

POTENTIAL ECONOMIC IMPACTS OF THE
MANAGED HAYING AND GRAZING
PROVISION OF THE CONSERVATION
RESERVE PROGRAM

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Submitted to the faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
December, 2009

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ACKNOWLEDGEMENTS

This research project would not have been possible without the support of many people. The author wishes to express her gratitude to her advisor, Professor Dr. Michael R. Dicks who was abundantly helpful and offered invaluable assistance, support and guidance. Deepest gratitude is also due to the members of the supervisory committee, Professor Dr. Philip Kenkel and Assistant Professor and Extension Economist Dr. Dave Shideler. Thanks are also due to Dr. Jody Campiche as well as Professor Dr. Francis Epplin without whose knowledge and assistance this study would not have been successful.

Thanks are also due to Dr. Skip Hyberg of the USDA's Farm Service Agency who without his assistance and support would not have had a successful response rate. The author would also like to express her pleasure of working with all the County Executive Directors from the 22 counties in Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

The author would also like to express her sincere appreciation to her entire family who has supported her throughout this process and who helped edit the paper a.k.a. read the sleeping material.

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CHAPTER I

INTRODUCTION

The Food Security Act of 1985 introduced a new voluntary program for agricultural landowners called the Conservation Reserve Program (CRP). The CRP was a cornerstone program for addressing environmental, supply control, and farm income objectives. Under the CRP, the U.S. Department of Agriculture (USDA) established contracts with agricultural producers to retire highly erodible and other environmentally sensitive cropland and pasture for a 10- to 15- year contract period. During this period, the farmland is converted to grass, trees, wildlife cover, or other conservation uses providing environmental benefits, including improvement of surface water quality, and reduction of offsite wind erosion damages (Farm Service Agency, 2008). In return for retiring marginal cropland from production, the Commodity Credit Corporation (CCC) provided producers annual rental payments based on the agriculture rental value of the land and provided cost-share assistance for establishing approved conservation practices.

CRP was not the first land retirement program implemented by USDA to protect soils, reduce crop surpluses, control overproduction, and support commodity prices. Predecessors of CRP included the Agricultural Adjustment Act of 1933, Agriculture Conservation Program (1936), Soil Bank Act (1956), Wheat Production Program (1962), and Feed Grain Program (1972). Important shortcomings of these programs for wildlife were the short duration of contracts, late planting date, undiversified planting mixtures,

frequent disturbance, and lack of technical assistance. For example, acreage reduction under Soil Bank and Feed Grain Programs was accomplished by using one-year contracts that required participants to plant cover (generally seed grain) after June 15 and mow, disk, or plow cover before grain maturity in mid to late July. Annual land retirement programs implemented between 1961 and 1983 resulted in increased soil erosion and contributed to declines in some grassland-dependent wildlife (Berner 1984). CRP requirements for 10-year contracts, diverse seeding mixtures that included forbs, elimination of disturbances except under emergency conditions, and provision of technical assistance to program participants were major advancements for wildlife in the 1985 Farm Bill.

Amendments to the 1985 Farm Bill in 1990 and 1996 sought to enhance wildlife benefits of CRP. Improvements in legislation that were sought by wildlife conservation interests were creation of state technical committees, establishment of an application review procedure that ranked applications based on their environmental benefits (e.g., proximity to wildlife habitat, diversity of seeding, use of native plant species), and recognition of coequal status of wildlife with soil and water conservation. Additionally, new programs, such as the Wetlands Reserve Program (WRP), Wildlife Habitat Incentives Program (WHIP), and Environmental Quality Incentives Program (EQIP) were created that offered great potential for improving wildlife habitat on private land.

Since the initial CRP sign-up in 1986, the CRP has undergone almost continuous modification. Most of the changes have come as a result of program assessments and the advent of new technology and new data for measuring environmental impacts. The Food Security and Rural Investment Act of 2002 included a new provision allowing managed

haying and grazing (including the harvest of biomass) and placement of wind turbines, if consistent with the conservation of soil, water quality, and wildlife habitat in return for partial reductions in the annual CRP payments . The prescribed management practices were enabled because the environmental community made a strong case for the need to include these practices to assist restoration efforts to provide better wildlife habitat.

Under the Act, managed haying and grazing was permitted subject to certain limitations. The interim rules and regulations enabled CRP contract holders to modify their contracts to enable the prescribed management in accordance with Natural Resources Conservation Service (NRCS) handbooks with the condition that rental payments be reduced by 25 percent. Although the provision did not include a specific managed haying and grazing schedule, the NRCS decided to allow managed haying and grazing to occur once every three years.

In 2008, the Food, Conservation, and Energy Act was signed into law and yet another provision relating to the Conservation Reserve Program was established. The new provision allowed for routine and prescribed grazing of CRP lands. The frequency of routine grazing is decided by local resource conditions and prescribed grazing is a permissible activity for the control of invasive species. Following the passage of this Act, FSA is now considering implementing changes to the managed haying and grazing provisions that would only apply to lands enrolled in CRP after September 25, 2006 as well as existing contracts without authorized managed haying and grazing prior to that date. As part of this process, USDA is preparing environmental assessments of alternatives for managed haying and grazing on CRP lands. A No Action scenario, which would result in no changes to the current managed haying and grazing provisions,

will be compared to various alternative haying and grazing frequencies and Primary Nesting Season (PNS) dates.

The managed harvesting, which includes the managed harvesting of biomass, requires the development of “appropriate vegetation management requirements” only during specific times of the year. According to the Farm Service Agency (FSA), current managed harvesting is authorized no more frequently than one out of every three years after the CRP cover is fully established. Managed haying and grazing may be available less frequently in a particular area depending upon local conditions, resource capacity, and the conservation goals of the program.

Grazing will be allowed for the control of invasive species or as a prescribed management practice to manage the health and vigor of the cover. Generally, CRP acreage may not be hayed or grazed during the Primary Nesting Season for certain wildlife established by state FSA committees in consultation with USDA's Natural Resources Conservation Service (NRCS) State Technical Committee. A plan for the grazing of Conservation Reserve Program lands is required to consider appropriate stocking rates to enable continued routine grazing that maintains or improves the health and vigor of the cover and the wildlife habitat. This plan is also required to consider an appropriate frequency (number of years) and duration (period within the year) of grazing based upon the regional climate, soil type and natural resources. USDA's FSA is currently seeking input from the public to aid in developing the rules and regulations needed to implement the managed haying and grazing provision under the guidelines issued in the Food, Conservation, and Energy Act of 2008.

During Congressional deliberations of the CRP in the Food Security Act of 1985 the initial CRP concept was for an easement program to restrict only cropping activities on specific “fragile” croplands. This would shift land use from cropping activities to haying and grazing and was seen as problematic by the cattle industry. The shift of land into more forage production was seen as a potential for increased cattle supplies and reduced prices as well as introducing inequities by providing easement payments for cattle producers that had plowed out their forages during the high priced crop years of the 1970s while others maintained their forage bases. These arguments won the day and now use of the CRP acres was permitted (Ervin and Dicks 1986).

By 1990, with more than 35 million acres enrolled in the CRP, and that enrollment highly concentrated in a small percentage of counties, a new set of studies focused on the lost economic activity and the hardships on many small communities in high enrollment areas. Impacts on local economies have been studied nearly since CRP was initiated by Martin et al. (1998), Standaert and Smith (1989), Mortensen et al. (1990), Broomhall and Johnson (1991), Hyberg et al. (1991), Henderson et al. (1992), Otto and Smith (1996), Hamilton and Levin (1998), Hodur et al. (1998), and Bangsrud et al. (2002) to name a few. There is ample literature to support the finding that land retirement reduces input use and employment in businesses serving crop producers (Taylor (1988); Standaert and Smith (1989); Hyberg, Dicks, and Hebert (1991); Abel and Earley (1994)). Conversely, there are many studies of economic development associated with the environmental improvements induced by land retirement (Daniels (1988); Parks and Schorr (1997); Beck et al. (1999); Feather et al. (1999); Johnson and Maxwell (2001)).

These two arguments, cattle producers' concerns that managed haying and grazing practiced on Conservation Reserve Program land may increase forage production and possibly increase beef production which could potentially drive down cattle prices and the concerns of rural communities and agribusinesses that non-use of CRP acres has adversely affected their wellbeing, have continued to this date. Several new arguments have risen over this time including the belief by some cattlemen that the increase in forage production would cut cattle feeding costs and create additional economic impacts in the local economy, that CRP land use would aid young farmers and ranchers faced with tight land supplies and beliefs by many environmental groups that grazing and haying activities would lower or eliminate the quality of wildlife habitat. The current grazing allowed on CRP land is viewed as a conflict with wildlife objectives of the CRP by the environmental groups. The grazing of the CRP land during the prime grazing season may conflict with the primary nesting season of some native bird species. The environmental and wildlife advocates believe that the grazing is interfering with nesting of the native birds and these advocates are actively taking action against the current management of the grazing provision.

The task of creating a method to devise a management scenario which meets all requirements in each state and ecological zone and is economically beneficial for farmers was assigned to researchers from FSA and Oklahoma State University. The study at Oklahoma State University, conducted by Dicks and Bidwell (2007), developed a comprehensive, site specific method for designing management scenarios which abide by limitations set forth by the National Environmental Policy Act (NEPA), the Food Security Act of 1985, and the Administrative Procedure Act. The FSA used a simple

method that blanketed the entire nation under the same limitations. Neither method was adopted as the first was deemed too labor intensive while the second was too broad.

Therefore, a compromise was made between the two and FSA in conjunction with NRCS developed management scenarios for each state, given local conditions. These scenarios were used for the basis of this research.

This study analyzes whether or not the new grazing and haying provisions of CRP would dramatically impact the price of beef and we estimate the impact such changes would have on state economies. First, this research examines whether or not it is economically beneficial for the farmer to hay or graze CRP land, given the reduction in rental payments called for in legislation and set forth in final rules by FSA. Second, the amount of annual beef and hay production in each state was projected under several scenarios under the new regulations. The impact of beef and hay production on beef prices was also estimated. Lastly, the economic impact of these production changes to states' economies was estimated and used to assess whether additional analysis is warranted by the FSA to demonstrate impact of the policies on market conditions. In addition to addressing these issues, this work adds a unique perspective to the literature on the Conservation Reserve Program and the growing literature on the Food, Conservation, and Energy Act of 2008. To our knowledge, no previous study has estimated the economic impact of such a policy change to state economies. Such analysis is critical to help policy makers and cattle producers understand the impacts of policy changes to their constituents and operations, respectively.

Objectives

The purpose of this research is to determine how a policy change for the Conservation Reserve Program will affect local and regional economies in the Great Plains region. More specifically, the objectives of this research are to:

1. Collect the forage and livestock data necessary to evaluate the economic value of haying and grazing the Conservation Reserve Program lands.
2. Combine the physical data collected with the economic data to provide comparisons of relative returns from each management scenario.
3. Estimate the potential increase in hay production (tons) and beef production (pounds) on Conservation Reserve Program acres throughout the plains states.
4. Estimate the percent growth in the value of beef and hay production for each scenario.
5. Determine the relative impact of those changes on local and regional markets.

Literature Review

Conservation programs within USDA, such as the Conservation Reserve Program and Conservation Reserve Enhanced Program assist owners of America's private land with conserving their soil, water, and other natural resources. Every year millions of acres are registered and withdrawn from the programs. Many studies have investigated the optimal allocation and alternative uses of these marginal lands as well as their economic and environmental impacts. The following review summarizes the Conservation Reserve Program, positive and adverse economic impacts on local

economies of enrollment in CRP, and the use of IMPLAN to estimate those economic impacts.

Conservation Reserve Program

The Conservation Reserve Program is a voluntary program for agricultural landowners and was established in the Food Security Act of 1985 (Farm Service Agency 2007). The soil conservation strategy of CRP involves paying farmers to retire marginal croplands from production for 10 years. CRP protects millions of acres from excessive erosion and is designed to safeguard the Nation's natural resources. By reducing water runoff and sedimentation, CRP protects groundwater and helps improve the condition of lakes, rivers, ponds, and streams. Acreage enrolled in the CRP is planted to resource-conserving vegetative covers, making the program a major contributor to increased wildlife populations in many parts of the country (Farm Service Agency 2007).

The Food Security Act of 1985 generally provided that no commercial use could be made of land enrolled in the CRP. However, the Federal Agricultural Improvement and Reform Act of 1995 authorized haying and grazing of CRP acreage under certain conditions to improve the quality and performance of the CRP cover or to provide emergency relief to livestock producers due to certain natural disasters. There are two types of haying and grazing authorization: managed and emergency. Acreage under haying or grazing management are penalized a 25% reduction in the rental payment while acreage under emergency haying or grazing management are only penalized 10% of the rental payment. In anticipation of a profitable biorefinery business model, amendments were made to the management of CRP land. The Farm Security and Rural Investment Act of 2002 permitted managed haying, grazing and biomass harvesting of CRP

grassland in accordance with a conservation plan (U.S. Department of Agriculture 2003). Acres that are used for grazing, haying, or on which biomass has been harvested are assessed a 25% reduction in the annual rental payment.

Economic Impact

Several studies have examined the economic impacts of CRP programs in areas across the United States. Using IMPLAN and input-output models, Broomhall and Johnson (1990) state that the CRP program had a negative effect in east central Georgia. These findings have been consistent with results produced by other researchers including Martin et al. (1988) and Hyberg et al. (1991) in other areas of the United States. Similar results indicate reduced sales by agribusinesses as farmers' needs for chemicals, equipment, fuels and other inputs used in crop production (Bartlett and Trock 1987). In Baca County, CO, rental of CRP land was as much as 3 times the cash rent creating a market for highly erodible land that is eligible for or enrolled in CRP (Reichenberger 1987). The higher rental rates have resulted in higher land prices. Using the U.S. Forest Service's Input-Output model, IMPLAN Version 2.0, Martin et al. (1988), Mortensen et al. (1989), and Broomhall and Johnson (1990) determined enrollment in the CRP had negative impacts on both employment and income, including both the payment to farm households and the income generated by subsequent consumption expenditures of farm households. A study by Boyd et al. (1992) revealed that by keeping 33.9 million acres in CRP would result in lower output by the producing sectors, a decrease in the consumption of goods and services, and a reduction in welfare. The government would also realize an increase in expenditure to support commodity programs.

While these studies have examined the impacts of reduced agricultural production and the economic stimulation created by government payments, others have argued that the regional economic development opportunities cannot be ignored. For example, as land use changes from agricultural use to that of recreational activities, the economic activity can be substantial depending on size and nature of the activity in question. Ribaudo (1989a, 1989b), Langner (1989), Ribaudo et al. (1989), and Ribaudo et al. (1990) predict significant increases in wildlife-based and water-based recreational activity resulting from the CRP. Siegel and Johnson (1991) developed a “break-even” approach to analyzing CRP impacts so that the amount of recreation activity needed to offset the negative impact of CRP could be determined. Positive impacts within any community are the initial expenditures for establishing permanent cover as well as the annual rental payments to farmers and ranchers (Bartlett and Trock 1987). Sullivan et al. (2004) also estimated economy-wide impacts if CRP contracts had been allowed to expire in 2001. Land brought back into production would have resulted in increased production of farm commodities, increasing demand for farm inputs, labor, marketing and transportation services, leading to job growth in those industries. However, there was a reduction in outdoor recreational spending. ERS found no statistically significant evidence that CRP encouraged rural population outmigration (Sullivan et al. 2004). Sullivan et al. (2004) also discovered that high levels of land retirement did not appear to have affected trends in farm start-ups and aggregate employment growth slowed temporarily in some high-enrollment counties, but growth in the number of other nonfarm businesses moderated the impact on total employment.

Input-Output Modeling

According to research by Mundell (200), input-output (I/O) modeling was first developed in the late 1930s and has become widely used in regional economics since that time. I/O provides a framework for measuring the linkages among sectors (a term used interchangeable with 'industries') in a region's economy. The model is based on observed economic data for a specific geographical area (e.g. a county or state). Basically, the input-output system keeps track of the flow of goods from each sector to other sectors and the final consumers. The flow of one sector's output to other industries reflects the inter-sectoral linkages in an economy.

With I/O there is a fixed proportion of inputs for each unit of output. Fixed proportions imply there are no substitutions between inputs, regardless of price changes or new technology. In addition, all the firms in a sector are assumed to need the same average mix of inputs. For example, if a sector called "vehicle construction" included firms that produce full-sized trucks and firms that produce golf-carts, I/O assumes the same proportion of inputs, capital, and labor are used in both types of firms. Fixed proportions also signify that small and large producers have the same input mix and efficiency in production. Another assumption is constant returns to scale. That is, in order for output to double all of the inputs used in production must double. Also, because there are no resource constraints, there is no assumed production capacity.

In the past, to use I/O in a study, a lot of time and money were needed in order to collect necessary primary and secondary data and to set up the I/O model. Today, there are several pre-packaged I/O models available to researchers that can run on personal computers. One of the more popular models is called IMpact analysis for PLANning

(IMPLAN). IMPLAN contains comprehensive national data that is used to estimate regional data on a county-by-county basis. This model allows the researcher to specify the geographic region of interest. In addition, the model is relatively easy to modify to include primary or more recent data. It is this flexibility that makes IMPLAN very effective in meeting the needs of various researchers.

IMPLAN is used in the creation of scenarios in conjunction with the Show Me Model. This model is frequently used to generate estimates of total employment and income when a community is interested in knowing the impacts of an economic development event. A change in employment or income has a multiplier effect because of the inter-industry linkages in the local economy. IMPLAN measures these linkages. The Show Me Model is then used to allocate the estimated changes in employment and income over several years. The fiscal, economic, and demographic projections that are made in a scenario now incorporate the new circumstances. The scenario results, when compared to the baseline, provide valuable information that can be used in local decision-making.

CHAPTER II

METHODS

Several steps are required to determine the change in productivity from the new CRP rules and the impact such changes would have on states' economies. After collecting farm and county level data, farm budgets were constructed that correspond to various use restrictions that were proposed under the new CRP rules. The farm budgets were used to determine which farms are likely to profit from the new CRP rules, and thus predict the resulting changes in beef and hay production. Once state-level estimates of beef and hay production were calculated, the magnitude of quantity and price changes to the beef and hay industries were determined for various restricted-use scenarios. Finally, the economy-wide impacts of these changes were estimated using IMPLAN, a national, inter-regional input-output model. The details of these methods are discussed in this section.

