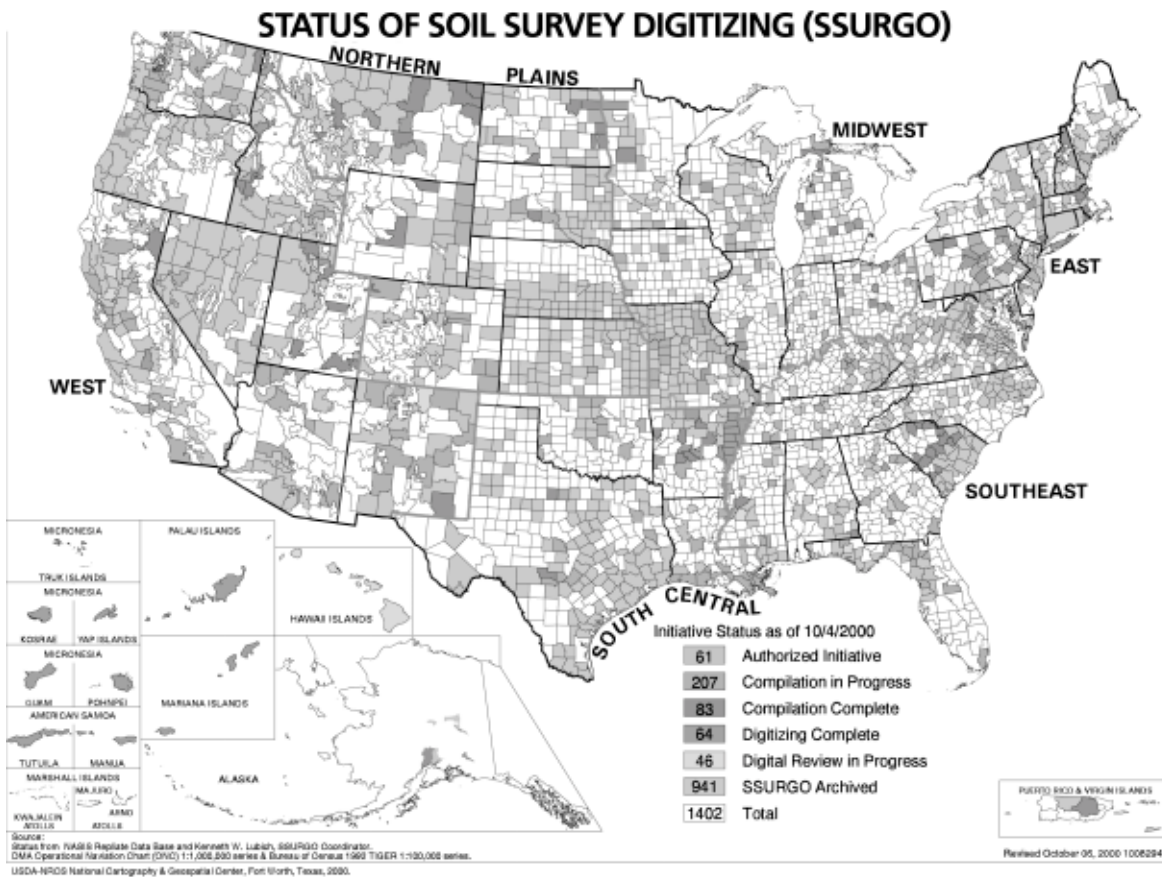


Figure 34 - This map shows the status of soil survey digitization for the Soil Survey Geographic (SSURGO) database. Digitized soil surveys make detailed soils data available for GIS and other computer-assisted systems for natural resource planning and management. Source: NCGC, SSURGO Status map, October 2000

tors for assessing and monitoring the health of natural resources, watersheds, and landscapes.

- Use appropriate communications strategies to publicize new science and technology on natural resource conservation and ensure that new information is widely disseminated within the agency and among the partnership.

### Baseline

- At the end of FY 2000, a total of 901 soil surveys were available in digital form.
- In 1999, an estimated 75 percent of NRCS national conservation practice standards were current and reflected best available technology. In 2001, a definitive baseline will be established.
- In 1999, an estimated 75 percent of State FOTGs were up to date with current technology and related national level guidance. In 2001, a definitive baseline will be established.

### Performance Targets

The performance target is to meet the total conservation need.

- By 2008, a total of 2,800 soil surveys will be available in digital form, making interpretations of soil survey information easily accessible to our customers, partners, and other users.
- By 2005, 85 percent of the national conservation practice standards will be current and reflect best available technology.
- By 2005, each State will have 85 percent of their FOTGs up to date with current technology and consistent with related national level guidance.

