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Larry L. Janssen
South Dakota State University, larry.janssen@sdstate.edu

Martin Beutler
South Dakota State University

Tecleberhan Ghebremicael
South Dakota State University

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CONSERVATION RESERVE PROGRAM LAND USE DECISIONS IN SOUTH DAKOTA

by

Dr. Larry L. Janssen,
Professor of Economics
Dr. Martin Beutler,
Extension Economist
Mr. Tecleberhan Ghebremicael,
former graduate assistant

The Conservation Reserve Program (CRP), authorized in the Food Security Act of 1985, was enacted with the goal of removing highly erodible and some other environmentally sensitive cropland from production. In this voluntary program, landowners with qualifying cropland could submit bids during various signup periods. CRP landowners (contract holders) received annual payments for 10 years to remove land from crop production and convert it to a conserving use.

Major questions surround post-contract land use decisions of land managers controlling 36 million acres of Conservation Reserve Program (CRP) lands in the United States during the 1996 - 2001 release dates. The decisions of CRP contract holders will impact various crop and livestock commodity markets, farm-level costs and returns, environmental (soil erosion and water) quality, wildlife habitat, and the overall economic well being of many local communities. The greatest regional impacts will occur in the Great Plains states, including South Dakota, where most of the CRP land acres are located.

This report is focused on: (1) key characteristics of CRP contract holders and their CRP contracts, and (2) the post-CRP land use and land management intentions of South Dakota contract holders. The major data source is a 1993 CRP survey mailed to a random sample of 8.3% of South Dakota CRP contract holders. The survey was completed by 556 persons controlling 181,000 CRP acres, 9% of the nearly 2 million South Dakota cropland acres enrolled in CRP. Policy options for the Conservation Reserve Program in 1995 farm legislation will be discussed in a future issue of the Economics Commentator.

RESPONDENT / CRP CONTRACT CHARACTERISTICS

Most South Dakota CRP contract holders are land owners and farm operators; they will be the main decision makers about post-CRP contract land uses. The principal occupation of most South Dakota CRP contract holders (61% of respondents) is farming or ranching. Approximately 21% are retired and the remainder are working in a nonfarm business or occupation. Farmers and ranchers control at least two-thirds of CRP acres.

South Dakota CRP contract holders are well educated, with 85% having completed high school or above. Nearly 50% have some post-high school education and 29% have completed a college degree. The distribution of reported family household income is similar to the Census reported distribution of household income among all South Dakota families.

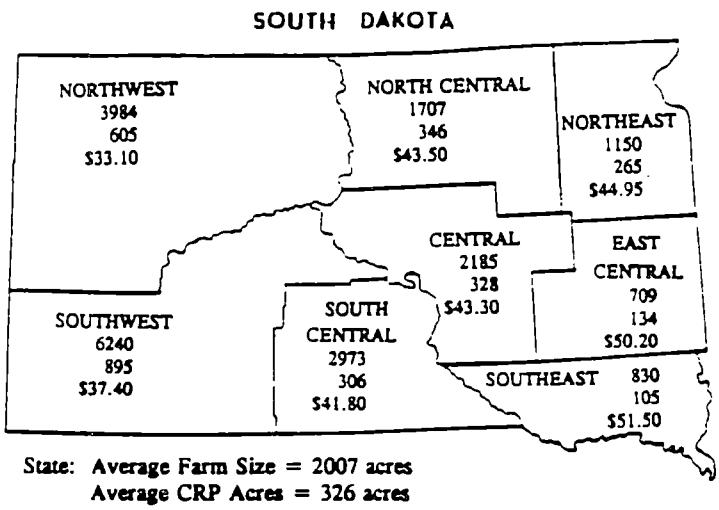
In general, CRP contract holders are older than the average farmer or business person. The average and median age of CRP respondents is 56 years, compared to 49 years for all South Dakota farmers. Only one-fourth of CRP respondents are 20 - 44 years old, while 29% are 65 to 87 years of age.

Land under CRP Contracts

Respondents tend to operate larger than average size farms and their CRP acres are only a modest proportion of total farm acres. Respondents owned or leased an average of 2,007 acres of South Dakota farm/ranch land, including 326 acres of CRP lands, 680 acres of other cropland, and nearly 1,000 acres of pasture, range, or other land uses. Respondents control 181,000 acres of CRP land, or 9% of SD CRP acres.

Respondents with CRP contracts in the southwest region of the State operate the largest average farm size (6,240 acres) and the largest average number of CRP acres (895 acres). The southeast region has the smallest average number of CRP acres (105 acres) and has an average farm size of 830 acres per respondent (Figure 1). The largest portion of CRP acres (43%) are located in northeast and north central SD. Forty one percent of the CRP acres are located west of the Missouri River.

Figure 1. Distribution of Average Farm Size, Average Number of CRP Acres and Average CRP Payment per Acre by Region, South Dakota CRP Respondents, 1993.



