The Conservation Reserve Program: what happens when contracts expire?

by Ralph E. Heimlich and
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What will happen to the Conservation Reserve Program (CRP) in a few short years when contracts end? This question will be an important part of the 1995 farm bill debate. CRP provides important environmental benefits and is a significant component of some farm incomes. However, policy makers must decide what role remains for long-term land retirement programs in view of the budget deficit.

Here we review the status and effects of the CRP, including environmental performance, government costs, and the change in bid acceptance following the 1990 Food, Agriculture, Conservation, and Trade Act (FACTA). We summarize what is known about producers' post-contract plans for CRP acres and discuss some policy options that could perpetuate CRP conservation, wildlife, and environmental benefits on at least part of the land currently enrolled.

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The first CRP contracts, covering 2 million acres, expire in October 1995 (figure 1). In 1996 and 1997, contracts on more than 22 million acres expire. Nearly all contracts on the 36.5 million acres currently enrolled will expire by 2001. CRP contract expiration raises concerns about loss of the conservation, wildlife, and environmental benefits, particularly if commodity markets are favorable in 1996 and 1997.

Why wasn't this problem anticipated in 1985? Those involved in shaping the 1985 Food Security Act (FSA) were well aware of the "plow-out" of Soil Bank lands that occurred in the early 1970s. CRP and the conservation compliance provisions of the 1985 FSA were designed in tandem to prevent a recurrence of the Soil Bank experience. Conservation compliance denies farm program benefits to producers using highly erodible cropland and who fail to adopt a conservation plan and fully implement it before 1995. Unlike the Soil Bank, the CRP was targeted to highly erodible cropland and conservation

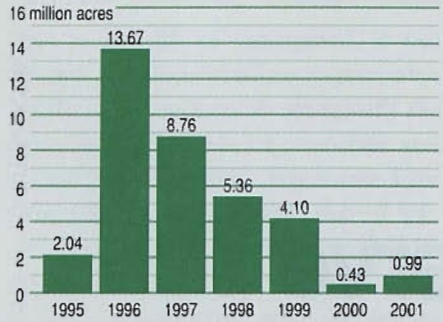


Figure 1. Post-contract availability of CRP land

Note: 22 million acres exit CRP in late 1996 and 1997.

compliance standards were enacted to keep CRP land from returning to crop production. In the interim, CRP would provide producers 10 years of rental payments to cushion a transition to noncropland uses.

Why won't conservation compliance keep most CRP land from returning to crop production? Two factors in the implementation of CRP and conservation compliance are responsible. First, farmers enrolled a large number of CRP acres with relatively low erodibility. Twenty-six percent of CRP acres have an erodibility index (EI) less than 8, and thus are not subject to conservation compliance (figure 2). This land was eligible because of high existing erosion rates, regardless of erodibility, or the presence of other environmentally sensitive conditions such as cropped wetlands or scour erosion. Only half of the acres that must comply are the most erodible acres (EI greater than 15) that will produce unacceptable soil losses without costly practices such as terraces or crop rotation changes.

Second, USDA changed the conservation compliance erosion goal from the originally proposed T value standard. The soil loss tolerance level (T) is the maximum level of soil erosion, usually 5 tons per acre per year, that will permit a high level of crop productivity to be sustained indefinitely. After reconsideration, USDA substituted alternative conservation cropping systems for the original T value standard. Alternative conservation systems are aimed at "obtaining a significant level of erosion reduction," but in many cases do not achieve tolerable soil loss (T). Because of these two facts, conservation compliance will probably not keep many CRP acres from returning to crop production, although the level of soil erosion from CRP acres returned to production will be significantly reduced from pre-enrollment levels.

CRP status

Farmers have enrolled about 36.5 million acres of highly erodible or environmentally sensitive cropland in the CRP through 377,000 ten-year CRP contracts (Osborn, Llacuna, and Linsenbigler). Eight percent of U.S. cropland is in the CRP, and nearly 60 percent of CRP acres are in the 10 Great Plains States (figure 3). USDA pays CRP participants an annual rent plus half the cost of establishing a conserving land cover. In exchange, producers retire highly erodible or other environmentally sensitive land from crop production under 10-year contracts. Annual rental payments average $50 per acre and nationwide total $1.8 billion annually. The CRP provides participating producers with a dependable source of income, reduces crop production, and decreases annual commodity program costs.

