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United States
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Legal Authorities for Federal (USDA), State and Local Soil and Water Conservation Activities

Background for the
Second RCA Appraisal

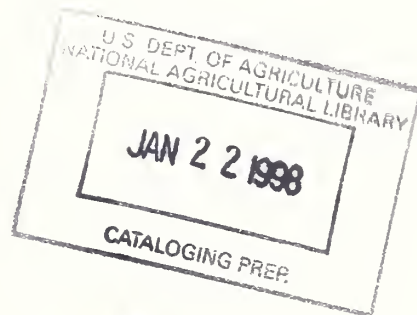
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Second RCA Appraisal



United States Department of Agriculture

Issued September 1987

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This report was prepared by
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U.S. Department of Agriculture

In line with Department of Agriculture policy, benefits of the programs described in this summary are available to all, regardless of race, color, national origin, sex, religion, marital status, handicap, or age.

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FEDERAL LAWS: LEGISLATIVE AUTHORITIES FOR USDA CONSERVATION PROGRAMS

Chapter 14 of the 1980 RCA Appraisal, Part II, summarized the federal laws that then authorized USDA to carry out its conservation activities for soil, water, and related resources. It grouped them according to resource concerns--such as "Soil and Water Conservation," "Flood Control," and "Research." It listed the laws on tables showing activities covered by each law and the flexibility of each law with regard to program objectives, procedures, and administration.

This document is a follow-up to that chapter. It updates the description of enabling authorities for federal conservation programs and briefly describes the programs, grouped by lead agency.

Although many other federal laws and programs contain elements that affect soil and water conservation, only those that give specific responsibilities to USDA are discussed.

RECENT LEGISLATION

Since 1980, Congress has enacted three laws that significantly affect USDA conservation programs: Public Law 99-198, the 1985 farm bill; Public Law 97-98, the 1981 farm bill; and Public Law 98-569, authorizing a separate Colorado River Salinity Control Program. Congress also appropriated money for the Rural Clean Water Program, which had been authorized earlier but not funded.

The Food Security Act of 1985

Title XII of the Food Security Act of 1985 (Public Law 99-198) sets out the law's provisions for soil and water conservation. It limits production on highly erodible land; discourages the conversion of wetlands to farmland; and sets up the Conservation Reserve for highly erodible and otherwise vulnerable land that is to be removed from production.

Highly Erodible Land Conservation (Subtitle B).-- Anyone who produces an agricultural commodity on highly erodible land is ineligible for price and income supports, disaster payments, Farmers Home Administration loans, farm storage facility loans, and other programs under which payments are made with respect to commodities produced by the farmer.

This provision does not affect payments and benefits for crop production on land cultivated between 1981 and 1985 or on land that has been idled or set aside under a USDA-administered program.

A farmer who is already applying a conservation plan will have until January 1, 1990, or until 2 years after SCS has completed a soil survey of the farm, to remove highly erodible fields from cultivation. Nobody will become ineligible retroactively, either for planting a crop before the law was enacted, or for planting on highly erodible land that SCS has erroneously classified as not being highly erodible.

The law directs SCS to complete soil maps of unmapped areas as quickly as practicable, concentrating on those areas where significant amounts of highly erodible land are being converted to agricultural use.

Wetland Conservation (Subtitle C).--The "swampbuster" provision states that anyone who produces an agricultural commodity on a converted wetland will be ineligible for the same federal payments listed in Subtitle B. This provision does not apply to wetlands converted before the date of the law, to artificial wetlands created from nonwetland areas in order to collect and retain water, to wet areas created by irrigation, or to wetland that dries up from natural causes, such as drought. An area can also be exempted if the Secretary of Agriculture determines the effect of conversion to be minimal.

Conservation Reserve (Subtitle D).--This subtitle establishes the Conservation Reserve, sets out the respective obligations of land users and USDA, defines payments to be made, and makes rules regarding contracts.

The Conservation Reserve provision will be carried out through rental payments for the land taken out of production and through sharing the cost of putting the land into grass or trees. Each year, the amount of land put into the Conservation Reserve will increase, up to a maximum of 45 million acres by 1990. The minimum acreage will be 40 million acres. Some lands may be included that are not highly erodible but that pose an off-farm environmental threat or are seriously affected by salinity and likely to remain so if continued in production. The contracts shall last for a minimum of 10 years and a maximum of 15.

● Duties of Owners and Operators.--A conservation plan will be drawn up and approved by the district for each farm, setting forth the conservation measures to be implemented and the commercial use, if any, that can be made of the reserved land. The plan may provide for permanent retirement of some land. In order to place land in the Conservation Reserve, the owner or operator of a farm or ranch must agree to convert highly erodible land normally used for agricultural commodities to a less intensive use in accordance with the schedule outlined in the individual conservation plan.

The land placed in the Conservation Reserve will be planted with an approved vegetative cover, such as pasture, grass, legumes, forbs, shrubs, or trees. The reserved land will not be used for agricultural purposes unless it is specifically permitted by the Secretary of Agriculture. If these conditions are violated, the farmer or rancher must refund all or part of the payments already received, plus interest, and accept termination of the contract or its renegotiation on less favorable terms.

If the land is transferred to another owner or operator, the original landuser must forfeit the right to further payments and refund the money already received unless the new owner assumes the obligations of the contract.

Land in the Conservation Reserve must not be used in any way that would defeat the purposes of the contract. Such uses include harvesting, grazing, or other commercial use of forage, unless a drought or similar emergency occurs and the Secretary of Agriculture approves the use. Insofar as possible, at least one-eighth of the acreage planted in the Conservation Reserve will be devoted to trees. Trees planted on reserved land are not to be used for commercial gain; however, it is permissible to prune, thin, and improve tree stands according to customary forestry practice. Other contract provisions may be set out by the Department of Agriculture.

- **Duties of the Secretary.**--The Secretary of Agriculture will share the cost of conservation measures provided for in the contract, pay an annual rental fee to compensate for the commodity sales and subsidy payments lost by removal of the land from production, and provide conservation technical assistance to aid the owner or operator in carrying out the contract.

- **Payments.**--Payments shall be made as soon as possible after October 1 of each year or, at the discretion of the Secretary, prior to October 1 of the year that the obligation is incurred. Cost-share payments will be 50 percent of the cost of establishing conservation measures.

Amounts of rental payments are to be determined through bid submission and by whatever other means the Secretary deems appropriate. Factors considered in determining the acceptability of contract offers include the extent of erosion and the productivity of the acreage that is to be reserved. The Secretary may accept offers that provide for the establishment of shelterbelts and windbreaks on permanently vegetated stream borders, and filter strips of permanent grass, forbs, shrubs, and trees that will reduce sedimentation substantially. Different criteria for erosion control may be established in different states and regions, and priority will be given to owners and operators who are subject to the greatest degree of economic stress.

Payments shall be made in cash or commodities, and they may be made prior to verification that the owner or operator has met the contract specifications. In-kind commodities can be transferred to the owner or operator by delivery to a specified warehouse, by transfer of negotiable warehouse receipts, or by whatever other method, including whole or partial cash payments, that will allow the owner or operator to receive prompt payment. If the owner or operator dies, becomes incompetent, or is unable to receive payment, the Secretary will determine a fair method of payment.

The total amount of rental payments for one farm or ranch, including those made in-kind, may not exceed

\$50,000 for any fiscal year. However, the rental payments are in addition to, and will not affect, the amount in payments an owner or operator receives under the Agricultural Acts of 1949 and 1970.

- **Contracts.**--No contract will be accepted if land ownership has changed in the three-year period preceding the date of the contract unless it can be proven to the satisfaction of the Secretary that the ownership was not acquired for the purpose of placing the land in the Conservation Reserve. Such circumstances include inheritance by will or succession and ownership acquired before January 1, 1985.

A new owner may continue the contract, enter a new contract, or elect not to continue the contract. A person need not own the land in order to enter into a contract, but he or she must have operated the land for at least 3 years preceding the date of the contract or since January 1, 1985, whichever is later; and he or she must control the land for the contract period. A contract entered into by a new owner can be modified by mutual agreement, and the Secretary can permit the raising of crops on reserved land under conditions he deems appropriate. Contracts may be terminated by mutual agreement or if the Secretary determines such termination to be in the public interest. At least 90 days before any contract is terminated, the Secretary must notify the Committee on Agriculture of the House of Representatives and the Committee on Agriculture, Nutrition, and Forestry of the Senate.

- **Base History.**--The owner or operator will not be paid for crops that would have been produced on the land placed in the Conservation Reserve. However, the base history may be preserved for the purpose of any other federal program under which the owner or operator receives payments.

Administration (Subtitle E).--The Commodity Credit Corporation will be used to carry out the Conservation Reserve program. Other agencies involved will be the Soil Conservation Service; the Forest Service; the Fish and Wildlife Service; state agencies; land grant colleges; local, county, and state committees; conservation districts; and other agencies. Regulations regarding appeal provisions and other contract provisions will be issued by the Secretary of Agriculture.

Other Conservation Provisions (Subtitle F).--Regardless of the other provisions of this law, USDA is entitled to give technical assistance to property owners, state and local government agencies, and interstate river basin commissions in order to (1) protect the quality and quantity of ground water, (2) help property owners reduce their vulnerability to flood hazards that may also affect water resources, and (3) control salinity. Any such technical assistance authorized will be evaluated and a report submitted to the House and Senate committees on agriculture.

The law amends the Soil and Water Resources Act of 1977 (16 U.S.C. 20004ff.) to provide for appraisals

in 1995 and 2005, and for updating the National Conservation Program in 1987, 1997, and 2007.

The law also amends Section 608 of the Agricultural Programs Adjustment Act of 1984 (7 U.S.C. 1981 note). Softwood timber can be planted on marginal land and its revenue used as security against reamortization of a distressed loan. The loan can be deferred for 45 years or until a timber crop is produced, whichever comes first. Interest rates will be determined by the Secretary, but will not exceed 1 percent. No loan shall exceed \$1,000 per acre, and no more than 50,000 acres may be placed in the program.

The Agriculture and Food Act of 1981

The Agriculture and Food Act of 1981 (Public Law 97-98) addressed many of the resource problems identified earlier in the RCA process. It was the first farm bill to incorporate a significant conservation title (Title XV). Title XV authorized three new programs (not yet funded by congressional appropriations) and amended several existing programs.

Special Areas Conservation Program (Subtitle B).-- This program would direct additional technical and financial assistance to areas designated by the Secretary as having severe and chronic erosion or water-management problems. The Secretary would enter into long-term contracts with farmers and ranchers to provide cost sharing and technical assistance. The land user would agree to carry out provisions of a conservation plan approved by USDA and the conservation district. This program would resemble current USDA targeting of existing programs except that--

- Funds for the special areas program would be new appropriations rather than money redirected from existing sources.
- Special area projects would be implemented entirely through long-term contracts rather than through annual cost-sharing agreements.
- The agriculture committees of both houses of Congress would have an opportunity to comment on the Secretary's proposals to designate specific special areas.

The Secretary would ensure that all USDA conservation programs operating in a designated special area complemented the objectives established for the special area. The Secretary would use the technical services of USDA; the Commodity Credit Corporation; local, county, and state ASC committees; conservation districts, and other state and local agencies. The Secretary was authorized to fund--directly or through grants--research needed to develop new or improve existing technologies for controlling erosion or water-related problems in the special areas. Special areas may be designated at any time until September 30, 1991, and contracts may be written up to 10 years after designation.

Funding for the special areas program has not been requested by the President or appropriated by the Congress.

Amendments to the Small Watershed Program and Title III of the Bankhead-Jones Farm Tenant Act (Subtitle C).--This subtitle expands the Watershed Protection and Prevention Act to include Indian tribes or tribal organizations as local sponsors of projects. It increases from \$1 million to \$5 million the monetary ceiling for projects that can be approved by the SCS Chief without specific approval by Congress. It authorizes the Secretary to pay half the cost incurred by local organizations in acquiring land, easements, or rights-of-way to mitigate the effects of the project on fish or wildlife habitat. It adds conservation and development of energy resources as authorized objectives in conservation plans and agreements between the Secretary and landowners.

This subtitle also adds development of energy resources to the authorized purposes of land treatment under the Bankhead-Jones Farm Tenant Act.

Matching Grants for Conservation Activities (Subtitle D).--This subtitle authorized the Secretary to develop a program to assist local units of government to conserve soil, water, and related resources through annual grants made through state soil conservation agencies. The grant funds could be used only for noncapital expenditures associated with technical assistance to land users. These grants must augment rather than replace other technical and financial assistance programs. To be eligible for a grant, a local unit of government must have a long-range program approved by the state agency and an annual operating plan to implement the program and must arrange for matching funds. If the local program or plan addresses a problem that is primarily a national rather than a state or local priority, the unit need provide only 25 percent of the total cost of the project. USDA could meet up to 75 percent of the cost of activities directed to the national priorities of erosion control, water conservation, or reduction of upstream flood damages.

No funds have been appropriated for these grants. In fiscal year 1983, the President requested \$10 million for grants.

Conservation Loan Program (Subtitle E).--This subtitle authorized the Commodity Credit Corporation to make loans to farmers for measures to conserve natural resources and enhance the environment; such measures must be recommended by the local and state agricultural stabilization and conservation committees and included in a conservation plan approved by the local conservation district. The loans are to be for no more than 10 years and in amounts not to exceed \$25,000.

No funds have been requested by the President or appropriated by the Congress.

Reservoir Sedimentation Reduction Program (Subtitle F).--This subtitle authorized the Secretary to test the feasibility of reducing excessive sedimentation in existing reservoirs. It authorizes the Secretary to identify no more than five publicly owned reservoirs where sedimentation is a critical problem because of erosion in the watershed drainage area of the reservoir. The Secretary will enter an agreement with the local conservation district, the appropriate state agency, and local units of government to develop a plan for solving the problem. The Secretary will submit the completed plans to the agriculture committees of both houses of Congress for their approval before work is begun.

Volunteers for USDA Programs (Subtitle G).--The Secretary is authorized to use volunteers in carrying out the programs of the Department, subject to regulations of the Office of Personnel Management. Volunteers serve without compensation and must not displace any employee, including local, county or state employees. Volunteers are not considered as federal employees except in regard to injury compensation. Regulations for administering volunteer programs have been issued, and agencies are implementing such programs.

Resource Conservation and Development Program (Subtitle H).--This subtitle updates and redirects the Department's Resource Conservation and Development Program. It increases the emphasis on land conservation, water management, community development, and other elements including energy conservation, protection of agricultural land, or protection of fish and wildlife habitat. It sets a cap of 225 active program areas, authorizes the Secretary to withdraw assistance from an area if assistance is no longer needed, and sets a limit of \$15 million per year for loans.

Farmland Protection Policy Act (Subtitle I).--The Act mandated a new program to ensure that federal actions do not encourage the unnecessary conversion of farmland to nonfarm uses.

The Act requires the Secretary of Agriculture to develop criteria for identifying the effects of federal programs on the conversion of farmland to nonagricultural uses. It also requires all federal agencies to use these criteria to identify and take into account the adverse effects of federal programs on the preservation of farmland; consider alternative actions, as appropriate, that could lessen such adverse effects; and ensure that federal programs are compatible with state, local, and private policies and programs to protect farmland. It also permits the Secretary to make available to other governmental units at local, state, and federal levels information useful in restoring, maintaining, and improving the quantity and quality of farmland. It encourages the Secretary to provide technical assistance to states, local governments, and nonprofit organizations that want to develop programs or policies to limit the conversion of productive farmland to nonfarm uses.

The Act does not give the federal government the right to regulate the use of nonfederal land. It affects only agencies of the federal government and only when they are considering undertaking or assisting projects that would convert farmland to other uses. Where no federal activity is involved, the Act does not apply; in addition, it does not apply to the acquisition or use of farmland for purposes of national defense. The Act does not require a federal agency to modify any project solely to avoid or minimize the effects of conversion of farmland.

The Soil Conservation Service is the agency responsible for the implementation of the Act. As required by the Act, the Department (in cooperation with other units of the federal government and after considering public comments) formulated criteria for identifying the effects of federal programs on farmland conversion. These criteria were published in the Federal Register on July 5, 1984, and went into effect on August 6, 1984. They are in Title 7 of the Code of Federal Regulations, Part 658. The Secretary designated the National Agricultural Library as the national information center required by the Act.

Miscellaneous Provisions (Subtitle J).--This subtitle contained various independent provisions, not all relating to conservation.

- Local Search and Rescue Operations.--The Secretary is authorized to offer SCS personnel, vehicles, and other equipment to help in search and rescue operations when requested by local authorities.
- Reclamation.--The Surface Mining Control and Reclamation Act of 1977 is amended to allow experimental reclamation projects carried out on all lands within a hydrologic unit of not more than 25,000 acres, if the Secretary determines that such a project would be more effective than treatment confined to individual parcels of land.
- Payments for Land Removed from Production for Conservation Purposes.--The Secretary is authorized to make payments to owners and operators of cropland that normally freezes to a depth of at least 4 inches who remove land from agricultural production in order to install enduring conservation measures that involve excavation of the soil. Payments on such idled cropland may not exceed one-half the annual rent that would locally be paid for the same acreage of similar land and may not be made on more than one-half of one percent of the cropland in a county in any year. Also, the board of the local conservation district must approve the conservation measures for which financial aid is requested.
- Conservation Tillage.--Congress urged and requested that the Secretary of Agriculture (1) direct the attention of farmers to the costs and benefits of conservation tillage and (2) conduct a program of research to resolve questions about the advantages and disadvantages of conservation tillage. The Secretary has taken action to implement both recommendations.

Conservation Provisions of Other Titles.--Several other titles in Public Law 97-98 include provisions that affect soil and water conservation.

● Research Programs.--Several of the amendments to the National Agricultural Research, Extension, and Teaching Policy Act of 1977 that are grouped in Title XIV of the 1981 Agriculture and Food Act bear upon natural resources and conservation. In Section 1402 Congress called for reaffirmation and expansion of national support of cooperative research, extension, and teaching in several areas of agricultural interest, including the following natural resource objectives:

- sustaining soil productivity;
- developing more cost-effective and practical conservation practices;
- managing water in stressed environments;
- protecting the quality of the nation's surface water and ground water resources; and
- implementing the research recommendations of a USDA study on organic farming.

In Section 1405 Congress directed the Secretary to coordinate all USDA agricultural research, extension, and teaching activities with the resource appraisals conducted by the Forest Service and Soil Conservation Service.

In Section 1440(a) two new subtitles were added to the 1977 Act: "Subtitle L--Aquaculture" and "Subtitle M--Rangeland Research." These subtitles provide for grants to land-grant institutions, agricultural experiment stations, and other laboratories with appropriate capacity to conduct research on aquaculture and rangeland management and provide for national advisory boards. Subtitle M, while concerned primarily with increasing rangeland productivity, also requires research on methods of managing rangeland watersheds to maximize efficient use of water and improve water yield, water quality, and water conservation, to protect against onsite and offsite damage of rangeland resources from floods, erosion, and other detrimental influences, and to remedy unsatisfactory and unstable rangeland conditions.

● Major Commodity Programs.--In Titles III, IV, V, and VI of the 1981 Act, which dealt with the commodity programs for wheat, feed grains, cotton, and rice from 1982 through 1985, Congress maintained the requirement that cropland withdrawn from production under these programs must be devoted to conservation uses in accordance with regulations issued by the Secretary. These regulations shall assure that the land is protected from weeds and from wind and water erosion. Also, Congress again provided that such land may be devoted to wildlife food plots or wildlife habitat and authorized the Secretary to pay an appropriate share of the cost of establishing these uses.

Colorado River Salinity Control Program

In 1984, Public Law 98-569 authorized a separately funded program to reduce salinity in the Colorado River Basin to replace the program previously conducted through other USDA programs (see page 24). Regulations for implementation of this program have not been issued, but the new program is expected to be administered by the Agricultural Stabilization and Conservation Service (ASCS) with participation from other USDA agencies in activities within their expertise.

The 1984 legislation authorizes a program to improve onfarm water management and reduce watershed erosion on nonfederal lands and national forest lands. New Section 202a(c) authorizes USDA to participate in planning, installing, maintaining, and monitoring the effectiveness of onfarm irrigation management measures to reduce the salt load of the Colorado River, including improvement of related laterals and of watershed erosion management. It also authorizes related research, demonstration, and education activities.

It authorizes the Secretary to use existing agencies, ASC committees, and conservation districts to provide technical and cost-sharing assistance to land users who voluntarily implement salinity control plans through contracts and agreements. The contracts must require the restoration of incidental fish and wildlife values foregone and the continuing operation and maintenance of installed salinity control measures.

Cost sharing for salinity control measures under section 202(c) will differ from cost sharing under ACP in several important respects:

- it will be made available not only to agricultural producers but also to local governments and nongovernmental entities, such as irrigation districts and canal companies;
- it will have its own cost-share levels and payment limitations; and
- thirty percent of USDA cost-share payments will be reimbursable by the states from hydro receipts in the Upper or Lower Colorado River Basin Funds.

The Secretary shall submit a report to Congress by January 1, 1988, and at 5-year intervals thereafter, evaluating the operation of this program.

Rural Clean Water Program (RCWP)

Provisions in the Agriculture, Rural Development and Related Agencies Appropriations Acts of 1980 and 1981 authorize the RCWP (see page 22).

Congress appropriated \$50 million in fiscal year 1980 and \$20 million in fiscal year 1981 to fund this program. ASCS administers the program and SCS

has responsibility for technical assistance. Extension Service provides information and education as well as technical assistance to projects. Participation in the program is voluntary. The program provides financial and technical assistance to private landowners in 21 project areas where water quality problems are caused by agricultural activities. Through long-term contracts of 3 to 10 years, assistance is provided for installing best management practices. All the areas were identified by EPA-sponsored state or regional water quality management plans prepared pursuant to Section 208 of the Clean Water Act. All the projects should be completed within 15 years of inception.

SOIL CONSERVATION SERVICE PROGRAMS

Conservation Technical Assistance (CTA)

CTA is SCS's largest program; it used 58 percent of the SCS budget in fiscal year 1983. CTA was authorized by Public Law 74-46, the Soil Conservation Act of 1935,(1) which established SCS. Public Law 74-76 authorized a comprehensive program to control or prevent soil erosion for the purposes of soil and water conservation, flood control, prevention of damage to reservoirs and to the navigability of rivers and harbors, and preservation of natural resources.(2) CTA is based on provisions of Public Law 74-76 authorizing SCS to:

- make agreements to furnish technical or financial assistance to any agency or person, subject to conditions needed for the purposes of the Act;
- conduct investigations relating to the character of soil erosion and needed preventive measures; and
- carry out such measures on private or public land.

(1) Secs. 1-6, 49 Stat. 163-4 (1935), 16 U.S.C. 590a-f, established SCS to exercise the powers conferred on the Secretary of Agriculture by other provisions of the Act.

Public Law 74-46 was amended in 1936 by Public Law 74-461, 49 Stat. 1148, as amended, 16 U.S.C. 590 (g, h, i-k, l-q), which authorized the Secretary of Agriculture to make payments for conservation and other purposes. Public Law 74-461 (which will be discussed under ASCS programs) entitled the entire authority "The Soil Conservation and Domestic Allotment Act."

(2) Conservation operations to improve farm irrigation and land drainage were not authorized by Public Law 74-76 but by language in appropriations legislation, beginning with the Department of Agriculture Appropriations Act for 1940, 53 Stat. 939, 973 (1939).

The preventive measures include (but are not limited to) "engineering operations, methods of cultivation, growing of vegetation, and changes in use of land." (3)

Aid to Land Users.--Most technical assistance is delivered to or through a nationwide system of about 3,000 special-purpose local conservation districts (4), which are authorized by state laws. (In most states, these districts are called soil conservation soil and water conservation, or natural resources districts.) USDA has a memorandum of understanding with each district to assist in carrying out a long-term district conservation program. SCS has a supplemental memorandum to provide technicians for resource planning and conservation and development work. The SCS district conservationist helps the district prepare its annual plan, which assigns priorities to particular lands, and prepares an SCS annual plan based on USDA priorities for CTA and other conservation programs.

Assistance in preparing and applying individual conservation plans is the main form of technical assistance SCS provides to district cooperators. This assistance includes interpreting existing soil survey data and conducting site-specific investigations of soil, plant, water, and other physical conditions to determine appropriate alternative systems of land use and land treatment. It also includes assistance in applying the land treatment systems described in the plan, including design, layout, and installation of conservation practices. Until the new Colorado River Basin Salinity Control Program is implemented, onfarm salinity control plans in the Grand Valley and Uinta Basin areas of the Colorado River Basin are being prepared and implemented as a CTA activity (see page 23).

Preparation of district-approved conservation plans is required for participation in other SCS and ASCS programs and required by several state and local laws. In some cases, implementation of the conservation plan is also required.

Farmers are not the only land users eligible to receive technical assistance; it may be made available to other land users, citizens' groups, youth groups, recreation groups, and garden clubs. Also, assistance is provided to local governments, states, and federal agencies that manage publicly owned land.

Aid to State and Local Governments for Planning and Regulation.--SCS provides technical assistance, usually through the conservation districts, to local and state agencies in planning rural development projects selected by state and county rural development committees. These committees are composed of state and local government represen-

(3) 16 U.S.C. 590a-c, e.

(4) The legal authorities for conservation districts will be discussed in subsequent chapters on State Laws and Local Laws.

tatives who work cooperatively with state and county Food and Agriculture Councils, which are composed of field personnel of USDA agencies.

This activity is specifically authorized in Section 603(c) of the Rural Development Act of 1972, which requires the Secretary of Agriculture to use state, regional, district, county, or other USDA offices to enhance rural development.(5) As part of SCS participation in the rural development program, SCS district-level personnel interpret soils to help local interests find appropriate sites for homes, commercial and industrial developments, and community facilities.

In addition, SCS state and district-level personnel help state and regional planning agencies with the continuing statewide and areawide nonpoint-source pollution control planning conducted under Section 208 of the Clean Water Act.(6) This activity is authorized by an interdepartmental agreement between USDA and the U.S. Environmental Protection Agency, pursuant to Section 304 (k)(7) of the Clean Water Act. SCS personnel also assist the districts (which are authorized by state law) in the preparation of soil conservation standards used to implement state and local laws relating to erosion and sediment control and nonpoint-source pollution controls and assist in developing state coastal zone management plans. SCS district-level personnel also participate in reviews of development plans and building-permit applications for conformity to state and local regulations governing erosion control, nonpoint source pollution control, coastal zone management, and flood plain use.

Resources Inventory

SCS derives basic authority to collect and interpret natural resources data from Section 1 of Public Law 74-46, which authorizes surveys and investigations relating to the character of soil erosion and measures to control it.(8) The first such nationwide survey, the National Inventory of Soil and Water Conservation Needs (CNI), was established by Secretary of Agriculture's Memorandum 1396 (April 10, 1956). The CNI was conducted for each county in the United States in 1958 and was updated in 1967.

SCS's current inventory and monitoring program, apart from the snow survey and water supply forecasting, is being carried out under more recent legislation: Section 302 of the Rural Development

Act of 1972(9) and Section 5(a) of the Soil and Water Resources Conservation Act of 1977 (RCA).(10)

Section 302 authorizes a continuing land inventory and monitoring program including--but not limited to--identification of prime farmland, studies and surveys of erosion and sediment damages, flood plain identification and use, land use changes and trends, and environmental degradation resulting from improper use of soil, water and related resources. It also directs the Secretary of Agriculture to issue a report, at least once every 5 years, on the condition of the nation's soil, water, and related resources. Section 302 is the enabling authority for the periodic National Resources Inventory (NRI) and for much of the special-purpose monitoring and inventory work carried out by SCS. Special-purpose inventorying is also authorized by Section 5(a) of the RCA, which directs the Secretary of Agriculture to conduct a continuing appraisal of soil, water, and related resources.

The National Resources Inventory.--The 1977 NRI updated the estimates of land use and conservation needs in the 1967 Conservation Needs Inventory. It included nationwide data on 11 resource elements: land cover, small water areas, flood-prone areas, irrigated land, conservation needs for various land uses, water erosion, wind erosion, prime farmland, potential for new cropland, land capability classification, and wetlands.

The 1982 NRI monitored previous sampling sites to update the status of the 11 resource elements inventoried in 1977 and added 11 new resource elements to meet RCA needs. The additional elements were: land use, cropping history, range condition and trends, critically eroding areas, saline and alkali areas, windbreaks, conservation practices on the land, riparian vegetation, wildlife habitat diversity, pastureland condition, and other vegetation data. Data on the 22 elements were recorded at approximately one million sites in more than 300,000 primary sampling units.

Water Information Collection.--A special inventory was initiated in 1983 to collect water data required for the 1985 RCA appraisal that could not be collected by the NRI process of monitoring at sampling points. This inventory is mainly compiled from data in U.S. Geological Survey reports and The Census of Agriculture. It contains information concerning water supply quantities, crops, and value of production from land irrigated by water from subsurface and surface supplies, effects of changes in water supply, areas short of irrigation water, point- and nonpoint-source pollution of surface water, quantities and sources of sediment loadings,

(5) Public Law 92-419, 86 Stat. 657, 675, as amended, 7 U.S.C. 2204a.

(6) Public Law 92-500, 86 Stat. 816, 839, as amended, 33 U.S.C. 1298.

(7) Sec. 51, the Clean Water Act of 1977, Public Law 95-217, 91 Stat. 1566, 1588 (1977).

(8) 49 Stat. 163 (1935), 16 U.S.C. 590.

(9) 86 Stat. 670 (1972), 7 U.S.C. 1010a.

(10) Public Law 95-192, 91 Stat. 1407, 1408 (1977), 16 U.S.C. 2004.

upstream flood damages and watershed protection, wetlands acreage and use, and potable water in small communities and rural households. A similar inventory may be conducted to supplement the 1987 NRI.

Snow Survey and Water Supply Forecasting.--This annual activity has been led by SCS (under Section 1 of Public Law 74-46) since Secretary of Agriculture's Memorandum 870 (July 1, 1940). It consists of determining the depth and water equivalent of the snowpack at a network of sites in the western states and Alaska in order to predict spring streamflows and water supplies. The monitoring is done in cooperation with federal, state, and local agencies, irrigation and power companies, and the Province of British Columbia. The water supply forecasts are made available to federal, state, and local agencies with water management responsibilities, irrigation water users, and industrial water users.

Important Farmlands Mapping.--This program includes generalized mapping of prime farmlands on the state level and more detailed mapping of counties where prime farmlands, unique farmlands, and other important farmlands are undergoing significant land use changes. The maps are published according to priorities set by availability of soil data and national, state, or local needs and are furnished to interested state and local agencies. This program receives local as well as national funding.

Wind Erosion Conditions for the 10 Great Plains States.--Data are gathered for this inventory every year, during the November 1 to June 1 blowing season. The data include estimates of damages to croplands, rangelands, crops, and cover; lands protected from damage by emergency tillage; lands in condition to blow; and major factors contributing to wind erosion. The data are distributed to SCS field personnel and others with responsibilities for soil erosion control in high-hazard areas.

Localized or Specialized Studies.--Studies of this type are undertaken on an as-needed basis. They have recently included county-level resource inventories and inventories of encroachment of brush on rangeland in Texas, ephemeral gully erosion, and local salinity problems.

Short-duration Phenomena Inventories.--These deal with resource problems resulting from natural events such as droughts, hail, floods, hurricanes, prolonged temperature extremes, fires, plant diseases, volcanic eruptions, and other events.

Soil Survey

SCS carries out the National Cooperative Soil Survey program of preparing and publishing soil surveys in cooperation with state agricultural experiment stations, other state agencies, and (where federal

lands are surveyed) other federal agencies. This program was initiated in 1899 under general USDA authorities to acquire and diffuse useful information about agriculture(11) and more specific language in the Agricultural Appropriations Act of 1895.(12)

Under the authorities in Public Law 74-76 the Soil Conservation Service began conducting soil conservation surveys in cooperation with state, local, and other federal agencies.(13) For a time there were two active soil survey programs--one in the Soil Conservation Service and another in the Bureau of Plant Industry, Soils, and Agricultural Engineering. Through Secretary's Memorandum 1318 of October 14, 1952, Secretary Charles Brannan merged the two operations, effective November 23, by transferring the soil survey work and staff from the Bureau to SCS.

Increasing demands for soil surveys by local governments in rural areas undergoing development in the 1960's led to the enactment in 1966 of Public Law 89-560. This act authorizes USDA to provide soil surveys to assist public agencies in community planning and resource development for the purposes of environmental quality, resource conservation and multiple use, and reduction of sediment and other pollution. Public Law 89-560 specifically authorizes USDA to accelerate and intensify particular soil surveys at the request of state and other public agencies and to make reasonable efforts to assure that the requesting agencies pay a substantial part of the cost of such surveys.(14)

Soil surveys now form the basis of nearly all conservation planning in both agricultural and built-up areas. Over two-thirds of the United States is soil mapped. Soil surveys of many counties or similar-sized areas have been published, although not all of them are up to date.

Published soil surveys include maps showing the boundaries of each kind of soil in the county or area surveyed, descriptions of each kind of soil according to a nationwide system of soil taxonomy, and interpretations of soil suitability for land uses, including farming, range, woodland, recreation, wildlife habitat, and urban development. Interpretations for farmers include suitability for particular crops, estimated crop yields, soil erosion potential, appropriate conservation

(11) Act of May 15, 1862, The Department of Agriculture Organic Act, 12 Stat. 87, as amended, 7 U.S.C. 2201.

