

# The Conservation Reserve Program: Achievements to Date and Challenges Ahead

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# Proposed 2013 Farm Bills

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## **Senate Farm Bill** (release on May 9)

*The Agriculture Reform, Food and Jobs Act of 2013*

- Reduce conservation spending by \$5 billion
- Reduce the CRP enrollment cap to 25 million acres

## **House Farm Bill** (release on May 10)

*The Federal Agriculture Reform and Risk Management (FARRM) Act of 2013*

- Reduce conservation spending by \$6 billion
- Reduce the CRP enrollment cap to 24 million acres

# Outline

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- Highlights of CRP Achievements
- Impacts of Reducing the Size of the CRP
- Criteria for Selecting CRP Contracts for Renewal
- Economic, Environmental and Distributional Implications of the Selection Criteria

# The CRP

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- Established by the Food Security Act of 1985, reauthorized in all subsequent Farm Bills.
- Under the CRP, farmers convert highly erodible cropland or other environmentally sensitive acreage to resource conserving covers, such as native grasses, trees, and filterstrips.
- In return, farmers receive an annual rental payment for a contract period of 10-15 years.
- The 1985 Act directed USDA to enroll up to 45 million acres by 1990.

# The CRP – cont.

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- A primary goal of the CRP was to reduce soil erosion on highly erodible cropland.
- Secondary objectives included
  - protecting soil productivity,
  - reducing sedimentation,
  - improving water quality,
  - improving fish and wildlife habitat,
  - curbing production of surplus commodities, and
  - providing income support for farmers.
- Enrollment is limited to 25 percent of the cropland within a county.

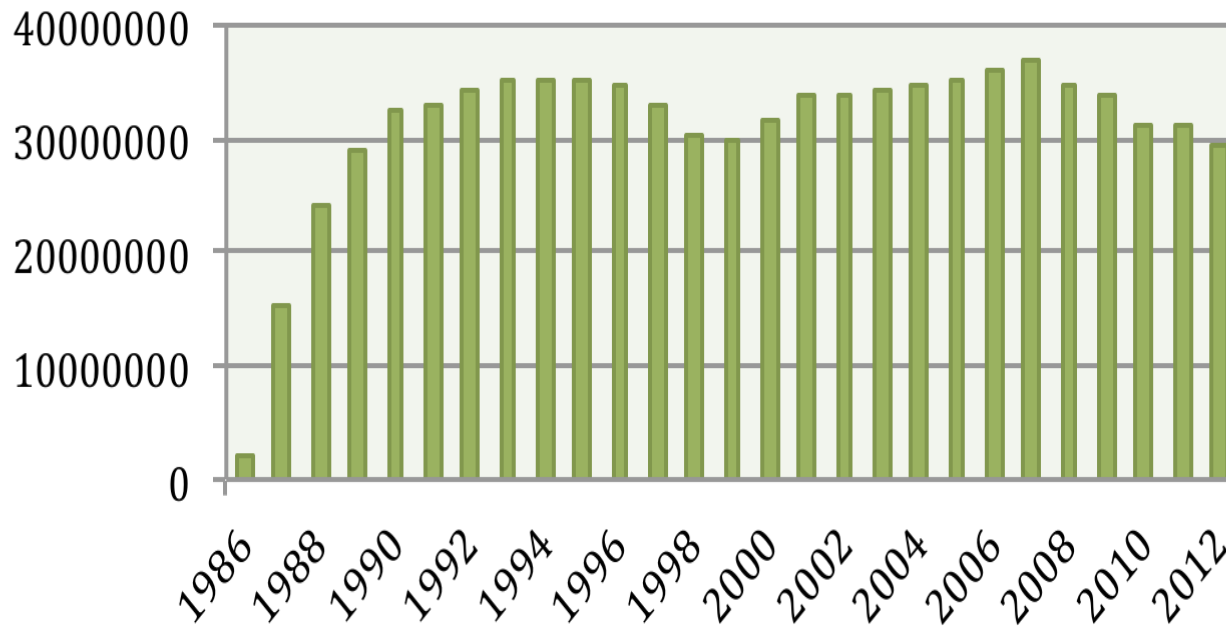
# The CRP- cont.

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- The CRP uses a bidding process to select land into the program.
- In the initial signups, eligible parcels (bids) were selected based on the rental rates requested.
- The selection criterion has been broadened to include multiple environmental benefits.
- CRP uses an index known as the Environmental Benefits Index (EBI) to rank submitted bids.