The vegetative cover established on

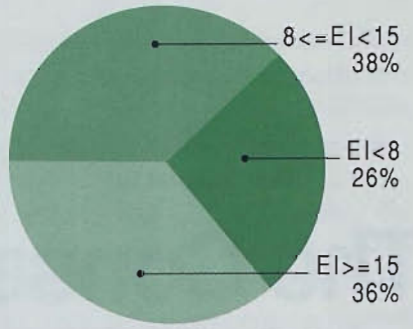


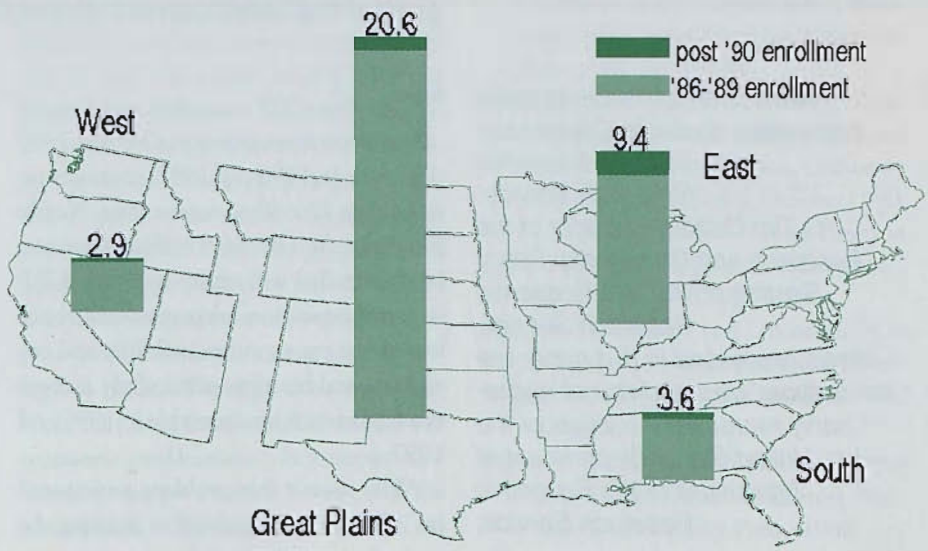
Figure 2. Erodibility of CRP acres

Note: 74% is subject to conservation compliance, but only 36% have EI of 15 or more. (EI = erodibility index)

CRP land improves surface water quality, creates wildlife habitat, preserves soil productivity, protects ground water, and reduces offsite wind erosion damage. A team of Economic Research Service (ERS) economists estimated the present value of natural resource benefits from a 45-million-acre CRP at $6.1 to $13.8 billion (Young and Osborn). CRP reduced soil erosion nearly 700 million tons per year, or an average of 19 tons per acre per year (table 1). This is a 22 percent reduction in pre-CRP U.S. cropland erosion. Most CRP acres are planted in grass, but the CRP also includes 2.4 million acres of trees, 2 million acres of special wildlife practices, 410,000 acres of wetlands, and 5,200 miles of filter strips along waterways.

The latest CRP signup (number 12)

Figure 3. Geographic distribution of CRP enrollment (million acres)



was held in June 1992. However, Congress did not include money to enroll additional acres in the fiscal year 1993 appropriation. The president's fiscal year 1994 budget contains funds for an additional 1 million acre enrollment, but Congress appropriated no new funds.

Since the 1990 FACTA, farmers enrolled 2.6 million acres in 3 signups. The bid acceptance procedure for these signups was significantly revised from the old process used in 1986-1989. The new procedure uses a productivity-based rental rate screen and ranks bids based on the ratio of an environmental benefits index (EBI) to the government cost of the contract. A recent ERS analysis of these post-1990 signups indicates that the revised procedure has improved CRP's environmental and economic performance in the following ways:

- 12 percent of post-1990 enrollment was planted to trees, compared with 6 percent in 1986-1989.
- Post-1990 erosion reductions averaged 16 tons per acre; an improvement over the 14 ton per acre average of the 9th signup, the last to be held in the 1986-1989 period.
- Two-thirds of the erosion reduction in the post-1990 signups was water related; most erosion reduction in the 1986-1989 signups was wind related. Both forms of erosion can reduce agricultural productivity, but reduction of water-caused erosion generally produces greater offsite water-quality, recreational, and wildlife benefits.
- Almost 15 percent of post-1990 acres came from conservation priority area watersheds draining into the Chesapeake Bay, Long Island Sound, and the Great Lakes Region, compared with only 2 percent in the first nine signups. Congress established conservation priority areas in the 1990 FACTA and directed USDA to achieve a significant level of enrollment in these watersheds.
- Eighty-seven percent of land rejected by the new process sought rents higher than fair market prices for comparable land allowed under the productivity-based rental rate screen. Most of this land was in the west and two-thirds was predominantly subject to wind erosion.

