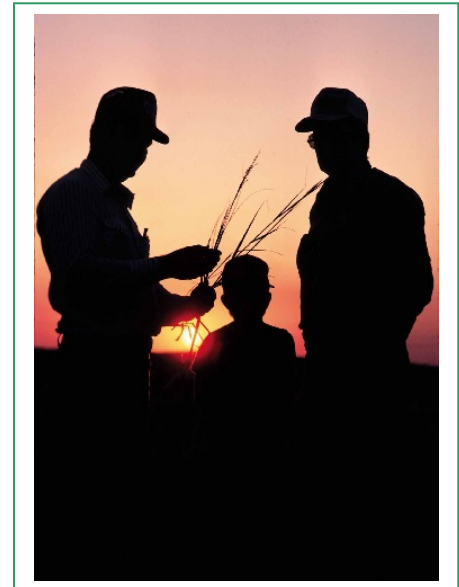


## CONSERVATION SECURITY PROGRAM (CSP)

Final  
Environmental Assessment  
May 2004



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# BACKGROUND

## Introduction

The Natural Resources Conservation Service (NRCS) is promulgating an interim final rule to implement the Conservation Security Program (CSP), which is authorized by Title XII, Chapter 2, Subchapter A, of the Food Security Act of 1985, as amended by the Farm Security and Rural Investment Act of 2002 (“the 2002 Act”).

The National Environmental Policy Act of 1969 (NEPA) requires that Federal agencies prepare Environmental Impact Statements (EISs) for major federal actions significantly affecting the quality of the human environment. In addition, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500-1508) require Federal agencies to prepare Environmental Assessments (EAs) to assist them in determining whether they need to prepare an EIS for actions that have not been categorically excluded from NEPA. The CEQ has defined "major federal action" to include activities over which Federal agencies have control, including promulgation of regulations in which they exercise discretion.

NRCS regulations implementing the provisions of NEPA state that an EIS is normally required for "broad Federal assistance programs administered by NRCS when the environmental evaluation indicates there may be significant cumulative impacts on the human environment." (7 CFR 650.7 (a)(3).) The environmental evaluation for the CSP indicated that, when focusing on the significant adverse impacts that NEPA is intended to help decision makers avoid and mitigate, it is unlikely there will be significant cumulative impacts on the quality of the human environment as a result of implementing the CSP. However, NRCS nonetheless determined it would develop this EA to review the effects of the proposed program and to assist in determining whether implementing the CSP will significantly affect the quality of the human environment such that NRCS must prepare an EIS.

When NRCS published the proposed rule to implement CSP, it also made available for public comment a draft EA and draft Finding of No Significant Impact (FONSI). The comments NRCS received on the draft EA recommended that NRCS include an analysis of alternatives in addition to the proposed action and no action. The comments suggested NRCS analyze alternatives for implementing CSP without funding limitations, as well as other reasonable alternatives for implementing a capped program. NRCS determined that an alternative implementing the CSP without funding limits would not meet the identified need because Congress has, in fact, placed a funding limit on the program. However, NRCS has modified the EA to include alternative approaches to implementing CSP that allow for funding limits. The comments on the draft EA also suggested that NRCS include among the alternatives a cost-share payment rate equivalent to that provided in the Environmental Quality Incentives Program (EQIP). In response, NRCS has modified the EA to include a reasonable range of cost-share payment rate alternatives.

The proposed action under consideration here involves rulemaking, and no site-specific or ground-disturbing actions will occur as an immediate result of implementing the proposal. NRCS will undertake additional environmental review at subsequent stages of program implementation consistent with NEPA requirements and NRCS regulations.

## **CSP Statutory Requirements**

The CSP is a voluntary program providing both technical and financial assistance to producers of agricultural operations for the conservation and improvement of the quality of soil, water, air, energy, plant and animal life on working lands. The intent of the program is to recognize producers financially for the significant environmental goods and services they provide to the public through their annual and ongoing conservation efforts, to motivate others to do the same, and to secure the Nation's ability to produce food and fiber.

The program provides payments to producers who practice good stewardship on their agriculture operations and provides additional incentives to enhance their conservation achievements. Participation in CSP requires that an inventory of an agricultural operation be conducted to identify existing resource concerns and determine the extent of existing conservation treatment. Annual payments made under CSP contracts may include a base payment for existing conservation treatments, cost-share and maintenance payments, and an enhanced payment for exceptional conservation effort. A three-tiered approach is used to determine base payments.

The Chief of NRCS has authority under CSP to assist producers who participate in CSP to develop a comprehensive, long-term strategy for improving and maintaining all natural resources of the producer's agricultural operation. All participants must meet the highly erodible land and wetland conservation provisions of the Food Security Act of 1985, as amended. (See Appendix A for a copy of the CSP authorizing legislation.)

### **Eligibility:**

Producers may participate in the CSP if they:

- Own or control
  - private agricultural land, including cropland, grassland, prairie land, improved pastureland, and rangeland;
  - private forested land that is an incidental part of the agricultural operation; or
  - agriculture land that is federally recognized Tribal, BIA allotted, or Indian trust land; and
- Have not already enrolled the land in the Conservation Reserve Program, the Wetlands Reserve Program, or the Grassland Reserve Program, or converted the land to cropland subsequent to passage of the 2002 Farm Bill.

Producers must submit an application and a conservation security plan that:

- Identifies significant resource concerns;
- Identifies the lands to be included in the contract;
- Describes the base payment tier and the individual conservation practices to be implemented and maintained for participants to be eligible to receive a base payment, maintenance payment, and enhancement payment, as applicable; and
- Contains a schedule for implementing, maintaining, or improving applicable conservation practices for the term of the conservation security contract.

## **Payments:**

The CSP authorizes three types of payments for approved land management, vegetative and structural practices:

1. Base payments. These payments are derived from the average national per-acre rental rate for a specific land use during the 2001 crop year; or another appropriate rate for the 2001 crop year that ensures regional equity. The producer receives a higher percentage of the applicable rental rate when a higher level of conservation is applied to the agricultural operation. The statute includes eligibility requirements for each of the three levels, or tiers, of base payments and specifies the amounts that NRCS may pay under each tier. (See Table 1 below for a comparison of the tiers.)

### Tier I:

- Applies when conservation practices address at least one significant resource of concern for the enrolled portion of the agricultural operation at a level that meets the appropriate non-degradation standard.
- Contracts are for five years.
- Producers may receive 5 percent of the rental rate of the land covered by the contract.
- The base payment is limited to \$5,000 because there is a contract limit of \$20,000 for Tier I contracts, and the base payment may not be more than 25 percent of the contract amount.

### Tier II:

- Applies when conservation practices address at least one significant resource of concern for the entire agricultural operation at a level that meets the appropriate non-degradation standard.
- Contracts are for a period of not less than five years and no more than 10 years.
- Producers may receive 10 percent of the rental rate of the land covered by the contract.
- The base payment is limited to \$10,500 because there is a contract limit of \$35,000 for Tier II contracts, and the base payment may not be more than 30 percent of the contract amount.

### Tier III:

- Applies when resource management systems are used that meet the appropriate non-degradation standard for all resources of concern of the entire agricultural operation.
- Contracts are for a period of not less than five years and no more than 10 years.
- Producers may receive 15 percent of the rental rate of the land covered by the contract.
- The base payment is limited to \$13,500 because there is a contract limit of \$45,000 for Tier III contracts, and the base payment may not be more than 30 percent of the contract amount.

2. Cost-share payments for installation and maintenance of conservation practices. However, payments are not to be provided for:
  - Construction or maintenance of animal waste storage or treatment facilities or associated waste transport or transfer devices for animal feeding operations; or
  - Purchase or maintenance of equipment or a non-land based structure that is not integral to a land-based practice.
  
3. Enhancement payments to reward producers who go beyond the minimum requirements of the program to address additional resource considerations. Producers may be eligible to receive enhancement payments for the following:
  - Implementing or maintaining multiple conservation practices that exceed current tier requirements;
  - Addressing local conservation priorities in addition to resource considerations for the agricultural operation;
  - Participating in an on-farm conservation research, demonstration, or pilot project;
  - Participating in a watershed or regional resource conservation plan that involves at least 75 percent of the agricultural producers in the plan area; and
  - Assisting in assessment and evaluation of conservation practices included in the CSP plan.

An agricultural producer may be eligible to receive cost-share payments for maintenance and installation, as well as enhancement payments, regardless of the tier under which the base payment falls; however, as described above, there are limitations on base payments and contract payments, as well as a per-person payment limitation of \$45,000 per year. Table 1 summarizes these limitations, as well as the base payment requirements set forth in the CSP authorizing legislation.

**Table 1: Comparison of Tier Requirements and Limits by Statute**

	<b>Extent</b>	<b>Required Treatment</b>	<b>Rental Rate Limit</b>	<b>Base Payment Limit</b>	<b>Contract Limit</b>
<b>Tier I</b>	Part of Ag Operation	One Resource Concern	5%	\$5,000	\$20,000
<b>Tier II</b>	Entire Ag Operation	One Resource Concern	10%	\$10,500	\$35,000
<b>Tier III</b>	Entire Ag Operation	All Resource Concerns	15%	\$13,500	\$45,000

**Level of Treatment to Address Resource Concern**

As indicated in Table 1, the level of conservation treatment required increases with each tier. Each resource concern that is treated must raise the condition of the resource at least to a non-degradation level. The CSP authorizing legislation defines this non-degradation standard as the “level of measures required to adequately protect, and prevent degradation of, one or more

natural resources, as determined ... in accordance with the quality criteria described in handbooks of the Natural Resources Conservation Service.”

Quality criteria are qualitative or quantitative statements of a treatment level required to achieve the Resource Management System (RMS) level of conservation planning. The object of RMS planning is to achieve resource sustainability in order to secure the Nation’s ability to produce food and fiber. While quality criteria are established at the national level, they are also modified at the State and local level to take into account state and local laws, regulations, and standards that may apply, as well as unique conditions that may exist. Local quality criteria are contained in each NRCS Field Office Technical Guide.

Quality criteria are established for soil erosion and soil condition; water quality and quantity; air quality; plant suitability and condition; fish and wildlife habitat; and domestic animal management. Appendix C identifies the National Quality Criteria, and Table 2 provides an example of quality criteria established for surface water quality, the type of resource problem to which the quality criteria might apply and the types of conservation practices that could be implemented on cropland so the resource is restored to a condition that meets the quality criteria.

**Table 2: Application of Quality Criteria to Surface Water Quality Concern**

DESCRIPTION OF RESOURCE CONCERN	QUALITY CRITERIA	SAMPLE CONSERVATION PRACTICES
Water Quality—Excessive Nutrients and Organics in Surface Water: Pollution from natural or human-induced nutrients such as nitrogen, phosphorous, and organics (including animal and other wastes) degrades surface water quality.	Nutrients and organics are stored, handled, disposed of and managed such that surface water uses are not adversely affected.	<u>Nutrient Management (590)</u> and <u>Waste Utilization (633)</u> .
Water Quality—Harmful Levels of Pesticides in Surface Water: Pest control chemicals present in toxic amounts degrade surface water quality.	Pesticides are applied, stored, handled and managed such that surface water uses are not adversely affected.	<u>Pest Management (595)</u> .
Water Quality—Excessive Suspended Sediment and Turbidity in Surface Water: Pollution from mineral or organic particles degrades surface water quality.	Movement of mineral and organic particles is managed such that surface water uses are not adversely affected.	<u>Terrace (600)</u> , <u>Residue Management, Seasonal (344)</u> , and <u>Riparian Forest Buffer (391)</u> .



## **CSP Appropriations**

The 2002 Farm Bill provides that the CSP shall be funded by the Commodity Credit Corporation (CCC) and placed no funding limits on the program. It did, however, limit technical assistance for conservation security contracts to 15 percent of amounts expended for the fiscal year. In 2003, Congress amended the 2002 Farm Bill to limit the amount of CCC funds available for CSP to \$3,773,000,000 for the period of fiscal years 2003 through 2013 (P.L. 108-7, Sec. 216(c)). Then, in the 2004 Omnibus Appropriations Bill, Congress limited fiscal year 2004 CSP funding to \$41,443,000 (P.L. 108-199, Sec. 752), but again amended the 2002 Farm Bill to remove the ten-year funding limitation (P.L. 108-199, Sec. 101).

