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Managed Haying or Grazing of CRP Acres

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Managed Haying or Grazing of CRP Acres

Abstract

Current Conservation Reserve Program (CRP) rules allow landowners with active CRP contracts to periodically harvest forage from CRP acres via routine (commonly referred to as “managed”) haying or grazing under certain conditions.

Responsibly managed haying and grazing have been shown to diversify covers, improve existing stands, and provide benefits to wildlife habitat. The Natural Resources Conservation Service (NRCS) sets the standards for this provision and the Farm Service Agency (FSA) works with CRP contract holders to develop approved management plans. Livestock producers with access to CRP acres and CRP landowners faced with the decision of whether to utilize this provision must compare the costs and returns to managed haying or grazing of CRP acres with the alternatives, i.e., purchasing hay, leasing private acres for haying or grazing.

This publication presents average breakeven rates for managed haying and grazing of CRP acres in Iowa and provides formulas and background information needed to calculate breakeven prices when comparing the managed harvest of forage from CRP acres with the alternatives for obtaining hay or grazing acres.

Disciplines

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enrolling into the CRP. This suggests the 25 percent reduction in rental rates reflects a higher opportunity cost of harvesting CRP in the northern part of the state. However, it is important to consider the productive capacity of the acres enrolled in the CRP when estimating the total cost of harvesting because it will affect the per-ton cost of forage from CRP acres.

The following sections provide step-by-step examples of how to estimate the costs of forage from managed haying or grazing of CRP acres based on average county level data. Because costs are specific to many factors, producers are encouraged to use their own information when calculating the cost of haying or grazing CRP acres.⁵

Managed Haying of CRP Acres

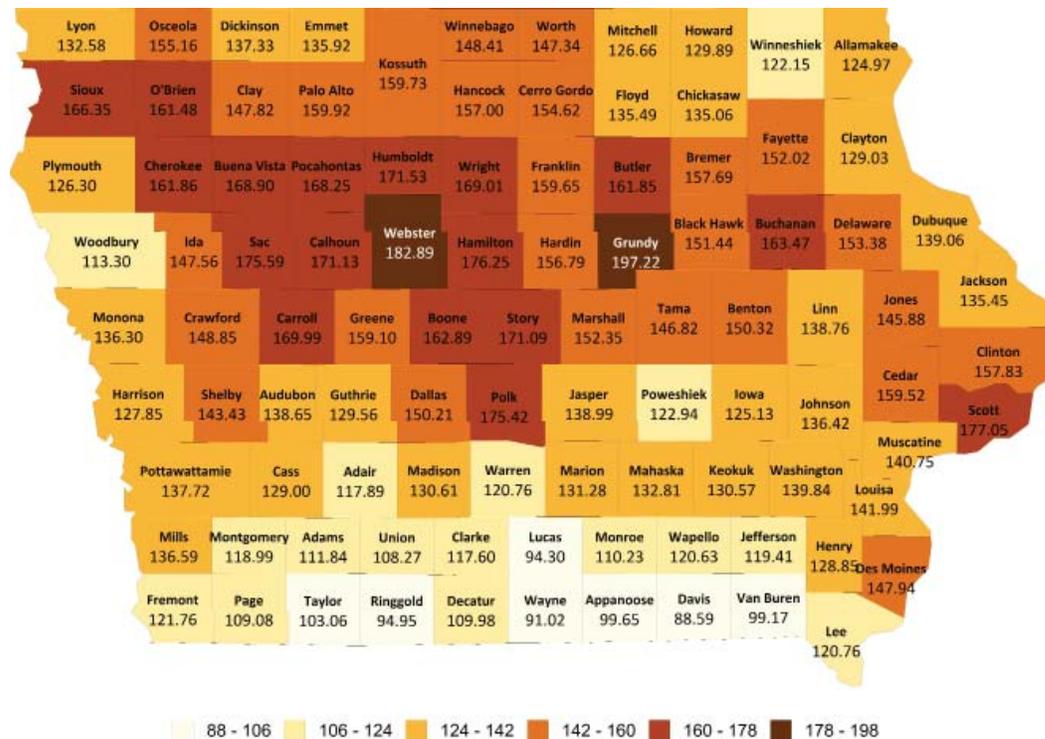
Landowners who consider haying their CRP acres should compare the estimated hay cost per acre with the two alternatives for sourcing hay: 1) leasing private acres to harvest hay, and 2) purchasing hay. This is accomplished by calculating the per-acre cost