(12) Act of March 2, 1895, 28 Stat. 727, 735. This law provided for "investigation of the relation of soils to climate and organic life" and "investigation of the texture and composition of soils, in the field and laboratory."

(13) Sec. 1, 49 Stat. 163 (1935), 7 U.S.C. 590a.

(14) Sec. 1, 80 Stat. 706 (1966), 42 U.S.C. 3271.

measures, areas suitable for waste disposal, and areas suitable for recreation. Interpretations for ranchers include range and grazing management, and potential for range, pasture, hay and silage, wildlife habitat, and recreation.

Plant Materials Centers

USDA plant materials work predates the establishment of SCS. It started in 1934 in the erosion control nurseries of the Bureau of Plant Industry (the precursor of the Agricultural Research Service). The nurseries were transferred to the Soil Erosion Service (the precursor of SCS) by Secretary of Agriculture's Memorandum 665 on March 25, 1935. The work of the erosion control nurseries was then reauthorized by the language of Section 1 of Public Law 74-46 that authorizes USDA to conduct "investigations . . . relating to the character of soil erosion and preventive measures needed" and to carry out such measures, including "the growing of vegetation."(15)

Executive Order 10516 of January 26, 1954, placed the federally owned erosion control nurseries under Title III of the Bankhead Jones Farm Tenant Act. This act simplified SCS cooperative arrangements with state agricultural experiment stations and conservation districts by providing that SCS could transfer the real estate used for the program to cooperating agencies, "with or without consideration."(16) At about the same time, the nurseries were renamed "plant materials centers." In addition, the program emphasis changed from producing large quantities of erosion-controlling plants for distribution through local conservation districts to assembling, selecting, testing, releasing, and encouraging commercial production of plants that can be used to support SCS programs.

The centers also develop and test techniques for making effective use of the plants and test new plants and cultural methods in actual use conditions on the lands of district cooperators or the properties of other cooperating agencies.

Resource Appraisal and Program Development

This program was authorized by the Soil and Water Resources Conservation Act of 1977 (RCA).(17) The Act directs the Secretary of Agriculture to:

- conduct a continuing appraisal of the soil, water, and related resources of the nation;
- develop and periodically update a national soil and water conservation program;

(15) 48 Stat. 163 (1935), 16 U.S.C. 590.

(16) 50 Stat. 525 (1937), 7 U.S.C. 1010, 1011.

(17) Public Law 95-192, 91 Stat. 1407 (1977), 16 U.S.C. 2001-2009.

- report to the Congress on the appraisal and the national conservation program at 5-year intervals, as long as the Act is in effect; and

- make annual progress and evaluation reports to accompany budget requests.(18)

The Act provides that the activities authorized will terminate at the end of December 1985, unless the Act is extended.(19) It defines "soil, water, and related resources" to mean those resources that come within the scope of SCS activities.(20) It states that the national conservation program must be consistent with the roles and program responsibilities of other federal agencies and of state and local governments.(21)

Section 5 directs that the continuing appraisal include data on soil, water, and related resources; relevant federal and state laws and programs; costs and benefits of alternative soil and water conservation practices; and costs and benefits of alternative irrigation techniques and the impact of such techniques on soil and water conservation, crop production, and the environment.(22) Section 5(b) directs that the appraisal utilize data collected from multiple sources and that it establish an integrated system capable of comparing alternative uses of resources and identifying local, state, and national roles pertaining to soil and water conservation, resource use and development, and environmental improvement. Section 5(c) directs that the appraisal be made in cooperation with conservation districts, state conservation agencies, other state and local organizations, and citizens' groups.(23)

Section 6 authorizes the preparation and updating at 5-year intervals of a national conservation program, which SCS is directed to use as a guide in carrying out its activities. The program is to set forth direction for future USDA conservation efforts, based on the findings of the resources appraisal and the long- and short-term needs of the nation, landowners, and land users. Like the appraisal, the program is to be developed with public participation and in cooperation with conservation districts and state and national organizations and agencies.

The program must identify and evaluate alternative national conservation strategies in alternative time frames and must include analyses of the federal and

(18) Sec. 4(c), 16 U.S.C. 2003.

(19) Sec. 10, 16 U.S.C. 2009.

(20) Sec. 3, 16 U.S.C. 2002.

(21) Sec. 4(c), 16 U.S.C. 2003.

(22) 16 U.S.C. 2004.

(23) Ibid.

nonfederal inputs needed to implement the program. It must include:

- analyses of national soil, water, and related resource problems and the effectiveness of existing federal, state, and local conservation laws and programs;
- analyses of the costs and benefits of alternative soil and water conservation practices and irrigation techniques and the impacts of the irrigation techniques on conservation, crop production, and the environment; and
- analyses of the practicability, desirability, and feasibility of collecting and transporting organic wastes for use in land treatment-- including agricultural, municipal, and industrial wastes.

Small Watersheds Program

This program was authorized in 1954 by Public Law 83-566, the Watershed Protection and Flood Prevention Act.(24) The Act has been amended numerous times to redefine federal and local costs and other responsibilities, include new project purposes, and expand the definition of the sponsoring "local organization" to include additional kinds of organizations.(25) The Act, as amended, is commonly known as Public Law 566.

Public Law 566 authorizes the Secretary of Agriculture to assist local organizations to prepare and carry out works of improvement on watersheds not exceeding 250,000 acres for the purposes of flood prevention; conservation, development, utilization, and proper disposal of water; and conservation and proper use of land.(26) The Act provides that the local organization may be a state, Indian tribe, local government, conservation (or other special-purpose) district, nonprofit association, or combination of such organizations.(27) The local organization's application for planning assistance

must first be approved by a responsible state agency.(28) SCS assistance is dependent on the availability of planning funds and the priority recommendations of the state agency.

SCS works with the local organization to investigate the land and water problems of the watershed and examine alternative solutions, including non structural solutions to flooding problems,(29) in cooperation with other federal agencies.(30) SCS and the local organizations must agree on the selected plan. Most watershed plans include combinations of land treatment measures for sediment control and flood prevention. They may also include nonstructural flood prevention measures(31) and structural measures for flood prevention, agricultural water management, public recreation, fish and wildlife, municipal or industrial water supply, water quality management, water power, ground water recharge, control of agriculture-related pollution and disposal of solid wastes. Plans may not include any single flood prevention structure with more than 12,500 acre-feet of floodwater detention capacity or any single multiple-purpose structure with more than 25,000 acre-feet total capacity.(32)

Watershed plans may include both cost-shared and non-cost-shared land treatment measures. Cost-shared measures are installed under long-term contracts based on conservation plans. The federal cost share for such measures may not exceed the rate of assistance for similar measures under other national programs.(33) The Forest Service is responsible for providing technical assistance for the forestry aspects of planned land treatment measures.

The federal contribution to the costs of structural measures depends on the purpose of the measures, and the estimated federal contribution for construction determines the method of approving plans for operation. The Chief of SCS may begin operations on small projects as soon as funds become available.

(24) 68 Stat. 666 (1954), as amended, 16 U.S.C. 1001-1009.

(25) Public Law 84-1018, 70 Stat. 1088 (1956); Public Law 85-624, 72 Stat. 563 (1958); Public Law 85-865, 72 Stat. 1605, 16 U.S.C. 1004 (1958); Public Law 86-468, 74 Stat. 131 (1960); Public Law 86-545, 74 Stat. 254 (1960); Public Law 87-170, 75 Stat. 408 (1961); Public Law 87-703, 76 Stat. 605 (1962); Public Law 89-337, 79 Stat. 1300 (1965); Public Law 90-361, 82 Stat. 250 (1968); Public Law 92-419, 86 Stat. 657 (1972); Public Law 95-113, 91 Stat. 913 (1977); Public Law 97-98, 95 Stat. 1213 (1981).

(26) Sec. 2-3, Public Law 566, 16 U.S.C. 1002-1003.

(27) Sec. 2, 16 U.S.C. 1002.

(28) Sec. 3, 16 U.S.C. 1003.

(29) Consideration of nonstructural solutions is required by Section 73 of the Water Resources Development Act of 1974, 88 Stat. 12, 33 U.S.C. 701b-11.

(30) Sec. 5-12, Public Law 566, 16 U.S.C. 1005, 1008.

(31) Nonstructural measures include acquisition of land rights in flood plain land, flood plain land use regulation, and flood proofing or relocating existing improvements. Section 73 of the Water Resources Development Act of 1974 provides that whenever plans recommend nonstructural measures the federal cost share of such measures shall be at least 80 percent of the total cost.

(32) Sec. 2, Public Law 566, 16 U.S.C. 1002.

(33) Ibid., Sec. 3, 16 U.S.C. 1003.

But projects that entail an estimated federal contribution of more than \$5 million to construction costs or that include one or more structures with more than 2,500 acre-feet of water-holding capacity must first be approved by resolutions of the appropriate House and Senate committees.(34)

The federal government pays:

- all engineering and construction costs for flood prevention;
- all engineering and up to 50 percent of construction costs for agricultural water management, eligible public recreation development, and fish and wildlife;
- engineering costs for water quality management, and
- up to 50 percent of the costs of land rights and basic facilities for eligible public recreation development and fish and wildlife, including the cost of land for mitigating damages to fish and wildlife.(35)

All other costs are borne by the local organization,(36) which may obtain loans from the Farmers Home Administration or, in some special cases, advances from SCS to finance its costs.(37) The local organization is responsible for issuing bids and letting construction contracts (unless SCS has agreed to administer the contracts), acquiring water and land rights, and operating and maintaining the project. The local organization is also responsible for obtaining agreements from landowners and operators to plan and install land treatment measures. Public Law 566 requires that at least one-half of the land above retention reservoirs must be covered by conservation plans and by agreements to implement the plans.(38) SCS policy requires in addition that:

- at least one-half of the land above both floodwater-retarding dams and retention reservoirs must be adequately protected from erosion;

(34) Ibid., Sec. 5, 16 U.S.C. 1005. The appropriate committees for projects containing no single structure of more than 4,000 acre-feet total water detention capacity are the House and Senate Agricultural Committees; the appropriate committees for projects containing larger reservoirs are the respective Public Works Committees.

(35) 16 U.S.C. 1004.

(36) Ibid.

(37) Sec. 8, 16 U.S.C. 1006a.

(38) Sec. 4, 16 U.S.C. 1004.

- land treatment measures must be installed (or their installation planned) in at least 75 percent of sediment-source areas that are a hazard to structural measures; and
- onfarm practices needed to realize benefits from drainage and irrigation measures must be installed.

Flood Prevention Program

Section 13 of Public Law 75-534, the Flood Control Act of 1944, authorized the Secretary of Agriculture to undertake works of improvement for runoff and waterflow retardation in 11 large watersheds, in conformity to overall planning reports.(39) The watersheds are Buffalo Creek, New York; Coosa River, Georgia and Tennessee; Little Sioux River, Iowa and Minnesota; Little Tallahatchie River, Mississippi; Los Angeles River, California; Middle Colorado River, Texas; Potomac River, Virginia, West Virginia, Maryland, and Pennsylvania; Santa Ynez River, California; Trinity River, Texas; Washita River, Oklahoma and Texas; and Yazoo River, Mississippi. They cover 30 million acres. All work in two of the watersheds--Buffalo Creek and Coosa River--has now been completed, and work in two others--Middle Colorado River, Texas, and Santa Ynez River, California--is nearing completion.

The reports on watersheds that were approved by Congress identified and analyzed flooding and sedimentation problems and proposed remedial measures. Then, the Forest Service and SCS began developing work plans for subwatersheds. The reports had emphasized mainly land treatment, but in the 1950's amendments to the Act authorized channel improvements and water detention structures.

Initially SCS and the Forest Service shared responsibility for USDA flood prevention, but Secretary's Memorandum 1325 (April 1, 1953) made SCS responsible for administering all USDA flood prevention and river basin activities. After Public Law 566 was enacted in 1954, Secretary's Memorandum 1325 and two amendments to Public Law 566 made it possible to administer the flood prevention program along the same lines as the small watershed program. Public Law 534 subwatershed projects have the same objectives and purposes as small watershed projects, the same participation by the Forest Service, and the same requirements concerning local organization sponsorship, cost sharing, and responsibilities for land and water rights acquisition and operation and maintenance of projects.

The relevant amendments to Public Law 566 are:

- Public Law 86-468 of 1960, which authorized the Secretary of Agriculture to include works of improvement for the conservation, development, utilization, and proper disposal of water in the 11 watershed programs authorized

(39) 58 Stat. 887, 905.

by Public Law 534.(40) The Act did not specifically condition federal contributions to multiple-purpose water improvements or local cost sharing (this was done administratively), but it directed that the same loans and advancements that were available to help local organizations finance their share of costs in the Small Watersheds Program be made available to local organizations in the Flood Prevention Program.(41)

- Public Law 92-419 of 1972, which authorized USDA to enter long-term agreements to carry out land treatment measures in both small watershed and flood prevention projects.(42)

Since the 11 flood prevention projects were individually authorized by the Flood Control Act of 1944, subwatershed planning assistance does not require state agency approval and implementation of plans does not require congressional committee approval. SCS administers construction contracts, unless it is agreed that the local organization shall administer them.

Emergency Watershed Protection Program

Section 15 of the Flood Control Act of 1944 authorized USDA to undertake emergency measures to retard runoff and prevent erosion that would protect lives and property from floods and products of erosion in cases where sudden impairment of a watershed has resulted from fire or other natural causes. Section 15 also authorized up to \$100,000 for annual funding of emergency measures,(43) and this authorization was raised to \$300,000 by Section 216 of the Flood Control Act of 1950.(44)

Under these authorities, SCS developed a program of technical and financial assistance to remedy hazardous watershed conditions resulting from floods, fires, windstorms, earthquakes, volcanic action, and droughts. However, supplemental legislation was needed every year for emergency measures that could not be funded under the authorizing legislation. The program was reauthorized without appropriations limits in Sections 403-404 of Public Law 95-334, the Agricultural Credit Act of 1978.(45) Although both authorities remain in effect, the Emergency Watershed Protection Program (EWP) is now funded under Public Law 95-334.

(40) Sec. 1, 74 Stat. 131, (Sec. 8, Public Law 566) 16 U.S.C. 1006a.

(41) Ibid.

(42) Title II, Sec. (c), 86 Stat. 667, (Sec. 3(6) Public Law 566) 16 U.S.C. 1003.

(43) 58 Stat. 907, as amended 33 U.S.C. 701b-1.

(44) 64 Stat. 184, 33 U.S.C. 701b-1.

(45) 16 U.S.C. 2203-2204.

Recipients of assistance may include public or private landowners or land managers that have legal title or responsibilities for watershed protection, but have insufficient funds or other resources to provide adequate relief from hazardous conditions. Recipients must be represented by a project sponsor, which must be a state, local government, or Indian tribe that has legal authority to obtain needed land rights, water rights, and permits, and which agrees to provide for operation and maintenance of completed work.

Where the near-term probability of damage to life or property is high enough to demand immediate federal action, federal emergency funds may bear up to 100 percent of the cost of construction of emergency measures. In this situation, funds are obligated within 10 days of receipt, unless conditions do not permit beginning construction activities, and work must be completed within 30 days unless the Chief of SCS grants an extension.

Where the near-term probability of damage to life or property is somewhat less but is high enough to constitute an emergency, federal funds may bear up to 80 percent of construction costs, and funds must be obligated and construction completed within 220 days after receipt of funds, unless the Chief grants an extension.

Cooperative River Basin Surveys

These studies are authorized in Section 6 of Public Law 83-566, which authorizes USDA to cooperate "with other Federal and with State and local agencies to make investigations and surveys of the watersheds of rivers and other waterways as a basis for the development of coordinated programs."(46) These studies must be requested by an agency of federal, state, or local government. They are undertaken to meet water and related land objectives of the requesting agency or (in the case of the request of a supervisory state agency) of a special-purpose agency organized under state law, such as a conservation district or regional planning board. Problems dealt with include studies of erosion and sediment damage to rural lands and properties; flood-hazard reduction; identification of prime farmland and methods to preserve it; agriculture-related water pollution; agricultural drought problems and irrigation requirements; opportunities for water conservation; impaired drainage of agricultural lands, and water needs for livestock, rural domestic use, fish and wildlife, forest-based industries, municipalities, and other industries.

The studies assist in appraising water and related land resources, and define and determine inventories of resources and associated problems for use by other agencies in plan formulation.

(46) 68 Stat. 668, 16 U.S.C. 1006.

Assistance is provided through field advisory committees composed of SCS and Forest Service representatives and chaired by SCS. Priority for starting cooperative studies is based on date of application, readiness of the requesting agency to participate, importance or significance of the problems to be studied, monetary or in-kind contributions of the requesting agency, sequence of related ongoing and future studies, potential for implementation, cost, and duration and other factors affecting the effectiveness of the study.

Flood Plain Management Studies

This program is conducted under the provisions of Section 6 of Public Law 566, but was initiated in response to the recommendation of a 1966 Presidential Task Force that federal agencies with authority to study flood problems should assist communities to determine flood hazards, consider alternative methods--including nonstructural methods--to reduce flood damages, and arrive at flood plain management decisions.(47)

Local governments, communities, conservation districts, or regional planning agencies that need flood plain management studies apply through the responsible state (flood plain management) agency. The state agency determines priority for studies within the state, including studies requested by the state. But SCS priority is also based on the same factors that determine priority for cooperative river basin studies. Local or state requestors are encouraged to make monetary or in-kind contributions to studies.

Each flood plain management study is based on a plan of study agreed to by the applicant, the responsible state agency, and the SCS state conservationist. The plan of study sets forth the responsibilities of the applicant, the state, and USDA in carrying out the study and interpreting and issuing the data.

Studies may include identifying flood hazard areas and mapping the flood plain, inventorying natural values in the flood plain and identifying ways to preserve them, preparing and analyzing the effects of alternative flood plain management plans, and interpreting technical data.

The generated information not only serves as the basis for recommendations to local applicants, but is used by other federal agencies, such as the Farmers Home Administration, to determine the flood hazard of proposed developments.

Flood Insurance Studies

SCS carries out flood insurance studies at the request of the Federal Emergency Management Agency

(47) Task Force on Federal Flood Control Policy, A Unified National Program for Managing Flood Losses, H. Doc. 465, 89th Congress, 2d Sess. (1966).

(FEMA) on the basis of annual interagency agreements. These studies are authorized by Sections 1360 and 1371 of the National Flood Insurance Act of 1968 as amended. Section 1360 authorizes FEMA to make agreements with USDA and other federal departments and agencies for reimbursable studies to identify flood risk and mudslide risk zones and estimate the extent and frequency of flooding.(48) These studies are needed to enable communities to participate in the National Flood Insurance Program.(49)

Section 1371 authorizes similar interagency agreements with USDA to undertake studies to identify and determine hazards in areas susceptible to disaster from earthquakes and other natural hazards.(50)

Joint Investigations with the Corps of Engineers

Public Law 87-639 provides that the House and Senate Public Works Committees may authorize USDA and the Army Corps of Engineers to make joint investigations and surveys and prepare joint recommendations for flood prevention or for the conservation, development, utilization, and disposal of water (USDA) and for flood control and allied purposes (the Corps of Engineers).(51) These surveys are made when the two Public Works Committees believe that flooding problems require both upstream and mainstream solutions. The SCS share of the reports can be implemented either by Public Law 566 projects or (more frequently) by authorization of individual SCS flood prevention projects in omnibus flood control acts.

Interagency Coordination and Program Formulation

This activity encompasses interagency water resources policy and program coordination at the national and field levels and national-level leadership for field-level activities.

(48) Title XIII, Public Law 90-448, 82 Stat. 584, 587 (1968), as amended, 42 U.S.C. 4101.

(49) Section 1305 of the same Act makes flood insurance available for identified flood risk areas, if the community has adopted flood plain regulations conforming to FEMA criteria (82 Stat. 574, (1968), as amended, 42 U.S.C. 4012). Section 102 of the Flood Disaster Protection Act of 1973 requires flood insurance as a condition of receiving any type of federal financial assistance for structures in flood hazard areas--including grants, loans, mortgage guarantees and insurance, and disaster assistance (Public Law 93-234, 87 Stat. 979 (1973), as amended, 42 U.S.C. 4012a).

(50) 82 Stat. 588, as amended, 42 U.S.C. 4122.

(51) Sec. 1, 76 Stat. 438, 16 U.S.C. 1009.

At the national level, policy for federal water resources programs is developed by a working group of the Cabinet Council on Natural Resources and the Environment--the Assistant Secretaries' Working Group on Water Resources. SCS provides information to the USDA member--the Assistant Secretary for Natural Resources and the Environment--through a USDA committee chaired by the Assistant Secretary. SCS is also represented on task forces and ad hoc subgroups that study particular issues for the Assistant Secretaries' Working Group.

At the field level, SCS represents USDA in two federal-interstate river basin compact organizations, the Delaware and Susquehanna River Basin Commissions. SCS state conservationists are the USDA contact points for other interstate compact organizations that have water and related land resource responsibilities.

SCS represents USDA on the coordinating committees of a number of regional interagency and (usually) intergovernmental water programs.(52) SCS also represents USDA on special interagency water-study groups, such as the Colorado River Basin Salinity Control Program studies.(53) The Forest Service and other USDA agencies participate in river basin field activities under SCS leadership.

Great Plains Conservation Program (GPCP)

This program is authorized by the Soil Conservation and Domestic Allotment Act as amended by Public Law

(52) These include the seven committees that were formed to replace the seven discontinued River Basin Commissions organized under the Water Resources Planning Act of 1965 and several less formal organizations. For two of these committees--the Arkansas-White-Red Basin Committee and the Pacific Southwest Interagency Committee--the SCS representative periodically serves as chairperson and provides an executive secretary. For the Southeast Basin Interagency Committee, SCS periodically provides an executive secretary for the chairperson, who is a state government official. The Water Resources Planning Act, Public Law 89-80, 79 Stat. 244, 42 U.S.C. 1962, creates a cabinet-level Water Resources Council with numerous policy-making responsibilities and authorizes an independent staff, federal grants to state water resources planning, and the creation of federally funded intergovernmental River Basin Commissions (RBCs). The Secretary of Agriculture is a member of the Council. Although the Act has not been repealed, the Council's staff, the state grants and the RBCs were discontinued in 1982 for budgetary reasons. The Council still exists and remains responsible for promulgating federal water resource planning guidelines.

(53) Authorized by Title II, Colorado River Basin Salinity Control Act, Public Law 93-320, 88 Stat. 270, 43 U.S.C. 1952-3.

84-1021 (1956)(54) and further amended by Public Laws 91-118 (1969) and 96-263 (1980).(55)

The Act, as amended, authorizes USDA to assist farmers and ranchers to prepare and implement a land use and treatment program that will help prevent or reduce the effects of the erratic climate of the Great Plains area. The Great Plains Conservation Program provides long-term financial and technical assistance to land users who have developed an acceptable conservation plan for the entire farm or ranch operating unit.

Within the 10 Great Plains states, counties are designated for inclusion in the program because they are susceptible to serious wind or water erosion by reason of climatic, soil, topographic, flood, saline, and other natural hazards. For land users, participation is voluntary. Farmers and ranchers in designated counties who apply for cost-sharing assistance under the program must submit a conservation plan developed in cooperation with SCS and the conservation district. The plan records the land user's decisions as to land use and treatment, together with estimates of extent and cost and a schedule for applying each conservation practice included. An approved plan is used to establish a contract by which SCS provides cost-sharing and technical assistance, over a term of 3 to 10 years, in applying all needed conservation land treatment. The land user may choose to have the plan include measures to enhance fish and wildlife and recreation resources, promote the economic use of land, and reduce agriculture-related pollution. The federal cost-share rate for all eligible conservation practices ranges from 50 to 80 percent; the 80 percent rate is offered to encourage the use of practices that have great public value but provide little or no direct financial return to the participant. Cost-share money for the entire plan is earmarked when the contract is signed, so that contract payments do not depend on annual appropriations. Under present law, new contracts may be signed at any time through September 30, 1991.

As the Great Plains Conservation Program has been extended, Congress has increased its total funding limit. In 1969 the limit was raised from \$150 million to \$300 million, and in 1980 it was raised to \$600 million and the annual cost-share limit was increased to \$50 million.

(54) 70 Stat. 1115 (1956), as amended, 16 U.S.C. 590p.

(55) Public Law 91-118, 83 Stat. 194 (1969); Public Law 96-263, 94 Stat. 438 (1980), 16 U.S.C. 590p. An earlier amendment preserved the base for acreage allotments on cropland converted to grass under the program (Public Law 86-793, 74 Stat. 1030); this provision was repealed in 1965 (Pub. Law 89-321, 79 Stat. 1187, 1208, 16 U.S.C. 590p). Meanwhile Public Law 87-129, 75 Stat. 319 (August 10, 1961) had extended the program for 10 years to December 31, 1971.

Also in 1969, land users who operate under annually renewed leases became eligible for long-term assistance, if they could show the local SCS officials satisfactory evidence of their control of the land for the term of the contract. SCS has made its rules for carrying out the program simpler and more flexible in order to allow more decisions to be made at state and local levels--for example, in determining which practices would be approved and cost-shared.

Rural Abandoned Mine Program (RAMP)

Section 406 of the Surface Mining Control and Reclamation Act of 1977 authorized the Secretary of Agriculture to establish a program of cost sharing and technical assistance for reclamation of abandoned surface-mined coal lands and lands and waters adversely affected by past coal mining (including the surface effects of deep mining). The Act directs the Secretary to use SCS in carrying out Section 406 (the RAMP program). Funds for RAMP are appropriated from the Abandoned Mine Reclamation Fund and transferred by the Secretary of the Interior to the Secretary of Agriculture.(56)

Lands are eligible for RAMP assistance only if the mines concerned were abandoned without adequate reclamation before passage of the Act on August 3, 1977. The applicant must own or control the lands and waters to be reclaimed or protected. Priority is given to lands and waters whose condition poses a threat to public health, safety, general welfare, and property. Assistance is furnished through long-term (5- to 10-year) contracts for installing and sharing the costs of planned reclamation measures. Permitted uses for reclaimed lands include cropland, hayland, pasture, range, woodland, wildlife habitat, and noncommercial recreation.

The plan must be prepared by an SCS conservationist or by another professional and must be approved by the conservation district or, if there is none in the area, the local reclamation committee. Cost-share rates can vary between 25 and 100 percent, depending on the size of the area to be reclaimed, the income-producing potential of the reclaimed land, whether the benefits are mostly onsite or offsite, and whether the landowner will or will not suffer an excessive financial burden.

No single landowner can receive cost-sharing assistance for more than 320 acres. However, subtitle C (Title XV) of the Agriculture and Food Act of 1981 authorizes the Secretary to carry out experimental reclamation projects on all lands within a hydrologic unit encompassing not more than 25,000 acres if treatment as a hydrologic unit would be more effective than treatment of individual parcels of land.(57) The amendment exempts such

(56) Sec. 406, Public Law 95-89, 91 Stat. 460, as amended, 30 U.S.C. 1238.

(57) Sec. 1551, Public Law 97-98, 95 Stat. 1344, 30 U.S.C. 1236.

projects from the 320-acre limitation. To date, this authorization has not been implemented.

The Wellton-Mohawk Irrigation Improvement Program

Title 1 of the Colorado River Basin Salinity Control Act of 1977 authorizes the Secretary of the Interior to provide irrigation improvements for reducing saline irrigation-return flows from the Wellton-Mohawk Irrigation and Drainage District in Yuma County, Arizona.(58) The Secretary of the Interior is authorized to transfer funds to the Secretary of Agriculture to provide technical and financial assistance to the farmers and ranchers in the district. This authority is the basis of an SCS program that is one of several federal programs intended to reduce saline irrigation-return flows from the district into the Colorado River in the stretch above Morelos Dam. The dam is the primary source of irrigation water in Mexico's Mexicali Valley.

SCS assists landowners and land users who apply for this assistance to develop complete plans for managing irrigation water--including irrigation systems, cropping patterns, and irrigation management practices. After the SCS project leader approves such a plan, its structural improvements and irrigation water management practices are incorporated into an SCS-landowner contract. The federal cost-share rate for eligible practices is 75 percent. Cost-shared practices include ditch lining, land leveling, pipelines, irrigation systems, and onfarm water management.

Resource Conservation and Development Program (RC&D)

This program is now being operated under Sections 1528-1538 of Public Law 97-98, the Agriculture and Food Act of 1981,(59) although its previous authority, Section 102 of the Food and Agriculture Act of 1962, as amended,(60) has not been repealed.

The 1962 Act authorized the Secretary to provide administrative and technical assistance to combinations of federal, state, territorial, and other public agencies and local nonprofit organizations to develop comprehensive plans for use and conservation of natural resources and to assist them in carrying out such plans through (FmHA) loans.(61) A subsequent amendment authorized the Secretary to provide cost-sharing assistance--where it could not be provided under other existing authorities--to public water-based fish and wildlife

(58) Sec. 101(k), Public Law 93-320, 88 Stat. 257, 43 U.S.C. 1571.

(59) Title XV, Subtitle H, 95 Stat. 1337, 16 U.S.C. 3451.

(60) Public Law 703, 76 Stat. 607, as amended, 7 U.S.C. 1010, 1011e.

(61) Ibid.

or recreation developments.(62) Another amendment authorized cost sharing for measures and facilities designed to maintain or improve water quality; measures and facilities designed to control agricultural pollution; rural community water supplies; solid waste disposal; and water storage in reservoirs, farm ponds, or other impoundments and maintenance of water withdrawal equipment for rural fire protection.(63)

Subtitle H in Public Law 97-98 provides a detailed description of the program and administrative policies.(64) Subtitle H requires the creation of a national-level USDA Resource Conservation and Development Policy Board to advise the Secretary on the administration of the program.(65) It requires that the Secretary evaluate the effectiveness of the program in meeting the objectives of project sponsors and submit a report on the evaluation to Congress by December 31, 1986.(66) The report is to include recommendations for continuing, terminating, redirecting, or modifying the program.

Subtitle H provides that the RC&D area plan, which is the basis of implementation assistance, must include one or more of the following: (1) a land conservation element providing for erosion and sediment control; (2) a water management element providing for such matters as flood control, irrigation, rural and agricultural water supply, nonpoint source pollution control, and other water management measures; (3) a community development element providing for measures such as natural resource-based industries, aquaculture, adequate water and waste disposal systems, improvements in recreation, housing, health, education, and transportation facilities; or (4) other elements such as energy conservation, preservation of agricultural land, or protection of fish and wildlife habitat.(67)

RC&D projects are initiated by sponsors who mainly consist of government units in multiple-county rural areas big enough to have substantial natural resources to use for economic improvement and community betterment. Sponsors of a typical project usually include several conservation districts, counties, and municipalities and may also include state agencies and substate districts. After a steering committee representing potential sponsors and local leaders agrees that a project is needed to deal with areawide resource-related problems, the

sponsors organize a Resource Conservation and Development Council.

The initial functions of the Council are to coordinate the sponsors' activities among themselves and with other areawide, state, or local planning programs and to prepare an application for assistance. The Council may request SCS help to prepare the application, which must set forth area problems, resources, and goals, proposed activities, direction and management, and expected benefits from the project.

The application must be endorsed by the Governor or his designated agency before it is submitted to the SCS state conservationist, who forwards it to the Secretary with his recommendations.

If the Secretary authorizes program assistance, the state conservationist names a coordinator to work with the Council and its committees to develop and carry out the plan.

The coordinator also works to obtain technical and financial assistance for planning and installing works of improvement from other USDA programs and programs administered by other federal departments and agencies. Where financial assistance is not available, USDA may provide direct assistance for carrying out works of improvement--in the form of matching grants (from SCS) and RC&D loans (from the Farmers Home Administration). Sponsoring organizations are responsible for acquiring land rights and for the operation and maintenance of completed works of improvement.

In fiscal year 1984, criteria were developed for targeting financial and technical assistance for erosion control to areas where land erosion was causing significant damage to future productivity. Criteria are being developed to target assistance for upstream flood control and water conservation.

Farmland Protection Policy Act

The Act(68) directs the Department of Agriculture, as well as other federal agencies, to review and take measures where needed to ensure that activities of the Federal Government do not cause U.S. farmland to be irreversibly converted to nonagricultural uses when those uses do not override the importance of maintaining farmland resources. Such measures should be compatible with state and local governmental efforts to preserve farmland. As required by the Act, the Department (in cooperation with other units of the federal government and after considering public comment from many sources) has formulated criteria for identifying the effects of federal programs on farmland conversion. The criteria were published in the Federal Register on July 5, 1984, and went into effect on August 6, 1984. They are in Title 7 of the Code of Federal Regulations Part 658.

(62) Public Law 91-343, 84 Stat. 439 (1970), 7 U.S.C. 1011e.

(63) Public Law 92-419, 86 Stat. 669 (1972), 7 U.S.C. 1011e.

(64) Sec. 1528-1538, Public Law 97-97, 95 Stat. 1337 (1981), 16 U.S.C. 3451-3473.

(65) Sec. 1534, 16 U.S.C. 3457.

(66) Sec. 1535, 16 U.S.C. 3458.

(67) Sec. 1529, 16 U.S.C.

(68) Title XV, Subtitle I, Public Law 97-98, 7 U.S.C. 4201-4209.

The Act does not give the federal government the right to regulate the use of nonfederal or private land. It applies only to federal agencies or their programs that might convert farmland. Where no federal activity is involved, the Act does not apply; in addition, it does not apply to the acquisition or use of farmland for purposes of national defense. The Act does not require a federal agency to modify any project solely to avoid or minimize the effects of conversion of farmland to nonagricultural uses. It merely requires that before taking or approving any action that would result in conversion of farmland, the agency shall examine the effects of the action using the published criteria, and if there are adverse effects, consider alternatives to lessen them.