## Resources Needed

The goals identified in this strategic plan are based on the total conservation need. The National Partnership WLA, completed in October 1999, provided data on the extent of the conservation need, as determined by technical specialists in field offices across the country. Based on these data, an estimated 41,300 field staff are needed at the local level on a continuing basis to provide technical assistance to landowners, communities, and government entities. The performance targets identified in this strategic plan are based on projection of a consistent

annual increase in field staff to provide technical assistance. At this level of increase, 94 percent of the total staff required (38,700) would be in place at the local level by 2005. It also was assumed that the necessary increases in program financial assistance would be made available, as would increases on the statutory caps on program acreage. If the needed resources do not become available or the program enrollment caps are not increased, then the goals identified in this plan will not be achieved within the time frame identified.

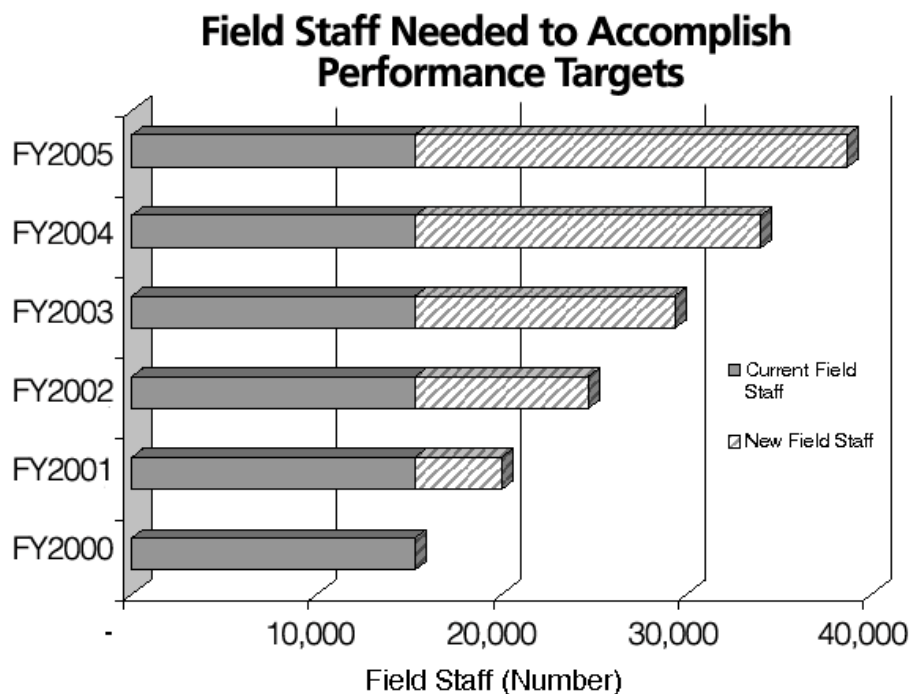


Figure 35 - The performance targets contained in this plan are based on an expectation of a consistent increase in the field staff needed to provide technical assistance over the course of the strategic plan. Source: WLMA, July 2000



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## Relationship to Annual Goals

Performance plans provide the link between the long-term goals established through strategic planning and the day-to-day activities of agency personnel. Performance planning is the tool used to set annual targets that help move the organization toward realizing its mission.

The performance measures and targets in the strategic plan form the basis for developing annual performance plan goals. These annual goals are **indicators of progress** that relate directly to a long-term strategic goal, but can be measured on an annual basis. The annual goals developed in the performance plan help guide the allocation of staff and financial resources. The plan details the anticipated results of the proposed expenditure of agency funds. In NRCS, performance plans are developed at the national and State levels. The National Performance Plan provides the framework for the development of State performance plans. These goals are refined to reflect local priorities identified by State conservationists through the performance planning process.

For this plan, performance targets are set for meeting the total conservation need to ensure that natural resources are adequately protected in order to remain productive over the long term. Related annual measures will be developed that quantify specific activities that will contribute to achieving the long range improvement. For example, rangeland adequately treated may be tracked annually through goals for resource management systems on

rangeland, prescribed grazing applied, and group and areawide plans implemented because of grazing land resource concerns. The annual measures are quantifiable indicators that can be allocated back to programs and staff activity. Annual measurement of change in land health can be costly, and external factors may easily exaggerate or mask the effects of management practices applied. By monitoring these annual indicators, however, we can make a judgment as to how well we are progressing toward our strategic objectives. Outcomes—the impact of these activities on the condition of the resource—will be determined through the use of NRI conservation needs assessments, WLA total conservation needs data, other appropriate inventory and monitoring data, and models currently under development. The results of these annual progress evaluations and outcome evaluations will feed into the strategic planning cycle and will be used to adjust or improve goals and targets.