of hay in the CRP field (before harvest) and also the per-ton cost of harvesting hay from the CRP parcel. Alternatively, a producer could calculate the breakeven CRP rental rate at or below which it is more economical to harvest from CRP acres instead of buying hay or leasing acres to harvest. This information can be used to help identify potential nearby CRP acres that meet the breakeven criteria. The steps for these calculations and examples are provided in what follows.

The county level averages of annual per-acre CRP rental rates presented in Figure 1 are used to calculate a before harvest hay cost per acre that can be used as a comparison with the cost to lease private acres for haying. The before harvest hay cost per acre is calculated using the following formula:

$$\frac{\text{County Average CRP Rental Rate} \times \text{Percent Reduction in Rental Rate}}{\text{Percent of Forage Available to Hay}} = \text{Before Harvest Hay Cost per Acre}$$

Figure 1. Iowa County Level Average CRP Rental Rates, \$/acre*



* Includes 2012 signup acres. Source: USDA-Farm Service Agency, <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=rns-css>

For example, the following are the before harvest hay costs per acre of haying CRP for Lucas County in southern Iowa and Buchanan County in northern Iowa.

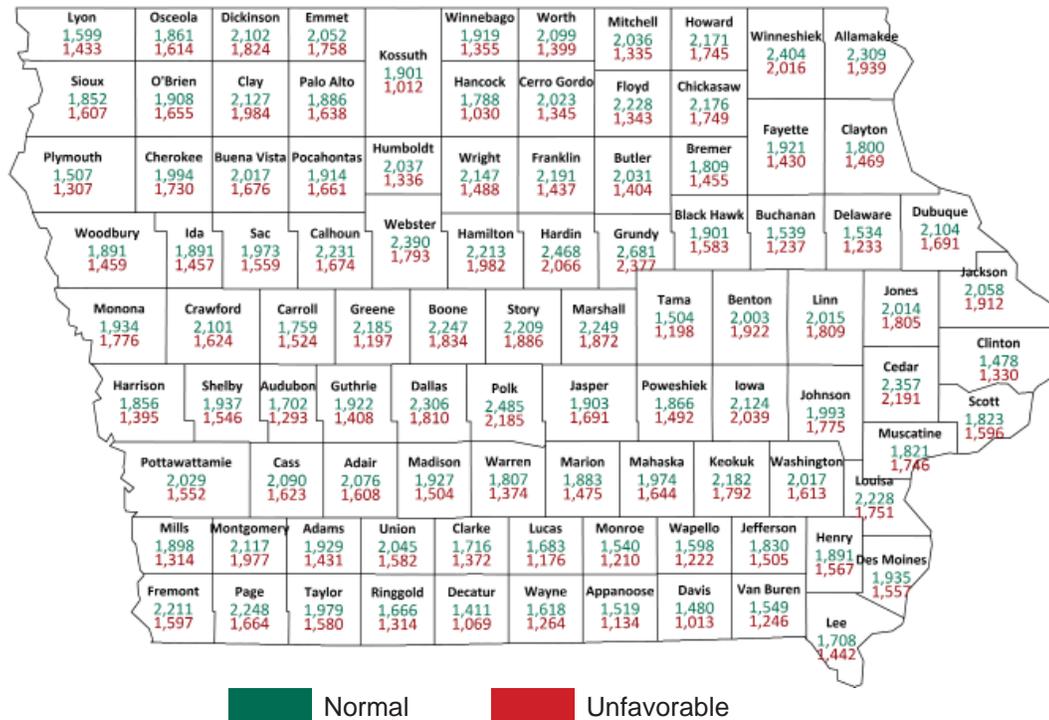
Lucas County: $\frac{\$94.30 \times 25\%}{100\%} = \23.58 per acre

Buchanan County: $\frac{\$163.47 \times 25\%}{100\%} = \40.87 per acre

These per-acre costs allow for the comparison of the costs of leasing private acres and harvesting hay from CRP land. If private acres can be leased for less than \$23.58 per acre in Lucas County or \$40.87 in Buchanan County, haying CRP acres is not economical. When making this comparison, producers should remember to account for potential productivity differences between the CRP acres and other acres being considered.