The Act empowered the Secretary of Agriculture to designate one or more farmland information centers to serve as central depositories for information on farmland issues, policies, actions, and proposals. The National Agricultural Library has been designated as the national information center. The Department of Agriculture will design and produce educational programs and materials that stress the importance of productive farmland to the nation's well-being.

The Soil Conservation Service is responsible for carrying out the provisions of the Act.

International Activities

The Foreign Assistance Act of 1961, Public Law 87-195, 75 Stat. 424 (September 4, 1961), authorized federal agencies to provide technical assistance to help foreign countries improve their standards of living and economic conditions. This assistance is financed by funds from the Agency for International Development (AID). In a cooperative agreement between the Secretary of Agriculture and the Director of AID dated February 15, 1966, provisions were made for USDA, including the Soil Conservation Service, to assume necessary assignments in foreign agricultural development.

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE PROGRAMS

Agricultural Conservation Program (ACP)

This is the Department's largest cost-sharing program. It provides cost-sharing assistance to farmers and ranchers in all 50 states, Puerto Rico, and the Virgin Islands for carrying out approved, enduring conservation and environmental enhancement practices on agricultural land.(69) It is

(69) Farms and ranches in counties designated for the Great Plains Conservation Program are not eligible for ACP cost sharing under long-term agreements that cover whole farms, but are eligible for annual agreements and long-term agreements that cover parts of farms.

authorized by Public Law 74-461 of 1936, as amended (70) (which together with Public Law 74-46 of 1935, as amended, constitutes the Soil Conservation and Domestic Allotment Act), supplemented by Title X of the Agriculture and Consumer Protection Act of 1973. (71)

The Soil Conservation and Domestic Allotment Act specifies that eligibility for cost-sharing assistance depends on the existence of a conservation or environmental problem that reduces the productivity of soil or water resources or degrades environmental quality.(72) Beginning with the 1979 Agricultural Appropriations Act,(73) annual ACP appropriations legislation has specified that cost-sharing assistance is not available for practices that primarily increase production and achieve little or nothing toward resource conservation or pollution abatement.

The National ACP Program provides an annual list of practices eligible for cost sharing at levels of up to 75 percent of cost(74) (long-term agreements are limited to levels of 50 to 75 percent). State and county review groups may select from this list of eligible practices. The practices are designed to help prevent soil erosion and water pollution from animal wastes or other nonpoint sources, protect the productive capacity of farmland and rangeland, conserve water, preserve and develop wildlife habitat, and conserve energy. The national list is drawn up by a national review group representing ASCS, all other USDA agencies with conservation program responsibilities, EPA, and the Office of Management and Budget.

Translation of the national program into effective financial incentives for voluntary installation of conservation practices with long-term, community-wide benefits is the responsibility of state and county agricultural stabilization and conservation (ASC) committees. ASCS allocates ACP funds among the states through the state ASC committees on the basis of state soil and water conservation needs. ASCS plans to develop a procedure to incorporate the data from the 1982 National Resources Inventory on resource conditions and trends into the allocation

(70) Sec. 1, 49 Stat. 1148, 16 U.S.C. 5909-590p(a), 590q.

(71) Public Law 93-86, 87 Stat. 241, 16 U.S.C. 1501-1505. Long-term agreements are carried out under this authority.

(72) Sec. 8, SCDA, 16 U.S.C. 590h. This provision was added to the Act by a 1977 amendment, Sec. 1501(a)(1), Public Law 95-113, 91 Stat. 1019.

(73) Title II, Public Law 95-448, 92 Stat. 1073, 1088 (1978).

(74) The Deputy Administrator, State and County Operations, may specifically authorize a higher level of cost sharing where necessary to provide adequate incentive for carrying out a conservation practice.

formula. The agency is also analyzing data stored in the Conservation Reporting and Evaluation System to determine whether it can also be used to improve the allocation formula.

Each state ASC committee is composed of three to five members appointed by the Secretary of Agriculture, and the Director of the State Agricultural Extension Service is an ex officio member. Staff work is performed by ASCS employees supervised by the ASCS State Executive Director. The principal ACP responsibilities of the state ASC committee are to allocate cost-sharing funds to the county ASC committees and to develop a state ACP program in consultation with the state conservation review group. The state review group includes state-level representatives of the national review group and may also include representatives of state agencies responsible for forestry, water quality, and fish and wildlife.

The state program must be approved by the Secretary of Agriculture. It consists of practices selected from the National Program and cost-share limits for such practices considered appropriate to state conditions. The state program may include performance specifications for some practices and may also include special practices originally recommended at the state level and approved at the national level.

Each county or community ASC committee is composed of three members elected by other farmers and ranchers in the county or community; the county agricultural extension agent serves as an ex officio, nonvoting member. There are approximately 3,000 county committees, one for each agricultural county in the nation, and 16,000 community committees. County ASC committees are responsible for:

- Developing recommendations for the county ACP program in consultation with a county-level conservation program review group. The county review group includes the county ASC committee, county-level representatives of SCS, the Forest Service, and the Farmers Home Administration and may also include representatives of one or more conservation districts and the state forestry agency. The county ASC committee receives technical assistance from SCS (for cropland, pasture, and rangeland) and from the Forest Service (for forest land) in determining the need for and practicability of certain practices included in the county program and requested by farmers.
- Reviewing all requests for cost-sharing assistance and determining which farms should receive funding for requested practices--with regard to conservation priorities and funding limitations.

The county ACP program must be approved by the state ASC committee and the Secretary of Agriculture. The approved program consists of practices chosen from the state list at fixed or variable cost-share levels considered appropriate to county conditions.

It includes performance specifications for each practice and may also include special practices originally recommended at the county level.

Requests for cost sharing may be made by individual farm or ranch enterprises or by two or more enterprises that enter pooling agreements to jointly solve mutual resource problems. Annual cost-share payments may not exceed \$3,500 to any individual person, partnership, corporation, or other legal entity owning or operating a farm or ranch, except under pooling agreements, total payments to an individual may not exceed \$10,000.

Cost sharing is available under annual or long-term agreements and is paid after completion of specified practices. If practices are assigned for technical responsibility, SCS or FS technicians must certify that they have been carried out according to specifications before payments are made.

Long-term agreements require performance of a sequence of practices over a 3- to 10-year period. If the farm or ranch is located in a conservation district, the long-term agreement must be based on a conservation plan approved by the district. Farms or ranches that are not located in conservation districts may be eligible for long-term agreements based on conservation plans developed in cooperation with SCS and approved by an appropriate state official or SCS. Annual agreements require performance of individual practices and may require maintenance of the practices for several years.

Until recently, all county programs provided a fixed cost-share level for all participants performing the same practice. Since 1982 ASCS has been pilot testing the use of variable cost-share levels, which were tried on a voluntary basis in 126 counties in fiscal 1983. For this project, SCS technicians or SCS-trained ASCS personnel provide the county ASC committees with site-specific estimates of the amount by which each requested practice will reduce soil loss. The county committee uses this information to provide higher cost-shared levels that are equitable with the amount of soil saved.

The Secretary designates critical resource problem areas for targeting on the basis of the severity of priority resource problems identified by the NCP and the probable effectiveness of a USDA-sponsored conservation program in correcting the problem. Targeting of ACP and CTA resources is coordinated so that many targeted areas receive additional ACP cost-sharing funds as well as additional SCS technical assistance personnel to deal with the same problems.

For several years, the ACP has included special projects to demonstrate solutions to resource problems identified on the local level. Since fiscal 1982, these projects have emphasized solutions to the priorities identified in USDA's National Conservation Program--critical soil erosion, water conservation, and upstream flooding.

In 1982 and 1983, increased emphasis was placed on demonstrating the use of no-till or reduced tillage systems. In 1984, emphasis was on planting

permanent grass or trees on critically eroding cropland placed in the Acreage Conservation Reserve. Water quality as well as permanent cover or trees on critically eroding cropland received special project funding for 1985.

1984 National ACR Special Project.--This national-level special project earmarked \$20 million of 1984 ACP funds for 90-percent cost sharing to establish two practices (elsewhere cost-shared at up to 70 percent) on critically eroding land that was placed in the acreage conservation reserve (ACR).(75) Farmers who took part in this project received one annual payment to establish the practices, which involved permanent conversion from cropland and required maintenance for a term of 5 to 10 years. The practices were:

- permanent grass or grass-legume mixture (5-year minimum life span) and
- forest tree plantations (10-year minimum life span).

SCS, FS, and ES provided technical assistance, educational services, and publicity for the project. Data were recorded in the Conservation Reporting and Evaluation System, and ERS assumed leadership for evaluation of the project.

The purpose of the ACR Special Project was to determine what incentives were necessary to achieve significant levels of conversion of highly erodible cropland to permanent vegetative cover on a nationwide basis, without long-term contracts featuring income-maintenance payments.

Another purpose was to respond to the directive of the 1982 NCP report that USDA identify inconsistencies between programs and ensure that all USDA programs support conservation objectives. ACR has conservation objectives, but since its primary objective is to control production of basic commodities to protect prices it has not been used to obtain permanent conversion of highly erodible cropland. ACR and its enabling legislation are discussed under "Production Control Programs."

Water Bank Program (WBP)

This program is authorized by the Water Bank Act of 1970 as amended in 1980.(76) The objects of the WBP are to preserve, restore, and improve the wetlands of the nation, and thereby: (1) conserve surface waters, (2) preserve and improve habitat for migratory waterfowl and other wildlife resources, (3) reduce runoff and soil and wind erosion, (4)

(75) Eligible ACR land was required to be eroding at greater than 2T before treatment and to be classified as class IIIe or above.

(76) Public Law 91-559, 84 Stat. 1468, as amended by Public Law 96-182, 93 Stat. 1317, 16 U.S.C. 1302-1311.

contribute to flood control, (5) contribute to improved water quality and reduced stream sedimentation, (6) contribute to improved subsurface moisture, (7) reduce acres of new land coming into production and retire lands now in agricultural production, (8) enhance the natural beauty of the landscape, and (9) promote comprehensive and total water management planning.(77)

The program applies to wetlands that are on designated farms and are identified in a conservation plan developed in cooperation with the soil and water conservation district in which the lands are located, and under terms and conditions set forth by the Secretary of Agriculture.

The term "wetlands" is defined in the Act as meaning the inland fresh areas (type 1 through type 7) described in Circular 39, Wetlands of the United States, published by the U.S. Department of the Interior. This definition includes artificially developed inland fresh areas which meet this description. The seven types include seasonally flooded basins or flats; fresh meadows; shallow fresh marshes; deep fresh marshes; open fresh water; shrub swamps; and wooded swamps.

The Water Bank Act authorizes the Secretary to enter into agreements with eligible landowners and operators having eligible wetlands in selected migratory waterfowl nesting, breeding, and feeding areas. The agreements are for 10 years with provisions for renewal. During the period of the agreement, the landowner agrees not to drain, burn, fill, or otherwise destroy the wetland character of the areas placed under the agreement. Annual payments are made to the owner or operator at a rate determined at the time of the agreement and subject to review after 4 years and at a time of renewal. Cost-share payments may be made to eligible producers, usually at the beginning of an agreement period, if needed to install conservation practices developed primarily to accomplish one of the following:

- establish or maintain vegetative cover;
- control erosion;
- establish or maintain shallow water areas and improve habitat;
- conserve surface water and contribute to flood control and improve subsurface moisture; and
- provide bottomland hardwood management.

In 1980, the program was expanded to include type 6 and type 7 wetlands. This expansion included cost-share assistance for managing bottom land hardwoods to enhance the quality of migratory waterfowl habitat in Arkansas, Mississippi, and Louisiana. If timber management activities are planned or needed, the Forest Service will develop

(77) Sec. 2, 16 U.S.C. 1301.

forest management plans for inclusion in the conservation plans.

The Water Bank Program is administered through county ASC committees, which are authorized to approve WBP agreements on behalf of the Secretary of Agriculture. The county committees monitor program activities and issue annual and cost-share payments to participants. Planning and technical assistance are provided by the SCS.

The program is applicable in states and counties designated by the Deputy Administrator, State and County Operations, Agricultural Stabilization and Conservation Service (ASCS), after consultation with the U.S. Fish and Wildlife Service, U.S. Department of the Interior.

The Water Bank Program operates primarily in the northern part of the Central flyway and the northern and southern part of the Mississippi River flyway, which are the major migratory routes used by waterfowl. The program also operates along other flyways in the states where the program is authorized.

Emergency Conservation Program (ECP)

The Agricultural Credit Act of 1978(78) authorizes the Secretary to make cost-share payments to agricultural producers who carry out emergency measures to control wind erosion on farmlands or to rehabilitate farmlands damaged by wind erosion, floods, hurricanes or other natural disasters.(79) It also authorizes the Secretary to make payments to agricultural producers who carry out emergency water conservation or water-enhancing measures during periods of severe drought, as determined by the Secretary.(80) The Act authorizes necessary appropriations for this purpose to remain available until expended.(81)

The Act specifies that payments to rehabilitate farmlands damaged by wind erosion, floods, hurricanes, or other natural disasters are available only to solve substantial new problems caused by the natural disasters. Such new problems must:

- impair or endanger the land if not treated;
- materially affect the productive capacity of the land;

(78) Title IV, Public Law 95-334, 92 Stat. 433 (1978), 16 U.S.C. 2201-2205.

(79) Sec. 401, 16 U.S.C. 2201.

(80) Sec. 402, 16 U.S.C. 2202. Another provision for cost sharing of emergency runoff retardation in impaired watersheds (Sec. 403, 16 U.S.C. 2203) has never been funded.

(81) Sec. 404, 16 U.S.C. 2204.

- represent damage that is unusual and, except for wind erosion, is not likely to recur frequently in the same area; and
- be so costly to rehabilitate that federal assistance will be required to return the land to productive agricultural use.(82)

Except in the case of severe drought or wind erosion, cost sharing for emergency conservation practices can be used only to restore farmland to a condition similar to the pre-disaster condition except where a safety hazard would be created or the cost would be less to restore the structure or installation to current standards than to pre-disaster conditions. The national list of ECP practices contains seven practices: EC1, removing debris from farmlands; EC2, grading, shaping, and releveling or similar measures; EC3, restoring permanent fences; EC4, restoring structure and other installations; EC5, emergency wind erosion control measures; EC6, drought emergency measures; and EC7, other emergency conservation measures.

The county ASC committee, in consultation with the state ASC committee, is authorized to provide assistance through the ECP in all disasters except drought and to include emergency conservation practices 1 through 5 in county programs. The ASCS Deputy Administrator for State and County Operations (DASCO) is responsible for determining that severe drought conditions exist, justifying implementation of practice EC6. The state ASC committee must recommend and DASCO must approve inclusion of EC7. The county programs specify any requirements upon which cost sharing is conditioned. The County Office Committee (COC) shall establish cost share levels for each practice or for the total eligible restoration cost if two or more practices are involved. Cost share levels shall be established as follows:

- not to exceed 64 percent of the first \$62,500 of the eligible cost of restoring the loss;
- not to exceed 40 percent of the second \$62,500 of the eligible cost of restoring the loss;
- not to exceed 20 percent of the eligible cost above \$125,000 to restore the loss; and
- not to exceed \$200,000 for total cost share paid to one person for a disaster loss including that paid under pooling agreements.

(82) Sec. 401, 16 U.S.C. 2201.

SCS provides most technical assistance under the emergency program, but FS provides assistance for practices involving planting trees or improving stands of trees for forestry purposes. Technical responsibility is specified in state and county programs and includes:

- determining whether the practice is needed and practicable;
- selecting the site, complying with environmental regulations, determining specific measures needed, and performing any required layout work where appropriate; and
- certifying the extent of performance and whether or not the specifications for the practice have been met. Costs may be shared for performance actually rendered even though practices are not completed to approved specifications. However, the producer must satisfy the county ASC committee and the county representative of SCS (or FS) that a reasonable effort was made to meet the specifications and that the practice, as performed, is adequate to solve the problem caused by the disaster.

Forestry Incentives Program (FIP)

This program is authorized by Section 4 of the Cooperative Forestry Assistance Act of 1978(83) to provide cost sharing for tree planting and timber stand improvement by private nonindustrial landowners. The primary purpose of the program is to increase timber production by private landowners who control the majority of forest lands in the nation but do not have funds to make long-term investments.

Section 4 provides that landowners may be eligible for cost sharing if they own 1,000 acres or less of private forest land but that the Secretary may approve cost sharing with landowners owning between 1,000 and 5,000 acres if significant public benefits will accrue.(84) It also provides that cost-sharing funds shall be distributed among the states after giving appropriate consideration to:

(83) Public Law 95-213, 92 Stat. 367 (1978), 16 U.S.C. 2103.

(84) Ibid., Subsec.(c). Subsection (b) defines private forest land as being capable of producing crops of industrial wood and owned by any private individual, group, Indian tribe, corporation, or other legal entity. However, FIP regulations provide that corporations whose stocks are publicly traded are ineligible to participate. 7 CFR 701.30 (1984).

- the acreage of private commercial forest land in each state;
- the potential productivity of such land;
- the number of ownerships eligible for cost sharing;
- the need for reforestation, timberland improvement, or other forestry investments on eligible lands; and
- the enhancement of forest resources.(85)

The Forest Service's Resources Planning Act survey is used to determine these factors.

FIP is administered jointly by ASCS and the Forest Service in cooperation with a committee of at least five state foresters. The national program is reviewed periodically and program policy may be changed by the Director, Conservation and Environmental Protection Division, ASCS; representatives of the Forest Service; and a committee of at least five state foresters or equivalent officials selected by the majority of state foresters. This group determines the distribution of cost-sharing funds to state ASC committees on the basis of the statutory factors and the potential for effective participation in the program in each state.

The state ASC committee develops the recommended state FIP program in consultation with the state foresters. The state program includes a list of designated counties; a determination as to whether cost sharing shall be made available for all of the three national practices; applicable cost-share rates; and the requirements, conditions, and specifications for the practices. (The three national practices are: planting trees, improving a stand of forest trees, and preparing a site for natural regeneration.) In some states, assistance is available under long-term agreements of 3 to 10 years.

Landowners apply for participation in the program at the county ASCS office, which asks the state forestry agency to examine the property, certify the need for the proposed practice, and develop the forest management plan required for a cost-sharing agreement between the landowner and the Secretary of Agriculture. The plans provide for protection and enhancement of other related forest resources as well as cost-effective timber production.

The state forestry agency provides technical advice and will help locate approved vendors for getting the work accomplished. The state forestry agency must certify that the project has been completed in accordance with the approved plan before payment is made.

(85) Ibid., Subsec.(g).

Rural Clean Water Program

This program is authorized by provisions in the Agriculture, Rural Development and Related Agencies Appropriations Acts of 1980(86) and 1981.(87)

These Acts appropriated \$50 million and \$20 million respectively--to remain available until expended--for an experimental program of financial and technical assistance for carrying out water quality improvement practices. The assistance is to be used in areas selected by the Secretary with identified, significant agricultural nonpoint source pollution problems. The appropriations provisions specify that:

- The practices shall be selected by either
 - (a) recommendation of the county ASC committees with approval by the state ASC committees and the Secretary and concurrence of the Administrator of the Environmental Protection Agency; or
 - (b) recommendation of the Secretary, with the concurrence of the Administrator and approval of the state and county committees.
- the program shall be in addition to and coordinated with ACP and other conservation programs;
- SCS and others shall provide technical assistance;
- ASCS shall negotiate and administer contracts, disburse payments, and otherwise administer the program; and
- funds shall be transferred to SCS or others for required technical assistance.

Under these authorities, 21 project areas have been selected. The areas exemplify various types of pollution problems (nutrients, organics, pesticides, sediments, dissolved solids, etc.) resulting from various types of agriculture and affecting various types of waters (rivers, lakes, estuaries, ground water). All the areas were identified by EPA-sponsored state or regional water-quality management plans prepared pursuant to Section 208 of the Clean Water Act.(88) All the projects should be completed within 15 years of inception.

The projects are based on project plans containing estimates of the extent and costs of the best man-

agement practices (BMP's)(89) needed to control the particular pollution problems of the area, including recommended cost-share levels. The projects were proposed by county ASC committees on the basis of plans developed by local coordinating committees headed by the chairman of the ASC committee and including county-level representatives of ASCS and SCS, the conservation district, the (state or substate) designated water-quality management agency, the state forestry agency, and the Cooperative Extension Service. Projects were then approved by the state ASC committee on the basis of the recommendations of a state coordinating committee, consisting of state-level members of the groups represented on the local committee. Final project selections were made by a national coordinating committee on the basis of cost effectiveness and significance of water quality achievement. The national committee, which provides national-level review and supervision, consists of the heads of all USDA agencies with conservation program responsibilities and the Environmental Protection Agency's Assistant Administrator for Water and Waste Management. Upper limits for the total federal cost of each of the approved projects were set by the Secretary on the basis of the national committee's recommendations.

The committee also developed a national list of practices. The maximum federal cost share for any best management practice is 75 percent, unless a larger share is approved by the ASCS Administrator. (90)

Individual participation in the program is based on long-term contracts to carry out water quality plans drawn up in cooperation with SCS and approved by the conservation district. Landowners and land users wishing to participate must apply to the county ASC committee. The county ASC committee and the district jointly decide which landholdings shall receive assistance to develop water quality plans on the basis of "planning priority" criteria developed by the local coordinating committees in consultation with the state coordinating committee, and with technical advice from SCS.

Contracts require participants to install a schedule of best management practices over a period of 3 to 10 years and to maintain each practice for a specified period (at least 5 years). Cost-share payments are made after each practice is installed to SCS-designed specifications. By the end of fiscal year 1984, most water quality plans were

(86) Public Law 96-108, 93 Stat. 835 (1979).

(87) Public Law 96-528, 94 Stat. 3111 (1980).

(88) Public Law 92-500, 86 Stat. 816 (1972), as amended, 33 U.S.C. 1288.

(89) BMP's are intended to keep nonpoint source pollutants out of the nation's waters. Since most such pollutants are adsorbed to sediments, most BMP's are designed to reduce erosion or to filter runoff. Other agricultural BMP's may require better management of fertilizers and pesticides.

(90) State and local agencies may also provide RCWP cost-share assistance; however, no participant may receive more than 100 percent assistance.

completed and contracts assigned on most projects. All planning and contracting is expected to be complete by the end of fiscal year 1986.

The program requires monitoring of all projects to determine progress in applying practices and to document improvement in water quality through the life of the project. State water-quality agencies perform this basic monitoring for 16 of the projects. Five projects have been selected for joint USDA/EPA comprehensive monitoring, evaluation, and analysis. This comprehensive monitoring requires detailed identification of changes in water quality attributable to best management practices, other land use changes, and farming practices. It also requires identification of socio-economic impacts on landowners, participation of federal, state, and local agencies, and educational methods used.

Colorado River Basin Salinity Control Program

Title II of the Colorado River Basin Salinity Control Act, Public Law 93-320 (1974), authorizes USDI and USDA programs to reduce salinity concentrations in the Colorado River above Imperial Dam in order to meet U.S. water quality standards established by the seven basin states and the Environmental Protection Agency.(91) USDA was authorized to use existing programs to plan and carry out onfarm irrigation improvements and salinity controls.(92)

Implementation projects were begun in the Grand Valley, Colorado, in 1979 and in the Uinta Basin, Utah, in 1980. The projects featured technical assistance through SCS's Conservation Technical Assistance Program, with transfer funds from USDI and cost-sharing assistance through ACP for practices such as ditch lining, land leveling, water control structures, pipelines, irrigation systems, and sedimentation control practices. Education was provided by the Cooperative Extension Service. For fiscal year 1985, funds were requested for two similar projects in Virgin Valley, Arizona and Nevada, and Mopa Valley, Nevada.

In 1984, Public Law 98-569 authorized a new, separately funded program.(93) Regulations for implementation of this program have not been issued, but the new program is expected to be administered by ASCS with participation from other USDA agencies in activities within their expertise.

(91) Public Law 93-320, 88 Stat. 266-270 (1974), as amended.

(92) Ibid., 88 Stat. 271-272 (1974), 43 U.S.C. 1592, 1593 (1982 supp.).

(93) Sec. 202, Colorado River Basin Salinity Control Act. 88 Stat. 271 (1984). U.S.C. 1592.

The 1984 amendments authorize a salinity-control program to improve onfarm water management and reduce watershed erosion on nonfederal lands and national forest lands.(94) New Section 202(c) authorizes USDA to participate in planning, installing, maintaining, and monitoring the effectiveness of onfarm irrigation management measures to reduce the salt load of the Colorado River, including improvement of related laterals and of watershed erosion management.(95) It also authorizes related research, demonstration, and education activities.(96)

It authorizes the Secretary to use SCS or other existing USDA agencies, ASC committees, and conservation districts to provide technical and cost sharing assistance to land users who voluntarily implement salinity control plans through contracts and agreements. The contracts must require the restoration of incidental fish and wildlife values foregone and continuing operation and maintenance of installed salinity control measures.

Cost sharing for salinity control measures under section 202(c) will differ from cost sharing under ACP in several important respects:

- it will be made available not only to agricultural producers but also to local governments and nongovernmental entities, such as irrigation districts and canal companies;(97)
- it will have its own cost-share levels and payment limitations;(98) and
- thirty percent of USDA cost-share payments will be reimbursable by the states from hydro receipts in the Upper or Lower Colorado River Basin Funds.(99)

Production Control Programs--Conservation Use Acreage

ASCS has long administered a variety of programs that provide financial incentives to farmers with a history of growing certain basic crops to take a specified percentage of acreage out of production and put it into conservation use. The crops are

(94) Ibid., Sec. 202(c)(1), 43 U.S.C. 1592.

(95) Ibid., Sec. 202(c)(2)(B)(D), 43 U.S.C. 1592.

(96) Ibid., Sec. 202(c)(2)(E), 43 U.S.C. 1592.

(97) Ibid., Sec. 202(c)(4), 43 U.S.C. 1593.

(98) Ibid., Sec. 202(2)(c)(F), 43 U.S.C. 1592-1593.

(99) Ibid., Sec. 202(a)(1), 43 U.S.C. 1595.

wheat, feed grains, upland cotton, and rice.(100) These programs (acreage reduction, set-aside, paid land diversion, and recommended voluntary reduction) vary from year to year in response to statutory authorities that may be mandatory or discretionary. They are authorized by Title I of the Agricultural Act of 1949, as amended periodically in USDA program-authorizing legislation.(101) Amendments in the Agriculture and Food Act of 1981 authorized the Secretary to conduct acreage reduction programs and make land diversion payments for the 1982 through 1985 crops of wheat, feed grains, cotton, and rice.(102) The Omnibus Budget Reconciliation Act of 1982 required land diversion programs for the 1983 crops of wheat, rice, and upland cotton.(103) There is no production-control program for soybeans.

The purpose of the production-control programs is to bring supplies of specified basic commodities into line with demand in order to support and stabilize farm prices and income. These programs are not primarily conservation programs, but they do have secondary conservation objectives. Public Law 97-98 requires the Secretary to issue regulations for approved conservation use of acreage idled for acreage reduction, set-aside, or land diversion programs for crop years 1982-1985. Approved conservation practices in ASCS regulations for 1982-1985 include: grasses, legumes (other than soybeans), small grains (not allowed to form grain), and other cover crops (in compliance with conditions set by the state ASC committee and DASCO), maintenance of the previous year's crop residue, other (unspecified) cover and practices that provide year-round protection against wind and water erosion. The unspecified cover and practices must be approved by the county and state ASC committees with the concurrence of SCS and after consultation with state or public-interest wildlife protection organizations.(104)

(100) Financial incentives have typically included cash payments, target price protection, and eligibility for crop loans. In 1983, these incentives were supplemented by payment-in-kind from commodities stored by the Commodity Credit Corporation to farmers idling additional percentages of wheat, feed grains, cotton, and rice acreage. This "PIK program" was continued in 1984 for wheat acreage. Use of stored commodities as incentives is authorized by the Commodity Credit Corporation Charter Act, Sec. 5, Public Law 80-89, 62 Stat. 1070 (1948), 15 U.S.C. 714c.

(101) Public Law 81-439, 68 Stat. 1051-10, as amended, 16 U.S.C. 1441-1445.

(102) Tit. III-VI, Public Law 97-98, 95 Stat. 1213, 1221-1247.

(103) Tit. I, Subtit. C., Public Law 97-253, 96 Stat. 761, 766-772.

(104) 7 CFR 713.51 - 713.74 (1984).

ASCS has participated in several experiments to test the feasibility of increasing the conservation potential of acreage control programs in response to NCP requirements that USDA increase consistency between its commodity programs and conservation programs. One of these--ACP's 1984 ACR Special Project--has already been discussed. Another is a 1984 pilot conservation program--limited to the three states of Oregon, Idaho, and Washington--for lands with Class IVe and VIe soils that are currently in a rotation comprising crops eligible for the 1984 ACR programs and perennial grasses and/or legumes.

This pilot program alters the normal rule that land can be counted in the producer's acreage allotment and designated as conservation acreage only if it has been in production for 2 of the past 3 years. The 1984 pilot program abrogates this rule for Class IVe and VIe acreage on which a cover of grasses or legumes is preventing an erosion rate in excess of the tolerance level. Thus, producers can preserve existing cover on highly erodible soils, instead of having to plow up the land to maintain a crop history, and still participate in production control and price support programs.

FARMERS HOME ADMINISTRATION PROGRAMS

USDA's lending agency has several authorities to lend money for programs that affect departmental soil and water conservation objectives. The Consolidated Farm and Rural Development Act (105) authorizes farm ownership loans,(106) operating loans,(107) soil and water loans,(108) irrigation and drainage loans,(109) grazing association

(105) Tit. III, Public Law 87-128, as amended, 7 U.S.C. 1921-1992.

(106) Sec. 302-303a, 7 U.S.C. 1922-1923a. In addition to the purchase of family farms, these loans can be used for land and water development, pollution control, installation of fences and grassed waterways, irrigation, and forestry.

(107) Secs. 311-312, 7 U.S.C. 1941-1942. These loans can be used for seeding, sodding, fencing, installing drainage, and other conservation measures.

(108) Sec. 304, 7 U.S.C. 1924. These loans are for soil conservation, water conservation or development, pasture improvement, forestation or drainage of farmland, and pollution abatement.

(109) Sec. 306, 7 U.S.C. 1926. These loans are made to legally organized associations of farmers and rural residents for irrigation and drainage works.

loans,(110) recreation loans,(111) and emergency loans.(112) Section 8 of the Watershed Protection and Flood Prevention Act (Public Law 566) authorizes loans to local organizations to finance the local costs of carrying out small watershed projects and to state and local agencies to finance the local agencies to finance the local costs of flood prevention projects.(113)

Section 1533 of the Agriculture and Food Act of 1981 (114) authorizes loans to states, local government units, and local nonprofit organizations to assist in carrying out RC&D area plans for resource conservation and utilization.

FmHA and SCS have drawn up a memorandum of understanding that applies to all programs of loans to farmers and ranchers. The memorandum states that FmHA will inform all loan applicants and borrowers about SCS technical assistance available through the conservation districts and that the district conservationists will give priority to FmHA borrowers and applicants who request assistance.

A stricter rule applies to loan applications for larger, more environmentally sensitive projects classified as Class II actions for environmental assessment purposes. For these applications, FmHA will request applicants to seek planning assistance from SCS, if they have not already done so, and will structure loan agreements to require compliance with an SCS-developed conservation plan. However, the FmHA approving official may exclude an element of the conservation plan from the loan agreement if he determines that the element is not essential to accomplishing the plan's objective and is so costly that it interferes with the borrower's ability to repay the loan.

The memorandum further states that FmHA will request SCS assistance in dealing with proposed grazing-association loans. This assistance will include an initial land inventory to determine the present

(110) Sec. 306, 7 U.S.C. 1926. These loans are made to nonprofit associations to acquire and develop grazing land or convert land to grazing.

(111) Sec. 304, 7 U.S.C. 1924. These loans are used to develop land and water resources for income-producing recreation enterprises or farms.

(112) Sec. 321, 7 U.S.C. 1961. These loans to repair damage caused by natural disasters include funds used for conservation measures.

(113) Added by Public Law 84-1018, 70 Stat. 1090, as amended, 16 U.S.C. 1006a.

(114) Public Law 97-98, 95 Stat. 1339 (1981), 16 U.S.C. 3456.

grazing capacity and potential for improvement of the land to be acquired, as well as development of a complete conservation plan. It will also include encouraging individual members of the grazing association to develop and implement plans for their own units through the district's program.

In addition, SCS will provide technical assistance in planning onfarm energy projects and energy conservation tillage and crop management practices when requested and as resources are available.

FOREST SERVICE PROGRAMS

The Weeks Law of 1911 provided for federal assistance to states in fire protection on state and private forest lands when the states have a system of fire protection. It provided for purchase of forest lands within the watersheds of navigable streams for national forests. The law also provided that 25 percent of all moneys received from these national forests should be paid to the states in which they are situated for the benefit of public schools and public roads of the respective counties.

The Clarke-McNary Act of 1924 amended the Weeks Law to allow the purchase of forest lands suitable for the production of timber, not limited to the watersheds of navigable streams. The act extended and strengthened the Weeks Law authority to assist state and private agencies in the protection of forest lands from fire. It also provided for cooperation with the states in the procurement, production, and distribution of tree seeds and plants to establish forests, windbreaks, shelterbelts, and farm woodlots. Another provision of the Clarke-McNary Act directed federal cooperation with the Extension Services in the various states to aid farmers in establishing, renewing, protecting, and managing woodlots, shelterbelts, and windbreaks. A 1937 amendment (the Norris-Doxey Act) extended this aid to harvesting, utilizing, and marketing the products of such farm woods.

