

### 6.3 Conservation Compliance and Sodbuster

*Compliance and Sodbuster provisions for conservation of highly erodible lands (HEL) were introduced in the 1985 Food Security Act. Nearly two-thirds of all HEL now has a fully applied conservation system, with 85 percent expected under conservation in 1995.*

The Food Security Act of 1985 included provisions for farmers who cultivate land classified as highly erodible. Specifically, any lands cultivated in any year between 1981 and 1985 and classified as *highly erodible land* (HEL) [italicized terms are defined in glossary at the end of this module] are subject to the conservation *compliance provisions* (affecting 149 million acres) and must be farmed using an SCS (Soil Conservation Service) *approved conservation system*. This system becomes an *applied conservation system* when the farmer meets the established implementation schedule. Also included in the 1985 Act was a stricter Sodbuster provision. Sodbuster pertains to all HEL that was not cropped during 1981-85 (224 million acres); anyone cultivating these lands must adopt a basic conservation system that reduces erosion to the T level.<sup>1</sup> A *violation* of either conservation compliance or Sodbuster will result in loss of some or all USDA program benefits.

#### More HEL Is in Compliance—Erosion Levels Are Down

The deadline for having a fully applied conservation system is January 1, 1995. By the end of 1993, 96 percent of HEL designations, covering 144 million acres, had an approved conservation system. Two-thirds of this acreage (98 million acres) had fully implemented systems (table 6.3.1), up from 86 million acres in April 1993.

Most conservation plans feature crop residue management, which can be achieved through conservation tillage and crop rotation (see chapter 4). An estimated 75 percent of conservation plans require some form of crop residue management. Conservation plans may also include contour farming, cover cropping, grassed waterways, sediment control basins, or other practices or structures. An SCS status review in March 1994 indicated that the average crop residue level on HEL with an applied conservation system is 30 percent ground cover, which is one-third higher than required crop residue levels averaging 22 percent. The highest average levels of planned crop residue are in the Southeast and Appalachian States.

Fifteen percent of conservation plans, mainly in Southern and Midwestern States, require erosion control structures such as terraces, contour strips, and diversions.

The March 1994 review also showed that average annual soil erosion on all HEL fields, after fully applying conservation systems, would drop from 17.4 tons per acre before compliance to 5.8 tons. The average erosion rate on HEL fields under full compliance would be 1.3 T, compared with 4 T prior to compliance. In several States, primarily in the West, average compliance erosion rates are below T. Prior to compliance, no States had average erosion rates at or below T on HEL fields. Regional trends mirror national estimates, with no region lagging significantly. For the 98 million acres currently in full compliance, SCS estimates that average annual erosion has been reduced from 19.8 tons per acre to 5.9 tons.

Based on pre-conservation compliance cropping and management practices, it is estimated that at least 35 million acres of HEL were in compliance before

**Table 6.3.1—Statistics on highly erodible land (HEL) subject to conservation compliance, 1993**

Item	Million acres
HEL designations	149
HEL acres with an approved conservation system	144
HEL certified in full compliance (approved conservation system fully applied)	98
HEL with an approved conservation system not fully applied or not yet certified	46
HEL in the CRP <sup>1</sup>	28
Highly erodible soils eroding at the T level or less in 1987 <sup>2</sup>	35

<sup>1</sup> Estimated at 76 percent of the 36.4 million acres in the CRP. This percentage is based on an SCS survey of 5 percent of CRP contracts.

<sup>2</sup> Based on 35 million acres of highly erodible soils found in the 1987 National Resources Inventory to be eroding at T or less (which would qualify these soils as being in compliance).

Source: USDA, Soil Conservation Service data and ERS estimates.

implementation of the 1985 Act (table 6.3.1). Thus, of the 98 million acres of HEL with fully applied conservation systems, about 63 million acres of HEL have adopted approved conservation practices as a result of the conservation provisions in the 1985 and 1990 Farm Acts. However, some of this is CRP land which, if returned to crop production, will require a new conservation plan. Full application of plans has likely increased as the January 1, 1995, deadline approaches, as is often the case with impending deadlines (for example, Federal income tax filings in April 1995). SCS projects compliance at 85 percent or more of HEL in 1995 (fig. 6.3.1).

