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CONSERVATION RESERVE PROGRAM IN SOUTH DAKOTA: Summary of Major Findings¹

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Major findings from a 2007 survey completed by 753 South Dakota CRP contract holders are presented in this *Economics Commentator*.² This CRP survey was the main primary data source to complete the major research objectives of (1) estimating the number of CRP acre that are likely to revert back to crop production, their location, and estimated crop mix on those acres; and 2) determining the main factors that influence post-CRP land use decisions.

Background

The Conservation Reserve Program (CRP) was created in 1985 as a federal program to retire highly erodible and environmentally sensitive cropland and pasture. CRP land is generally set aside for 10-15 years. CRP was initially viewed as a supply control program targeted to highly erodible cropland.

¹ Readers are encouraged to consult the full report *Conservation Reserve Program in South Dakota: Major Findings from 2007 Survey of South Dakota CRP Respondents* by Janssen, Klein, Taylor, Opoku, and Holbeck. It will be available on-line later this month at : <http://econ.sdstate.edu/Research/CRP2008.pdf>.

² Financial support for this study was provided by the South Dakota Agricultural Experiment Station and a grant from the South Dakota Corn Utilization Council on the "Impact of CRP acres in South Dakota being put back into production." The CRP survey instrument was developed by co-authors Janssen, Klein, and Taylor from the SDSU Economics Dept. and Drs. Sharon Clay and David Clay from the SDSU Plant Science Dept.

During subsequent years, CRP evolved into a land retirement program designed to help meet many environmental objectives.

South Dakota currently has about 1.3 million acres of land in CRP or 6.5 percent of the State's cropland acres. The greatest number and intensity of CRP acres are located in the northeast and north central regions. From 2008 to 2010, CRP contracts totaling nearly 508,000 acres in South Dakota are set to expire. From 2011 to 2013 another 420,700 contract acres will expire, and the remaining 364,600 CRP acres will expire from 2014 to 2023. Many of these acres may be re-enrolled or contracts extended depending on program funding and landowner preferences.

CRP Survey and Respondent Characteristics

During September and October 2007 a sample of 2,524 CRP contract holders were mailed a survey form with questions about future CRP land use. The survey instrument included six sections: 1) CRP enrollment factors, 2) CRP future land use plans, 3) CRP, grass, and livestock, 4) CRP and crop management, 5) CRP and environment, and 6) General characteristics of CRP respondents. A total of 753 respondents provided useable data for this report, for an overall useable response rate of 30%.

The farm size and distribution of acres among survey respondents closely matches statewide characteristics. The statewide average farm size per respondent was 1,396 total acres with 174 acres enrolled in CRP. Statewide, CRP acres were an average of 12% of total acres and 27% of cropland acres per respondent farm (Figure 1).

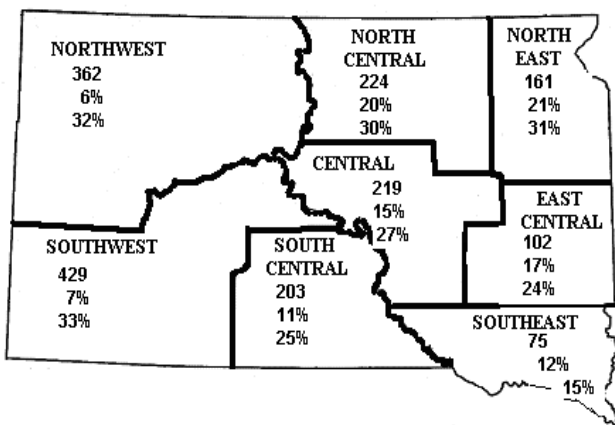
CRP acres are more concentrated in the northeast and north-central regions than elsewhere in South Dakota. These two regions have 43% of CRP acres held by respondents. Furthermore, CRP acres are an

average of 20% of total farm acres and 30% of cropland acres for these respondents (Figure 1).