## Program Evaluations

Periodic evaluations of the implementation and accomplishments of individual conservation programs administered by NRCS are a critical element of overall performance measurement. These evaluations help NRCS determine the overall contribution the agency makes to conservation of our Nation's natural resources. Findings of periodic and annual evaluations are used to refine agency strategic objectives and guide agency strategic planning. Program evaluations are routinely conducted within NRCS through a variety of methods:

- Program managers complete programmatic reviews, which assess the propriety of implementation at the field level.
- The Oversight and Evaluation Staff completes independent reviews of various programs to ascertain compliance with existing laws, executive orders, regulations, policies, and procedures. Procedures utilized include surveys, comprehensive reviews, and quick response reviews, depending on the issue, scope, and depth of review needed.
- Regional and State offices are responsible for compliance reviews of the individual programmatic activities within their jurisdiction.

Evaluation schedules are prepared a year in advance and are included in the agency's business plan for that year. The next farm bill may authorize new farm programs with new policies and implementation procedures, evaluations will be scheduled accordingly on any new or terminated programs. Programs

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are evaluated to assess how effectively each contributes to achieving the desired outcomes and, specifically, to estimate the benefits achieved, the cost effectiveness, and the extent to which customer needs and congressional intent are met.

Since 1997, evaluations have been conducted to determine the adequacy of operation and maintenance on NRCS-assisted project dams, technical and administrative activities related to wetland protection, and ability to meet the expectation for planning and implementation assistance called for in the Joint Unified National Strategy for Animal Feeding Operations. These evaluations were instrumental in updating this strategic plan and have led to development of new objectives and refinement of performance targets. In addition, results of these evaluations have led to additional management actions to improve performance:

- NRCS-EPA Unified National Strategy for Animal Feeding Operations. Evaluation findings indicated that many existing waste management plans and nutrient assessments do not meet the standards of NRCS's new nutrient management policy. A management action plan has been developed to identify corrective actions to improve performance in this area.
- NRCS-assisted project dams. The review found that inadequate operation and maintenance has led to significant deterioration on nearly one-third of the sites reviewed.
- Technical and administrative activities related to wetland protection. A review on ease-

ment management was conducted to evaluate effectiveness of easement program administration and implementation. The review found some cases in which documentation of easement management, monitoring, and enforcement was insufficient to determine whether environmental values and Federal interests are being protected. A review of wetland restoration activities found that the technical content of some restoration plans and subsequent quality control are inadequate to meet NRCS standards. A review of the implementation of wetlands flexibility provisions found some instances of deficiencies in use of minimal effects and mitigation procedures. Management action plans have been prepared to correct all these deficiencies.

- Processing of Environmental Quality Incentives Program applications. The review led to development of actions to streamline the EQIP process.

NRCS currently is improving its quality assurance policy, which details the process and roles and responsibilities. The quality assurance process is used to ensure that all agency conservation planning and application and program implementation and delivery activities are conducted in compliance with agency policy and procedures and program guidelines. Each State also has a quality assurance plan, which is the principle vehicle for State implementation of the quality assurance process.

## **Role of External Entities**

This plan was prepared by NRCS employees. No contractors were involved in activities directly related to preparation of reports. Contractors, working through cooperative agreements, have assisted in the analysis of data in support of this plan. The draft plan was reviewed by numerous outside interest groups and individuals.

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## Appendix A

### Strategic Planning in NRCS

Strategic Planning in NRCS involves all levels of the agency; partners; State, local and Tribal governments; government agencies; and other stakeholders. It is a continuing process by which the agency envisions its future and identifies the procedures, operations, and resources necessary to achieve that future. Activities are conducted in accordance with the Soil and Water Resources Conservation Act of 1977, the Government Performance and Results Act of 1993, and USDA guidelines.

The NRCS strategic planning process includes:

**Inventories and Assessments** - Information on the status, condition, and trends of the Nation's natural resources as well as workload, performance, and workforce data is gathered and assessed to determine resource concerns and approaches to address identified needs. Information is gathered at all levels of the agency, from national level assessments to locally identified priorities.