Through 1992, 1,944 producers had been disqualified from USDA programs because of violations of compliance provisions. Violators include producers who requested USDA program benefits but failed to meet interim compliance deadlines (including conservation compliance and Sodbuster) or who failed to develop an approved conservation system. This failure has disqualified over 151,000 acres of land for USDA program benefits. The estimated value of benefits denied is over \$7 million (table 6.3.2).

### Conservation Compliance and Sodbuster Represent a New Approach to Conservation

Prior to conservation compliance and Sodbuster, Federal efforts to promote soil conservation focused on extension, technical support, cost-share programs, and land retirement. However, soil erosion achievements made since the 1930's were diminishing as farmers brought land into production in response to the high producer prices during the 1970's.<sup>2</sup> More intensive cropping practices as well as conversion of highly erodible land can degrade soil resources, contribute to surface and groundwater pollution, and degrade air quality from wind erosion. Public awareness of these types of environmental problems helped to bring about the conservation policies in the 1985 and 1990 Farm Acts.

Conservation compliance and Sodbuster provisions were innovative because they linked farm program payments to conservation performance. Programs requiring conservation compliance include price support, loan rate, crop insurance, disaster relief, CRP, and FmHA loan programs. Because of high

<sup>2</sup> Cropland harvested between 1969 and 1977 increased every year (except 1972), and was at its highest level since the 1940's by 1981 (Daugherty, 1991). A 1975 survey by SCS reported that erosion on the additional cropland was typically much higher than on land already in production (American Agricultural Economics Association, 1986).

**Table 6.3.2—Conservation compliance and Sodbuster violations, 1986-92**

Year	Producers found in violation	Land in violation	Value of benefits denied
	<i>Number</i>	<i>Acres</i>	<i>Dollars</i>
1986	2	10	10,834
1987	66	3,289	224,328
1988	174	3,745	530,974
1989	83	2,957	238,239
1990	342	60,295	1,555,209
1991	584	42,675	2,928,188
1992	693	38,503	1,803,250
Total	1,944	151,474	7,291,022

Source: USDA, ASCS data.

participation rates for some of these programs, the range of compliance reaches further than just those who receive deficiency payments.<sup>3</sup> While linking program payments to conservation plans is an effective way to meet conservation goals, the effectiveness is dependent on program participation—if programs become unattractive to farmers for whatever reason, the compliance leverage is weakened.

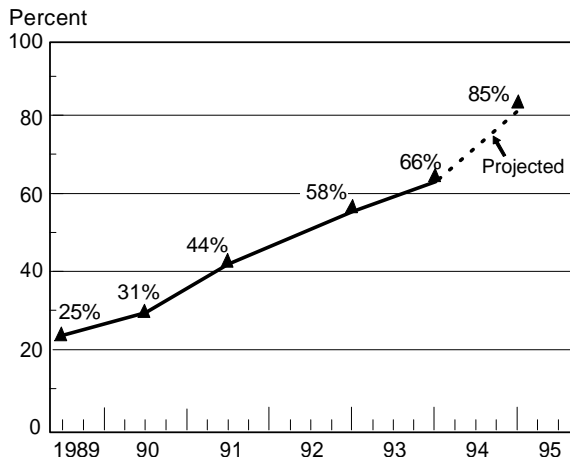
Conservation compliance and Sodbuster are proving to be effective erosion control tools, but have not been employed to achieve comprehensive soil quality, water quality, or wildlife goals. Conservation compliance is not required on all farmland where soil erosion may be harmful to the environment; the provision has limited coverage in some intensive-water-use regions (Ribaud, 1986). Further, conservation compliance and Sodbuster were not designed to address other agriculturally related environmental problems. As the National Research Council reports (1993), other forms of soil degradation, such as compaction and salinization, which can be equally as serious as erosion in some areas, are not subject to control under the compliance provision. Also, farmers who produce crops on land vulnerable to chemical leaching (which may not be HEL) are not required to alter their management practices in order to be eligible for USDA programs.

