
Interim Results: Impact of USDA Payments and Sodbuster on Grassland Conversions to Cropland

**Briefing for Staff of Senator Tom Harkin
Chairman, Senate Committee on Agriculture,
Nutrition, and Forestry
and
Representative Collin Peterson
Chairman, House Committee on Agriculture**

May 24, 2007

Introduction

- Grassland (rangeland and pastureland) is valuable for
 - livestock grazing.
 - recreation (hunting and fishing).
 - the environment by reducing soil erosion, improving water quality, providing wildlife habitat, and increasing carbon sequestration.
- Converting grassland to cropland
 - reduces these environmental benefits.
 - can result in additional federal spending on farm programs.

Introduction

- For agricultural producers to be eligible to receive certain USDA benefits, Sodbuster requires them to apply conservation practices if they convert native grassland that is highly erodible to cropland.
- The federal farm programs include a variety of income and price support programs for specific commodities such as corn and soybeans; crop insurance; disaster assistance; and conservation programs. Payments made under these programs total about \$20 billion annually.

Introduction

- Wildlife, environmental, and conservation groups, as well as certain cattle industry interests, are concerned that farm program payments are a financial incentive for landowners to convert grassland to cropland. They advocate eliminating these payments for newly converted land in order to discourage conversions.
- Several farm organizations maintain that eliminating farm program payments on newly converted land would reduce available land for beginning farmers and constrain farmers' ability to adapt to changing market conditions related to the growing demand for food and renewable fuels.

Objectives

You asked us to determine:

- (1) the extent of grassland conversions to cropland and the cost of farm program payments related to these newly converted cropland acres;
- (2) the relative importance of farm program payments versus other factors in producers' decisions to convert grassland to cropland;
- (3) any impact the Sodbuster provision has had on limiting grassland conversions.

Objective 1 – Extent of Grassland Conversions and Associated Costs

- Available data show extensive conversions of grassland to cropland in some areas of the country and that these conversions add significantly to farm program costs in these areas.
 - Data from USDA's National Resources Inventory (NRI), a periodic statistical survey of land use, indicate that the nation's private grassland decreased by 25 million acres from 1982 to 2003 (most recent data). Most of this decrease occurred in the Northern Plains and Intermountain regions. Some of the decrease in grassland is attributable to development. However, the leading cause is conversion to cropland.
 - NRI data also indicate that the following states had declines in rangeland of over 400,000 acres each from 1982 to 1997 (most recent data): Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, and Texas.

Objective 1 – Extent of Grassland Conversions and Associated Costs

- Farm program payments, such as crop insurance and disaster assistance, are significantly higher per acre in South Dakota counties with high rates of conversion, adding to program costs.
 - From 1997 through 2006, the 20 South Dakota counties with the highest number of native grassland conversions to cropland had annual crop insurance net benefits to producers of \$12.32 per acre versus \$6.07 per acre in all other counties in the state.
 - Further, we found that the correlation between county net crop insurance benefits and acres of native grassland converted was moderately high (0.60) and is statistically significant.

Objective 1: Extent of Grassland Conversions and Associated Costs

- USDA Risk Management Agency (RMA) rules limit crop insurance coverage in the year in which grassland is converted to cropland.
- Land that was not planted and harvested in at least one of the previous three crop years is not insurable unless
 - (1) a "written agreement" is being used (Note: A written agreement has to be approved by an RMA regional office and significantly reduces potential payments to the producer by restricting the allowable crop yields.), or
 - (2) the converted acreage is 5 percent or less of the existing insured acreage.
- Because it lacks necessary information on land location to determine if land was cropped in one of the last three years, RMA may not be able to enforce this limitation on insurance coverage.

Objective 2: Factors Influencing Landowners' Conversion Decisions

- Factors influencing landowners' decisions to convert grassland to cropland include farm program payments, rising crop prices, hardier seed varieties, and new farming techniques.
- According to several studies and USDA officials, farm program payments provide incentives to convert grassland to cropland because they increase the expected profitability of farming while lowering the associated financial risks.
 - Crop insurance and disaster assistance payments reduce a producer's financial risk in the event of crop failure due to drought or other weather-related disasters.
 - A 2006 USDA study found that the availability of crop insurance motivated producers to expand cropland in the contiguous 48 states by an estimated 2.5 million acres in the mid-1990s.