Building Farm Budgets

To estimate farmer profitability for haying and grazing activities under the new CRP restricted use policy, data on 560 fields currently in CRP were collected. These fields represented 10 fields in 4 counties for Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming. Data were collected using a mail survey, shown in Table 1,

completed by FSA County Executive Directors (CED) and Natural Resources and Conservation Service (NRCS) Conservationists to collect number of acres, pounds of forage harvestable, previous crop base, previous program yield, water availability and proximity of cattle operations, haying and grazing restrictions, months available for grazing and haying, and % of forage removable. This information was gathered from CRP reports filed with the county FSA offices by program participants. The CED and Conservationists also submitted a GIS photo map of the field, soil map, and Environmental Quality Incentive Program cost share sheets for the county. Counties and fields were chosen by the local CED and Conservationist based on counties with a high percentage of CRP participation and the ecological diversity of counties within the state. The fields were chosen to represent the diversity of the CRP lands in each county. Of the 560 fields, 2 states, Colorado and Wyoming submitted incomplete information leaving 480 fields for analysis. The following analysis uses data collected from actual field records and characteristics and not hypothetical or average data, as in previous policy studies.

Table II-1. Data Collection Survey

OSU- Research Hay vs. Grazing Management					
Your Name		County, State		CRP- Field ID	
Legal Description of CRP field					
Field Location					
Acreage		Shape i.e. square/irregular		Perimeter in Feet	
Fence	Y N	Type of Fence		Any Cross Fencing?	Y N
Water Available	Y N	Type of Water Source		Distance to Water	
Used for Grazing?	Y N	Which Months Available for Grazing?			
Used for Haying?		Which Months Available for Haying?			
Details/Restrictions					
Estimated Capacity for Grazing (given in # of animal units)					
Types of Grass Present					
Remarks/Additional Information:					
Additional Items to Include			For Questions Please Contact		
GIS photo map of field			Amanda Dickson	email: amanda.dickson@okstate.edu	
Soil Map				Cell phone: 405-564-4204	
EQIP Cost share sheets for the county			Dr. Mike Dicks	email: michael.dicks@okstate.edu	

In addition to the actual, field-specific data, economic data from the United States Department of Agriculture National Agricultural Statistics Service were used. County data include: total CRP acres eligible for haying and grazing already under certain conservation practices (CP1, CP2, CP4B, CP4D, CP10, CP18B, and CP18C, see Appendix B), total active CRP acres, all cattle and beef cows, 2004 – 2006 average wheat yield, and total of managed haying and grazing acres.

Using the farm and county specific data, enterprise budgets were constructed for beef and hay production for each state and county. The process for constructing the budgets required several steps. First, assumptions were made about the production processes of farm and ranch operations. Second, the change in beef and/or hay

production was calculated for each CRP contract, in each county and state under the various land use scenarios. Third, these changes in production were expanded to determine the state level change in production. Lastly, the state projections were analyzed in an input-output framework to determine their state-wide impact.

Assumptions

To develop the haying and grazing budgets, certain assumptions were made regarding hay and cattle production. We assumed that profit maximizing hay and cattle production practices are used on all acres, all equipment includes recent technology, bales are 1200 pounds on average, fields are hayed at mid-point of haying period, cattle operations are primarily cow-calf, grazeable acres are used to extend calf production from cow-calf operation, weight gain and prices assume weight gains between 4 and 8 cwt (hundred weight), cattle prices are from the Oklahoma City market (average of weekly averages for 2008) because it is the largest national livestock auction and is indicative of national prices, baling costs set at 2 tons per acre output and costs per bale increase (decrease) as tons/acre declines (increases). We also use the following values based on the work of Rouquette et. al (1980), we calculated 1.496 pounds of gain/day, 19.448 pounds of forage per day required to achieve daily gain, \$1.05 per pound of beef, \$0.65 is the value of a pound of gain, 2.002 pounds of feed/day, feed per pound of gain cost \$0.28, \$15.28 is the price per bale, hay is valued at \$65 a ton, and moving costs of \$5/bale for less than 5 miles (anything further than 5 miles will incur \$3.50/mile).

We made additional assumptions to simplify the analysis. Only fields that are currently fenced can be grazed as the cost of fencing is too high to have profitable

grazing in the most frequent (1 in 3 year) grazing alternative. Grazing is also not an option if water is not located within 1 mile, as hauling water located beyond 1 mile is cost prohibitive.

Based on past CRP performance, only 64% of the CRP contracts that are considered eligible and economically viable lands for haying or grazing are assumed to have owners/operators willing to participate (the maximum level of participation in previous voluntary programs due to age, knowledge of program, risk preference, equipment availability and other limitations), and 2004 – 2006 haying and grazing reports have no fields double counted.

Scenarios

The FSA created scenarios ranging from conservative (restrictive) to liberal (lenient) which are described in Appendix A. For each state there are up to 4 different scenarios which allows the haying or grazing limitations to vary. The limitations include how many days the land can be used for haying and grazing, how frequently the acres may be used (in years), and designated periods of inactivity for the primary nesting season and the winter cover needs of local bird species. The limitations vary from state to state but follow a pattern of most conservative to most liberal.

Budgets

To determine if it is economically beneficial for a farmer to hay or graze CRP land, farm budgets were developed for each CRP contract acreage. The contract acreage

may be used for haying and grazing if it is determined to be economically beneficial based upon a positive net return calculated as follows:

$$NR = \pi - C - R$$

Where $NR = net\ return$ and is calculated by subtracting C (where $C = costs$) and R (where $R = rental\ rate\ reduction$) from π , (where $\pi = revenue$). The revenue for hay production was calculated by determining the value of hay.

$$\pi = H * P_t$$

where;

$H = harvested\ tons\ of\ hay\ per\ acre,$

$P_t = price\ per\ ton\ of\ hay.$

Next, the cost per acre, including transportation costs, was calculated. The transportation cost is determined by the distance between the location of the contract acreage field/road edge and the next closest non-CRP acreage where the hay could be fed. Costs are estimated as:

$$C = (B_a + P_b)$$

Where transportation costs or tc are subject to the following constraints

if distance < 5 miles then \$5 per bale,

if distance > 5 miles then \$5 per bale + \$3.50 per additional mile

where

$C = Cost\ per\ acre,$

$B_a = number\ of\ bales\ per\ acre,$

$P_b, = harvest\ cost\ per\ bale\ of\ \$15.28.$

The harvesting costs assume bales. The rental rate reduction associated with haying or grazing the land was computed by reducing the monthly payment by 25% as required by law. Net returns were then calculated by taking the value of hay production per acre (revenue) minus the costs per acre minus the rental rate reduction.

Calculating the net returns for beef production followed similar steps. Initially, the amount of forage available and the quality of that forage was estimated. The quantity of forage available depends on the number of available days for grazing under the FSA scenarios and the productivity of the site. Based upon estimates of forage quantity available over a given period of time the number of animal units (AUs) was estimated as follows;

$$AU = Y_{FP} / F / D_g$$

Where

AU = the number of *animal units per acre*,

Y_{FP} = the *forage production available per year*,

F = the *amount of forage needed to achieve ideal weight gain*, and, D_g = the *number of days allowed for grazing*.

Next, the revenue generated from grazing cattle can be calculated by determining the pounds of gain per acre as;

$$G_a = AU * G_d$$

Where

G_a = the *pounds of gain per acre*,

AU = the *number of animal units per acre*, and

G_d = the pounds of gain per day.

The revenue from the gain per acre is:

$$\pi = (P_g - C_g) * G_a$$

Where

π = revenue of gain per acre,

G_a = pounds of gain per acre,

P_g = the price of gain, and

C_g = cost of feed per pound of gain.

Net returns (NR) were then calculated by taking into account the availability of water; if no water was available or available at a distance greater than 1 mile, the grazing option was deemed infeasible for this contract acreage.

$$NR = (\pi * D_G) - R$$

where

NR = the net returns for cattle production

π = revenue per acre,

D_G = gain per acre = the number of days allowed for grazing, and

R = the per acre rental rate reduction.

Finally, the increase in total pounds of beef produced can be calculated by multiplying pounds of gain per acre per day by the number of grazing days and by the number of acres.

After estimating the production that would occur for each contract acreage based upon profitability, an expansion factor is used to determine the total profitable acres of grazing or haying in each county and for each state for each of the haying and grazing alternatives. County expansion factors are computed by finding the ratio of total CRP acres in the county to the number of CRP acres sampled from the county. This number varies from county to county. Similarly, state expansion factors were generated by dividing the total number of CRP acres across the state by the amount of CRP acres in our sample. Using the state expansion factors, the percent of acres likely to be grazed/hayed (total acres samples*64%), annual economically hay-able/graze-able CRP acres, pounds of beef/hay produced, and potential increase in economy wide impacts (\$) from beef/hay production on CRP were estimated.

Input/ Output Analysis

To estimate the economy-wide impact of the CRP rule changes and the local and regional impacts on the beef and hay industries an input-output (I/O) analysis is used. The I/O model is essentially a mathematical representation of the purchases and sales patterns of a regional economy. The model is used to estimate total regional change in output, employment, and income at a given point in time due to a change in final demands in an industry. The total change to an economy from a shock like the increase in production of beef and hay is summarized by a multiplier. For example, a multiplier of 1.42 means that \$1 in additional final demand will generate an additional \$0.42 of output because of input purchase to produce the first \$1 of output and the consumption of households paid by firms impacted by this change in final demand. The multipliers used

in this study were derived using IMPLAN, an I/O model available from the Minnesota IMPLAN Group, Inc. (2000), and the corresponding state data for 2007.

CHAPTER III

RESULTS

The average rental rate for CRP acres and the 25% rental rate reduction for each county are shown in Table III-1. The average net returns per acre for hay production and grazing with the 25% CRP rental rate reduction are shown in Table III-2. Low average net returns (under \$3/acre) for hay production were calculated for the following counties: Power (ID), Hamilton (KS), Big Horn (MT), Hill (MT), Banner (NE), Morrill (NE), Box Elder (UT), and Walla Walla (WA). For grazing, counties with low average net returns included all of the same counties with low returns on hay production as well as Howard (TX) and Spokane (WA) counties. The counties with the highest net returns for hay production and grazing were Lyman (SD) and Beckham (OK), respectively. The amount of beef and hay production used to calculate the average net returns for each county is shown in Table III-3.

Table III-1. Average Rental Rates and Rental Rate Reductions by County

State	County	2007 Avg Rental Rate	25% Rental Rate Reduction
ID	Power	\$37.13	\$9.28
KS	Dickson	\$51.50	\$9.82
KS	Hamilton	\$33.05	\$8.26
KS	Washington	\$53.13	\$13.28
KS	Ness	\$39.60	\$9.90
MT	Big Horn	\$38.62	\$9.66
MT	Hill	\$30.25	\$7.56
NE	Banner	\$29.93	\$7.48
NE	Gage	\$71.40	\$17.85
NE	Holt	\$41.21	\$10.30
NE	Morrill	\$58.85	\$14.71
NM	Curry	\$33.19	\$8.30
ND	Walsh	\$27.86	\$6.97
ND	Hettinger	\$35.63	\$8.91
ND	Nelson	\$44.51	\$11.13
OK	Beckham	\$36.76	\$9.19
OK	Dewey	\$36.76	\$9.19
OK	Ellis	\$33.35	\$8.34
OR	Morrow	\$45.73	\$11.43
OR	Umatilla	\$56.97	\$14.24
SD	Brown	\$45.17	\$11.29
SD	Day	\$45.73	\$11.43
SD	Lyman	\$33.32	\$8.33
TX	Andrews	\$27.67	\$6.92
TX	Deaf Smith	\$38.15	\$9.54
TX	Howard	\$39.16	\$9.79
TX	Lamar	\$36.91	\$9.23
UT	Box Elder	\$28.57	\$7.14
UT	Cache	\$34.89	\$8.72
WA	Spokane	\$55.77	\$13.94
WA	Walla Walla	\$54.63	\$13.66
WA	Whitman	\$73.61	\$18.40

Table III-2. Average Return per ACRE on Hay Production and Grazing with a 25% Rental Rate Reduction on CRP Acreage (\$/acre)

State	County	Revenue ¹	Cost ²	25% Reduction ³	Net Return Hay ⁴	Net Return Grazing ⁵
ID	Power	20.30	10.51	9.28	2.17	0.00
KS	Dickson	47.78	24.84	12.88	19.88	12.44
KS	Hamilton	21.84	13.92	8.26	1.63	1.10
KS	Washington	39.04	20.30	13.28	17.95	10.86
KS	Ness	45.50	24.73	9.90	17.15	9.45
MT	Big Horn	19.53	12.45	7.56	0.61	0.05
MT	Hill	25.71	16.39	9.66	1.49	1.75
NE	Banner	24.34	15.67	7.48	1.18	1.35
NE	Gage	82.81	43.06	17.85	22.23	13.06
NE	Holt	50.28	29.28	10.30	10.68	8.30
NE	Morrill	35.49	21.24	14.71	1.73	0.48
NM	Curry	35.95	22.92	8.30	6.54	7.23
ND	Walsh	60.97	32.39	11.13	18.40	8.49
ND	Hettinger	44.36	24.95	6.97	12.68	9.62
ND	Nelson	33.67	20.15	8.91	4.66	6.28
OK	Beckham	59.35	30.86	9.19	22.59	22.41
OK	Dewey	50.27	27.89	9.19	12.00	9.56
OK	Ellis	61.43	26.58	8.34	27.71	15.27
OR	Morrow	19.32	10.15	11.43	0.71	0.00
OR	Umatilla	38.72	20.06	14.24	3.37	0.00
SD	Brown	50.05	31.12	11.29	15.40	10.68
SD	Day	61.75	32.11	11.43	27.11	20.36
SD	Lyman	60.06	31.23	8.33	28.27	21.15
TX	Andrews	34.35	21.90	6.92	5.40	5.51
TX	Deaf Smith	37.31	22.90	9.54	21.44	19.08
TX	Howard	56.88	36.26	9.79	10.83	0.00
TX	Lamar	55.28	34.64	9.23	16.23	15.73
UT	Box Elder	4.72	3.01	7.14	0.00	0.00
UT	Cache	66.89	38.04	8.72	19.68	16.53
WA	Spokane	56.00	29.01	13.94	14.07	2.94
WA	Walla Walla	6.83	5.81	13.66	0.00	0.00
WA	Whitman	87.95	49.88	18.40	16.81	13.33

¹Average Revenue for Hay Production = Average Revenue – Average Cost – Average 25% Rental Rate Reduction. ²Average Revenue for Stocker Cattle = Average Revenue – Average 25% Rental Rate Reduction.

³Average 25% CRP rental rate reduction.

⁴Net (Weighted) Return for Hay Production = Total Value of Hay Increase/Acres Hayed.

⁵Net (Weighted) Return for Stocker Cattle = Total Value of Beef Increase/Acres Grazed.

Table III-3. Number of Plots with Returns Greater than the 25% Rate Reduction

State	# Plots Sampled in State	# Plots with Hay Return >25% Rate Reduction	# Plots with Grazing Return >25% Rate Reduction
ID	10	8	0
KS	37	18	30
MT	20	14	13
NE	40	40	31
NM	10	8	6
ND	30	30	13
OK	30	29	23
OR	20	14	
SD	30	29	18
TX	40	8	10
UT	20	10	9
WA	24	19	10

The 2004 – 2006 county level data relating to economically viable CRP acres was extrapolated to the state level. Table III-4 shows the percentage of CRP acres in each state eligible for haying and grazing based on current CRP program guidelines as well as the percentage of CRP acres economically viable for haying and grazing. A large percentage of CRP acres are eligible for haying and grazing in every state and a large percentage of CRP acres in most states are economically viable for haying and grazing. However, none of the CRP acres in Idaho and less than 20% in Texas and Washington are economically viable for hay production. With the exception of 3 states (KS, MT, and UT), grazing was economically viable on over 50% of CRP acres in each state.

Table III-4. Eligible CRP Acres and Economically Viable Acres

State	% CRP Acres Eligible for Haying & Grazing	% CRP Acres Economically Viable for Grazing	% CRP Acres Economically Viable for Haying
ID	96.0%	0.0%	83.0%
KS	82.0%	43.0%	42.0%
MT	94.0%	44.0%	34.0%
NE	86.0%	77.0%	87.0%
NM	99.0%	59.0%	78.0%
ND	79.0%	34.0%	95.0%
OK	93.0%	74.0%	95.0%
OR	92.0%	0.0%	70.9%
SD	68.0%	71.0%	95.0%
TX	98.0%	19.0%	61.0%
UT	99.8%	41.0%	48.0%
WA	98.0%	19.0%	61.0%

The actual number of eligible CRP acres used for managed haying/grazing as well as the percentage of CRP acres economically viable for haying/grazing and used for haying/grazing are presented in Table III-5. In most states, a fairly low percentage of CRP acres eligible for managed haying/grazing were actually used for managed haying/grazing in 2004 - 2006. Table III-6 provides an estimate of the maximum amount of acres in each state that are both economically viable for haying/grazing and eligible for managed haying/grazing.

Table III-5. Actual % Eligible CRP Acres Used for Haying and Grazing- Statewide Extrapolation

State	% Eligible CRP Acres Used	% CRP Acres Economically Viable for Grazing & Used for Grazing	% CRP Acres Economically Viable for Haying & Used for Haying
ID	0.51%	0.00%	0.51%
KS	5.10%	1.80%	3.30%
MT	19.4%	4.60%	14.80%
NE	17.90%	4.40%	13.50%
NM	1.20%	1.20%	0.00%
ND	30.70%	2.50%	28.30%
OK	18.20%	12.30%	5.90%
OR	0.05%	0.00%	0.05%
SD	7.70%	1.05%	6.60%
TX	37.00%	35.40%	1.26%
UT	6.00%	5.99%	0.03%
WA	1.00%	1.31%	0.17%

Table III-6. Estimated % Eligible CRP Acres Used for Managed Haying and Grazing - Statewide Extrapolation

State	Max % of Economically Viable Haying Acres Used for Managed Haying	Max # of Economically Viable Grazing Acres Used for Managed Grazing	Max % of Economically Viable Grazing Acres Used for Managed Grazing	Max # of Economically Viable Grazing Acres Used for Managed Grazing
ID	53.16%	318,000	0.00%	0
KS	27.60%	366,000	27.20%	354,000
MT	20.20%	275,000	50.00%	524,000
NE	49.40%	448,000	55.70%	27,000
NM	38.00%	126,000	50.10%	220,000
ND	21.60%	206,000	60.70%	1,600,000
OK	47.60%	334,000	61.00%	550,000
OR	45.39%	180,000	6.62%	2,000
SD	31.00%	258,000	41.00%	458,000
TX	12.30%	22,000	39.30%	228,000
UT	26.00%	19,000	31.00%	27,000
WA	15.00%	53,000	26.00%	159,000

For each state, the current program constraints are compared to alternative program constraints (i.e. different managed haying/grazing constraints and/or different primary nesting seasons). For each state, the current program constraints are referred to

as Alternative A. For each alternative, individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis. The analysis for each alternative was based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage.