Compared to all South Dakota producers, respondents with CRP contracts are older (average age of 60.8 years versus 53.3 years), obtained more formal education (two-fifths have at least a four-year college degree), are less likely to have farming as their primary occupation (37.5% are primarily farmers/ranchers), and have lower gross farm income (73.7% have less than \$100,000 of annual gross farm income).

Over half (57.5%) of the CRP acres are held by either retirees or those who do not consider farming to be their primary business (Table 1). This could have a significant impact on the factors influencing post-CRP land use decisions.

Figure 1. Distribution of acres of CRP respondent farm by region and statewide.



Item	State
Top: Average number of CRP acres	174
Middle: CRP acres as % of total acres	12%
Bottom: CRP acres as % of cropland acres	27%

Source: South Dakota CRP Survey, Sept/Oct 2007.

Post CRP Land Use Plans of Respondents

We sought respondents' plans for their CRP acres after their contracts expire. These land use plans involve a series of interrelated and sequential decisions. Some alternatives are: re-enrolling some or all acres into a new CRP contract, converting CRP acres to crop production, and retaining CRP acres in grass for hay, grazing, or wildlife habitat.

The extent of CRP land conversion to producing crops and what cropping patterns are projected in different regions of South Dakota are of major concern to farmers, agribusinesses, landowners, and main street businesses in the state. Potential land use changes also involve a host of crop, grass, wildlife, wetland, and other management decisions.

Potential land use plans indicated by respondents are very tentative. Major changes that have occurred since the survey was administered include the passage of a new farm bill, substantial increases in commodity prices, and major increases in energy-based input costs. A majority of respondents indicated the "opportunity to re-enroll" and "market prices of crops / livestock" were the most important factors that will influence their decisions.

The most basic post-CRP land use decision is related to the question: "What percent of CRP acres is expected to be converted to agricultural production vs. re-enrollment into a new CRP program?" In many respects, this important issue is the most difficult to answer because so many factors are related to this land use decision, including unknown payment rate provisions and land use restrictions in new CRP contracts. Based on their response pattern to several key survey questions, we classify respondents into these categories: "very likely", "somewhat likely", and "not likely" to re-enroll some or all of their CRP acres. Based on respondent land use plans and re-enrollment preference and the amount of CRP acres held by each group, we project:

- 34.2 percent of respondent CRP acres are considered "very likely" to be re-enrolled;
- 28.8 percent of their CRP acres are "somewhat likely" to be re-enrolled;
- 37.0 percent of their CRP acres are "not likely" to be re-enrolled.

CRP acres that are "very likely" to be re-enrolled are held by 42% of respondents that had definite plans to re-enroll some or all of their CRP acres and specific plans for any remaining CRP acres. The CRP acres classified as "somewhat likely" were held by 58% of respondents with specific plans or no land use plans for their contract acres, but would consider re-enrolling some of their CRP acres.

Table 1. Distribution of respondents, CRP acres, and total acres by farm type.

<u>Farm Type*</u>	<u>Respondents</u>		<u>CRP Acres</u>		<u>Total farmland acres</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Retired	222	30.8	35,070	31.4	114,510	12.5
Nonfarm	223	31.0	29,140	26.1	115,450	12.6
Small Farm	119	16.5	20,183	18.0	185,724	20.3
Medium Farm	75	10.4	13,181	11.8	161,218	17.6
Large Farm	81	11.3	14,245	12.7	338,545	37.0
Sum:	720	100.0	111,819	100.0	915,447	100.0

*Definitions of Farm Type are based on the combination of respondent's principal occupation and their gross farm income. Retired and nonfarm occupation are mostly small farms with less than \$100,000 of gross farm income. Respondents whose principal occupation is farming were divided into three categories based on gross farm income (GFI): Small = less than \$100,000, Medium = \$100,000 - \$249,999, and Large = \$250,000 or more.

Data on CRP premiums (increase in CRP payment rate per acre from the existing contract) needed to re-enroll CRP acres as expressed by survey respondents are consistent with our classification of respondent re-enroll preferences. CRP premium amounts and percentage increases in payment rates are lower for those respondents classified as "very likely" to re-enroll some of their CRP acres.