# The CRP – cont.

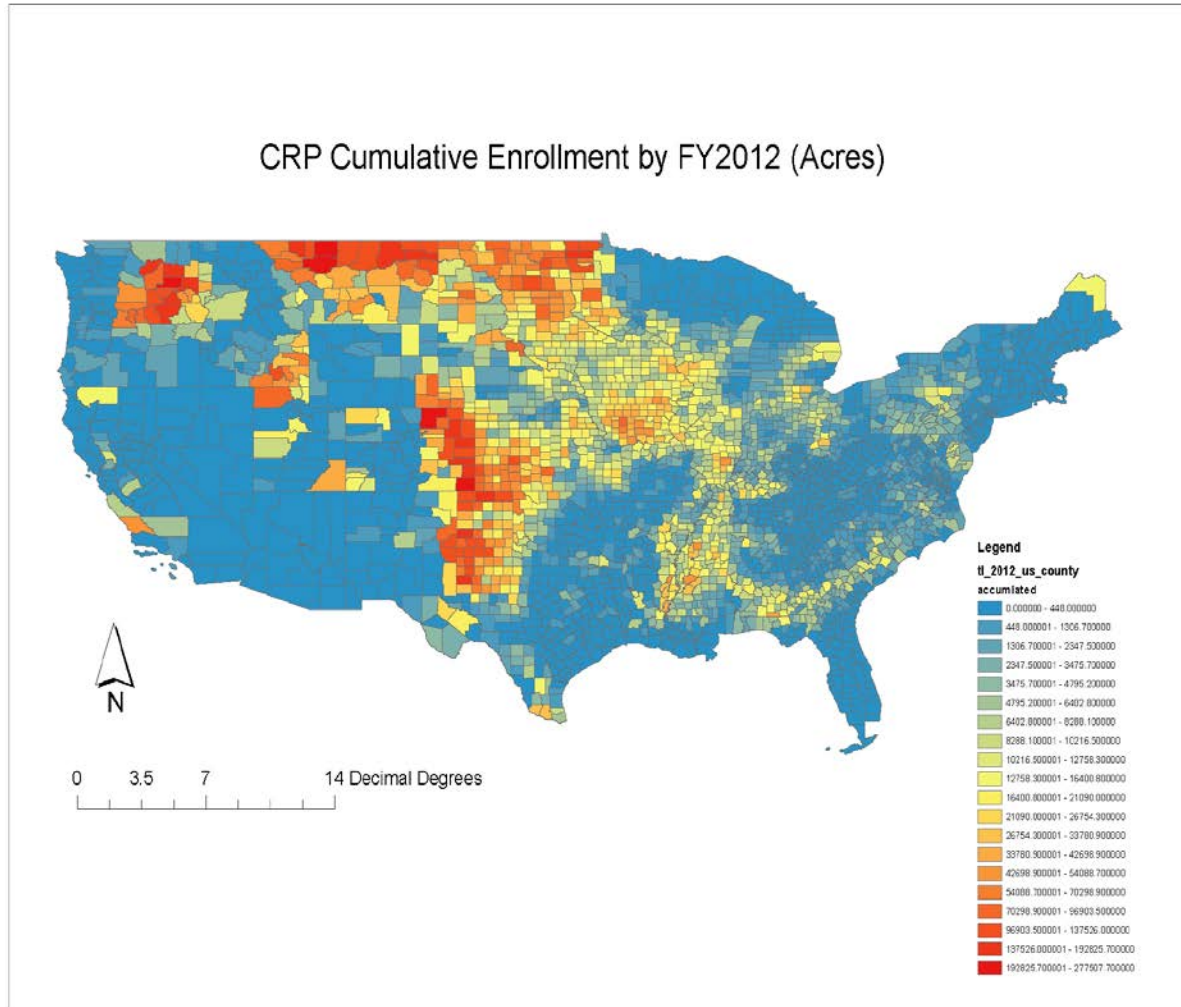
**Figure 1. Conservation Reserve Program - Cumulative Enrollment by Year (Acres)**



Data source: USDA (2012c). Shown here are acreages at the end of fiscal year (September 30).

# The CRP – cont.

CRP Cumulative Enrollment by FY2012 (Acres)





# The CRP – cont.

**Table. CRP Enrollment , Rental Payments and Expiration in California and the Pacific Northwest**

State	FY 2012	FY 2012	Cumulative Rental Payment 1987-2013 (dollars)	Contract Expiration: FY 2013-17	
	Enromment (acres)	Rental Payment (dollars)		(acres)	%
CA	101,228	4,615,526	157,398,824	52,896	52%
OR	546,432	28,711,677	633,057,210	234,186	43%
WA	1,488,621	81,422,150	1,577,863,713	638,479	43%
ID	648,800	29,473,403	842,394,504	221,519	34%
Total	2,785,081	144,222,756	3,210,714,251	1,147,080	41%

# CRP Environmental Impacts

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- *Reduced soil erosion:* By 224 million tons a year, or approximately 6.8 tons per CRP acre, based on 1997 enrollments (Sullivan et al. 2004).
- *Improved water quality:* Reduced nitrate loadings by 90 percent, sediment and herbicide loadings by 50 percent, and phosphorous loadings by 30 percent in some U.S. agricultural regions.
- *Wildlife habitat:* By converting row cropland into native grasslands and trees, the CRP benefits many wildlife species.

# CRP Economic Impacts

**Table 1. Selected Economic Impacts of the Conservation Reserve Program**

Impacts	Total <sup>a</sup>	Per CRP acre <sup>a</sup>
	<i>\$ million/year</i>	<i>\$/acre/year</i>
Reduced soil erosion <sup>b</sup>	653	20
Recreational benefits <sup>b</sup>	963	29
Increased agricultural land value <sup>c</sup>	1108	34
Increased developed land value <sup>c</sup>	786	24

<sup>a</sup> All benefits estimates are adjusted for inflation to represent 2011 dollars and total benefits are rounded to the nearest million dollars.