Comparison of Alternatives

Idaho

Alternative A- MH: 1/10, MG: 1/10, PNS: 1APR – 1AUG

Analysis of the existing provisions for managed haying and grazing revealed that the maximum annual percentage of use for these activities would be approximately 0.00 percent of managed grazing and 5.32 percent of managed haying of the economically viable acreage. This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately no acres employing managed grazing and 32,000 acres using managed haying. These activities are estimated to produce no additional beef production value (0.00 percent increase) and \$750,000 in hay production value (0.13 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would not produce an additional value from beef production (0.00 percent increase) and

\$1.2 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$750,000 while there is no increase from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$363,000 while there is not an increase from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$269,000. Therefore, the total economic impact from hay production for the state is anticipated about \$1.2 million.

Alternative B- MH: 1/3, MG: 1/3, PNS: 15APR – 1JUL

Under Alternative B, eligible CRP practices could be used for managed haying and grazing activities once every 3 years; and the primary nesting season would be established between 15 April and 1 July every year. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage.

Analysis of this scenario for managed haying and grazing revealed that the maximum annual percentage of use for these activities would be approximately 0.00 percent of managed grazing and 17.72 percent of managed haying of the economically viable acreage. This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to no acres

employing managed grazing and 106,000 acres using managed haying. These activities are estimated to produce no additional beef production value (0.00 percent increase) and \$2.5 million in hay production value (0.42 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce no additional value from beef production (0.00 percent increase) and \$4 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$2.5 million while there is no increase from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$1.2 million while there is not an increase from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$896,000 and no impact from beef production. Therefore, the total economic impact from hay production for the state is anticipated about \$4.2 million.

Alternative C- MH: 1/3, MG: 1/3, PNS: 15APR – 15JUN Fall grazing to Dec 31

Under Alternative C, eligible CRP practices could be used for managed haying and grazing activities once every 3 years; and the primary nesting season would be established between 15 April and 15 June every year with fall grazing allowed till December 31. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal,

local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this scenario for managed haying and grazing revealed that the maximum annual percentage of use for these activities would be approximately 33.33 percent of managed grazing and 17.72 percent of managed haying of the economically viable acreage. This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 600,000 acres employing managed grazing and 106,000 acres using managed haying. These activities are estimated to produce approximately \$14.3 million additional beef production value (4.79 percent increase) and \$2.5 million in hay production value (0.42 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$25.1 million from beef production (0.00 percent increase) and \$4 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$2.5 million and \$14.3 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$1.2 million and \$5 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$896,000 while from beef production its \$3.2 million. Therefore, the total

economic impact for the state for hay production is anticipated about \$4.2 million and from beef production is \$26.4 million.

Alternative D- MH: 1/5, MG: 1/5, PNS: 1APR – 1AUG

Under Alternative D, eligible CRP practices could be used for managed haying and grazing activities once every 5 years; and the primary nesting season would be established between 01 April and 01 August every year. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this scenario for managed haying and grazing revealed that the maximum annual percentage of use for these activities would be approximately 0.00 percent of managed grazing and 10.63 percent of managed haying of the economically viable acreage. This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to no acres employing managed grazing and 63,000 acres using managed haying. These activities are estimated to produce no additional beef production value (0.00 percent increase) and \$1.5 million in hay production value (0.25 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce no

additional value from beef production (0.00 percent increase) and \$2.4 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.5 million and no impact from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$725,000 and no impact from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$538,000 while there's no impact from beef production. Therefore, the total economic impact for the state for hay production is anticipated about \$2.5 million. A comparison of the alternatives is illustrated in Table III-7.

Table III-7. Comparison of the Alternatives for Idaho

Parameter	Alt A	Alt B	Alt C	Alt D
Managed Grazing Activities (Beef Production)				
Maximum % Economically Viable Acres	0.00%	0.00%	33.33%	0.00%
Maximum Number of Acres	0	0	597,301	0
Additional Pounds of Beef	0	0	13,608,477	0
Additional Beef Value	\$0.00	\$0.00	\$14,288,901	\$0.00
Percent Change in Beef Value	0.00%	0.00%	4.79%	0.00%
Economy-wide Value Change	\$0.00	\$0.00	\$25,127,820	\$0.00
Percent Economy-wide Value Change	0.00%	0.00%	0.00%	0.00%
Managed Haying Activities (Hay Production)				
Maximum % Economically Viable Acres	5.32%	17.72%	17.72%	10.63%
Maximum Number of Acres	31,752	105,841	105,841	63,504
Additional Tons of Hay	9,434	31,448	31,448	18,869
Additional Hay Value	\$754,743	\$2,515,812	\$2,515,812	\$1,509,487
Percent Change in Hay Value	12.56%	0.42%	0.42%	0.25%
Economy-wide Value Change	\$1,198,119	\$3,993,731	\$3,993,731	\$2,396,239
Percent Economy-wide Value Change	0.00%	0.00%	0.00%	0.00%

Kansas

Alternative A – MH: 1/10, MG: 1/10, PNS: 1May – 1Jul

Analysis of the existing provisions for managed haying and grazing revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 8.2 percent of the economically feasible acreage (5.5 percent of managed grazing and 2.7 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated from each acre of managed haying or grazing activities. This would equate to approximately 73,000 acres using managed grazing activities and 35,000 acres using managed haying activities. These activities are estimated to produce approximately \$5.9 million additional beef production value (4.5 percent increase) and \$800,000 in hay production value (0.18 percent increase). For the statewide economy, the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$10 million from beef production (0.01 percent increase) and \$1.7 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$811,000 and \$5.8 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$390,000 and \$2 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be

about \$289,000 while from beef production about \$1.3 million. Therefore, the total economic impact for the state for hay production is anticipated about \$1.4 million and \$10.8 million from beef production.

Alternative B – MH: 1/3, MG: 1/3, PNS: 1May – 1Jul

Alternative B proposes to allow both managed haying and grazing to occur once every three years on authorized conservation practices (CP), with no change to the primary nesting season (PNS). The analysis for this alternative was based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

An analysis selecting this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 18.3 percent of the economically feasible acreage (9.2 percent of managed grazing and 9.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 122,000 acres using managed grazing activities and 118,000 acres using managed haying activities. These activities are estimated to produce approximately \$9.8 million additional beef production value (7.6 percent increase) and \$2.7 million in hay production value (0.6 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an

estimated additional \$16.6 million from beef production (0.02 percent increase) and \$5.7 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$2.7 million and \$9.8 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$1.3 million and \$3.4 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$964,000 while from beef production about \$2.2 million. Therefore, the total economic impact for the state for hay production is anticipated about \$4.5 million and \$18 million from beef production. A comparison of the alternatives is illustrated in Table III-8.

Table III-8. Comparison of the Alternatives for Kansas

Parameter	Alt A	Alt B
Managed Grazing Activities (Beef Production)		
Maximum % Economically Viable Acres	5.52%	9.20%
Maximum Number of Acres	73,126	121,876
Additional Pounds of Beef	5,581,049	9,301,748
Additional Beef Value	\$5,860,101	\$9,766,835
Percent Change in Beef Value	4.54%	7.57%
Economy-wide Value Change	\$9,962,172	\$16,603,620
Percent Economy-wide Value Change	0.02%	0.98%
Managed Haying Activities (Hay Production)		
Maximum % Economically Viable Acres	2.72%	9.06%
Maximum Number of Acres	35,435	118,115
Additional Tons of Hay	12,487	41,623
Additional Hay Value	\$811,653	\$2,705,511
Percent Change in Hay Value	0.18%	0.59%
Economy-wide Value Change	\$1,704,472	\$5,681,573
Percent Economy-wide Value Change	0.02%	0.08%

Montana

Alternative A – MH: 1/10, MG: 1/10, PNS: 15May – 1Aug

Analysis of the existing provisions for managed haying and grazing revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 9 percent of the economically feasible acreage (4 percent of managed grazing and 5 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated from each acre of managed haying or grazing activities. This would equate to approximately 125,000 acres using managed grazing activities and 155,000 acres using managed haying activities. These activities are estimated to produce approximately \$3 million additional beef production value (0.38 percent increase) and \$3.6 million in hay production value (1.17 percent increase). For the statewide economy, the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$5.6 million from beef production (0.02 percent increase) and \$6 million from hay production (0.02 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$3.6 million and \$3 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$1.7 million and \$1 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be

about \$1.3 million while from beef production about \$675,000. Therefore, the total economic impact for the state for hay production is anticipated about \$6 million and \$5.6 million from beef production.

Alternative B – MH: 1/5, MG: 1/3, PNS: 15May – 15Jul

Alternative B proposes to allow managed haying to occur once every five years and grazing to occur once every three years on authorized conservation practices (CP), with the primary nesting season (PNS) established between 15 May and 15 July. The analysis for this alternative was based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

An analysis selecting this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 26.4 percent of the economically feasible acreage (10.2 percent of managed grazing and 16.2 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 317,000 acres using managed grazing activities and 504,000 acres using managed haying activities. These activities are estimated to produce approximately \$7.6 million additional beef production value (0.97 percent increase) and \$11.6 million in hay production value (3.8 percent increase). For the statewide economy

the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$14.1 million from beef production (0.05 percent increase) and \$19.4 million from hay production (0.07 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$11.6 million and \$7.6 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$5.6 million and \$2.7 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$4.1 million while from beef production about \$1.7 million. Therefore, the total economic impact for the state for hay production is anticipated about \$19.4 million and \$14.1 million from beef production.

Alternative C – MH: 1/5, MG: 1/3, PNS: 15May – 1Jul

Alternative C proposes to allow managed haying to occur once every five years and grazing once every three years on authorized conservation practices (CP), with the primary nesting season (PNS) from 15 May to 1 July. The analysis for this alternative was based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

An analysis selecting this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 31 percent of the economically feasible acreage (12 percent of managed grazing and 19.2 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 371,000 acres using managed grazing activities and 596,000 acres using managed haying activities. These activities are estimated to produce approximately \$8.9 million additional beef production value (1.14 percent increase) and \$13.7 million in hay production value (4.5 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$16.5 million from beef production (0.06 percent increase) and \$22.9 million from hay production (0.09 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$13.7 million and \$8.9 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$6.6 million and 3.1 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$4.9 million while from beef production about \$2 million. Therefore, the total economic impact for the state for hay production is anticipated about \$23 million and \$16.5 million from beef production.

Alternative D – MH: 1/5, MG: 1/5, PNS: 15May – 1Aug

Alternative D proposes to allow managed haying and grazing to occur once every five years on authorized conservation practices (CP), with the primary nesting season (PNS) from 15 May to 1 August. The analysis for this alternative was based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

An analysis selecting this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 14 percent of the economically feasible acreage (4 percent of managed grazing and 10 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 125,000 acres using managed grazing activities and 310,000 acres using managed haying activities. These activities are estimated to produce approximately \$3 million additional beef production value (0.38 percent increase) and \$7.1 million in hay production value (2.34 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$5.6 million from beef production (0.02 percent increase) and \$12 million from hay production (0.05 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$7.2 million and \$3 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$3.4 million and \$1 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$2.5 million while from beef production about \$675,000. Therefore, the total economic impact for the state for hay production is anticipated about \$12 million and \$5.5 million from beef production. A comparison of the alternatives is illustrated in Table III-9.

Table III-9. Comparison of the Alternatives for Montana

Parameter	Alt A	Alt B	Alt C	Alt D
Managed Grazing Activities (Beef Production)				
Maximum % Economically Viable				
Acres	4.03%	10.20%	11.95%	4.03%
Maximum Number of Acres	125,428	317,397	371,700	125,428
Additional Pounds of Beef	2,867,310	7,255,767	8,497,139	2,867,310
Additional Beef Value	\$3,010,676	\$7,618,556	\$8,921,995	\$3,010,676
Percent Change in Beef Value	0.38%	0.97%	1.14%	0.38%
Economy-wide Value Change	\$5,571,438	\$14,098,599	\$16,510,693	\$5,571,438
Percent Economy-wide Value Change	0.02%	0.05%	0.06%	0.02%
Managed Haying Activities (Hay Production)				
Maximum % Economically Viable				
Acres	4.99%	16.20%	19.17%	9.98%
Maximum Number of Acres	155,246	504,023	596,211	310,492
Additional Tons of Hay	55,067	178,780	211,480	110,133
Additional Hay Value	\$3,579,336	\$11,620,700	\$13,746,173	\$7,158,673
Percent Change in Hay Value	1.17%	3.80%	4.50%	2.34%
Economy-wide Value Change	\$5,979,565	\$19,413,300	\$22,964,070	\$11,959,130
Percent Economy-wide Value Change	0.02%	0.07%	0.09%	0.05%

Nebraska

Alternative A – MH: 1/10, MG: 1/5, PNS: 15May – 1Aug

Analysis of the existing provisions for managed haying and grazing revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 15.5 percent of the economically feasible acreage (9.9 percent of managed grazing and 5.6 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated from each acre of managed haying or grazing activities. This would equate to approximately 90,000 acres using managed grazing activities and 57,000 acres using managed haying activities. These activities are estimated to produce approximately \$4.1 million additional beef production value (0.32 percent increase) and \$1.8 million in hay production value (0.45 percent increase). For the statewide economy, the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$7.5 million from beef production (0.01 percent increase) and \$3.1 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.8 million and \$4 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$900,000 and \$1.4 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be

about \$668,000 while from beef production about \$914,000. Therefore, the total economic impact for the state for hay production is anticipated about \$3.1 million and \$7.5 million from beef production.

Alternative B – MH: 1/3, MG: 1/3, PNS: 1May – 1Jul

Alternative B proposes to allow managed haying grazing to occur once every three years on authorized conservation practices (CP), with no change to the primary nesting season (PNS). The analysis for this alternative was based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

An analysis selecting this alternative revealed that the maximum annual percentage of use for managed haying would be approximately 18.6 percent and grazing activities would be approximately 16.5 percent of the economically feasible acreage. This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 149,000 acres using managed grazing activities and 190,000 acres using managed haying activities. These activities are estimated to produce approximately \$6.8 million additional beef production value (0.54 percent increase) and \$6.2 million in hay production value (1.51 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$12.6 million from beef

production (0.02 percent increase) and \$10.4 million from hay production (0.01 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$6.2 million and \$6.8 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$3 million and \$2.4 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$2.2 million while from beef production about \$1.5 million. Therefore, the total economic impact for the state for hay production is anticipated about \$10.4 million and \$12.6 million from beef production. A comparison of the alternatives is illustrated in Table III-10.

Table III-10. Comparison of the Alternatives for Nebraska

Parameter	Alt A	Alt B
Managed Grazing Activities (Beef Production)		
Maximum % Economically Viable Acres	9.87%	16.46%
Maximum Number of Acres	89,572	149,287
Additional Pounds of Beef	3,882,162	6,470,270
Additional Beef Value	\$4,076,270	\$6,793,784
Percent Change in Beef Value	0.32%	0.54%
Economy-wide Value Change	\$7,543,385	\$12,572,308
Percent Economy-wide Value Change	0.01%	0.02%
Managed Haying Activities (Hay Production)		
Maximum % Economically Viable Acres	5.57%	18.58%
Maximum Number of Acres	57,075	190,249
Additional Tons of Hay	28,834	96,112
Additional Hay Value	\$1,874,189	\$6,247,298
Percent Change in Hay Value	0.45%	1.51%
Economy-wide Value Change	\$3,130,982	\$10,436,605
Percent Economy-wide Value Change	0.00%	0.01%

New Mexico

Alternative A – MH: 1/10, MG: 1/10, PNS: 1May – 1Jul

An analysis of the provisions for managed haying and grazing activities revealed that the maximum annual percentage for these activities would be approximately 8.8 percent of the economically viable acreage (3.8 percent of managed grazing and 5 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 13,000 acres using managed grazing activities and 22,000 acres using managed haying activities. These activities are estimated to produce approximately \$560,000 additional beef production value (0.2 percent increase) and \$899,000 in hay production value (0.5 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$1 million from beef production (0.00 percent increase) and \$1.5 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$899,000 and \$563,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$431,000 and \$196,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be

about \$320,000 while from beef production about \$126,000. Therefore, the total economic impact for the state for hay production is anticipated about \$1.5 million and \$1 million from beef production.

Alternative B – MH: 1/5, MG: 1/3, PNS: 1Mar – 1Jul

Alternative B proposes to allow managed haying to occur once every five years and managed grazing to occur once every three years on authorized CPs with no change to the PNS. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 22.7 percent of the economically viable acreage (12.7 percent of managed grazing and 10 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 42,000 acres implementing managed grazing and 44,000 acres using managed haying. These activities are estimated to produce approximately \$1.9 million additional beef production value (0.7 percent increase) and \$1.8 million in hay production value (1 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$3.5

million from beef production (0.01 percent increase) and \$3 million from hay production (0.01 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.8 million and \$1.9 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$863,000 and \$653,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$640,000 while from beef production about \$421,000. Therefore, the total economic impact for the state for hay production is anticipated about \$3 million and \$3.5 million from beef production.

Alternative C – MH: 1/5, MG: 1/3, PNS: 1Mar – 1Jul Fall grazing through Dec 31

Alternative C proposes to allow managed haying to occur once every five years and managed grazing to occur once every three years on authorized CPs with the PNS between 1 March and 1 July and fall grazing through December 31. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 24.6 percent of the

economically viable acreage (14.6 percent of managed grazing and 10 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 48,000 acres implementing managed grazing and 44,000 acres using managed haying. These activities are estimated to produce approximately \$2.2 million additional beef production value (0.8 percent increase) and \$1.8 million in hay production value (1 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$4 million from beef production (0.01 percent increase) and \$3 million from hay production (0.01 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.8 million and \$2.2 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$863,000 and \$750,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$640,000 while from beef production about \$483,000. Therefore, the total economic impact for the state for hay production is anticipated about \$3 million and \$4 million from beef production. A comparison of the alternatives and the baseline conditions is illustrated in Table III-11.