## **PURPOSE AND NEED FOR ACTION**

The need to which NRCS is responding by proposing action is the need to implement the CSP as authorized, amended, and funded by Congress. To meet this need, NRCS must implement the program in a manner that achieves the purpose for which the CSP was authorized. As stated in the legislation, the purpose of CSP is “to assist producers of agricultural operations in promoting, as is applicable with respect to land to be enrolled in the program, conservation and improvement of the quality of soil, water, air, energy, plant and animal life, and any other conservation purposes, as determined by the Secretary.”<sup>1</sup>

In reviewing the Conference Report accompanying the 2002 Farm Bill, it becomes clear that Congress intends CSP to achieve the following additional purposes:

- Secure agricultural producers’ ongoing stewardship of America’s lands by providing incentive payments for producers to maintain and enhance conservation practices at a non-degradation level.
- Assist agricultural producers to increase their current level of conservation by providing financial and technical assistance to promote conservation and improvement of soil, water, air, energy, plant and animal life, and to achieve other conservation purposes on working lands.
- Reward producers who support conservation in a manner that goes beyond the minimum requirements of the program.

The wide variety of agricultural operations and related environmental and social concerns across the U.S., as well as the CSP statutory framework, requires that NRCS implement CSP with flexibility to address differences in State, Tribal and local situations. Thus, State Conservationists must have some flexibility concerning new activities funded by CSP so the program is most effective under the circumstances that exist in each State. At the same time, there is also a need for NRCS to maintain program integrity by ensuring a level of consistency in the way States carry out the CSP.

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<sup>1</sup> P.L. 107-171, Sec. 1238A(a).

In addition to meeting these needs, there is also a need to ensure the rule has enough flexibility to be effectively and efficiently implemented within both the technical assistance cap and funding levels that may vary from year to year and may or may not be limited. Though the 2002 Farm Bill does not limit CSP funding, Congress limited the funds in FY 2004. In addition, Congress has limited the funding available for technical assistance to develop and implement CSP contracts for technical assistance to 15 percent of annual expenditures. This effectively limits the amount of conservation planning and administrative time NRCS and technical service providers have to assist agricultural operators to develop and execute CSP contracts.

## ALTERNATIVES

### INTRODUCTION

This EA analyzes alternatives related to the cost-share payment rate and methods for enrolling applicants within funding limits. The effects of those alternatives that meet the purpose and need for action are discussed in the “Impacts” section below.

### NO ACTION ALTERNATIVE (ALTERNATIVE 1)

This alternative assumes CSP would not be implemented.

### ACTION ALTERNATIVES

#### Cost-Share Payment Rate Alternatives

**Alternative 2.** Under this alternative, NRCS would establish a cost-share payment rate of 5 percent of the cost to implement a new conservation practice.

**Alternative 3, *Proposed Action*.** Under the proposed action, NRCS would allow cost-share payment rates to vary by practice but in no case to exceed 50 percent of the cost to implement a new conservation practice. NRCS would provide the list of approved practices and the percentage cost-share payment rate for each practice at the time of each CSP sign-up announcement.

**Alternative 4.** Under this alternative, NRCS would establish a cost-share payment rate of 75 percent of the cost to implement a new conservation practice.

#### Enrollment Alternatives

**Alternative 5, *Proposed Action*.** Under the proposed action, NRCS would implement CSP according to the interim final rule. This approach uses periodic sign-ups to enroll current stewards in priority watersheds. Within these areas, priority is given to those who are willing to

implement enhancements. The interim final rule provides that NRCS will periodically publish announcements identifying the sign-up period, eligibility and enrollment criteria, and the priority watersheds in which producers are eligible to submit CSP applications. All watersheds will be prioritized using a nationally consistent process based on existing natural resource, environmental quality, and agricultural activity data along with other information that may be necessary to efficiently operate the program. The watershed prioritization and identification process considers several factors, including, but not limited to:

1. Potential of surface and ground water quality to degrade;
2. Potential of soil to degrade;
3. Potential of grazing land to degrade;
4. State or national conservation and environmental issues, such as location of air quality non-attainment zones or at-risk species habitat; and
5. Local availability of management tools needed to operate the program more efficiently, such as digital soils information.

To be eligible to participate in CSP, a benchmark inventory must indicate that all nationally significant resource concerns have already been addressed on at least part of the agricultural operation. The interim final rule designates soil and water quality as nationally significant resource concerns for all land uses, and allows the Chief, NRCS, to identify in sign-up announcements additional nationally significant resource concerns that will apply to all land uses. To be considered for CSP enrollment, applicants must meet the soil and water quality criteria shown in Table 3, as well as applicable criteria for any other nationally significant resource concerns that are identified in particular sign-up announcements.

**Table 3: Minimum Soil and Water Quality Criteria for CSP Eligibility**

<b>On Cropland</b>		<b>On Rangeland/Pastureland</b>	
<b><i>Soil Quality</i></b>	<b><i>Water Quality</i></b>	<b><i>Soil Quality</i></b>	<b><i>Water Quality</i></b>
Soil conditioning index <sup>2</sup> is positive	Current treatment level meets or exceeds quality criteria for: <u>Surface Water:</u> nutrients, pesticides, salinity and sediment <u>Groundwater:</u> nutrients, pesticides, and salinity	Vegetation management through a grazing management plan that provides a forage animal balance, proper livestock distribution and timing of use, and managing livestock access to water.	

<sup>2</sup> “The Soil Conditioning Index (SCI) is a tool that can predict the consequences of cropping systems and tillage practices on the trend of soil organic matter. Organic matter is a primary indicator of soil quality and an important factor in carbon sequestration and global climate change. The Soil Conditioning Index has three main components: 1) the amount of organic material returned to or removed from the soil; 2) the effects of tillage and field operations on organic matter decomposition; and 3) the effect of predicted soil erosion associated with the management system. The SCI gives an overall rating based on these components. If the rating is a negative value, the system is predicted to have declining soil organic matter. If the rating is a positive value, the system is predicted to have increasing soil organic matter.... The model was developed by personnel at the NRCS National Soil Survey Center in Lincoln, Nebraska.” Soil Conditioning Index for Cropland Management Systems. NRCS National Soil Survey Center, Lincoln, Nebraska. Available at [http://soils.usda.gov/sqi/soil\\_quality/land\\_management/sci.html](http://soils.usda.gov/sqi/soil_quality/land_management/sci.html).

To be eligible to be considered for enrollment in Tier I of the program, the benchmark inventory must indicate that the nationally significant resource concerns of water quality and soil quality have been addressed on part of the agricultural operation. (See Table 3.) For Tier II, these concerns must have been addressed for all land uses on the entire agricultural operation. To be eligible to be considered for enrollment in Tier III of the program, the benchmark condition inventory must indicate that the applicant has addressed not only the nationally significant resource concerns, but has treated all the applicable resource concerns to an RMS level on the entire agricultural operation.<sup>3</sup> In other words, the condition of all soil, water, air, plants and animals on the agricultural operation must, at a minimum, meet the NRCS quality criteria standards applicable in the local area. (See Appendix B for Natural Resource Concerns and National Quality Criteria. These National criteria may be modified by NRCS at the State or local level when necessary.)

CSP contracts will be for the period set forth in the authorizing legislation—5 years for Tier I, and 5 to 10 years for Tier II or Tier III.

CSP payments may consist of up to four components:

- Base conservation stewardship payments;
- Maintenance payments;
- New practice cost-share payments; and
- Enhancement payments.

NRCS will make base conservation stewardship payments using an appropriate rate that ensures regional equity. Separate rates will be established for each land use category based on the AFIDA Land Value Survey, the NASS land rental data and CRP rental rates. Where typical rental rates for a given land use vary widely within a State or between adjacent States, NRCS will adjust the county-level rates to ensure local and regional consistency. The regionally adjusted rates may be adjusted over the life of the program, but will not be reduced during the life of the CSP contract. The final stewardship payment rate will be the adjusted regional rates multiplied by a reduction factor of 0.25 for Tier I, 0.50 for Tier II, and 0.75 for Tier III. NRCS will compute the stewardship component of a participant's CSP payment as the product of: the number of acres in each land-use category; the corresponding stewardship payment rate for the applicable acreage; the reduction factor; and the tier-specific percentage established in the CSP authorizing legislation.<sup>4</sup>

In addition to the conservation stewardship payments, NRCS may provide CSP participants with maintenance payments based on a percentage of the average 2001 county cost of maintaining a land management and structural practice that is documented in the benchmark condition inventory as existing upon enrollment in CSP. The Chief may offer alternative payment methods

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<sup>3</sup> A list of all potential resource concerns are identified in Section III of the NRCS Field Office Technical Guide except that the minimum requirement for soil quality on cropland is considered achieved when the Soil Conditioning Index value is positive; the minimum requirement for water quantity - irrigation water management on cropland or pastureland is considered achieved when the current level of treatment and management for the system results in a water use efficiency value of at least 50%; and the minimum requirement for wildlife is considered achieved when the current level of treatment and management for the system results in a value of at least 0.5.

<sup>4</sup> The tier-specific percentage is 5 percent for Tier I payments, 10 percent for Tier II payments, and 15 percent for Tier III payments.

such as paying a percentage of the stewardship payment as long as the payment will not exceed 75 percent (or, in the case of a beginning farmer or rancher, 90 percent) of the average 2001 county costs of installing the practice in the 2001 crop year. NRCS will post the rates at the time of the sign-up announcements.

If a participant's CSP contract requires the participant to implement a new structural, vegetative, or management practice, NRCS may also pay the participant a percentage of the cost of installing the new practice. In no case will the payment exceed 50 percent of the average county costs of installing the practice in the 2001 crop year. NRCS will provide the list of approved practices and the percentage cost-share payment rate for each practice at the time of each CSP sign-up announcement. NRCS will not make new practice payments for a conservation practice the producer has applied prior to application for the program. New practice installation payments also will not be made to a participant who has implemented or initiated the implementation of a conservation practice after submitting an application but before contract approval unless a waiver was granted by the State Conservationist or the Designated Conservationist before the installation of the practice.

The Chief will establish a list of conservation practices and activities that are eligible for enhancement payments for a given sign-up. State Conservationists, with advice from the State Technical Committees, will tailor the list to meet the needs of the selected watersheds and submit it to the Chief for concurrence. NRCS may pay an enhancement component of a CSP payment if a conservation stewardship plan demonstrates to the satisfaction of NRCS that the plan's activities will increase conservation performance--including activities related to energy conservation--as a result of additional effort by the participant and result in:

- The improvement of a resource concern by implementing or maintaining multiple conservation practices or measures that exceed the minimum eligibility requirements for the participant's tier of participation and the contract requirements; or
- An improvement in a local resource concern based on local priorities and in addition to the national significant resource concerns, as determined by NRCS. CSP sign-up announcements will identify priority resource concerns for which enhancement payments will be offered for specific locations and land uses.

NRCS may also pay an enhancement component of a CSP payment if a participant:

- Participates in an on-farm conservation research, demonstration, or pilot project as outlined in the sign-up announcement; or
- Cooperates with other producers to implement watershed or regional resource conservation plans that involve at least 75 percent of the producers in the targeted area; or
- Carries out assessment and evaluation activities relating to practices included in the conservation stewardship plan as outlined in the sign-up announcement.

NRCS will not pay the enhancement component of a CSP payment for any practice that is included in a participant's Highly Erodible Land and Wetland Conservation Compliance plan as required by the Food Security Act of 1985.

State Conservationists, with advice from the State Technical Committees, will develop proposed enhancement payment amounts for each activity. Enhancement payments will be determined based on a given activity's cost and expected net conservation benefits above the minimum criteria, and the payment amount will be an amount and at a rate necessary to encourage a participant to perform a management practice or measure, resource assessment and evaluation project, or a field-test research, demonstration, or pilot project, that would not otherwise be initiated without government assistance. This amount will not exceed the participant's estimated cost of undertaking the activity. NRCS will provide the list of approved enhancement activities and payment amounts for each activity prior to the CSP sign-up announcements. The Chief may set a not-to-exceed limit for the enhancement payment in any given sign-up notice. In addition, enhancements above the minimum criteria for the resource concern that are included in the benchmark inventory may be included in the first CSP payment.