In addition to concerns raised about the design of the compliance provision, two other important concerns

<sup>3</sup> For example, according to the 1993 USDA Cropping Practices Survey, 81 percent of HEL acreage planted to corn and approximately 95 percent of HEL acreage planted to wheat and cotton were enrolled in a price support program.

Figure 6.3.1

**Conservation compliance plan implementation program \***



\* Highly erodible land (HEL) acres with plans that are in full compliance (all conservation plan practices applied).  
Source: USDA, SCS data.

pertain to the effectiveness of the provision: (1) changes in minimum compliance standards, and (2) the rate of conservation plan implementation. Preliminary program rules, issued in 1986, required that conservation systems for highly erodible cropland had to reduce erosion down to the soil loss tolerance or T value for the soil; in the case of economic hardship, a 2T value could be used. By 1987, SCS became concerned that the T or 2T standard could be too costly for some farmers and might take significant portions of land out of production. Consequently, the agency decided that conservation plans could be based on systems that are economically and technically feasible for the farmers' local area. These "alternative conservation systems" do not necessarily achieve the T level of erosion, but SCS determined that no significant impact to the "quality of human environment" would result from this new standard (USDA, 1988). While SCS considered this new standard necessary to ensure a high rate of compliance, critics feared this change would result in a far less effective provision. Although the issue has not been resolved, the March 1994 review reports that annual erosion rates for HEL fields with fully implemented plans average 1.3 T.

Concerns about the rate of conservation plan implementation focus on SCS administration of the conservation compliance and Sodbuster provisions. Two reports, one by the USDA Office of Inspector General and one by the Soil and Water Conservation Society, assess the administration of the provisions (see box, "Summary of Reports Monitoring Conservation Compliance Provisions").

**The Costs and Benefits of Conservation Compliance—The Economic Viewpoint**

While fully implemented conservation plans are known to reduce soil erosion, an economic assessment of conservation compliance and Sodbuster would focus on valuing these benefits to farmers, taxpayers, and consumers, and on determining the cost of achieving these benefits. For example, if the onfarm costs of compliance are significant, some farmers may experience lower or negative profit margins. If enough farmers face higher costs, crop supplies could be reduced and food and feed prices could rise. Higher prices could benefit farmers, but at the expense of consumers. Other costs include the administrative costs of the compliance programs, which are funded at taxpayer expense. Benefits include maintaining onfarm productivity as well as the value associated with reducing the off-farm effects of soil erosion, such as water and air quality degradation, siltation of ditches, etc.

**Costs**

For many farmers, conservation compliance can require them to change their crop rotations or tillage methods or to construct erosion control structures. Of all HEL (including land enrolled in the CRP), about 42 percent requires no change in production practices to meet conservation plan requirements. The remaining 86 million acres of HEL may require the purchase of new equipment to implement a different crop rotation, tillage practice, or erosion control structure, as well as human capital expenses needed to learn new practices.

Research on the onfarm costs of conservation compliance indicates that the majority of HEL can be brought into compliance without significant economic burden. For example, a national survey of producers subject to conservation compliance, conducted in the second half of 1992, indicated that 39 percent expected no change in earnings after fully implementing their conservation system, and an additional 34 percent expected increased earnings (Esseks and Kraft, 1993).

However, other research shows that erosion cannot be significantly reduced on some HEL without considerable economic burden. Nelson and Seitz (1979) estimate that farms on moderately productive soils located on steeply sloped land would experience significant income loss to reduce erosion to T level. Nearly 14 percent of the sample farm acreage in their Corn Belt study were in this land class. Barbarika and Dicks (1988) measured the costs to producers and

taxpayers from reducing erosion on HEL to the T standard while holding crop rotations unchanged, and found the average cost to be about \$15 per acre.<sup>4</sup>

Although alternative conservation systems are designed to balance economic and conservation objectives, the SCS expects that as much as 15 percent of HEL will not come into compliance. Compliance as currently implemented does not require erosion be reduced to T, but these findings demonstrate the difficulty some producers will have in meeting the compliance provision.