Table III-11. Comparison of the Alternatives for New Mexico

Parameter	Alt A	Alt B	Alt C
Managed Grazing Activities (Beef Production)			
Maximum % Economically Viable Acres	3.80%	12.68%	14.56%
Maximum Number of Acres	12,627	42,091	48,344
Additional Pounds of Beef	536,202	1,787,339	2,052,900
Additional Beef Value	\$563,012	\$1,876,706	\$2,155,545
Percent Change in Beef Value	0.20%	0.65%	0.75%
Economy-wide Value Change	\$1,041,888	\$3,472,959	\$3,988,967
Percent Economy-wide Value Change	0.00%	0.01%	0.01%
Managed Haying Activities (Hay Production)			
Maximum % Economically Viable Acres	5.01%	10.03%	10.03%
Maximum Number of Acres	21,951	43,902	4,392
Additional Tons of Hay	13,825	27,651	27,651
Additional Hay Value	\$898,643	\$1,797,285	\$1,797,285
Percent Change in Hay Value	0.49%	0.98%	0.98%
Economy-wide Value Change	\$1,501,254	\$3,002,508	\$3,002,508
Percent Economy-wide Value Change	0.00%	0.01%	0.01%

North Dakota**Alternative A – MH: 1/10, MG: 1/5, PNS: 15Apr – 1Aug**

Analysis of the existing provisions for managed haying and grazing revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 10.4 percent of the economically feasible acreage (4.3 percent of managed grazing and 6.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated from each acre of managed haying or grazing activities. This would equate to approximately 41,000 acres using managed grazing activities and 163,000 acres using managed haying activities. These activities are estimated to produce approximately \$3.6 million additional beef production value (1.64

percent increase) and \$7.8 million in hay production value (0.97 percent increase). For the statewide economy, the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$6.7 million from beef production (0.01 percent increase) and \$13.1 million from hay production (0.01 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$7.8 million and \$3.7 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$3.8 million and \$1.3 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$2.8 million while from beef production about \$820,000. Therefore, the total economic impact for the state for hay production is anticipated about \$13.1 million and \$6.8 million from beef production.

Alternative B – MH: 1/3, MG: 1/3, PNS: 15Apr – 1Aug

Alternative B proposes to allow managed haying and grazing to occur once every three years on authorized conservation practices (CP), with no change to the primary nesting season (PNS). The analysis for this alternative was based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

An analysis selecting this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 27.4 percent of the economically feasible acreage (7.2 percent of managed grazing and 20.2 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 69,000 acres using managed grazing activities and 543,000 acres using managed haying activities. These activities are estimated to produce approximately \$6.1 million additional beef production value (2.74 percent increase) and \$26.2 million in hay production value (3.23 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$11 million from beef production (0.01 percent increase) and \$55 million from hay production (0.05 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$26.2 million and \$6.1 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$12.6 million and \$2.1 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$9.3 million while from beef production about \$1.4 million. Therefore, the total economic impact for the state for hay production is anticipated about \$43.7 million and \$11.3 million from beef production.

Alternative C– MH: 1/5, MG: 1/5, PNS: 15Apr – 1Aug

Alternative C proposes to allow managed haying and grazing to occur once every five years on authorized conservation practices (CP), with the primary nesting season (PNS) from 15 April to 1 August. The analysis for this alternative was based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

An analysis selecting this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 16.4 percent of the economically feasible acreage (4.3 percent of managed grazing and 12.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 41,000 acres using managed grazing activities and 326,000 acres using managed haying activities. These activities are estimated to produce approximately \$3.6 million additional beef production value (1.64 percent increase) and \$15.7 million in hay production value (1.94 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$6.6 million from beef production (0.00 percent increase) and \$33 million from hay production (0.03 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$15.7 million and \$3.7 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$7.5 million and \$1.3 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$5.6 million while from beef production about \$820,000. Therefore, the total economic impact for the state for hay production is anticipated about \$26.2 million and \$6.8 million from beef production. A comparison of the alternatives is illustrated in Table III-12.

Table III-12. Comparison of the Alternatives for North Dakota

Parameter	Alt A	Alt B	Alt C
Managed Grazing Activities (Beef Production)			
Maximum % Economically Viable Acres	4.32%	7.20%	4.32%
Maximum Number of Acres	41,272	68,787	41,272
Additional Pounds of Beef	3,482,125	5,803,541	3,482,125
Additional Beef Value	\$3,656,231	\$6,093,718	\$3,656,231
Percent Change in Beef Value	1.64%	2.74%	1.64%
Economy-wide Value Change	\$6,581,216	\$10,968,693	\$6,581,216
Percent Economy-wide Value Change	0.01%	0.01%	0.01%
Managed Haying Activities (Hay Production)			
Maximum % Economically Viable Acres	6.07%	20.24%	12.14%
Maximum Number of Acres	162,835	542,784	325,670
Additional Tons of Hay	120,747	402,488	241,493
Additional Hay Value	\$7,848,525	\$26,161,750	\$15,697,050
Percent Change in Hay Value	0.97%	3.23%	1.94%
Economy-wide Value Change	\$16,481,902	\$54,939,675	\$32,963,805
Percent Economy-wide Value Change	0.01%	0.05%	0.03%

Oklahoma

Alternative A – MH: 1/10, MG: 1/5, PNS: 1May – 1Jul

An analysis of the existing provisions for managed haying and grazing activities revealed that the maximum annual percentage for these activities would be approximately 15.6 percent of the economically viable acreage (9.5 percent of managed grazing and 6.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 67,000 acres using managed grazing activities and 55,000 acres using managed haying activities. These activities are estimated to produce approximately \$5.8 million additional beef production value (0.7 percent increase) and \$3.3 million in hay production value (1.1 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$10.2 million from beef production (0.01 percent increase) and \$5.2 million from hay production (0.01 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$3.3 million and \$5.8 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$1 million and \$3.6 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be

about \$1.2 million while from beef production about \$1.3 million. Therefore, the total economic impact for the state for hay production is anticipated about \$5.5 million and \$10.7 million from beef production.

Alternative B – MH: 1/3, MG: 1/3, PNS: 1May – 1Jul

Alternative B proposes to allow both managed haying and grazing to occur on authorized CPs with no change to the PNS. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 36.2 percent of the economically viable acreage (15.9 percent of managed grazing and 20.3 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 111,000 acres implementing managed grazing and 183,000 acres using managed haying. These activities are estimated to produce approximately \$9.6 million additional beef production value (1.2 percent increase) and \$11 million in hay production value (3.6 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$17.8

million from beef production (0.02 percent increase) and \$18.4 million from hay production (0.02 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$11 million and \$9.6 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$5.3 million and \$3.3 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$3.9 million while from beef production about \$2.2 million. Therefore, the total economic impact for the state for hay production is anticipated about \$18.4 million and \$17.8 million from beef production. A comparison of the alternatives and the baseline conditions is illustrated in Table III-13.

Table III-13. Comparison of the Alternatives for Oklahoma

Parameter	Alt A	Alt B
Managed Grazing Activities (Beef Production)		
Maximum % Economically Viable Acres	9.51%	15.85%
Maximum Number of Acres	66,783	111,305
Additional Pounds of Beef	5,505,324	9,175,540
Additional Beef Value	\$5,780,590	\$9,634,317
Percent Change in Beef Value	0.74%	1.23%
Economy-wide Value Change	\$9,827,003	\$17,828,887
Percent Economy-wide Value Change	0.07%	0.0174%
Managed Haying Activities (Hay Production)		
Maximum % Economically Viable Acres	6.10%	20.34%
Maximum Number of Acres	54,962	183,207
Additional Tons of Hay	50,712	169,041
Additional Hay Value	\$3,296,301	\$10,987,671
Percent Change in Hay Value	1.08%	3.59%
Economy-wide Value Change	\$6,922,233	\$18,355,775
Percent Economy-wide Value Change	0.11%	0.0179%

Oregon

Alternative A – MH: 1/10, MG: 1/10, PNS: 15Mar – 15Jul

An analysis of the existing provisions for managed haying and grazing activities revealed that the maximum annual percentage for these activities would be approximately 5.2 percent of the economically viable acreage (0.7 percent of managed grazing and 4.5 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 200 acres using managed grazing activities and 18,000 acres using managed haying activities. These activities are estimated to produce approximately \$7,000 additional beef production value (0.00 percent increase) and \$522,000 in hay production value (0.2 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$13,000 from beef production (0.00 percent increase) and \$829,000 from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

Alternative B – MH: 1/3, MG: 1/3, PNS: 1May – 1Jul

Alternative B proposes to allow both managed haying and grazing to occur once every three years on authorized CPs with no change to the PNS. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would

likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 17 percent of the economically viable acreage (2.2 percent of managed grazing and 15.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 7,000 acres implementing managed grazing and 76,000 acres using managed haying. These activities are estimated to produce approximately 1.1 million additional beef production value (0.03 percent increase) and \$2.3 million in hay production value (0.25 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$2 million from beef production (0.0 percent increase) and \$3.8 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.7 million and \$25,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$835,000 and \$8,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$620,000 while from beef production about \$6,000. Therefore, the total economic

impact for the state for hay production is anticipated about \$2.9 million and \$46,000 from beef production.

Alternative C – MH: 1/3, MG: 1/3, PNS: 1 April – 1 Jul Fall grazing to Dec 31

Alternative C proposes to allow both managed haying and grazing to occur once every three years and allow grazing until December 31 on authorized CPs with no change to the PNS. Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 44 percent of the economically viable acreage (29.3 percent of managed grazing and 15.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 11,000 acres implementing managed grazing and 60,000 acres using managed haying. These activities are estimated to produce approximately \$89,000 additional beef production value (0.02 percent increase) and \$1.7 million in hay production value (0.8 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$156,000 from beef production (0.0 percent increase) and \$2.7 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.7 million and \$89,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$835,000 and \$30,000 from beef

production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$620,000 while from beef production about \$20,000. Therefore, the total economic impact for the state for hay production is anticipated about \$2.9 million and \$164,000 from beef production.

Alternative D – MH: 1/5, MG: 1/5, PNS: 1April – 1Aug

Alternative D proposes to allow both managed haying and grazing to occur once every five years on authorized CPs with no change to the PNS. Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 10 percent of the economically viable acreage (1.3 percent of managed grazing and 9.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 500 acres implementing managed grazing and 36,000 acres using managed haying. These activities are estimated to produce approximately \$14,000 additional beef production value (0.00 percent increase) and \$1.0 million in hay production value (0.5 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$26,000 from beef production (0.0 percent increase) and \$1.7 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.0 million and \$15,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$501,000 and \$5,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$372,000 while from beef production about \$3,000. Therefore, the total economic impact for the state for hay production is anticipated about \$1.79 million and \$28,000 from beef production. Comparisons of the alternatives are shown in Table III-14.

Table III-14. Comparison of Alternatives for Oregon

Parameter	Alt A	Alt B	Alt C	Alt D
Managed Grazing Activities (Beef Production)				
Maximum % Economically Viable Acres	0.66%	2.21%	29.25%	1.32%
Maximum Number of Acres	244	814	10,793	488
Additional Pounds of Beef	7,101	23,671	84,520	14,203
Additional Beef Value	\$7,456	\$24,855	\$88,746	\$14,913
Percent Change in Beef Value	0.00%	0.01%	0.02%	0.00%
Economy-wide Value Change	\$13,113	\$43,709	\$156,064	\$26,225
Percent Economy-wide Value Change	0.00%	0.00%	0.00%	0.00%
Managed Haying Activities (Hay Production)				
Maximum % Economically Viable Acres	4.54%	15.13%	15.13%	9.08%
Maximum Number of Acres	17,949	59,831	59,831	35,898
Additional Tons of Hay	6529	21,762	21,762	13,057
Additional Hay Value	\$522,294	\$1,740,981	\$1,740,981	\$1,044,589
Percent Change in Hay Value	0.24%	0.80%	0.80%	0.51%
Economy-wide Value Change	\$829,117	\$2,763,725	\$2,763,725	\$1,658,235
Percent Economy-wide Value Change	0.00%	0.00%	0.00%	0.00%

South Dakota

Alternative A – MH: 1/10, MG: 1/5, PNS: 1May – 1Aug

An analysis of the existing provisions for managed haying and grazing activities revealed that the maximum annual percentage for these activities would be approximately 10 percent of the economically viable acreage (6.2 percent of managed grazing and 4.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 52,000 acres using managed grazing activities and 46,000 acres using managed haying activities. These activities are estimated to produce approximately \$3.8 million additional beef production value (0.7 percent increase) and \$2.6 million in hay production value (0.7 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$7.1 million from beef production (0.03 percent increase) and \$4.4 million from hay production (0.02 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$2.6 million and \$3.8 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$1.3 million and \$1.3 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be

about \$943,000 while from beef production about \$860,000. Therefore, the total economic impact for the state for hay production is anticipated about \$4.4 million and \$7.1 million from beef production.

Alternative B – MH: 1/5, MG: 1/5, PNS: 1May – 1Aug

Alternative B proposes to allow both managed haying and grazing to occur once every five years on authorized CPs with no change to the PNS. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 14 percent of the economically viable acreage (6.2 percent of managed grazing and 8.2 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 52,000 acres implementing managed grazing and 92,000 acres using managed haying. These activities are estimated to produce approximately \$3.8 million additional beef production value (0.7 percent increase) and \$5.3 million in hay production value (1.3 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$7.1 million from beef

production (0.03 percent increase) and \$8.8 million from hay production (0.03 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$5.3 million and \$3.8 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$2.5 million and \$1.3 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$1.9 million while from beef production about \$860,000. Therefore, the total economic impact for the state for hay production is anticipated about \$8.8 million and \$7.1 million from beef production.

Alternative C – MH: 1/3, MG: 1/3, PNS: 1May – 1Jul

Alternative C proposes to allow both managed haying and grazing to occur once every three years on authorized CPs with the PNS between 01 May and 01 July. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 24 percent of the economically viable acreage (10.3 percent of managed grazing and 13.7 percent of

managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 86,000 acres implementing managed grazing and 153,000 acres using managed haying. These activities are estimated to produce approximately \$7.4 million additional beef production value (1 percent increase) and \$9.1 million in hay production value (3 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$13.8 million from beef production (0.05 percent increase) and \$15.3 million from hay production (0.06 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$9.1 million and \$7.4 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$4.4 million and \$2.6 million from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$3.2 million while from beef production about \$1.7 million. Therefore, the total economic impact for the state for hay production is anticipated about \$15.3 million and \$13.8 million from beef production. A comparison of the alternatives and the baseline conditions is illustrated in Table III-14.

Table III-14. Comparison of the Alternatives for South Dakota

Parameter	Alt A	Alt B	Alt C
Managed Grazing Activities (Beef Production)			
Maximum % Economically Viable Acres	6.17%	6.17%	10.29%
Maximum Number of Acres	51,560	51,560	85,934
Additional Pounds of Beef	3,651,439	3,651,439	7,084,074
Additional Beef Value	\$3,834,011	\$3,834,011	\$7,438,277
Percent Change in Beef Value	0.68%	0.68%	0.95%
Economy-wide Value Change	\$7,095,069	\$7,095,069	\$13,764,983
Percent Economy-wide Value Change	0.03%	0.03%	0.05%
Managed Haying Activities (Hay Production)			
Maximum % Economically Viable Acres	4.33%	8.22%	13.71%
Maximum Number of Acres	45768	91,535	152,559
Additional Tons of Hay	40708	81,417	140,763
Additional Hay Value	\$2,646,038	\$5,292,076	\$9,149,595
Percent Change in Hay Value	0.66%	1.31%	2.99%
Economy-wide Value Change	\$4,420,416	\$8,840,831	\$15,285,123
Percent Economy-wide Value Change	0.02%	0.03%	0.06%

Texas

Alternative A – MH: 1/10, MG: 1/5, PNS: 1May – 1Jul

An analysis of the existing provisions for managed haying and grazing activities revealed that the maximum annual percentage for these activities would be approximately 6 percent of the economically viable acreage (2.4 percent of managed grazing and 3.9 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 4,000 acres using managed grazing activities and 23,000 acres using managed haying activities. These activities are estimated to produce approximately

\$670,000 additional beef production value (0.02 percent increase) and \$686,000 in hay production value (0.8 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$1.2 million from beef production (0.00 percent increase) and \$1.4 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

Alternative B – MH: 1/3, MG: 1/3, PNS: 1May – 1Jul

Alternative B proposes to allow both managed haying and grazing to occur once every three years on authorized CPs with no change to the PNS. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 17 percent of the economically viable acreage (4.1 percent of managed grazing and 13.1 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 7,000 acres implementing managed grazing and 76,000 acres using managed haying. These activities are estimated to produce approximately 1.1 million additional beef production value (0.03 percent increase) and \$2.3 million in hay

production value (0.25 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$2 million from beef production (0.0 percent increase) and \$3.8 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$2.3 million and \$1.1 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$1.1 million and \$390,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$815,000 while from beef production about \$251,000. Therefore, the total economic impact for the state for hay production is anticipated about \$3.8 million and \$2.1 million from beef production.

Alternative C – MH: 1/2, MG: 1/2, PNS: 1Mar – 1Jun Fall grazing through Dec 31

Alternative C proposes to allow both managed haying and grazing to occur once every two years on authorized CPs with the PNS between 01 March and 01 June with fall grazing through 31 December. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 26 percent of the economically viable acreage (6.2 percent of managed grazing and 19.6 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 11,000 acres implementing managed grazing and 114,000 acres using managed haying. These activities are estimated to produce approximately \$1.7 million additional beef production value (0.05 percent increase) and \$3.4 million in hay production value (0.38 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$3.1 million from beef production (0.00 percent increase) and \$5.7 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$3.4 million and \$1.7 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$1.6 million and \$584,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$1.2 million while from beef production about \$377,000. Therefore, the total economic impact for the state for hay production is anticipated about \$5.7 million and

\$3.1 million from beef production. A comparison of the alternatives and the baseline conditions is illustrated in Table III-15.

Table III-15. Comparison of the Alternatives for Texas

Parameter	Alt A	Alt B	Alt C
Managed Grazing Activities (Beef Production)			
Maximum % Economically Viable Acres	2.46%	4.10%	6.15%
Maximum Number of Acres	4,468	7,447	11,171
Additional Pounds of Beef	639,738	1,066,230	1,599,345
Additional Beef Value	\$671,725	\$1,119,542	\$1,679,313
Percent Change in Beef Value	0.02%	0.03%	0.05%
Economy-wide Value Change	\$1,243,068	\$2,071,780	\$3,107,670
Percent Economy-wide Value Change	0.00014%	0.00024%	0.00036%
Managed Haying Activities (Hay Production)			
Maximum % Economically Viable Acres	3.93%	13.10%	19.64%
Maximum Number of Acres	22,794	75,982	113,972
Additional Tons of Hay	10,554	35,179	52,769
Additional Hay Value	\$685,991	\$2,286,636	\$3,429,954
Percent Change in Hay Value	0.08%	0.25%	0.38%
Economy-wide Value Change	\$1,146,002	\$3,820,006	\$5,730,010
Percent Economy-wide Value Change	0.00013%	0.00044%	0.00066%

Utah

Alternative A – MH: 1/10, MG: 1/10, PNS: 1Apr – 15Jul

An analysis of the existing provisions for managed haying and grazing activities revealed that the maximum annual percentage for these activities would be approximately 6 percent of the economically viable acreage (2.6 percent of managed grazing and 3.08 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the

product generated off each acre of managed haying or grazing activities. This would equate to approximately 2,000 acres using managed grazing activities and 3,000 acres using managed haying activities. These activities are estimated to produce approximately \$162,000 additional beef production value (0.08 percent increase) and \$86,000 in hay production value (0.04 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$299,000 from beef production (0.00 percent increase) and \$144,000 from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$86,000 and \$162,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$42,000 and \$56,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$31,000 while from beef production about \$36,000. Therefore, the total economic impact for the state for hay production is anticipated about \$144,000 and \$299,000 from beef production.