Similarly, the cost of hay harvested from CRP acres on a per-ton basis can be calculated. This measure accounts for differences in productivity and allows producers to compare the CRP-harvest option with either the cost per ton of harvested hay from other acres or to the cost of purchasing hay. To convert the per-acre cost of managed haying to a per-ton basis, adjust the per-acre value to account for the amount of hay available under certain range conditions. Iowa State University – in cooperation with the United States Department of Agriculture, Natural Resources Conservation Service, and Iowa Department of Agriculture and Land Stewardship – makes available descriptions of each type of soil in each Iowa County including interpretations of a soil’s potential for production. These production capabilities are applied to the enrolled grass acres of CRP in Iowa to determine the expected hay production on CRP acres under normal and unfavorable (drought) conditions (Figure 2).

Figure 2. Hay Production of CRP Acres under Normal and Unfavorable Conditions, tons/acre*



* Hay production estimates under normal and unfavorable conditions determined by descriptions listed in the Iowa Soil Properties and Interpretations Database (ISPAID). Source: Iowa State University Extension and Outreach – Soil and Land Use, <http://www.extension.iastate.edu/soils/ispaid>.

The before harvest hay cost per acre is adjusted for the estimated hay production and converted to a before harvest hay cost per ton using the following formula:

$$\frac{\text{Before Harvest Hay Cost per Acre}}{\text{lbs of hay per acre}} \times \frac{2,000 \text{ lbs per ton}}{\text{lbs of hay per acre}} = \frac{\text{Before Harvest Hay Cost per Ton}}{\text{Ton}}$$

The appropriate value for “lbs of hay per acre” in the formula above is acre and situation specific. Using the hay production estimates from Figure 2, the before harvest hay costs per ton associated with haying CRP acres under normal conditions in Lucas and Buchanan counties are:

$$\text{Lucas County: } \frac{\$23.58 \text{ per acre}}{1,683 \text{ lbs per acre}} \times \frac{2,000 \text{ lbs per ton}}{\text{lbs of hay per acre}} = \$28.02 \text{ per ton}$$

$$\text{Buchanan County: } \frac{\$40.87 \text{ per acre}}{1,539 \text{ lbs per acre}} \times \frac{2,000 \text{ lbs per ton}}{\text{lbs of hay per acre}} = \$53.11 \text{ per ton}$$

The corresponding estimated before harvest hay costs per ton under unfavorable conditions in Lucas and Buchanan counties are \$40.10 and \$66.06, respectively. The expected production value has a significant impact on the before harvest hay cost per acre, which reinforces the importance of producers using their own information when calculating the cost of harvesting CRP acres for hay. Producers may find it useful to calculate the before harvest hay cost per ton for CRP acres and for another parcel they consider leasing for haying using realistic production values for each parcel. This comparison is useful because it provides flexibility in accounting for productivity differences between parcels.

Finally, to compare the costs of managed haying of CRP acres and buying hay, add the total costs of harvesting hay (i.e., cost of mowing, raking, baling, and moving) to the before harvest cost of hay per ton calculated above. Adding the harvesting costs gives an estimate of the total cost of harvested hay. Table 1

shows the statewide average prices paid for custom hay harvesting in Iowa from 2008 to 2012, assuming a 1,500-pound round bale.