USDA administers several programs that provide financial (cost-share) and technical assistance to producers who adopt conservation practices, including the installation of erosion abatement structures. But the General Accounting Office found that implementing conservation plans will be difficult for many producers because of insufficient cost-share funds. A recent Soil and Water Conservation Society study found that, in some areas, cost-share funding for terrace construction was oversubscribed by a factor of 10 based on annual cost-share budgets. While USDA has a Crop Residue Management Action Plan to assist producers in implementing the residue components of their conservation plans, this program does not provide for cost-share funding; instead, it focuses on other important aspects of technology transfer—speeding the delivery of information, technology training, and technical assistance.

The off-farm costs of conservation compliance are difficult to measure. For the same reasons that conservation compliance and Sodbuster could lead to higher prices received by farmers (if supplies are reduced), food retailers and consumers would pay higher prices for these products. The increased consumer costs would offset the potential economic benefit to farmers. There is not yet a measure of the price or quantity effects of the compliance provision, but there is compelling evidence that such effects will be small (for example, see discussion in Young, Walker, and Kanjo, 1991).

Ideally, the administrative costs of the compliance provision should be measured as the difference between costs with and without the provision. Although no such estimates have been made, SCS estimates that in 1994, 43 percent (6,000 staff-years) of available staff-years were required solely for administering the conservation compliance provision

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<sup>4</sup> This estimate also includes public expenditures for SCS technical assistance in implementing conservation plans.

and Sodbuster, and that 50 percent fewer will be needed in 1995, with an additional 33-percent reduction in 1996 (Zinn, 1993). But two important figures are absent from these data: how the provision influenced the total size of SCS staff years, and whether any services previously provided by existing staff were phased out due to compliance duties.

### *Benefits*

Farmers who adopt conservation plans benefit by controlling the rate of soil erosion on their highly erodible fields, thereby maintaining the long-term productivity of the soil. The significance of this benefit depends on several factors, including the current topsoil depth and erosion rates, as well as the rate at which the producer discounts future benefits (if the producer does not place a high value on potential future gains in income due to maintaining the soil's long-term productivity, then the gains of reducing soil erosion will be perceived as small, and vice versa). Further potential benefits can be realized by producers, including those not subject to compliance, due to higher commodity prices should there be sufficient declines in production under conservation systems.

The off-farm benefits of compliance and Sodbuster may be substantial. Reduced soil erosion and water runoff because of these provisions will lower delivery of sediment and pesticide and nutrient residues to U.S. waters (Ribaud, 1986). Fewer contaminants will generate benefits to domestic, industrial, and recreational water users.

Controlling wind erosion, predominantly a problem west of the Mississippi River, also provides benefits. Less windblown soil reduces such costs as residential and commercial cleaning and painting, automotive and aircraft maintenance, laundry, and landscaping. Health and recreational benefits are also realized.

However, there is significant uncertainty in measuring water and air quality benefits, because predicting weather patterns and the physical process of soil erosion, runoff, and leaching are inexact sciences. Using a number of simplifying assumptions, and ignoring the chemical leaching effects to ground water, Ribaud and Young (1989) estimated roughly 56 cents of offsite benefits per ton of soil erosion abatement annually. In a related study (USDA, 1986), water quality benefits are estimated to range from 33 to 83 cents per ton abated. These estimates represent benefits for commercial and recreational uses, water storage, and reduced flood damage. Offsite benefits of wind erosion abatement also may