Alternative B – MH: 1/3, MG: 1/3, PNS: 1Apr – 15Jul

Alternative B proposes to allow both managed haying and grazing to occur once every three years on authorized CPs with no change to the PNS. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these

practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 19 percent of the economically viable acreage (8.7 percent of managed grazing and 10.3 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 6,000 acres implementing managed grazing and 9,000 acres using managed haying. These activities are estimated to produce approximately \$539,000 additional beef production value (0.25 percent increase) and \$482,000 in hay production value (0.12 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$1 million from beef production (0.03 percent increase) and \$482,000 from hay production (0.01 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$288,000 and \$539,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$138,000 and \$188,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$103,000 while from beef production about \$121,000. Therefore, the total

economic impact for the state for hay production is anticipated about \$482,000 and \$997,000 from beef production.

Alternative C – MH: 1/3, MG: 1/3, PNS: 1Apr – 1Jul Fall grazing through Dec 31

Alternative C proposes to allow both managed haying and grazing to occur once every three years on authorized CPs with the PNS between 01 April and 15 July with fall grazing through 31 December. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 19 percent of the economically viable acreage (8.7 percent of managed grazing and 10.3 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 6,000 acres implementing managed grazing and 9,000 acres using managed haying. These activities are estimated to produce approximately \$539,000 additional beef production value (0.25 percent increase) and \$482,000 in hay production value (0.12 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$1 million

from beef production (0.03 percent increase) and \$482,000 from hay production (0.01 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$288,000 and \$539,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$138,000 and \$188,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$103,000 while from beef production about \$121,000. Therefore, the total economic impact for the state for hay production is anticipated about \$482,000 and \$997,000 from beef production. A comparison of the alternatives and the baseline conditions is illustrated in Table III-16.

Table III-16. Comparison of the Alternatives for Utah

Parameter	Alt A	Alt B	Alt C
Managed Grazing Activities (Beef Production)			
Maximum % Economically Viable Acres	2.60%	8.68%	8.68%
Maximum Number of Acres	1,944	6,480	6,480
Additional Pounds of Beef	153,977	513,258	513,258
Additional Beef Value	\$161,676	\$538,921	\$538,921
Percent Change in Beef Value	0.08%	0.25%	0.25%
Economy-wide Value Change	\$299,192	\$997,306	\$997,306
Percent Economy-wide Value Change	0.00%	0.03%	0.03%
Managed Haying Activities (Hay Production)			
Maximum % Economically Viable Acres	3.08%	10.27%	10.27%
Maximum Number of Acres	2,723	9,078	9,078
Additional Tons of Hay	1,331	4,436	4,436
Additional Hay Value	\$86,496	\$288,322	\$288,322
Percent Change in Hay Value	0.04%	0.12%	0.12%
Economy-wide Value Change	\$144,499	\$481,664	\$481,664
Percent Economy-wide Value Change	0.00%	0.01%	0.01%

Washington

Alternative A – MH: 1/10, MG: 1/10, PNS: 1Apr – 1Aug

An analysis of the existing provisions for managed haying and grazing activities revealed that the maximum annual percentage for these activities would be approximately 3 percent of the economically viable acreage (1.48 percent of managed grazing and 2.56 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 6,000 acres using managed grazing activities and 16,000 acres using managed haying activities. These activities are estimated to produce approximately \$464,000 additional beef production value (0.3 percent increase) and \$547,000 in hay production value (0.27 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$817,000 from beef production (0.00 percent increase) and \$868,000 from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$547,000 and \$464,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$262,000 and \$162,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be

about \$195,000 while from beef production about \$104,000. Therefore, the total economic impact for the state for hay production is anticipated about \$913,000 and \$860,000 from beef production.

Alternative B – MH: 1/3, MG: 1/3, PNS: 1Apr – 1Aug

Alternative B proposes to allow both managed haying and grazing to occur once every three years on authorized CPs with no change to the PNS. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 13 percent of the economically viable acreage (4.94 percent of managed grazing and 8.55 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 18,000 acres implementing managed grazing and 53,000 acres using managed haying. These activities are estimated to produce approximately \$1.5 million additional beef production value (0.98 percent increase) and \$1.8 million in hay production value (0.89 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated

additional \$2.7 million from beef production (0.00 percent increase) and \$2.9 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.8 million and \$1.5 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$875,000 and \$539,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$649,000 while from beef production about \$347,000. Therefore, the total economic impact for the state for hay production is anticipated about \$3 million and \$2.9 million from beef production.

Alternative C – MH: 1/3, MG: 1/3, PNS: 1Apr – 1Jul Fall grazing to Dec 31

Alternative C proposes to allow both managed haying and grazing to occur once every three years on authorized CPs with the PNS established between 01 April and 01 July and fall grazing until 31 December. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 16 percent of the

economically viable acreage (7.04 percent of managed grazing and 8.55 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 25,000 acres implementing managed grazing and 53,000 acres using managed haying. These activities are estimated to produce approximately \$2.4 million additional beef production value (1.58 percent increase) and \$1.8 million in hay production value (0.89 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$4.3 million from beef production (0.00 percent increase) and \$2.9 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.8 million and \$2.5 million from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$875,000 and \$866,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$649,000 while from beef production about \$558,000. Therefore, the total economic impact for the state for hay production is anticipated about \$3 million and \$4.6 million from beef production.

Alternative D – MH: 1/5, MG: 1/5, PNS: 1Apr – 1Aug

Alternative D proposes to allow both managed haying and grazing to occur once every five years on authorized CPs with the PNS established between 01 April and 01 August. The analysis for this alternative is based on a maximum adoption scenario of managed haying and grazing activities on eligible CPs for enrolled CRP acreage. Individual operator adoption of these practices would be based on numerous personal, local, and regional factors, which would likely indicate that the adoption rate would be less than the maximum values calculated under this analysis.

Analysis of this alternative revealed that the maximum annual percentage of use for managed haying and grazing activities would be approximately 8 percent of the economically viable acreage (2.97 percent of managed grazing and 5.13 percent of managed haying). This determination of economically viable acreage indicates that the 25 percent rate reduction would be less than the economic value of the product generated off each acre of managed haying or grazing activities. This would equate to approximately 11,000 acres implementing managed grazing and 32,000 acres using managed haying. These activities are estimated to produce approximately \$929,000 additional beef production value (0.59 percent increase) and \$1.1 million in hay production value (0.53 percent increase). For the statewide economy the use of these CRP acres for managed haying and grazing activities would produce an estimated additional \$1.6 million from beef production (0.00 percent increase) and \$1.7 million from hay production (0.00 percent increase) rippling throughout the rest of the state economy.

The increase in crop/animal production (direct impacts) from hay production for the state and local economy equates to roughly \$1.1 million and \$929,000 from beef production. The increase in the associated agricultural input and processing industries (indirect impacts) for hay production is estimated at \$525,000 and \$323,000 from beef production. The impact from hay production to the goods and services industries providing support to these agricultural industries (induced impacts) is projected to be about \$390,000 while from beef production about \$208,000. Therefore, the total economic impact for the state for hay production is anticipated about \$1.8 million and \$1.7 million from beef production. A comparison of the alternatives and the baseline conditions is illustrated in Table III-17.

Table III-17. Comparison of the Alternatives for Washington

Parameter	Alt A	Alt B	Alt C	Alt D
Managed Grazing Activities (Beef Production)				
Maximum % Economically Viable Acres	1.48%	4.94%	3.71%	2.97%
Maximum Number of Acres	5,318	17,728	13,296	10,637
Additional Pounds of Beef	442,348	1,474,494	1,105,870	884,696
Additional Beef Value	\$464,465	\$1,548,218	\$1,161,164	\$928,931
Percent Change in Beef Value	0.30%	0.98%	0.74%	0.59%
Economy-wide Value Change	\$816,788	\$2,722,627	\$2,041,970	\$1,633,576
Percent Economy-wide Value Change	0.00%	0.00%	0.00%	0.00%
Managed Haying Activities (Hay Production)				
Maximum % Economically Viable Acres	2.56%	8.55%	6.41%	5.13%
Maximum Number of Acres	15,905	53,017	39,763	31,810
Additional Tons of Hay	6,835	22,783	17,087	13,670
Additional Hay Value	\$546,787	\$1,822,623	\$1,366,968	\$1,093,574
Percent Change in Hay Value	0.27%	0.89%	0.66%	0.53%
Economy-wide Value Change	\$867,998	\$2,893,328	\$2,169,996	\$1,735,997
Percent Economy-wide Value Change	0.00%	0.00%	0.00%	0.00%

CHAPTER IV

SUMMARY AND CONCLUSION

Every state that was evaluated had acres that were eligible for haying and grazing as depicted in Figure IV-1. The highest percentages of acres are from New Mexico and Texas with 99% and 98%, while the lowest percentage is from South Dakota with 68%. Almost all states have acres that are economically feasible for grazing with the highest percentage from North Dakota, Oklahoma, and South Dakota with 95% and the lowest from Montana with 34% and Washington with 40%. All but Idaho and Oregon have acres feasible for haying with Nebraska at 77% being the highest. Interestingly, Montana, Kansas, Texas, and Washington all have high percentages of acres eligible for haying and/or grazing yet not many that are economically feasible.

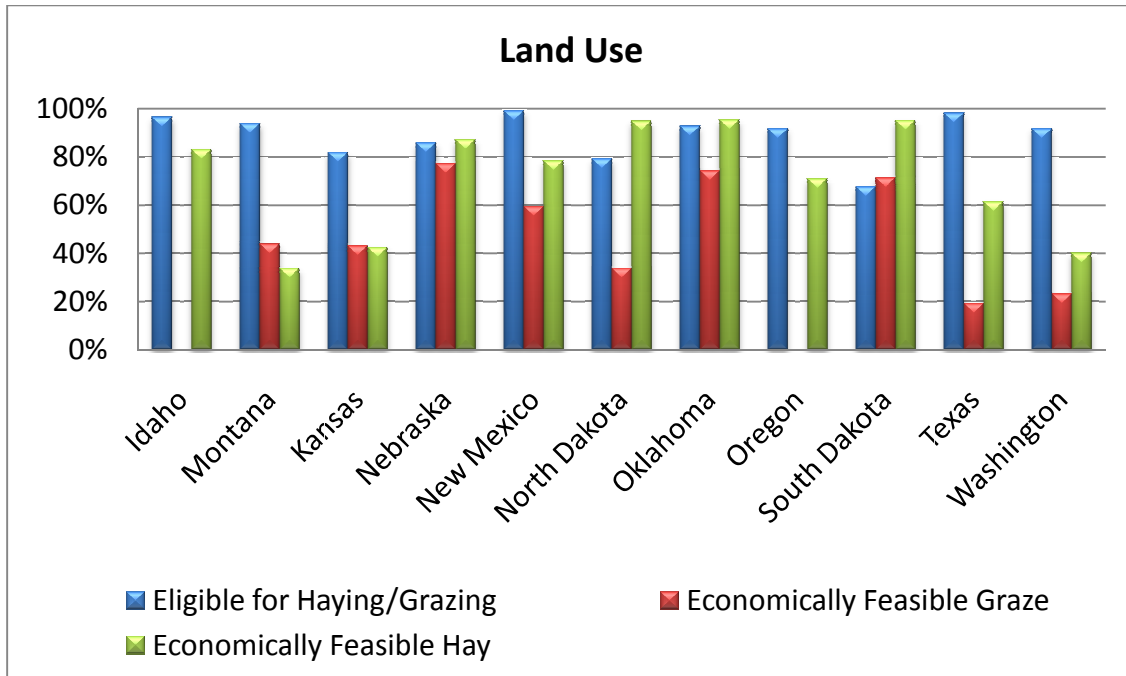


Figure IV-1. Percentages of Acres Eligible and Economically Feasible for Haying and Grazing

Of the economically feasible acres, the results are as follows. In Figure IV-2, the amount of beef production for each state under scenarios A and B are presented. A movement from the more conservative scenario A to the more liberal scenario B has an increase in production with the exception of South Dakota which shows no increase due to the grazing frequency remaining the same between the scenarios; this is expected since farmers and ranchers can graze the land more frequently under scenario B. Kansas (5.6 million pounds) and Oklahoma (5.5 million pounds) produce the most in both scenarios, whereas Idaho (0 pounds), Oregon (7,000 pounds), and Utah (154,000 pounds) produce the least. In scenario B, the more liberal one, Montana, New Mexico, Oregon (although not showing graphically because the numbers are so small), Utah, and Washington experience an increase in production of more than 50% while all other states show an increase of 40% with the exception of South Dakota (see previous statement).

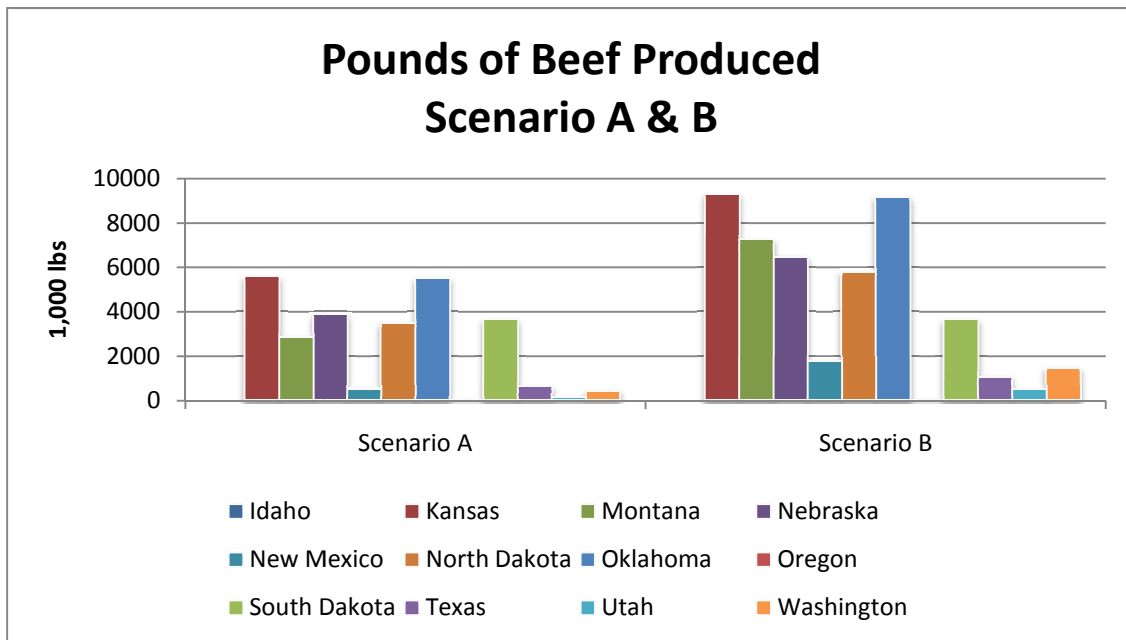


Figure IV-2. Pounds of Beef Produced for Scenarios A & B

Figure IV-3 show the changes in beef production from the states allowing a third scenario. Kansas, Nebraska, and Oklahoma were not offered scenario C, so these states are left out of the figure. Interestingly, Idaho has the most production with just less than 14 million pounds. Montana, North and South Dakota have the next highest production with 8.5 million, 7 million, and 7.1 million pounds while the lowest are Oregon with 85,000 pounds and Utah with 513,000 pounds. The median is Washington with 2.4 million pounds of beef. Although Oregon’s numbers are very small, the state experiences the highest percent change from scenario B to C with 72% increase in production. The next highest percent change is South Dakota with a 48% increase. Texas and Washington realize a 35% increase and Montana, New Mexico and North Dakota increase by 15%.

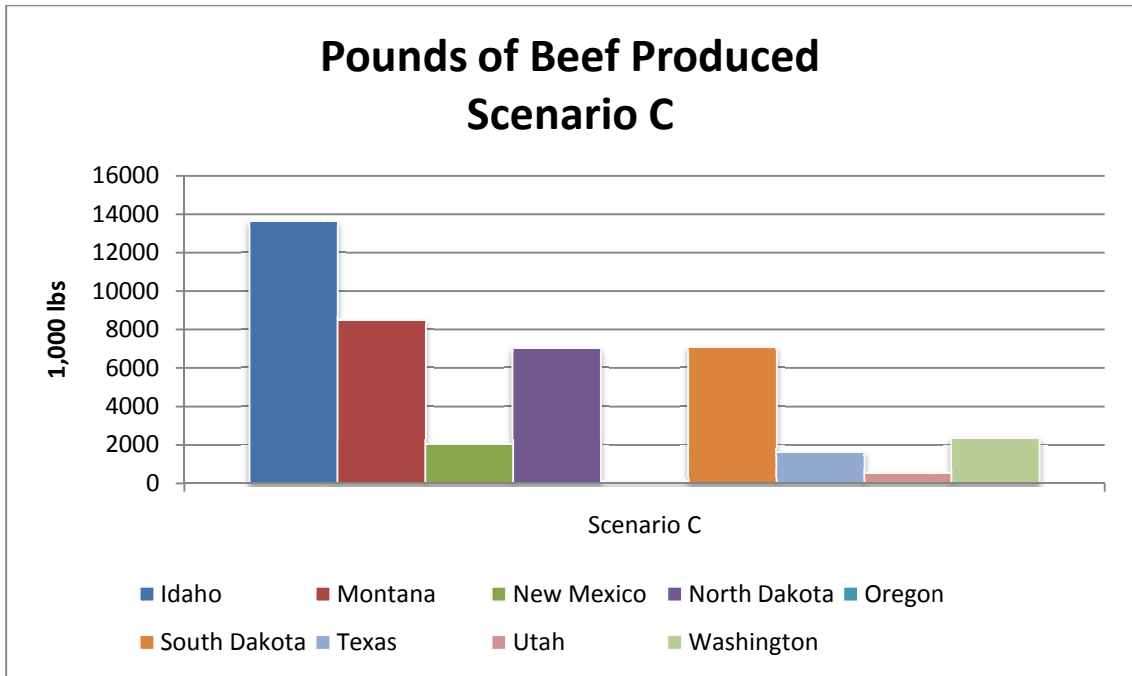


Figure IV-3. Pounds of Beef Produced for Scenario C

Figure IV-4 shows the results under scenario D for the 5 states in which it is offered. The limitations restrict haying and grazing to once every 5 years. All states show a decrease in production relative to scenario C. In this case, North Dakota and Montana have the most production with 3.4 million and 2.9 million pounds and the least is Idaho with 0 pounds and Oregon with 14,000 pounds. The median again is Washington State with 885,000 pounds.

