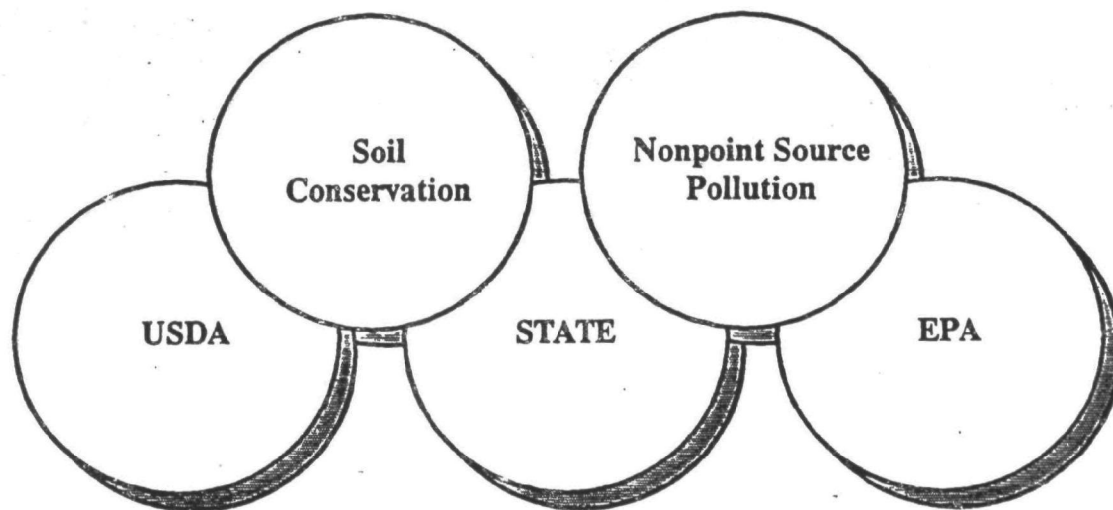
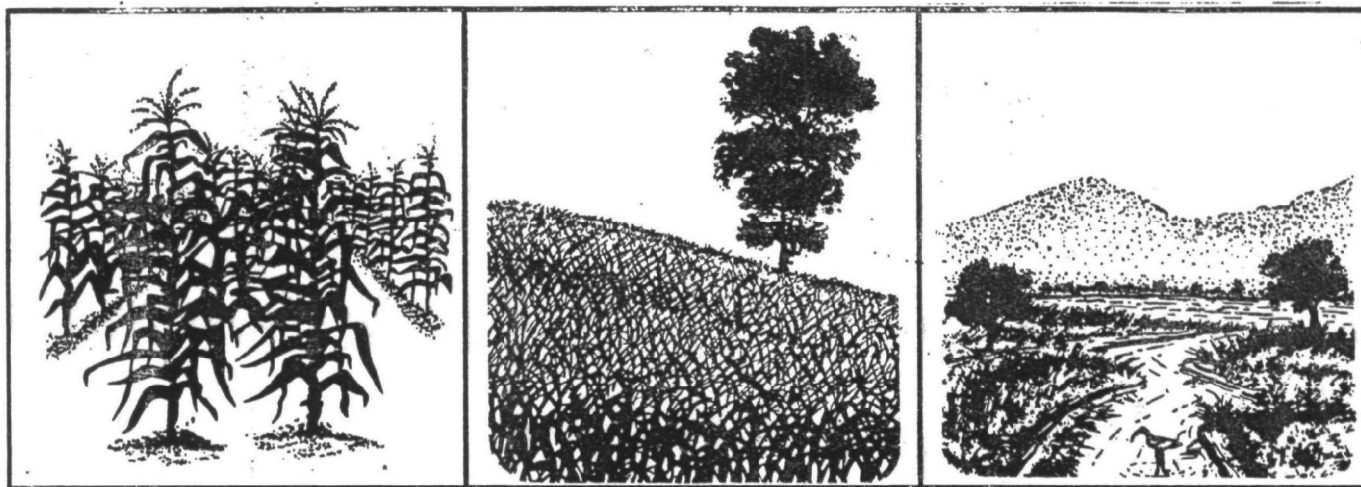


Water

EPA Interfacing Nonpoint Source Programs With the Conservation Reserve: Guidance for Water Quality Managers



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INTERFACING NONPOINT SOURCE PROGRAMS WITH THE CONSERVATION RESERVE: GUIDANCE FOR WATER QUALITY MANAGERS

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Cooperative Agreement CR813753-01-0

September, 1988

Disclaimer

The contents and views expressed in this document are those of the authors and do not necessarily represent the policies or positions of the North Carolina State Agricultural Extension Service, the United States Environmental Protection Agency or the United States Department of Agriculture.

Acknowledgments

This manual was written under a grant from the Office of Policy, Planning and Evaluation, U.S. Environmental Protection Agency. We would like to thank the U.S. Department of Agriculture's Soil Conservation Service and Agricultural Stabilization and Conservation Service, and EPA's Nonpoint Sources Branch for their review and comments. The authors would also like to thank EPA personnel Steve Dressing, Bo Crum, and Bob Hummel for their assistance in developing a more useful and readable manual.

SUMMARY OF RECOMMENDATIONS FOR INTERFACING NPS PROGRAMS AND CRP

- 1. Identify priority watersheds and determine if CRP-vegetative cover can be used effectively in the NPS management program.**
- 2. Identify areas where CRP-permanent vegetative cover and CRP filter strips could improve water quality.**
- 3. Participate in the administration of CRP at the state level by attending meetings of the State Conservation Review Group.**
- 4. Participate in County Conservation Review Group committee meetings to promote mutually beneficial objectives for agricultural and NPS management programs.**
- 5. Develop a coordinated NPS-management program involving federal, state, and local agencies and farm organizations. Establish agency roles and objectives that are realistic and support them with written agreements.**
- 6. Use NPS-program funds to supplement technical staff for CRP implementation in water quality critical areas.**
- 7. Use state and local NPS-program funds to supplement CRP-rental payments and cost-share funds in water quality critical areas.**
- 8. Complement CRP, and other voluntary programs, with regulatory programs where necessary.**
- 9. Target NPS-program efforts to water quality critical areas; use personal contact with targeted landowners to provide information and assistance to facilitate CRP sign-up.**
- 10. Ensure long-term water quality benefits by promoting use of CRP tree planting, coordinating Conservation Compliance activities, and establishing long-term working relationships among water quality managers, USDA personnel and farmers.**

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Abbreviations

ASCS	Agricultural Stabilization and Conservation Service
CC.....	Conservation Compliance
CCC.....	Commodity Credit Corporation
CCRG	County Conservation Review Group
CES.....	Conservation Extension Service
COC.....	County Committee
CRP	Conservation Review Group
DOI.....	United States Department of Interior
EPA	United State Environmental Protection Agency
FmHA	Farmers Home Administration
FS	Forest Service
FSA85.....	Food Security Act of 1985
HEL.....	Highly Erodible Land
HELC.....	Highly Erodible Land Conservation
I&E	Information and Education
MIP	Model Implementation Program
NPS.....	Nonpoint Source Pollution
SCRC.....	State Conservation Review Committee
SCS	Soil Conservation Service
STC.....	State Technical Committee
USDA.....	United States Department of Agriculture

INTRODUCTION

Mandate for NPS Management

Passage of the 1987 Water Quality Act established, under Section 319, an ambitious and far-reaching initiative to address nonpoint sources of pollution. Implementation of the Act requires states to assess their nonpoint source (NPS) pollution problems and develop management programs for their NPS-impaired and threatened water bodies. Following EPA's approval of these programs, implementation is to occur over a four-year period. Although Congress has authorized a total of \$400 million for fiscal years 1988 through 1991 to help states implement their management programs, actual appropriations were zero in FY1988 and future appropriations remain uncertain.

Passage of the Food Security Act of 1985 (FSA85) initiated a large redirection of monetary and human resources towards soil conservation and indirectly towards control of agricultural NPS pollution. In fact, these resources are far larger than those authorized by Congress for implementation of Section 319. Therefore, coordinating state NPS management programs with related federal and state agricultural programs can be critical to the success of Section 319.

Scope of this Manual

EPA is supporting state implementation of Section 319 with a combination of the *NPS Guidance Manual* (1), the *State Clean Water Strategy* (2), *Setting Priorities: The Key to NPS Pollution Control* (3), and a variety of other technical guides (such as this one) and grant mechanisms. These support documents stress the importance of targeting NPS- program resources and coordinating with other federal and state efforts.