**Table 6.3.3—Benefits and costs of conservation compliance: regional estimates<sup>1</sup>**

Region	Per-acre benefit from--			Per-acre costs to--			Benefit/cost ratio
	Water quality	Air quality	Productivity	Producers	Federal Government	Net economic benefits	
<i>Annual 1993 dollars per acre</i>							
Northeast	35.63	0	0.16	3.57	3.43	28.80	5.12
Lake States	21.99	0	0.12	0.32	3.43	18.37	5.90
Corn Belt	15.61	0	0.25	8.90	3.43	3.53	1.29
Northern Plains	3.47	3.00	0.19	3.35	3.43	-0.11	0.98
Appalachia	23.58	0	0.24	3.51	3.43	16.89	3.43
Southeast	25.63	0	0.12	8.18	3.43	14.15	2.22
Delta	35.50	0	0.12	1.97	3.43	30.22	6.60
Southern Plains	5.26	4.63	0.33	2.34	3.43	4.45	1.77
Mountain	5.10	4.01	0.15	0.20	3.43	5.63	2.55
Pacific	31.83	1.09	0.14	2.23	3.43	27.40	5.85
United States	13.81	1.93	0.21	3.78	3.43	8.74	2.21

<sup>1</sup> For procedures used, see box "Measuring the Benefits and Costs of Conservation Compliance."

Sources: Onsite benefits based on USDA (1986), and SCS March 1994 status review. Off-site benefits are based on Ribaldo (1989), Huszar (1989), and SCS status review. Costs are based on Barbarika and Dicks (1988), SCS status review, and SCS staff-year projections. U.S. figures are weighted means of regional numbers, based on HEL acreage by region.

be substantial. Piper and Lee (1989), building on work by Huszar (1989), estimated reduced damages ranging from 30 cents to \$1.96 per ton of wind erosion abated.

### Conservation Compliance Dividends by Region

The SCS status review of HEL fields subject to compliance and other studies related to conservation and environmental issues can be used to estimate the benefits and costs of compliance (table 6.3.3, box "Measuring the Benefits and Costs of Conservation Compliance"). Overall, benefits exceed costs. These preliminary estimates indicate that a social dividend of over \$2 is realized for every dollar of combined public and private expenditures required by the compliance provision. The estimated discounted value of annual net benefits to society of \$218 per acre (using a discount rate of 4 percent) more than offsets compliance startup costs, such as USDA staff years devoted to HEL determinations and development of conservation plans. Air quality benefits estimated here account only for household wind damage. Damage to firms, such as cleaning costs and transportation costs, as well as potential health and recreation benefits, is likely to bring total benefits further above costs.

At the regional level, the ratio of benefits to costs is wide-ranging. The Corn Belt and Northern Plains

regions show modest social dividends from compliance, especially relative to the Delta, Northeast, and Pacific regions. In the Mountain and Lake States regions, very few conservation plans require costly conservation structures, and yet reductions in soil erosion are substantial. In the Corn Belt and Southeast regions, substantial reductions in soil erosion are achieved, but many plans specify costly conservation structures. Based on the preliminary estimates, benefits in the Northern Plains fall short of total compliance costs, but a broader accounting of air quality benefits could more than offset this shortfall.

*Author: Patrick Canning, (202) 219-0776.*

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## Measuring the Benefits and Costs of Conservation Compliance

The benefit and cost estimates presented in table 6.3.3 are based on a combination of sources. A March 1994 status review provides detailed information related to the goals and accomplishments of the conservation compliance provision. This information is translated into monetary estimates of annual benefits and costs using studies that estimate the economic impacts of soil erosion to households, firms, and municipalities.

### Water Quality

Several studies have looked at the relationship between water quality and soil erosion from farmland. Ribaudo (1989) estimated the value of total annual damage caused by soil erosion from all sources to the quality of water used by households, industry, and municipalities in the 10 farm production regions. The damages from cropland erosion per ton can be estimated by multiplying Ribaudo's regional damage estimate by cropland's percentage of total sediment delivery, and dividing the result by the region's total annual erosion from cropland. Multiplying the water quality damages per ton of soil erosion for each region times the erosion reduced by compliance in that region provides an estimate of compliance's water quality benefits in that region.