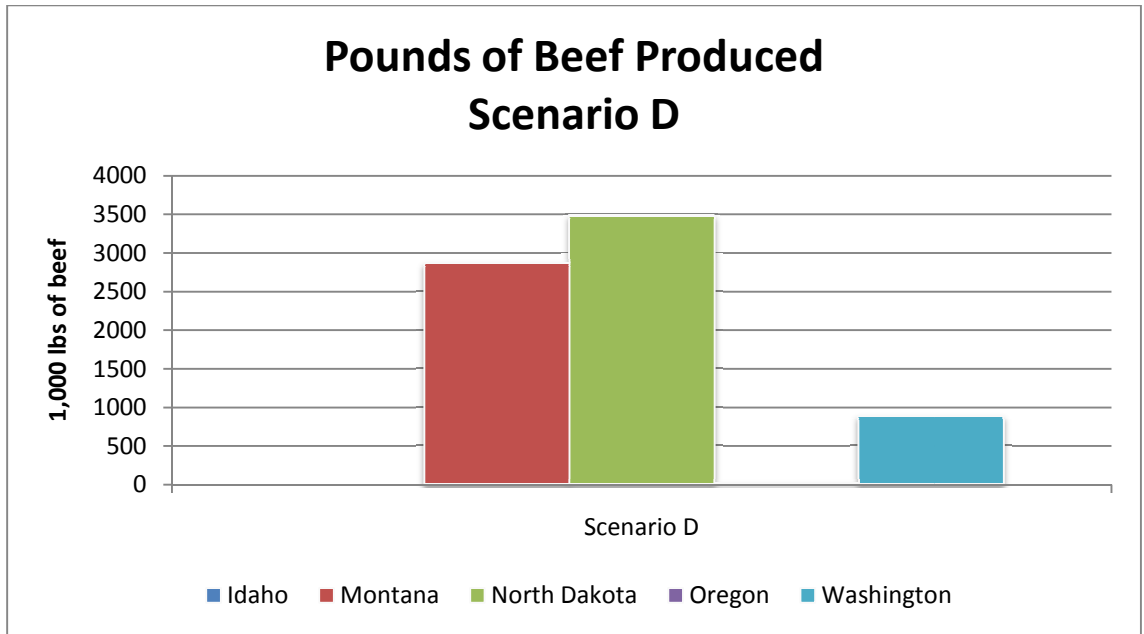


Figure IV-4. Pounds of Beef Produced for Scenario D

To truly understand the magnitude of these production increases, however, one must compare the increases to the actual level of production. It is this comparison that allows us to conclude whether the new CRP rules will induce dramatic price changes in the beef industry. First, the percent growth in the value of beef production was calculated as the ratio of the state value of beef production resulting from the new CRP rules (as estimated above) to the value of total current state beef production on all lands. The economy wide impact from beef production is the size of the increased value of state output from the potential grazing as a percent of total state output (state gross domestic product). These measures were used because USDA uses these indicators to measure the significance of potential impacts to decide if further study is necessary.

Figure IV-5 shows an adaptation of either scenario A or B has less than an 8% impact on the state beef industry. In scenario A, Kansas produced 5.6 million pounds of beef which is only a 4.5 % impact for the beef industry. Similarly, North Dakota

produced 3.5 million pounds with only an impact on the beef industry of 1.6%. In scenario B, again Kansas had the highest impact of 7.6% with 9.3 million pounds of beef while North Dakota had the second highest impact of 2.7% with 5.8 million pounds. New Mexico, Oregon, Texas, and Utah had the smallest impact with less than 0.25% for either scenario. Interestingly, Oklahoma appeared to have the highest beef production for both scenarios yet the industry impact is one of the lowest, 0.74% and 1.23% respectively.

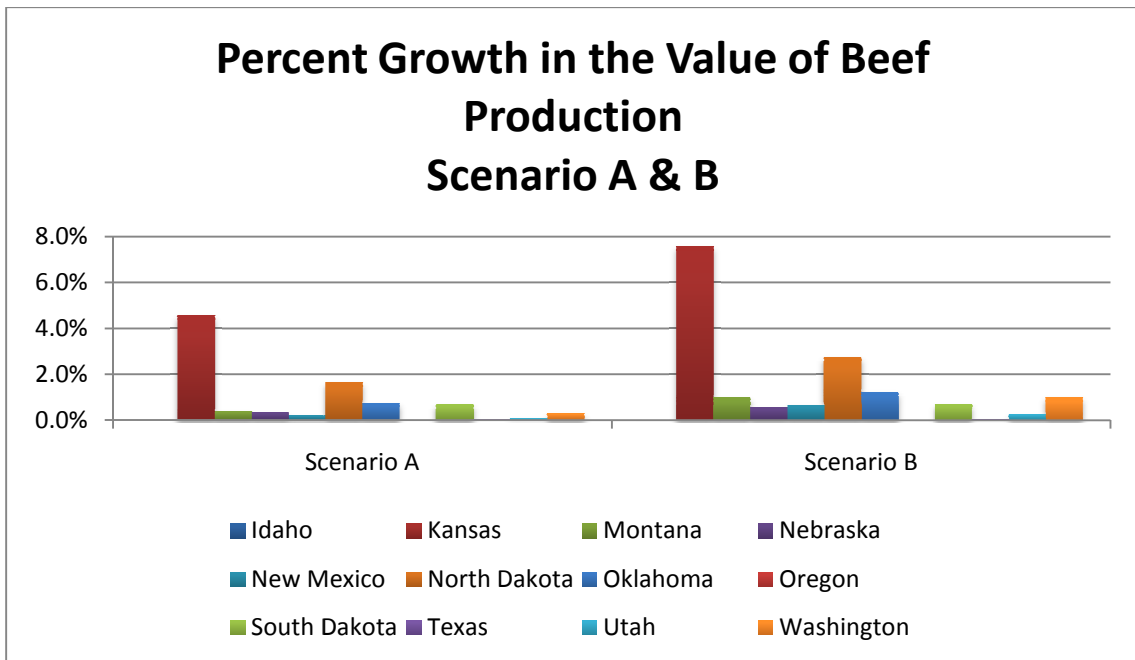


Figure IV-5. Percent Growth in the Value of Beef Production for Scenario A & B

In Figure IV-6, use of scenario C, which is similar to scenario B but allowed to graze for a longer period of time and less limiting than scenario A, does not increase the impact as we expected. The highest impact is Idaho with 4.8% which coincides with the highest beef production for this scenario. The least impacted states are Oregon, Texas, and Utah. Montana, which ranked second in production with 8.5 million pounds, only has

an impact of 1.14%. North Dakota and Washington are the only states that increase from scenario B to C, which benefit greatly from the extended grazing period.

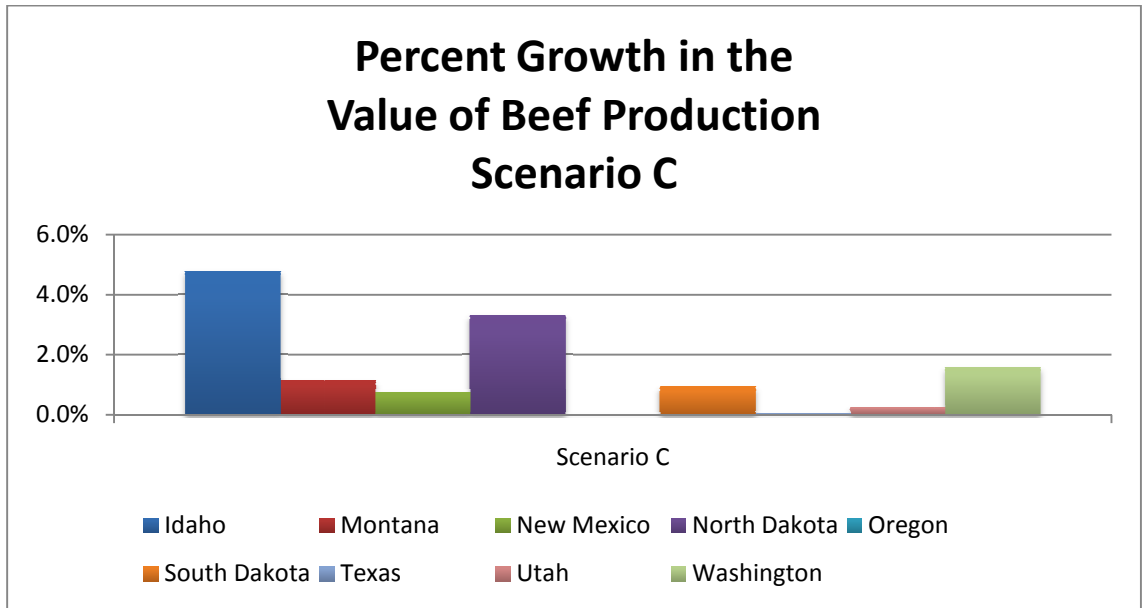


Figure IV-6. Percent Growth in the Value of Beef Production for Scenario C

Figure IV-7 shows the impacts that could occur with scenario D. North Dakota has the highest impact with 1.64% while Washington and Montana follow behind with 0.59% and 0.38%. Scenario D's pounds of beef production follows the same pattern as Figure 5 with the slight difference of Montana which produced 2.9 million pounds of beef and was ranked second but the growth in value is only ranked third. Similarly North Dakota's beef production was ranked second whereas the growth in value is ranked third.

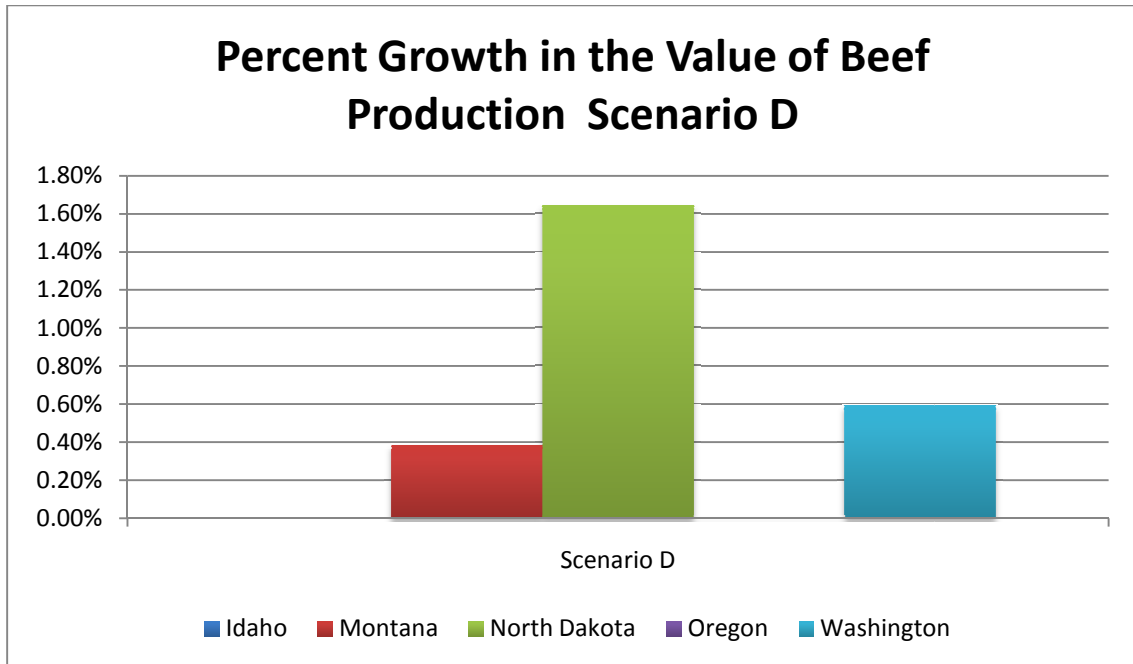


Figure IV-7. Percent Growth in the Value of Beef Production for Scenario D

Because of economic linkages, there is a rippling effect throughout all industries when one local industry increases output. Therefore multipliers generated from the I/O model were used to enable us to translate the estimated impacts into changes in the state economy. Comparing the value of the total economic impact of the new CRP rules to the states' total output illustrates the magnitude of these changes on the state economy (Figure IV-8). First, note that all changes imply total impacts that are less than one tenth of one percent. Montana and South Dakota's economy could have the biggest impact from any scenario while Idaho, Oregon, Texas, and Washington would see little to no impact. Scenario B shows an increase in economy wide impacts in all states except for South Dakota, which stands to reason since the frequency of grazing did not change. Likewise, the most liberal scenario, scenario C, shows an increase in impacts for all states

offering it. Scenario D matches perfectly with scenario A for those states that offer D since the frequency of grazing went unchanged.

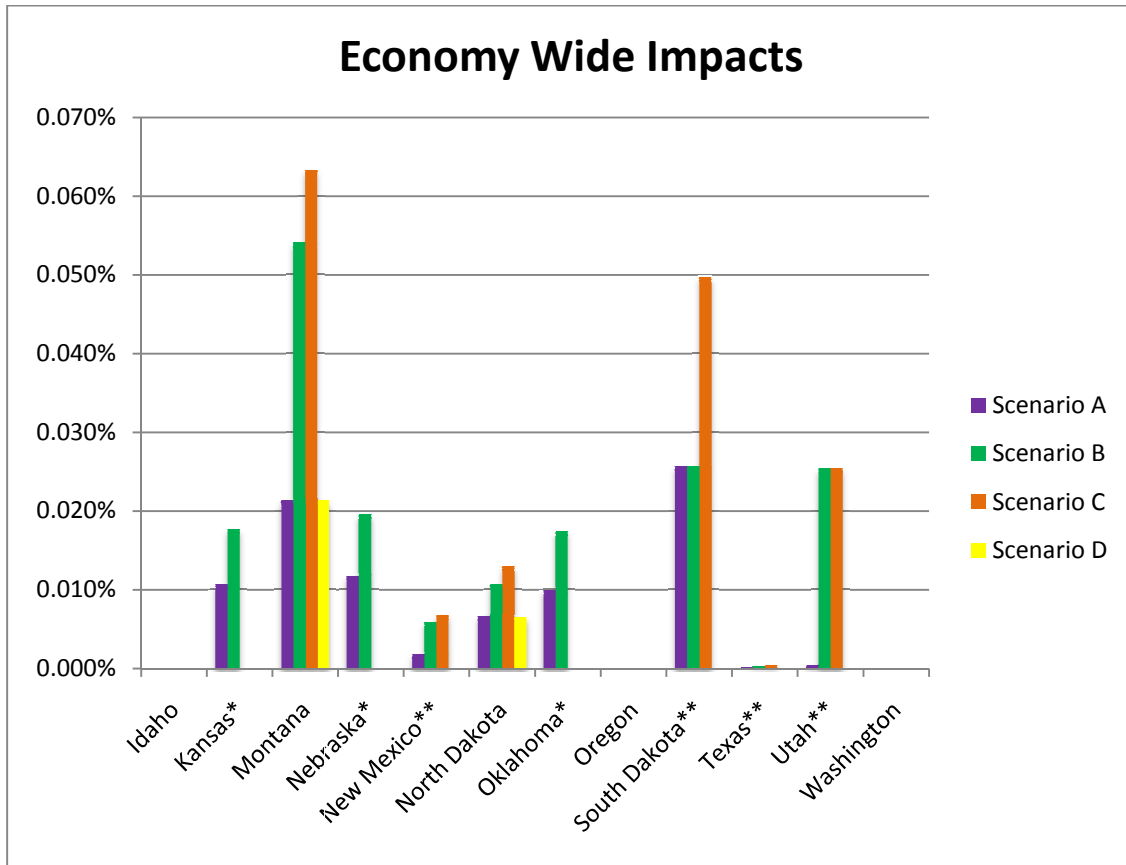


Figure IV-8. Economy Wide Impacts from Additional Beef Production

* only A & B were offered, ** scenario A, B, & C were offered and no asterisk means all 4 scenarios were offered.

Hay Production

In Figure IV-9, for scenario A and B we observe the increased production of tons of hay for each state. A movement from the more conservative scenario A to the more liberal scenario B has an increase in production across all states. Montana, North Dakota, and Oklahoma produce the most tons of hay for each scenario while Oregon, Utah, and Washington produce the least.

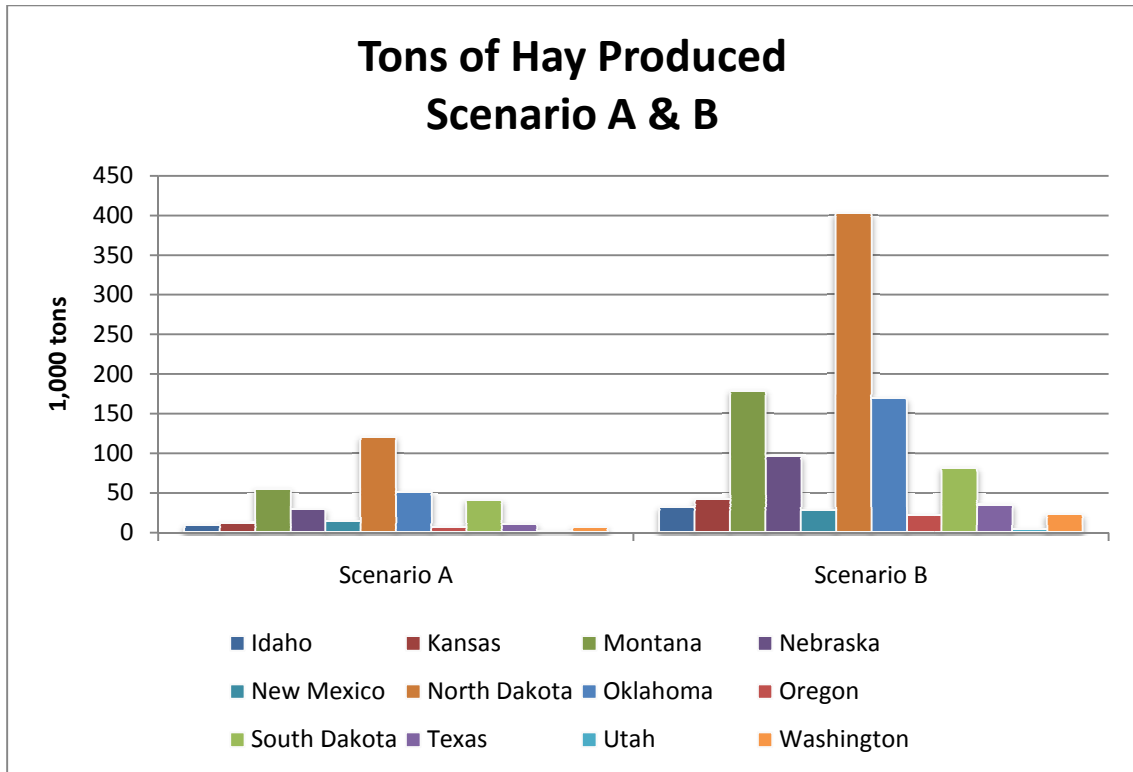


Figure IV-9. Tons of Hay Produced from Scenarios A & B

Figure IV-10 shows the tons of hay produced for scenario C. Remember scenario C allows for additional grazing until December 31. North Dakota produces the most hay with 487,000 tons followed by Montana with 211,000 tons and South Dakota with 141,000 tons. The state producing the least amount of hay with 4,000 tons is Utah. North and South Dakota, Montana, and Texas are the only states that show an increase in production from scenario B to C while Idaho, New Mexico, Oregon, Utah, and Washington remain the same. South Dakota has the biggest percent change from scenario B to C with 42% increase in hay, next is Texas with an increase of 33% then North Dakota and Montana with an increase of 16%.