This manual is intended as a guide for state NPS agencies and area-wide planning agencies to coordinate Section 319 activities with FSA85 Title XII - Conservation, which created the Conservation Reserve, Highly Erodible Land Conservation (HELCS), and Wetland Conservation (WC) subtitles. The HELCS subtitle mandates the Conservation Compliance (CC) and Sodbuster programs that protect highly erodible cropland. In addition, to discourage drainage of wetlands, the Swampbuster program was established, under the WC subtitle. This manual uses targeting concepts, reviews FSA85 conservation programs, with an emphasis on the Conservation Reserve Program (CRP), and suggests ways to coordinate programs to optimize the state's NPS management effort. NPS managers should consult USDA officials regarding any recent modifications in FSA85 conservation programs not covered by this manual.

Title XII of FSA85 has multiple objectives: conservation of the nation's soil resource, reduction of surplus commodities, protection of wetlands, and reduction of off-site impacts from sediment including deterioration of water quality. The CRP removes from agricultural production, for a period of 10 years, 40 to 45 million acres of highly erodible cropland and certain other lands deemed eligible due to special criteria. Land removed from production by CRP is also eligible for cost-sharing assistance for conservation practices or planting of trees. The CC provision introduces certain penalties for any farmers who produce agricultural commodities on highly erodible land without reducing erosion to locally approved levels, and the Sodbuster provision invokes penalties for production of annually tilled agricultural commodities and sugarcane in previously uncropped, highly erosive areas. After December 23, 1985, the drainage of wetlands for the production of agricultural commodities will result in penalties under the Swampbuster provision.

Integration of a state's NPS management program with these FSA85 provisions can benefit both programs. Section 319 mandates assessment and management of nonpoint source impaired or threatened water bodies, but authorizes funding only for program management and development, and demonstration projects. The CRP

provides rental payments and cost sharing incentives, while CC and Swampbuster use penalties to facilitate implementation of conservation measures for highly erodible cropland, wetlands, and certain environmentally sensitive areas. Simultaneous cuts in operating budgets for the agricultural agencies, however, have limited their ability to target any but the immediate conservation objectives. The challenge for the administrator of the primary NPS agency is, therefore, to coordinate agency efforts with those of the agricultural agencies in a productive and efficient way.

Agricultural conservation programs authorized in FSA85 apply only to those NPS problems that originate from existing or potential croplands. Therefore, other incentives or penalties will be needed to address NPS pollutants from surface mining, urban areas, and non-row crop agriculture. Specifically, grazing land sources, dairies, feedlots, poultry operations, pasture and range are not affected by the FSA85 conservation programs. However, in the context of a state NPS management program, the FSA85 provisions can provide a large part of the agricultural NPS management program.

CONSERVATION PROVISIONS OF THE FOOD SECURITY ACT

Federal conservation programs provide farmers with technical, financial, and educational assistance for adopting farming practices that reduce erosion and water quality degradation. Agencies directly involved include the Soil Conservation Service (SCS), the Agricultural Stabilization and Conservation Service (ASCS), the Forest Service (FS), the Cooperative Extension Service (CES), and the Farmers Home Administration (FmHA). Typically, SCS provides technical assistance in planning and installing conservation practices; the FS provides technical assistance for woodland management; the ASCS provides financial assistance (cost sharing) for conservation practices; and the CES provides educational support. These boundaries are not firm, however, since the CES provides some technical assistance, and the SCS and FS also provide educational support. As an example, ASCS's Agricultural Conservation Program is discussed in greater detail in the following box (Agricultural Conservation Program).

Three new conservation programs were created by Title XII of FSA85: the Conservation Reserve Program (CRP), Highly Erodible Land Conservation (HELCS), which includes Sodbuster and Conservation Compliance (CC), and Wetland Conservation, which is addressed by the Swampbuster provision (see Figure 1). Each of these programs is important for soil conservation and could be important for water quality. CRP offers financial incentives to farmers for voluntarily retiring land from production and is the main focus of this section. This option is offered through 1990 or until 45 million acres of cropland are entered into the program. In contrast to CRP, the remaining provisions threaten non-complying farmers with substantial financial penalties by disqualifying them from receiving USDA program benefits, including commodity payments, crop insurance, and price support loans. As long as commodity prices remain low and participation in farm programs high, CC, Sodbuster, and Swampbuster should be effective programs.

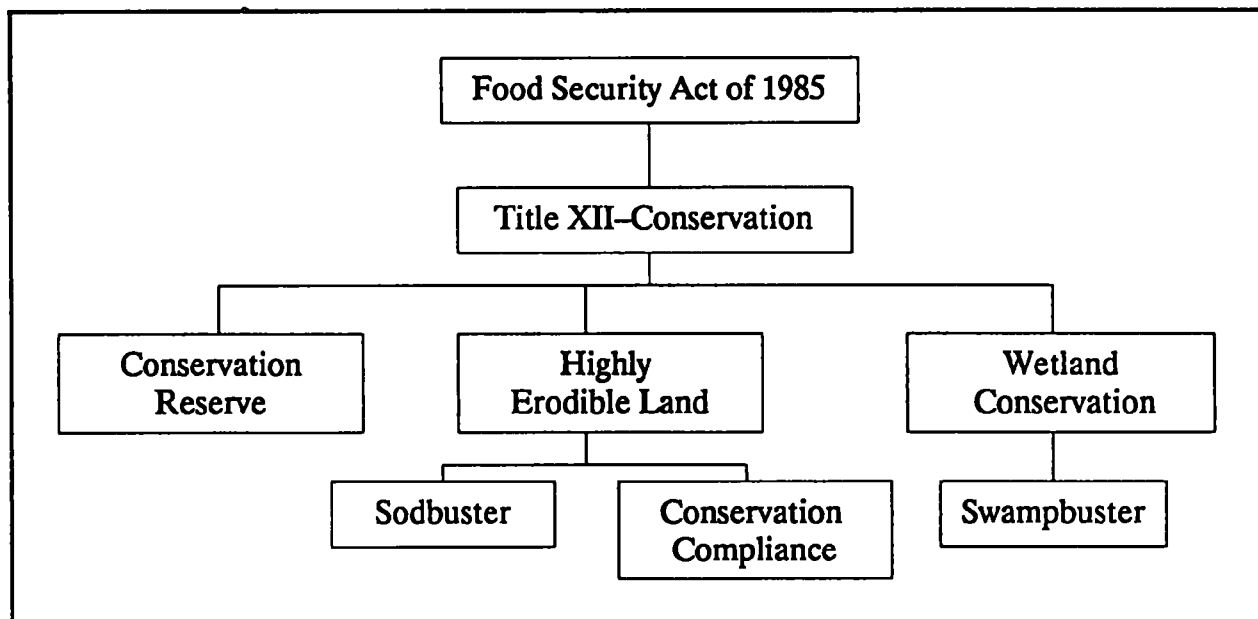


Figure 1. Food Security Act of 1985 Conservation Programs

AGRICULTURAL CONSERVATION PROGRAM

The ASCS provides cost-sharing incentives for the adoption and maintenance of conservation measures through a number of programs. The majority of the cost-share funding is provided through the Agricultural Conservation Program (ACP).

Disbursement of ACP cost-sharing funds to a single farm is limited by national regulations to 75% of the farmer's out-of-pocket expenses and a \$3500 per year ceiling. However, the actual cost-share rate may be lower. Priorities for ACP monies and selection of eligible practices can be influenced by concerned citizens and organizations that participate in the county ASCS committee. If there is targeting, it is generally based on erosion rate, but lands that contribute to water quality problems may also be targeted. For instance, in North Carolina any agricultural land in designated water quality program counties is eligible, but a higher priority is placed on those lands that affect water quality.

Other federal programs that help farmers implement conservation practices are similar to ACP, although their emphases may be different. Some programs promote conservation farming, while others encourage converting cropland to trees or wildlife habitat, and still others stress complete removal of land from production. Despite a considerable history of soil conservation efforts, sediment remains a critical factor in water pollution. State SCS and ASCS offices should be contacted for further information on these programs.

Conservation Reserve Program

As stated in the Federal Register, "The primary purpose of the CRP is reducing the amount of erosion occurring on our Nation's cropland." The objectives, as listed in the Final Rule (FR Vol. 52, No. 28, pages 4265-4275) are:

1. Reduce water and wind erosion,
2. Protect our long-term capability to produce food and fiber,
3. Reduce sedimentation,
4. Improve water quality,
5. Create better habitat for fish and wildlife through improved food and cover,
6. Curb production of surplus commodities, and
7. Provide needed income support for farmers.

CRP, together with CC, could be highly effective in controlling erosion and reducing NPS pollution, if current goals are met. USDA projects a 45- 50% reduction in soil erosion from these programs (4).

To meet the objectives of the CRP, 40-45 million acres of highly erodible land will be taken out of production for 10 years. The largest amount of eligible land is in the Corn Belt, but nearly every county in the nation has some eligible cropland. Areas subject primarily to wind erosion account for a substantial portion, and so Texas has the most acres eligible for CRP of any individual state. Eligible cropland by state is reported in Table 1 (excluding land eligible for filter strips). The CRP is a dynamic program and the definition of eligible cropland has been modified a number of times. State or local USDA officials should be consulted for the current definition.