<sup>b</sup> Source: Sullivan et al. (2004)

<sup>c</sup> Wu and Lin (2010) estimated that the CRP increased farmland value by \$18–25 per acre (with an average of \$21.5) and increased developed land value by \$6–274 per acre (with an average of \$140/acre) in 1997. Multiplying the averages by the total acreages of agricultural land and developed land in 1997, we obtain the total increases in agricultural land value and developed land value, respectively. Assume a discount rate of 5%, annualized benefits from increased land values are calculated by multiplying the total increases by 5%. Dividing the annual benefits by the total CRP acreage in 1997 gives the per acre benefits, which are adjusted by the Consumer Price Index (CPI) to represent the 2011 dollars.

# Proposed Changes to the CRP

**Table. The "Stepdown Approach" Proposed by the Senate and House Farm Bills**

FY Year 2012 CRP Contract Enrollment: 29.53 million acres

FY Year	Contract Expiration (million acres)	CRP Acres Without Re-enrollment (million acres)	"Stepdown Approach" (million)		Renewed or New CRP Acres Needed (million acres)
			Senate Bill	House Bill	
2013	3.3	26.2	30.0	29.0	3.8
2014	2.0	24.2	27.5	26.0	-0.5
2015	1.7	22.6	26.5	26.0	0.7
2016	1.2	21.4	25.5	25.5	0.2
2017	2.6	18.8	25.0	25.0	2.1
2018	1.5	17.2	25.0	25.0	1.5
2019	1.0	16.2	25.0	25.0	1.0
2020	4.6	11.7	25.0	25.0	4.6
2021	3.1	8.5	25.0	25.0	3.1
2022	4.3	4.2	25.0	25.0	4.3
2023	0.2	4.0	25.0	25.0	0.2
Total	25.5				

\*Source: Chite, R.M. 2012 (August). "The 2012 Farm Bill: A Comparison of Senate-Passed S. 3240 and the House Agriculture Committee's H.R. 6083 with Current Law." Congressional Research Service, 7-5700, R42552.

# Targeting Criteria for CRP Land Retention

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1. Cost targeting – to retain CRP lands that require lowest rental payment per acre.
2. Benefit targeting –to retain CRP lands that provide the highest environmental benefit per acre.
3. Benefit-cost targeting –to retain CRP lands that offer the highest benefit-cost ratios.
4. Benefit-maximizing targeting – to retain CRP lands that provide the largest environmental benefit for a given budget.

# Performance of the Criteria

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- Amount of land conserved (A):  $A_1 \geq A_4 \geq A_3 \geq A_2$
- Total crop production (Y) :  $Y_2 \geq Y_4 \geq Y_3 \geq Y_1$
- Output price (p) :  $p_1 \geq p_3 \geq p_4 \geq p_2$
- Consumer surplus (CS) :  $CS_2 \geq CS_4 \geq CS_3 \geq CS_1$
- Producer surplus (PS) :  $PS_1 \geq PS_3 \geq PS_4 \geq PS_2$
- Total environmental benefit (B):  $B_4 \geq B_3 \geq B_1; B_4 \geq B_2$

# Implications – Cost Targeting

- Leads to the largest amount of land in conservation and the lowest total output.
- Leads to the highest output price and the largest producer surplus.
- Should be farmers' and fiscal conservative's most favored strategy.
- Most pro-poor policy if the poor own CRP land.
- However, if the poor are not landowners, it is the least pro-poor policy.

# Implications – Benefit Targeting

- Lead to lowest output price and the highest consumer surplus.
- Should be consumers, labor and input suppliers' most preferred strategy.
- Farmers' least preferred strategy because it results in the lowest output price and producer surplus.



# Implications – Benefit-Cost Targeting

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- The most efficient strategy (i.e., maximize the social welfare for a given budget).
- Also maximizes the total environmental benefit for a given budget when the output price is not affected.
- However, when the output price is affected, it is no longer maximizing the total environmental benefit for a given budget.
- Not the most preferred strategy of any group.

# Implications – Benefit-Maximizing Targeting

- Less efficient than benefit-cost targeting.
- Generate the largest amount environmental benefit for a given budget because it takes into account slippage.
- Slippage occurs when some non-cropland is converted to cropland.
- Ignoring the slippage effects will reduce environmental gains and, in the worst scenario, could make a conservation program counter productive.

# *For More Information*

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*Visit the OreCal website (<http://oregonstate.edu/orecal>):*

- Wu, JunJie, Bruce Weber. “What would happen if the Conservation Reserve Program were reduced?” OreCal Issues Brief #002.

*Or the C-FARE website:*

- Wu, JunJie, and Bruce Weber. 2012. “Implications of a Reduced Conservation Reserve Program.” In *The Conservation Crossroads in Agriculture: Insight from Leading Economists*. The Council on Food, Agricultural and Resource Economics.