Table 1. CRP Status, signups 1-12

Number of contracts	377,000
Acres enrolled	36.5 million
Total erosion reduction (tons/year)	700 million
Average erosion reduction (tons/acre/year)	19
Total rental cost ($/year)	1.8 billion
Average rental cost ($/acre/year)	50
Acres planted in trees (%)	6
Acres of crop acreage base idled	23.3 million

Land use without CRP

According to a 1990 survey conducted by the Soil and Water Conservation Society, 46 percent of respondents said they already had plans for their CRP acres after the contracts expire. Those with plans said that they would return half the land to crop production, leave one-third in grass for livestock grazing or hay production, and keep almost a tenth in tree cover or in grass or trees for wildlife habitat (figure 4). Producers cited economics as the most important factor in determining their future use of CRP land. The Soil and Water Conservation Society is conducting a new survey this year designed to focus on contract holders' likely responses to changing economic conditions.

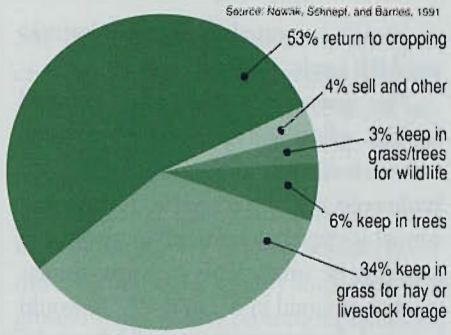


Figure 4. Landowners' plans for post-contract CRP acres

Note: These percentages do not match those reported by Nowak, Schnepf, and Barnes (1991) because they did not weight individual responses by the number of CRP acres controleed by each producer.

It is too early to accurately predict the economic and budgetary conditions that will exist when CRP contracts end. However, a number of emerging forces will influence commodity demands and play a role in landowners' decisions to crop, graze, or idle CRP land. They include trade negotiations such as GATT and NAFTA, economic transformations in the former Soviet Union and Eastern Bloc, the role of ethanol in meeting Clean Air Act standards, and changes in U.S. agricultural support policy such as President Clinton's recent proposal to eliminate the 0/50/92 programs and increase normal flex acres under triple base to 25 percent.

ERS is modeling the impacts of CRP contract expiration. We are analyzing three demand scenarios that assume that no government action is taken to perpetuate CRP land cover when contracts expire.

In the first scenario, we assume that demands for U.S. wheat and feed grains remain near recent levels. After contracts have expired, planted acreage could increase by approximately 13 million acres if annual set-aside rates (ARP) remain at their recent low levels. This is approximately 38 percent of the land in the CRP. However, without the supply control provided by the CRP, USDA would have to

counteract increased production by raising ARP levels.

The second scenario shows demand for U.S. wheat and feed grains increasing over current levels. In this case, most CRP land could return to crop production and annual acreage reduction programs would probably be small. This scenario, similar to what occurred in the mid-1970s, would be good for farmers but would have the most negative implications for soil erosion, water quality, and wildlife habitat benefits now provided by the CRP.

Finally, if demand for U.S. wheat and feed grains weakens from current levels, only a small amount of CRP land would likely return to crop production after contracts expire. The annual acreage reduction programs would increase more than under the level demand scenario, perhaps returning to the levels of the mid-1980s.

The switch from long-term to annual set-aside programs in the level- and weakening-demand scenarios would provide fewer overall soil erosion, water quality, and wildlife habitat benefits than if the land had remained in the cover established under CRP. There are three reasons for poorer environmental performance from annual programs:

- Land idled under annual set-aside is drawn from all land participating in programs, not targeted to highly erodible or environmentally sensitive land.
- Smaller tracts are idled under annual set-aside and these are less useful for wildlife habitat and to control erosion.
- Supply control needs fluctuate from year to year and farmers may change the location of their set-aside acreage, resulting in shorter periods under permanent cover and less well-established cover.

Some of the annual program's weaknesses for conservation and environmental protection could be overcome by providing greater incentives for long-term agreements, targeting sensitive lands, and paying closer attention to the quality and characteristics of vegetative cover required on set-aside land. The CRP's strengths as a long-term conservation program can become weaknesses in achieving other objectives: long-term idling is not sensitive to changing supply and demand conditions, can concentrate economic impacts from retiring land on local economies, and reduces farmers' flexibility in changing rotations and cropping patterns.