The interim final rule provides that the total of the stewardship, existing practice and enhancement payment cannot exceed a percentage of the unadjusted stewardship payment rate—that is, the amount before application of the reduction factors. The tier-specific percentage is 15 percent for Tier I contracts, 25 percent for Tier II contracts, and 40 percent for Tier III contracts.

The interim final rule states that the Chief, NRCS, will provide a list of structural and land management practices and activities eligible for each CSP payment component. When determining the lists of practices and activities and their associated rates, the Chief will consider:

- The cost and potential conservation benefits;
- The degree of treatment of significant resource concerns;
- The number of resource concerns the practice will address;
- Locally available technology;
- New and emerging conservation technology;
- Ability to address the resource concern based on site specific conditions; and
- The need for cost-share assistance for specific practices and activities to help producers achieve higher management intensity levels or to advance in tiers of eligibility.

To address unique resource conditions in a State or region, the Chief may make additional conservation practices, measures, and enhancement activities eligible that are not included in the national list of eligible CSP practices. NRCS will make the list of eligible practices and their individual cost-share payment rates available to the public. Where new technologies or conservation practices that show high potential for optimizing environmental benefits are available, NRCS may approve interim conservation practice standards and financial assistance for pilot work to evaluate and assess the performance, efficacy, and effectiveness of the technology or conservation practices.

In limited funding years, NRCS will use enrollment categories to determine which new contracts will be funded in a given sign-up. The enrollment categories are defined by criteria related to resource concerns and levels of historic conservation treatment, as well as the producer's willingness to achieve additional environmental performance or conduct enhancement activities. All applications that meet the sign-up criteria within the priority watersheds will be placed in an enrollment category regardless of available funding.

NRCS will develop subcategories within each enrollment category and include them in the sign-up announcement. The development of subcategories may consider several factors, including:

1. Willingness of the applicant to participate in local conservation enhancement activities;
2. Targeting program participation for Limited Resource Producers;
3. Targeting program participation to water quality priority areas for nutrient or pest management;
4. Targeting program for locally important wildlife/fisheries habitat creation and protection; and
5. Other priorities as determined by the Secretary.

At the beginning of each sign-up period the Chief will announce the order in which categories and sub-categories will be funded. All applications which meet the sign-up criteria will be placed in the highest level enrollment category for which they qualify. Applications in the highest priority enrollment categories will be funded in priority order until the specified funds are exhausted.

Table 4, shown on page 13, is an example of enrollment categories that may be used to prioritize enrollment of CSP applicants within priority watersheds. Appendix D provides an example of how the enrollment categories would be used to identify the CSP enrollment priority for a fictitious agricultural operation.

NRCS will publish and consider public comment on specific enrollment categories to be used for CSP implementation beginning in FY 2005.

Before each CSP sign-up, NRCS will publish an announcement that provides information about the priority watersheds in which the program will be available; any nationally significant resource concerns that apply in addition to Soil and Water; the sign-up schedule and time periods; additional program eligibility criteria not listed in the interim final rule; additional requirements that participants must include in their CSP applications and contracts not listed in the rule; payment rates, practices and enhancement activities; specific information on the share of funding that NRCS estimates will go toward base, maintenance, and enhancement payments; enrollment categories and sub-categories and an estimate for the number of enrollment categories and contracts NRCS expects to be able to fund; and an estimate of the total funds NRCS expects to obligate under new contracts during a given sign-up.

Interested producers may then submit an application package that includes a completed self-assessment workbook and a conservation stewardship plan that incorporates a benchmark condition inventory, as well as other information or certification NRCS may identify. The conservation stewardship plan must include:

- A quantitative and qualitative description of the conservation and environmental benefits that the conservation stewardship contract will achieve, to the extent practicable;
- A plan map showing the acreage to be enrolled in CSP;

**Table 4: Sample CSP Enrollment Categories**

	Category	Criteria				Enhancement Activities (to be completed by the third year of the contract)
		Soil Conditioning Index (SCI)	Soil Tillage Intensity Rating (STIR) <sup>5</sup>	Stewardship Practices from list(*) in place for two or more years	Stewardship Activities from list(**) in place for two or more years	
<b>CROPLAND</b>	A	At least 0.1	Less than 30	At least 3 practices	At least 3 activities	Agree to 1) move to the next tier or to add two Stewardship Practices or Activities from list and 2) conduct on-farm project or assessment and evaluation activity
	B	At least 0.0	Less than 30	At least 3 practices	At least 3 activities	
	C	At least 0.1	Less than 60	At least 2 practices	At least 2 activities	Agree to 1) add two Stewardship Practices or Activities from list and 2) conduct on-farm project or assessment and evaluation activity
	D	At least 0.0	Less than 60	At least 2 practices	At least 2 activities	
	E	At least 0.1	Less than 60	At least 2 practices	At least 1 activity	Agree to 1) add two Stewardship Practices or Activities from list and 2) conduct on-farm project or assessment and evaluation activity
	F	At least 0.0	Less than 100	At least 1 practice	At least 2 activities	
	G	At least 0.0	Less than 100	At least 1 practice	Any number of activities	Agree to add two Stewardship Practices or Activities from list
	H	Must meet minimum program eligibility requirements as defined in the rule.				Do not agree to do additional enhancement activities

\* Stewardship Practice List for Cropland in this example:<sup>6</sup> Contour Buffer Strips, Cover Crop, Grade Stabilization Structure, Irrigation Water Management.

\*\* Stewardship Activity List for Cropland in this example:<sup>7</sup> Test soil and/or plant tissue on annual basis, precision application of nutrients such as banding, side dressing, injection, fertigation, irrigation system efficiency evaluations and adjustments.

<sup>5</sup> STIR is an index used to evaluate the kind, severity and number of ground disturbing passes on soil quality. High STIR numbers indicate more disturbance

<sup>6</sup> The list would contain all conservation practices identified in the Field Office Technical Guide for application to cropland to improve soil and/or water quality.

<sup>7</sup> The list would contain all applicable stewardship activities which, when applied to a cropland field, mitigate off-site resource damage or improve soil and/or water quality.



- A verified benchmark condition inventory that incorporates:
  - A map, aerial photograph, or overlay that delineates the entire agricultural operation, including land use and acreage;
  - A description of the applicant's production system(s) on the agricultural operation to be enrolled;
  - The existing conservation practices and resource concerns, problems, and opportunities on the operation;
  - Other information needed to document existing conservation treatment and activities, such as grazing management, nutrient management, pest management, and irrigation water management plans;
  - A description of the significant resource concerns and other resource concerns that the applicant is willing to address in their contract through the adoption of new conservation practices and measures; and
  - A list of enhancements that the producer may be willing to undertake as part of their contract.
- A description of the significant resource concerns and other resource concerns to be addressed in the contract through the adoption of new conservation measures;
- A description of the conservation activities that are required for a participant to transition to a higher tier of participation;
- A description and implementation schedule of:
  - Individual conservation practices and measures to be maintained during the contract, consistent with the requirements for the tier(s) of participation and the relevant resource concerns and with the requirements of the sign-up;
  - Individual conservation practices and measures to be installed during the contract, consistent with the requirements for the tier(s) of participation and the relevant resource concerns;
  - Eligible enhancement activities as selected by the participant and approved by NRCS; and
  - A schedule for transitioning to higher tier(s) of participation, if applicable;
- Information that will enable evaluation of the effectiveness of the plan in achieving its environmental objectives; and
- Other information determined appropriate by NRCS and described to the applicant.

The conservation stewardship plan can be developed with assistance from NRCS or NRCS-certified Technical Service Providers.

After the sign-up period has ended, NRCS will place applications into the appropriate enrollment category based on the specified criteria and fund enrollment categories in the order designated in the sign-up announcement until the available funding is exhausted. NRCS will then notify applicants of the tier(s) in which they are eligible to participate and develop conservation stewardship contracts for selected applications.

NRCS may use the services of NRCS-approved or certified Technical Service Providers in performing its responsibilities for technical assistance. Technical assistance may include, but is not limited to:

- assisting applicants during sign-up,
- processing and assessing applications,
- assisting the participant in developing the conservation stewardship plan;
- conservation practice survey, layout, design, installation, and certification;
- information, education, and training for producers; and
- training, certification, and quality assurance for professional conservationists.

NRCS retains approval authority over the certification of technical assistance done by non-NRCS personnel and also retains approval authority of the CSP contracts and contract payments. Conservation stewardship plans will be developed only by NRCS-certified conservation planners.

Upon agreement by NRCS and the participant, a conservation stewardship contract may include provisions that allow the tier of participation to increase over the term of the contract period. Such a transition does not require a contract modification providing that the transition is laid out in the schedule of contract activities. In the event that such a transition initiates with Tier I, only the land area in the agricultural operation that meets the requirements for enrollment in Tier I can be enrolled in the contract until the transition occurs. Upon transition from Tier I to a higher tier of participation, the entire agricultural operation must be incorporated into the contract. All requirements applicable to the higher tier of participation would then apply. NRCS will calculate all base, existing practice, new practice one-time payments, and enhancement payments using the applicable enrolled acreage at the time of the payment.

When a CSP contract provides for a participant to transition to a higher tier of participation, the contract must include:

- A schedule for the activities associated with the transition(s);
- A date certain by which time the transition(s) must occur; and
- A specification that the CSP payment will be based on the current tier of participation and may change over the life of the contract.

When a participant transitions from Tier I or II to a higher tier, payments at the higher tier rate will not be made until the participant has demonstrated that the new level of stewardship has been in place for a period of at least 12 months.

**Alternative 6.** This alternative would implement the program using periodic sign-ups that close when all available funds are committed. This would be a “first come, first served” approach.

**Alternative 7.** This alternative would implement the program by funding applicants who are willing to implement all enhancements.

## Alternatives Considered But Eliminated From Detailed Analysis

NRCS considered an alternative that would result in implementing CSP as authorized by the legislation and would not place any limitations on program participation. However, it is not possible to implement such an alternative when funding is limited. Funding is limited in fiscal year 2004; therefore, this approach would not meet the need to implement the program within funding limits that may vary from year to year and which may or may not be limited.

NRCS also considered an alternative that would implement the program by funding all eligible CSP applicants on a pro-rata basis. Under this approach, NRCS would select all eligible applications for funding, but would reduce the level of funding for each eligible contract by an amount that would hold the total CSP expenditures to the funding limits. Proration has the advantage of allowing all eligible applicants to become contract holders. However, depending on the level of funding and the number of applicants, each contract-holder might receive only a small amount of funding. Even for agricultural operators who are current stewards, there is a transaction cost associated with the CSP application process. Because applicants would not know what their contract payments would be until after the end of the sign-up period, there would be little incentive to apply for a CSP contract or commit to undertake additional conservation or other enhancement activities. Implementing CSP in such a manner would not meet the purpose and need of securing agricultural producers' ongoing stewardship of America's lands by providing incentive payments for producers to maintain and enhance conservation practices at a non-degradation level, of assisting agricultural producers to increase their current level of conservation by providing financial and technical assistance to promote conservation and improvement of soil, water, air, energy, plant and animal life, or of rewarding producers who support conservation in a manner that goes beyond the minimum requirements of the program. Moreover, with the technical assistance funding cap of 15 percent, there would not be enough funds available to assist all potential applicants and participants to complete the assessment and contract requirements to receive their payment. Therefore, this approach would not meet the need to effectively and efficiently implement the program within the technical assistance cap and potential funding levels.

Another alternative NRCS considered was one that would prioritize CSP funding by enrolling the best stewards—those applicants in the highest tiers—first. However, this alternative is not permitted by the authorizing legislation, which requires the program to be offered at all three levels of participation.<sup>8</sup>

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<sup>8</sup> “The Secretary shall establish, and offer to eligible producers, 3 tiers of conservation contracts under which a payment under this subchapter may be received.” Section 1238A(d)(1)(A).

# IMPACTS

## NO ACTION ALTERNATIVE (ALTERNATIVE 1)

If CSP were not implemented, the current resource trends would continue, including concerns about the security of the Nation's ability to produce food and fiber. While resource degradation associated with agricultural operations has generally slowed or improved as a result of conservation programs and the efforts of individual agricultural producers, more progress is needed. A summary of current conditions and trends follows.<sup>9</sup>

### Soil Quality

Over the years, the level of organic matter in agricultural soils has declined as a consequence of conventional tillage methods. Widespread soil cultivation began in about 1907 with the conversion of native grasslands and forest lands to cropland. By the 1950's, soil organic matter was approximately 53 percent of the 1907 level. Conservation tillage systems began being adopted in the 1970's and since that time, soil organic matter has increased so it is now at about 61 percent of the 1907 level. (Lal 1998).