Table 1. Iowa State-Level Average Custom Hay Harvesting Rates

Year	Mowing (\$/acre)	Raking (\$/acre)	Baling (\$/bale)	Moving (\$/bale)
2012	15.65	6.20	10.85	3.75
2011	13.85	5.75	9.95	2.85
2010	14.50	5.65	9.80	2.90
2009	14.10	5.70	9.70	3.00
2008	12.50	5.65	9.20	3.10

Source: Iowa Farm Custom Rate Survey, <http://www.extension.iastate.edu/agdm/crops/html/a3-10.html>

The cost of harvesting hay is calculated by converting the costs listed in Table 1 to dollars-per-ton, adjusting for the estimated amount of hay production, and adding the individual costs to arrive at a total cost. The calculations are:

$$\frac{\text{Mowing cost per acre}}{\text{lbs of hay per acre}} \times \frac{2,000 \text{ lbs per ton}}{\text{lbs of hay per acre}} = \text{Mowing cost per ton}$$

$$\frac{\text{Raking cost per acre}}{\text{lbs of hay per acre}} \times \frac{2,000 \text{ lbs per ton}}{\text{lbs of hay per acre}} = \text{Raking cost per ton}$$

$$\frac{\text{Baling cost per bale}}{1,500 \text{ lbs of hay per bale}} \times \frac{2,000 \text{ lbs per ton}}{\text{lbs of hay per acre}} = \text{Baling cost per ton}$$

$$\frac{\text{Moving cost per bale}}{1,500 \text{ lbs of hay per bale}} \times \frac{2,000 \text{ lbs per ton}}{\text{lbs of hay per acre}} = \text{Moving cost per ton}$$

$$\begin{aligned} & \text{Mowing cost per ton} \\ & + \text{Raking cost per ton} \\ & + \text{Baling cost per ton} \\ & + \text{Moving cost per ton} \\ & = \text{Total cost of haying per ton} \end{aligned}$$

To determine the after harvest hay cost per ton, the total cost of harvesting hay per ton is added to the before harvest hay cost per ton using the following formula:

$$\begin{matrix} \text{Before Harvest} & & \text{Total Cost of} & & \text{After Harvest} \\ \text{Hay Cost per} & + & \text{Harvesting Hay} & = & \text{Hay Cost per} \\ \text{ton} & & \text{per ton} & & \text{ton} \end{matrix}$$

Continuing with the example for Lucas and Buchanan counties, the after harvest hay costs per ton under normal conditions are:⁶

$$\text{Lucas County: } \begin{matrix} \$28.02 \\ \text{per ton} \end{matrix} + \begin{matrix} \$45.44 \\ \text{per ton} \end{matrix} = \$73.46$$

$$\text{Buchanan County: } \begin{matrix} \$53.11 \\ \text{per ton} \end{matrix} + \begin{matrix} \$47.86 \\ \text{per ton} \end{matrix} = \$100.97$$

The examples above are based on the average CRP rental rates in Lucas County and Buchanan County, but CRP acres even within a single county are contracted at various per-acre rates that can differ significantly. A livestock producer who knows the market for purchasing hay and for haying costs may want to know the CRP rental rate below which it is more economical to harvest from CRP acres using managed haying, i.e., a “breakeven” CRP rental rate for haying. Knowing this allows the producer to seek out CRP land whose contracted rental rate per-acre is lower than the calculated breakeven rental rate. Given the market rate for purchasing hay, the following formula can be used to calculate a breakeven CRP rental rate per acre:

$$\frac{\left(\begin{matrix} \text{Price of Hay} \\ \text{per ton} \end{matrix} - \begin{matrix} \text{Total Cost} \\ \text{of Harvesting} \\ \text{Hay per ton} \end{matrix} \right) \times \begin{matrix} \text{lbs of hay} \\ \text{per acre} \end{matrix} \times \begin{matrix} \text{Percent} \\ \text{of Forage} \\ \text{Available to Hay} \end{matrix}}{2,000 \text{ lbs per ton} \times \text{Percent Reduction in Rental Rate}} = \begin{matrix} \text{Breakeven CRP} \\ \text{Rental Rate, \$} \\ \text{per acre} \end{matrix}$$

$$\text{Lucas County: } \frac{\left(\begin{matrix} \$95.00 \\ \text{per ton} \end{matrix} - \begin{matrix} \$45.44 \\ \text{per ton} \end{matrix} \right) \times \begin{matrix} 1,683 \text{ lbs} \\ \text{per acre} \end{matrix} \times 100\%}{2,000 \text{ lbs per ton} \times 25\%} = \$166.80 \text{ per acre}$$