State: Average Farm Size = 2007 acres
Average CRP Acres = 326 acres
Average CRP Payment = $44/acre

Source: 1993 South Dakota CRP Survey.

CRP Payment Rates

The statewide average CRP payment per respondent is $44.00 per acre, as compared to a statewide average cash rental rate on non-CRP cropland of $30.50 in 1993. The eastern regions of South Dakota have the highest average CRP rental rates ($44.95 or more), followed by the central ($41.80 or more) and western ($33.10 or more) regions (Figure 1).

Cash rental rates are a relatively good measure of current returns to agricultural land. CRP payments per acre greatly exceed cash rental rates for rangeland in all regions and exceed cropland cash rental rates in western and central regions of South Dakota (see Economics Commentator June 20 issue #337 for the most recent data on cash rental rates). If cash rental rates at the time of CRP contract expiration are close to present cropland cash rental rates, either of two cases may result: (1) CRP contract holders may prefer to extend their CRP contracts, if this policy option is available, or (2) if they return their CRP acres to agricultural production, cash rental rates for cropland and rangeland may decline in some areas, with a subsequent reduction in agricultural land values.

Land Capability Class of CRP Contracts

Land Capability Class (LCC) is a major determinant of the agricultural uses that can be soundly applied to the land. The land capability class of CRP acres is an indicator of the ease of converting CRP acres to cropland. Nearly 22% of respondent CRP acres are in LCC I or II, with few or moderate limitations for conversion to crop production. Almost 42% of CRP acres are Class III lands which have considerable limitations for crop production or require special conservation practices or both. Another 23% of CRP acres are primarily Class IV lands with very severe limitations for cropland use, and 13% of CRP acres (Class V, VI, or VII) should not be used as cropland.

Most CRP tracts have highly erodible lands, while some CRP contracts in the central, north central, northeast and east central regions have considerable amounts of enrolled wetland acres. The Soil Conservation Service (SCS) estimates that the average reduction in soil erosion on respondents' CRP lands is 10.6 tons/acre/year. The most highly erodible land is located in the southwest and southeast regions, with an average of 13 - 14 tons/acre/year net erosion reduction.

Conservation Practices and Existing Improvements on CRP Lands

Four major conservation practices were adopted and cost-shared on South Dakota CRP acres: (1) permanent and introduced grasses, (2) permanent wildlife habitat, (2) native grasses, and (4) vegetative cover. The predominant conservation practices in South Dakota are permanent and introduced grass and permanent wildlife habitat (85% of respondent CRP acres). Alfalfa - tame grass mixtures are reported as the vegetative cover on three-fifths of respondent CRP acres.

Respondents were asked about the presence of fences, water sources, and other improvements on their CRP contract acres. A total of 453 of 556 respondents answered this question. More than half indicated that they have fences on their CRP lands. Another 34% said they have waterways, followed by 29% reporting shelterbelts/windbreaks and 28% reporting livestock water sources.

POST-CRP LAND USE MANAGEMENT PLANS

A summary of post-CRP land use intentions of 556 respondents controlling 181,000 CRP acres indicates 52% of CRP acres will be converted to cropland, 29% of CRP acres will remain as grassland, and projected land use of 19% of CRP acres is uncertain (Table 1). For the 496 respondents with specific intentions, 32% plan to convert all of their CRP lands to cropland, 28% plan to keep all CRP land as grassland, while 40% plan to use about three-fifths of their CRP acres for cropland and retain two-fifths of their CRP acres in grassland.

Table 1. Post-CRP Land Use Intentions by Region, South Dakota, 1993.

Region	Respondent CRP Acres (1000)	Post-CRP Intended Land Use: Crop	Grass	Uncertain
		---- % of CRP acres ----		
Eastern	47.7	66%	23%	11%
Central	79.9	57%	30%	13%
Western	53.4	31%	34%	35%
State	181.0	52%	29%	19%

Eastern = southeast, east central and northeast regions
Central = south central, central, and north central regions
Western = southwest and northwest regions
Source: 1993 South Dakota CRP Survey.

There are major regional differences in CRP land use intentions. For example, respondents intend to convert 66% of their CRP acres in eastern South Dakota to cropland, compared to only 31% of CRP acres in western South Dakota. Respondents in the western regions intend to retain a higher proportion of CRP acres in permanent pasture or are "uncertain" about land uses that will meet conservation compliance requirements.

There are modest differences in CRP land use intentions by land class. Sixty nine percent of CRP acres intended for cropland use are in land capability classes I-III, compared to 57% of CRP acres intended for grassland use. Thirty one percent of CRP acres intended for cropland use and 43% of CRP acres intended for grassland use are in land capability classes IV-VII.

Cropland Use and Management Considerations

Cropland tillage practices intended for post-CRP cropland include chisel plow tillage (61% of cropland use respondents), some no-till farming (26%), other conservation tillage methods (12%) and moldboard plow tillage (30%). Moldboard plow use is favored in much of eastern SD and some of it is only intended for initial tillage of the sod.