**Identifying and Analyzing Alternatives** - Alternative strategies for addressing identified resource concerns are developed and analyzed. Science-based resource analyses project the impact on resource conditions, and workload analyses define costs.

**Consultation and Reaching Consensus** - Consultation with stakeholders, partnership, government agencies, Tribes, and interest groups helps define general goals, objectives, and performance targets.

**Plan Preparation, Communication, and Evaluation** - Planning documents are developed and the plan, with the associated goals and performance targets, is communicated to all levels of the agency and to all stakeholders. Review and evaluation identify new information and analytical needs, leading into the next planning cycle.

This plan is built on analysis of new data on resource conditions, workload, and performance collected from a number of sources, including:

- Global and Domestic Issues Team report (internal, October 1999).
- Resource analyses and assessments.
- Workload data from the 2001 National Partnership Workload Analysis (WLA) and evaluations of these data using the Workload Management Analysis (WLMA) system.
- Performance data from the NRCS Performance and Results Measurement System (PRMS).
- Performance data from the RC&D Information and Management System.
- National Resources Inventory (NRI) (1982, 1987, 1992, 1995).
- USDA soil surveys – Digitized and published.
- National Agricultural Census data from NASS.
- Water quality surveys conducted by State water quality agencies.
- U.S. Environmental Protection Agency data and analyses.
- U.S. Geological Survey data and analyses.

This plan also incorporates input from our partners and the broader community gathered through the following avenues:

- Conservation Summit in Ames, Iowa, December 1999.
- Forums on Private Lands Conservation, 1999.
- Listening Sessions on the Environmental Quality Incentives Program, 1999.
- Listening Sessions on the Joint Unified National Strategy on Animal Feeding Operations, 1999.
- Soil Survey Town Hall Meetings, 1999.
- Strategic planning and outreach in the six NRCS regions to identify natural resource concerns and strategic objectives.

Additional input was received from broad agency and partnership review of strategic planning materials, including:

- Review of 1997 NRCS GPRA Strategic Plan goals, objectives and targets (December 1999).
- Situation analysis survey of agency leadership (January 2000).
- Internal and external review of draft materials (May 2000 & July 2000).

This information forms the foundation from which the agency goals, objectives, and performance measures in this plan were developed. The challenge for strategic planning is to translate this highly specific input into general goals and objectives that provide a framework to guide agency activities, yet sufficient flexibility to allow the locally led process to work effectively. General goals and objectives are broad-based and accompanied by performance

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targets that are outcome-oriented. These performance targets may be reached through different paths in different parts of the Nation. Each State and region is expected to craft its approach using objectives as building blocks that can be used independently or in concert to address the concerns that face that locality. The performance planning process provides the avenue for States, in conjunction with regional guidance, to identify the level of effort to be directed toward individual objectives on an annual basis.

## Appendix B

### Conservation Need Data

**The estimates for Conservation Need** were gathered through the 2001 National Partnership Workload Analysis (WLA) and are based on the total resource need in the parish/county for each core work product. Data were gathered at NRCS field offices across the country and were based on the following guidance:

- **Total Conservation Need:** Estimates should be based on resource information provided by the State office, soil conservation district's annual work plans, and other published resource assessments recently completed for the county/parish. The amount reported should be equal to the number of acres for the respective land use, minus the acres where conservation systems have been applied and are being maintained.
- **Source of Data:** The 1992 National Resources Inventory (NRI) data should be used to determine the total acres of the land use, unless another credible data source is available locally.
- **Local Adjustments:** Field offices should subtract the acres of conservation systems currently meeting the field office technical guide (FOTG) criteria from the acreage of the land use to determine the total conservation need for the core work product. Use the NRI treatment needs data, local resource assessment reports, and cumulative progress data to estimate the acreage meeting FOTG criteria. In the case of forestland, local staff were

directed to make an additional adjustment in acres considered in order to exclude forestland acres where NRCS would not have authority or responsibility for providing technical assistance. Thus, the estimates for forestland in need of conservation treatment are not comprehensive. [Note: NRI treatment needs data are based on the judgement of a qualified specialist as guided by the local FOTG, the prevailing agricultural operations, and the guides used in development of conservation plans. If conservation practices or systems are necessary and feasible to arrest or prevent deterioration or enhance the productive capacity of the soil, water, plant, or animal resources then the land is reported as **needing conservation treatment.**]

- **Quality Control:** If the total acres of conservation need for a land use exceed the total acres for that land use in the county/parish as reported in the 1992 NRI data tables, the reasons for the difference were to be documented and made available on request.

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