Data from the Conservation Technology Information Center show that in 2000, some form of conservation tillage was practiced on about 37 percent of cropland in the United States, meaning that those lands had more than 30 percent residue cover on the ground after planting (NACD 2001). This use of conservation tillage has mostly occurred since the early 1980's, when farmers began widely adopting the practice.

Adoption of no-till practices has risen significantly in recent years. No-till is a form of conservation tillage where a new crop is planted directly into the residue-covered soil from the previous crop; there is no additional tillage or seedbed preparation. In 1990, about 16.8 million acres were being managed with no-till systems. By 2000, that number had increased to 50.8 million acres (NACD 2001).

Despite these gains, NRCS estimates that about one-third of the approximately 269 million acres of U.S. cropland not experiencing excessive (greater than "T") erosion might benefit from management systems aimed at enhancing soil quality.<sup>10</sup>

"Soil quality is the capacity of a specific kind of soil to function, within natural or managed ecosystem boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation."<sup>11</sup> "Healthy soil gives us clean air and water, bountiful crops and forests, productive rangeland, diverse wildlife, and beautiful landscapes. Soil does all this by performing five essential functions:

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<sup>9</sup> The information in this section is based on or directly excerpted from "A Resources Conservation Act Report: Interim Appraisal and Analysis of Conservation Alternatives."

<sup>10</sup> *Interim Appraisal and Analysis of Conservation Alternatives*, p. 21.

<sup>11</sup> What is Soil Quality? Soil Quality -- Managing soil for today and tomorrow. NRCS Soil Quality Institute. December 2001. Available at [http://soils.usda.gov/sqi/soil\\_quality/what\\_is/index.html](http://soils.usda.gov/sqi/soil_quality/what_is/index.html).

- Regulating water. Soil helps control where rain, snowmelt, and irrigation water goes. Water and dissolved solutes flow over the land or into and through the soil.
- Sustaining plant and animal life. The diversity and productivity of living things depends on soil.
- Filtering potential pollutants. The minerals and microbes in soil are responsible for filtering, buffering, degrading, immobilizing, and detoxifying organic and inorganic materials, including industrial and municipal by-products and atmospheric deposits.
- Cycling nutrients. Carbon, nitrogen, phosphorus, and many other nutrients are stored, transformed, and cycled through soil.
- Supporting structures. Buildings need stable soil for support, and archeological treasures associated with human habitation are protected in soils.”<sup>12</sup>

The potential for decline in the health or overall quality of the soil resource is an issue because it can reduce crop production and require more inputs, such as nutrients and labor, to produce an acceptable crop. Because soil quality has a number of facets, it is difficult to measure directly and thus it is difficult to assess its impact at broad scales over extensive areas. A natural consequence of cultivating soil is decomposition of the soil organic matter. Depending on the use of the land and its management, cultivation may impact the soil’s overall tilth (or workability); its fertility and biological activity and its ability to store adequate water for plant growth.

### Soil Erosion

Soil erosion by water and wind is an aspect of soil quality and is one of the major processes that can lead to environmental degradation. Soil erosion and accelerated sedimentation, often brought about by cultivating or unwisely managing marginal soils or soils with high erosion potential, are degrading soil and water quality on a global scale. Sheet and rill erosion that occur when rainfall and water run off the land and remove soil from the surface of the land is often the most obvious form of soil erosion. However, wind erosion is also a concern and in extreme cases, wind erosion can create huge dust clouds that suspend unacceptable levels of particulate in the air, in addition to damaging the soil.

Erosion caused by water and wind will always occur as part of the natural cycle, but the natural process of soil development can renew and sustain the soil if demands on the soil resource do not exceed its regenerative capabilities. For most soils, an erosion rate less than four to five tons per acre per year is considered “acceptable” from a soil-quality standpoint. This level is termed the soil loss tolerance, or “T” value. Even at such rates, however, sediment from eroding lands may lead to decreased water quality in some areas.

Over the past several decades, U.S. agriculture has made significant strides in reducing erosion on cropland through conservation practices such as conservation tillage, crop rotations, grassed waterways and contour-strip cropping. Landowners also participate in USDA easement and reserve programs that target lands most susceptible to erosion, provide incentives for conservation and help offset costs associated with such measures. According to data from the National Resources Inventory (NRCS 2000), approximately 170 million acres, or 40 percent of

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<sup>12</sup> Ibid.

all cropland, were eroding at greater than acceptable (“T”) levels in 1982. By 1997, that amount had been reduced to about 108 million acres, 28 percent of total cropland acreage at that time. However, despite these gains, of the 377 million acres of working U.S. cropland, 28 percent is eroding at rates great enough to have adverse impacts on long-term soil productivity and overall soil quality.<sup>13</sup>

Soil erosion also results in more than just the removal of topsoil. About three-quarters of the soil eroded by water in a typical farm field is deposited as sediment in the same field from which it eroded. Upon deposition, the eroded soil material causes the soil surface to crust and seal in low areas of the field, resulting in ponding and irregular distribution of nutrients. Uneven crop productivity in the field leads to inefficient water and nutrient use, which causes excessive soil nutrient buildup, runoff or deep percolation, all of which can adversely impact water quality.

Of the approximately one quarter of soil material eroded by water that actually leaves farm fields, most — about 60 million tons annually — is deposited in local streams and waterways of small watersheds. There, it disrupts streamflow, affects streambank stability and accelerates siltation of lakes, reservoirs, ponds and wetlands. The relatively small proportion of eroded soil that eventually leaves watershed outlets, estimated at about 14 million tons a year, carries excessive levels of nutrients and pesticides to larger water bodies such as the Gulf of Mexico and the Chesapeake Bay, contributing to regional water quality problems.

It is difficult to quantify the off-site fate of soil material lost through wind erosion. However, in severe cases blowing soil contributes to the level of particulate matter in the air, damages fences and other infrastructure through abrasion, and drifts over roads where it increases maintenance costs and poses a travel hazard.

### Water Quality

There are no reports or studies that fully describe the health of all waters in the United States. The U.S. Environmental Protection Agency makes periodic reports to Congress based on assessment reports from states, territories, tribes and interstate commissions. Findings from EPA’s 1998 report (USEPA 2000) indicate the following:

- Of the 23 percent of the nation’s rivers and streams that were assessed, 35 percent were impaired for one or more of three primary uses (drinking, fishing and swimming).
- Of the 42 percent of lakes, reservoirs and ponds that were assessed, 45 percent were impaired.
- Of the 32 percent of the country’s estuaries that were assessed, 44 percent were impaired.

According to EPA, more than 20,000 individual river segments, lakes, and estuaries are impaired with one or more pollutants from all sources.

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<sup>13</sup> Estimates of sedimentation are from a broad-scale national analysis using National Resource Inventory-derived sheet and rill water erosion data coupled with NRCS-assigned sediment delivery ratios for areas in the conterminous U.S. approximating 2<sup>nd</sup>-code hydrologic units.

Sediment. EPA reports that sediment is the most common pollutant affecting assessed rivers and streams and that agriculture is the leading source. However, the impact of agriculture on water quality should be considered in the context of the amount of land supporting agricultural activities. About 900 million acres, or 41 percent of the continental United States, are on farms and ranches.

As documented in local soil surveys, soils have varying degrees of erosion potential and capacity to allow sediment movement in streams. Based on soil information, reducing soil erosion through on-farm conservation practices can improve the condition of surface and ground waters.

Nutrients. In agriculture, nutrients – mainly nitrogen, phosphorus and potassium – are applied to promote plant growth. If they are applied inappropriately or in excessive amounts, they can be transported to surface or ground waters.

Nitrogen is added to soils from commercial fertilizers, animal manure, legumes such as alfalfa and soybeans and from atmospheric deposition. Some soils with sufficient clay content slow down leaching of nitrates through the soil; enough to retain nitrogen near the surface and keep it available for plant uptake. Other soils, particularly sandy ones, allow for rapid leaching and in some cases provide a pathway for excess nitrogen movement into stream systems and groundwater.

Nitrogen compounds in excessive amounts accelerate eutrophication in surface waters, which depletes oxygen, kills fish and results in cloudy water with an unpleasant smell. Elevated concentrations of nitrate in drinking water poses a potential threat to human health, particularly among infants.

The phosphorus compound phosphate, while not as mobile as nitrate, tends to be carried on soil particles that move off the land. Recent studies show that phosphate can also leach to ground waters, especially where commercial fertilizers or manure have been applied to the land over many years. Phosphate can also contribute to eutrophication in fresh surface waters.

Pesticides. Pesticides are used to control harmful insects, rodents, molds and other fungi that may reduce production of agricultural commodities. Since 1979, according to NASS surveys (USDA 2000), the agricultural sector in this country has accounted for about 80 percent of all pesticide use each year.

Pesticides may contaminate water by leaching through the soil or as a result of being washed from the field surface into nearby water bodies. Only small proportions of pesticides migrate from farm fields, however. In general, monitoring results show that most agricultural pesticides occur in low concentrations in surface and ground waters, even in regions where agricultural use is high.

Farmers and ranchers are modifying their management practices by using more environmentally friendly pesticides, applying pesticides only when the pest is likely to cause economic damage to crop production and reducing their reliance on agricultural pesticides through integrated pest management techniques.

By practicing prevention, avoidance, monitoring and suppression of pests – either through cultural, physical or biological means – dependence on chemicals has decreased. Insecticide use per acre on corn dropped 52 percent from 1991 to 1999. Also by 1999, more than half of the corn and 80 percent of all cotton grown in the United States were produced using integrated pest management techniques.

Irrigation. Irrigation-induced erosion creates a sedimentation problem in some areas. There is also concern that deep-water aquifers will become contaminated with agricultural chemicals as the water used for irrigation percolates down and carries chemical residuals to aquifers.

Irrigation accounts for 37 percent of the elevated salinity concentrations in the lower Colorado River. Irrigation water's natural base load of dissolved mineral salts become concentrated as the water is consumed by plants or evaporated. Deep percolating irrigation water may also become contaminated through contact with shale or highly saline aquifers and the return flows convey the salts to the receiving streams or ground water. As the same water is used over and over again and more water evaporates, the salinity level increases, and that can impair water quality.

### Water Quantity

Drought. Every year some parts of the country experience water shortages. When drought occurs, water shortages may become critical. The more severe consequences of drought include huge economic losses in agriculture, shipping and other water-dependent businesses; drinking water shortages, particularly in small rural communities; and environmental stresses, including loss of or damage to wildlife habitat and downshifts in wildlife populations. Prolonged drought may also mean we have to make tough decisions in regard to water allocations among competing interests such as fisheries, agriculture and communities.

In years when drought has occurred, USDA programs have helped farmers who irrigate their crops to achieve a savings of 4.7 million acre-feet of water each year (enough to cover the nearly 700,000 acres of Rhode Island with seven feet of water), primarily through adoption of management practices that conserve water and reduce the potential for soil salinity.

Such conservation practices reduce the risk associated with drought, especially if improvement in soil quality has been a primary objective. Healthy soils absorb and store more water than do degraded soils.

Irrigation. According NASS (USDA 1998), irrigated crops, while raised on only 16 percent of all harvested cropland in the country, account for 49 percent of total U.S. crop sales. In the West (including the 17 western contiguous states, Hawaii and Alaska), irrigated crops make up 72 percent of all crop sales.

For the past 20 years, approximately 43 million acres of cropland have been irrigated in the western states. While that figure has remained fairly constant, there has been a shift of about three million irrigated acres from the more arid Southwest and southern plains primarily to the less arid and more abundant groundwater areas of central and eastern Nebraska. Irrigation



withdrawals as a share of total freshwater withdrawals in this country declined from 46 percent in 1960 to 40 percent in 1995, where they remain today.