$$\text{Buchanan County: } \frac{\left(\begin{matrix} \$95.00 \\ \text{per ton} \end{matrix} - \begin{matrix} \$47.86 \\ \text{per ton} \end{matrix} \right) \times \begin{matrix} 1,539 \text{ lbs} \\ \text{per acre} \end{matrix} \times 100\%}{2,000 \text{ lbs per ton} \times 25\%} = \$145.10 \text{ per acre}$$

Again continuing with the example for Lucas and Buchanan counties, and assuming a market hay price of \$95.00 per ton and normal pasture conditions, breakeven CRP rental rates are calculated as follows:⁷

If the per-acre CRP rental rate is lower than the calculated breakeven rental rate, then hay harvested from managed CRP acres is less expensive than purchasing hay at the market price (\$95.00 per ton in this example). The cost of haying CRP acres – including the 25 percent reduction in payment on all acres used for haying – is lower than the benefit of haying the CRP acres to avoid purchasing hay. In Buchanan County, the calculated breakeven rental rate is lower than the county average CRP rental rate of \$163.47. Thus, the cost of hay from CRP acres is higher than the cost of purchasing hay. However, the breakeven rental rate in Lucas County is higher than the county average CRP rental rate of \$94.30, indicating the cost of hay from managed CRP acres is less than the cost of purchasing hay at the market price. Note that in the event of a drought (i.e., unfavorable conditions), the market price for hay could be substantially higher than the \$95 used in these examples and emergency haying provisions may reduce the assessed CRP rental rate penalty to something less than 25 percent. All else equal, as the price of hay increases, the breakeven CRP rental rate also increases and the relative profitability of haying CRP acres improves.

The FSA rules for managed and emergency haying and grazing of CRP acres state explicitly the CRP rental rate reduction that will be assessed in each case. Because these penalties can change, a landowner or producer may want to know how large the CRP rental rate penalty would need to be to make it more economical to buy hay rather than utilize emergency or managed haying. A breakeven analysis similar to the one shown can be constructed to determine the breakeven percentage reduction in the CRP rental rate that is implied for managed haying. The breakeven percent reduction in the CRP rental rate is calculated as shown below.

Assuming normal range conditions and a market hay price of \$95 per ton, the breakeven CRP rental rate reduction percentages for Lucas and Buchanan counties are shown in the examples below.

The interpretation of this breakeven rate is that the FSA-imposed CRP rental rate reduction percentage would have to be less than the calculated breakeven rental rate reduction for haying of CRP to cost less per ton than purchasing hay. Said another way, whenever the announced FSA rate reduction is less than the calculated breakeven rental rate reduction, it will be less costly (more economical) to hay CRP acres than purchasing hay at the market price. In a previous example it was shown that based on the current statewide rate of 25 percent, the after harvest cost of hay per ton from CRP acres in Buchanan County (\$100.97 per ton) is greater than the cost of purchas-

ing hay (\$95 per ton). In this case, the rental rate reduction would have to be less than 22.2 percent for haying “average” CRP acres in Buchanan County to be economical. Conversely, the after harvest cost of hay per ton for managed haying of CRP acres in Lucas County (\$73.46 per ton) is less than the cost to purchase hay (\$95 per ton). In other words, the CRP rental rate reduction could be as high as 44.2 percent before it would become uneconomical to hay the average CRP parcel in Lucas County given the assumptions in this example. To the extent that a particular CRP parcel’s rental rate is higher or lower than the county average, the breakeven CRP rental rate reduction should be recalculated.