Eight percent of U.S. cropland is in the CRP, and nearly 60 percent of CRP acres are in the 10 Great Plains States.

Table 2. Effects of three selection strategies to retain 5 million acres in CRP

Effects	Strategy		
	Minimize rental cost	Maximize erosion reduction per dollar	Maximize EBI per dollar
Total rental cost (million $/year)	107	142	187
Average rental cost ($/acre/year)	21	29	38
Contract rental savings over current rental cost (million $/year)	87	62	54
Average erosion reduction (tons/acre/year)	24	53	32
Water-caused erosion (% of total)	18	23	32
Water quality priority areas (million acres)	0.1	0.04	1.2
Environmental benefits index per dollar (EBI/$)	140	146	172

Post-contract policy options

At a minimum, there should be nothing in federal farm policy that creates artificial incentives to recrop CRP land. Current regulations require USDA to protect crop acreage bases, quotas, and allotments on CRP land and to permit haying and grazing during specified periods for 5 years after a contract expires if the producer keeps the land in conserving uses. These provisions, along with commodity program provisions such as 0/50/92, planting flexibility, and multiyear set-aside, give producers alternatives to recropping CRP acres.

CRP contracts currently cost the government $1.8 billion each year. For budgetary reasons alone, extension of all CRP contracts is probably not realistic. Even if sufficient funds were available, continuation of all contracts might not be desirable. The 1990 FACTA's refocusing of the CRP demonstrates that reducing soil erosion, per se, is now less important than broader environmental goals, such as improving water quality or wildlife habitat. Some land enrolled earlier does not ad-

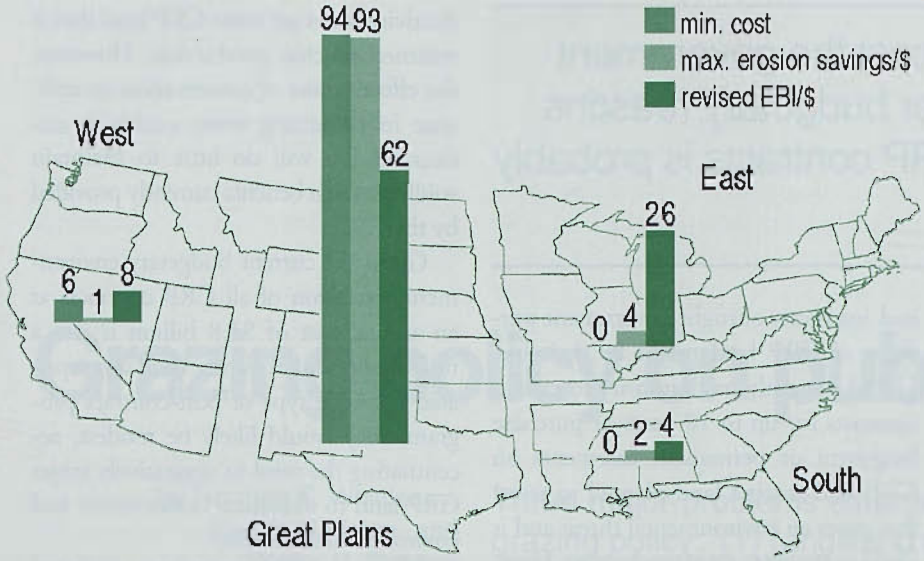


Figure 5. Five million acre contract extension strategies: simulated regional distribution percentages of enrolled land

dress current areas of concern. Consequently, policies designed to preserve CRP conservation and environmental benefits must be aggressively targeted to be most effective. Ideally, CRP land would be targeted for renewal based on the extent of conservation and environmental benefits, the likelihood of return to crop production, and the government costs necessary to induce farmers to continue conserving uses. The 1988 CRP appropriations language limiting rental rates to fair market values for comparable land and pressure to reduce the budget deficit imply that extension of current CRP contracts will be on more stringent terms than when the land was initially enrolled.

The bid acceptance procedure used for the post-1990 signups can be adapted to target CRP land for retention under whatever post-contract program Congress might pass in the next farm act. In practical terms, dollar estimates of the benefits provided by each of the 377,000 contracts cannot be estimated and are proxied by an index. In theory, the optimal size for a post-contract program could be determined using benefit/cost criteria. Inability to estimate dollar-denominated benefits precludes determining how much CRP land to retain. The environmental benefits index (EBI) calculated in the bid acceptance process could, however, identify the most cost-effective acres to select subject to a given funding or acreage limit.