Conservation practices expected to be used by more than one-fourth of cropland use respondents include crop rotations (28%) and grass waterways (32%). Another 12% of these respondents, located in central and western regions, plan to use windstrip cropping practices. Very few cropland use respondents plan to use contour farming (7%) or terraces (3%).

A majority of CRP acres (51%) planned for crop production are intended for wheat production. Another 16% of post-CRP cropland acres are intended for corn production, while the remaining 33% are intended for other crops.

Almost all respondents have some Federal crop program base acres on their CRP lands. Fifty eight percent of respondent CRP acres (105 of 181 thousand acres) are crop base reduction acres. Thirty one percent of respondents with a high proportion of crop base acres (68%) on their CRP land intend to return most of their CRP acres to crop production to maintain their total farm program crop base. Another 10% of respondents (with a much smaller number of and percent of CRP crop base acres) intend to use all of their CRP crop base acres to meet set aside and/or normal flexible acres requirements, if permitted. Overall, the extent of crop base acres on CRP lands is an important consideration to a majority of the 370 respondents intending to return some or all of their CRP acres to crop production.

Results from various statistical analyses indicate respondents with CRP lands in eastern SD, with a higher proportion of crop base acres, and with a greater reliance on Federal commodity programs are more likely to convert their CRP lands to cropland, after contract expiration.

Grassland Use and Management Considerations

Two-thirds (334 of 496) of respondents with post-CRP land use intentions plan to keep some of their CRP acres in grass production. Grassland is the intended post-contract use of 29% of respondent CRP acres, with 51% of the planned grassland acres located in western South Dakota. Most of these respondents intend to use the grassland for livestock grazing and/or hay production. Nearly 45% plan to manage some of their grassland acres for improving wildlife habitat.

All respondents were asked to evaluate the suitability of their CRP lands for livestock grazing. Nearly 30% of the 536 respondents answering these questions indicated their CRP land is ready for grazing. Almost 65% of respondents said some or all of the necessary fences need to be built, and 40% indicated existing fences need repair before their CRP lands would be suitable for livestock grazing. Nearly 48% stated that a livestock water source needs to be established, while 18% indicated an existing water source needs repair before their CRP lands would be suitable for livestock grazing.

Results from various statistical analyses indicate that respondents' post-CRP grassland use intention is significantly ($p <= 0.05$) related to ownership of hay equipment and to their assessment of suitability of CRP lands for livestock grazing. Five-sixths (84%) of

SOUTH DAKOTA STATE UNIVERSITY
Economics Department
Box 504A
Brookings, SD 57007

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respondents reporting their CRP lands are ready for grazing intend to use their CRP lands for livestock grazing. By comparison, only three-fifths of contract holders reporting fences need to be built or water sources need to be established plan to use some of their CRP land for pasture after contract expiration.

Important Factors that may Influence or Change Post-CRP Land Use Intentions

Respondent contract holders indicated that several economic and public policy factors will influence and may possibly CHANGE their post-CRP land use decisions from their current intentions. The most important factors influencing respondents' actual land use decisions are: (1) market prices of crops vs. livestock (62% stated this factor was very important), (2) expected costs of crop production on CRP lands (56%), (3) cost of soil conservation practices (46%), and (4) Federal crop program provisions (45%). Availability of cost-sharing programs for soil conservation compliance, promoting wildlife habitat, or making CRP lands suitable for livestock grazing were "very important" factors to 40%, 38% and 41%, respectively, of respondents. Expected selling price of CRP land or retirement from farming / ranching were "very important" factors to nearly 27% of respondents.

SELECTED IMPLICATIONS

Respondents to CRP surveys in South Dakota (and in other States) indicate plans to return a majority of CRP acres to cropland after their contracts expire. Economic costs, returns and risks prevailing at the time their CRP contracts expire will have the greatest influence on their ACTUAL post-CRP land use decision.

However economic costs, returns and risks associated with alternative post-CRP land use decisions will be greatly influenced by public policies related to CRP lands. The public policy factors that are important to these land use decisions include: (1) provisions for renewal of CRP contracts and available funding, (2) availability and adequate funding of cost-sharing programs that can be used to assist post-CRP land use conversion, (3) incentives for use of CRP crop base acres, and (4) conservation compliance requirements applicable to CRP lands.

Regardless of public policy outcomes concerning the future of CRP, applied management research and education programs targeted to post-CRP land use decision should have high payoffs to society over the next 5-7 years.

We wish to thank all respondents to the South Dakota CRP Survey for their contribution to this project. For more detailed information, readers are encouraged to contact the SDSU Economics Department for Economics Staff Paper 94-3: Factors Influencing Post-Contract CRP Land Use Decisions in South Dakota.

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EDITOR: Donald C. Taylor, Agricultural Economist

ECONOMICS DEPARTMENT
South Dakota State University
Box 504A
Brookings, SD 57007
Phone: (605) 688 - 4141

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