A state-level breakeven analysis is calculated using an average CRP rental rate and average hay production estimates for Iowa under normal and unfavorable conditions. The average CRP rental rate and the average hay production are adjusted to reflect the number of CRP acres in grass in each county to arrive at a weighted average rental rate and production level. The acre-weighted average CRP rental rate for Iowa is \$124.28 per acre and the acre-weighted hay production levels are 1,888 and 1,513 pounds per acre for normal and unfavorable range conditions, respectively. These values are used to calculate the state-level breakeven CRP rental rates and rental rate reduction percentages (Table 2). Under normal haying conditions, the breakeven rental rate is \$197.76 per acre and the rental rate reduction percentage is 40.2 percent. Under unfavorable conditions, the

$$\frac{\left(\begin{array}{c} \text{Price of Hay} \\ \text{per ton} \end{array} - \begin{array}{c} \text{Total Cost} \\ \text{of Harvesting} \\ \text{Hay per ton} \end{array} \right) \times \begin{array}{c} \text{lbs of hay} \\ \text{per acre} \end{array} \times \begin{array}{c} \text{Percent} \\ \text{of Forage} \\ \text{Available to Hay} \end{array}}{2,000 \text{ lbs per ton} \times \text{CRP rental rate, \$ per acre}} = \text{Breakeven Rental Rate Reduction, \%}$$

Lucas County:
$$\frac{\left(\begin{array}{c} \$95.00 \\ \text{per ton} \end{array} - \begin{array}{c} \$45.44 \\ \text{per ton} \end{array} \right) \times 1,683 \text{ lbs} \\ \text{per acre} \times 100\%}{2,000 \text{ lbs per ton} \times \$94.30 \text{ per acre}} = 44.2\%$$

Buchanan County:
$$\frac{\left(\begin{array}{c} \$95.00 \\ \text{per ton} \end{array} - \begin{array}{c} \$47.86 \\ \text{per ton} \end{array} \right) \times 1,538 \text{ lbs} \\ \text{per acre} \times 100\%}{2,000 \text{ lbs per ton} \times \$163.47 \text{ per acre}} = 22.2\%$$

breakeven rental rate is \$141.10 per acre and the breakeven rental rate reduction is 28.4 percent. These results suggest that, on average in Iowa, the costs of hay harvested from CRP acres under both normal and unfavorable conditions is less expensive than purchasing hay at \$95.00 per ton. The formulas presented above allow for re-calculation of the breakeven values to reflect changes in the market price for purchasing hay, changes in the cost of hay harvesting, as well as different assessments of expected hay production.

Table 2. Breakeven Rates of Managed Haying for State-Level Values*

Normal Range Conditions		Unfavorable Range Conditions	
CRP Rental Rate	CRP Rate Reduction	CRP Rental Rate	CRP Rate Reduction
\$197.76 per acre	40.2%	\$141.10 per acre	28.4%

* Based on Iowa weighted average CRP rental rate of \$124.28, a purchase cost for hay of \$95.00 per ton, and Iowa weighted average hay production levels of 1,888 and 1,513 pounds per acre for normal and unfavorable conditions, respectively.

Managed Grazing of CRP Acres

Just as values for comparing the cost of managed haying of CRP with alternatives for sourcing forage can be constructed, landowners can make similar calculations to compare the cost of grazing CRP land with private grazing costs in alternative pastures. This comparison requires calculating the grazing cost per acre on the CRP land with adjustments for stocking capacity. Additionally, breakeven CRP rental rate and breakeven CRP rental reduction calculations are provided below.

County average CRP rental rates in Iowa during 2012 (Figure 1) are used to calculate the grazing cost per acre of CRP using the following formula:⁸

$$\frac{\text{County Average CRP Rental Rate} \times \text{Percent Reduction in Rental Rate}}{\text{Percent of Forage Available to Graze}} = \text{Grazing Cost per acre}$$

For example, the following are the grazing costs per acre for Lucas County in southern Iowa and Buchanan County in northern Iowa.

$$\text{Lucas County: } \frac{\$94.30 \times 25\%}{100\%} = \$23.58 \text{ per acre}$$