Throughout the United States, irrigation for crops may have significant environmental impacts, including:

- Diversions from some streams impair aquatic communities and migration of anadromous fish.
- Return flows from irrigated areas may contain biocide residues, nutrients (phosphates and nitrates), total dissolved solids (salinity) and sediment and may reduce the quality of ground and surface waters.
- Seepage from irrigation systems creates fish and wildlife habitat and recharges aquifers.

Irrigators continue to adopt and apply water management practices based on on-site soil information that allow for more efficient use of water and a reduction in the magnitude of adverse environmental impacts. Since 1979, use of gravity systems decreased by 20 percent, while use of sprinkler and drip/trickle systems increased by 25 percent and more than 500 percent, respectively.

These and other practices, along with shifts in irrigation to less arid climates, are having an impact. Since 1969, the national average irrigation rate declined by 4.5 inches, or 20 percent. That is enough to offset the increase in irrigated acreage and maintain the total water applied near the level of 25 years ago. Farmers are simultaneously increasing yields of irrigated crops (for example, rice yields increased 1.2 percent per year over the last 30 years), making the conservation results in relation to water use per unit of agricultural product even more dramatic. However, water shortages, subsidence, saltwater intrusion and other effects continue to occur in some areas, making further water conservation efforts necessary.

## Air

Particulate matter in the air has been linked with respiratory illness and is viewed as a growing public health concern. EPA estimates that fugitive dust from crop production totals 3.3 million tons annually and that, under current controls, these emissions will increase to about 3.8 million tons by 2005. EPA also projects that fugitive dust from livestock operations, now contributing an estimated 181,400 tons every year to the atmosphere, will rise to 193,400 tons a year by 2005.

In 1998, EPA identified fewer than 10 air quality non-attainment areas<sup>14</sup> that included rural lands. In 2000, after additional surveys, there were more than 100 such rural areas, and EPA projects the number to rise significantly by 2002.

## Grazing Lands

Rangelands are managed as natural ecosystems while pastures are managed more intensely — fertilization and irrigation to attain maximum forage production are common, for example. USDA technical assistance programs have helped to improve nearly 20 million acres of grazing

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<sup>14</sup> In non-attainment areas, air quality is below the limits set by Clean Air Act regulations.

land (Grazing Lands Conservation Initiative data). However, a number of critical resource concerns must still be addressed so that grazing lands can continue to provide diverse benefits.

Maintenance of appropriate plant cover (including natural plant communities) is a primary resource concern on grazing land in this country (Grazing Lands Conservation Initiative data). Overuse of grazing lands and concentrated livestock numbers place stress on vegetation on grazing lands, particularly in riparian areas or during times of drought. Without proper grazing management — in addition to proper nutrient management on pastures — the quality and quantity of plant cover declines. This causes productivity losses, exposes the soil to damaging wind and water erosion and impairs water quality.

Because grazing land occupies such a large portion of the landscape, degradation of the vegetative cover on grazing lands can have a potentially significant impact on U.S. soil and water resources. It is estimated that about 280 million acres — more than 50 percent — of U.S. grazing lands may be susceptible to such degradation and in need of some form of conservation management (SRM 2000 and Smith and Koala 1999). Approximately 50 percent of U.S. pastureland, or 60 million acres, is on land that is subject to erosion and other soil limitations if adequate ground cover is not maintained (National Resources Inventory 1997).

Establishment of invasive plant species on grazing lands is another resource concern, and it is gaining increased attention. Productivity of grazing lands declines and management becomes more difficult upon the invasion of non-native woody shrubs and trees, noxious weeds and plant species of low forage value. As invasive species take over a site and displace native or introduced forage species, the landscape hydrology is altered. This can adversely affect water quality and quantity, which increases the potential for soil erosion and the risk of damaging floods.

Other impacts include loss of critical wildlife habitat and a reduction in the natural diversity of the landscape. Natural diversity is crucial to an ecosystem's ability to recover from stresses such as fire, drought or flooding.

Without CSP, current natural resource trends are likely to continue. The declines in our resources have slowed in many cases, and in some cases they have improved. However, there is no assurance that those who have invested in conservation in the past will continue to maintain their efforts or to expand them without CSP. While other conservation programs encourage implementation of basic conservation measures, they do not provide incentives to go beyond those levels. If CSP were not implemented, the off-site natural resource benefits accruing to the public through the efforts of America's farmers and ranchers will go unrecognized. The security of continued natural resource protection would be jeopardized.

## **ACTION ALTERNATIVES**

This section of the EA briefly analyzes the effects of alternative cost-share payment rates and methods for enrolling CSP applicants within funding limits.

Regardless of the alternative considered, changes in the environment as a result of CSP will occur only as a result of new conservation practices that are implemented with CSP cost-share payments for new practices and certain enhancement payments. Maintenance payments will result in some conservation benefit since they will ensure conservation practices are properly maintained and function effectively through the term of the CSP contract, but these payments will not result in a change in conservation activities that are currently ongoing. The types of practices for which maintenance payments are made, and the effects obtained as a result of extending their effectiveness, will be the same as the conservation practices implemented with CSP cost-share assistance. While CSP authorizes base stewardship payments and cost-share maintenance payments, these payments are based on conservation practices that are already in place and do not effect any change from current conditions. NRCS certainly hopes that agricultural operators who receive base stewardship payments will use those funds to further their previous conservation efforts, but since there is no requirement for them to do so, any description of such effects would be purely speculative. Even the environmental effects of payments for some types of enhancement activities would be speculative.

CSP enhancement payments may be made for activities that:

- implement or maintain multiple conservation practices that exceed minimum requirements for the applicable tier of participation (including practices that involve a change in land use, such as resource-conserving crop rotation, managed rotational grazing, or conservation buffer practices);
- address local conservation priorities in addition to resources of concern for the agricultural operation;
- participate in an on-farm conservation research, demonstration, or pilot project;
- participate in a watershed or regional resource conservation plan that involves at least 75 percent of producers in a targeted area; or
- carry out assessment and evaluation activities relating to practices included in a conservation security plan.

The effects of participating in an on-farm conservation research or pilot project would be speculative since NRCS can not predict what specific research or pilot projects may be valuable over the life the of CSP program. Demonstration projects make it more likely that conservation practices will be adopted by others, but the extent to which this will occur and what practices will be adopted is speculative. In addition assessment and evaluation activities do not have an impact on the ground. They may lead to the development of new practices or modification of existing practices, but again, the extent to which this will occur is speculative. Therefore, this analysis focuses on the effects of the new conservation activities implemented with CSP cost-share assistance and enhancement payments based on implementing multiple conservation practices that exceed minimum requirements for the applicable tier of participation, that address local conservation priorities in addition to the resources of concern on the agricultural operation, or involve 75 percent or more of the agricultural producers in a watershed.

The resource concerns to be addressed with CSP funds relate to the quality of soil, water, air, plant and animal life. Cost-share payments for new conservation practices may be for installation of one practice or for a combination of practices and may help a CSP participant address one resource concern to quality criteria or multiple resource concerns to a level that goes beyond quality criteria. In all cases, however, the practices will most likely be among those identified in Appendix C. Because of this, NRCS developed network diagrams depicting the chain of natural resource effects that typically results from the application of these conservation practices.

Each of the network diagrams first identifies the typical setting to which the practice is applied. This includes identification of the predominating land use and the resource concerns that trigger use of the practice. The diagrams then identify the practice used to address the resource concerns. Following identification of the practice, there is a description of the physical activities that are carried out to implement the practice. From there, the diagrams depict the occurrence of the direct, indirect and cumulative effects of the practice. Effects are qualified with a "+" or a "-" which denotes an increase ("+") or decrease ("-") in the effect. Pluses and minuses do not equate to good and bad or positive and negative. Only the general effects that are considered the most important ones from a national perspective are illustrated. In addition to the network diagrams, Appendix C includes a photo and summary description about how each of these practices is intended to be used and the general effects of using the practice.

The effects of the practices will vary somewhat depending on the local ecosystem(s), methods of practice installation, purpose for which the practice is being used, and presence of special resource concerns in a particular State, such as the presence of a coastal zone, endangered or threatened species, historic or cultural resources, and the like. While effects on these resources may be described in general terms at the national level, they must be addressed at the State and local level. This is particularly true for endangered and threatened species, historic preservation, historic and cultural resources, essential fish habitat and other resources that are protected by special authorities that require consultation. NRCS will consult on a State or site-specific level as needed and appropriate, to ensure CSP actions do not adversely affect special resources of concern. NRCS will also implement practices in a manner that is consistent with the NRCS policy to avoid, minimize or mitigate adverse effects to the extent feasible.

For example, to ensure compliance with the Endangered Species Act, State Conservationists will invite representatives of the U.S. Fish and Wildlife Service (FWS) and the National Oceanographic and Air Administration's Office of Fisheries (NOAA Fisheries, previously known as the National Marine Fisheries Service or NMFS), as applicable, to all State Technical Committee meetings and encourage their involvement in the development of program criteria within the State. NRCS will also conduct additional programmatic consultations with FWS and NOAA Fisheries at the State level as needed to ensure CSP implementation is not likely to adversely affect species listed as endangered or threatened or species proposed for listing as endangered or threatened or designated or proposed critical habitat. Such consultation will also be used to identify ways the CSP might further the conservation of protected species and identify

situations in which no site-specific consultation would be needed.<sup>15</sup> Site-specific consultation will also be conducted as needed to avoid adversely affecting any protected species or habitat.

To ensure compliance with the National Historic Preservation Act and associated authorities, NRCS State Offices will follow the procedures outlined in the Advisory Council on Historic Preservation's (ACHP) regulations (36 CFR Part 800) or, in accordance with NRCS' alternate procedures (nationwide Programmatic Agreement), invite State Historic Preservation Officers (SHPO's) and federally recognized Tribes (or their designated Tribal Historic Preservation Officers) to enter into consultation agreements that highlight and focus review and consultation on those resources and locations that are of special concern to these parties. In addition, if no State-level agreements are developed with the SHPO's or Tribes, and/or if other consulting parties are identified, they will be afforded, as appropriate, an opportunity to advise the NRCS State Office during project-specific planning about their historic and cultural resource concerns so that they may be taken into account in accordance with the ACHP regulations. Similar processes will be followed, as needed and appropriate, to address other special requirements for the protection of the environment.

To describe the effects of conservation practices, it is important that they be considered in the context of a particular land use. Therefore, the following analysis focuses separately on the effects of CSP conservation practices likely to be used on cropland, on grazing land, which includes grassland, prairie land, improved pastureland and rangeland, and on forested land that is an incidental part of an agricultural operation.

### **Cropland**

While there is a broad range of conservation practices that may be used under CSP to address resource concerns on cropland, those expected to be implemented most frequently as a result of CSP cost-share assistance or enhancement payments are identified in Table 5, shown on page 27. These practices are generally designed to reduce erosion, redirect water flow, enhance crop production, produce bio-fuels and other bio-products, enhance wildlife food and cover and/or reduce surface runoff that may carry contaminants to receiving water. They perform these functions by creating channels, covering the soil with live vegetation or crop residues, creating barriers or buffer areas, planting crops or other vegetation with specialized characteristics, or adjusting the timing and techniques used to apply fertilizers or pesticides.

In addition to the primary effects mentioned above, other effects, both positive and negative, may occur. Livestock feed production, soil organic matter, and biodiversity may increase. Carbon sequestration may increase, while particulate matter generation and transport may decrease. Nutrient cycling may be improved, and the corresponding need for purchased nutrients may decrease. Aesthetics may also be improved. Snow trapping may occur, saline seeps may be

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<sup>15</sup> In addition to situations in which NRCS determines there is no effect on protected species or habitat, site-specific consultation should not be needed when NRCS and FWS or NOAA Fisheries agree a category of proposed actions is not likely to adversely affect a protected species or habitat and NRCS obtains written concurrence based on that agreement.