Objective 2: Factors Influencing Landowners' Conversion Decisions

- Rising demand and prices for corn and other commodities used to produce ethanol and other renewable fuels are also significant factors in conversion decisions.
 - In 2006, USDA estimated that another 10 million acres of corn must be brought into production by 2010 to meet the nation's growing demand for ethanol.
 - Corn prices—the prices received by producers—rose from \$2.50 per bushel in September 2006 to \$4.16 per bushel in January 2007.
- Hardier seed varieties, such as drought-tolerant corn and herbicide-resistant soybeans, and new farming techniques, such as no-till cultivation, contribute to conversion decisions as well. These developments make it easier to produce crops in areas generally considered unsuitable for crop production in the past.

Objective 2: Factors Influencing Landowners' Conversion Decisions

- Some farm programs and certain conservation programs may be working at cross-purposes, leading to inefficient use of program funds.
 - Farm program payments tend to encourage conversion of grassland to cropland by increasing the profitability of farming while reducing producer risk.
 - In contrast, conservation programs such as the Grassland Reserve Program (GRP), Wetlands Reserve Program (WRP), and the Conservation Reserve Program (CRP), provide financial incentives to protect grassland from conversion or to encourage conversion of cropland to grassland.
 - According to a 2000 study published in the *American Journal of Agricultural Economics*, for every 100 acres removed from cropland in the central United States, 20 acres of grassland were converted to cropland.

Objective 3: Sodbuster's Impact on Grassland Conversions to Cropland

- Sodbuster has had little impact on grassland conversions.
 - Slightly more than half of rangeland acres in three major crop production regions converted to cropland between 1997 and 2003 were classified as non-highly erodible and therefore were not subject to Sodbuster.
 - Even when converted land is subject to Sodbuster, USDA field officials stated that the costs associated with controlling soil erosion relative to the potential profits of cropping the land have generally not been high enough to prevent conversions.
 - New technology, such as no-till farming, has reduced the cost of complying with Sodbuster and made farming highly-erodible land feasible.

Scope and Methodology

- We reviewed and analyzed
 - land use data from (1) USDA's NRI, (2) USDA state offices in Montana, North Dakota, and South Dakota, and (3) a collaborative study by Ducks Unlimited, U.S. Fish & Wildlife Service, the University of Montana, and others;
 - USDA data on farm program payments, including commodity program, crop insurance, and disaster payments; and
 - GAO's 2003 survey responses regarding USDA field officials' views of Sodbuster's impact on conversion decisions.
- We also conducted interviews with agency and stakeholder officials in Washington, DC, and in key grassland conversion states.
- Our work was performed in accordance with generally accepted government auditing standards, including an assessment of data reliability.

Appendix 1: U.S. Land Use Changes, 1982 – 2003

(in millions of acres)

Year	Cropland	CRP Land	Pastureland (grassland)	Rangeland (grassland)	Forestland
1982	419.9	0	131.1	415.5	402.4
2003	367.9	31.5	117.0	405.1	405.6
Change, 1982-2003	-52.0	31.5	-14.1	-10.4	3.2

Year	Other Rural Land	Developed Land	Water Areas	Federal Land
1982	48.2	72.9	48.6	399.1
2003	50.2	108.1	50.4	401.9
Change, 1982-2003	2.0	35.2	1.8	2.8

Source: NRCS NRI.

Appendix 2: Rangeland and Pastureland Converted to Cropland, by Crop production Region, 1982- 2003

(with margins of error)