To avoid disturbance of the local economy, FSA85 establishes a limit of 25% of cropland per county to be enrolled in CRP. A waiver is possible if requested by the local county government and supported by business interests. The Secretary of Agriculture must make the final determination that such action will not adversely affect the local economy.

TABLE 1. Total Acres Eligible for the CRP by State

STATE	TOTAL ACRES ELIGIBLE	STATE	TOTAL ACRES ELIGIBLE
AL	1,286,100	NV	196,900
AK	N/A	NH	23,800
AZ	196,800	NJ	193,100
AR	684,100	NM	871,600
CA	767,500	NY	1,225,300
CO	5,469,400	NC	1,527,800
CT	52,600	ND	2,790,500
DE	25,200	OH	1,529,800
FL	445,200	OK	2,949,300
GA	998,300	OR	1,212,500
HI	114,800	PA	1,980,800
ID	2,330,400	PR	242,500
IL	4,017,500	RI	3,300
IN	2,133,600	SC	364,600
IA	8,846,100	SD	2,038,300
KS	7,032,000	TN	2,023,800
KY	2,054,600	TX	13,932,400
LA	244,600	UT	463,900
ME	132,000	VT	68,600
MD	439,500	VA	910,800
MA	48,000	WA	2,464,000
MI	828,800	WV	232,400
MN	2,327,000	WI	2,994,500
MS	1,575,300	WY	383,500
MO	5,226,800		
MT	8,601,400		
NE	5,034,200		
		TOTAL	101,535,800

¹Excluding land eligible as filter strips.
Source: Margheim, 1987.

Eligibility

Eligibility of a field for CRP is determined by its extent of Highly Erodible Land (HEL) and its crop history. HEL can be identified from a list of soils available from the local county SCS office (see box on HIGHLY ERODIBLE CROPLAND). The field's crop history must show that it was planted to an agricultural commodity crop other than orchards, vineyards, and ornamentals during 2 of the 5 crop years from 1981 to 1985.

An entire field may be eligible for CRP rental payments and permanent grass cover if 2/3 of its area is considered highly erodible. If the farmer elects to plant tree cover, only 1/3 of the field need be highly erodible. Fields of 9 acres or larger may be subdivided to meet the 1/3 or 2/3 requirement, but a field may be subdivided only once and each section must be at least 3 acres. NPS managers should consult with USDA officials regarding possible modifications in eligibility requirements.

HIGHLY ERODIBLE CROPLAND DEFINITION

For the CRP, Highly Erodible Land (HEL) is defined as cropland with:

- Erosion Index (EI) greater than 8, and a predicted annual erosion rate greater than that recommended by the SCS Field Office Technical Guide; or
- Land Capability Class (LCC) II, III, IV, or V with a USLE of three times T; or
- LCC II, III, IV, or V with USLE of two times T or greater and with a serious gully erosion problem; or
- LCC VI, VII, or VIII,

For sheet and rill erosion EI is computed as:

$$RKLS/T$$

where

- R, K, L, and S are factors in the Universal Soil Loss Equation (21), and
- T is the loss tolerance based on soil productivity.

For wind erosion EI is computed as:

$$CI/T$$

where

- C and I are factors in the Wind Erosion Equations (22), and
- T is the loss tolerance based on soil productivity.

LCCs are given with soils descriptions available from SCS.

USLE = Universal Soil Loss Equation, which predicts the annual erosion rate.

RKLS = Rainfall, Soil Erodibility, Slope-Length, and Slope-Gradient factors in the USLE.

The SCS Field Office Technical Guide and a current list of eligible soils can be obtained from the county SCS office.

Filter Strips

Riparian cropland areas may be eligible for CRP filter strips, even if they contain no highly erodible land. Filter strips are intended by USDA to prevent off-site sedimentation and improve water quality of streams, lakes, and estuaries, and so they may be particularly useful in NPS management programs. A filter strip for CRP purposes must meet the cropland requirements and be adjacent and parallel to a perennial or seasonal stream (excluding gullies and sod waterways) or a permanent waterbody 5 acres or greater in size. A seasonal stream is an intermittent stream that flows only during wet seasons. Filter strips may only be 66 to 99 feet (1-1.5 chains) wide except in special cases where a wider strip is needed.

Bidding and Signups

ASCS announces signup times and the location of pool boundaries. Pool boundaries and maximum bid levels are determined by: land values, rental rates, production capabilities, major land resource areas, geopolitical boundaries, differences in climatic conditions within the state, and number of eligible acres per pool. Pool boundaries have been used to isolate water quality priority areas and adjust maximum bid levels. Signups for the CRP will be held each year through FY 1990 unless program funds are unavailable or the 45 million acre-goal is reached.

Farmers submit bids to county offices stating the annual rental payment they would accept to enroll in CRP. They include a cropping history of the field from 1981- 1985 with their bids. SCS then determines eligibility for the designated fields. County ASCS committees accept or reject producer bids based on the maximum bid level established for the pool in which the county is located. Maximum bid levels for previous bids are generally announced.

Producers who sign up agree to establish and maintain a soil-conserving cover on the land for at least 10 years. During this time, no harvest may be conducted on CRP land and the land cannot be grazed, although the sale of hunting rights is permitted. Timber may be harvested after the land is released from the reserve. Producers receive an annual rental payment in addition to cost share for establishment of practices to control erosion and establish conservation cover.

Compliance is checked first by verification of practice completion and subsequently by spot checks. If land is returned to production before contract expiration or if the contract is terminated because of other contract violations, the participant must repay with interest all annual rental and cost-share payments. An exception holds if there is a national need to return land to production.

Payments

The actual amount of the rental payment depends on the accepted bid and designated field area. Each recipient is limited to \$50,000 annually in cash or commodity certificates. Rental payment is treated as taxable income.

Placing land in the reserve has a negative effect on participants' income from commodity programs (see box on **TERMS FOR COMMODITY PROGRAMS**). The aggregate total of a producer's base, allotment and quota is reduced during the period of the contract. The reduction is determined by the ratio of acreage placed in CRP to total cropland acreage on the farm. The participant chooses which base to reduce.

Participants also receive half the cost of establishing conservation cover not to exceed half the value of the enrolled land. Seven practices are cost shared: permanent introduced grasses and legumes, permanent native grasses and legumes, trees, wildlife cover, field windbreaks, shallow water areas for wildlife, and filter strips. Some erosion control measures including diversions, erosion control structures, and grass waterways are cost shared if needed. Cost to re-establish cover is also shared if the loss results from circumstances beyond the farmer's control.

TERMS FOR COMMODITY AND PRICE SUPPORT PROGRAMS

Commodity programs exist for wheat, feed grains, cotton, rice, soybeans, dairy, peanuts, tobacco, sugar, wool, mohair, and honey. Financial support is given to producers who voluntarily help control supply by limiting their own production through *base acreage, allotments and quotas*. Financial support usually falls into one of three categories: deficiency payments, loans or diversion payments. There is an annual payment limit of \$50,000 per producer (excluding CRP payments).

Deficiency payments are direct payments to farmers. Under loan programs, the government loans the producer money against the producer's expected harvest.

Diversion payments are made to farmers for yield forgone on land diverted from production of the surplus commodity crop.

Base Acreage, Allotments and Quotas Producers who receive commodity program benefits must limit their production of commodity crops to their base acreage, allotment or quota, which are established on historical production levels for their farm. In years of over-supply, producers must reduce production to some fraction of their base as set by the Secretary of Agriculture. Land temporarily set aside from producing a program crop is sometimes required to lay idle with a conservation cover. In some cases a crop that is not covered by USDA commodity support programs may be produced.

Participation in supply control programs is mandatory for tobacco and other major crops. For example, if a farmer has 1,000 total crop acres with 100 acres of corn base, 200 acres of wheat base, and 50 acres of tobacco allotment, his or her total base would be 350 acres. If 100 acres are entered into the Reserve, the farmer must reduce his or her base by 10% (100 acres/1000 acres) or 35 acres (10% x 350 acres).

Transfer of Contractual Obligations

A CRP contracts can be transferred if the new owner is willing to carry out the contracts terms and conditions, and sign a new contract. Otherwise the original owner is responsible for refunding all rental and cost-share payments.

Administration of CRP

The Agricultural Stabilization and Conservation Service (ASCS) administers CRP for the Commodity Credit Corporation (CCC) with assistance from the Soil Conservation Service (SCS), the Forest Service (FS), the Cooperative Extension Service (CES), and the Conservation District. The SCS role is primarily technical, determining highly erodible cropland, certifying land eligibility, developing conservation plans, and determining the adequacy of conservation practices. When conservation plans involve tree planting, FS provides the technical assistance and approval. The CES is designated to coordinate information and education programs for implementation of CRP and must concur in the establishment of minimum protective measures. The Conservation District, which is active at the county level, participates in CRP deliberations, helps promote CRP, and, in conjunction with ASCS County Committees, approves participants' conservation plans. ASCS is also expected to utilize the services of other conservation and environmental agencies to carry out its mission in the CRP.