The Cooperative Forest Management Act of 1950 provided for technical services to private landowners, forest operators, wood processors, and public agencies for management, protection, and improvement of forest lands; the harvesting, marketing, and processing of forest products; and protection, improvement, and establishment of trees and shrubs in urban areas. This act superseded the Norris-Doxey Act of 1937.

The Clarke-McNary Act and the Cooperative Forest Management Act were superseded by the Cooperative Forestry Assistance Act of 1978.

The Cooperative Forestry Research Act of 1962 made funds available to states on a matching basis to help carry out research at land grant institutions and state-supported forestry schools.

Resources Planning Act Assessment and Program

Section 3 of the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA),(115) directs the Secretary to conduct a comprehensive survey and analysis of the present and prospective conditions of renewable resources, forests, and rangelands in the nation (RPA).(116) The assessment is continuously revised over a 10-year cycle. For the purpose of Forest Service missions, the term "renewable resources" means timber, water, forage, wildlife and fish, and recreation. The assessment relies on the SCS National Resources Inventory for information on nonfederal rangeland. It is coordinated with and supplies information for the RCA appraisal.

Section 4 of RPA directs the Secretary to prepare a national program--which is updated every 5 years--for the national forest system, cooperative state and private programs, and research.(117)

Renewable Resources Research

The Forest and Rangeland Renewable Resources Research Act(118) authorizes a comprehensive Forest Service research program including in-house, cooperative, and competitive-grant research. It is intended to complement the policies and direction of the Forest and Rangeland Renewable Resources Planning Act. Section 3 authorizes research programs dealing with resource management for multiple use; protection of resources against fire, insects, disease, noxious plants, etc.; environmental research; and other matters. The environmental research category specifically includes (but is not limited to) basic and applied research concerning surface and subsurface waterflow, control of soil erosion, rehabilitation of forest and rangeland watersheds, wildlife and fish habitat, and management of vegetation to reduce air and water pollution.(119)

Section 1415 of the Agriculture and Food Act of 1981 updates earlier USDA authority to make special grants to state agricultural experiment stations, universities, and research foundations for basic and applied research to further USDA programs, including Forest Service programs.(120)

Rural Forestry Assistance Program

Section 3 of the Cooperative Forestry Assistance Act of 1978(121) authorizes the Rural Forestry Assistance Program to provide financial and technical assistance to state forestry agencies to carry out timber stand improvements and other forestry work on nonfederal land, specifically including work to achieve forested watershed stability, water quality protection, and wildlife habitat quality. It also authorizes the Secretary to give such assistance to state foresters for state programs of technical assistance and information to private forest owners, managers, and operators and public agencies that control forest land.(122)

The state technical assistance programs may include development and implementation of forest management plans, which are primarily designed to improve the quality and quantity of forest resources but also protect soil fertility, watershed stability, water quality and wildlife. Forest management plans are required for participation in Forestry Incentives Program (FIP) and Research Conservation and Development (RC&D) forestry projects, for harvesting timber from Water Bank land, and for participation in state cost-sharing programs. Landowners are encouraged to obtain forest management plans for forestry work used as land treatment in small watershed and flood prevention projects.

State technical assistance to harvesters and loggers--for example, local specifications for logging roads--is used in state and areawide water quality management programs.

Forestry Incentives Program (FIP)

Section 4 of the Cooperative Forestry Assistance Act authorizes the Forestry Incentives Program, which has been discussed under ASCS programs.(123)

Insect and Disease Control Program

Section 5 of the Cooperative Forestry Assistance Act authorizes the Insect and Disease Control Program, under which the Secretary takes measures to protect trees in the national forest system and gives technical assistance for such measures to owners of forest lands.(124)

(115) Public Law 93-378, 88 Stat. 476 (1974), as amended, 16 U.S.C. 1600-1614.

(116) Ibid., 16 U.S.C. 1601.

(117) Ibid., 16 U.S.C. 1602.

(118) Public Law 95-307, 92 Stat. 353 (1978), as amended, 16 U.S.C. 1641-1647.

(119) Ibid., 16 U.S.C. 1642.

(120) Public Law 97-98, 95 Stat. 1303, 7 U.S.C. 450.

(121) Public Law 95-313, 92 Stat. 365 (1978), 16 U.S.C. 2101-2111.

(122) 16 U.S.C. 2102.

(123) 16 U.S.C. 2103.

(124) 16 U.S.C. 2104.

Urban Forestry Assistance Program

Section 6 authorizes the Urban Forestry Assistance Program, through which the Secretary provides technical and financial assistance and information to local governments and others to use trees for erosion control and environmental purposes.(125) This program is used in the planning and implementation of state and areawide water quality management programs.

Rural Fire Prevention and Control Program

Section 7 of the Cooperative Forestry Assistance Act of 1978 authorizes the Rural Fire Prevention and Control Program, through which the Secretary cooperates with state forestry agencies in developing rural fire prevention, control, and suppression programs and provides financial and technical assistance such programs to state forestry agencies and through them to others. It also authorizes financial and technical assistance to state forestry agencies to organize, train, and equip local firefighting forces.(126)

Section 8 authorizes the Secretary to provide financial and technical assistance to state forestry agencies for all aspects of forest resources planning and other matters.(127)

Forest Service Activities under Other Agency Authorities

The Forest Service provides reimbursable technical assistance for forestry practices under several USDA conservation programs led by other agencies, under laws that have already been discussed. Responsibilities for these activities are assigned by the Secretary's Administrative Regulations, and the work is performed as prescribed by interagency memorandums of understanding.

SCS makes use of Forest Service technical assistance in planning Cooperative River Basin Surveys and Joint USDA-Corps of Engineers studies, and in planning and implementing Small Watersheds, Flood Prevention, Emergency Watershed Protection, and RC&D programs. The Forest Service uses transfer funds from ASCS for undertaking technical responsibility for forestry practices under ACP, FIP, and RCWP. Where Forest Service responsibilities can be carried out through the technical assistance programs of state forestry agencies, the Forest Service may use transfer funds to make grants for such activities to state forestry agencies.

The Forest Service also carries out soil and water conservation activities affecting privately owned forest lands under enabling authorities of non-USDA agencies, notably EPA's Clean Water Act.(128) These activities include reimbursable research, investigations, training, and information, under Section 104(p) of the Clean Water Act.(129) They also include use of the Forest Service's own programs and funds to complement the state and areawide water quality management plans authorized by Section 208 of the Act, pursuant to an interdepartmental agreement authorized by Section 304(k)(1).(130) Transfer of funds to the Forest Service to accelerate its programs for this purpose is authorized by Section 304(k)(2),(131) but this subsection had not been implemented when this was written.

The Forest Service also uses transfer funds from the Office of Surface Mining for work to control the environmental effects of surface coal mining, as required by Title V of the Surface Coal Mining and Reclamation Act of 1977.(132) This work is authorized by Section 201(b) of that Act, which states the Office of Surface Management may use employees of other federal agencies, on a reimbursable basis, to carry out its own responsibilities.(133)

(128) Public Law 92-500, 86 Stat. 816 (1972), as amended, 33 U.S.C. 1251-1376.

(129) Ibid., 33 U.S.C. 1254(p).

(130) Ibid., 33 U.S.C. 1314(k)(1).

(131) Ibid., 33 U.S.C. 1314(k)(2).

(132) Public Law 95-87, 91 Stat. 447, 501 (1977), 30 U.S.C. 1251-1279.

(133) 91 Stat. 447, 449, 30 U.S.C. 1211(b).

(125) 16 U.S.C. 2105.

(126) 16 U.S.C. 2106.

(127) 16 U.S.C. 2107.

THE AGRICULTURAL RESEARCH SERVICE (ARS) PROGRAMS

USDA's in-house scientific research agency conducts programs in five subject areas, one of which--soil, water, and air--is directly related to soil and water conservation concerns.(134) Authorities for this work include the following laws:

- The Organic Act of 1862, establishing the Department of Agriculture and giving it "general and comprehensive" authority to acquire and diffuse useful information on subjects connected with agriculture.(135)
- Section 1 of Public Law 74-46, the Soil Conservation Act of 1935, authorizing research on the character of soil erosion and preventive measures needed.(136) This activity was originally assigned to SCS but was transferred to ARS by Secretary's Memorandum 1320, Supp. 4, on November 2, 1953.
- The Research and Marketing Act of 1946, authorizing research relating to conservation, development, and use of land, forest, and water resources for agriculture-related concerns.(137)
- The National Agricultural Research, Extension, and Teaching Policy Act of 1977, providing for a national planning process to coordinate all USDA agricultural research with state and private research and to establish research needs and priorities. The Act also created a Joint Council on Food and Agricultural Sciences to relate federal budget development and program management to this process.(138)

(134) The other four areas are: human nutrition, crop science, livestock and veterinary science, and post-harvest science and technology.

(135) Act of May 15, 1862, ch. 72, 12 Stat. 387, as amended, 7 U.S.C. 2201.

(136) 49 Stat. 163 (1935), 16 U.S.C. 590a.

(137) Sec. 101, Public Law 79-733, 60 Stat. 1082, 7 U.S.C. 427.

(138) Secs. 1405, 1407, Public Law 95-113, 91 Stat. 985-86 (1977), as amended, 7 U.S.C. 3121-3122.

The Agriculture and Food Act of 1981 amended the 1977 Act to provide that all USDA agricultural research be coordinated with the assessments required by the RPA and RCA legislation.(139)

A 1982 program document, The Mission of the Agricultural Research Service, explains the working limits of these far-reaching authorities. ARS research is required to:

- deal with problems of genuinely national concern;
- be sufficiently long-range, high-risk, or broad in scope to require ARS unified planning, continuity of effort, and stable scientific environment;
- be unsuitable for agricultural research institutions with a narrower geographic focus or shorter perspective; and
- be a uniquely federal responsibility, such as research that supports federal action programs.

Pursuant to this mission and under these authorities, ARS performs research related to USDA soil and water conservation objectives in facilities located in appropriate areas of the country. These facilities include 14 soil and water conservation research centers, 11 watershed research centers, 4 water management laboratories, 3 laboratories for erosion and sedimentation studies, the National Tillage Machinery Laboratory, and the U.S. Plant, Soil, and Nutrition Laboratory.

ARS responsibilities for other lines of agricultural research have made possible only a slight increase in agency funding for research on soil, water, and air. However, the agency has changed emphasis within this category in response to the needs of the RCA Appraisal. Beginning with fiscal year 1984, ARS has given highest priority to research in the relationships between erosion and soil productivity, conservation tillage systems, prediction of concentrated flow erosion, crop production systems with limited water supply, prevention and control of gullies, effects of new grazing systems, and adaptation of the Universal Soil Loss Equation for use on rangeland. The agency has reduced its research related to land shaping, development and evaluation of engineering structures, development of irrigation hardware, water-harvesting programs, and utilization of municipal waste.

(139) Sec. 1405, Public Law 97-98, 95 Stat. 1298.

COOPERATIVE STATE RESEARCH SERVICE (CSRS) PROGRAMS

CSRS administers federal funding of university-based (and small amounts of other nonfederal) agricultural research. Assistance is provided to state agricultural experiment stations under the Hatch Act of 1887, as amended,(140) to approved state forestry schools, under the Cooperative Forestry Research Act of 1962, as amended,(141) and to the 1890 land-grant colleges and Tuskegee University, under the National Agricultural Research, Extension, and Teaching Policy Act of 1977, as amended.(142)

All of these statutes allot funds to state institutions, which have authority to select research projects dealing with the full array of agriculture-related research.(143) However, the statutes also contain several authorities for CSRS to communicate USDA perceptions of research needs and to assist in coordinating university-based and USDA agricultural research.

Thus, the Hatch Act authorizes USDA to give advice to state agricultural experiment stations on lines of inquiry it considers important, to participate in coordinating state agricultural experiment station research, and to encourage cooperation among the experiment stations and between the stations and USDA.(144) Under this authority, CSRS conducts reviews of individual experiment station programs at their request (usually every 5 years) and

(140) Act of Mar. 2, 1887, 24 Stat. 440, as amended, 7 U.S.C. 361a-361i.

(141) Sec. 1, Public Law 87-788, 76 Stat. 806, as amended, 16 U.S.C. 582a, a-1 to a-6.

(142) Sec. 1445, Public Law 95-113, 91 Stat. 1009, as amended, 7 U.S.C. 3222-3223.

(143) CSRS has more input into the subject matter of the special and competitive research grants authorized by Sec. 2 of Public Law 89-106, 79 Stat. 431 (1965), as amended, 7 U.S.C. 450i.

Special grants are awarded to colleges and universities and state agricultural experiment stations for periods of up to 5 years to facilitate research breakthroughs or expand ongoing state-federal research.

Competitive grants are awarded to state agricultural experiment stations, colleges and universities, other research organizations, federal agencies, private organizations or corporations, and individuals for periods of up to 5 years. These grants are for research in six USDA priority areas identified by the Users Board. One of the priority areas is soil and water.

(144) Sec. 7, 24 Stat. 441 (1887), as amended, 7 U.S.C. 361g.

participates in experiment station regional research planning and the national-level deliberations of the Experiment Station Committee on Policy.

The Cooperative Forestry Research Act requires that assistance be based on research plans agreed to in advance by CSRS and the forestry school.(145) At the national level, a Cooperative Forestry Advisory Council plans and coordinates forestry research by federal and state agencies, forestry schools, and industry. Members of the Council represent the Forest Service, state forestry agencies, forestry schools, public interest groups, and industries.(146) CSRS provides the Executive Secretary of this group.

The National Agricultural Research, Extension, and Teaching Policy Act directs the Secretary to coordinate all agricultural research, extension, and teaching activities conducted or funded by USDA.(147) It creates a Joint Council on Food and Agricultural Sciences composed of representatives of the federal, state, and private agricultural science communities. The Joint Council is directed to improve planning and coordination of publicly and privately supported agricultural research and to relate federal budget development and program management to those processes.(148) The Act also authorizes the Joint Council to recommend research priorities, delineate suggested federal, state, and private areas of responsibility, and assist the Secretary to make a 5-year plan for food and agricultural sciences.(149) The Joint Council has assigned these responsibilities to a National Agricultural Research Committee composed of representatives of USDA and state research agencies.

In Section 1402 (Title XIV) of the Agriculture and Food Act of 1981,(150) Congress called for reaffirmation and expansion of national support for cooperative research, extension, and teaching in several areas of agricultural interest, including the following natural-resource objectives:

- sustaining soil productivity;
- developing more cost-effective and practical conservation practices;
- managing water in stressed environments;

(145) Sec. 2, 76 Stat. 80 (1962), as amended, 16 U.S.C. 582a-1.

(146) Sec. 1441c, Public Law 97-98, 95 Stat. 1320 (1981), 16 U.S.C. 582a-4.

(147) Sec. 1405, Public Law 95-113, 91 Stat. 985 (1977), as amended, 7 U.S.C. 3121.

(148) Sec. 1407, as amended, 7 U.S.C. 3122.

(149) Ibid.

(150) Public Law 97-98, 95 Stat. 1295.

- protecting the quality of the nation's surface and ground-water resources; and
- implementing the research recommendations of a 1980 USDA study on organic farming.

In Section 1405, Congress directed the Secretary to coordinate all USDA agricultural research, extension, and teaching activities with the resource appraisals conducted by the Forest Service and Soil Conservation Service.

The Agriculture and Food Act of 1981 further amended the National Agricultural Research, Extension, and Teaching Act by adding "Subtitle L--Aquaculture," and "Subtitle M--Rangeland Research." These subtitles provide for grants to land-grant institutions, agricultural experiment stations, and other laboratories with appropriate capacity to conduct research on aquaculture and rangeland management and provide for national advisory boards. Subtitle M, while concerned primarily with increasing rangeland productivity, also requires research on methods of managing rangeland watersheds to maximize efficient use of water and improve water yield, water quality, and water conservation, to protect against onsite and offsite damage to rangeland resources by floods, erosion, and other detrimental influences, and to remedy unsatisfactory and unstable rangeland conditions.

CSRS and its state partners in agricultural research administration are reflecting the priorities of the National Conservation Program in their long-range planning for state activities funded by federal appropriations. The National Agricultural Research Committee's 1981-1986 research projections show the largest increase for state programs in programs RP1.01, "soil and land use," and RP1.03, "water and watersheds." For fiscal year 1983, of the \$27.4 million available for soil and water research at state institutions, about \$23.0 million (84 percent) was focused on NCP priority concerns. This compares with 56 percent in 1981.

ECONOMIC RESEARCH SERVICE (ERS) PROGRAMS

ERS has more recent and specific authorities for other types of agricultural economics research, but its natural resource economics work remains based on the Department of Agriculture Organic Act of 1862. The Organic Act gives the Department authority to acquire and diffuse useful information on subjects connected with agriculture and (as amended by the Rural Development Act of 1972) rural development "in the most general and comprehensive sense of those terms." (151)

(151) Act of May 15, 1862, Ch. 72, 12 Stat. 387, as amended, 7 U.S.C. 2201; the 1972 amendment is in Sec. 603(a), Public Law 92-419, 86 Stat. 675.

USDA economics research was initiated under the authority of the Organic Act when the Office of Farm Management and Farm Economics was established in the Office of the Secretary on July 1, 1919. The research of the Office included agricultural history and geography and rural sociology as well as economics. The Office was divided into eight sections, one of which was land economics.

USDA has conducted in-house land economics research ever since. When the Office of Farm Management and Farm Economics was abolished on July 1, 1922, this work was transferred to the Bureau of Agricultural Economics and later to successor research agencies. The land economics research mission was broadened to include water and environmental concerns as these became more important to USDA action agencies.

Land, water, and environmental economics research is now the responsibility of the Natural Resources Economics Division and includes:

- research on the economics of the use, conservation, development, and ownership of natural resources;
- research on the supply and demand for agricultural production inputs;
- assessment of changes in agricultural production technology; and
- assessment of environmental quality.

ERS has conducted a study analyzing the extent to which USDA export, price support, production control, crop insurance, and loan programs are consistent with conservation objectives. ERS has also shifted funds and staff to conduct a national survey of farmer investments in soil conservation practices.

EXTENSION SERVICE (ES) PROGRAMS

The Smith-Lever Act of 1914, as amended, authorizes USDA to cooperate with programs of extension education in agriculture, home economics, and related subjects administered by state-designated colleges. (152) This Act is the authority for programs involving cooperative efforts and funding by federal agencies and state and local governments in all states. (153) Federal funding for state cooperative extension services (CES) varies among the states according to formula and special matching funds but averages 40 percent.

(152) Act of May 8, 1914, 38 Stat. 372, as amended, 7 U.S.C. 341-348.

(153) Extension work is also conducted in the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, the Northern Marianas, and Micronesia.

ES responsibilities for the nationwide program include:

- serving as a liaison between USDA and state cooperative extension and providing program leadership and assistance to carry out extension work;
- administering federal laws authorizing extension work, and coordinating the work among the states; and
- providing leadership for the educational phase of all USDA agency programs, including conservation programs.

The principal organization for coordinating the objectives of CES programs is the Extension Committee on Organization and Policy (ECOP). The committee is primarily composed of representatives of state directors of extension. It reviews policy and programs and provides a forum for ES to explain USDA priorities.

Public Law 95-306, 92 Stat. 349, 16 U.S.C. 1671, the Renewable Resources Extension Act of 1978, provides for an expanded and comprehensive extension program for renewable forest and rangeland resources. This educational program is to cover a broad range of renewable resources and related ordinances. The Act also requires that the needs for research on renewable resources be identified.

It makes the state directors of cooperative extension programs and the heads of extension in eligible colleges and universities responsible for

each state's extension program on renewable resources. It requires the Secretary to prepare a 5-year extension program on renewable resources.

The program is to coincide with the planning cycles for the Forest and Rangeland Renewable Resources Planning Act and the Soil and Water Resources Conservation Act. The Secretary is also to prepare an annual report on the program for Congress. The program was submitted to Congress on May 29, 1980.

After the 1980 RCA appraisal found that the soil and water conservation program engaged less than 5 percent of the total extension effort in the states, ES assisted in setting out redirection strategies. The strategies were largely developed by the work of two task forces. An ES staff task group began a systematic compilation of current extension teaching materials dealing with soil erosion control, water conservation, and related matters. An external group produced a resolution approved by the Extension Committee on Organization and Policy, which urged redirection of resources to develop additional soil and water conservation programs, and a position paper. The task group also developed a soil and water conservation symposium, which was presented at the 1983 summer meeting of the American Society of Agronomy, and a national workshop in the fall of 1983 for CES soil and water conservation specialists. It also produced a report to ECOP which identified areas of need in soil and water conservation programs.

ES has responded to the recommendations of the two task forces by assisting increases in conservation programming in identified areas of need.

STATE LAWS

State laws dealing with conservation of soil and water and related resources are extremely numerous and varied. There are two basic reasons for this.

One is that most government decisions concerning individual land and water use and management are made by local general-purpose governments, special-purpose districts, and authorities that derive all their powers from the states. This rule applies to both the discretionary authorities and the mandatory responsibilities of local jurisdictions. A state law can require local governments and special-purpose districts to enact a law or administer a program to protect natural resources.

The other reason is that many states have enacted natural resources protection laws or upgraded older laws in order to participate in federal programs. Federal laws cannot require states to enact laws authorizing state agencies to apply federal policies to local conditions, but they can provide incentives, in the form of technical and financial assistance, for states to do so.

Consequently, federal laws that provide technical or financial assistance for conservation activities to or through local authorities typically require that an agency operating under state laws prepare a state program that assigns priority to local requests for assistance. Federal laws regulating the use of natural resources typically require that the federal regulatory agency shall delegate regulatory responsibilities to state agencies whose programs meet federal standards and shall also provide the responsible state agency with various types of technical and financial assistance.

The 1980 RCA Appraisal chapter on state laws provided an overview of several types of laws that dealt with conservation and related matters. This report on state laws is concerned with soil and water conservation updates and provides more detail about the types of laws discussed in the 1980 RCA report. It also shows the relevance of several other types of state laws to soil and water conservation and identifies significant approaches taken by some individual states. It does not provide citations.

The main sources of information for this chapter include:

- continued consultation with the National Association of Conservation Districts (NACD);
- interviews with officials of state agencies responsible for conservation programs regarding their program authorities;
- consultation with the National Association of State Departments of Agriculture;
- the published reports of the National Agricultural Lands Study (GPO 1980); and
- the published and unpublished work of researchers in natural resource law currently or formerly employed by the Natural Resources Economics Division of the Economic Research Service. These specialists include J.D. Aiken, W.D. Anderson, J.P. DeBraal, B.H. Holmes, and D.T. Massey.

CONSERVATION DISTRICT LAWS

In 1937, the President sent a "Standard State Soil Conservation District Law" to all the State Governors and proposed its passage. The purpose of this model state law was to provide the responsible state and local cooperation required by SCS's new program of soil conservation improvements on private land and by other potential federal, state, and local conservation programs. All the states responded by passing laws in the late 1930's and early 1940's that were based on the model law. Consequently, state conservation district laws are similar but contain some variations. Most were amended in the 1950's to put more emphasis on water conservation and to confer authority to carry out watershed projects. More recent amendments confer authorities to participate in state water quality management and erosion and sediment control programs, critical area land-use management programs, and administration of special soil and water conservation funds--including funds that provide state financial assistance for installing soil and water conservation practices.

All the state conservation district laws create two levels of authority. They require that a state conservation agency assist and coordinate the work of local conservation districts, secure the cooperation of federal and other state agencies, and disseminate information. In almost half the states, the state conservation agency is an independent committee, commission, or council. In the others it is a unit of a state department, typically the department concerned with natural resources, environmental protection, or agriculture.

SCS invited state conservation agencies to participate in the RCA Appraisal and the development of the National Conservation Program. In 1979, SCS granted \$2 million to state agencies to help with these activities. By the end of 1983, 44 states had used this money and other resources to prepare long-range conservation plans.

The state conservation district laws also conferred powers on the local authorities they created. These local authorities are called conservation districts in some state laws; other state laws call them soil conservation districts, soil and water conservation districts, or natural resources districts. In this document they are referred to generally as conservation districts, or simply as districts.

All the states except Wisconsin have such independent local authorities. Wisconsin abolished its conservation districts in 1982 and transferred their functions to county governments, to be carried out by land conservation committees consisting largely of county board members and appointees.

Conservation districts have been established in nearly all rural, most suburban, and many urban areas. Districts vary among states: some are subdivisions of state government, some of county government; some follow county borders, and some

cover parts of counties or two or more counties. District governing boards are locally elected or appointed. At the request of the district board, SCS assigns a district conservationist and a staff to provide technical assistance to the district and its cooperating land users.

The state laws authorize the districts to study natural resource needs and problems and develop long-range programs and plans for soil conservation, flood prevention, water management, recreation, and other purposes on private and public land. The districts educate land users about the plans and carry out demonstration projects. They also provide land users with technical, financial, and other assistance (including machinery, equipment, fertilizer, and seeds)(1) in installing conservation practices on their land. The laws also authorize conservation districts to require land users to enter and fulfill agreements to carry out conservation practices or farm conservation plans as a condition of receiving benefits and services.

State laws also authorize districts to acquire land and interests in land and to carry out conservation projects on such land or on land owned by the state or local governments. All the laws authorize conservation districts to receive financial and other assistance (including assignment of personnel) from federal, state, and local governments. A few laws authorize conservation districts to raise their own funds by levying taxes or issuing bonds.

About 25 state laws contain provisions that authorize conservation districts to adopt enforceable conservation ordinances approved by referendum. However, these authorities have not been extensively used, mainly because conservation district philosophy centers on voluntary participation. Also, state laws generally make it difficult to enact such ordinances because most require that the referendum is restricted to landowners and must be passed by more than a majority vote. In 1983, Colorado repealed the authority for its soil conservation districts to enact conservation ordinances, but several Colorado counties have since enacted the same kind of land management ordinance. These ordinances require district-approved conservation plans but are enforced by the counties.

The districts participate in SCS, ASCS, FmHA, and other USDA programs, pursuant to memoranda of understanding developed between each district and USDA. In the 1980's, the districts have played a key role in organizing local cooperation with USDA initiatives to carry out the National Conservation Program.

(1) Conservation districts in several states use this authority to lend conservation tillage equipment owned by the district to cooperating farmers for conservation projects on the farmers' land or on land owned by the state or local governments.

EROSION AND SEDIMENT CONTROL

Erosion control and flood prevention practices recommended by conservation districts have long been known to keep sediment and associated pollutants generated by agriculture and forestry out of waterways. Some local governments began in the late 1960's to enact ordinances that drew on district expertise to deal with erosion-caused pollution from urban development. In the 1970's, virtually all the states turned to the districts for assistance in curbing erosion-caused water pollution from agricultural and other land-disturbing activities, such as construction and mining. Some states specifically amended their conservation district laws to authorize the state conservation agency and the districts to participate in the state water quality management programs initiated by section 208 of the Clean Water Act. Others arranged for such participation under the original authorities conferred by the state conservation district laws.

In addition, 18 states,(2) the Virgin Islands, and the District of Columbia have enacted laws that use district-type erosion control plans in statewide programs of erosion and sediment control (at least partly) for water quality management purposes. The first two of these laws were enacted before the 1972 amendments to the Federal Clean Water Act.

The 1970 Maryland Sediment Control Law exempts agricultural land-disturbing activities but it requires all local governments to withhold building and grading permits from urban developers until the local conservation district has approved the developer's sediment control plan.

Iowa's 1971 amendment to its conservation district law was the first agricultural erosion and sediment control law. It requires all conservation districts to set soil-loss limits for different classes of land and requires landowners to comply with the soil-loss limits. If the failure of landowners to comply results in damage to other lands or to state interests in navigable and meandering streams and lakes, the district may issue orders to the landowners to install remedial soil and water conservation practices. The orders are legally enforceable, provided that cost-sharing assistance of 75-percent is available for installing permanent practices and an amount specified by the state conservation agency is available for temporary practices.

The Model Act. In 1973, a model state erosion and sediment control statute drafted by representatives of NACD, EPA, USDA, and state governments was published and recommended to state legislatures by the Council of State Governments. The most

important provisions of the model law can be summarized as follows:

- The state conservation agency is required to prepare a comprehensive program to control soil erosion and sedimentation resulting from land-disturbing activities. The program must identify critical erosion and sedimentation areas and include guidelines for conservation districts to use in developing regulatory programs.
- Land-disturbing activities are defined to include both agricultural and nonagricultural activities that cause accelerated soil erosion but not to include minor activities such as home gardens, landscaping, and repairs.
- All conservation districts are required to adopt district-level erosion and sediment control programs (based on the state programs) and district conservation standards for various soil types and land uses. The conservation standards are performance standards which may include soil-loss limits, erosion control practices, and water quality management practices.
- A district-approved erosion and sediment control plan must be obtained for all nonagricultural land-disturbing activities. Local or state agencies that issue permits for grading, building, or similar land-disturbing activities must require permit applicants to submit a district-approved erosion and sediment control plan with the application.
- Users of agricultural and forest land are required either to obtain and implement a district farm conservation plan or to implement the district conservation standards for their type of operations. They may be required to install any erosion and sediment control measures included in their conservation plans or needed to comply with district conservation standards, but only if cost-sharing assistance of at least 50 percent or adequate technical assistance is made available to them.
- Permit-issuing authorities (for activities requiring permits) and conservation districts (for agricultural activities) have authority to inspect land-disturbing activities for violation of required plans or conservation standards and to issue administrative orders requiring specific remedial measures. The administrative orders are subject to judicial review.
- County attorneys bring enforcement actions on request of permit-issuing authorities or conservation districts. Violations of administrative orders are subject to injunctions and criminal penalties.

State Laws Based on the Model Act. Most state erosion and sediment control laws passed since 1973 follow the Model Act to some extent. (They are generally amendments to the conservation district law or in the next section of the code.) They

(2) Connecticut, Delaware, Georgia, Hawaii, Illinois, Iowa, Maine, Maryland, Michigan, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, South Dakota, Virginia, and Wisconsin.

typically require the state program to identify critical sedimentation areas and to provide guidelines for local programs based on district erosion control standards. They generally require local authorities to approve erosion and sediment control methods before granting permits for urban development activities.(3) But few of the laws follow the Model Act's treatment of agricultural activities. The Connecticut, Georgia, New Jersey, North Carolina, and South Carolina laws exempt all agricultural activities. Virginia exempts plowing, tilling, harvesting, and conservation engineering operations, and Michigan exempts plowing and tilling.(4) But Virginia and Michigan require regulation of other agricultural activities (such as drainage ditches) without conditioning enforcement of compliance on the availability of cost-sharing assistance.

Hawaii, South Dakota, and the Virgin Islands require agricultural activities to conform to district conservation plans or standards to avoid violating the law but do not require cost-sharing assistance to help farmers install remedial measures. The Delaware law follows the Model Act in requiring adequate technical assistance or cost-sharing assistance of 50 percent prior to enforcing correction of agricultural violations. The Illinois law requires each district program to provide cost sharing for enduring erosion and sediment control measures but makes no provision for enforcing the conservation standards for either urban or agricultural land-disturbing activities. Instead, it provides for public hearings on violations.

Other State Laws. Some states approach the goal of curbing erosion and nonpoint-source pollution by ways entirely different from those of the Model Act. These laws are treated here in more or less detail according as they authorize state-wide programs, address highly localized and specific problems, or assign control to local governments and agencies.

New York.--New York has no state-level sediment control law that applies to urban land uses. However, an amendment to its conservation district law requires that owners and operators of concentrated animal operations and of land-holdings of more than 25 acres that are used for agriculture and forestry must apply to their districts for a conser-

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- (3) The Connecticut law requires that provisions for prior approval of erosion and sediment control plans be included in all zoning, planned unit development, and subdivision regulations.
 - (4) Other land-disturbing activities that are commonly exempted in state acts include construction of single homes or on small sites, public agency activities that are subject to other erosion control regulations, activities within the boundaries of local governments that have their own erosion and sediment control ordinances and activities regulated by other state programs, such as mining.

vation plan. The plan must provide a practical system for controlling both soil erosion and non-point-source water pollution. The districts must develop all required conservation plans by January 1, 1987 (or by January 1, 1985, if the farm is in an agricultural district or receives agricultural-value assessment).(5) The New York mandatory conservation plan law does not provide any means to enforce implementation of the plans.

Pennsylvania.--Both Pennsylvania and Maine regulate sedimentation under their water quality laws. Pennsylvania's program is based on two sections of the Pennsylvania Clean Streams Law. Section 316 provides that the Department of Environmental Regulation may order a landowner or land user to correct a polluting or potentially polluting "condition on land" or to allow a state agency access to correct the condition at the polluter's expense. This section further provides that if sediment pollution originates from land covered by a fully implemented and maintained district conservation plan, the landowner or land user is exempted from the civil and criminal penalties in the act.(6)

Section 402 authorizes the State Environmental Quality Board to issue a regulatory order whenever it finds that an activity not requiring a (point source) permit under the act requires regulation to prevent pollution. Regulatory orders issued under this section require all persons engaged in earth-moving activities to adopt and maintain an effective erosion and sedimentation control plan. Individual permits conditioned on such plans are required for all earth-moving activities on areas of 25 acres or more, except "plowing and tilling for agricultural purposes." For plowing and tilling, district conservation plans or technically equivalent plans based on state-level conservation standards are considered acceptable erosion and sediment control plans.