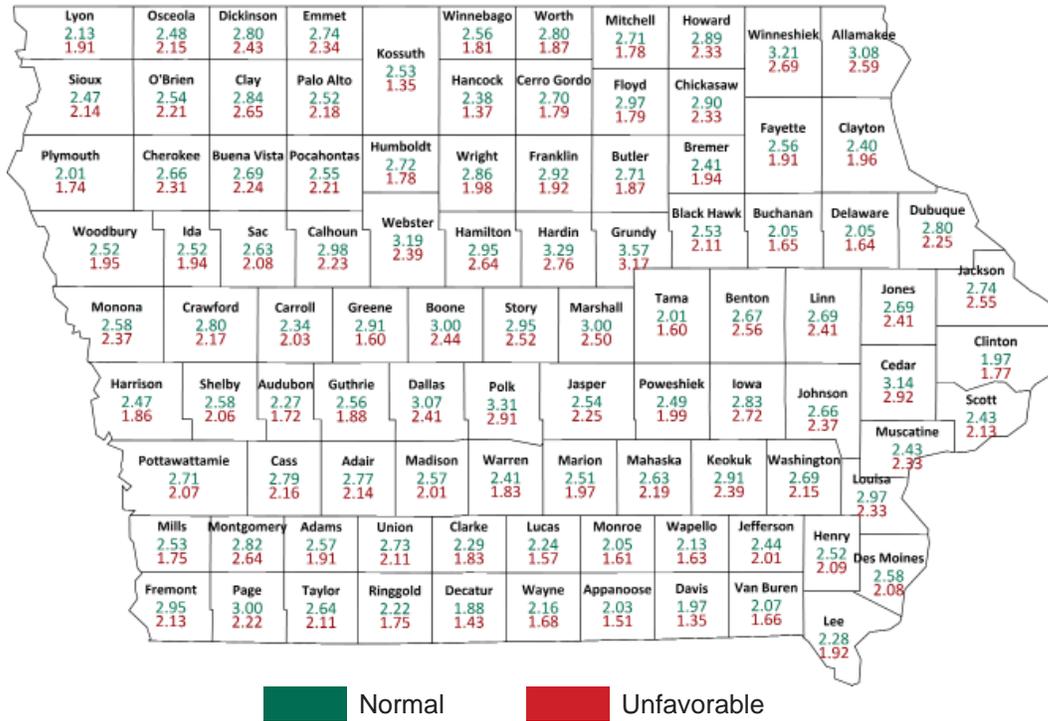
$$\text{Buchanan County: } \frac{\$163.47 \times 25\%}{100\%} = \$40.87 \text{ per acre}$$

This calculation gives the per-acre cost of grazing CRP land, but because the stocking capacity on CRP acres may be different than the alternative being considered, the calculated value may be an inaccurate indication. The cost of grazing is a function of the forage available to graze. Iowa State University – in cooperation with the United States Department of Agriculture, Natural Resources Conservation Service, and Iowa Department of Agriculture and Land Stewardship – makes available descriptions of each type of soil in each Iowa county with interpretations of each soil’s potential for production. To get a better sense of the true cost of grazing CRP acres or other acres with minimal grazing history, these production capability values are applied to the CRP acres in Iowa enrolled in grass-type conservation practices to determine the expected initial stocking rates on CRP acres under both normal and unfavorable (drought) conditions (Figure 3). Stocking rates are given in terms of an animal unit month (AUM) per acre.⁹ The AUM measure standardizes the stocking capacity in that it accounts for differences in the acres-per-head-stocking-rates that often exist within and between regions.

Continuing with the example for Lucas and Buchanan counties, the grazing cost per acre is adjusted to reflect the estimated forage available under normal conditions to arrive at the grazing cost per AUM. The adjustment factor is given by:

$$\frac{\text{Grazing Cost per acre}}{\text{AUMs per acre}} = \text{Grazing Cost per AUM}$$

Figure 3. Initial Stocking Rates of CRP under Various Conditions, AUMs/acre*



* Initial stocking rate estimates under normal and unfavorable conditions determined by descriptions listed in the Iowa Soil Properties and Interpretations Database (ISPAID). Source: Iowa State University Extension and Outreach – Soil and Land Use, <http://www.extension.iastate.edu/soils/ispaid>.