### Air Quality

Air quality is affected by wind-blown soil, which accounts for much of the erosion west of the Mississippi River. Like water-based erosion, a damage function for wind erosion depends on the use value of the damaged good and on the total volume of wind erosion. Huszar (1989) uses contingent valuation techniques to determine the annual damage per household per ton of wind-blown dust in New Mexico. As with water-based soil erosion, marginal wind-blown soil abatement benefits are smaller in sparsely populated areas, and where the total volume of wind erosion is large relative to the reduction achieved by compliance. Huszar's damage function is applied to estimate county-level impacts of a reduction in wind erosion from conservation compliance in all regions west of the Mississippi River. These estimates are then aggregated to farm production regions. In eastern regions, wind erosion damage is not estimated, although it is a problem in some areas. The estimates include only household-related damage. Inclusion of dust damage to firms, health, and recreation would increase the damage values.

### Productivity

Onfarm benefits of soil conservation have been estimated by USDA (1986) as the net current value of future productivity gains to soil per ton of erosion abatement. Weighting the USDA value per ton of soil conservation for each soil group by the percentage of acreage in each soil group for each county with significant HEL acreage provides estimates of the onfarm net present value per ton of soil conservation. Multiplying this value by soil savings from conservation compliance and annualizing these benefits (based on a 4-percent discount rate) gives estimates of annual productivity gains.

### Producer and Government Costs

Conservation compliance costs of producers are estimated at the field level. For HEL fields that need only conservation tillage, crop rotation, or other residue management (no structures), compliance cost is assumed to be zero. Barbarika and Dicks (1989) assumed a no-cost transition to conservation tillage when this was all that was required for full compliance. In a national survey reported by Esseks and Kraft (1993), 1 in 5 producers subject to compliance expected to incur costs, and under 1 in 20 expected significant costs. Where structures are prescribed by SCS, one of two equations (depending on whether or not conservation tillage is already applied to the field), estimated by Barbarika and Dicks, is used to relate annual installation and maintenance costs per acre to the level of soil erosion and the size of the treated field. Since the Barbarika and Dicks equations include the value of SCS technical assistance, this value is deducted from annual costs to avoid double-counting government costs.

Government costs of carrying out compliance are based on the value of continuing staff time per acre. USDA's budgeted annual staff years devoted to compliance duties are projected to level off at just under 2,000 by 1996. To be consistent with Barbarika and Dicks, opportunity costs are set at \$82 per staff hour (\$62.50 per staff hour in 1985 dollars converted to 1993 dollars). Compliance acres are estimated at 100 million, 86 percent of total HEL acreage (Esseks and Kraft, 1993), less 28 million acres enrolled in the CRP. The startup costs of compliance, such as the staff years devoted to HEL determinations and development of conservation plans, are not included since they would amount to very little on an annualized basis.

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## **Summary of Reports Monitoring Conservation Compliance Provisions**

### **Soil and Water Conservation Society (1992)**

Between 1989 and 1991, the SWCS monitored the development and implementation of conservation plans on HEL fields in 30 U.S. counties. The SWCS study included extensive interviews with local USDA officials involved in implementing the provisions, as well as local agribusiness specialists and producers. Of the HEL sites visited by the SWCS Steering Committee, 31 percent of the prescribed practices could not be verified as actively applied. Two-thirds of sites relied largely or entirely on crop residue management, and the Committee questioned the ability of producers to meet the high residue levels specified for many of these plans. In light of these findings, the Committee expressed concern about uneven monitoring and enforcement of conservation compliance. For the counties visited in the SWCS study, SCS reported only one potential violation as a result of its status reviews in 1990 and 1991. The timing of SCS field visits was also questioned, as many were scheduled at inappropriate times to properly measure plan implementation. Other visits were found to be conducted inappropriately, in terms of the measurement techniques employed by SCS personnel monitoring plan implementation. The SWCS committee found SCS staffing inadequate for monitoring and technical assistance, and cost-share funding too low for implementing conservation plans. The SWCS survey consequently predicted that nearly 10 percent of farmers may elect not to participate in Federal farm programs, and some may be forced out of business. The report concluded that soil erosion reductions due to conservation compliance would be considerable, but less than anticipated.