**Table 5: Cropland Practices**

Practice Name	Practice Number <sup>16</sup>
Conservation Crop Rotation	328
Contour Buffer Strips (Herbaceous)	332
Contour Farming	330
Cover Crop	340
Critical Area Planting	342
Diversion	362
Filter Strip	393
Grade Stabilization Structure	410
Grassed Waterway	412
Irrigation Water Conveyance (AA-EE)	430
Irrigation Water Management	449
Nutrient Management	590
Pest Management	595
Residue Management, Mulch Till	329B
Residue Management, No Till/Strip Till	329A
Residue Management, Ridge Till	329C
Residue Management, Seasonal	344
Riparian Forest Buffers	391
Terrace	600
Upland Wildlife Habitat Management	645
Wetland Restoration	657
Wetland Wildlife Habitat Management	644
Windbreak/Shelterbelt Establishment	380

reduced, and water use efficiency by crops may be improved. Many of the practices will also result in an initial up-front cost and increase in fuel use when they are installed. However, the total costs and fuel used on the cropland may eventually be decreased because of increased efficiencies resulting from the installation. Moreover, the increased production of biofuels may provide an alternate energy source for the farm or community. Many of the practices will also decrease runoff while correspondingly increasing infiltration, which may result in both positive and negative effects.

The direct effects lead to indirect effects. Improved wildlife habitat should lead to increased wildlife, reduced runoff and erosion should lead to reduced loss of soluble and sediment-bound contaminants to receiving water bodies, and snow trapping should lead to increased water storage, leading to healthier crops in many cases, as well as a reduced need for irrigation water. Reduced need for nutrient and pesticide applications will reduce farmer costs, leading to increased net income.

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<sup>16</sup> Practice numbers are assigned by NRCS for eases of reference and are found in the NRCS National Handbook of Conservation Practices.

Direct and indirect effects lead to cumulative effects such as income stability for farmers and communities, improved air quality, water quality, habitat suitability and environmental health. These effects occur when the practice is applied within the same watershed or region on many farms or fields, as might be expected when CSP is implemented.

### **Grazing Lands**

Grazing lands include a myriad of land uses: rangelands, pasturelands, haylands, grazed forestlands, grazed croplands, and naturalized pastures. While there are many conservation practices that may be used under CSP to address resource concerns found on grazing lands, those expected to be used most frequently to improve the quality of grazing land are identified in Table 6.

**Table 6: Grazing Land Practices**

<b>Practice Name</b>	<b>Practice Number<sup>17</sup></b>
Animal Trails and Walkways	575
Brush Management	314
Critical Area Planting	342
Fence	382
Forage Harvest Management	511
Pasture/Hayland Planting	512
Pipeline	516
Pond	378
Prescribed Burning	338
Prescribed Grazing	528A
Range Planting	550
Spring Development	574
Use Exclusion	472
Watering Facility	614

The practices in Table 6 are generally designed to provide feed and water for livestock production; enhance wildlife food and habitat; enhance plant biodiversity; protect air, soil, and water resources; and provide a basis for diversifying farm income.

Practices frequently used to carry out these functions are manipulation of livestock numbers, grazing intensity, duration, and distribution. Other practices used to augment these are clipping, crop rotation, drainage, fertilization, and addition of soil amendments, irrigation, land clearing, mechanical harvest, pest control, vegetative plantings, rock picking, selection and/or protection of plant species, tillage, brush management, watering facility development, and livestock use exclusion.

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<sup>17</sup> Practice numbers are assigned by NRCS for ease of reference and are found in the NRCS National Handbook of Conservation Practices.

In addition to the primary effects mentioned above, other effects, both positive and negative, may occur. Improved plant growth and condition can result from controlling erosion on steep slopes and around feed areas. The increase in plant cover protects streams, ponds, and other water supplies from sediment and other possible contaminants, as well as providing food for livestock and wildlife and decreased potential for wind erosion and particulate matter generation. Soil condition may be improved, resulting in increased nutrient cycling, organic matter, and carbon sequestration. Equipment, labor, materials, and maintenance may result in added costs to the producer in order to provide water, erosion control, and other associated conservation measures and controls.

The direct effects can lead to indirect effects. Controlled access to sensitive areas should lead to a reduction in contaminants, pathogens, and sediments in receiving waters, as well as protection and productivity of desired plant species. Development of water facilities and mechanisms for providing source water for livestock leads to an increase in animal health and production and sometimes benefits wildlife. These same practices may interfere with natural water flow and/or enhance saltwater intrusion and possibly allow potential contaminants into water bodies. Some wildlife species may also be negatively affected.

Direct and indirect effects lead to cumulative effects such as income stability for producers and communities, improved water quality, habitat suitability, and human and animal health.

### **Forestry Management**

Only forest land that is incidental to an agricultural operation can be included in CSP. The tracts of forest land that may be eligible might include forest management practices listed in Table 7, which include: Forest Stand Improvement, Forest Harvest Trails and Landings, Forest Site Preparation, Firebreaks, Prescribed Burning, Tree Establishment, Pruning, and Use Exclusion.

In addition to the practices used on forest land that is incidental to an agricultural operation, CSP may also address resource concerns through application of agroforestry practices.

Agroforestry is the intentional blending of agricultural and forestry production in conservation systems and practices. Practices used in agroforestry are listed in Table 7 and include: Alley Cropping, Riparian Forest Buffer, Windbreak/Shelterbelt Establishment, and Windbreak/Shelterbelt Renovation. There is growing interest in the use of these practices to increase carbon sequestration, and for production of biomass for fuel, and mitigation of odor and particulate matter transport from livestock operations. The use of practices in systems has high potential to increase forage and wood fiber yields and diversify incomes. Agroforestry practices provide many of the buffers that improve water quality and reduce soil erosion. A new practice of silvopasture has great potential to reduce fuel loads around communities.



**Table 7: Agroforestry Practices**

<b>Practice Name</b>	<b>Practice Number<sup>18</sup></b>
Alley Cropping	311
Firebreak	394
Forest Harvest Trails and Landings	655
Forest Site Preparation	490
Forest Stand Improvement	666
Prescribed Burning	338
Riparian Forest Buffer	391
Tree/Shrub Establishment	612
Tree/Shrub Pruning	660
Use Exclusion	472
Windbreak/Shelterbelt Establishment	380
Windbreak/Shelterbelt Renovation	650

Enhancement payments based on implementing multiple conservation practices that exceed minimum requirements for the applicable tier of participation will have the same effects in many cases as those described above, because they will occur as a result of addressing additional resource concerns to the level of quality criteria. However, a CSP participant may also qualify for enhancement payments when the “management intensity” of the conservation practices they are applying results in the resource not only meeting, but exceeding, quality criteria. For example, the quality criteria for Water Quality—Excessive Nutrients and Organics in Surface Water, is that nutrients and organics are stored, handled, and utilized such that surface water uses are not adversely affected. (See Appendix C.) Surface water uses recognize that there is always a certain level of nutrients and organics present in surface waters. Some uses tolerate a higher presence of these substances than others, but in all cases they are present. Meeting the quality criteria, therefore, does not require that there be no nutrients or organics entering surface waters at all. Instead, it means that the surface water will be usable for all designated uses even though there are some nutrients or organics entering them.<sup>19</sup> The concept of increasing management intensity contemplates that conservation practices will be applied in a manner that results in even smaller amounts of nutrients and organics entering the surface waters than is acceptable based on tolerance limits for designated uses.

Management intensity may also be used in another way to qualify for the first type of enhancement payment. For example, varying the management intensity of a conservation practice may result not only in the primary resource concern meeting quality criteria, but in an additional resource concern meeting quality criteria, as well. This concept can be illustrated with the nutrient management conservation practice standard.<sup>20</sup> A system designed to meet the

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<sup>18</sup> Practice numbers are assigned by NRCS for eases of reference and are found in the NRCS National Handbook of Conservation Practices.

<sup>19</sup> For example, if a designated use of surface waters is to serve as a source of drinking water, the applicable quality criteria for surface water quality will require that a lower level of organics and nutrients enter surface waters than if the designated use is for fishing.

<sup>20</sup> See Appendix D for a description Nutrient Management (practice 590).

minimum requirements of the nutrient management practice standard will provide an adequate supply of nutrients to the crop(s) being grown, will achieve a base level of water quality protection, and may or may not accomplish air quality protection depending upon the sources of nutrients used and methods of application. However, it is both possible and desirable to design and implement nutrient management systems that exceed the minimum requirements of the resource considerations (e.g. air and/or water quality) are addressed, and the level of resource protection and/or enhancement that may be achieved by the system. Table 7, shown on page 32, identifies the various ways the nutrient management conservation practice standard could be applied and the results of intensifying activities.

The components of the practice shown in Table 7, as well as the effects, may vary widely depending on the State in which they are implemented and the particular conditions of the site. The network diagrams shown in Appendix D were developed as examples to illustrate what the broad direct, indirect and cumulative effects would result from increasing the management intensity of manure management, and from applying a system of practices to improve water quantity management and to improve upland wildlife habitat management.

Enhancements that address local conservation priorities in addition to the resources of concern on the agricultural operation, or involve 75 percent or more of the agricultural producers in a watershed, will also involve the practices identified above and described in Appendix C. Local conservation priorities will be addressed through the same conservation practices, though components of the practices will vary to address the specific conditions. The effects of conservation practices implemented within a watershed in which 75 percent or more of the producers in a watershed are addressing identified resource concerns will vary depending on the amount of agriculture that is occurring in the watershed. For example, in a watershed with a predominance of agricultural land uses, improvements in water quality of headwater streams should be obtained in a much shorter time frame than would be the case in watersheds that heavily influenced by other watersheds or have urbanizing land uses.

Though the specific conservation measures applied may vary from site-to-site, the goal of implementing these practices is to improve natural resource conditions. Conservation systems are applied not only to address multiple resource concerns to a level that improves conditions beyond the condition defined by the quality criteria, but also to mitigate any adverse conditions which may result in a resource condition that is not the target of a particular conservation practice. Application of an RMS level of conservation is expected to result in improved natural resource conditions under all circumstances. In some cases, those effects will occur in a shorter time frame than in other cases.

While CSP will support conservation nationwide, it is reasonable to expect that the location of new conservation practices implemented under CSP, and the types of practices implemented, will be determined to a great extent by the agricultural land use and the conservation needs

**Table 7: Varying Management Intensity of Nutrient Management**

<b>SYSTEM LEVEL</b>	<b>TECHNOLOGY USED</b>	<b>EFFECTS OBTAINED</b>
A (Adequate Conservation System)	<ul style="list-style-type: none"> <li>• Use current soil tests to determine recommended rates at which to apply nutrients.</li> <li>• Use realistic yield estimates or production records to estimate yield.</li> <li>• Develop a nutrient budget for nitrogen, phosphate, and potassium.</li> <li>• Apply commercial fertilizer at recommended rates.</li> <li>• Apply manure according to an N standard, or when required according to a P standard.</li> <li>• Use book values to estimate manure nutrient content.</li> </ul>	<ul style="list-style-type: none"> <li>• Provides adequate nutrients for crop production.</li> <li>• Provides a base level of surface and/or ground water quality protection.</li> </ul>
B (Better Conservation System)	<ul style="list-style-type: none"> <li>• Meet the minimum requirements of 590.</li> <li>• Use laboratory analysis of manure to determine manure nutrient content.</li> <li>• Use pre-sidedress nitrate test.</li> <li>• Use urease or nitrification inhibitors.</li> </ul>	<ul style="list-style-type: none"> <li>• Provides adequate nutrients for crop production.</li> <li>• Provides a better level of surface and/or ground water quality protection.</li> <li>• Provides some air quality protection.</li> <li>• May achieve better nutrient use efficiency (ratio of nutrient applied and nutrients harvested in plant biomass).</li> </ul>
C (Conservation Performance System)	<ul style="list-style-type: none"> <li>• Meet the minimum requirements of 590.</li> <li>• Use laboratory analysis of manure to determine manure nutrient content.</li> <li>• Use pre-sidedress nitrate test</li> <li>• Use urease or nitrification inhibitors.</li> <li>• Use better timing for fertilizer &amp; manure applications or use controlled release fertilizer materials.</li> <li>• Incorporate manure immediately after application.</li> <li>• Use P based manure management.</li> </ul>	<ul style="list-style-type: none"> <li>• Provides adequate nutrients for plant production.</li> <li>• Achieves the highest level of surface and/or ground water quality protection.</li> <li>• Achieves the highest level of nutrient use efficiency.</li> <li>• Achieves the highest level of air quality protection.</li> </ul>

associated with those agricultural land uses. Based on its 1992 National Resources Inventory (NRI)<sup>21</sup>, NRCS conducted an analysis to determine the needs for conservation treatment for cropland and pastureland.