The administrative structure of the CRP is shown in Figure 2. The ASCS Deputy Administrator of State and County Operations is primarily responsible for administering CRP. The ASCS State Technical Committee (STC) directs the development and administration of CRP and oversees the activities of the ASCS County Committee (COC). The County Committee establishes local policy and administers the CRP on a daily basis. County Committee activities include opening bid offers from applicants, approving contracts, establishing cost-share rates, and handling violations and appeals. The Deputy Administrator may reverse or modify any determinations made by the State Technical Committee or the County Committee, or he may authorize another person or persons to administer the CRP.

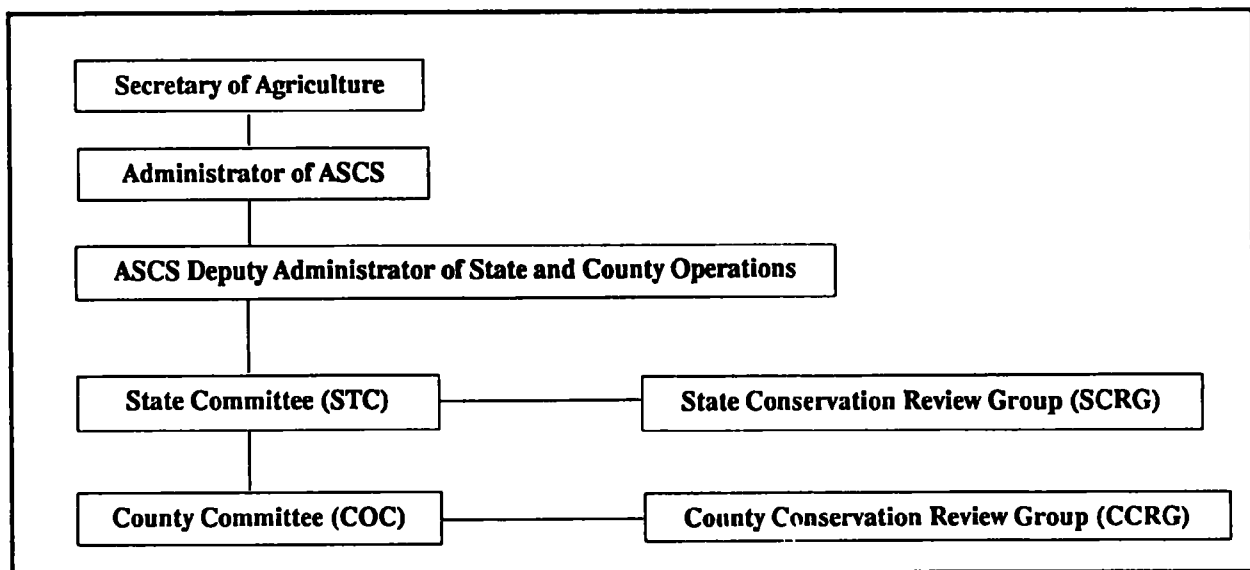


FIGURE 2. Administrative Structure for CRP Implementation

Both the State Technical Committee and County Committee have review groups to advise them on policy and practices. The ASCS CRP Field Handbook designate the membership of the State Conservation Review Group (SCRG) to include the chairperson of the State Technical Committee, the state CES director, the state SCS Conservationist, and a FS representative (19). In addition, the SCRG is directed to invite representation from an open-ended list of federal and state conservation and water quality agencies, including EPA and the state water quality agency. Members and invited participants of the review group committees are listed in Figure 3.

<p>STATE CONSERVATION REVIEW GROUP MEMBERS:</p> <ul style="list-style-type: none"> ● STC Chairperson serves as chairperson for SCRG ● the state Extension Director ● the SCS State Conservationist ● a FS representative <p>INVITED TO SCRG MEETINGS:</p> <ul style="list-style-type: none"> ● the state soil conservation commission, ● the US Fish and Wildlife Service, ● the state fish and game commission, ● the state forestry agency, ● the Farmers Home Administration (FmHA), ● the state water quality agency, ● the US Environmental Protection Agency, and ● other agencies that have interest in conservation. 	<p>COUNTY CONSERVATION REVIEW GROUP MEMBERS (IF USED BY STC):</p> <ul style="list-style-type: none"> ● COC Chairperson serves as Chairperson of CCRG ● a county CES agent ● a FS representative ● the SCS District Conservationist ● a Conservation District representative <p>INVITED TO CCRG MEETINGS:</p> <ul style="list-style-type: none"> ● FmHA ● the state forestry agency ● the state fish and game commission ● any other conservation-oriented agencies or organizations
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FIGURE 3. State and County Conservation Review Group Members

The SCRG recommends policies to the State Technical Committee that may have important implications for implementation of Section 319 Management Plans at the state level including:

- Determine adequate erosion control criteria and date control must be achieved,
- Select eligible conservation practices from a national list,
- Coordinate CRP with other ongoing conservation programs,
- Carry out information and education programs,
- Recommend counties for inclusion in each pool, and
- Recommend minimum specifications for erosion control practices.

The County Conservation Review Group recommends to the County Committee cover practices from the state list of eligible practices. SCS establishes minimum specifications for cover practices. The official membership and list of invitees for the County Conservation Review Group is shown in Figure 3. State and local water quality managers can work with their CCRGs to insure consistency among local water quality concerns and CRP implementation.

Sodbuster, Conservation Compliance, and Swampbuster

FSA85 includes Sodbuster, Conservation Compliance, and Swampbuster, provisions that mandate the loss of USDA program benefits for those farmers who convert highly erosive land or wetlands to row crop production, or produce row crops on highly erosive land without an approved conservation plan. USDA program benefits that may be lost for noncompliance are listed in the box below (see box on USDA PROGRAM BENEFITS).

The Sodbuster provision is designed to discourage the conversion of highly erodible land for agricultural production. If annually tilled crops are planted on highly erodible grassland or woodland, the landowner loses eligibility for USDA program benefits for that crop year, unless the land is planted under a locally approved conservation system. Highly erodible land that was planted to annually tilled agricultural commodities or sugarcane during the period 1981-85 is exempt from this provision, but is covered under Conservation Compliance.

The Conservation Compliance provision applies to land where annually tilled crops were grown at least once during the period 1981-85, and will apply to all highly erodible land in annual crop production by 1990. Under this provision, eligibility for USDA program benefits will be lost if by January 1, 1990 the producer does not have an approved conservation plan on his or her HEL. Approved conservation plans must employ a set of soil erosion management practices that have been approved by the state SCS and local Conservation Districts. These plans are not required to address water quality. Conservation plans must be installed by January 1, 1995. (FR 35194 Vol. 52, No. 180, *Highly Erodible Land and Wetland Conservation, Final Rule*).

The Swampbuster provision is intended to discourage conversion of wetland for agricultural purposes. Under this provision, eligibility for USDA program benefits is lost if wetlands are converted to cropland use (applicable to wetlands converted after Dec. 23, 1985). Eligibility for USDA programs is lost on all the land on the farm, not just the wetland area. (FR 35194 Vol. 52, No. 180, *Highly Erodible Land and Wetland Conservation, Final Rule*).

USDA PROGRAM BENEFITS*

- Price and income supports
- Crop insurance
- Farmers Home Administration loans
- Commodity Credit Corporation storage payments
- Farm storage facility loans
- Conservation Reserve Program annual payments
- Other programs under which USDA makes commodity-related payments

*These benefits may be lost for noncompliance with CC provisions

INCORPORATING CRP INTO NPS MANAGEMENT PLANS

The Value of Permanent Vegetative Cover In State NPS Projects

States should work with USDA to promote grass or tree cover for those water quality critical areas eligible for the CRP. Due to the high cost of establishing vegetative cover and the displacement of income-generating cropland, this practice has not been widely employed in water quality projects. Where highly erosive cropland is identified as critical to the watershed management plan, vegetative cover is one of the most effective BMPs for controlling sediment movement, and for controlling nutrients and pesticides in solution or absorbed on the finer soil particles (5). The CRP rental and cost-share payments also make permanent cover a feasible BMP for state and local NPS management programs.

Sediment is the most pervasive pollutant for surface waters, and farmland is recognized as its major source (6). Sedimentation reduces stream and reservoir capacities, contributes to increased flooding, disrupts biological systems, degrades drinking water, and transports nutrients, bacteria and pesticides to waterways. Where Section 319 Management Programs address sediment problems originating from cropland, coordination with CRP will likely represent an effective, low-cost solution.

Where nutrients, pesticides and turbidity problems are associated with highly erosive soils, vegetative cover will reduce their contribution to the impaired resource. In the short term, grasses effectively stabilize nutrients. Furthermore, CRP lands will receive far fewer fertilizer and pesticide applications. These benefits, however, may be reduced if farmers increase the intensity of chemical applications on other fields.