Maine.--Maine's agricultural sediment control law is an amendment to the law requiring a license for all waste discharge into state waters. The amendment provides that a license is not required for nonpoint-source discharges resulting from erosion related to agricultural activities, on condition that the land is covered by a district conservation plan that provides for nonpoint-source pollution control, and that the agricultural activities are in compliance with the nonpoint-source pollution control provisions of the plan, or the conservation district has certified that no funds are available from existing federal or state programs to carry out those provisions.

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- (5) After January 1, 1987, New York conservation districts must provide land users with a conservation plan within 6 months of application.
 - (6) Section 316 was originally intended and, in the past, was mainly used to control pollution from mining. It is now being used to control agricultural pollution.

Ohio.--Ohio's 1978 Agricultural Pollution and Urban Sediment Pollution Abatement Law directs the state conservation agency to establish rules containing technically feasible and economically reasonable standards to abate both kinds of pollution. The law defines agricultural pollution to include erosion from farm and forestry operations and water pollution by sediment and associated substances and animal wastes. It defines urban sediment pollution as erosion or sedimentation resulting from all nonfarm soil-disturbing activities except surface mining.

The state conservation agency's urban sediment control rules must provide for implementing the areawide water quality management plans prepared under section 208 of the Clean Water Act. Approval of urban sediment control plans and issuance of permits are required before the start of urban soil-disturbing activities on areas of 5 acres or more.

The urban sediment control rules are to be carried out by the counties. The counties are given permissive authority to adopt their own rules for filing sediment control plans before beginning soil-disturbing activities, to inspect the land for compliance with the plans, and to enforce compliance. County rules do not apply to incorporated areas within counties, because such areas have self-governing powers to adopt their own sediment control rules. Neither do they apply to public highway, transportation, or drainage projects undertaken by public agencies in compliance with sediment control policies that have been approved by the state conservation agency.

Before this law was enacted, the principal authority for the control of urban sediment pollution was to incorporate sediment control provisions in subdivision regulations, since zoning in Ohio is performed by townships. The state law gives the counties a new authority to regulate the nonpoint-source effects of development on all areas of 5 or more acres, regardless of whether the development is subdivided.

The Ohio law requires the agricultural pollution control rules to provide for time-phased achievement of USDA soil-loss limits. However, after the initial phase, no more stringent phase may be adopted without an economic impact study and a public hearing in each district.

The law directs that the state agency shall establish procedures for administering the agricultural pollution control rules and for enforcing the rules for animal waste management. The state agency shall enter agreements with the conservation districts to achieve compliance with the agricultural pollution rules and to obtain enforcement orders for animal waste management. In addition, the state agency shall specify the particular agricultural pollution control practices eligible for cost sharing out of appropriated cost-share funds. Measures to control erosion and discharge of animal wastes are eligible for cost sharing, if they are enduring practices that require large capital expenses. The

Ohio law contains no provision for enforcing installation of erosion control measures. But installation of animal waste management measures may be enforced, provided that 75 percent public cost-sharing assistance is available. There is a limit of \$5,000 per person on cost-sharing assistance from all sources (including the Agricultural Conservation Program), but this limit may be waived.

South Dakota.--The only state that regulates land-disturbing activities that cause wind erosion is South Dakota. A 1984 law amends the state's soil erosion and sediment control law by requiring all landowners and operators to prevent or minimize dust blowing and soil erosion by appropriate erosion control practices including, to the extent practicable, leaving stubble residue on the soil surface.

If a conservation district has evidence that soil is blowing from any land, the district may inspect the land. If it finds that soil is blowing from the land in excess of district standards and is injuring other property, the district can issue an order to the owner or operator stating the treatment required and the date the treatment is to be started. If the district finds the blowing is causing an emergency, it will issue an emergency order; if the owner or operator then fails to begin treatment within 3 days or to perform the treatment as prescribed, the district may perform the work itself and the county will assess the costs--not to exceed \$15 per acre or the actual cost of the treatment--against the land which is the source of the blowing soil.

The 1984 law also provides that conservation district standards may designate as "fragile lands" any area in the district that is assigned to class IVE, VI, VII, or VIII in the SCS land-capability classification system and is so highly erodible as to cause a public hazard if converted to cropland. The conservation districts may require an approved conservation plan before any land designated as fragile land is converted to cropland.

Wisconsin.--The 1981 revision of Wisconsin's soil and water conservation law, which replaced the independent conservation districts with county land conservation committees (LCCs), contains a state erosion control program including control of nonpoint-source pollution. The Wisconsin law provides for considerable adjustment of the state program to meet local conditions.

The 1981 law directs the state conservation agency to allocate soil erosion control planning funds among the LCCs. The state agency assists the committees in preparing soil erosion control plans, reviews and develops recommendations to improve such plans, approves or disapproves the plans, and concentrates state resources in areas with the most severe erosion (or nonpoint-source pollution) problems. The state agency allocates funds for up to 75 percent of the cost of conservation practices to LCCs with approved soil erosion control plans.

The Wisconsin law directs each LCC to prepare a detailed erosion control plan that specifies maximum acceptable soil erosion rates and

identifies the land parcels where soil erosion standards are not being met. The plan also specifies the changes in land use or management practices needed to bring these parcels into compliance with the standards. LCC plans must specify the methods used to assist landowners and land users to control erosion, including technical assistance and practices selected for cost sharing under contract with the LCC. Contracts require the landowner or land user to return cost-share payments if the practices are not maintained or if title to the land is transferred to an owner who does not agree to comply with the requirement of the LCC plan.

In addition, the LCCs are authorized to develop erosion and sediment control ordinances for enactment by the county. The ordinances may prohibit or regulate land uses and land management practices that cause excessive soil erosion, sedimentation, nonpoint-source water pollution, or stormwater runoff. The ordinances are applicable throughout the county or in any part of it; incorporated areas are not exempt. Before such an ordinance is enacted, it must be approved by the county board of supervisors and by majority vote of a referendum open to all voters in the affected area.

County erosion and sediment control ordinances prescribe necessary enforcement procedures, which may include injunctions and civil forfeitures. Counties that enact such ordinances must provide enforcement personnel. The ordinances also provide at least 1 year's notice of the violation, together with a management plan, before an enforcement action can be brought. The management plan must explain all reasonable options for achieving acceptable soil erosion rates and the technical assistance and financial assistance (cost sharing, loans, tax incentives) available for taking such options.

An interesting feature of the provision for county ordinances in the Wisconsin law is that it gives the counties permissive authority to regulate both land use and land management practices. Although the counties already had authority to regulate urban land development under their existing land-use regulatory powers, it has not been customary, until recently, for them to regulate agricultural land management practices. This authority had been given to the districts, not the counties, by Wisconsin's old conservation district law.

The Wisconsin law can be classified as a statewide erosion and sediment control law because it provides statewide erosion control planning and cost sharing and enforcement in some, but not all, areas of the state. Other laws go even further in localizing state efforts to control nonpoint-source pollution. Montana's natural streambed and land preservation law and Maine's dredging law provide for erosion and sedimentation control practices only for activities on the bottoms and the banks of waterways.

Nevada's water pollution control law permits a state commission "to prescribe controls for diffused sources" of pollution to prevent the degradation of high-quality waters. The Nevada law directs the responsible state agency to delegate administration

of diffused-source controls to qualified cities and counties.

State responsibility under the Clean Water Act for areawide nonpoint-source pollution control planning and state-level concern for controlling the erosion and sedimentation effects of urban construction have encouraged the states to assume responsibility for urban stormwater control. Because the substitution of paved surfaces for water-retaining vegetated soil increases and concentrates runoff, urbanization commonly results in stream channel erosion and massive sedimentation as well as local flooding. Planners concerned with areawide water quality management commonly look to state conservation agencies, conservation districts, and SCS for assistance in designing stormwater retardation practices.

Some states (such as Wisconsin) have adopted statutory language that includes stormwater management as one of the purposes of local erosion and sediment control laws. In others (such as Virginia) the state conservation agency has amended its erosion and sediment control standards and guidelines to ensure that local ordinances require developers to include stormwater runoff management features in their already required erosion and sediment control plans.

Two states, New Jersey (1981), and Maryland (1982), have enacted separate stormwater management laws. The New Jersey law requires that all municipalities prepare a stormwater management plan and implementation ordinance, providing that they receive 90 percent planning grants from the state Department of Environmental Protection. All such plans must be coordinated with the appropriate conservation district to ensure integration with district-administered erosion and sediment control programs.

The Maryland law requires that each county and municipality adopt and implement a stormwater management program that prohibits the granting of grading and building permits and land development for residential, commercial, industrial, or institutional use without an approved stormwater management plan. The law directs the Department of Natural Resources to establish state-level criteria and procedures for local stormwater management programs--including the minimum content of local ordinances to be adopted--and to provide technical assistance to local governments. Counties and municipalities are authorized to provide by ordinance for the conservation district to review and approve stormwater management plans.

STATE FINANCIAL ASSISTANCE FOR CONSERVATION PRACTICES

State laws that provide financial assistance to private landowners to install conservation practices are recent, and many of them form a response to the RCA-NCP effort. Most such laws follow the model of federal financial assistance by providing cost sharing for the installation of various types of conservation practices under contracts with conservation districts. The few laws that provide low-interest loans for conservation practices also stipulate for district supervision of the practices.

Assistance to Conservation District Projects

Most state conservation district laws provide for state financial assistance to district conservation projects. Nonspecific appropriations are made on occasion; for example, in 1984 New Mexico made \$235,000 available to its natural resources (conservation) districts, subject to a limitation of \$7,500 per district, for any purpose for which other funds available to the district may be spent. Laws providing specific funds for specific conservation projects are not new either. However, a few currently operative laws in this category deserve special mention.

One is the 1983 Maine amendment that establishes the "Soil and Water Challenge-Grant Program." Under this program, Maine allocates funds for district-proposed projects on local government land and demonstration projects on private land competitively, on the basis of state conservation program needs.

Another is a 1949 South Dakota amendment that establishes a revolving fund for loans to conservation districts for purchase of equipment and tree seedlings. This fund has been augmented by moneys from USDA rural development grants and is being used for low-interest loans to districts to buy conservation tillage equipment, which can be borrowed by district cooperators.

Cost-Sharing Programs: Soil and Water Conservation and Agricultural Nonpoint-Source Pollution Control

Some state cost-sharing programs are authorized by the general authorities in conservation district laws that enable state conservation agencies to provide financial assistance to the districts to implement their programs and enable the districts to provide financial assistance to landowners and land users to carry out soil and water conservation practices. Other programs are authorized by special laws for specific purposes or practices. Florida, North Carolina, and Tennessee have localized cost-sharing programs aimed at controlling sedimentation and nonpoint-source pollution in one or more watershed areas. The Florida and Tennessee programs were designed to supplement federal water quality programs; thus, Tennessee provided 10 percent of the cost of installing erosion control practices in critical areas in the Obion-Forked Deer

River Basin. North Carolina's program, which is the largest in acreage covered and in funds committed, is described below. At least 18 other states either have current statewide cost-sharing programs for practices to control erosion and nonpoint-source pollution or have special legislative authorities for such programs.

Alabama.--An amendment to the Constitution of Alabama, ratified by a 1985 referendum, establishes the Alabama Agricultural and Conservation Development Commission and charges it with administering a new program of cost-sharing assistance for practices to reduce erosion and improve agricultural water quality and forest resources. Each of Alabama's 67 soil and water conservation districts receives a basic allocation of 1 percent of the available funds. The remaining 33 percent is allocated according to three factors: the percentage of Alabama's highly erodible land that is situated in a district; reforestation needs; and agricultural water pollution problems. The funds may be used only for installing eligible practices selected from a state list. In each district, the district supervisor determines which practices are needed (and therefore eligible for cost sharing), subject to approval by the Commission. Cost-share rates are set by the Commission and vary depending on the practice. Cost-share grants are exempt from the state income tax.

The program is limited to agricultural and forest land; however, tracts of less than 20 acres yielding less than \$1,000 worth of agricultural production per year are not eligible. Land owned or managed by other units of government is also ineligible. An applicant for cost sharing must file a district-approved conservation plan with the application.

Delaware.--In 1977 Delaware added to its statutes a new chapter entitled Erosion and Sediment Control. This act authorizes a comprehensive and coordinated statewide erosion and sediment control program to conserve and protect land, water, air, and other resources. Delaware's cost-sharing program was instituted in 1985 under authority of the state conservation district law and the 1977 act. It is administered by the state's three soil and water conservation districts, with oversight by the Delaware Department of Natural Resources and Environmental Control. The program addresses both urban and agricultural concerns. It encompasses not only erosion and sediment control but also water quality and water management, organic waste management, forestry, wildlife habitat development, and other conservation needs. All contracts have a 10-year term and require operation and maintenance of the practices. Standards and specification for the cost-shared practices are those of the Soil Conservation Service. The basic cost-share rate is 50 percent; in special situations, however, a higher rate may be allowed, depending upon the available funds and the ensuing public benefits.

Idaho.--A 1980 amendment to Idaho's water pollution control law authorizes the state water quality agency to enter into contracts with conservation

districts to provide for district-administered cost sharing for implementing the best management practices (BNPs) identified in the state's Agricultural Water Quality Management Plan. In a district water quality project, the maximum cost-share rate is 90 percent (including cost sharing under other federal, state, or local programs), and payments may not exceed \$25,000 per individual. The cost-sharing funds are used in nine water quality project areas established by the state. These projects are similar in design to USDA's small watershed projects of land-treatment type, although the Idaho projects have water quality rather than watershed protection as the main objective.

Conservation districts that contract with the state water quality agency must develop district-level projects for controlling nonpoint-source pollution, in consultation with the state conservation agency, and must make sure of adequate participation by landowners in the area. The plan of a project must include landowner water quality objectives, methods for technical assistance and project administration, and cost-share rates for approved practices.

By November 1984, \$6.7 million had been obligated for the projects. Two projects have been completed.

Illinois.--The Illinois Sediment and Erosion Control Law requires the state conservation agency to prepare guidelines for district use in developing programs that provide cost sharing for "enduring erosion and sediment control devices, structures, and practices." Under this law, the state agency has selected and prepared specifications for eight such enduring practices, which may be funded at up to 75 percent of cost out of monies appropriated for this purpose.

In each of the fiscal years 1983 and 1984, \$50,000 was allocated to help landowners comply with the state erosion-control law. Complaints about erosion go to the conservation district, which asks the landowner's permission to verify the erosion rate. If the complaint is valid, the district works with the landowner to develop a plan for reducing erosion to an acceptable level. There is no penalty for failure to comply. Of the first 53 complaints processed, however, 20 were judged invalid, and landowner compliance on the rest was nearly 100 percent.

At present, the maximum acceptable rate of erosion under Illinois law is four times the tolerance (T-value) of the soil. The maximum rate will be successively lowered in 1988, 1994, and 2000. In 2000, all the land must erode at a rate of no more than T to comply.

Two new programs that go into effect in fiscal year 1986 are designed to help achieve the goal of T by 2000. Both are authorized under the general provisions of the Illinois conservation district law, and each has first-year funding of \$2 million. One is the County Conservation Practices Program, which will provide cost sharing to farmers for the construction of enduring practices. The other is the Watershed Land Treatment Program, which

concentrates on the implementation of enduring practices in high-priority watersheds.

Iowa.--The Iowa conservation district law was amended in 1971 to establish conditions for state cost sharing of the mandatory practices needed to comply with Iowa's Erosion Control Law. In 1981, another amendment laid down general conditions for cost sharing of permanent soil conservation practices.

On the basis of the 1971 and 1981 amendments, the general authorities of the state conservation agency and the conservation districts, and supplementary appropriations, Iowa operates three cost-share programs:

- The Soil Conservation Financial Incentives Program provides cost-sharing assistance for nine enduring practices. If the practices are needed to comply with Iowa's erosion control regulatory program or are located above publicly owned lakes on a state priority list, the cost-share rate is 75 percent. Elsewhere it is 50 percent.
- The No-Till Incentive Program replaced the earlier Till Program in July 1981. Under it, the districts have the option of using up to 10 percent of their allocation for incentive payments of not more than \$10 per acre to farmers who use no-till on their cropland. (The Till Program, which was enacted by 1979 appropriations legislation, applied to areas nominated by districts where the owners of at least 80 percent of the land agreed to maintain a 55-percent surface cover of the previous crop's residue on 50 percent of their row-crop acreage. A one-time payment of \$30 was allowed. The practice had to be maintained for 5 years.)
- The Wind Erosion Control Incentives Program was initiated by 1979 legislation that transferred state road-use tax revenues to the state conservation agency for applying wind erosion control practices along Iowa's roads. The program allows one payment of \$1,000 per acre for tree windbreaks (to be maintained for 10 years) and one payment of \$500 per acre for grass windbreaks (to be maintained for 5 years).

Kansas.--A fiscal 1981 appropriation to the state conservation agency initiated an ongoing cost-sharing program for enduring structures and practices to improve the quality and quantity of water resources. This program is based on state conservation agency authorities to provide assistance to district conservation programs and also to participate in state programs that conserve and develop water resources and improve and maintain water quality. For the water resources program, the Kansas state conservation agency has developed a list of eligible enduring practices and structures and of cost-share rates, which range up to 80 percent. Eligible practices include animal-waste control facilities, grassed waterways or outlets, permanent vegetative cover on critical areas, terraces, diversions, and impoundments.

State policy directs the state agency to notify conservation districts of the amount of money credited to them for cost-sharing practices on the state list. The conservation districts determine the needed practices and the cost-share rates (which must not exceed the state maximums), forward recommended applications from landowners for state agency approval, and administer the program.

Maryland.--Maryland's program of cost sharing for agricultural water pollution control was initiated by a 1982 amendment to the state Agriculture Law. The Maryland law authorizes cost sharing for implementing best management practices (BMPs) to minimize water pollution from sediment, animal wastes, nutrients, and agricultural chemicals in "priority areas" with critical nonpoint-source pollution conditions. The law instructs the state conservation and water pollution control agencies to jointly identify geographic areas likely to contain such priority areas, designate the priority areas, and establish eligibility criteria for cost sharing. Selection of projects to be cost shared and of cost-share rates is based on estimated water quality achievements and on estimated economic benefits of the BMPs to the participating farmers. The maximum cost-share level is 87.5 percent of eligible costs. Payments may not exceed \$10,000 for one project, \$20,000 for a project carried out on different farms under a pooling agreement, or \$25,000 per farm.

State cost-sharing funds are made available under contract between the land operator, the conservation district, and the state conservation agency. The land operator must maintain the BMPs for their expected life span and so bind any successors in title. The conservation district must certify that the BMPs meet applicable technical standards and that all submitted invoices represent eligible costs.

The program was launched in 1982 with an appropriation (under the Water Quality Loan Act of 1974) of \$5 million in non-lapsing funds. It is now being managed to concentrate on priority areas impacting the water quality and aquatic resources of the Chesapeake Bay.

Minnesota.--A 1977 amendment to the Minnesota soil and water conservation district law provides for cost-sharing contracts for erosion control and water quality management. The law was further amended in 1982 and 1985 to implement special planning and targeting programs. It directs the state conservation agency to adopt guidelines for identifying high-priority erosion, sedimentation, and water quality problems and to set cost-share rates that provide a higher state share in high-priority problem areas.

As of July 1, 1985, a variable cost-share rate is in effect. Minnesota provides up to 75 percent for practices to control high-priority problems of erosion, sedimentation, or water quality and up to 50 percent for less severe problems. Several factors determine the eligibility of a given tract of land for cost sharing: the land's capability classification, its erosion rate, and its proximity to protected state waters.

The Minnesota law gives the districts authority to enter contracts with land occupiers or state agencies to use state cost-sharing funds to implement permanent systems for erosion or sedimentation control. It directs the state conservation agency to allocate funds to a district at the district's request, after reviewing its comprehensive and annual work plans. At least 70 percent of state cost-sharing funds must be allocated to practices addressing high-priority erosion, sedimentation, and water quality problems identified in the state rules and in district comprehensive and annual work plans. At least 50 percent must be allocated to high-priority erosion problems identified in district annual work plans. The remainder can be used to administer the program or granted to the conservation districts for conservation activities.

Mississippi.--The legislative authority for Mississippi's soil and water conservation cost-sharing program was enacted in April 1985. Funds for the program will be sought--probably for fiscal year 1986--when the state conservation commission has defined objectives and prescribed program rules and regulations, including the eligible practices and the cost-share percentage allowed.

Missouri.--Missouri amended its conservation district law in 1980 to authorize the state conservation agency to promulgate rules and guidelines for a state-funded soil and water conservation cost-share program and to assist the districts in administering it. The Missouri law authorizes the state agency to require landowners receiving state funds to enter into contracts requiring the maintenance of cost-shared practices for their expected life or 10 years, whichever is less.

An exception is provided in cases where maintenance would create undue hardship for the landowner. In these cases the district may be given a right of access to maintain the practice.

Under this law Missouri's state conservation agency has developed a program that allocates half its funds equally among the conservation districts and the other half on the basis of relative needs for the eligible practices within districts. The agency has developed and annually reviews a list of eligible enduring practices. Conservation districts may cost share with landowners for eligible practices contained in their conservation plans, but only on lands eroding above tolerable soil-loss limits. Funds for the Missouri program have come from EPA water quality management funds as well as from state revenues.

In August 1984, Missourians voted to increase the state sales tax by one-tenth of a cent to aid conservation and the state park system. The tax, with a lifespan of 5 years, is expected to generate \$30.5 million each year. Half will go to the park system and half to soil and water conservation. All expenditures must be approved by the state legislature, but projected distribution of the soil conservation funds is as follows: 50.8 percent for the state conservation cost-share program; 13.1

percent for a low-interest conservation loan program; 13.1 percent for nonfederal costs of small watershed projects; 13.1 percent for technical planning and clerical help for conservation districts; 6.6 percent for accelerating soil surveys; and 3.3 percent for administration and personnel. The tax went into effect in July 1985.

Nebraska--Nebraska's cost-share program is authorized by 1977 and 1983 amendments to the law authorizing natural resources districts (the Nebraska equivalent of conservation districts). The Nebraska law creates a soil and water conservation fund out of which the legislature may appropriate money for up to 75 percent cost sharing of eligible projects and practices. The law directs the state conservation agency to administer the state fund to supplement, not replace, available federal conservation cost-share funds. Projects and practices that provide the greatest public benefit receive priority.

The Nebraska soil and water conservation law authorizes the state conservation agency to determine eligible projects for cost sharing within the district. Cost-share contracts require landowners to agree to maintain cost-shared practices for a period of up to 10 years and may require them to grant a right of access (to the district or state agency) to operate and maintain the practices.

Under this authority, each year the Nebraska conservation agency initially allocates funds equally among the districts and reallocates any unused funds. Cost-shared practices include impoundments, terraces and terrace outlets, and irrigation reuse pits.

An innovative provision of this law, which as yet has not been used, is authority to make land diversion payments to encourage alternative cropping patterns that allow more time for installing conservation measures.

Nebraska also has a joint state-district wildlife habitat program. This program is authorized in part by the enabling law of the state game and parks agency and in part by the provisions of the Nebraska conservation law that authorize districts to establish and raise taxes for their own cost-share programs. Seventy-five percent of the funds for this program comes from hunting fees and 25 percent from district funds.

This program provides payments of \$7.50 to \$30 per acre per year for protecting existing wildlife cover and for establishing various types of cover on converted cropland under 2- to 5-year contracts between the district and the landowner. Landowners may receive an additional \$2.50 per acre per year for agreeing to allow public access.

New Jersey--New Jersey's 1982 Farmland Preservation Bond Act provides up to 50 percent cost sharing for soil and water conservation projects carried out on farmland that is in a voluntary farmland preservation area (agricultural district). Cost sharing is funded by the State Farmland Preservation Fund. This program is administered by the state

conservation agency through the local soil conservation districts. It is limited to practices included in a district-approved conservation plan.

North Carolina--A 1984 North Carolina law appropriates funds for implementing the agricultural part of the state's nutrient-sensitive watersheds program. Under this appropriation and its general authorities, the state conservation agency is administering a pilot program of 75 percent cost sharing and technical assistance for establishing sediment control practices on cropland (including conversion to grass or trees and sod-based rotations) and installing animal waste management systems in three watersheds: the Chowan River, Falls Lake, and B. Everett Jordan Lake watersheds. Three-year and annual agreements are available. Cost-share payments are limited to \$15,000 per year per applicant. The farmer's 25 percent share of the average cost for each practice may include in-kind support.

North Dakota--A 1977 North Dakota law authorizes the state Game and Fish Department to pay 75 to 100 percent of the cost of practices that enhance wildlife habitat and improve water quality. Interest earned on the Game and Fish Reserve Funds maintains the program.

Ohio--Ohio has two authorities for cost-sharing programs in this category. Under the already discussed Agricultural Pollution and Urban Sediment Pollution Abatement Act, the state conservation agency specifies enduring agricultural pollution abatement practices as eligible for cost sharing. Only those practices are eligible for which costs of installation are likely to exceed economic returns resulting from their installation. The state agency reviews district proposals on a regional basis and selects practices for cost sharing from funds available for this purpose. The practices selected may involve control of erosion with offsite effects or animal waste management. The sediment control practices are cost shared at the 75 percent rate. However, most practices selected for cost sharing are animal waste management facilities, which may receive a total of \$5,000 per operator in public funds, including both state funds and ACP.

The other Ohio program derives from a 1969 amendment to the state conservation district law. This law authorizes the state conservation agency to provide assistance for county construction of works of improvement approved and requested by conservation districts, out of monies appropriated for such purposes. This provides a means of financing group projects for drainage, erosion and flood control, and wildlife habitat improvement. The state conservation agency has set cost-share rates that range from 25 to 100 percent, depending on the type of practice. Some wildlife habitat practices are cost shared at 100 percent.

Since Ohio conservation districts have no taxing powers, the counties are required to assess the local share of the cost on the real property benefited by the projects.

Oklahoma.--A 1981 amendment to the Oklahoma conservation district law authorizes the state conservation agency to administer a program that provides cost-share funds to conservation districts for practices to control soil erosion and nonpoint-source pollution. The state conservation agency has used this authority to carry out a pilot nonpoint-source pollution control project in Caddo County in cooperation with several USDA agencies.

South Dakota.--South Dakota provides cost-sharing assistance to landowners for establishing and preserving wildlife habitat for pheasants. The landowner must maintain the practices for 6 years.

Under a 1985 law, the state conservation agency makes annual incentive payments of \$5 per acre for 10 years for shelterbelts. The shelterbelts must be certified by the local conservation district as being planted and maintained in accordance with state guidelines. The program is modified from a 1984 law that exempted shelterbelt acreage from property tax and was concomitant to South Dakota's wind erosion control law of 1984.

Virginia.--Virginia's agricultural nonpoint-source pollution control programs are authorized by basic state conservation agency and conservation district authorities. Under these authorities, the legislature appropriated funds for fiscal year 1985 to the state conservation agency to carry out agricultural nonpoint-source pollution control programs in the Chesapeake Bay and Chowan River Basins. Although the appropriations language contained no program detail, the monies were appropriated to carry out administratively prepared programs that feature cost sharing, technical assistance, education, and research.

These programs give responsibility for administering the cost sharing and technical assistance to the conservation districts under direction of the state conservation agency. In the Chesapeake Basin, six practices have been selected for cost sharing throughout the basin, and seven additional practices have been selected for cost sharing in the priority problem area. In the Chowan Basin, seven practices have been selected for cost sharing throughout the basin.

A forerunner of these programs was a smaller cost-shared project that began in fiscal year 1983 and will be complete in 1986. A one-time appropriation of \$100,000 in nonlapsing funds is being used for establishing grassed filter strips, at a cost-share rate of \$0.10 per linear foot, in high-priority areas with severe erosion problems. This practice (at the same cost-share rate) is also among the best management practices listed for the Chesapeake Bay program.

Wisconsin.--Wisconsin's authority to provide cost sharing for soil erosion and nonpoint-source pollution control practices is found in the already discussed 1981 revision of its soil and water conservation law. The Wisconsin law requires the county land conservation committees to prepare soil erosion control plans (defined to include nonpoint-source pollution control, where needed).

It authorizes the state conservation agency to allocate funds for up to 75 percent cost sharing to county committees with approved erosion control plans. The areas with the most severe erosion problems have priority in cost sharing. The payments must be returned if the practices are not maintained or if title to the land is transferred to an owner who does not agree to maintain the practices.

Cost-Sharing Programs: Forestry

Alabama and Delaware have newly enacted, comprehensive cost-sharing programs for resource conservation that operate broadly enough to include forest renewal and improvement; these programs are summarized in the preceding section. Other states have developed separate forestry programs. A few of these make cost sharing available to other units of government that own or manage forest land. Most of the programs provide assistance only to private landowners, and nearly all exclude those who are engaged or financially interested in wood products industries. Generally, these forest development laws provide planning and cost-sharing assistance for forestry practices intended to increase production of commercially valuable timber while at the same time promoting soil and water conservation and enhancing wildlife habitat. California maintains its program on revenues from the state forests. Florida's unique program is a combined effort of the state Division of Forestry, ASCS, and private industry (the Florida Forestry Association). In each of the other states--Illinois, Mississippi, North Carolina, South Carolina, and Virginia--the cost-share monies are paid out of a special fund financed in large part by revenues from a severance tax on primary processors of forest products.

The practice specifications of the state programs generally agree with those approved for the area by USDA's Forestry Incentives Program (FIP) and Agricultural Conservation Program (ACP). That makes it possible to treat large areas by applying state and federal programs on adjacent tracts and thus to increase the effectiveness of the treatment, especially in controlling erosion. Also, the state programs may be available in counties not designated for FIP. Most state laws do not permit timber growers to receive cost-share payments for more than one program on the same acreage; Illinois and California are exceptions. The Illinois law specifies that state cost-sharing assistance can be used to supplement USDA cost sharing under FIP and ACP. California's program does not include treatments using herbicides, which are carried out under FIP.

California.--Since 1980 the California Department of Forestry has administered a cost-sharing program for reforestation and timber stand improvement that also includes soil and water conservation practices suitable for forest land and measures to benefit fish and wildlife. Eligible practices are cost shared at a rate of 80 to 90 percent. They are incorporated into professionally developed, long-term forest management plans for participating landowners, who must maintain the practices for 10

years. To be eligible, landowners must have not less than 20 nor more than 5,000 acres of forest land. The minimum acreage that may be treated under the program is 5 acres; there is no maximum. There are no restrictions on the kinds of trees that may be planted.

Florida.--As of 1983, 16 counties in Florida were included in a reforestation program supported by the Florida Forestry Association and operated jointly by the state Division of Forestry and ASCS. Private landowners who have at least 10 acres of suitable land are eligible for the program. A participating landowner plants a minimum of 5 acres with pine seedlings purchased from a state nursery; the Association then reimburses the landowner for the cost of the seedlings. There is an upper limit of 60,000 seedlings per landowner per year (enough to stock 100 acres). ASCS handles requests; the Division of Forestry provides technical assistance and processes payments; and the Association designates counties, practices, and cost-share rates. Also, the Forest Service contributes minimal federal grants for technical assistance. Reimbursement for seedlings is the only form of financial assistance currently provided.

Illinois.--The 1984 Illinois law creates a program to reimburse up to 20 percent of the cost of acceptable practices specified in approved forest management plans. To be eligible for cost-sharing assistance, timber growers must own or operate at least 5 contiguous acres dedicated to timber production and must develop an approvable forest management plan (usually with the assistance of the district forester). The Department of Conservation is directed to review forest management plans, assist timber growers to make necessary revisions, approve acceptable plans, enter agreements to provide cost sharing for acceptable forest management practices specified in the approved plans, and evaluate the plans annually for reapproval. The plans must describe kinds of timber to be grown, forest management practices, and estimates of the costs. The plans must also furnish details of planting, harvesting, and measures for soil and water conservation and wildlife habitat.

Eligible forest management practices include site preparation, brush control, purchase of planting stock, planting, firebreaks, fencing, and timber stand improvement. The state sets ceilings on reimbursable costs for materials and for labor, which may be done by the timber grower or landowner or a contractor. The maximum payment has been set at \$1,000 per timber grower or landowner per year.

Mississippi.--The 1974 Mississippi law authorizes a program of cost-share incentives to private landowners and agencies of the state or its political subdivisions for implementation of eligible forest management practices approved by the state Forestry Commission. Eligible practices are planting, seeding, timber stand improvement, prescribed burning, site preparation, systematic planting of hardwood trees for game habitat, and other practices approved by the Commission. The Mississippi law does not specifically require that practices for which cost-sharing assistance is

requested be included in a forestry development plan prepared by the state forestry agency. In practice, however, all cost-sharing assistance is based on such plans. The law does provide that the maximum cost-share rate is 75 percent of actual cost, up to an adjusted dollar limit per acre, and that no eligible owner may receive a total of more than \$3,000 per year except under an approved 3-year forest development plan. The total payment limit for a 3-year plan is \$9,000.

The Mississippi law differs from the Illinois law in authorizing the state forestry agency to render cost-sharing assistance in the form of equipment, supplies, and services for on-the-ground implementation of practices. The state agency will not supply such practical aid, however, if the landowner or private vendors can supply it. If the state forestry agency must supply practical aid or services, the agency will assess the cost at the prevailing commercial rate and bill the landowner for his (or her) share.