The dot density map in Figure 1, shown on page 34, shows where conservation treatment is needed on cropland<sup>22</sup>. Each dot represents 20,000 acres of cropland that has been identified as needing conservation treatment. Cropland includes both cultivated and non-cultivated cropland. Dots were aggregated by and placed randomly within each 8-digit hydrologic unit<sup>23</sup>. Based on the conservation needs related to cropland, it is likely that the areas identified in Figure 1 as most needing conservation treatment will be those with the most significant resource concerns related to cropland and the key locations in which cropland conservation practices will be implemented under CSP. (See Appendix D for the most frequently used cropland practices and their effects.)

Figure 2, shown on page 35, is a dot density map that shows where conservation treatment is needed on pastureland<sup>24</sup>, which is a land cover/use that is managed primarily for the production of species in a pure stand, a grass mixture or a grass-legume mixture, and includes grasslands and prairie lands. Each dot in Figure 2 represents 20,000 acres of pastureland that has been identified as needing conservation treatment. Dots were aggregated by and placed randomly within each 8-digit hydrologic unit. Based on the conservation needs related to pastureland, it is likely that the areas identified in Figure 2 as most needing conservation treatment will be those with the most significant resource concerns related to pastureland and the key locations in which grazing land conservation practices will be implemented under CSP. (See Appendix D for the most frequently used grazing land practices and their effects.)

In addition to cropland and pastureland, rangeland is also eligible to be enrolled in CSP. Rangeland is land on which the climax or potential plant cover is composed principally of native grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing, and are managed as natural ecosystems. Grasslands, savannas, many wetlands, some deserts, and tundra are considered to be rangeland. Certain communities of low forbs and shrubs, such as mesquite, chaparral, mountain shrub, and pinyon-juniper, are also included as rangeland. [NRI-97] "It is estimated that about 280 million acres – more than 50 percent – of U.S. grazing lands may be susceptible to degradation and in need of some form of conservation management (SRM 2000, Smith and Koala 1999)."<sup>25</sup> The location of rangelands and other land uses is shown in Figure 3, on page 36. Figure 3 is a pie map containing a pie chart for each state and the nation. The pie slices reflect acres of land in various land cover/use categories as a percent of the total area. The "Other" category includes Conservation Reserve Program (CRP) land, rural transportation land, other rural land, urban areas, and water areas. The size of the pies is proportional to the amount

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<sup>21</sup> The NRI is a statistically based sample of land use and natural resource conditions and trends on U.S. nonfederal lands. The Natural Resources Conservation Service's program for NRI serves as the Federal Government's principal source of information on the status, condition, and trends of soil, water, and related resources in the United States.

<sup>22</sup> Needs are based on the judgment of a qualified specialist as guided by the local NRCS Technical Guide, the prevailing agricultural operations, and the guides used in the development of conservation plans [NRI-92].

<sup>23</sup> <http://www.nrcs.usda.gov/technical/land/meta/m2716.html>.

<sup>24</sup> As with cropland, the conservation needs are based on the judgment of a qualified specialist as guided by the local NRCS Technical Guide, the prevailing agricultural operations, and the guides used in the development of conservation plans [NRI-92].

<sup>25</sup> *Interim Appraisal and Analysis of Conservation Alternatives*, p. 45.

of land in the state. As stated previously, the land use affects which practices are most likely to address the existing resource concerns.

Discussion of the each alternative that follows focuses on how that particular alternative will affect implementation of the conservation practices discussed above.

**Figure 1: Acres of Cropland Needing Conservation Treatment, 1992**

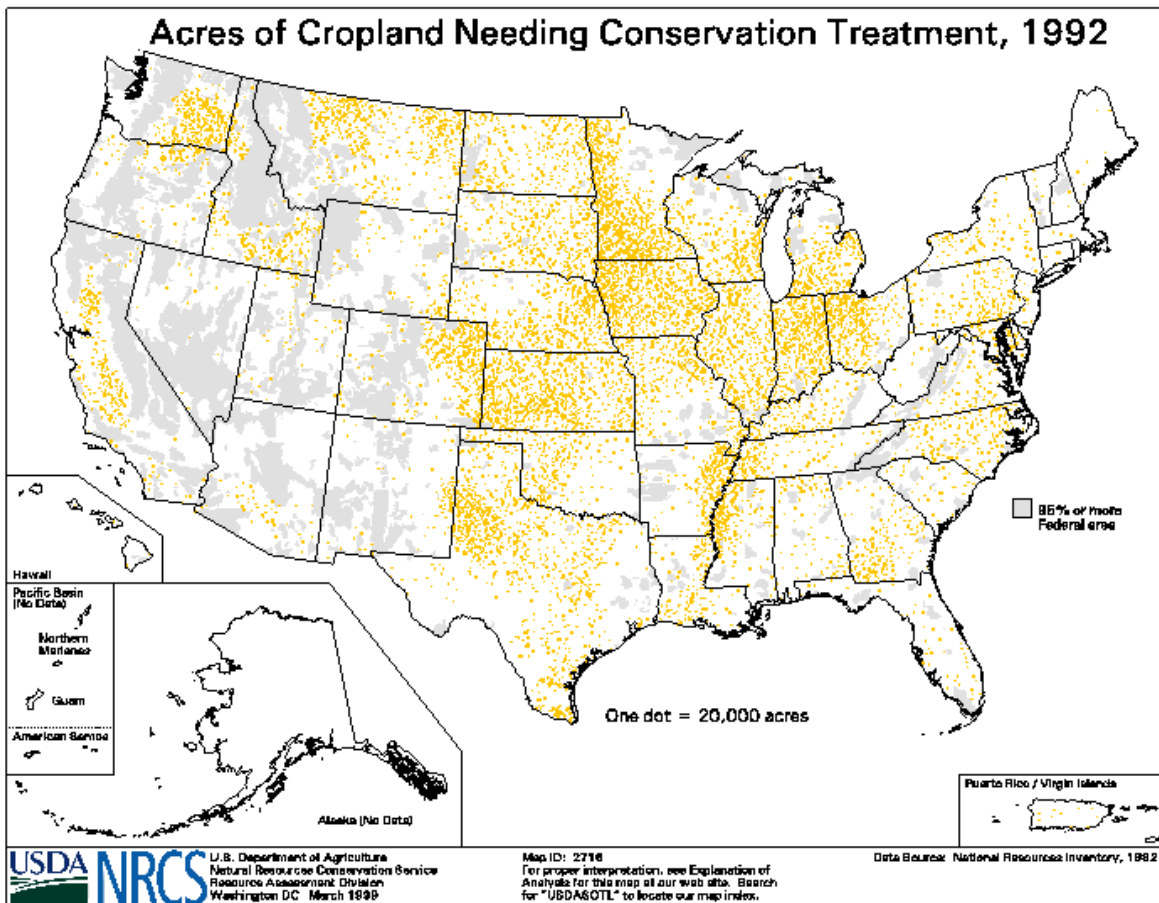
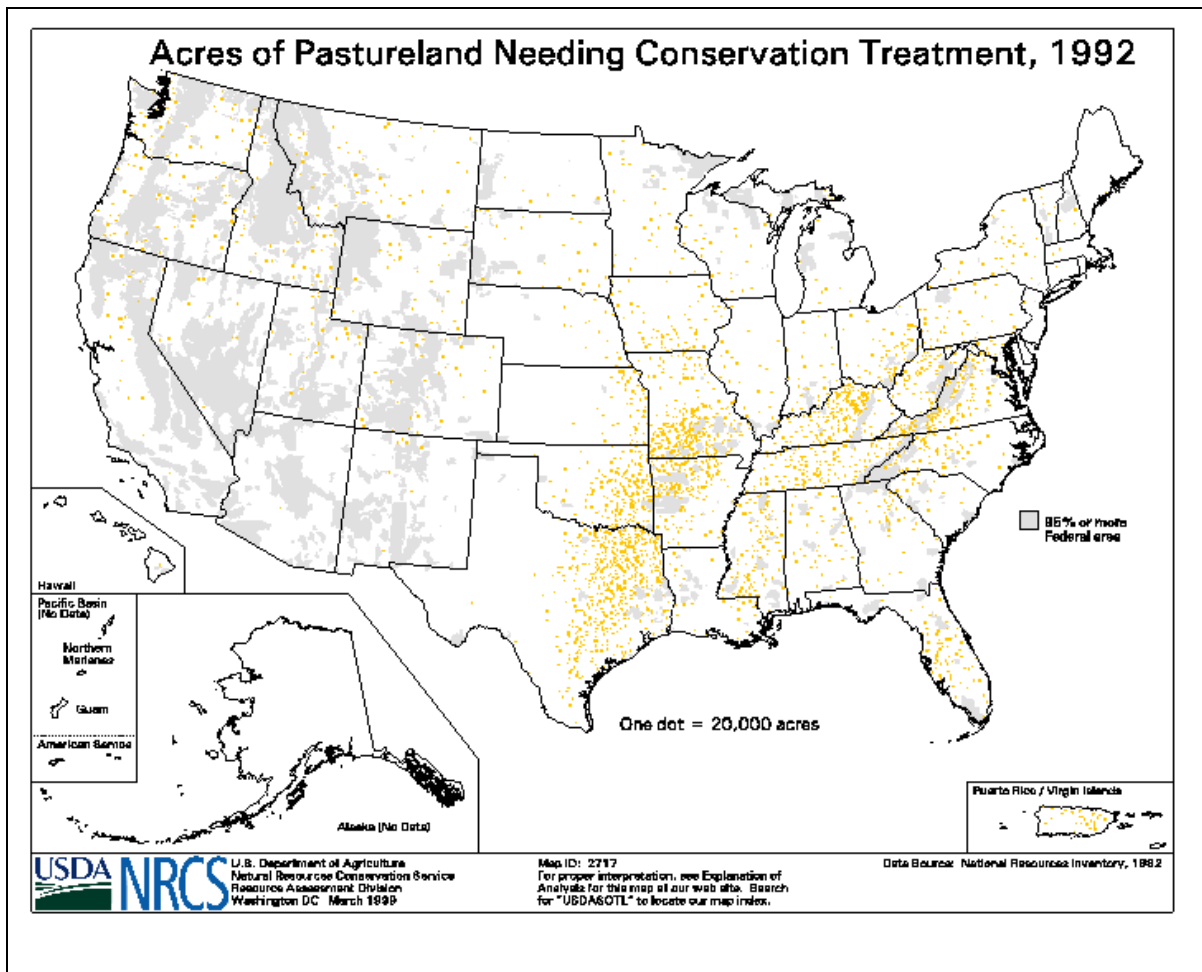
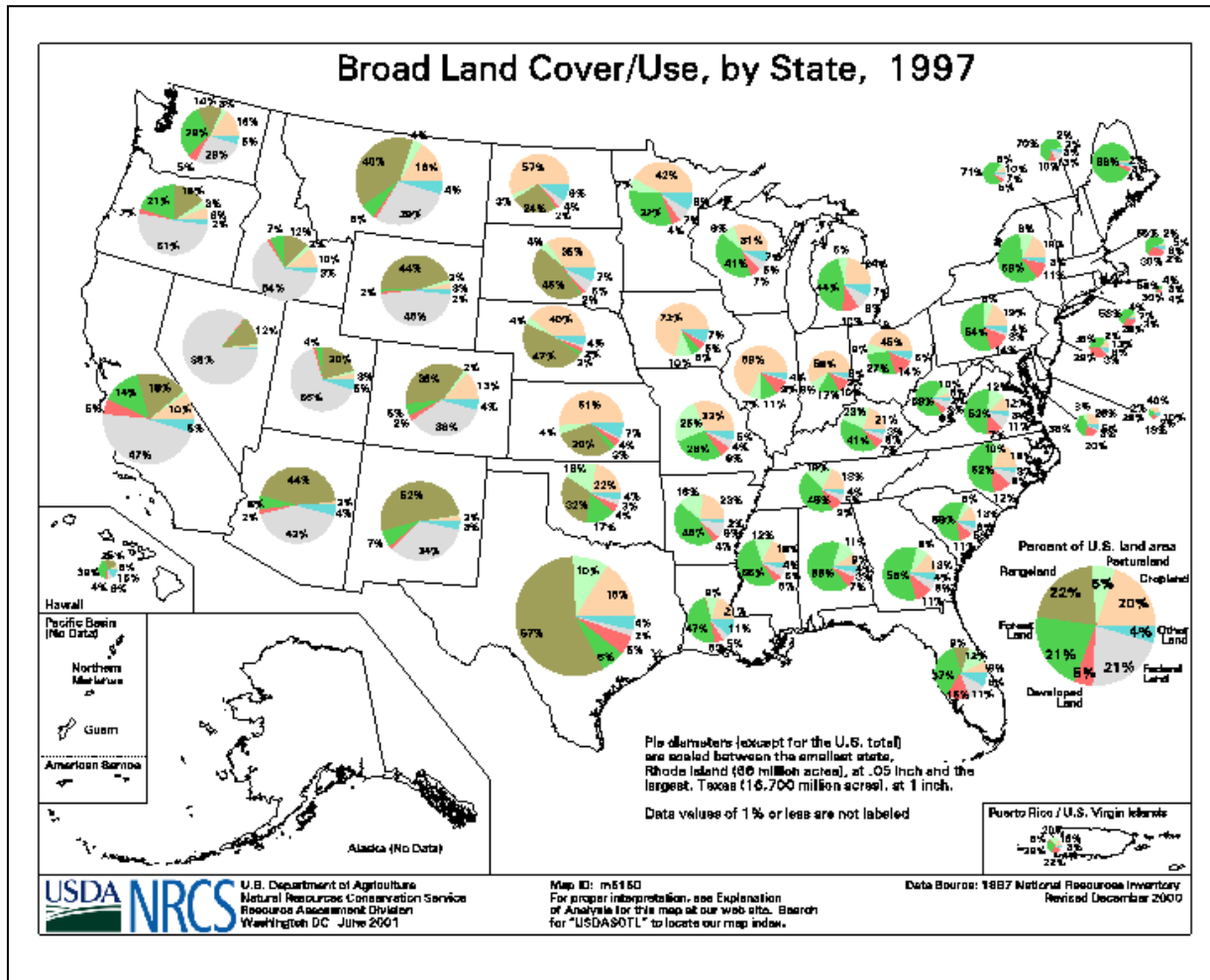