The effectiveness of a coordinated Section 319/CRP effort depends on having resources to address other pollution sources such as point sources, feedlots, irrigation discharge, grazing lands, mine discharge and urban sources. Even in rural areas, point sources can have a substantial impact.

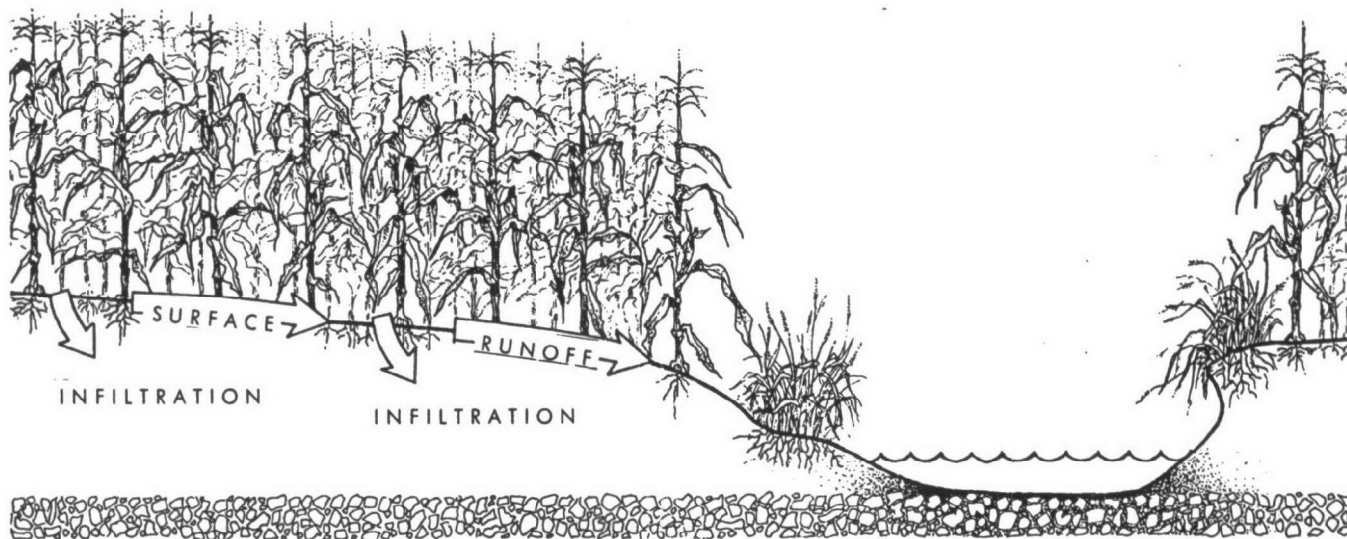
Filter Strips in State NPS Projects

The versatility of filter strips makes them important components for agricultural NPS management. Unlike vegetative cover, discussed above, CRP filter strips are not limited to highly erosive soils. In combination with upland erosion control practices, filter strips—especially contiguous ones—can help reduce loadings of sediment, nutrients and pesticides. Alone, filter strips can play an important role in the management of riparian areas adjacent to streams, lakes and wetlands.

Riparian areas are ecologically rich, providing wildlife habitat, improving fish habitat, and increasing recreational opportunities for land owners and visitors. Cropping activity removes the natural vegetative buffer in the riparian areas that helps protect adjacent water bodies from agricultural pollutants.

A pamphlet titled *Well Managed Stream Corridors* (7), written by Craven, et. al., explains that vegetation reduces the velocity of overland flow promoting deposition of sediment before it reaches the water body. The root systems of grass and tree cover crops increase soil stability reducing bank erosion and slumping. As illustrated in Figure 3, stream channels protected by a natural riparian buffer are generally narrower, deeper, and more suitable for fish and macro invertebrates. Shading effects of overhanging vegetation can reduce summer water temperatures, which is desirable for trout, small mouth bass and other sport fish.

Many experts feel that a filter strip consisting of 50 to 100 feet of natural vegetation provides an effective buffer zone to protect water quality and improve conditions for fish and other aquatic organisms (8). Performance as a filter strip, however, requires that concentrated flows be dispersed across the buffer and channelization be



Two panels showing a stream and adjacent bank before and after improvement. The TOP PANEL shows a corn field planted up to the stream bank. Cropland runoff carries soil from fields directly to the stream. The streambanks are unprotected and actively eroding. This situation produces a warm, shallow, silted stream with limited fish life.

The BOTTOM PANEL shows the same area 10 years later. The field has been set back. Vegetation between the field and stream protects water quality by reducing runoff and siltation and filtering potential chemical pollutants. The stream is narrower, deeper, cooler and supports greater numbers and types of fish. The streamside vegetation also provides wildlife habitat.

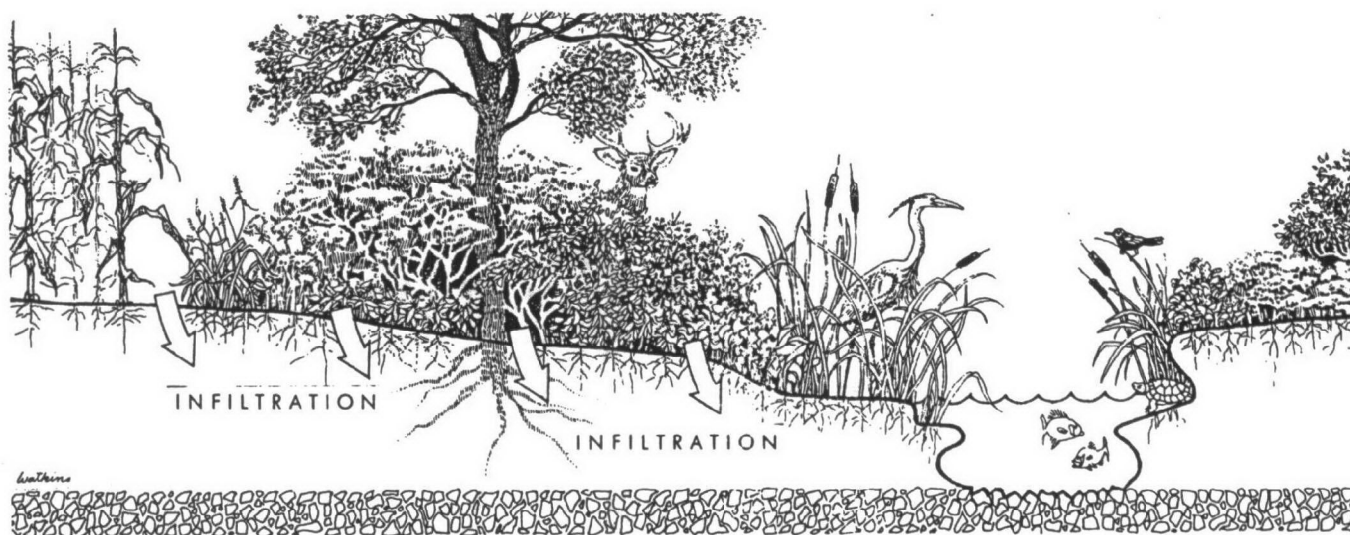


Figure 3. Riparian Benefits of Filter Strips (From Craven, et al., 1987)

avoided in the filter strip area. This may require engineered spreaders or special maintenance practices to prevent gully erosion or deposition, and to assure that filter strips perform as desired. Where cropland includes flood plains or wetlands, or where wildlife benefits are desired, larger filter strips may be needed.

In the control of upland erosion, Karr and Schlosser report that filter strips can effectively control sediment from sheet and shallow channel runoff (9). Where upland conditions create gulches or channels, or deposition smothers the grass cover, more intensive upland controls may be required (5). In some areas, additional funds will be needed to stabilize severely eroding channels and to install fencing to keep cattle from grazing too close to the stream.

Setting Priorities For NPS Management Programs

Focusing agency money and staff on a few small NPS watershed projects may be prudent in light of the four-year implementation period of the WQA. Prioritization of water quality problems focuses attention on resources that can be adequately treated with available financial and technical support. Funds spread too thinly are unlikely to yield observable improvement in water quality or to increase beneficial uses. Lack of benefits may dampen public and legislative enthusiasm for continued NPS project support.

An effective NPS program matches program authority and resources with water resource needs. Factors to consider include the degree and type of water resource problem; the type, magnitude and distribution of NPS and point sources of pollution; and, the regulatory and non-regulatory mechanisms for addressing the problem. (3).

Political input also plays an important role in balancing the quantifiable and unquantifiable factors used in the selection of priority watersheds. Showcasing a NPS project can help in the long term success of a NPS program, but care should be taken to insure that technical considerations and public benefits (in comparison to costs) are not overlooked.