North Carolina.--The 1977 North Carolina Forestry Development Act authorizes a program of cost-sharing assistance for practices approved by the State Department of Natural Resources and Community Development. The law provides that the practices must be for site preparation, reforestation, noncommercial removal of residual stands for silvicultural purposes, and cultivation of established young growth of desirable trees as determined by the needs of the individual forest stand. The practices approved for cost sharing must be included in approved forest management plans (prepared by the Division of Forestry) to ensure both maximum forest productivity and environmental protection. The law provides that the department shall establish cost-share rates, which shall not exceed 60 percent of the actual per-acre cost of implementing the practices or 60 percent of the prevailing commercial rate, whichever is less. No landowner may receive cost-sharing assistance in a single year for more than the total of approved practices on 100 acres of land.

The North Carolina law resembles the Mississippi law in limiting assistance to private landowners to "nonindustrial" landowners. However, it specifies that public-agency landowners, whether federal, state, or local, are not eligible to participate in the program.

The North Carolina law declares a preference for use of private sector resources to furnish services and materials needed to implement the practices. The Forestry Division implements the practices where private sector resources are unavailable and assesses the costs at prevailing commercial rates.

South Carolina.--A 1981 South Carolina law authorizes cost-sharing assistance for forest renewal. The state Forestry Commission administers the program, which started in 1982. Eligible practices include site preparation, reforestation (which may be fostering natural regeneration as well as planting seed or seedlings), and timber stand improvement. Participating landowners must maintain the practices for 10 years. As in North Carolina,

the law specifies that a landowner may receive cost-sharing assistance for work performed on no more than 100 acres per year. The state cost share may not exceed the levels currently available under FIP.

Virginia.--The 1970 Reforestation of Timberlands Act authorizes the state forester to furnish planning and cost-sharing assistance to landowners who reforest cut-over hardwood forest land and cropland with certain commercially valuable pine species. The objective of the assistance program is timber production, environmental protection, and multiple-purpose use. State and local public agencies and private landowners--whether industrial or nonindustrial--are eligible to participate in this program.

Reforestation projects must be recommended and approved by the State Forester. Costs to be shared are the prevailing commercial costs for site preparation and planting, including equipment, labor, seedlings, seeds, and materials. The cost share is set by regulations (which are annually reviewed and may be revised). As of mid-1985, it may not exceed 50 percent or \$60 per acre. Total limits on payments per landowner are also set by regulations.

Cost-share payments may be made in two ways:

- The landowners may use available state resources (including equipment, personnel, seedlings, seeds, and materials) without charge to the extent of the state cost share and will be billed for the surplus.
- The landowners may use their own resources or hire a contractor. They will then be reimbursed to the extent of the state cost share, commonly in two payments: one after site preparation, the other after completion of the project.

Loan Programs

Several states have laws creating low-interest loan programs to assist farm and ranch conservation programs. The means of funding some loan programs are worthy of note. Missouri has committed about 13 percent of the revenue from its sales tax increase (which went into effect on July 1, 1985) to a conservation loan program; the loan program's share is estimated at \$4 million a year. In Nebraska, a state lending authority sells tax-exempt bonds to banks to enable them to make loans for soil and water conservation purposes at interest rates below the prime rate. In Utah, the state conservation agency is responsible for making loans at a very low interest rate out of a revolving account largely funded by monies appropriated from state mineral-lease revenues.

Under the authority of its Renewable Resources Development Act (1975), Montana has established a revolving loan fund for carrying out practices to improve range condition. This fund (although separately administered) is part of the state general fund and has built up through regular

appropriations to a working base of \$5 million. The maximum allowable loan to a rancher is \$30,000. Repayment can be deferred for 2 years and can then be spread over 10 years. The borrower pays no interest, but the loan is secured by a mortgage on some part of the ranch. The program is administered locally by the conservation districts. It is designed to bring rangeland in poor condition up to good or excellent condition. Eligible practices include establishing watering places for livestock, fencing to help establish grazing systems, range rotation, and control of noxious weeds. One criterion used in reviewing loan applications is the sum total of related resources--water quality, wildlife, soil conservation--that would gain by a project.

In 1983 the Iowa Department of Soil Conservation established a revolving fund to make loans to landowners for the installation of permanent soil and water conservation practices. All loans must be for farms for which a district conservation plan has been developed and for projects approved by the conservation district. The loans may not be used to supplement state or federal cost-sharing assistance for conservation practices. The maximum loan that any farmer may receive is \$10,000.

A 1981 Nebraska law creates an independent corporation, the Nebraska Conservation Corporation, to manage a program of low-cost loans to farmers and ranchers to implement land treatment and water conservation practices. A 1985 amendment extends the corporation's authority to include loans to districts and to general-purpose local governments.

The Nebraska law directs the corporation to coordinate these activities with state land and water resource practices, programs, and plans, particularly those of the Department of Environmental Control, the Nebraska Natural Resources Commission (the state conservation agency), and the natural resource districts. (In practice, the Board of Directors of the Nebraska Conservation Corporation is the Board of Directors of the Nebraska Association of Natural Resource Districts.)

The law directs the corporation to adopt regulations concerning the number and location of conservation practices to be financed by loans, standards and requirements for allocation of available money, and commitment requirements for conservation practices.

A 1983 amendment to Utah's conservation district law creates the Agriculture Resource Development Fund and authorizes the state conservation agency to approve and make loans from the fund to farmers and ranchers, individually or in groups (for concerted projects). The statutory purposes for the loans are: nonfederal rangeland improvement and management, watershed protection and flood prevention, cropland soil and water conservation, and energy-efficient farming practice programs.

Under this amendment, Utah, which has no cost-sharing program, operates a particularly large low-interest loan program. The fund contained \$13 million at the end of fiscal 1985. Conservation practices eligible for loans include practices on the long state list,

special practices (which must be approved by the state agency), and repair and replacement of practices. The state loans may be used to supplement federal cost-share payments. The program gives priority to applicants whose primary source of income is farming or ranching. The Utah borrower pays a one-time administrative fee of 4 percent of the loan and annual interest of 3 percent.

TAX INCENTIVES FOR SOIL AND WATER CONSERVATION AND FARMLAND PRESERVATION

Property Taxes

Real estate taxes are ad valorem taxes imposed on the assessed or appraised value of property. As a general constitutional principle, property is assessed for taxation purposes at the fair market value--the price a property would sell for when offered by a seller who is under no compulsion to sell to a buyer who is under no compulsion to buy.

However, all state tax codes provide lower taxes or no taxes for some types of land use. Property tax relief is generally intended as an incentive for voluntary land uses that provide public benefits exceeding their economic value to the landowner. In some cases it is intended as a form of compensation to landowners whose use of their property is restricted by land use regulations.

Differential Assessment. All the states except Kansas have some form of differential taxation for some agricultural, silvicultural, and other open-space land uses. Soil and water conservation, as such, generally is not an objective of these laws. The laws were generally enacted to relieve farmers of tax burdens caused by the government services needed by new suburban development, to preserve farming as a way of life, and to preserve open space for scenery in urban fringe and urban areas. However, there is growing appreciation of preservation of farmland as a resource--and growing recognition that preservation of unpaved land in urban fringe areas can protect ground water recharge areas, wildlife, stream channels, and surface water supplies.

In some states differential assessment is provided for agricultural and other open-space use of sensitive natural areas, such as wetlands, whose use is restricted by agreements with government bodies or conservation organizations.

Differential taxation laws and their relative effectiveness in keeping land in agricultural and other open-space uses have been discussed in several authoritative studies, notably the National Agricultural Lands Study.(7) These laws are generally classified as follows:

- Preferential Assessment (16 states).--Preferred uses are taxed at current use value, not market value.

- Preferential Assessment with Deferred Taxation (25 states).--If land that has received preferential assessment is sold for development or converted to a nonqualifying use, these laws either require payment of rollback taxes (equal to all or part of the taxes saved by preferential taxation) or payment of a land use change tax (equal to a percentage of the taxes saved or the fair market value of the property in the year of development). Several states with this type of differential taxation require that it must be supported by exclusive zoning for preferred uses or terminated if the owner applies for a rezoning.

- Preferential Assessment with Restrictive Agreement (8 states).--To obtain use-value assessment in these states, landowners must apply for a contract with a designated government unit to keep the land in a qualifying use for a term of years. The laws that authorize this type of tax break frequently integrate it into some kind of agricultural preservation land use program that provides other incentives for nondevelopment of the land.

- "Circuit Breaker" Income Tax Credits.--Two states, Michigan and Wisconsin, provide that if the (market value) property tax on farmland exceeds a specified percentage of household income, the excess can be credited against state income taxes. In Wisconsin, the circuit breaker tax credit(8) is available only for lands under permanent farmland preservation agreements (which require that the lands be managed according to soil and water conservation plans) and for lands that are zoned for exclusive agricultural use.

Differential Assessment Contingent on Conservation Land Management. The Wisconsin law is one of the very few state laws that make property tax relief contingent on conservation land management. Another is the Illinois law that requires a forest owner to have a forestry management plan in order to have his

(7) R.E. Coughlin and J.C. Keene, The Protection of Farmland, National Agricultural Lands Study, U.S. Council on Environmental Quality, GPO (1980).

(8) The tax credit is determined by a formula based on the extent to which property taxes are deemed excessive in relation to the landowner's household income. Thus, the farmland owners with the lowest incomes, who are believed most susceptible to development pressures, are eligible for the largest tax credits. The formula even provides for a negative income tax payment to owners whose tax credit exceeds their income tax liability. The formula would eliminate all credits to high-income farmers with large holdings of productive land were it not for a 1980 amendment that provides a minimum credit of 10 percent to owners of farmland in an exclusive agricultural zoning district.

land assessed at the very low forest land rate instead of the higher (but still below market value) rate for pasture or cropland. A North Carolina statute specifies that agricultural, forested, and horticultural land must be under a "sound management program" to be classified for preferential assessment. This law is currently interpreted as requiring a forestry management plan for forest land use assessment, but not as requiring a soil and water conservation plan for agricultural use assessment.

Property Tax Exemptions for Conservation Land Management. These are rare. A 1984 South Dakota law would have provided property tax exemption for up to 10 years for shelterbelts that were planted or renovated and maintained in compliance with state guidelines as certified by the conservation districts. However, because the law required the services of both district technicians and county assessors, it was considered to require more administration than necessary and was revised in 1985, retaining the state guidelines, the district certification, and the 10-year term, but substituting yearly payments of \$5 per acre for tax relief.

Some state laws use property tax exemptions to obtain voluntary conservation management of critical areas. A 1981 Oregon law directs the state's Department of Fish and Wildlife to develop standards for managing riparian lands for fish and wildlife habitat improvement and erosion and nonpoint-source pollution control. Riparian lands may be designated for tax exemption, provided that the owner agrees to install any protective or remedial measures needed to bring the land up to the standards.

Owners of riparian lands located outside urban growth areas and planned and zoned for agriculture (including rangeland) or forestry may apply to the county assessor, describing the land for which tax exemption is requested and its current uses. After the Department of Fish and Wildlife inspects the property, it may negotiate a management agreement specifying the measures to be taken and the boundaries of the tax-exempt area. If the landowner changes to a land use that is incompatible with the agreement without informing the tax assessor, the landowner becomes subject to a penalty of up to five times the amount of taxes that would have been due without the exemption. If the landowner informs the assessor within 60 days of taking such incompatible use, the landowner becomes subject to the same taxes that apply to similarly situated property that is not in the program.

A 1982 Iowa law authorizes counties to designate for tax exemption parcels of 2 or more acres of wetlands, recreational lakes, forest cover, forest reservations, open prairies, rivers and streams and their banks, provided that they are used for soil erosion control or wildlife habitat or both.

The Iowa law provides that property tax exemptions shall be designated each year for a period of 3 years for wetlands or 1 year for other conservation lands. To qualify for exemption, a landowner must

apply to the conservation district, which is responsible for certification of eligibility. The application must describe and locate the property and include an aerial photo showing its boundaries and an affidavit stating that the property (except for forest reserve property) will not be used for economic gain during the tax exemption period. Gullied land that is susceptible to severe erosion must be in a district-approved erosion control plan to be eligible for exemption.

After certification by the conservation district the land is eligible for designation by the county. However, the county board is required to establish priorities and acreages for types of conservation property to be exempted on a yearly basis before designating the particular parcels to be exempted.

The law limits the acreage of conservation property (apart from forest reserve land) that may be exempted from property tax in any one year to one percent of the acreage assessed as agricultural land in the county or 3,000 acres, whichever is larger. However, if the acreage that is actually exempted in any one year is equal to the acreage limitation, the limitation may be raised ten percent--not to exceed 300 acres--in the following year.

A Hawaii law provides tax exemption for forest land whose management is "surrendered" for conservation management under a long-term contract with a state agency.

Income Tax Incentives

State income tax incentives are less common than property tax incentives. However, many state income tax laws presumably follow federal law in allowing landowners to take charitable deductions for gifts of conservation restrictions and easements to government bodies, publicly supported charities, or charitable foundations.(9)

Amendments to the state tax codes of North Carolina (1983), South Carolina (1981), and Virginia (1985) allow similar income tax credits for the purchase of certain soil and water and energy conservation equipment. The laws provide a credit of 25 percent of the cost of the equipment up to a maximum of \$2,500 each year. If the amount of the tax credit exceeds the taxpayer's income tax liability for the year of purchase, the excess credit may be carried over for credit against income taxes in each of the succeeding 5 years.

The North Carolina law applies the tax credit to conservation tillage equipment for use in a farming business, including tree farming, and specifies that it may be used for purchase of attachments to equipment already owned by the taxpayer. It defines conservation tillage equipment to mean: (1) planters designed to minimize soil disturbance in

(9) J.A. Kusler, Our National Wetland Heritage, pp. 100-101, Environmental Law Institute (1982).

planting crops and trees, and (2) specified items of equipment designed to minimize soil disturbance in preparing a site for reforestation. The eligible items are K6-blades, drip-choppers, and V-blades.

The South Carolina law makes the tax credit applicable to conservation tillage equipment, drip/trickle irrigation systems (including all necessary measures, equipment, and installation charges) and dual-purpose combination truck and crane equipment.

A 1984 amendment to the South Carolina tax code allows the same credit (25 percent of expenditures, up to \$2,500 per year) for the construction and restoration of ponds, lakes, and other water impoundments and water control structures for the purpose of irrigation, water supply, sediment control, erosion control, agriculture, or wildlife management. The amendment does not apply to impoundments or structures that are located on or near the coast and are filled primarily by coastal waters. The credit may be used more than once.

The Virginia law makes the tax credit applicable only to conservation tillage equipment, which it defines as a no-till planter or drill, designed to minimize disturbance of the soil in planting crops. The planter or drill may be attached to equipment already owned by the taxpayer.

The Arkansas Water Resource Conservation and Development Incentives Act of 1985 creates two new income tax credits for developing alternative water sources within the state. Taxpayers may be eligible to claim either or both of the tax credits. A tax credit of up to \$3,000 per year for up to 10 years is allowed toward the cost of constructing or restoring ponds, lakes (20 acre-feet minimum), or other water control structures. Impoundments must be used for irrigation, water supply, sediment control, agriculture, or wildlife management. The second tax credit is a 1-year deduction equal to 10 percent of the costs incurred in shifting to surface-water use while discontinuing or reducing the use of ground water. For the first tax credit, the taxpayer must have obtained a construction permit (or a release from permit requirements) from the Arkansas Soil and Water Conservation Commission; for the second, the Conservation Commission must have certified that the saving in ground water consumption qualifies for the credit.

AGRICULTURAL LAND AND OPEN SPACE PRESERVATION

Many states have laws that regulate land use in order to reduce conversion of farmland and (frequently) other open space land to urban transportation and residential development, mineral development, water development, and other nonfarm uses. The main objectives of many of these laws are to preserve farmland as a resource (especially prime farmland and important farmland) and farming as a way of life. Many of the laws also seek to protect city people from the high costs of furnishing urban services to unplanned developments and to preserve farms and woodlands as scenic greenbelts in urban fringe areas.

However, there is also growing appreciation that preserving open space in the watersheds of urban areas can help protect water supplies and estuarial and wildlife resources and reduce local flooding, stream channel degradation, and sedimentation. A few states have sought to intensify the conservation effects of their agricultural land use programs by providing for some integration of these programs with state soil and water conservation programs; most have not.

The following is a discussion of some of the leading types of state agricultural preservation land use laws. Because it is partly based on the author's updating of previous studies, it is fairly comprehensive for some types of land use laws but only gives examples of others.

Agricultural Districts

At least 8 states have agricultural district laws that provide for farmer initiation and government approval of the formation of special geographic areas in which incentives are provided for farmers to keep their land in agricultural use.⁽¹⁰⁾ The aim of these laws is to give farmers incentives to join in the voluntary creation of farming-dominated communities of significant size, where they will be protected against factors that make it unprofitable or impracticable to farm. Most of the agricultural district laws provide that a farmer cannot be included in an agricultural district without his written permission. Only the New Jersey law requires a district participant to enter a restrictive agreement to retain the land in agriculture for a period of years. However, those laws that provide district participants with differential tax assessment also provide that the participant who develops his land for nonfarm use must pay back all or part of the taxes saved or pay some other penalty.

The Maryland law specifies that most of the land area in districts must contain prime or important farmland soils. Most of the other laws only require

(10) Illinois, Kentucky, Maryland, New Jersey, New York, Ohio, Pennsylvania, and Virginia.

that the land be "economically viable farmland" and be approved by a local advisory board on the basis of factors that typically include urban development pressures as well as soils and topography.

The incentives provided by state laws for forming agricultural districts vary but typically include differential assessment or limits on rates of tax increases, limits on acquisition of land within districts by public agencies, and limits on public investments promoting nonfarm developments within districts. In addition, the New Jersey law makes participants eligible for cost-sharing assistance for soil and water conservation practices. The New York law provides state subvention payments to counties with agricultural districts to repay them for taxes forgone because of differential assessment.

Maryland and New Jersey make participants eligible for state purchase of development rights (PDR), and Pennsylvania authorizes counties to establish PDR programs for participants. (PDR means that a farmer may receive a substantial payment for selling the rights to develop land for nonfarm uses.)

Agricultural Preserves

These laws are frequently classified as agricultural district laws. They are classified separately here because they are not farmer-initiated but give local governments authority to create special agricultural areas. These laws combine the incentives used by the agricultural district laws with somewhat more compulsory means to preserve agriculture.

The best known is California's 1965 Land Conservation Act, or Williamson Act, which authorizes cities and counties to create agricultural preserves as part of their planning priorities. The Act authorizes the local governments to enter contracts with landowners within the preserves to exclude all land uses except agriculture and compatible uses for a period of 10 or more years. Since 1972, the term "agricultural uses" has been defined for the purposes of the Act to include recreational and open space uses such as scenic highway corridors, wildlife habitat, salt ponds, and managed wetlands or submerged areas.

The Act requires the local government to offer the same opportunity to enter such restrictive contracts to all owners within a preserve. Landowners are not required to enter such contracts, but only contractually restricted lands can qualify for use-value assessment in California.

Within 2 years of the first contract, the local government must use zoning or other controls to limit land uses on non-contract land in the preserve to those compatible with the uses allowed in the Williamson Act contract. The Act also provides that state and local agencies shall refrain from land acquisition for public improvements and locating such improvements within agricultural preserves, whenever practicable, and shall locate necessary improvements on non-contract land, whenever practicable.

Williamson Act contracts are binding on all subsequent purchasers and are automatically renewed each year, unless the landowner or local government files a notice of nonrenewal or the landowner applies for cancellation. Nonrenewal means that the remaining 9 years of the contract must be honored before the land can be converted to a nonpermitted use. Property tax relief is gradually eliminated over the 9-year period.

Cancelling a Williamson Act contract may be expensive and difficult. The landowner must petition the local government, which may grant cancellation (after notice to all landowners in the preserve and a public hearing) only if consistent with the Act and the public interest. A protest by more than 50 percent of the landowners blocks the cancellation. If the cancellation is granted, the land must be reassessed and the landowner is required to pay a cancellation fee of 12.5 percent of the land's full cash value, unless the penalty is waived in the public interest on the basis of equity concerns. The Act also authorizes the local government to recover a portion of the deferred taxes.

Although the Williamson Act does not require that the land in agricultural preserves be prime agricultural land, it defines such land by factors that include soil quality, animal-carrying capacity, and sale value of agricultural products. The Act provides for state subvention payments to the local governments (to reimburse them for revenues lost because of differential assessment) on the basis of the value of the land for agriculture and the extent of development pressures on the land. Thus, the subvention payment schedule for land under restrictive contracts is \$8 per acre for urban prime agricultural land within 3 miles of cities of 25,000 or more population, \$5 per acre for prime agricultural land within 3 miles of cities of 15,000 to 25,000 population, \$1 for other prime agricultural land, and 40 cents for nonprime and open space land.

The other state law in this category is the Minnesota Metropolitan Agricultural Preserves Act, which applies only to the Twin Cities Metropolitan Area. The Twin Cities Area contains the cities of Minneapolis and St. Paul, seven counties, and numerous townships, but more than 50 percent of its land area was in commercial agriculture when the Act was passed in 1977. The Minnesota Metropolitan Act is designed to provide a comprehensive program to keep the lands that local or regional planning has designated for long-term agricultural use in such use.

The Act authorizes local governments with planning and zoning authority to certify lands that are planned and zoned for long-term agricultural use (which means a maximum residential density of one unit per 40 acres) as eligible for designation as agricultural preserves. The local government is then authorized to enter a restrictive covenant with an owner of such certified land (binding on all subsequent owners of the land) to keep it in an agricultural preserve. For this law, the term "agricultural preserve" means the land under

restrictive covenant, rather than the land certified as eligible for such a covenant.

These urban-fringe agricultural preserves are among the relatively few state agricultural preservation devices that require the land retained in agriculture to be managed in compliance with soil and water conservation requirements. The law makes the local government that created the preserve (called the authority) responsible for enforcing the conservation requirements. On receiving a written complaint of excessive soil loss on a preserve the authority must notify the appropriate conservation district. The district then inspects the land, determines whether the soil loss exceeds the tolerance level, recommends alternative practices to reduce the soil loss to a tolerable level, and reports to the authority. The authority may then adopt a resolution directing the owner to take corrective measures.

At the request of the owner, the conservation district will then assist him in planning, design, and application of the corrective measures and gives the owner priority for technical and cost-sharing assistance. However, if the owner fails to implement corrective measures to the satisfaction of the authority within 1 year, the owner is liable for a \$1,000 civil penalty and the authority's enforcement costs.

The Metropolitan Agricultural Preserves Act provides numerous benefits to owners of agricultural preserves. Tax benefits include both differential taxation and a provision that the tax may never exceed 105 percent of the previous year's statewide township millage rate for all purposes. The state reimburses local taxing jurisdictions for revenues lost as a result of these provisions.

In addition, local governments are prohibited from enacting ordinances that unreasonably interfere with normal farming practices in the preserves. Construction projects for public sewer or water systems are prohibited. Annexation and eminent domain actions of government are subject to stringent review to ensure maximum consideration of effects on agricultural preservation.

Agricultural preserves are permanent, unless the landowner or the authority initiates the expiration process. The provisions for initiation of expiration of all or part of a preserve require 8 years' notice before the preserve is terminated. Earlier termination is provided for only in the event of a public emergency, on petition from the owner or authority to the Governor. If 8 years' notice is given, the owner does not have to pay deferred taxes and special local assessments. If early termination takes place, the special assessments plus interest must be paid within 90 days, unless deferred or waived by the Governor.

Purchase of Development Rights (PDR)

PDR means purchasing the right of the owner of land and all his successors in interest or assignees to build on or excavate beneath the land in order to develop it for nonagricultural use. It is a method

of acquiring an easement or less-than-fee interest in land in order to control its use. Since PDR generally means a substantial payment to the landowner, it is the most effective device that a state or local government can use to persuade farmers to keep land subject to development pressures in agricultural use.

PDR is also the most expensive agriculture preservation device. The value of development rights is defined as the difference between the market value of the land and its value for agriculture, and the market value of farmland increases as opportunities to develop it for residential, commercial, and industrial uses increase.

Consequently, although local PDR programs exist in several regions of the country, state-funded PDR programs are found only in heavily urbanized Northeastern states. In these states the threat of "wall to wall suburbanization" has created statewide support among the nonfarm population for large expenditures to preserve rural esthetic and cultural values and local sources of food production.

As already noted, Maryland and New Jersey are two states where applicants for PDR must be participants in agricultural districts (which are formed on the basis of farm community support, soil quality, viable agriculture, and significant size). In both states, both county and state authorities must approve the transaction before purchase with matching state and local funds.

Connecticut, Massachusetts, New Hampshire, and Rhode Island also have state PDR programs for agricultural land. In Massachusetts and New Hampshire, applications for PDR are submitted by local governments to a state authority for evaluation, approval, and funding. The local government proposals are commonly based on the historical or environmental value of the land. These considerations also count in the selection of PDR land in Connecticut and Rhode Island, where the landowner applies directly to the state authority. In Connecticut the nonagricultural considerations are addressed when the state consults the towns during the selection process. In Rhode Island, environmental and scenic concerns are a secondary criterion for state selection. In all of the states, eligibility criteria and the main state criteria for selecting PDR land are strictly agricultural.

Except in Maryland and New Jersey, where the land must be in an agricultural district, the main eligibility requirement is that the land be agricultural land. Proof of previous agricultural use and of soil suitability may be required. In Massachusetts and Rhode Island there is also a 5-acre minimum parcel size.

Since selection criteria are more complex than eligibility criteria, all the states use a point system or similar priority rating system to select PDR land. Soil quality and productivity (which is defined to include conservation management of erodible land) is a high-ranking criterion in all states. Rhode Island is the only state that uses

conservation plan participation, as such, as a (secondary) selection criterion. Maryland requires that PDR land must be under a district-approved soil and water conservation plan and that the plan must be implemented within 10 years.

The other primary selection criteria in all states are: likelihood of imminent conversion to nonfarm use (some states make an exception for land under restrictive agreements for a term of years), economic viability, and capacity to contribute to the agriculture of the state. Cost of the PDR is a major or minor selection criterion in several states.

The Maryland and New Jersey laws provide that highest priority shall be given within each county to program applicants whose "asking price" is lowest in relation to the appraised value of the development rights. This approach encourages price competition between agricultural district participants who apply for PDR. It is considered to result in permanent preservation of more farmland for a given amount of money.

All the laws provide that the cost of development rights may not exceed their appraised value as the difference between the market value of the land and its value for agriculture; some require more than one appraisal. In most states this is accomplished by using comparable sales to appraise both the market value and the agricultural value of the land. However, it has sometimes been difficult to find local sales of farmland for prices that do not reflect development potentials, and appraisers have sometimes had to go out of the state to find such comparable sales.

Connecticut and New Hampshire have sought to avoid the problem of appraising farmland values in developed areas by using the per-acre assessment guideline figures used for differential assessment of farm property tax. This approach has been criticized, however, as understating the value for agricultural use of the better-than-average quality farmland offered for PDR and thus inflating the price the states pay for development rights.

Most PDR programs are financed by state bond issues or appropriations from the legislature. However, the Maryland Agricultural Land Preservation Fund uses a portion of the revenues of two earmarked taxes: the real estate transfer tax and the agricultural transfer tax, which is levied on land converted out of agricultural use after having enjoyed differential taxation as agricultural land.

The Maryland law requires the counties that approve PDR projects to pay 40 percent of the cost of the easements if they are able to do so. But Maryland counties can pay part of their share of the cost out of their portion of the agricultural transfer tax. In New Jersey, where the easements are held by the local government, the law requires a local cost share of 50 percent. Most New Jersey counties or municipalities that have thus far participated in the program have issued bonds to pay their cost share. The Massachusetts law directs the state to encourage local governments to participate in the

cost--the usual local cost share in Massachusetts is five percent. However, the state requires local cost sharing (and may require more than the usual rate) if there is more local than state interest in acquiring the development rights, or if the cost is very high.

Although some of the laws contain provisions for the repurchase of development rights, they make repurchase extremely difficult. In Maryland, the landowner can petition for resale (on the basis that profitable farming is no longer feasible) only after 25 years. In all states, repurchase requires the consent of both the state and the appropriate local authority following a hearing, for which, in Connecticut and Rhode Island, the landowner must pay.

Agricultural and Open Space Zoning

Although all local government zoning powers are derived from state law, zoning is a land-use regulatory tool generally used by local governments, not states. State-level zoning laws for any conservation use are rare--the main examples are a few authorities to regulate development in critical areas of state concern, such as flood hazard areas. State laws that provide tax incentives for agricultural and open space zoning are somewhat more common. In addition, many state laws require zoning in compliance with state standards for sensitive lands or critical areas.

The following are examples of state laws that make use of state or local zoning for farmland preservation and other conservation purposes.

Hawaii.--Hawaii is the only state that has a statewide comprehensive zoning system. The Hawaii Land Use Law provides for state-level classification of all the lands in the state into four types of zoning districts--urban, rural, agricultural, and conservation.(11) State agencies are authorized to approve all district boundary amendments--which must conform to the state land use plan--and to adopt state-level regulations for all but the urban districts, which are regulated by the counties.

The Land Use Law directs the state land use commission to draw agricultural zoning district boundaries to give "the greatest possible protection to lands with a high capacity for intensive cultivation." Within agricultural districts, the state soil productivity classification determines permissible land uses. Unless a special permit is obtained from the county and approved by the land use commission, permissible uses on class A and B lands are restricted to crops--including forage and timber--fish and wildlife, open-space recreation, and accessory facilities for those uses, such as farm dwellings and employee housing. Permissible

(11) Although the Land Use Law calls these units "districts," they are not the organizations of voluntary participants generally called districts but regulatory zones determining the type and density of development.

uses for adjacent land in other classes must be compatible with class A and B land uses.

The law establishes a minimum lot size of 1 acre in agricultural districts, but counties are allowed to adopt larger lot sizes and other zoning regulations, as well as subdivision regulations, that comply with the commission's minimum standards.

Farmland in agricultural districts automatically receives differential assessment--subject to a penalty and rollback taxes if the owner has the land reclassified to a rural or urban district or subdivides the land into parcels of less than 5 acres. In the other three types of districts, farmland must be "dedicated" to a specific agricultural use or uses to receive such favored tax treatment.

The Hawaii Land Use Law states that the boundaries of the conservation districts shall be those of the forest and water resource zones created by previous legislation except that the state land use commission shall have authority to make changes in the boundaries of the conservation districts. (Much of the land in the forest and water resource zones is either public land or private forest land whose management has been "surrendered," under long-term agreement, to the Department of Land and Natural Resources in return for property tax exemption.)

The Land Use Law provides that conservation districts shall include areas needed to protect watersheds and water sources; to preserve scenic areas, plants, forests, and fish and wildlife; to prevent floods and soil erosion; and to provide parklands, wilderness, and beach.

The Land Use Law further provides that the conservation districts shall be governed by the Department of Land and Natural Resources under the law that created the forest and water reserve zones. That law provides that the Department may establish subzones and restrict their uses on the basis of soil classification data. All commercial uses and changes in the boundaries or permitted uses of subzones require a special permit that may be granted only after a public hearing.

Oregon.--Oregon's 1973 Land Use Act establishes a statewide program under which the state Land Conservation and Development Commission sets standards for local land use planning and regulation. The local jurisdictions then enact comprehensive plans and implementation ordinances consistent with the state standards. The plans and ordinances must be approved--"acknowledged"--by the Commission. The Act also provides that the Commission may recommend that the legislature designate areas of critical state concern for state-level planning and, if necessary, regulation. Thus far, only the Willamette River Greenway has been so designated.

The Land Use Act requires the Commission to develop statewide planning goals and guidelines for use by state agencies, cities, counties, and special districts in preparing, revising, and implementing

existing and future comprehensive plans.(12) It directs the Commission to give priority consideration to agricultural land along with environmentally sensitive or open space land in other categories.

Each city and county must develop comprehensive plans consistent with the goals and implement the plans by enacting ordinances or regulations dealing with zoning, subdivision, and related matters. The Commission has authority to review local plans and ordinances or regulations, to order local governments to bring their land use decisions into compliance with the goals, and to prescribe corrective actions and compliance schedules.

Goal 3, as specified by the Commission, is to preserve and maintain agricultural lands for existing and future needs for agricultural products, forest, and open space. Agricultural land is defined--using SCS capability-class definitions--to include Class I,II, III, and IV soils throughout the state and Class V and VI soils in eastern Oregon.(13) Agricultural lands are to be inventoried and preserved by adopting exclusive farm use (EFU) zoning pursuant to the Oregon zoning law. Minimum lot size to be used for EFU zones is left up to the local government. But the zoning law directs that it be appropriate for the continuation of the existing commercial agriculture in the area.

Conversion of rural agricultural land to urbanizable land is possible where no alternative site is available for a needed use, but EFU zoning of all Class I through IV soils not committed to nonfarm use by physical development is the Commission's policy. EFU is defined by the Oregon zoning law to mean that lands within farm zones shall be used exclusively for farm use except as specified. Nonfarm uses permitted as of right are limited to: silviculture, farm dwellings on parcels no smaller than the minimum lot size, other farm buildings, schools, churches, minor utility facilities, and state-mandated solid waste disposal facilities. Other uses, which require county approval, include: farm dwellings on smaller parcels, farm-related commercial activities, parks, campgrounds, hunting and fishing preserves, mining, public power generators, temporary facilities for primary processing of wood products, and state-permitted solid waste facilities.

The conditions under which single-family nonfarm dwellings may be built in EFU zones are very restrictive. Such dwellings may not force a

(12) Goals are defined as "mandatory standards" and guidelines as "suggested approaches" for complying with the goals.