To illustrate how this could work, we simulated three different strategies to target a post-contract extension of 5 million acres (table 2). The selection strategies include minimizing contract rental costs, maximizing erosion reduction per dollar of cost, and maximizing the value of a revised environmental benefits index (EBI) per dollar of cost, a criteria similar to that used in the post-1990 signups. CRP land planted to trees was considered ineligible for selection under all strategies and tree planting is not included in the revised EBI per dollar scenario since studies of land planted to trees under the Soil Bank show it is unlikely to return to crop production. Because vegetative cover is already established on CRP acres, additional establishment costs were not included in costs.

The revised EBI incorporates criteria used in the current bid acceptance procedure: surface water quality improvement, ground water quality protection, assistance to farmers most affected by conservation compliance, and enrollment in water quality priority areas. To these are added reduction of offsite costs of wind erosion, wildlife habitat for farm-related species, and deficiency payment savings.

Minimizing contract rental costs and maximizing erosion reductions per dollar each concentrate more than 90 percent of the 5-million-acre retention goal in the Great Plains States where wind erosion dominates (figure 5). Maximizing environmental benefits per dollar places 62 percent of the land in the Great Plains States and 26 percent in the Eastern States.

Minimizing contract rental costs retains 5 million acres in the CRP for a total annual cost of $107 million or $21 per acre, while maximizing environmental benefits per dollar requires an outlay of $187 million, or $38 per acre. CRP rental rates for contract renewal will likely be limited to average dryland cash rents adjusted for differences in soil productivity between parcels. Rental cost savings, calculated as the difference between the rental rates CRP contract holders now receive and lower future rental rates, equal $87 million per year for land targeted to minimize rental costs, an average of $17

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per acre. However, the EBI per dollar from minimizing rental cost is 23 percent less than for a strategy that maximizes environmental cost-effectiveness.

Maximizing erosion reductions per dollar reduces erosion an average of 53 tons per acre, but 78 percent is from reduced wind erosion. Maximizing environmental cost-effectiveness gives a lower average erosion reduction, but a larger proportion is reduced water erosion, and enrollment in water-quality priority areas is 30 times greater.

The three selection strategies continue to idle 3.2 to 3.8 million acres of commodity base. Maximizing environmental cost-effectiveness idles the most corn base (767,000 acres), compared with only 97,000 acres when minimizing rental costs. More productive land would be kept out of production by maximizing environmental cost-effectiveness than minimizing costs.

Regardless of which land is chosen for an extended program, conservation and environmental benefits on targeted land could be perpetuated through a number of different approaches. These include contract extensions or easements of varying durations (with or without haying and grazing privileges), cost-sharing fencing and watering facilities to assist conversion to livestock production, and transfer or purchase of crop acreage base. In limited instances, outright government purchase of CRP land might be desirable. USDA presently has authority to extend contracts for up to 10 years or purchase long-term or permanent easements on CRP land (except land planted to trees) that poses an environmental threat and is likely to return to crop production. However, Congress would have to appropriate funds for a post-contract program before this authority can be exercised.

Conclusions

After CRP contracts expire, annual rental payments made by USDA to CRP participants will end and producers will decide the next use of their land. Depending largely on commodity market conditions, most CRP acres will either be planted to crops, placed in annual acreage set-asides, kept in grass for livestock production, or left idle. Land first placed in the CRP will be available for crop production or other uses starting in late 1995.

CRP contract expiration raises concerns about loss of the conservation, wildlife, and environmental benefits that have been gained, particularly if commodity markets are favorable in 1996 and 1997. While the conservation compliance provision of farm legislation will probably not prevent much CRP land from returning to production, it will moderate increases in soil erosion and onsite productivity losses on most CRP land that is returned to crop production. However, the effectiveness of conservation compliance in protecting water quality is unclear, and it will do little to maintain wildlife habitat benefits currently provided by the CRP.

At a minimum, there should be nothing in federal farm policy that creates artificial incentives to recrop CRP land.

Given the current budgetary environment, extension of all CRP contracts at an annual cost of $1.8 billion is not a realistic option. If funds were appropriated for some type of post-contract program, they would likely be modest, accentuaring the need to aggressively target CRP land to maximize conservation and environmental benefits.

A process similar to the bid acceptance procedure used for the post-1990 CRP signups could help target CRP land under whatever post-contract program Congress might enact. A number of different approaches should be considered to perpetuate conservation and environmental benefits on targeted land, independent of which land is selected for an extended program. However, short of permanent easement or purchase, any extension of CRP contracts implies the need to revisit this issue each time contracts come up for renewal. ■

■ For more information

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