### **USDA Office of Inspector General (1992)**

The OIG preformed an audit of SCS and ASCS administration of conservation compliance for 30 counties across 10 States for January - September 1991. A random sample of records on 359 tracts out of 38,759 from the 1991 SCS status review (see below) was drawn, of which 220 were relevant to the audit (72 plans did not require practices until after the audit, and the remainder were invalid samples). Of these, 116 had a completed SCS status review in 1991. The audit also included visits to 155 farms that had reconstituted plans in 1990 or 1991 due to changes in the farm operations. OIG found (1) SCS field staff had insufficient training to administer conservation compliance, (2) SCS and ASCS did not develop procedures to ensure proper reconstitution of revised conservation plans, and (3) producers were not subject to the deterrents developed to encourage their compliance. The report also noted that producers on 10 percent of the tracts were not in compliance, and an estimated \$20 million in Federal program payments could have been suspended on the 5-percent sample of HEL fields in the 10 States. Of the 292 developed conservation plans in the sample, 86 percent did not meet SCS technical requirements.

### **Soil Conservation Service Status Review (1994)**

Each year, SCS randomly selects 5 percent of all HEL tracts nationally to conduct a status review. Tracts rescheduled from previous years due to variances and tracts referred to SCS by other agencies or whistleblowers are also visited each year. For each review, an SCS soil conservationist visits the fields to determine if a developed conservation system is being implemented properly. Erosion rates are determined, then inadequacies are either reported to agencies administering Federal farm programs or granted a variance. Specific instructions on bringing the tract into compliance are provided. Recent changes in the review process now target HEL that is enrolled in Federal farm programs, and thus is affected by compliance. A detailed evaluation of program implementation in several States will serve as an internal quality control of program administration.

### **U.S. General Accounting Office (1994)**

GAO evaluated progress made by SCS in implementing the conservation compliance and swampbuster programs established in 1985. A previous GAO evaluation (1990) had indicated that SCS needed to improve the quality of the farmers' conservation plans and improve enforcement activities. GAO examined whether recent SCS reforms addressing the concerns of the previous evaluations had resulted in improvements in the management and effectiveness of conservation compliance and swampbuster. GAO concluded that while there were positive aspects of the reforms, SCS still needed to improve its enforcement activities through better managed status reviews, and by establishing clearer authority of State and county offices over conservation plans and wetland identifications. GAO also recognized that effective enforcement of conservation plans and swampbuster requires a change in the "culture" of SCS, a change that acknowledges SCS' newer, more regulatory role rather than its traditional role of advising farmers.



## Glossary

**Approved conservation system.** A set of field-specific cropping and managerial soil conservation practices designed in cooperation with local SCS agents to reduce soil erosion. Basic conservation systems, which pertain to Sodbuster lands, reduce erosion to the tolerance level. Alternative conservation systems provide a significant level of erosion reduction without excessive economic burden on producers for land subject to conservation compliance.

**Applied conservation system.** An approved conservation system that has been determined by a local SCS official, based on standards contained in the SCS field office technical guide, to be partially implemented at some interim before 1995, and fully implemented before January 1, 1995.

**Compliance provision.** Requires all farmers producing on HEL to have an approved conservation system on those lands before January 1, 1990, to have a fully applied conservation system by January 1, 1995, and to meet interim deadlines for partial implementation. Violations result in disqualification from USDA programs.

**Field.** Refers to a contiguous tract of land under a single farm operation and isolated by permanent barriers, such as fences, waterways, or woodland.

**Highly erodible land (HEL).** Determinations made by SCS field staff include cropland in fields that have at least one-third or 50 acres (whichever is less) of highly erodible soils. These are soils with a natural erosion potential at least 8 times their T level. HEL classifications currently total 149 million acres. This number has increased over time as more producers apply for benefits and more determinations are made.

**Operating unit.** Represents all fields farmed by a single operator. The entire unit is subject to the penalties of noncompliance, provided any field in the unit is determined to be highly erodible and the operator of that field has not followed the approved conservation system guidelines.

**Violations/disqualifications.** Determined by ASCS, on recommendations of SCS field staff, based on the guidelines of the approved conservation system. Occurs when an HEL field fails to have a partially applied conservation system by a specified interim deadline, or a fully applied plan before January 1, 1995. Operators can request the development of a new plan or may be granted a temporary variance.