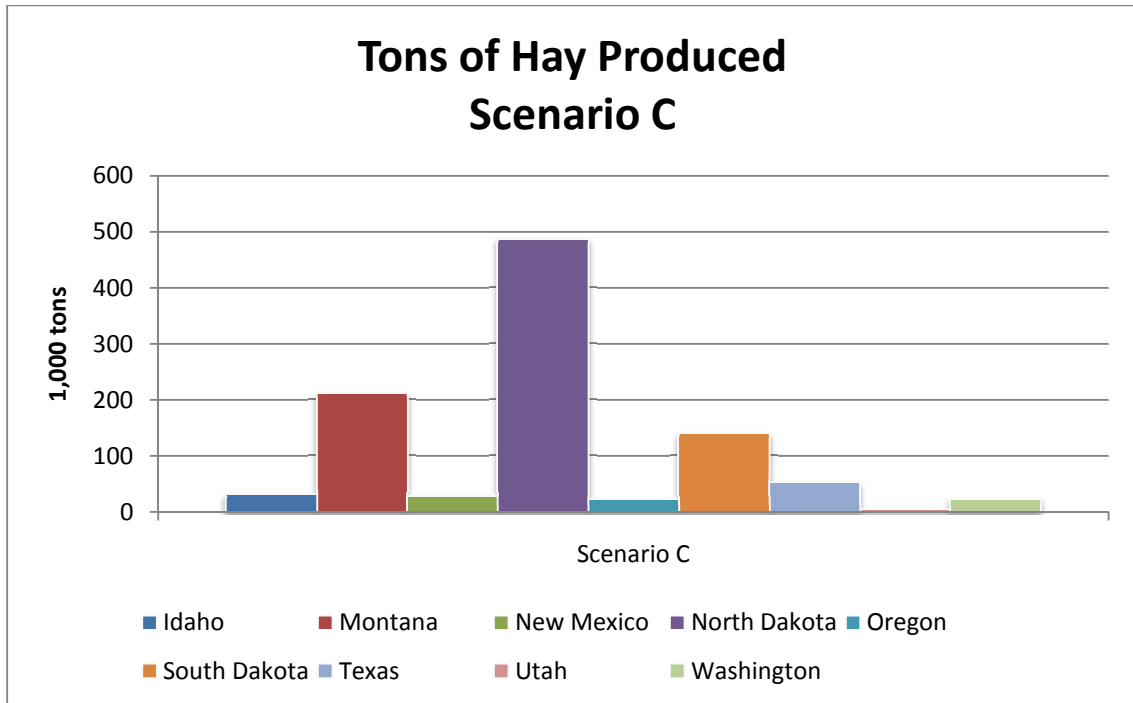


Figure IV-10. Tons of Hay Produced for Scenario C

Scenario D’s hay production is demonstrated in Figure IV-11. All states have a decrease in production compared to scenario C, which is reasonable since the frequency of haying is decreased from once every 3 years to once every 5 years. North Dakota produces the most tons of hay (241,000 tons) yet experiences the biggest decrease in production by 102%. Montana produces 110,000 tons while incurs a decrease by 92%. Those producing the least amount of hay, less than 13,000 tons, are Idaho, Oregon, and Washington, who experience a decrease by two-thirds.

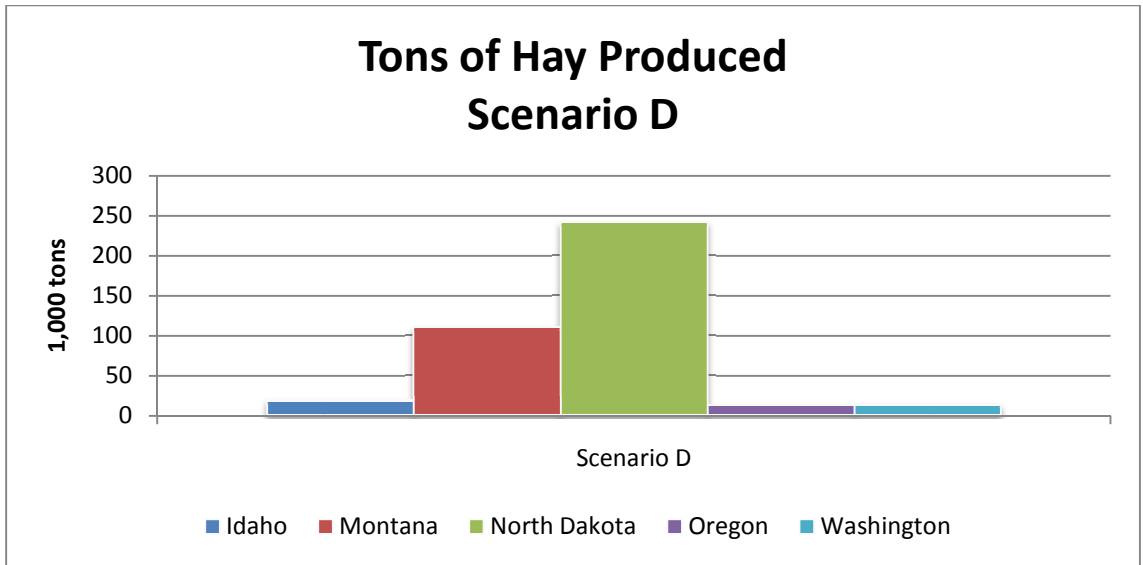


Figure IV-11. Tons of Hay Produced for Scenario D

Figure IV-12 shows that either scenario A or B has less than 4% impact on the state hay industry. In scenario A, North Dakota produced the highest number of tons of hay yet the impact is only 0.97%. The next highest producer, Montana, holds the highest percent impact with 1.17%. The smallest impacted for scenario A are Utah, Texas, and Idaho. In scenario B, the highest producer was North Dakota with an impact of 3.23%. The highest impact is in Montana with 3.8%. The states with the least impact are Utah with a 0.12% increase and Texas with a 0.25% increase.

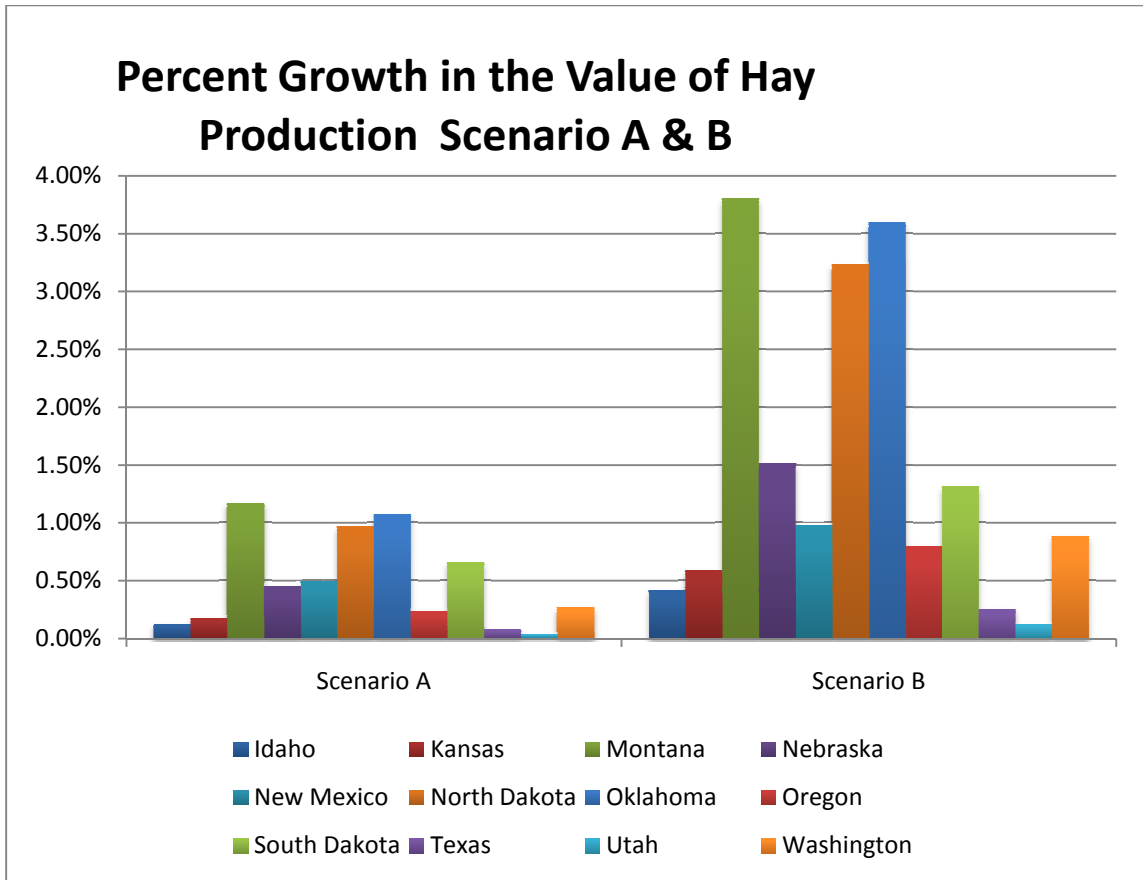


Figure IV-12. Percent Growth in the Value of Hay Production for Scenarios A & B

We expect scenario C for hay production to yield very little changes since the only changes between the scenarios is a longer grazing period. As shown in Figure IV-13, the predictions are mostly correct. The highest impact is in Montana and the least impact is Utah, both the same for scenario B. There is a slight increase in percentage for Montana moving from 3.8% to 4.5% and a slight increase for North Dakota from 3.23% to 3.91%. All other states remain about the same.

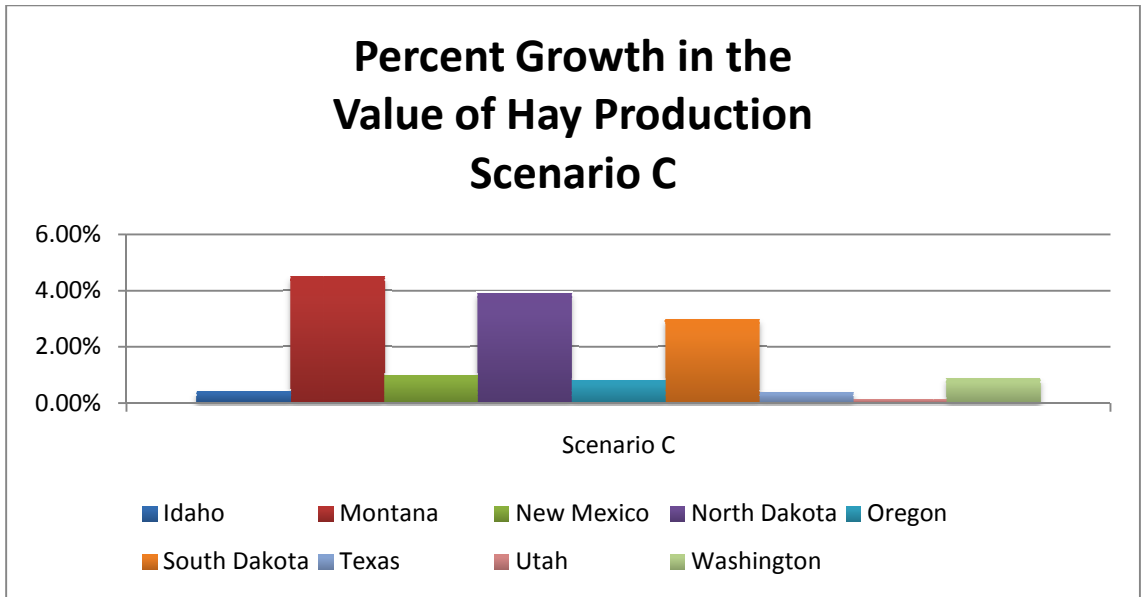


Figure IV-13. Percent Growth in the Value of Hay Production for Scenario C

Figure IV-14, percent growth in the value of hay production for scenario D, has a decrease in the frequency of haying from once every 3 years to once every 5 years. The highest impact for states analyzed occurs in Montana with 2.34% increase in hay value. The highest producer of hay (tons) for scenario D was North Dakota with an impact of 1.94%. The smallest impact occurs in Idaho with 0.25% while Oregon and Washington are similar with about 0.50%.

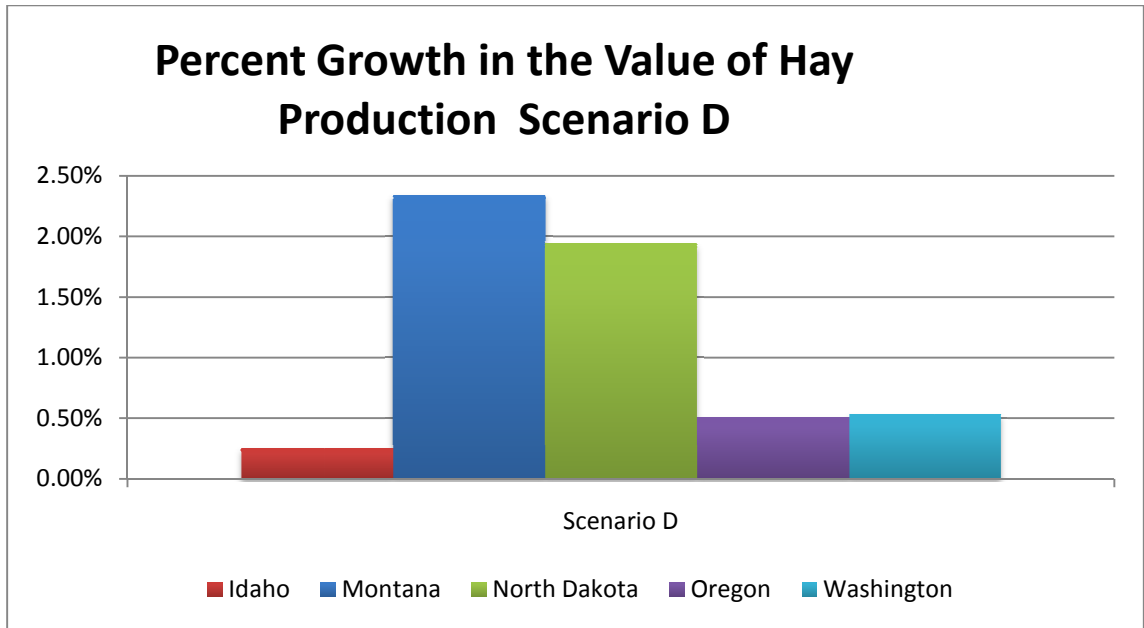


Figure IV-14. Percent Growth in the Value of Hay Production for Scenario D

To look at economy wide impacts, we take into consideration the direct, indirect, and induced effects from the increased grazing allowed in the CRP. Figure IV-15 shows these impacts for all states and scenarios. It is important to emphasize the insignificant percentage of impact for all scenarios, since in all states the impact is less than one tenth of one percent of gross state product. Scenario B has a higher impact over A, where it is offered. Scenario C has a higher impact over B, and where offered, scenario D has a higher impact over A. Montana, North Dakota and South Dakota will have the biggest impact in any scenario while Idaho, Oregon and Washington will have the least.

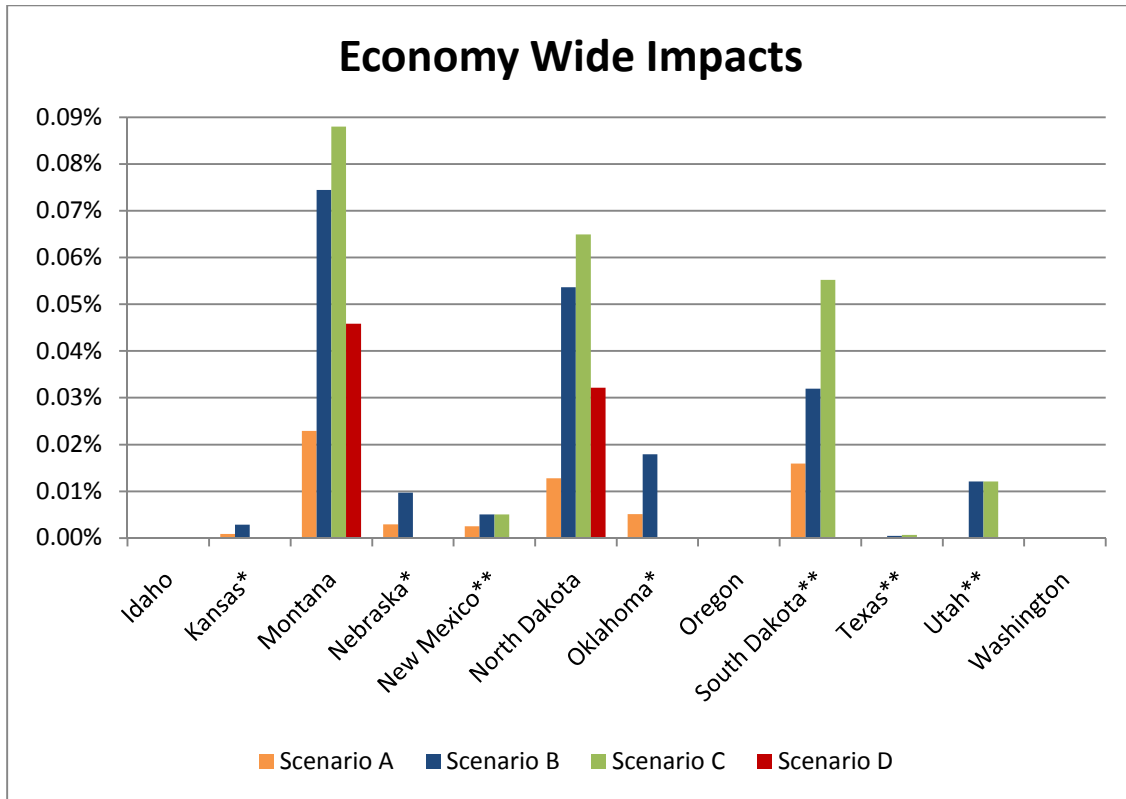


Figure IV-15. Economy Wide Impacts from Increased Hay Production

* only scenario A & B were offered

** scenario A, B, & C were offered and no asterisk means all 4 scenarios were offered

CONCLUSIONS

In 2008, the Farm Service Agency (FSA) allowed for the managed haying and grazing of lands enrolled in CRP. Farmers and ranchers have the opportunity to hay or graze CRP land with specific restrictions to protect the environmental goals of the program, but those who took advantage of this opportunity also faced a reduced rental payment. The belief that the one in three years haying and grazing rule as the only limit on these CRP land use activities would be harmful to wildlife nesting habitat and winter cover forced FSA to consider management options and the associated economic impacts of each. FSA and the NRCS developed various management scenarios for each state. In

addition to the concerns for wildlife, the cattle industry was concerned that increased forage production and/or increased production in pounds of beef may adversely affect the price of beef received.