(13) Goal 3 purports to preserve almost all farmland now in farm use outside the urban growth boundaries called for by Goal 14, not just prime and important farmland. Class I through IV lands are suitable for cropland. Class V through VII lands are largely limited to pasture, range, woodland, or wildlife habitat.

significant change or cost increase in farming practices on nearby land. If the site is a lot or parcel established since July 1, 1983, the parcel must consist of lands predominantly in capability classes IV through VIII and the dwellings must be located on land unsuitable for production of crops or livestock. But a nonfarm dwelling on a lot of 3 acres or less, established before July 1983, need not comply with the latter restrictions.

The Oregon program for agricultural lands adds to the restrictions of EFU zoning some of the benefits typical of agricultural districts. Thus, land in EFU zones is exempt from local government regulations that interfere with normal farming practices by putting restrictions on noise, odor, dust, or airborne particles. Moreover, as long as the land remains in agriculture, forest, or open space use, it is exempt from special assessments by sanitary and water supply districts and is qualified for differential property tax assessment. Outside EFU zones, land that is devoted exclusively to agriculture and generates a specified farm income is also qualified for differential assessment. However, the landowner must make an annual application for differential assessment for land not in an EFU zone, while for land zoned EFU, the assessor's review is automatic.

The effectiveness of Goal 3 is supported by Goal 14, which requires the establishment of boundaries separating land on which development is permitted from rural land. Rural land includes land to be preserved for agriculture, forest, open space, and natural resources and other land with few public services that is suitable for sparse settlements, small farms, or acreage homesites.

Goal 4 is to conserve forest land for production of wood fiber and for specified soil and water conservation, environmental quality, and recreation uses. Goal 4 defines forest land to include: (1) lands suitable for commercial forestry, (2) lands needed for watershed protection, wildlife and fish habitat, and recreation, (3) lands where extreme conditions of climate, soil, and topography require vegetative cover regardless of use, and (4) lands in urban or agricultural areas that provide urban buffers, windbreaks, wildlife and fish habitat, livestock habitat, scenic corridors, and recreation.

Goal 4 requires inventorying of forest lands for designation in local government comprehensive plans. It requires the local governments to use U.S. Forest Service regional field instructions for forest inventories in mapping and classifying forest sites for preservation. The accompanying guidelines instruct counties to limit developments to forest production and protection and compatible land management activities, except in areas designated as "marginal lands." In these areas, counties may allow the same kinds of single-family dwellings and nonresidential uses allowed in EFU zones. Counties may designate forest lands as marginal lands, provided such lands are not capable of producing a minimum amount of merchantable timber or consist mainly of lots that were less than 20 acres on July 1, 1983.

Although there is no state-level conservation management law for agricultural land in Oregon, the state's 1970 Forest Practices Act gives the Oregon Board of Forestry authority to promulgate rules for forest management practices on private land in each region of the state. The rules may govern reforestation, road construction and maintenance, harvesting of tree species, and application of chemicals. However, the mandate of the Forestry Practices Act is to balance the needs of timber production with protection of soil, air, and water. It does not direct the Board's rules to provide for protection of wildlife habitat, natural areas, or scenic views.

Protection of these and other resources is the objective of Goal 5, which requires local governments to provide land use programs that will ensure open space, protect scenic and historic areas and natural resources for future generations, and promote healthy and attractive environments in harmony with the natural landscape. To accomplish such programs, Goal 5 sets forth a three-stage process of inventory, identification of conflicting uses, and implementation.

Goal 5 requires that the county determine the location, quality, and quantity of resources in a long list, including among others: land for open space; mineral and aggregate resource areas; energy sources; fish and wildlife areas; ecologically and scientifically significant natural areas; outstanding scenic views and areas; surface water, wetland, watershed, and ground water areas; wilderness; potential and approved state recreation trails and scenic waterways; and federal wild and scenic waterways.

Where no conflicting uses for such resources are identified, local jurisdictions are directed to adopt land use regulations to preserve their original character. Where conflicting uses are identified, local jurisdictions are directed to identify the economic, social, environmental, and energy consequences of the conflicting uses and develop appropriate land use programs.

The guidelines direct local governments to use conservation of Goal 5 resources as the basis for determining the quantity, quality, location, rate, and type of growth in the planning area (that is, for zoning). The guidelines direct local and regional governments and state agencies to use other means of protecting resources, such as acquisition of land, easements, and development rights; differential assessment; and cluster development. Also, fish and wildlife areas and habitats must be managed in accordance with the Oregon Wildlife Commission's fish and wildlife management plans (which are on the whole restrictions on development), and state water rights must be administered to keep streamflow at a level adequate for fish and wildlife, pollution control, recreation, esthetics, and agriculture. The guidelines do not include any explicit requirements for soil and water conservation.

New Jersey.--Some state laws--unlike the Oregon Land Use Act--specify not only state standards for

restriction of development in local zoning of environmentally sensitive areas but also soil and water conservation requirements for permitted uses. One example is the 1979 New Jersey Pinelands Act, which requires a state commission to prepare a comprehensive management plan for the 1,500 square miles of pine barrens, situated within 50 miles of Philadelphia and 100 miles of New York. The purpose of the plan is to protect surface water and ground water quality, indigenous plant and animal species, scenery, and the existing agricultural and horticultural uses of the land. The Pinelands Act directs the plan to include a land use capability map, a program for state and local government implementation of various elements of the plan, and minimum standards for land use and development. The standards are required to be incorporated into municipal and county land-use plans and ordinances.

The state commission has used this authority, not only to require local zoning ordinances to restrict the density and type of construction in various areas of the pine barrens, but to require minimum soil and water conservation management standards for some permitted uses. Approvable zoning ordinances must contain implementation and enforcement provisions such as permits, onsite inspection, and penalties for violations. But in jurisdictions where zoning ordinances have not been approved, the Pinelands Commission retains authority to implement and enforce the standards.

The plan's minimum standards for extraction of sand, gravel, and other mineral resources in the pine barrens provide that no resource extraction operations may be approved within the semiwilderness preservation area, except those that were grandfathered in 1979. All applicants for a resource extraction operation must submit a permit application which includes a topographic map, a soils map, and the locations of any streams, wetlands, significant vegetation, forests, and wildlife habitat. The application must also contain a reclamation plan including provisions for preservation of topsoil, grading, vegetation, and maintenance. If it appears that the extraction operation would have adverse impacts on water quality, threatened or endangered plants or wildlife, or essential fish and wildlife habitat, the permit will not be granted. In addition, the plan contains specific soil and water conservation and environmental protection standards for permitted resource extraction and mandatory site-restoration operations.

The plan also requires that a permit application must be made before harvesting trees for commercial purposes or applying fish and wildlife management practices. The application must include a forestry management plan that shows, among other things, wetlands; types of vegetative cover; receiving waters; location of stream crossings, skid trails, roads, and landings; filter strips; soil types and erodibility; range of slope; timber to be harvested; and intermediate management and regeneration plans. As in the case of resource extraction, forestry permits will not be granted if the operations would cause adverse impacts on other protected resources. The plan includes minimum standards for permitted

forestry operations, including soil and water conservation and other resource protection standards.

The land use standards prohibit all agricultural activities in wetlands except gathering and growing blueberries and cranberries, growing native pine barrens plants, and other compatible operations that do not require use of pesticides. Although the standards recommend soil and water conservation management of all agriculture in the pine barrens, they require a district-approved conservation plan only for operations in areas (zoned as agricultural protection areas) where the ground water or surface water has been designated as substandard by a federal, state, or local agency. Where conservation plans are required, they must be based on SCS technical guides for erosion and runoff control and animal waste management and on State Cooperative Extension Service recommendations for the use of fertilizers and pesticides.

The comprehensive plan also contains nonpoint-source water pollution control standards for sanitary landfills and septic tanks. It does not contain erosion and sediment control standards for building construction. But New Jersey has a statewide soil erosion and sediment control law which requires district approval of an erosion and sediment control plan for all construction except small sites, single-family homes, and transportation facilities.

Wisconsin.--The 1977 Wisconsin Farmland Preservation Law was developed by a legislative study committee that consulted both farm and urban interests in order to develop a program to preserve productive farmland and avoid the drawbacks of unplanned urban sprawl. The Wisconsin law is one of the few agricultural preservation laws that also have soil and water conservation management requirements.

The objective of the Wisconsin law is to encourage counties to adopt agricultural preservation plans as part of their county land use plans and counties and municipalities to adopt exclusive agricultural zoning for the lands included in the preservation plans. To accomplish this, the law provides the counties with state-level preliminary delineation of priority agricultural areas for preservation and grants for preparation of agricultural preservation plans. It also makes the state's "circuit breaker" income tax credit to farmland owners contingent on the inclusion of their land in agricultural preservation plans or exclusive agricultural zoning ordinances that comply with state standards. The percentage of the applicable tax credit available to farmland owners increases with the stringency of local government preservation methods. Because urban counties are under greater development pressures than rural counties, the law requires them to adopt more stringent preservation methods for landowners to receive tax credits.

The law structures the program in two stages. In the first stage, 1977-1982, farm owners were eligible to enter into individual farmland preservation agreements with the state for a period of 10 to 25 years (5 to 20 years in areas identified as "transitional areas" in county agricultural preser-

vation plans).(14) The preservation agreements are contracts that oblige the farm owners to forgo making land improvements or building structures that are inconsistent with agricultural use unless approved by the local governing body and the state. Also, farming operations must be in compliance with a county LCC-approved soil and water conservation plan. The agreements entitle the farm owners to exemption from special local assessments for sanitary sewers, water, lights, or nonfarm drainage and (in the first stage) to 50 percent of the maximum applicable tax credit. All that was required of the counties in the first stage was to approve the farmer's application for an agreement with the state on the basis of general statutory criteria for the suitability of the land for agricultural preservation and to have, or be in the process of developing, an LCC soil and water conservation plan.

When the program entered the second stage, in October 1982, more was asked of the local governments. In rural counties (defined as having a population density of fewer than 100 persons per square mile) a contracting landowner lost his tax credit unless the county had adopted an agricultural preservation plan or the land had been zoned for exclusive agricultural use. In the second stage, if the rural county has adopted either a state-certified preservation plan or a zoning ordinance, under the tax credit formula a qualified contracting landowner is eligible for 70 percent of the maximum tax credit. If the county has adopted both the plan and the ordinance, the landowner is eligible for 100 percent.

In urban counties (with 100 or more persons per square mile), ordinances that allow exclusive agricultural zoning must be adopted for any landowners to receive tax credits. However, all farmland owners within the zoning district are eligible for tax credits, whether their land is under agricultural preservation agreements or not. The zoning ordinance may be a county ordinance (which requires town approval) or a town, city, or village ordinance.

Landowners whose lands in urban counties are zoned for exclusive agricultural use are eligible for 70 percent of the maximum applicable tax credit. If the county has also adopted an agricultural preservation plan, they are eligible for 100 percent.

If a landowner loses his eligibility for tax credit because his farmland preservation agreement expires or his land is rezoned, the owner is responsible for repaying the tax credits received over the past 10 years without interest. But if the landowner (with the agreement of county or state) cancels a contract early, he must also pay 6 percent interest from the time the credit is received.

(14) To be eligible for preservation agreements tax credits, landowners must own 25 or more acres of contiguous land in agricultural use which has produced gross farm profits of \$6,000 in the last year or \$18,000 in the last 3 years.

The law makes the State Land Conservation Board-- which is also responsible for the state's soil and water conservation program--responsible for allocating planning-grant funds to counties and providing policy guidance to the local governments responsible for developing agricultural land preservation plans and zoning ordinances. It also makes the Board responsible for hearing appeals from county denials of applications for farmland preservation contracts and approving requests for early relinquishment of contracts.

Statutory standards for agricultural land preservation plans require that the plans be integrated with county development plans. They also require that the plans identify the agricultural areas to be preserved. State-delineated agricultural areas must be considered for inclusion, but need not be included in agricultural preservation areas if farmland use is not economically viable or is inconsistent with existing or planned urban growth. The agricultural land preservation plans must also identify areas of special environmental or open space significance, areas of urban growth, any transitional areas (where agricultural lands will eventually be developed for other uses), and needed public facilities. The plans must include a program to implement agricultural preservation, open space, and environmental protection goals and to guide urban growth. The program must include such details as identification of septic field lines and a plan for financing future public facilities.

Statutory standards for exclusive agricultural zoning ordinances require that the zoning districts be consistent with agricultural land preservation plans and county and other local government comprehensive plans. The minimum parcel size for a residence or farm is 35 acres. Land uses are limited to agriculture and residences of persons who work on farms and their families, plus agriculture-related, religious, utility, institutional, and governmental uses and structures that are necessary and not inconsistent with agriculture.

The law also authorizes counties, cities, towns, and villages to enact separate ordinances requiring that land zoned for exclusive agricultural use be farmed in accordance with county LCC soil and water conservation standards.

Development Permits

State laws that create development permit systems to be administered by state agencies or by local governments pursuant to state standards are another approach to preservation of agricultural and open space land. Although these laws typically exempt all or most agricultural activities from the permit requirement, they are frequently motivated more by the desire to prevent intensive development of agricultural land for environmental or scenic reasons than by the desire to preserve farmland as a resource. These laws typically include at least some soil and water conservation requirements.

The first state development permit laws required permits for filling, structures, and obstructions in

floodways and flood plains and were intended to reduce flood heights and flood damages to structures. These laws typically exempt agricultural activities from the permit requirement.

Most of the next state development permit laws to be enacted concern ecologically sensitive lands or "critical areas," which commonly are lands at the water's edge, including coastal zones, lakeshores, streambanks, and land that overlies ground water aquifers. Most of these laws require scrutiny of development site plans to determine soil suitability. Most of them exempt all or most agricultural activities.

A large category of state development permit laws for sensitive lands is wetlands permit laws. These laws are intended to preserve fish, shellfish, wildlife, and plant communities, protect water quality, and reduce downstream flooding. They typically require a permit for activities involving excavation, drainage, filling, and construction in (and sometimes near) wetlands. Statutory standards or standards in the regulations condition the granting of permits on considerations of soil and water conservation as well as on the impact of proposed projects on wildlife. The regulations may require review of permit applications by the conservation district.

Where the wetlands laws list activities exempted from the permit requirement, they typically exempt grazing, tilling, harvesting, and forestry. Some exempt drainage for conversion to agricultural use and agriculture-related construction, but most of these do not exempt filling wetlands for agricultural purposes.

The two state development permit laws discussed below apply to very large areas but give special attention to ecologically sensitive lands within the areas. They are concerned with both the orderly structuring of urban growth and the preservation of high-quality farmland and agricultural economies threatened by such growth. The Vermont law was enacted to deal with the strains on environmental quality and government services caused by rapid expansion of second-home development in a rural state in the 1960's and 1970's. The California law was enacted to preserve the natural character of the state's thousand-mile-long coastal zone, in response to intense pressures for development for permanent and second homes, high-rise condominiums, oil drilling, and energy facilities.

Vermont.--The Vermont permit program was authorized by the Environmental Control Law of 1970, which was amended several times in the 1970's and 1980's. It sets up a statewide permit process that applies to all housing or mobile home developments of 10 or more units; developments for commercial, industrial, or government purposes on areas of 10 acres or more; subdivisions of 10 or more lots of less than 1 acre; oil drilling; exploration for and extraction or processing of fissionable material; and all construction at elevations over 2,500 feet, regardless of the size or purpose. In order to encourage local control of land use, the threshold

for state review and permission of commercial and industrial development is lowered to 1 acre for projects in towns that have not adopted permanent zoning and subdivision ordinances.

Application for permission to develop must be made to a District Environmental Commission. The commission reviews the site plan and may grant a permit, grant a permit subject to conditions, or deny a permit, following an adversary public hearing. Appeals may be taken from the District Commission to the State Environmental Board and beyond that to the State Supreme Court.

In order to grant a permit, the District Commission must find that the proposed project meets each of 10 criteria relating to environmental impacts, conformity with local and regional plans, and the existing and future capacity of public facilities and services.

Criterion 4 is that the project must not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result. This criterion is interpreted to mean that the applicant must have an erosion and sediment control plan for his development which must be approved by the SCS District Conservationist.

Two subcriteria address the agricultural land preservation issue. Criterion 9B states that a permit will be granted for development or subdivision of primary agricultural soils only if such development will not significantly reduce the agricultural potential of the primary agricultural soils or if all of four mitigating circumstances are present. These are:

- the applicant can realize a reasonable return on primary agricultural land only by devoting it to uses that significantly reduce its agricultural potential;
- the applicant has no other land reasonably suitable for development;
- the subdivision or development has been designed to minimize the reduction of agricultural potential (by using such devices as cluster planning); and
- the subdivision or development will not significantly interfere with or jeopardize the continuation of agriculture or forestry on adjoining lands or reduce their agricultural or forestry potential.

Criterion 9C puts nearly the same restrictions on the granting of permits for development or subdivision of forest land and secondary lands. However, it does not require that development on forest land or secondary agricultural land will not reduce the forestry or agricultural potential of adjoining land.

California.--The 1976 California Coastal Act establishes a development permit program for the

entire California coastal zone, which it defines by maps delineating an area extending 3 miles out to sea and from 1,000 yards to 5 miles inland from the mean high tide line. The act requires development permits from state and local agencies, utilities, and private developers for any of the following: all dredging and filling; changes in the density or intensity of land use, including subdivision; other land divisions (except those associated with public agency purchases of recreation land); and the construction, demolition, or alteration of the size of any structure. The Act also requires permits for removing or harvesting major vegetation other than for conversion to agriculture or for timber operations in accordance with a timber harvesting plan. California, like Oregon, has a Forest Practices Act that requires commercial timber operations to be managed according to resource conservation standards that include soil and water conservation requirements, but has no comparable requirements for agriculture.

The Coastal Act sets forth standards for coastal permit approval, establishes the state Coastal Commission, and authorizes it to regulate development by issuing permits, on a case-by-case basis, until local governments become eligible to do so. Local governments can assume permit-processing responsibilities by developing local coastal programs--including land use plans, zoning ordinances and maps, and other implementing measures--which are approved and certified by the Coastal Commission.

The Coastal Commission continues to make most permitting decisions in urban counties; most rural counties now have approved and certified coastal programs. A 1981 amendment provides some delegation of coastal permit-granting authority to any local government whose land use plan (or a part of the plan) has been certified, even if the total coastal program has not.

In order to ensure uniform application of Coastal Act standards, individuals, corporations, and government agencies may appeal to the commission from local approvals of certain kinds of developments, for example: Pacific shoreline developments (where specified scenic, public access, and environmental principles are in question); developments in tidelands, submerged and public trust lands; and developments within specified short distances of wetlands, estuaries, streams, and coastal bluffs. Appeal may also be brought against approvals of major public works or energy facilities, developments in unincorporated areas for uses that are not designated as the principal permitted uses in zoning ordinances and maps, and developments in sensitive areas, if their conformity with local program-implementing actions is challenged.

The Coastal Act standards include several soil and water conservation requirements. One provision requires that new developments shall neither create nor contribute significantly to erosion or geologic instability, nor require the construction of protective devices that would substantially alter landforms along bluffs and cliffs. Another provision requires protection of the quality and

biological productivity of the waters of the coastal zone by controlling runoff, preventing depletion of ground water supplies, maintaining vegetation in natural buffer areas, preventing substantial interference with surface water flow, minimizing alteration of natural streams, and other means. These provisions are interpreted to mean that required site plans for all developments must include a professional engineer's soils and drainage report, which must deal with erosion, sedimentation, stormwater management, and other nonpoint-source pollution control concerns.

The Coastal Act also calls for preservation of the maximum amount of prime agricultural land (as defined in the Williamson Act). The Coastal Act requires that conflict be minimized between agricultural and urban land uses by:

(a) establishing stable boundaries and, if necessary, buffer areas between urban and agricultural uses;

(b) limiting conversion of agricultural lands on the periphery of urban lands to areas where conflicts with urban use already exist and where conversion would create a viable neighborhood and a stable limit to urban development;

(c) developing lands not suited to agriculture prior to agricultural lands;

(d) preventing expansion of public services and facilities and nonagricultural development that would impair agricultural viability through increased assessment costs or degraded air and water quality; and

(e) ensuring that all divisions of prime land and all development of adjacent land do not diminish the productivity of prime land (whether or not the land is in actual production). The only exception allowed is for conversion of prime land on the periphery of urban development if the conversion meets all the criteria set forth in item (b) above.

Another standard in the Act requires that nonprime agricultural lands shall not be converted unless agricultural use is not feasible or such conversion would preserve prime agricultural land or concentrate development. Conversion of nonprime land must be compatible with continued agricultural use of surrounding (not merely adjacent) prime and nonprime agricultural land.

Still another standard requires that use of private lands for commercial public recreational facilities shall have priority over private residential or non-coastal dependent commercial or industrial development but shall not have priority over agriculture.

Agricultural land in the coastal zone, as elsewhere in the state, is eligible for a Williamson Act contract to refrain from development, and such a contract is required for land owners to receive differential assessment and local government to receive state subvention payments.

MINED LAND RECLAMATION

When the Federal Surface Mining Control and Reclamation Act of 1977 (SMCRA)(15) was enacted, it had the effect of standardizing the minimum soil and water reclamation requirements of state surface-coal mining reclamation laws. Many states have laws that provide permit regulation with similar soil and water reclamation requirements for surface mining of other minerals, but the SMCRA is concerned only with coal mining.

The Act created two major federal programs to be administered by the Office of Surface Mining (OSM) of the Department of the Interior: a regulatory program for surface mining and reclamation of surface-mined lands and the surface effects of underground mining, and an abandoned-mine reclamation program. The Act authorized technical assistance and grants to those states that elected to assume responsibility for both programs, and it established minimum regulatory program standards that the states must achieve before they could be authorized to run both programs.

Since 1977, 24 states have amended preexisting state reclamation laws, amended regulations under such preexisting laws, or enacted new state laws in order to conform to the SMCRA requirement for OSM approval of state regulatory and abandoned mine programs.(16)

In the other 10 coal-mining states, OSM has primary responsibility for such programs. The state SMCRA-type laws differ concerning assignment of agency responsibilities. Most laws assign responsibility for administering both programs to a mining-oriented agency or a division of the state natural resources or environmental protection department. However, they direct or authorize consultation with the state soil and water conservation agency, SCS, and the state forestry agency. The Oklahoma law makes the state conservation agency responsible for the abandoned mine reclamation program, and the Iowa law makes the state conservation agency responsible for both programs.

SMCRA requires state regulatory programs to include a permit system, regulations for surface coal mining and reclamation operations that are consistent with OSM regulations, a process for designating areas as unsuitable for surface coal mining, and enforcement provisions. Applications for state permits must include a map of all lands to be affected, location of aquifers, estimated depth of water table, location of spoil areas and segregated topsoil preserva-

tion areas, location of impoundments for waste or erosion control, discharges to any surface waters, and profiles of the final surface configuration to be achieved by the operator's reclamation plan. States may not issue permits in areas west of the 100th meridian for surface-mining operations that will significantly interfere with farming on alluvial valley floors that are irrigated or naturally subirrigated.

The SMCRA requires state regulatory programs to have environmental performance standards. These must provide for regrading the site to its approximate original contour while preventing subsidence and surface erosion, preserving and reusing topsoil, and preserving and reconstituting the soil strata of prime farmland. They must also provide for revegetation, protection of offsite areas from products of erosion from roads, mining and reclamation activities, minimizing disturbances to ground and surface waters, and spoil disposal.

State regulatory programs are required to establish a planning process, including a data base and inventory system for designating areas unsuitable for all or certain types of coal mining. Standards for such designation must include protection of aquifers, aquifer recharge areas, and areas where surface mining could substantially reduce water supplies or food and fiber production. They must also include protection of areas subject to frequent flooding or earthquakes if surface mining could endanger life or property.

State abandoned-mine reclamation programs are eligible for grants from the OSM-administered Abandoned Mine Land (AML) Reclamation Fund, which is financed by fees levied on surface mined and underground mined coal. They must include a description of proposed projects, the relative priority of each project, the anticipated benefit to be derived, the number of acres to be restored, and the surface lands to be protected from subsidence. State enabling legislation for carrying out the abandoned mine reclamation programs always provides that the responsible state agency may enter cooperative agreements with federal, state, and local government agencies to carry out reclamation projects.

As already noted in the chapter on federal conservation programs, SCS is authorized to use funds from the AML fund for its Rural Abandoned Mine Program (RAMP). RAMP provides cost sharing to landowners to carry out long-term contracts based on plans to reclaim impacted lands and waters by surface mining for uses such as cropland, pasture, range, woodland, wildlife habitat, and recreation.

(15)Pub. L. 95-87, 91 Stat. 447, 30 U.S.C. 1201-1309.

(16) Alabama, Alaska, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, Utah, Virginia, West Virginia, and Wyoming.

GROUND WATER RIGHTS

Until recently, state ground water rights law in both Eastern and Western states has been mainly concerned with settling property disputes and resolving well interference conflicts. The humid Eastern and Midwestern states have generally continued to follow either of two common law doctrines:

reasonable use and absolute ownership. The "reasonable use" doctrine puts few restrictions, and the "absolute ownership" doctrine puts none, on the landowner's right to remove as much ground water as he can. One state, Arkansas, in 1985 established a voluntary program of tax credit incentives to encourage the storing of surface water for conservation and agricultural uses and to reduce dependence on ground water. Some humid-area states require permits for most high-volume uses of ground water but do not consider priority in resolving well interference conflicts. These states may have administrative programs for preventing ground water withdrawals from interfering with minimum streamflows. They may also provide that the permitting authority will consider whether the proposed permit will interfere with the "safe yield" of the aquifer (equilibrium between average annual withdrawals and net recharge) and may apportion any shortage between the new and old permittees to preserve safe yield.

Most, but not all, Western states rely on the doctrine of prior appropriation ("first in time, first in right"), which considers water to be the property of the state. In these states, water is allocated by various priority systems, subject to the state's definition of a beneficial use. Ground water rights are acquired by obtaining a state appropriation permit. Conflicts between ground water appropriators are resolved by requiring the junior appropriator to stop withdrawals when they interfere with those of senior appropriators. In many states with this rule the state engineer will refuse to issue a permit if the proposed appropriation will cause ground water levels to fall beyond the economic reach of senior appropriators, because senior appropriators are entitled to a reasonable pumping depth.

The situation in which ground water withdrawals from an aquifer exceed net recharge is known as ground water mining, or ground water overdraft. The increase in ground water use for irrigation has led to ground water mining in several Western states and has also been associated with saline water pollution.(17) This, in turn, has caused some of these states to enact legislation authorizing special ground water regulations in designated critical areas.(18) The general objectives of such critical area laws are to slow or stop ground water mining, to provide administrative means for solving well interference conflicts, and to protect existing irrigation-based economies.

(17) Irrigation accounts for most of the consumptive use of fresh water in the U.S.--amounting in 1975 to 91 percent of fresh water consumption in the 17 contiguous Western states. Between 1955 and 1975 the quantity of ground water used annually for irrigation in the West increased from 18 million acre-feet to 56 million.

(18) Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, Oregon, Washington, Wyoming.

Criteria for designating critical areas vary from state to state but may include: withdrawals approaching or exceeding an aquifer's safe yield, decline of ground water level, conflict between users, water quality degradation, and land subsidence. The ground water controls authorized in critical areas also vary considerably and include (1) requiring state permits for new wells (in states where permits are required only in critical areas), (2) restricting ground water supply development through permit denials, well spacing requirements, or well drilling moratoria, (3) reducing use of existing supplies by reducing withdrawals of junior appropriators or of all appropriators, rotating pumping, enforcing voluntary pumping agreements, and (in Arizona) purchasing and retiring ground water pumping rights.

Arizona.--Arizona's 1980 Groundwater Management Act is considered the most conservation-oriented and comprehensive system of ground water management. The Act was drafted by the state's Ground Water Management Study Commission and enacted in response to the coexistence of enormous depletion of ground water, strong demand for water supply for nonagricultural purposes, and a lack of prospects for development of significant surface water supplies after the long-awaited Central Arizona Project (CAP) was completed.

Although the Act applies throughout the state, its most important provisions relate to four specific areas called active management areas (AMAs). These areas contain 80 percent of the population of the state (including the cities of Tucson and Phoenix), the bulk of irrigated agriculture, and 68 percent of the ground water overdraft. In the rest of the state, Arizona continues to be an overlying use (reasonable use) state. However, irrigation non-expansion areas can be created to freeze existing use of ground water for irrigation (two such areas were created by the Act), and additional AMAs can be created at the initiative of the Department of Water Resources (DWR) or by petition of local residents.

The main purpose of the Act is to achieve an equilibrium between ground water withdrawals and recharge in the aquifers of the AMAs. In three of the four AMAs the goal is to reach the point at which withdrawals do not exceed recharge by the year 2025. In the fourth AMA, the main objective is to preserve water for development of future nonirrigation uses--irrigation will be allowed for as long as feasible, consistent with that objective.

The Act creates two primary mechanisms for achieving this balance. The first is an overall conservation and management program administered by DWR and featuring a series of consecutive, mainly 10-year plans for each AMA. The second is a new system, based on conservation concepts, of ground water rights that may be subject to quantity reduction for conservation purposes.

Each successive management plan is required to mandate greater conservation measures than the last. Irrigation water duties (quantities available for eligible land) will be reduced under each successive

plan. Industrial users will be required to adopt the most effective commercially available technology allowing a reasonable economic return. Residential users will be subject to per capita reductions.

In addition, DWR will collect an annual ground water withdrawal fee from all users of ground water in an AMA and use the revenues to achieve the purposes of the Act. During the first 10-year plan, DWR can charge up to \$1 per acre-foot of water pumped for all purposes; the revenue will be used to pay the costs of administering the Act. During the second 10-year period, DWR can charge an additional \$2 per acre-foot to help augment the water supply. In the third 10-year plan, DWR can charge still another tax of \$2 per acre-foot; this money will be used to purchase irrigated land in order to retire it permanently from irrigation.

A planning provision in the Act prohibits new subdivision developments without a "certificate of assured water supply" based on proof of a 100-year supply to serve the proposed development. This requirement can be fulfilled by a contract for water deliveries from the CAP or from other surface-water sources.

In addition, the Act eliminates almost all pre-existing overlying use rights within the AMAs and substitutes three new kinds of ground water rights. These are: grandfathered rights, rights to receive and use water by virtue of being within the service area of a municipal or private water company that has a right to withdraw and deliver it, and special permit rights. The only remaining basis for an overlying ground water right in the AMA is ownership of exempt wells--wells with a maximum capacity of 35 gallons per minute, which may be used for domestic purposes (including irrigating up to 1 acre of land) or stock watering.

There are three kinds of grandfathered rights: irrigation grandfathered rights, type I nonirrigation grandfathered rights, and type II nonirrigation rights. All grandfathered rights in the initial four AMAs had to be applied for within 15 months of the effective date of the Act, or the overlying owner's preexisting right to use ground water ceased forever.

Irrigation grandfathered rights are the only rights to use ground water for irrigation within AMAs (except for very small amounts). They are based on ownership of land that was irrigated at any time between January 1, 1975 and January 1, 1980, provided that the land had not been retired by conversion to a nonirrigation use. This land is referred to as "water duty acres," and the irrigation grandfathered right is the right to continue to irrigate water duty acres in the future.

However, the amount of the water right is not the quantity of water previously used. Instead, it is fixed by DWR at the amount considered needed to grow the crops historically grown on that land (assuming reasonable conservation practices). If a farmer is dissatisfied with his allocation, he can appeal to the County Superior Court. The law

provides that the water duty will be decreased over time to achieve the goals of the successive AMA management plans.

Irrigation grandfathered rights can be based on either withdrawals from the land or deliveries from an irrigation district. Although some irrigation districts deliver ground water commingled with surface water, the amount of water the irrigator can receive remains limited to the water duty, regardless of the relative proportions of ground water and surface water in the delivery. But the Act does not apply to deliveries entirely of surface water.

Irrigation grandfathered rights are appurtenant to the land. If water duty land is sold to another irrigation or expanded animal-industry operation, the grandfathered right is unaffected. But if the land is sold for a nonirrigation use--apart from an expanded animal operation--and the land is outside the service area of a municipal or private water company, the grandfathered right is reduced to no more than 3 acre-feet per acre annually and becomes a type I nonirrigation grandfathered right. If the land is sold for a nonirrigation and non-animal-industry use and is within the service area of a municipal or private company, the grandfathered right is extinguished.

A similar rule applies to land use conversions by owners of grandfathered irrigation water rights. The owner loses his irrigation water duty but may obtain a type I nonirrigation grandfathered right of up to 3 acre-feet per acre, provided that DWR approves his development plan and the water duty land is outside the service area of a municipality or water company.

Type I nonirrigation rights are for nonirrigation use on lands retired from irrigation that are outside the water service area of a city, town or water company. They may be conveyed only with the land and only for a nonirrigation (and non-animal industry) use. Moreover, if such a water service area is extended to include the land, the type I right is extinguished.

The law has two intentions respecting irrigated land in AMAs. One is that once the lands are retired, they can never be returned to irrigation. The other is that if a city or water company can serve retired irrigation land at its regular rates, that city or water company will become the source of all future water supply for the land.

Type II nonirrigation grandfathered water rights are based on nonirrigation use of ground water before the land on which the well was located was included in the AMA. (All type II rights are based on nonirrigation use before June 12, 1980, the date of the creation of the original AMAs.) The amount of the type II right is the maximum amount used in any of the 5 years preceding inclusion of the land in the AMA. A type II right belongs to the owner of the land from which the water is withdrawn and can be used or sold anywhere for any nonirrigation purposes, with two exceptions. If the type II right is based on extraction of ground water for mining or

mineral processing or electric power generation, it may be used or conveyed only for the same uses.