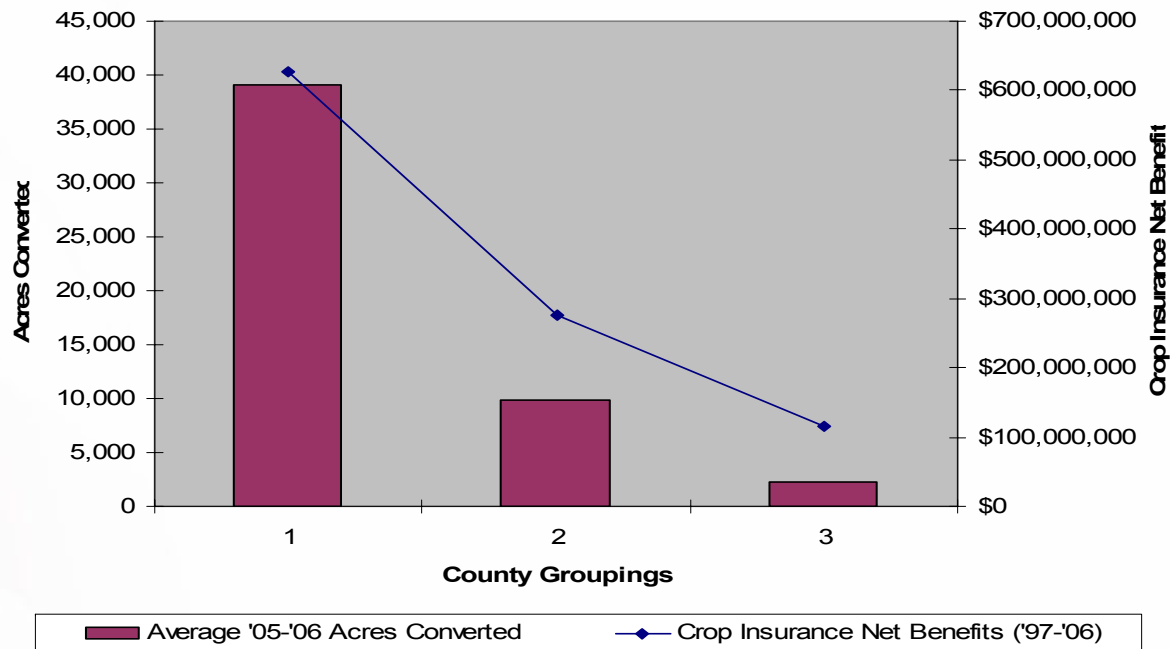
Region	Rangeland to Cropland 1982-1997	Rangeland to Cropland 1997-2003	Pastureland to Cropland 1982-1997	Pastureland to Cropland 1997-2003
Northern Plains	2,610,000 (+/-16%)	590,000 (+/-21%)	1,800,000 (+/-13%)	770,000 (+/-20%)
Southern Plains	1,170,000 (+/-16%)	290,000 (+/-48%)	940,000 (+/-26%)	420,000 (+/-34%)
Mountain States	2,040,000 (+/-20%)	580,000 (+/-53%)	990,000 (+/-23%)	800,000 (+/-31%)
Lake States	NA	NA	1,980,000 (+/-9%)	960,000 (+/-17%)
Corn Belt	NA	NA	4,480,000 (+/-6%)	1,660,000 (+/-12%)

Source: NRCS NRI.

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Appendix 3: Net Crop Insurance Benefits for Three Groups of South Dakota Counties, Based on the Amount of Native Grassland Converted in 2005 - 2006

Three Groups of South Dakota Counties: Numbers of Acres of Land Converted and Crop Insurance Net Benefits (1997 through 2006), From Largest to Smallest Numbers of Converted Acres



Source: GAO analysis of FSA and RMA data

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Appendix 4: Comparison of Crop Insurance Net Benefits for Producers in Various Categories of South Dakota Counties

Net Benefits = Indemnity – (Producer Premiums and Administration Fees)