FIGURE 2: Acres of Pastureland Needing Conservation Treatment<sup>26</sup>



<sup>26</sup> <http://www.nrcs.usda.gov/technical/land/meta/m2717.html>.

FIGURE 3<sup>27</sup>: Broad Land Cover/Use, by State, 1997



27 <http://www.nrcs.usda.gov/technical/land/meta/m5150.html>.

## **Cost-Share Payment Rate Alternatives**

Alternatives related to cost-share payment rates primarily affect the number and type of new conservation practices that are likely to be implemented.

**Alternative 2.** This alternative would establish cost-share payment rates of 5 percent of the cost to implement a new conservation practice. With such low cost-share payment rates, it is unlikely CSP participants would have any incentive to implement costly new conservation practices as a result of the available CSP cost-share. If a CSP participant did implement new practices, they would tend to be lower-cost practices that emphasize management actions rather than structural or land-treatment practices which tend to cost more. Most likely, it would primarily be wealthy CSP participants who would benefit from this alternative since they would more likely be able to afford to implement new conservation practices without cost-share assistance. On the other hand, if CSP participants were able to qualify for and obtain payments under another cost-share program, such as EQIP, that would make more funds available under CSP for base payments and enhancements. Historically, EQIP funding did not come close to meeting the demand of the program. In fiscal year 2003, NRCS allocated more than \$483 million to enter more than 30,000 contracts into the program. More than 174,000 applications were not funded in fiscal year 2003, totaling more than \$3 billion.<sup>28</sup> While funding has increased substantially, there still are not sufficient funds to satisfy existing EQIP demand, even without considering the additional demand that would result if CSP participants were dependent on those funds to be able to implement the conservation practices required to move to a higher CSP tier of conservation stewardship. Moreover, since there is no guarantee a CSP participant will qualify to receive EQIP funds, it would be risky for a producer to commit to a CSP contract that required new practices to move to a higher tier if they could not afford to implement those practices without cost-share assistance. There would also be a transaction cost to the producer associated with the need to enroll in a separate program to obtain cost-share. The transaction cost would prevent some producers from applying for cost-share that might otherwise do so if they did not have to enroll in a separate program. Thus, establishing a cost-share payment rate limited to 5 percent of the cost of implementing a practice would be likely to limit the new conservation practices that are implemented under CSP to a low level. Under this scenario, CSP participants would most likely be motivated to implement new practices in order to qualify for base payments under higher tiers and for certain types of enhancement payments, because of a stewardship ethic, or because the practices contribute to an increase in their long-term economic bottom line.

**Alternative 3, Proposed Action.** This alternative would allow cost-share payment rates to vary by practice but in no case to exceed 50 percent of the cost to implement a new conservation practice. This alternative would allow flexibility in cost-share rates so NRCS could encourage implementation of practices that are best-suited for addressing priority natural resource concerns. NRCS would provide the list of approved practices and the percentage cost-share payment rate for each practice at the time of each CSP sign-up announcement. This alternative would be most likely to result in CSP participants addressing priority resource concerns and installing the most cost-effective practices.

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<sup>28</sup> Available at [http://www.nrcs.usda.gov/programs/eqip/2003\\_Contracts/2003UF\\_Info.html](http://www.nrcs.usda.gov/programs/eqip/2003_Contracts/2003UF_Info.html).



Cost-share rates under this alternative would generally be lower than those available under EQIP. Thus, producers would tend to first seek EQIP or other cost-share funding to install new practices. They would primarily seek CSP funding only if EQIP or other cost-share funding that pays at higher rates were not available. As discussed above, historically, EQIP funding has been insufficient to meet demands for the program. Thus, under this alternative there may be less opportunity than under Alternative 4 for lower-income producers to install the new practices needed to allow them to qualify to move from their current Tier of CSP participation to a higher level of conservation.

**Alternative 4.** This alternative would establish cost-share payment rates of 75 percent of the cost to implement the practice. This rate is the maximum CSP cost-share payment rate permitted by the 2002 Farm Bill. It would provide the greatest incentive to implement new conservation practices and motivate CSP participants to carry out additional resource improvement activities on their agricultural operations. The risk of having the same high cost-share rate for every practice is there would be no incentive for a CSP participant to implement conservation practices that are considered particularly effective under specific conditions, or to address local priority resource concerns. This alternative would establish a CSP cost-share rate that is also the maximum allowable cost-share rate under EQIP; therefore, there would be much less incentive for CSP participants to enroll in EQIP or other programs to obtain financial assistance for the installation of new conservation practices. If Congress were to provide unlimited CSP funding, producers with a conservation history would likely tend to enroll in CSP, leaving more EQIP funds available to producers who are just beginning to apply conservation practices. However, in years CSP funding is limited, this would not necessarily be the case.

## **Enrollment Alternatives**

### **Alternative 5, *Proposed Action*.**

Under this alternative, CSP would be implemented based on priority watersheds and a method of prioritizing CSP applicants within a watershed that results in those applicants most committed to the highest levels of conservation stewardship being enrolled first.

Though this alternative would implement CSP only in priority watersheds during each signup period, over time CSP would be implemented in all watersheds. Focusing on certain watersheds at a time and prioritizing applicants within each watershed would allow NRCS to implement CSP nationwide over a number of years and to address resource concerns across the country within the permitted funding limits. When more funds were available, more applicants within priority watersheds would be enrolled and with unlimited funding, all watersheds nationwide would be eligible for CSP enrollment.

Watersheds form discrete natural spatial units. Using watersheds to allocate funding and assistance would enhance NRCS's ability to evaluate and focus the effectiveness of producers' stewardship efforts in ways that would not be likely from working along county or state lines. A watershed rotation would reduce the administrative burden on applicants while it would also

reduce the technical assistance costs that would be incurred if NRCS and its technical service providers had to process a large number of applications that could not be funded.

Rotating watersheds would allow producers to plan and prepare for CSP participation in future signups. Watersheds would allow finite resources to be focused on areas with both a documented need for resource enhancement and a strong stewardship tradition. For producers in a selected watershed, this approach would result in better service when applying, and a higher chance of getting selected. Producers in a watershed that had not yet been selected for CSP enrollment would have time to improve their conservation performance through access to other Farm Bill programs.

Staged implementation would allow agency personnel to refine, streamline, and perfect application procedures as well as self-assessment and self-screening processes. NRCS would also be better able to provide high quality technical assistance, adapt new technology tools, and assessment techniques to critically evaluate the program. NRCS would have the opportunity to evaluate the effectiveness of the treatment in a focused effort where it will be more practical and reasonable to relate to environmental performance.

The system of enrollment categories proposed for use under this alternative would enable NRCS to conduct the program in an orderly fashion and remain within the statutory budget caps. Once the highest enrollment category's applications were funded within all priority watersheds, the next category would be funded, etc. If all the applications in a category were not funded, then NRCS would fund subcategories in the same manner. Subcategories would be announced in each sign-up. Funding would be distributed to each succeeding category to fund subcategories until funding was exhausted. The enrollment categories would identify and categorize eligible producers within the selected watersheds for funding. Applicants would be eligible to be enrolled based on the criteria listed in sign-up notices consistent with historic conservation performance established prior to the announcement of a sign-up and the willingness of applicants to do more, such as addressing locally identified resource concerns or providing important assessment and evaluation information. Such an approach provides a way to select applicants when there are more applicants within priority watersheds than there are funds available and to allow flexibility to adjust enrollment categories as technology and priorities change.

**Alternative 6.** This alternative would implement the program using periodic sign-ups that close when all available funds are committed. This would be a "first come, first served" approach.

This alternative would be implemented using sign-up periods during which the first eligible applications received would be funded. Such an alternative would place unnecessary pressure on applicants to be first in line and such an approach would have no bearing on the expected conservation benefits of the contracts. In addition, it would be difficult for NRCS to know upon receipt of an application exactly what it would cost, mainly because detailed contract activities and the tiers of participation require some discussion and consideration by both the participant and NRCS field staff. This alternative approach would result in significantly lower levels of environmental benefits. Because of the funding limitations, significantly fewer CSP contracts

would be approved in each watershed, which would reduce the opportunity for peer recognition and awareness. This would reduce the opportunities for conservation planning and education efforts and provide less motivation for resource protection and enhancements.

**Alternative 7.** This alternative would implement the program by funding applicants who are willing to implement all enhancements. If this alternative were implemented, only those producers who agreed to do all the following types of activities would be permitted to enroll in the CSP:

- implement or maintain multiple conservation practices that exceed minimum requirements for the applicable tier of participation (including practices that involve a change in land use, such as resource-conserving crop rotation, managed rotational grazing, or conservation buffer practices);
- address local conservation priorities in addition to resources of concern for the agricultural operation;
- participate in an on-farm conservation research, demonstration, or pilot project;
- participate in a watershed or regional resource conservation plan that involves at least 75 percent of producers in a targeted area; and
- carry out assessment and evaluation activities relating to practices included in a conservation security plan.

On an initial review, this alternative would seem to have potential to achieve substantial environmental benefits and to go far toward achieving the program purposes. However, because this alternative requires all the enhancement activities to be implemented, producers would not be eligible to participate unless at least 75 percent of the agricultural producers in the watershed or area covered by a regional resource conservation plan participated. Such a focused program would potentially produce the greatest environmental benefits in the shortest time frame; from a practical perspective though, it would also be likely to severely limit the areas in which CSP would be implemented. While there would be some exceptions, many of the watersheds or regions that would qualify for CSP enrollment under this alternative would likely be those with a relatively small agricultural component, allowing the 75 percent participation level to be met by a small number of producers. If this were the case, the potential environmental effects from implementing enhancement activities would not be maximized because of the predominant influence of other land uses in those areas. It would also be possible that the majority of agricultural producers in such a watershed or regional planning area would qualify only at a Tier I level which, depending on the requirements associated with local conservation priorities, would tend not to maximize environmental benefits or reward the best conservation stewards, particularly from a national perspective.

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## **APPENDICES**

**Appendix A –CSP Legislation, as Established by the Farm Security and Rural Investment Act of 2002**

**Appendix B – Natural Resource Concerns and National Quality Criteria**

**Appendix C – CSP Practice Photos, Descriptions and Network Diagrams**

**Appendix D – Example of CSP Enrollment Decision**

**Appendix E – Sample Management Intensity Network Diagrams**