Voluntary participation is the cornerstone of most NPS projects. However, a balanced program with a strong information and education (I&E) component, positive incentives, and appropriate regulatory authority is the best approach. Voluntary participation is strongly influenced by the farmers' acceptance of the project's water quality objectives. State or local regulations that require farmers to reduce off-farm damages can significantly boost farmers' willingness to participate. Economic stress and lack of positive incentives, however, will tend to diminish farmers' capability to participate.

Developing and Coordinating an Interagency Program

Seldom does a single agency have the resources necessary to implement a successful NPS management program. For this reason marshaling the authority, and the appropriate talent and funding required for effective NPS control often leads to an effective interagency program. This manual explains how to combine the resources of state water quality offices with USDA CRP and other conservation programs to improve NPS impaired or threatened water resources.

Before discussing specifically the means of incorporating CRP in Section 319 programs, we first review some general guidelines for interagency cooperation from the *Setting Priorities* manual (3).

Establish Agency Roles

Some important lessons learned in program management have come from the Model Implementation Program (MIP) projects (1978-1982). Based on these lessons we recommend that individual NPS control programs designate a program coordinator from the state agency charged with NPS program management (18). The lead agency should be locally based and have implementation of Section 319 of the WQA as a primary mandate.

Alongside the potential strengths of an integrated NPS program lies the danger that pooling agency resources may create a whole less than the sum of its parts. To avoid duplication of effort and conflict of authority, the cooperating agencies should meet and determine the role each will fulfill: data collection, I&E, technical assistance, program development and implementation, public relations, etc. Each agency's potential NPS resources should also be considered: loan potential, cost-sharing programs, legal authority, and staff levels and capabilities. Including all affected or related parties at the planning stage is critical in starting a NPS control project on the right foot.

Set Realistic Program Goals

Program goals should be stated clearly in quantitative, measurable terms so that progress and accomplishments can be assessed. Water quality standards, pollution concentrations or loadings, restoring biological resources, or amount of land or sources treated provide the basis for program goals. Sufficient flexibility should be retained so that goals can be modified as knowledge of the dynamics of the water resource problem is obtained. Interim goals can be developed for each phase of the project with each participating agency recognizing the time required to complete each task.

There are two distinct time-frames to consider in establishing realistic goals: (1) the time to implement and develop a watershed level management program; and, (2) the response-time of the water resource. Additional time--four to six years or possibly more--may be required to confirm water resource improvement (20).

Develop Interagency Agreements

The roles and responsibilities of cooperating agencies and procedures to ensure effective interagency coordination should be specified in written agreements and guidelines. This will serve to clarify each agency's role and to prevent future misunderstandings. Although in many states this was done in a general way as part of the 208 planning process, NPS implementation programs may need to be much more specific in terms of tasks and responsibilities. States should consult with their appropriate offices to identify appropriate inter-governmental contract or agreement instruments.

Implementation of a Coordinated State Agricultural NPS Program

Increased Education of Farmers in Priority Watersheds

As a result of the voluntary nature of most NPS projects, I&E efforts are essential for obtaining farmer participation. One-on-one meetings, while time-consuming, are consistently viewed as the most effective technique for increasing participation (10). Pamphlets and educational brochures on the CRP are available from CES, SCS and ASCS. While these resources are excellent for notifying farmers of the existence of the Program, they may need to be supplemented with other materials and further publicity to stir interest and focus attention on local water quality objectives.

The Cooperative Extension Service (CES) and the local Conservation District can be important players in the development and delivery of information and education on the management of soil and water resources. In 1987, CES declared its National Water Quality Initiatives (11) emphasizing the importance of state and local water quality concerns. In addition, CES has direct access to universities and experience in adapting basic research to fit local needs.

Delivery Systems. *Getting the message out* should include one-on-one consultations in combination with tours, field days, workshops and publications. Water quality managers may be able to reach a broader audience of farmers if they take advantage of existing gatherings such as county and state fairs, commodity group meetings, workshops and training sessions. Demonstration farms and test plots can be particularly effective for demonstrating effective use of CRP vegetative cover, wildlife areas, filter strips and the economic advantages of tree planting.

Pamphlets should be prepared to focus attention on the impaired resource, the benefits of water quality improvement, how farmers can help contribute to the success of the project, and the financial and regulatory incentives for participation. A map that identifies the project boundaries, contributing watersheds, and critical areas would also be helpful.

Target Audiences. Landowners in critical areas should be targeted for one-on-one discussions. Community leaders, private farm organizations, producer groups, youth groups and environmental organizations can help communicate the objectives and benefits of the watershed project. A CRP outreach effort conducted by the Chesapeake Bay Foundation is discussed in the box below (CHESAPEAKE BAY OUTREACH PROGRAM PROMOTES CRP).

Incentives to Participate in the CRP

The potential for the CRP to assist in a state NPS management program depends on the the CRP's local rental rate and out-of-pocket costs for conservation practices (considering cost-share incentives), and the cropland's income generating potential (considering future costs to meet Conservation Compliance requirements). A survey by Nowak and Schnepf (12) found evidence that farmers balance the stability of guaranteed income against the cost resulting from loss of base when evaluating participation in CRP (see box, WHY FARMERS DO OR DO NOT PARTICIPATE IN THE CRP). States can increase farmers' incentive to participate by *piggy-backing* state funds onto CRP cost-share money or rental payments.

CHESAPEAKE BAY OUTREACH PROGRAM PROMOTES CRP

The Chesapeake Bay Foundation (CBF) recently conducted a test outreach program to encourage greater participation in USDA's February 1-19, 1988 CRP sign-up period. Agricultural NPS pollution is recognized as contributing to the Bay's nutrient enrichment problem.

Earlier CRP sign-ups in the Chesapeake Bay region lagged far behind the Nation with Maryland averaging 0.8% of eligible acres enrolled versus 23% for the Nation. While high land values, development pressure, and low CRP payments were identified as three reasons for low farmer participation, many farmers were not aware of the CRP, the recent addition of filter strips, and the CRP's potential for improving the Bay's water quality. The addition of filter strips was expected to have expanded the program's popularity.

The problem was that someone needed to tell the farmers that the CRP existed, that it had potentially large benefits for the Bay, and how to sign-up. CBF, in cooperation with local ASCS offices, decided to target farmers in Montgomery and Carroll Counties for an intensive outreach effort. They concluded that, if their efforts were successful, participation in these two counties would increase by more than the surrounding counties.

Using a bank of volunteer callers, CBF contacted farmers throughout Carroll and Montgomery Counties. Prior to the phone calls, ASCS had sent to area farmers an information package on the CRP. Volunteers were supplied with a model telephone script to make sure that all the pertinent information was covered. The script covered rental and cost-share rates, importance of Conservation Compliance Provisions, sign-up dates, and filter strip provisions. For those farmers who wanted more information, ASCS contacted the farmer directly.

The results suggested that the outreach effort was successful in Carroll County and less successful in Montgomery County. Carroll County farmers increased their enrollment in the CRP from 230 acres to 832 acres--a 262% increase. On the average, Maryland farmers increased their participation statewide by 108%, from 3400 acres to 7100 acres. Farmers in Montgomery County showed less interest in the CRP, increasing their total enrollments by only 131 acres to 555 acres--a 31% increase. Development pressure is strong in Montgomery County and provides a more attractive alternative than the CRP.

WHY FARMERS DO OR DO NOT PARTICIPATE IN THE CRP

Nowak and Schnepf surveyed SCS, ASCS, and CES field employees for their views on farmers' attitudes regarding participation in the CRP (12). The USDA employees reported three major reasons farmers participate in the Reserve: (1) the opportunity for a guaranteed income; (2) the opportunity to increase their financial returns from land that was not profitable; and, (3) to assist in meeting current loan payments. The same survey also reported that farmers might not participate in the CRP because: (1) rental rates were not high enough; (2) farmers were not willing to forgo base acres or other farm benefits; and, (3) the restrictions on harvesting or gaining an economic return on the cover crop. Farmers weigh the positive incentives (rental payments and cost-sharing) against lost income-generating opportunities of the cropland and out-of-pocket costs of establishing the required cover.

In theory, maximum CRP rental payments are set, in each county, to remove the poor quality or marginal cropland from production. These rental rates are consistent with the Program's objective to reduce output of surplus commodities. High erosion rates and large chemical losses from these lands often contribute substantially to NPS problems. Where CRP-eligible cropland overlaps with NPS critical areas, CRP-rental rates may provide farmers with a sufficient financial incentive to participate in a watershed management program. The CRP can be attractive, especially for part-time or small farms, where low profits combined with expensive treatment costs can make traditional BMPs prohibitively expensive.