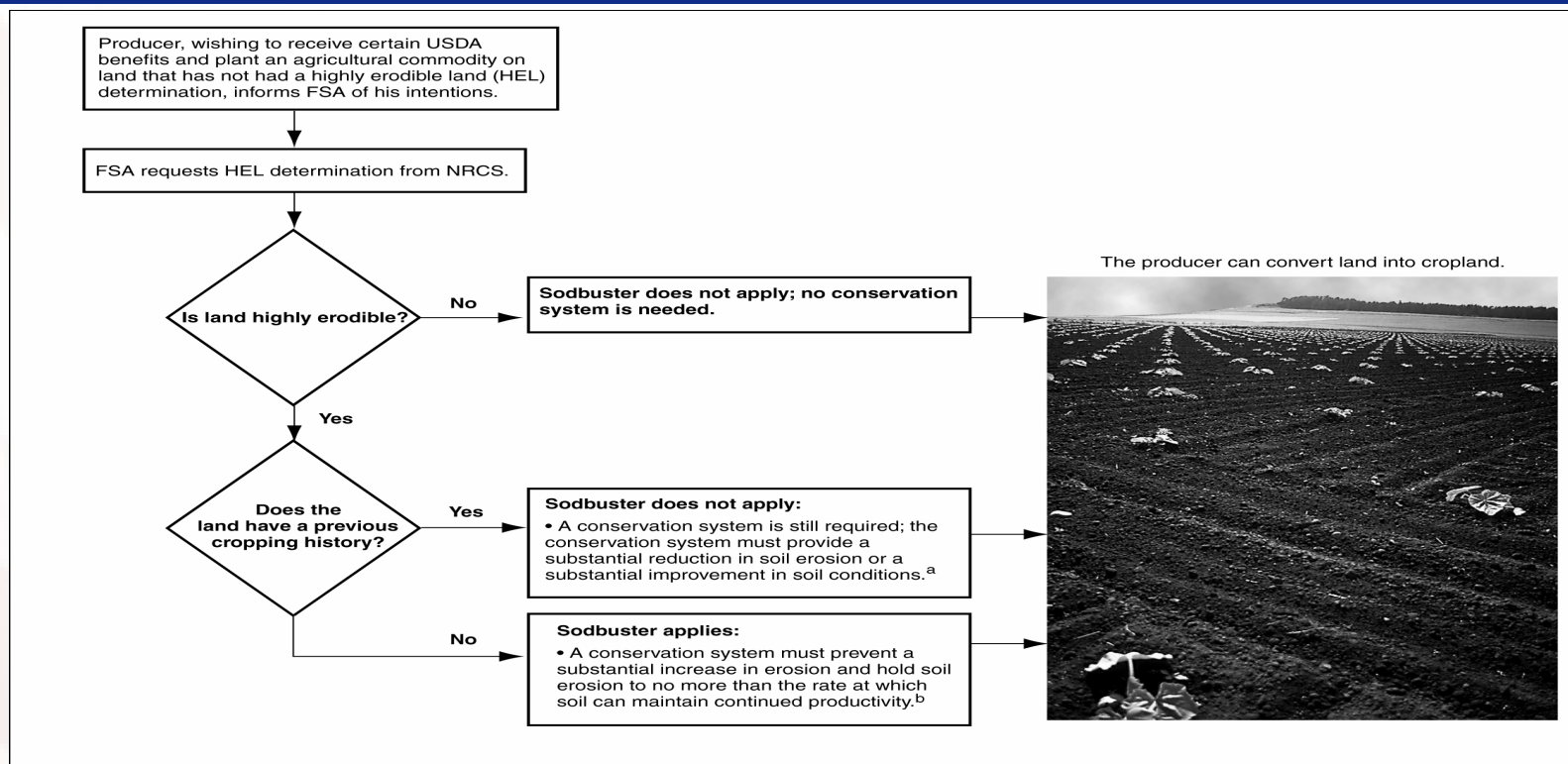
		Crop Years 1997 – 2006	
		Total	Per Acre
20 High Conversion Counties	Corn	\$288,899,623	\$20.94
	All Crops ¹	\$603,223,727	\$12.32
All Other Counties	Corn	\$198,283,154	\$7.80
	All Crops ¹	\$414,475,194	\$6.07
Selected Historically Cropped Counties ²	Corn	(\$3,562,466)	(\$0.45)
	All Crops ¹	(\$3,059,947)	(\$0.19)
State Totals	Corn	\$487,182,777	\$12.42
	All Crops ¹	\$1,017,698,921	\$8.68

¹Includes all crops except forage production and forage seeding.

²Includes 7 counties from the same NRCS production areas in southeast South Dakota.

Source: GAO analysis of FSA and RMA data.

Appendix 5: Flow Chart on Sodbuster's Applicability to Conversions



Source: GAO analysis of NRCS data.

^aA substantial reduction in soil erosion is defined as 75 percent of the potential erodibility and not more than twice the rate at which soil can maintain continued productivity.

^bA substantial increase in soil erosion is defined as a 25 percent increase of potential erodibility.