Statewide, 60.7% of respondent post-CRP acres, not re-enrolled, are projected to be used for crop production such as corn, wheat, soybeans, alfalfa, sorghum, sunflowers and other crops. Another 30% of CRP acres are projected to remain in grass and be used for livestock grazing or grass hay.

The remaining 9.3% of post-CRP acres are projected for other uses (wetlands, wildlife habitat, buffer strips, shelterbelts etc.) As expected, grass production use (50% of post-CRP acres) is more likely in West River regions, while crop production uses are predominant (71.8% of post-CRP acres) in the north central and northeast regions (Table 2).

Concerning crop mix, 26% of post-CRP acres, statewide, are projected to go into a corn / soybean / wheat rotation, 15% of post-CRP acres into a corn / soybean rotation, and lesser proportions into continuous corn, wheat, or alfalfa (Table 2). Overall, corn or soybeans would be planted on 44% of post-CRP acres and wheat would be included on 35% of post-CRP acres. The regional distribution of specific crops planted on post-CRP acres is similar to overall regional cropping patterns.

Other Key Findings

Post-CRP land use intentions for livestock grazing is closely related to presence of livestock (especially beef cows) on their farm, the overall suitability of their CRP land for livestock grazing, and the costs of getting their land ready for livestock. Lack of existing fences, the need to repair fences, or the need to establish water sources for livestock were the three most commonly cited limitations to future grazing on their CRP lands.

Crop residue is currently being harvested by one-sixth or more respondents for four main crops: wheat, corn, sorghum and oats. Nearly half of the respondents would consider harvesting crop residue for bio-fuels if there is a market for it. Another 36% of respondents were "uncertain" and only 16% would not consider this management option.

Three items (price per ton of crop residue, impact on soil structure, and impact on soil fertility) were considered important factors in the crop residue management decision by more than two-thirds of 500 respondents answering these questions.

Hunting is a common occurrence on CRP lands in South Dakota, with 94% reporting their CRP lands were used for hunting by themselves, their family and friends, or other hunters. Only 10% of respondents reported fee hunting on their land.

Hunting will be impacted if CRP acres are not renewed. Only a quarter of the respondents indicated that there would be no impact on hunting

Table 2. Post-CRP land use distribution, statewide and district.

<u>Land Use</u>	<u>Districts/regions</u>			
	<u>South Dakota</u>	<u>West River</u>	<u>East River North</u>	<u>East River South</u>
	----- percent of CRP acres -----			
Continuous corn	2.6	0.6	1.3	6.6
Corn/soybeans	15.1	4.2	17.5	22.9
Corn/soybeans/wheat	26.6	6.5	42.1	24.4
Wheat	9.7	21.4	5.5	3.5
Alfalfa	<u>6.9</u>	<u>12.9</u>	<u>5.3</u>	<u>2.7</u>
Major crops	60.7	45.5	71.8	60.1
Grass	29.9	50.4	18.3	25.9
Other	<u>9.3</u>	<u>4.1</u>	<u>9.1</u>	<u>14.0</u>
Total	100.0	100.0	100.0	100.0

Source: South Dakota CRP Survey, Sept/Oct 2007.

Districts are combinations of regions in Figure 1.

West River = south central, southwest, and northwest regions

East River North = north central and northeast regions

East River South = central, east central, and southeast regions

on their land if they do not re-enroll their acres in CRP. Close to half (43.6%) of respondents, representing 53% of CRP acres, indicated that there would be a substantial impact.

Wetlands were present on a majority of respondent farms located east of the Missouri River. The mean amount of wetlands on their CRP tracts was 32 acres or an average of 18% of their CRP acres. Nearly equal proportions (46% to 47%) of respondents plan to manage their wetlands for wildlife habitat, versus managing wetlands for grazing or crop production.

Wildlife and wildlife habitat were important considerations in their production management practices for 68% of respondents. Furthermore, nearly three-fifths of respondents consider wildlife and wildlife habitat as important factors in their decision of whether to re-enroll their CRP contracts.

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