Alerting farmers in critical areas to the existence of the CRP and the possibility that their marginal cropland may be more profitable in the Reserve should be an important element of a water quality manager's I&E efforts. A 1987 survey of Virginia farmers in the Chesapeake Bay area found that 50% of the farmers had not heard of the CRP or did not have sufficient information to decide if they should participate (13). It may also be necessary to help farmers recognize which croplands are eligible for the CRP. According to the Nowak and Schnepf survey, USDA personnel believed that 78% of the time farmers evaluated their erosion rate inaccurately or only somewhat accurately (12).

Where CRP-rental rates are too low to draw entire fields of highly erosive cropland into the CRP, use of filter strips may offer a solution. Farmers may be willing to consider enrolling 66 to 99-foot strips of cropland-adjacent to streams, lakes, or wetlands-into the CRP's filter strip program. For small farms, CRP's minimum field size may also be a stumbling block to targeting critical areas into the CRP. The NPS effort should take advantage of the filter strips option to protect riparian areas and establish a buffer between active cropland and water resources.

Piggy-backing state funds to augment CRP. Secretary of Agriculture Richard E. Lyng has expressed his commitment to working with state CRP targeting efforts and has stated, "Nonfederal entities are encouraged to provide additional incentives to bring specific acres into the [CRP]." (14) In NPS critical areas, this is an invitation to use CRP as a base of support to address state water quality problems. Additional state incentives may take the form of additional cost-share money to implement BMPs on CRP land, annual or lump-sum payments to augment the CRP-rental payments, or more innovative incentives. In some cases, states may find it advantageous to re-program existing state cost-share funds. Where states use their cost-share or other funds as an extra inducement, state funds will be able to reduce erosion and minimize off-farm damages on far more acres of cropland.

Several state and federal agencies have already begun programs to piggy-back their funds onto the CRP program. Examples are described in the boxes below (Case Study I, II, and III): The Department of Interior (DOI) leverages CRP rental payments with additional federal funds to protect important wetland habitat areas in the Prairie Pothole regions of North and South Dakota, and Minnesota. A state program in North Carolina uses state funds to provide additional cost-share money for BMP implementation.

CASE STUDY I

U.S. FISH AND WILDLIFE SERVICE WETLAND BONUS

In order to expand upland waterfowl habitat near wetlands, the Fish and Wildlife Service (FWS) coordinated their Wetland Easement Program (WEP) with the CRP. WEP is designed to preserve wetland areas for waterfowl, however, areas upland of wetlands are also necessary for nesting habitat. By coordinating CRP and WEP, the FWS was able to provide farmers with greater incentive to convert their highly erosive cropland located near wetlands into upland habitat for waterfowl. This resulted in a better mix of wetland and uplands for waterfowl habitat.

Farmers in North Dakota, South Dakota and Minnesota who already had wetland easements under WEP and who made successful bids to CRP, were eligible for the bonus program. A few exceptions were allowed where the land had a very good wetland complex either on or adjacent to it. All other eligibility requirements were the same as for CRP. In a few cases the field office would require a certain cover established on the land, but this also was an exception and depended on the discretion of the field office agents.

Advertisement of the program was through various media, particularly newspaper. Individual letters were also sent to WEP easement holders before the CRP signups. In writing contracts and making payments, the Service's field offices dealt directly with the landowners. After the landowner's bid was accepted for the CRP, the landowner signed a contract with FWS for an additional \$5 per acre accepted into the CRP. Payment for this bonus was only for 1 year. WEP used its original \$300,000 in the winter 1987 CRP signup to enroll approximately 60,000 acres. Without the CRP, WEP enrollment would have been far below this amount. FWS has a waiting list of additional participants should additional funds become available.

The Fish and Wildlife Service bonus program attracted land into the CRP, which might not have been otherwise entered, to improve the wildlife resource. This program meshed very well with the CRP program.

CASE STUDY II

REINVEST IN MINNESOTA (RIM) CONSERVATION RESERVE PROGRAM

The RIM Conservation Reserve Program links the objectives of soil conservation, wildlife preservation, and surface water quality maintenance and improvement. These objectives are accomplished by converting marginal cropland to permanent grass or trees. Participating farmers receive a one-time payment, in addition to cost sharing for establishing cover. The state has appropriated \$10 million for acquiring marginal cropland for the conversion to permanent grass and trees.

Local soil and water conservation districts (SWCDs) administer the program and define local priority areas using guidelines established by state law. After the SWCD board approves an application, SCS and cooperating agencies develop a site management plan, and the applicants install the approved BMPs and agrees to maintain the practices. Once it has been certified that that permanent vegetative cover is established, the Minnesota Soil and Water Conservation Board pays the farmer.

Cropland targeted for inclusion in the RIM Program must be marginally productive and either contribute to a water quality problem or be highly erosive. Land is not eligible for the RIM Program if it is currently set-aside, enrolled, or diverted under other federal or state government programs including

Federal Conservation Reserve, Federal Production Adjustment Set- Aside, or State or Federal Water Bank.

Farmers are given the option to sign a 10-year easement, 20-year easement, or a perpetual easement. The 10 and 20 year easements consist of discounted lump sum payments equal to 90% of the average CRP bid in that county. The perpetual easement offers a one-time payment equal to 70% of the township's average tillable land value. Approximately 60% of the land entered into the program has been put into perpetual easements. For establishing permanent grass or tree cover, or supporting practices, the farmer receives up to \$75 per acre.

The use of easements, rather than contracts as in the CRP, provides some additional benefits. If land enrolled in RIM is sold before the easement period is up, the easement is still binding. In addition, farmers are not allowed to return RIM payments to the state in exchange for negating the easement.

CASE STUDY III NORTH CAROLINA AGRICULTURE COST-SHARE PROGRAM

The purpose of the North Carolina cost-share program is to reduce the input of sediments, nutrients, animal wastes and pesticides into the waters of the state through an increased and targeted use of BMPs. BMPs are designed to prevent nonpoint source pollution and are cost shared with the landowner. This program recognizes water quality improvement as its primary objective.

Local soil and water conservation districts work with landowners and renters to identify appropriate BMPs and develop conservation plans. Following approval of a plan by the district supervisor, and completion of the BMPs, cost-share funds are provided to the farmer.

Landowners are reimbursed for up to 75 percent of the average cost of implementing a system of BMPs. Landowners may provide in-kind labor, material or equipment to reduce out-of-pocket costs. Where animal wastes are being applied, farmers must also agree to conduct soil tests to determine appropriate levels of nitrogen application. Agreements can be on an annual basis or long-term (up to 3 years). The landowner also agrees to maintain the BMPs for the minimum life of the practices.

Eligibility is based on availability of funds and potential impact on water quality. In counties designated for the cost-share program, any landowner or renter of agricultural lands is eligible to participate. Greater priority, however, is given to cropland that is causing a severe water quality problem.

BMPs cost-shared through this program include animal waste management systems, conservation tillage and other cultural practices, cover crops, and structural soil and water conservation practices. Cost-share payments must be used to accomplish one of the following objectives: (1) prevent erosion and the detachment of soil particles and associated nutrients, (2) limit the availability of potential pollutants that could be transported to a stream system, or (3) prevent the transport of pollutants to a stream system.

Coordination of CRP and cost-share programs like North Carolina's could enhance the ability of both programs to conserve soil and protect water quality. The Cost-Share Program could be used to pay part or all of the CRP participant's cost for establishing grass or tree cover. This would reduce the farmer's costs and should, therefore, increase participation in the CRP.

Regulatory Authority. Experience in the Florida and Oregon RCWP projects suggests that farmer participation in NPS watershed projects is greatly enhanced where effective state or local NPS regulations exist. These regulations require or strongly encourage farmers to take a more active role in controlling their own sources of pollution.

The combination of positive incentives, such as cost-share money, and enforceable regulations can be very effective in increasing participation in voluntary pollution control programs. The technical assistance and rental payments provided by the program gives the farmer the incentive to participate; the regulations give the farmer inducement to seek technical assistance.

Long-Term Advantage of Tree Cover. In addition to providing excellent water quality and wildlife benefits, trees can enhance the longevity of CRP leases beyond their slated ten years. Follow-up studies of the Soil Bank program in the South found that 86% of the trees planted still existed 15 to 20 years later (15). A similar study of trees planted under the Agricultural Conservation Program in the 1960s showed a 92% retention rate 10 to 15 years after planting (16). Tree planting is particularly suitable for the most marginal areas where the returns for trees exceed that for crops.

Evaluating the applicability of CRP to a targeted watershed

A number of local indicators can be used to estimate potential farmer participation and the CRP's usefulness in a NPS watershed management program. These include crop price and subsidy levels, amount of base acres, current CRP participation level, and regulatory and cross-compliance requirements. The local District Conservationist and Extension Agent should be able to provide much of this information; but, care should be used because county level data may not accurately represent conditions for targeted farms or small watershed areas.