The purpose of this research was to estimate the potential increase in hay and beef production by allowing the use of CRP acres throughout the plains states and determine the relative economic impact of those changes on local and regional markets. While an estimate of the potential price impacts are not estimated, the results suggest that the quantity of output generated by the policy change is small both in terms of current production levels and economy wide impacts. This means that farmers may have an opportunity to take full advantage of their CRP land and potentially decrease the production costs by haying and grazing the land. Furthermore, if costs are decreased and the pounds of beef are slightly increased that could lead to more potential income for the farmer. Furthermore, our results suggests that USDA's Farm Service Agency does not need to seek additional analysis to determine whether the policy change will have a significant economic impact on state and local industries.

Several assumptions have been used and specific uncertainties and limitations exist with the data. A more refined analysis could be used to remove each of these qualifiers from the analysis. Field selection is one issue we will highlight. Field selection was executed by FSA County Executive Directors because we felt they had the most accurate knowledge of CRP land in their county to achieve a diverse selection. Further research might look at randomized sampling of fields within counties and more counties within each state. In addition, more specific budget information that would better define the variation in equipment, and haying and grazing practices would provide

better estimates of the percent of acreage that could economically be feasible. The analysis could also be expanded to include 10 year forecasts of prices as changes to supply and demand will cause prices to fluctuate and these price variations may change the long term feasibility of shifting land uses. Finally, the estimates of land use changes are based on the current set of CRP contract acres. This is inaccurate as land moves in and out of the CRP every year and that may have an impact on the feasibility of the managed haying and grazing activity and more importantly, the implementation of a specific haying and grazing activity may induce a certain type of land to be enrolled in the program for the purpose of utilizing the haying and grazing provision.

This analysis does however, adequately reflect the magnitude of the changes likely to occur in the output of hay and beef from each of the haying and grazing scenarios. The analysis indicates that the haying and grazing scenarios would have a very small impact on state and national production levels and economic activity. However, in some counties the impacts may be more significant as a percentage of overall activity.

REFERENCES

- Allen, A.W., and Vandever, M.W. 2003. "A national survey of Conservation Reserve Program (CRP) participants on environmental effects, wildlife issues, and vegetation management on program lands." *Biological Science* p.51
- Alward, G. and C. Palmer. 1985 Implan User's Guide. Version 1.1. U.S. Forest Service.
- Bangsund, Dean A., F. Larry Leistritz, and Nancy M. Hodur. 2002. "Rural Economic Effects of the Conservation Reserve Program in North Dakota." Dept. Agribusiness & Applied Economics No. 497-S, North Dakota State University,
- Bartlett, E. T. and W. L. Trock. "The Conservation Reserve Program: An Economic Perspective." *Rangeland* 9(4): 147-148
- Bartlett, E.T., A. Torell, N.R. Rimbey, L.W. Van Tassell, and D.W. McCollum. 2002. "Valuing grazing use on public land." *J. Range Manage.* 55:426-438
- Beck, R. J., S. E. Kraft, and J. H. Burde. 1999. "Is the Conversion of Land from Agricultural Production to a Bioreserve Boon or Bane for Economic Development?" *Journal of Soil and Water Conservation* 54(1, 1st quarter): 394-401.
- Berner, A. H. 1984. "Federal land retirement program: A land management albatross." *North American Wildlife and Natural Resources* 49:118-130
- Boyd, R., K. Konyar, and N.D. Uri. 1992. "Measuring Aggregate Impacts: The Case of the Conservation Reserve Program." *Agricultural Systems* 38(1). 35-60
- Broomhall, D.E., and T.G. Johnson 1990. "The Impact of the Conservation Reserve Program on a Region in Rural Eastern Georgia" *Review of Regional Studies* 20 (2): 66-75
- Daniels, T.L. 1988. "America's Conservation Reserve Program: Rural Planning or Just Another Subsidy?" *Journal of Rural Studies* 4(4): 405-11.
- Dicks, M.R. 1990. "Southern Great Plains CRP lands: Future Use and Impacts." *Current Farm Economics* 63(4). 43-57.

- Dicks, M.R. , D. Ray and L. Sanders. 1990. "Conservation Title Impacts on the Great Plains." *Current Farm Economics*. 63(1) 21-30.
- Dicks, M.R. and T. Bidwell. 2005. "Conservation Reserve Program Haying and Grazing Provision Analysis" Unpublished, Oklahoma State University
- Feather, P., D. Hellerstein, and L. Hansen. 1999. "Economic Valuation of Environmental Benefits and the Targeting of Conservation Programs: The Case of the CRP." Washington DC: U.S. Department of Agriculture, Economic Research Service. AER-778
- Gee, C.K. 1981. "Estimating economic impacts of adjustments in grazing on federal lands and estimating federal rangeland forage values." Colorado State University Agr. Exp. Sta. Res. Bull. No. 143
- Harrington, D., G. Schluter, and P. O'Brien. 1986. "Agriculture's Links to the National Economy: Income and Employment." Washington DC: U.S. Department of Agriculture, October
- Ikerd, J., and D. Levins, and N. Thompson. 1996. "Evaluating Relative Impacts of Conventional and Sustainable Farming Systems on Rural Communities." *Sustainable Agriculture Research and Education*.
- Hamilton, L.L. and R.A. Levins. 1998. "Local Economic Impacts of Conservation Reserve Program Enrollments: A Sub-County Analysis." Paper presented at conference on Food, Agriculture and the Environment, Minneapolis, August 31–September 2.
- Henderson, D., L. Tweeten, and M. Woods. 1992. "A multicomunity approach to community impacts: the case of the conservation reserve program." *Journal of Community Development Society* 23(1) 88-102
- Hodur, N. M., F. L. Leistritz, and D.A. Bangsund. 2002. "Local Socioeconomic Impacts of the Conservation Reserve Program." Dept. Agribusiness & Applied Economics No. 476. North Dakota State University..
- Holechek, J.L., H. Gomez, F. Molinar, and D. Galt. 1999. "Grazing studies: What we've learned." *Rangeland*. 21(2):12-16.
- Hyberg, B.T., M.R. Dicks, and T. Hebert. 1991. "Economic Impacts of the Conservation Reserve Program on Rural Economies." *Review of Regional Studies* 21(1): 91–105.
- Johnson, J., and B. Maxwell. 2001. "The Role of the Conservation Reserve Program in Controlling Rural Residential Development." *Journal of Rural Studies* 17(3): 323–32.

- Kozloff, K. L. 1989. "Benefits and costs to society from retiring erodible cropland: A case study of the Conservation Reserve Program." PhD dissertation, University of Minnesota.
- Langner, L.L. 1989. "Land Use Changes and Hunter Participation: The Case of the Conservation Reserve Program." Paper presented at the 54th North American Wildlife and Natural Resources Conference, Washington, DC.
- Martin, M., H. Radtke, B. Eleveld, and S. D. Nofziger. 1988. "The Impacts of the Conservation Reserve Program on Rural Communities: The Case of Three Oregon Counties." *Western Journal of Agricultural Economics* 13(2): 225–32.
- Mortensen, T.L., R.C. Coon, F.L. Leistriz, J.A. Leitch, and B.L. Ekstrom. 1989. "Regional Economic Impact of the Conservation Reserve Program: An Application of Input Output Analysis." North Dakota University Agr. Exp. Sta. Res. Bull. No.89003.
- Mortensen, T.L., F.L. Leistriz, J.A. Leitch, R.C. Coon, and B.L. Ekstrom. 1990. "Socioeconomic Impacts of the Conservation Reserve Program in North Dakota." *Society and Natural Resources* 3(1): 53–61.
- Mundell, M. 2002. "The Economic Impacts of the CRP/CREP Programs in the Long Branch Watershed." Dept Policy Analysis No. S-2002-02, University of Missouri-Columbia, October
- Office of Management and Budget, The White House Website. 1996 *Economic Analysis of Federal Regulations Under Executive Order 12866*. Washington DC, January
- Otto, D.M., and D.B. Smith. 1996. "Economic Impacts of CRP on Communities," *Iowa Ag Review* (March): 12–14.
- Reichenberger, L. 1987. "Reeling from the reserve." *Farm Journal* 111(3):16-19.
- Ribaudo, M.O. 1989a. *Water Quality Benefits from the Conservation Reserve Program*. Washington DC: U.S. Department of Agriculture, ERS. AER No. 606.
- Ribaudo, M.O. 1989b. "Targeting the Conservation Reserve Program to Maximize Water Quality Benefits." *Land Economics* 65 (4): 320-32.
- Ribaudo, M.O., S. Piper, G.D. Schaible, L.L. Langner, and D. Colacicco. 1989. "CRP: What Economic Benefits?" *Journal of Soil and Water Conservation* 44 (5):421-24.
- Rowe, H.I., and E.T. Bartlett. 2001. "Development and federal grazing policy impacts on two Colorado counties: a comparative study. In: L.A. Torell, E.T. Bartlett, and R. Larranaga (eds.)." Symposium sponsored by Western Coordinating Committee

- Siegel, P.B. and T.G. Johnson. 1991. "Break-Even Analysis of the Conservation Reserve Program: The Virginia Case." *Land Economics*, 67(4)447-461
- Standaert, J.E., and H.A. Smith. 1989. "CRP Effects on Montana's Economy." *Journal of Soil and Water Conservation* 44(5): 507-509.
- Sullivan, P., D. Hellerstein, L. Hansen, R. Johansson, S. Koenig, R. Lubowski, W. McBride, D. McGranahan, M. Roberts, S. Vogel, and S. Bucholtz. September 2004. *The Conservation Reserve Program: Economic Implications for Rural America*. Washington DC: U.S. Department of Agriculture, ERS. AER No. 834.
- Sullivan, P., and D. McGranahan, D. Hellerstein, S. Vogel. 2006. "Farmland Retirement's Impact on Rural Growth." *Amber Waves*, 2(5)
- Taylor, H.H. 1988. *Use of Agricultural Inputs and the Conservation Reserve Program*. Washington DC: U.S. Department of Agriculture, Economic Research Service Situation and Outlook Report AR-11.
- Taylor, G. and L. Janssen. 2008. "The Economic Impact of CRP Acres in South Dakota Returning to Crop Production." Dept. Ag. Economics Staff Paper Series, South Dakota University
- Torell, L.A., J.R. Garrett, and C.T.K. Ching. 1981. "The economic effects of three changes in public lands grazing policies." *J. Range Manage.* 34(5):373-376.
- Torell, L.A., J.A. Tanaka, N. Rimbey, T. Darden, L. Van Tassell, and A. Harp. 2002. "Ranch-Level Impacts of Changing Grazing Policies on BLM Land to Protect the Greater Sage-Grouse: Evidence from Idaho, Nevada and Oregon." Dept. Policy Analysis Center for Western Public Lands. No. SG-01-02.
- U.S. Department of Agriculture, Farm Service Agency. 2008. *Conservation Reserve Program*. Internet Site:
<http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp>
- U.S. Department of Agriculture, National Agricultural Statistics Service, 2008. *Quick Stats U.S. & All States County Data – Crop & Livestock*. Internet site:
http://www.nass.usda.gov/QuickStats/Create_County_All.jsp
- U.S. Department of Agriculture, Commodity Credit Corporation, Federal Register. 2002 *Farm Bill- Conservation Reserve Program- Long-Term Policy; Interim Rule. 68, 89*
- Wikipedia. 2008. *List of countries by GDP*. World Bank. Internet site:
[http://en.wikipedia.org/wiki/List_of_countries_by_GDP_\(nominal\)](http://en.wikipedia.org/wiki/List_of_countries_by_GDP_(nominal))

APPENDICES

Appendix A

Below is a list of the states in our analysis and each scenario with its limitations.

MH stands for managed haying, MG means managed grazing, and PNS means primary nesting season. 1/10 signifies an activity may occur once every ten years.

Idaho

Scenario A	MH: 1/10	MG: 1/10	PNS: 1APR-1AUG
Scenario B	MH: 1/3	MG: 1/3	PNS: 15APR-1JULY
Scenario C	MH: 1/3	MG: 1/3	PNS: 15APR-15JUN Fall grazing to Dec 31
Scenario D	MH: 1/5	MG: 1/5	PNS: 1APR-1AUG

Kansas

Scenario A	MH: 1/10	MG: 1/5	PNS: 1MAY-1JUL
Scenario B	MH: 1/3	MG: 1/3	PNS: 1MAY-1JUL

Montana

Scenario A	MH: 1/10	MG: 1/5	PNS: 15MAY-1AUG
Scenario B	MH: 1/5	MG: 1/3	PNS: 15MAY-15JUL
Scenario C	MH: 1/5	MG: 1/3	PNS: 15MAY-1JUL
Scenario D	MH: 1/5	MG: 1/5	PNS: 15MAY-1AUG

Nebraska

Scenario A	MH: 1/10	MG: 1/5	PNS: 1MAY-1JUL
Scenario B	MH: 1/3	MG: 1/3	PNS: 1MAY-1JUL

New Mexico

Scenario A	MH: 1/10	MG: 1/10	PNS: 1MAR-1JUL
Scenario B	MH: 1/5	MG: 1/3	PNS: 1MAR-1JUL
Scenario C	MH: 1/5	MG: 1/3	PNS: 1MAR-1JUL Fall grazing through Dec 31

North Dakota

Scenario A	MH: 1/10	MG: 1/5	PNS: 15APR-1AUG
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Scenario B	MH: 1/3	MG: 1/3	PNS: 15APR-1AUG
Scenario C	MH: 1/3	MG: 1/3	PNS: 15APR-15 July
Scenario D	MH: 1/5	MG: 1/5	PNS: 15APR-1AUG

Oklahoma

Scenario A	MH: 1/10	MG: 1/5	PNS: 1MAY-1JUL
Scenario B	MH: 1/3	MG: 1/3	PNS: 1MAY-1JUL

Oregon

Scenario A	MH: 1/10	MG: 1/10	PNS: 1Mar-15JUL
Scenario B	MH: 1/3	MG: 1/3	PNS: 1APR-1AUG
Scenario C	MH: 1/3	MG: 1/3	PNS: 1APR-1JUL Fall grazing to Dec 31
Scenario D	MH: 1/5	MG: 1/5	PNS: 1APR-1AUG

South Dakota

Scenario A	MH: 1/10	MG: 1/5	PNS: 1MAY-1AUG
Scenario B	MH: 1/5	MG: 1/5	PNS: 1MAY-1AUG
Scenario C	MH: 1/3	MG: 1/3	PNS: 1MAY-1JUL

Texas

Scenario A	MH: 1/10	MG: 1/5	PNS: 1MAY-1JUL
Scenario B	MH: 1/3	MG: 1/3	PNS: 1MAY-1JUL
Scenario C	MH: 1/2	MG: 1/2	PNS: 1MAR-1JUN Fall grazing through Dec 31

Utah

Scenario A	MH: 1/10	MG: 1/10	PNS: 1APR-15JUL
Scenario B	MH: 1/3	MG: 1/3	PNS: 1APR-15JUL
Scenario C	MH: 1/3	MG: 1/3	PNS: 1APR-15JUL Fall grazing through Dec 31

Washington

Scenario A	MH: 1/10	MG: 1/10	PNS: 1APR-1AUG
Scenario B	MH: 1/3	MG: 1/3	PNS: 1APR-1AUG
Scenario C	MH: 1/3	MG: 1/3	PNS: 1APR-1JUL Fall grazing to Dec 31
Scenario D	MH: 1/5	MG: 1/5	PNS: 1APR-1AUG

Appendix B: Conservation Practices

CP1: Establishment of Introduced Grasses and Legumes

CP2: Establishment of Permanent Native Grasses

CP4B: Permanent Wildlife Habitat Corridors (Noneasement)

CP4D: Permanent Wildlife Habitat (Noneasement)

CP10: Grass Already Established

CP18B: Establishment of Permanent Vegetation to Reduce Salinity

CP18C: Establishment of Permanent Salt Tolerant Vegetative Cover

VITA

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Scope and Method of Study: A survey of 480 Conservation Reserve Program (CRP) fields from across 14 states in the Great Plains region was completed to estimate the economic impacts from a policy change in the managed haying and grazing provision of the CRP. The study was designed to determine whether the new grazing and haying provisions of CRP would dramatically impact the price of beef and state economies. The study examined the economic feasibility of the haying and grazing activity, given the reduction in rental payments, estimated the amount of beef and hay likely to be produced annually in each state under several haying and grazing scenarios and estimated the impact of these expanded activities on beef production. The economic impact of the changes in production for hay and beef on states' economies was measured. The results were evaluated to decide if additional analysis was needed for local markets.

Findings and Conclusions: The results suggest that the policy changes represented by the various haying and grazing scenarios result in a small change, both in terms of current production levels and economy wide impacts. This analysis adequately reflects the magnitude of the changes likely to occur in the output of hay and beef from each of the haying and grazing scenarios at the state level. Because the scenarios considered only a one in three to one in ten year haying or grazing management scheme for the CRP acres, the results of this study cannot be extended to a continuous haying and grazing activity.

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