The second type of ground water right in AMAs is the right of a municipal or private water company or an irrigation district to withdraw and transport ground water to landowners and residents within its service area. (Customers of irrigation districts must also have grandfathered irrigation rights.) The rights of both the service area water-supplying entities and their customers are subject to the conservation requirements of DWR.

A special permit is needed for any ground water withdrawal in AMAs that is not based on grandfathered rights or performed by service area water-supplying entities. The Act allows DWR to issue permits for only the following use categories:

- Dewatering: removing ground water near ore deposits or in other excavations to facilitate mining or other underground work. The law sets forth priorities for use of removed water.
- Mining and metallurgical processing.
- General industrial use.
- Any use of poor-quality ground water that has no other beneficial use.
- Temporary use for electric power generation when an emergency requires the use of more ground water than the power generation organization's legal entitlement.
- Temporary dewatering, where necessary for construction or structural integrity of improvements on the overlying land. The dewatering operation must be consistent with the AMA management plan.
- Drainage of irrigated land.

General industrial use permits must be consistent with achievement of the overall AMA ground water management goal. Furthermore, such permits will not be granted for uses inside the service area of a municipal or private water company or within 3 miles of such a service area, if the water supply organization can serve the use at its regular rates.

General industrial use permits will also not be granted if type II nonirrigation grandfathered rights can be purchased at reasonable prices, or if CAP water is available at regular project rates, or if surface water or effluent of adequate quality is available at a cost not more than 20 percent higher than the cost of ground water withdrawal.

Permits for mining and metallurgical processing will not be granted where CAP water, other surface water, or effluent of adequate quality is available at the rates specified for general industrial use.

The Arizona Groundwater Management Act provisions that are applicable to wells in all areas of the state are as follows:

- Registration of all existing wells is mandatory, and a permanent record must be kept describing the wells, the land, and its ownership.
- DWR construction standards are required for new and replacement wells and for deepening or abandoning existing wells.
- Well drillers and pump installation contractors must be licensed.
- DWR must receive notice of intention to drill for construction or deepening.
- Drillers must file well logs, and owners must file completion reports.
- Flowing wells are to be capped or otherwise sealed when not in use, and the construction, maintenance, and repair of all wells must be managed to prevent waste.

Provisions that are applicable only in AMAs include the following:

- DWR regulations must be followed in locating new and replacement wells in new locations.
- Permits are required for new and replacement wells in new locations.
- Operating regulations for multiple wells in AMAs shall be drafted to minimize damage to adjacent ground water rights.

LOCAL CONSERVATION LAWS

Most government decisions concerning land use and management are made at the local level. Local conservation laws may be broken down into two related, overlapping categories: land use and land management. Land use relates to type of use and type and density of permitted structures; land management relates to the soil and water conservation standards to be met both in ongoing land uses (such as agriculture and forestry) and in construction.

In general, most conservation-related laws enacted by local governments have dealt with land use rather than land management, although local conservation laws have included more land management provisions in the late 1970's and 1980's than formerly. The reasons for the increasing emphasis on land management include:

- The impetus given to local efforts to control nonpoint source pollution by the areawide water quality plans prepared under Section 208 of the U.S. Clean Water Act.
- The growing appreciation of the role of land management requirements in protecting locally prized sensitive lands such as wetlands, shorelands, and riverbanks.
- Strong local interest in wind erosion control in the Great Plains after massive plowing up of grasslands in the 1970's and 1980's.
- Strengthened local interest in the effectiveness of USDA soil and water conservation programs featuring conservation practices. This strengthened interest has resulted from state and local participation in the 1980 RCA Appraisal and from activities of the National Association of Conservation Districts.

The late 1970's and early 1980's saw a great expansion of local land use laws to preserve farmlands, farming as a way of life, and local sources of food in urban fringe areas. Some prosperous urbanizing jurisdictions, such as King County, Washington (which contains Seattle) and Suffolk County, New York (on Long Island), administer programs of their own, similar to the purchase-of-development rights programs discussed in the chapter on state laws.

However, the most distinctively local agricultural preservation laws are those based on traditional local government planning and zoning powers. Agricultural zoning is the most common local legal device to protect farmland. Another local device is transfer-of-development rights, by which owners of lands zoned for exclusive agricultural use are compensated for the loss of their rights to develop their own lands. Owners are given grants of development rights that they may sell to owners of land in identified zoning districts where development is permitted. Local governments use zoning and transfer-of-development rights to protect sensitive lands as well as agricultural lands.

Conservation Districts.--The chief local institution concerned with land management as opposed to land use is the special-purpose local conservation district (called soil conservation district, soil and water conservation district, resource conservation district, or natural resources district, in various states). Conservation districts are considered independent entities rather than agencies of the local government because they originally were established by referendum, and their governing boards usually are partly elected. In addition, they can carry out a variety of conservation programs on their own initiative without approval of other levels of government. However, in most states, the enabling authorities do not permit the districts to enact any regulatory ordinances. Furthermore, in most states, conservation districts cannot raise money to carry out their own programs but can receive money only from the federal, state, and general-purpose local governments. This means that most district programs are conducted pursuant to federal, state, county, or municipal legislation.

Because the standard State Soil Conservation District Law (on which all the state conservation district laws originally were based) empowered districts to adopt conservation regulations, some state laws still contain such a provision. However, because adoption usually requires a majority vote in a referendum and because districts have a tradition of voluntary cooperation, the conservation ordinance provisions in enabling laws have been little used.

Since Wisconsin's 1981 abolition of conservation districts and transfer of their functions to Land Conservation Committees--which are agencies of the counties--and Colorado's 1982 repeal of district authority to enact conservation regulations, Montana is the only state with conservation regulations enacted by conservation districts. However, both Wisconsin and Colorado have county land management regulations, which are administered by land conservation committees (in Wisconsin) and conservation districts (in Colorado) and rely on district-type expertise in soil and water conservation programs.

Local Government.--The chief institution for land use regulation is the local general-purpose government. Local governments derive their legislative powers from state laws or constitutions, but only those cities or counties which have been given home rule can exercise all the state's police powers to legislate for the public health, safety, and welfare within their jurisdictions. However, states can enact new laws to confer additional legislative powers on local governments. Most important, some level of local government in every state is responsible for land use planning and zoning.

Planning is the process used by local governments to make decisions. Comprehensive or master plans are not legally binding; they are policy documents based on long-term development goals, which set forth the land use control goals used in legally binding zoning ordinances.

Zoning means the division of a municipality, county, or town into districts for the purpose of regulating private land use. The principal elements of a zoning ordinance are a map and a zoning text. The zoning text describes the land use activities and structures permitted in each zone, the standards governing the uses in each zone, and the procedures citizens and officials must follow. Zoning is the chief tool that local governments use to regulate the type and density of structures permitted on agricultural and sensitive lands.

In urbanizing areas, subdivision regulations have become an important tool for regulating land use. These regulations specify standards for layout, design, and required public interest improvements for residential developments above a specified size. Both subdivision regulations and building codes (which require that materials and construction standards be met before a building permit is granted) frequently require that construction conforms to soil and water conservation standards.

The following are examples of local enactments for soil and water conservation and farmland preservation.

FLOOD PLAIN PROTECTION

Loudoun County, Virginia.--The original 1972 Flood Plain Zoning Ordinance was concerned solely with meeting federal flood insurance standards by restricting developments that would raise flood heights on flood plains. It was so little concerned with preserving natural flood plain values that it allowed developers to alter or relocate stream channels for residential or commercial construction after merely submitting assurances that the flood-carrying capacity of the watercourse would be maintained.

A 1982 revision of the ordinance bans residential construction on the historical 100-year flood plain and commercial structures that are not compatible with the flood plain's natural qualities. The revised ordinance divides the flood plain district into two subdistricts: the floodway and the flood fringe. In the floodway the only activities permitted are agriculture and other open-space, permeable-surface activities. Special permission may be granted for construction of water-related structures (such as piers) and government or public utility structures, but only after a favorable engineering review by the conservation district and a county engineer. In the flood fringe, small agriculture-related structures (sheds and greenhouses) and open-space recreational activities that involve paved surfaces or small structures (such as swimming pools) also are permitted, and special permission may be sought for open-space recreational activities that are more polluting (horse stables) or larger in scale (carnivals and circuses).

The new ordinance prohibits any development that would alter the stream channel and change the boundaries of the 100-year flood plain, unless it

receives a public hearing and is judged in the public interest. The engineering review for this type of project requires an environmental impact assessment and a stream rehabilitation program, including provisions for erosion control and tree protection.

PRESERVATION OF AGRICULTURAL LAND

Montgomery County, Maryland.--Maryland encourages agricultural preservation by use-value property assessment and voluntary agricultural districts with optional purchase of development easements. Montgomery County, a 500-square-mile area adjoining Washington, D.C., provides further encouragement through an interlinked system of planning, zoning, transfer-of-development rights, and a loan guarantee program.

A 1980 countywide "Master Plan for the Preservation of Agricultural and Rural Open Space" identified about a third of the county (then zoned as rural land with a residential density of one unit per 5 acres) as suitable for an agricultural reserve. The agricultural reserve was to be a clustered network of active farming operations and include adjacent fallow land, forest areas, and park land, thus keeping a "critical mass" of land free from urban intrusion. The plan therefore recommended the area be rezoned to permit only one dwelling per 25 acres--the minimum acreage that could support a Montgomery County farm family on a cash crop-direct sale basis. (Much larger acreages would be needed for wholesale marketing.) The plan also recommended a transfer-of-development rights system to compensate farmers for loss of development opportunities and to counteract the effect of sudden reduction in the value of their land when used as collateral to borrow money to carry out farm operations.

The transfer-of-development rights system was not to be limited to farmers but would include absentee owner-investors. Much land owned by investors already was being leased to farmers, and permitting the investors to sell off the transfer-of-development rights could benefit the farmers, who could then buy the land from the investors at use value.

After adopting the master plan, the county amended its zoning ordinance to put the identified areas into rural density transfer zones. Within these zones, only farms, primary agricultural processing, roadside farm markets, and agriculture-related structures are permitted. Secondary agricultural processes, compatible agribusinesses, and a few other uses require special permission.

The limit of one primary residential unit per 25 acres does not apply to farm tenant dwellings, which are treated as agricultural uses. The owner may cluster such units on lots as small as 1 acre, provided the lots meet the soil requirements for on-site septic sewage systems. Owners also may create lots for residences for their children (one lot per child), but such lots are deducted from the number of transfer rights the owner is allotted.

The owner is allowed to sell residential development rights on the private market. The owner is allotted one transferable development right for each 5 acres owned in the zone, less the number of dwellings previously sold or located on the land.

Local area master plans were amended piecemeal to provide an adequate number and a wide variety of sites as "receiving areas" where transfer-of-development rights could be used for development. Areas selected as receiving areas could not have a base density so low as to be incongruous with the densities of adjacent areas, and the density after transfer-of-development rights were exercised could not be so high as to exceed the carrying capacity of the environment of the site or of planned public facilities.

The county amended the zoning ordinance to allow increases in density in residential areas designated as receiving zones by an area master plan. The development rights are transferred by easement and must be recorded in the records of the property before the planning board will approve a subdivision plat for the area to which the development rights are transferred. The approved record plat notes the number of transfer-of-development rights used on the site.

In 1985 a Montgomery County ordinance established the transfer-of-development-rights fund, financed by part of the county's contribution to the Maryland Agricultural Preservation Foundation. The fund is empowered to: (1) guarantee farm loans that use land zoned as agricultural land, including transfer-of-development rights, as collateral, up to a minimum of 75 percent of market value for 5 years; (2) buy transfer-of-development rights that the owner has not been able to sell on the private market or to the state Agricultural Preservation Foundation; and (3) sell transfer-of-development rights through auction to the highest bidder.

Black Hawk County, Iowa.--Black Hawk County encompasses a metropolitan area with a population of 138,000, about 125,000 of whom live in incorporated cities and towns. Since the early 1970's, the county has sought to protect farming and agricultural land in the unincorporated area of the county while providing for timely and efficient development of appropriate lands. To accomplish this, the county developed a method to determine what land was to be considered prime agricultural land suitable for preservation. It used the SCS soil survey for Black Hawk County and a rating of soils for row crop production--prepared cooperatively by the state University Extension Service and SCS--to assign a corn suitability rating to all soils in the county. Beginning in 1973, soils with high corn suitability ratings were zoned for exclusive agricultural use.

In 1980, the county adopted a comprehensive land use plan that recognized preservation of agriculture and management of growth as the primary land use goals of the county. In 1982, it enacted an Agricultural Land Preservation and Zoning Ordinance to implement the comprehensive plan for the unincorporated portion of the county.

The new zoning ordinance defines land with a corn suitability rating of 50 or higher as prime agricultural land. It places 95 percent of the unincorporated area, consisting mainly of prime farmland, in the agricultural district for exclusively agricultural use. It divides the remaining 5 percent of the land into the residential/suburban district (which also permits agriculture) and exclusively commercial and industrial districts.

In the agricultural district, only one family farm residence per 35 acres is permitted, but a landowner can apply for a special permit to construct additional family farm residences on minimum lots of 1.5 acres. Also permitted are agriculture-related uses (farm labor housing, structures for both animal and row-crop operation) and incidental agriculture-related uses (roadside stands). Landowners can request rezoning to agricultural/residential if they wish to construct single non-farm residences that will not interfere with farming operations, but this type of rezoning does not permit residential subdivisions.

In the residential/suburban district, agricultural uses, single family residences, schools, and churches are permitted, but residential subdivisions are permitted only if adequate public facilities are available.

In addition, the zoning ordinance creates an environmentally sensitive overlay district, cutting across the other zoning districts, that identifies areas where conservation management provides important public benefits. These areas include surface waters, flood plains, aquifer recharge areas, steep slopes, and areas unsuitable for construction. In these areas, county officials and the conservation district must review development plans for all permitted construction to ensure that the soils are suitable and that the plan includes appropriate design and construction criteria for erosion and sediment control, conformity to federal flood insurance requirements, and protection of water resources and wildlife.

Also in 1982, the county enacted a right-to-farm ordinance. According to this ordinance, agricultural operations using generally accepted agricultural practices cannot be deemed a nuisance unless they are causing a danger to public health. All new non-farm residents are warned that they are residing in a commercial agricultural production area and will be subject to noise, odors, fumes, and dust resulting from use of machinery, storage and disposal of manure, and application of chemical fertilizers, herbicides, and pesticides.

In the same year, the county board adopted a resolution to inventory "significant land resources" (wetlands, woodlands, and native prairies) to determine which lands may be designated for property tax exemption under state laws. The conditions under which parcels of significant natural resource lands may be designated for tax exemption in Iowa are discussed in the chapter on state laws. Agricultural lands already receive preferential assessment in Iowa.

PROTECTION OF FRAGILE AREAS

Dade County, Florida.--In 1981, Dade County enacted a zoning overlay ordinance and a severable use ordinance to implement a management plan for the East Everglades, a 242-square-mile wetland area which adjoins Everglades National Park and the South Florida Water Management District's Conservation Area 3B and is an important recharge area for the Biscayne Aquifer. The objectives are to prohibit development that would affect the quantity and quality of important surface water and ground water supplies and to protect native plants and wildlife habitat, while providing compensation for loss of legitimate property rights.

The zoning ordinance divides the Everglades into management areas on the basis of ground water levels and frequency of flooding. It permits only one dwelling per 40 acres throughout the district except that one dwelling per 20 acres is permitted on existing farm enterprises in Area 1. Farming is permitted on only the 30,000 (out of 155,000) acres which are hydrologically capable of being farmed in the dry season.

The zoning ordinance also contains performance standards to minimize the impact of new developments on water flow. The standards apply to fill and excavation, farm roads and structures, and plant beds. Agriculture must be managed in compliance with district-approved conservation plans so that no net change in ground water infiltration occurs. Other performance standards require that landscaping and agriculture not introduce exotic species and that native vegetation on tree islands be preserved.

The Severable Use Rights Ordinance is Dade County's version of transferable development rights. Under the ordinance landowners whose reasonable expectations of economic return from their holdings were frustrated by the Zoning Overlay Ordinance may sell their rights to landowners in specified upland areas. They may also buy land in such areas and use the rights themselves for developments with specified moderate increases in currently permitted density.

Allocation of severable use rights is based on realistic development expectations and on zoning at the time when the land was purchased. Consequently landowners in Area 1 (which has high ground water levels for only 1 month of the year and prolonged surface flooding only once every 5 to 7 years, and which previously had been zoned for one dwelling per 5 acres) received the largest allocation of severable use rights--one per 5 acres. Landowners in Area 3B (a wetter, less developed agricultural area flooded up to 3 months of the year) were made eligible for one severable use right per 12 acres, and landowners in Area 3C (flooded 3 to 6 months of the year) were made eligible for one severable use right per 40 acres. Landowners in Area 3A (flooded up to 9 months of the year) and Areas 2A and 2B (flooded at least 9 months of the year) were awarded no severable use rights. These areas are

considered to have no reasonable development value because they would require very large expenditures for filling and large drainage systems to make them suitable for any economic use.

Petroleum County Conservation District, Montana.--This January 1984 ordinance authorizes The Petroleum County Conservation District to require a permit for plowing large areas of previously unplowed land and to enforce soil and water conservation management of this land and of highly erodible land plowed up before the ordinance was enacted. As of mid-1985, all plowing of large tracts of unplowed land had been conducted under a permit, but the ordinance had not been applied to previously cultivated land.

The ordinance states that no unplowed land in excess of 200 acres per landowner per year may be put under cultivation without a conservation district permit. The permit will not be granted if slope exceeds 15 percent, if soil depth is less than 20 inches over shale or bedrock, if cultivation of the land will result in filling, plowing over, or disturbing waterways, or if the land is not in a district-approved conservation plan. The conservation plan must address all soil and water resource problems, including wind erosion and saline seep, and must include maintenance of grassed waterways and proper cultivation of slopes where these practices are needed. The ordinance states that cultivation of all land in the district must be carried out to minimize erosion, saline seep, and sediment damage to land and water. It also states that the district may require conservation management or reseeding to grass of previously cultivated land.

District enforcement of the ordinance must be initiated by a written complaint signed by three land users. The conservation district must then notify the alleged violator and conduct an investigation; the violator and the three complainants may be present. If the investigation verifies that a violation has occurred, the district supervisors will discuss alternative solutions with the land user, offer technical assistance and information regarding financial assistance, and specify a time for voluntary compliance. If the land user disagrees with the supervisors' decision, the land user may discuss it with them at their next conservation district monthly meeting. If the supervisors do not reverse their decision at the meeting, they notify the land user of their final decision, prescribe procedures to correct the violation, and set a 20-day deadline in which to initiate corrective measures. If the land user does not demonstrate intent to correct the violation, the supervisors may petition the district court to compel compliance with the ordinance as provided by the state conservation district law.

The Petroleum County conservation district ordinance provides for establishment of a board of adjustment, as provided by the Montana conservation district law. Any person against whom a complaint has been filed may, within 60 days, appeal to the board for a variance on the grounds of practical

difficulties or unnecessary hardship. If the variance is granted, the supervisors in turn may appeal to the district court.

In addition, the ordinance allows the supervisors to bypass the review process and petition immediately for court enforcement against a recalcitrant cultivator of unplowed land who has been found in violation of the ordinance and who is not attempting to resolve the problem. The district may at the same time request a temporary restraining order against continued cultivation pending the trial.

Weld County, Colorado.--Weld County, a home-rule county with authority to enact whatever ordinances are necessary to carry out its land-use regulatory powers, was the first Colorado county to regulate plowing of privately owned grassland for the purpose of wind erosion control. Its 1982 ordinance requires a permit for cultivation of any grasslands not plowed within the past 5 years.

Applicants for a permit must submit a conservation plan approved by the conservation district, specifying the conditions under which cultivation is permitted. If the district approves the conservation plan or if the County Commissioners reverse the district's disapproval of the plan on appeal, the permit is granted and the conservation plan is recorded on the county land records.

If any landowner cultivates grassland without a permit, the County Commissioners are authorized to order the landowner to revegetate the land or, if necessary, to revegetate the land themselves and assess the cost to the landowner. Violators are subject to a fine of up to \$300 or imprisonment for up to 90 days or both for each day during which illegal cultivation continues.

The success of Weld County's ordinance has encouraged several other Colorado counties--Adams, Otero, Morgan, Washington, and Crowley--to enact plowing controls. But, since these counties are not home-rule counties, they have used their zoning powers to accomplish this objective.

Adams County, Colorado.--Adams County has delineated on a "fragile grasslands" overlay zoning map those grasslands that have not been cultivated during the past 5 years. Any person seeking to cultivate areas designated as fragile grassland must obtain a permit and submit a district-approved conservation plan specifying the conditions under which cultivation is permitted.

The Board of Adjustment will grant a permit for 5 years on the basis of the conservation plan, which will be recorded. The permit may be renewed every 5 years, provided the renewal request is accompanied by a written report from the conservation district that the conservation plan is still in effect and in approved form.

Penalties for zoning violations are a fine of up to \$100 per day, imprisonment for up to 10 days, or both, for each day in which the illegal land use continues.

DISTRICT COST-SHARING PROGRAM

Papio Natural Resources District, Nebraska.--Nebraska revised its conservation district law in 1969 to abolish soil and water conservation districts and water resources project districts and create comprehensive natural resources districts. The new districts assumed authority from state conservation district laws to use available resources to provide financial and technical assistance for conservation practices on private land, to require cooperating landowners to share the cost and labor of installing practices, and to carry out contracts to install and maintain the practices specified by the district. Most importantly, the 1969 law empowered the new districts to levy a 1-mill tax on all real property in the district and to use the revenues, together with operating funds from the state, for district activities.

More than half of Nebraska's 24 natural resources districts use district and state funds to finance their own cost-sharing programs. These programs were adopted by the directors of each district. The districts are responsible for managing the programs, including selecting the conservation practices to be cost-shared and the cost-share rates. However, their general policy is to insist that farmers use all available federal cost-share assistance from the Agricultural Conservation Program (ACP) before receiving district assistance.

The Papio District Conservation Assistance Program provides cost-share funds for five engineering practices: diversions, grassed waterways, terrace systems, erosion and sediment control dams, and livestock-waste control facilities. The landowner must have applied for ACP assistance before applying to the district. Cost-sharing rates are the same as the federal ACP rates for the practices in the county, but total payments for a practice may not exceed 70 percent of its cost. The district directors have authority to supplement ACP funds so that total payments may exceed the \$3,500 ACP limit.

All cost-shared practices are carried out under a contract between the district and the landowner that requires the landowner to maintain the practices for their specified normal lifespans, which are at least 10 years. The district can request return of assistance money from a landowner who does not maintain a practice for its full lifespan. SCS provides technical assistance for all cost-shared practices.

EROSION AND SEDIMENT CONTROL

Lewis and Clark County Conservation District, Montana.--This ordinance was developed as part of an Environmental Protection Agency/state/conservation district cooperative pilot project for control of sediment and related nonpoint source water pollution. Enacted by referendum in 1977, its purpose is to demonstrate the capability of

district regulations to enforce locally developed best management practices.

The ordinance requires that agriculture, forestry, and construction and subdivision activities conform to best management practices (previously adopted by the district and incorporated into the ordinance by reference) where needed to prevent "accelerated erosion and sediment damage."

Land users engaged in agriculture are deemed in compliance with the ordinance if their land is managed according to a district-approved conservation plan. But they need not have such a plan if their land management practices meet or exceed the best management practices adopted by the supervisors or if their practices are not creating erosion problems.

Timber harvesting activities also are deemed in compliance if they are in accord with a district conservation plan. If not, they require notice to the supervisors, who may insist on a special erosion and sediment control plan that conforms to district best management practices. Construction and subdivision activities, with minor exceptions, require prior district approval of an erosion and sediment control plan.

Enforcement begins with a complaint (which may be filed by other land users, by the district supervisors, or by state or county water-quality management officials) that accelerated erosion or sediment damage has occurred or is occurring. The process of notification, investigation, review, and petition is similar to the Petroleum County Conservation District ordinance process.

The Lewis and Clark County Conservation District ordinance also gives the supervisors power to initiate a court order to cease and desist against anyone disturbing the land if the land-disturbing activity results in accelerated erosion and sediment damage.

If this "cease and desist" power were applied to agricultural activities, it could eliminate the emphasis on voluntary compliance and the time-consuming complaint procedure and could bar appeals to the board of adjustment. However, the legislative history of the ordinance indicates that the cease and desist order provision was intended to be used only to stop construction and subdivision activities that are not in accord with an approved erosion and sediment control plan.

The ordinance authorizes the district to help agricultural land users apply best management practices by obtaining cost-share funds from federal, state, public, or private sources. If the supervisors decide that public cost sharing should be available to correct a violation, they can permit the land user to delay corrective measures until cost-share funds are made available. Lack of such funds may be considered a "practical difficulty" and may justify a variance from the time set by the supervisors.

Fillmore County, Minnesota.--This 1982 amendment to the county zoning ordinance states that no land user may conduct or cause to be conducted any activity that results in accelerated erosion and sediment damage. It provides requirements for three kinds of activity--agriculture, woodland use, and construction and subdivision.

Agricultural land users are considered in compliance with the zoning law if they use soil conservation practices approved by the local conservation district; have no rills, gullies, or sediment deposits on their fields; and are not farming so as to create erosion or sediment problems on adjoining fields.

Land users who use woodland for grazing are required to exercise proper management to prevent erosion or sedimentation resulting from overgrazing or cattle paths. Clearing woodland to convert it to another use is prohibited without a permit and approval by the Zoning Administrator and County Board of Adjustment.

A proposed erosion control plan must be submitted with any construction and subdivision plan that will disturb over 10,000 square feet of land.

Enforcement of erosion control requirements must be initiated by the complaint of a private landowner or public official, which describes the activity causing accelerated erosion or sediment damage. The Zoning Administrator receives the complaint and requests the local conservation district to investigate; the district must determine whether a violation exists.

If a violation exists, the Zoning Administrator notifies the alleged violator by letter, giving the violator 30 days to work up a plan with conservation district assistance to correct the violation. The plan must include specific conservation management practices and deadlines for completion. If the landowner does not develop a plan within 30 days, the district informs the Zoning Administrator of the situation and provides an evaluation of the practices needed to bring the land into compliance. Failure to comply will subject the violator to standard Fillmore County zoning ordinance penalties.

Washington County, Wisconsin.--Wisconsin's subdivision law gives the minimum standards for approval of subdivisions and authorizes local governments with planning agencies to adopt additional, more restrictive approval standards. Washington County's Land Divisions Ordinance was amended in 1978 and 1979 to give the local conservation district (whose administrative authorities have since been inherited by the County Land Conservation Department) responsibility for determining the suitability of the soil for subdivision and construction and the adequacy of planned erosion control and storm water management practices.

The amendments added the Land Conservation Department to the list of local and state agencies to which the developer must submit a preliminary plat

to be reviewed for conformity to a variety of public-interest criteria. The Land Conservation Department reviews the preliminary plat and sends a letter to the developer and the county approving agency explaining any problems and listing the erosion control and storm water management information that must be included in the construction plan after the preliminary plat is approved. The Land Conservation Department also supplies the developer with a booklet on design standards and explains the measures to be included in the construction plan.

If the Land Conservation Department and other "objecting agencies" raise no objections and the preliminary plat is approved, the developer must submit a construction plan to the Land Conservation Department. The county will not issue a construction permit until the Land Conservation Department approves the erosion control aspects of the plan. These include:

- Land suitability. The amendment specifies that lots with a specified percentage of slope or of road frontage with a specified vertical change will be presumed unsuitable for development unless the subdivider's construction and design plans satisfactorily avoid potential soil erosion and sedimentation problems.
- Storm water management. Storm water facilities must accommodate the 10-year, 24-hour storm (or the 25-year, 24-hour storm if the drainage area is more than 25 acres) and provide for maximum infiltration into the ground or temporary storage or retardation of peak runoff flow, where practicable. The facilities must be designed to avoid potential erosion problems and be consistent with any areawide hydrologic plans.
- Conservation practices. If substantial cutting, clearing, grading, or other land-disturbing activity is required during development, adequate conservation practices will be required to minimize erosion and sedimentation.

Before the final plat is issued, the Land Conservation Department will visit the subdivision site to see if erosion control measures were implemented according to the construction plan. The Land Conservation Department will not recommend approval of the final plat until all planned erosion control measures are installed, unless the town accepts a performance bond in lieu of completion of the measures. If necessary, the bond may be used to pay for installing the practices.

Delaware County, Ohio.--These regulations were enacted by resolution (county ordinance) of an urban fringe county, pursuant to a provision of the 1970 Ohio Agricultural and Urban Sediment Control Law that authorized counties to adopt urban sediment control regulations by resolution or in subdivision regulations. They are based on model county regulations developed by the Ohio Division of Soil and Water Conservation.

The regulations apply to all non-farm earth-disturbing activities for purposes other than surface mining and approved public agency transportation or drainage projects. If an area proposed for development consists of 5 or more acres, the developer must submit a sediment control plan to the approving agency. The agency may approve or disapprove the plan or may specify its deficiencies and approve it after required revisions. If the area to be developed is less than 5 acres, a sediment control plan is not required, but the developer must conform to the performance standards in the regulations and is subject to surveillance and site inspection by the approving agency.

The standards apply to control measures for sheet and rill erosion; accelerated erosion in drainage ways and streams and in ditches disturbed by development; sloughing, landsliding, and dumping; and stream channel and flood plain erosion. The standards require sediment basins, sized according to the SCS handbook, Water Management and Sediment Control for Urbanizing Areas, or conservation practices to maintain specified soil-loss levels, or both. They also require construction and maintenance of concentrated water flow channels so as not to exceed specified velocities and require the use of qualified engineering assistance for grading, excavation, fill, or construction on soils known to be unstable. The standards also require retardation, infiltration, or detention of increased storm water runoff caused by development so that the peak runoff rate does not exceed the peak rate under predevelopment conditions.

The regulations also provide for performance bonds to ensure completion (and maintenance during construction) of required sediment control improvements, after approval of the final subdivision plat. The regulations provide for inspection, appeals, and penalties for violations. They authorize developers to petition that the county assume responsibility for permanent maintenance of sediment control and storm water management facilities that benefit two or more property owners. However, the regulations state that the county may require such facilities to be designed to reduce costs.

WATER SUPPLY PROTECTION

Fairfax County, Virginia.--The Fairfax County Zoning Ordinance was amended in 1983 to protect Occoquan Reservoir, the county's drinking water supply, against nonpoint source pollution. The ordinance establishes a water-supply protection overlay district in the Occoquan River Basin and places the most environmentally sensitive portion of the basin in a residential conservation district. In this district, the only new construction permitted is one residence per lot of 5 acres or more.

Elsewhere in the basin, the water-supply protection overlay district encompasses zoning districts that allow industrial, commercial, or residential

subdivision use at the same density limits applicable elsewhere in the underlying zoning districts. However, the regulations for the water-supply protection overlay district require that special best management practices be installed within the overlay area. These include storm water management practices to reduce the projected phosphorus content of the runoff. They do not include erosion and sediment control practices because the state and county have erosion and sediment control laws requiring approval of an erosion and sediment control plan (including control of erosion from accelerated storm water runoff). But the regulations do include best management practices for controlling toxic water pollutants from building sites and industrial facilities.

The regulations for storm water management best management practices refer developers to the state and metropolitan Washington areawide best management practice manuals for engineering specifications. They explain, however, that storm water management practices used in the water-supply overlay district must provide for removal of the required percentage of phosphorus (the limiting nutrient for growth of algae in Occoquan Reservoir), not merely for control of peak runoff velocity. Removal of phosphorus may be accomplished by infiltration or by sedimentation in detention measures or storage facilities. The regulations provide a formula for computing the long-term detention storage volume required for each acre of development, related to percent of imperviousness. They also compare estimates of the phosphorus removal efficiencies of five types of storm water management best management practices--dry and wet detention ponds, infiltration pits, natural open space, and vacuum sweeping of parking lots and streets.

The regulations state that developers are not required to select the suggested water quality control measures but can choose any others that can accomplish the required phosphorus removal objective. They state that the county will encourage developers to cooperate in designing and

constructing combined facilities which can serve as storm water best management practices for several developments.

Occoquan Basin, Virginia.--Because Occoquan Reservoir, the chief drinking water supply for the Virginia suburbs of Washington, D.C., is threatened by nonpoint source pollution, both the general-purpose local governments and the conservation districts responsible for lands in the Occoquan watershed have their own water quality management programs. The local government programs to control urban nonpoint source pollution are implemented by legally enforceable zoning regulations containing density limits and by requirements for prior approval of best management practice plans as part of site approval of permitted development projects (see Fairfax County) and also by operation of local government housekeeping programs, such as street cleaning and disposal of solid wastes and treatment plant residuals. The conservation district programs to control agricultural nonpoint source pollution are not legally enforceable but are implemented through ongoing programs of education, technical assistance, and cost sharing that make use of state and federal resources.

All these jurisdictions have agreed to coordinate their Occoquan Basin nonpoint source pollution management programs in response to the recommendations of the Northern Virginia Planning District Commission. (The Commission is the state agency that played the leading role in preparing the Virginia section of the water quality management plan for the metropolitan Washington area.) Using a computer model operated by the Commission, a technical committee assesses the probable effects on water quality in the basin of all drainage-modifying developments and all adopted best management practices for urban construction and agricultural activities. On the basis of this assessment, a policy committee recommends additional protective measures and programs. These recommendations do not have the force of law. They are advisory only and must be implemented by regulations and operating programs of the constituent general-purpose local governments and conservation districts.

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