Crop prices and subsidy levels play an important role in determining the likelihood of a farmer submitting a CRP bid. Peanuts and tobacco, for example, are very profitable so that their inclusion in the CRP is very unlikely. A moderately productive acre of peanut land can yield approximately 6 times more revenue than a similarly productive acre of corn, while an acre of tobacco land can yield 15 times more revenue than an acre of corn (17). Higher production costs for peanuts and tobacco, compared to corn, will partially offset these differences. Table 2 shows the average per acre value for a number of crops and participation by crop in the CRP. As might be expected, peanuts and tobacco represent a very small percentage of total enrollments.

Many farmers are reluctant to place their highly erosive land in the Reserve because they must reduce their base acres and sacrifice a portion of their price subsidies. Furthermore, CRP regulations do not allow farmers with base acres to place only their less profitable non-base acres in the Reserve. The cropland enrolled is a prescribed mix of base and non-base acres. In addition, where real-estate development has increased land values, farmers may have less interest in the Reserve.

TABLE 2. CRP Crop Data

	Corn	Sorghum	Barley	Oats	Wheat	Rice	Cotton	Peanuts	Tobacco
Base* Acres in CRP (x mil.)	2.7	1.7	1.8	0.8	6.9	0.01	0.9	0.01	0.001
Value of** Production (\$/acre)	\$284	\$141	\$99	\$81	\$188	\$430	\$353	\$632	\$3612
*CRP base acres represent 65% of total sign-ups. Crop data is not available for non-base acres.									
**Value of Production equals Total Value of Production divided by Total Acres Harvested.									
Source: <i>Agricultural Statistics</i> . Washington, D.C.: USDA, 1986.									

Current participation level in the CRP may also indicate future participation in the critical area. Future participation may turn downwards if most marginal cropland is already in the Reserve, if demand for local crops is increasing, if the county has reached its CRP cropland limit, or if other USDA programs are more attractive. Information on current county participation is available from ASCS and SCS state and county offices.

Under the Conservation Compliance (CC) provisions, farmers with highly erosive cropland must implement a conservation plan by 1995 to maintain eligibility for federal subsidy programs. It is expected that 83 million acres will need treatment at an initial cost of \$25 to \$60 per acre (4). CRP offers an attractive alternative to CC requirements for those farms with marginal cropland that meet all highly erodible land criteria, cropping history, and ownership requirements. Of the 83 million acres that require treatment under CC, it is expected that 45 million of the most difficult to manage acres will be enrolled in the CRP (4).

Long-Term Maintenance of NPS Controls

The CRP can be an effective tool to improve water resources impaired by cropping activities, however, states will need to insure the long-term maintenance of NPS controls made possible by CRP. After ten years, farmers participating in the Reserve are allowed to return their cropland to production. At the same time, impaired water resources may require 3 to 5 years to show improvement and longer to reach their desired status.

The Conservation Compliance program will play a major role in maintaining CRP water quality improvements. As CRP leases expire, many farmers will be required to implement CC plans that minimize the soil erosion from these croplands. While it is too early to say how effective these plans will be in reducing off-site impacts, states should have an opportunity to work with farmers and SCS to insure that the best possible plans are implemented. Because farmer participation in CC is tied to farm program benefits, some farmers with highly productive soils who do not participate in these programs may revert back to the same cropping practices used prior to the CRP. In other cases, farmers may find it more profitable to leave their highly erosive cropland in vegetative cover rather than go to the expense of implementing a CC plan.

As mentioned earlier, tree planting, instead of vegetative cover, can increase the effective longevity of CRP leases 5 to 10 years. Tree planting may be particularly appropriate for CRP filter strips because CC will not protect these croplands after the CRP leases expire. Proper timber harvesting, however, is important to minimize off-site impacts.

Lastly, states may develop their own programs that either encourage or require farmers to minimize the effect of returning CRP lands on important water resources. States may want to consider additional payments or tax incentives for farmers who agree to continue their CRP lease with the state temporarily or permanently. Education campaigns that stress the important role CRP lands played in improving water quality may also help. Some states may find that a regulatory program works best. A combination of these different approaches will probably be most effective. The success of the CRP at improving water quality will probably determine the likelihood of a state developing new agricultural NPS programs.

Checklist for Section 319/CRP Coordination

To facilitate Section 319/CRP coordination, see the checklist in Figure 4. It suggests a list of activities to promote a coordinated program. Each state should modify this list to fit its circumstances. The basic elements of the coordinated effort illustrated in the checklist, are described below.

Identify NPS Critical Watersheds from Section 319 NPS Assessments. Effective use of the CRP in state Section 319 NPS programs starts with targeting. The targeting approach recommended in EPA's NPS Guidance Manual is to identify impaired water resources then develop programs to treat the highest priority resources first. EPA recommends prioritization of water resources based on: a) an identifiable water impairment that is controllable with available BMPs; b) high probability of water quality improvement given funding and staff resources; and, c) high public use value. A detailed discussion of the targeting concept is provided in "Setting Priorities: the Key to Nonpoint Source Pollution," available from EPA Headquarters and Regional offices (3).

CHECKLIST FOR SECTION 319/CRP COORDINATION

Activity Completed

1) Identify NPS Critical Watersheds from Section 319 NPS Assessment

Review Section 319 NPS assessment

Evaluate NPS and point source contribution for critical watersheds

2) Select NPS Critical Watersheds for Section 319/CRP Coordination

Identify watersheds where permanent vegetative cover and filter strips
could lead to water quality improvements

Evaluate potential CRP participation by area farmers

3) Develop Interagency Program

Participate in state and county Review Group meetings

Establish agency roles

Set realistic goals

Develop interagency agreements

4) Implement Coordinated NPS Watershed Management Program

Identify overlap between CRP eligible cropland and water
quality critical areas

Publicize NPS watershed project and CRP opportunities

Target farmers in critical areas for personal contact

Identify additional funding sources to "piggy-back" state and local
funds with cost-share monies and rental payments from CRP

Facilitate CRP sign-up for farmers in critical areas

Control NPS and point sources not eligible for CRP

5) Develop Strategy for Long-Term NPS Controls

Promote CRP tree planting

Develop state and local NPS initiatives

Coordinate with Conservation Compliance activities

Develop long-term working relationship with USDA

Select NPS Critical Watersheds for Section 319/CRP Coordination. States should review a number of factors before determining if a coordinated Section 319/CRP effort is worthwhile for a watershed impaired by agricultural activities. Farmers may be more inclined to participate in the Reserve where CRP participation is already high, farming is less profitable, or farmers are faced with the implementation of expensive Conservation Compliance plans. In contrast, production of highly profitable crops, the existence of base acres, and competition from real estate developers can increase farmer reluctance to place their highly erosive cropland in the Reserve. Watersheds where the CRP can help improve water quality should be identified in NPS Assessment Reports.

Develop Interagency Program. When coordinating Section 319 activities and CRP, state water quality officials should work with ASCS State Conservation Review Group and County Conservation Review Group members. The review groups provide important input to the State Technical Committee regarding erosion control criteria, eligible conservation practices, information and education programs, and other items of importance to a NPS control effort.

Coordination requires state water quality agencies and USDA to focus program resources and expertise on NPS control efforts that will achieve both Section 319 and CRP objectives. A clear understanding of each agency's roles, responsibilities and capabilities, and realistic program goals is critical to successful coordination. The inter-agency mechanism for coordinating Section 319 and CRP should be presented in each state's NPS management program report.

Implement a Coordinated NPS Watershed Management Program. Permanent vegetative cover and filter strips are available under the CRP to interested farmers on a voluntary basis. For state water quality agencies, the CRP facilitates the implementation of these BMPs and provides a mechanism for controlling agricultural NPS pollution originating from highly erosive cropland.

Permanent vegetative cover on highly erosive cropland and filter strips adjacent to streams can effectively reduce certain agricultural NPS pollutants to surface waters. Vegetative cover is effective for reducing nutrient, pesticide and turbidity problems where they are associated with highly erosive soils. Filter strips can help control sediment and associated pollutants from sheet and shallow channel runoff. Filter strips can also enhance riparian flora and fauna.

States can enhance CRP's role in improving water quality by publicizing the CRP in targeted watersheds and notifying farmers that their highly erosive marginal cropland may be more profitable in the Reserve. One-on-one discussions with farmers in NPS critical areas of the watershed is an especially effective method for publicizing information.

CRP can serve as a base of support to address agricultural NPS pollution with states providing additional funds to increase CRP participation in NPS critical areas. State incentives to increase CRP participation include additional cost-share money to implement BMPs, annual or lump-sum payments to augment CRP rental payments, or more innovative incentives. Directing state cost-share funds to augment CRP payments can significantly expand the effectiveness of state resources for reducing agricultural NPS pollution.

Develop Strategy for Long-Term NPS Controls. States can play an important role in developing a long-term strategy for maintaining water quality improvements gained with the help of CRP. Issues to consider include the CC provisions, promoting tree planting, developing state and local initiatives, and developing a long-term working relationship with USDA.

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