Lucas County: $\frac{\$23.58 \text{ per acre}}{2.24 \text{ AUMs per acre}} = \10.51 per AUM

Buchanan County: $\frac{\$40.87 \text{ per acre}}{2.05 \text{ AUMs per acre}} = \19.91 per AUM

When unfavorable pasture conditions exist, the AUMs per acre are lower, and in the case of Lucas and Buchanan counties, the costs of grazing CRP acres increase to \$15.04 and \$24.77 per AUM, respectively. Even though less forage per acre is available for grazing, the reduction to the CRP contract holder’s annual per-acre rental rate remains at 25 percent for managed grazing. If conditions were such

that emergency grazing provisions were implemented by the USDA, it is likely that a smaller rental rate penalty would be announced, decreasing the per-AUM grazing cost on CRP acres.

By using the calculations above, a landowner can compare the cost of managed grazing of CRP acres with local private grazing fees. The statewide average grazing fee for Iowa was \$22 per AUM in 2012 (Table 3). Based on these examples using average CRP rates, stocking rates, and private grazing fees, utilizing grazing of CRP land in Lucas and Buchanan counties would have been more economical (least costly) during 2012 than purchasing rights to private grazing.

Table 3. Iowa Grazing Fees for Cattle

Year	Cost per AUM
2012	\$22.00
2011	\$16.00
2010	\$17.00
2009	\$15.00
2008	\$19.00

Source: Cash Rental Rates for Iowa, <http://www.extension.iastate.edu/agdm/wholefarm/html/c2-10.html>

The cost values shown are based on the average CRP rates in Lucas and Buchanan counties. However, CRP contracts even within the same county can have significantly different associated per-acre rental rates. Thus, producers and landowners may find it useful to calculate the breakeven CRP rental rate for a given private grazing rate to identify whether it is more economical to graze CRP land or pay the private grazing fee. Using the average private grazing fee in Iowa during 2012, the breakeven CRP rental rate assuming normal pasture conditions is given by:

$$\frac{\text{Private Grazing Fee, } \$ \text{ per AUM} \times \text{Stocking Rate, AUMs per acre} \times \text{Percent of Forage Available to Graze}}{\text{Percent reduction in rental rate}} = \text{Breakeven CRP Rental Rate, } \$ \text{ per acre}$$

Lucas County: $\frac{\$22.00 \text{ per AUM} \times \$2.24 \text{ AUMs per acre} \times 100\%}{25\%} = \197.44 per acre

Buchanan County: $\frac{\$22.00 \text{ per AUM} \times \$2.05 \text{ AUMs per acre} \times 100\%}{25\%} = \180.58 per acre

The breakeven CRP rental rates calculated above are the per-acre CRP rental rate in Lucas and Buchanan counties below which it is more economical (less costly) to graze CRP land instead of paying the private grazing fee of \$22 per AUM. Producers considering private grazing should adjust the above formula to reflect the per-AUM rate they expect to pay. Under drought conditions, the market rate for private grazing may be higher and the percent reduction in the

rental rate on CRP land may be reduced under provisions for emergency grazing. Note that the private grazing fee used herein reflects local supply and demand for pasture and also capital investments (i.e., fencing, water tanks) that may not be present on CRP ground. When estimating the cost of grazing on CRP acres, it is important to consider the additional costs that might be incurred to ready the land for grazing.

Just as was shown for the case of haying CRP acres, a landowner or producer may want to know how large the CRP rental rate penalty would need to be to make it more economical to enter into a private grazing situation rather than utilize emergency or managed grazing on CRP acres.

A breakeven analysis similar to that above can be constructed to determine the breakeven percentage reduction in the CRP rental rate that is implied for managed grazing. The breakeven percent reduction in the CRP rental rate is calculated as follows:

$$\frac{\text{Private Grazing Fee, } \$ \text{ per AUM} \times \text{Stocking Rate, AUMs per acre} \times \text{Percent of Forage Available to Graze}}{\text{CRP Rental rate, } \$ \text{ per acre}} = \text{Breakeven Rental Rate Reduction, } \%$$

Assuming normal conditions and a market-based private grazing fee of \$22.00 per AUM, the breakeven CRP rental rate reduction percentages for Lucas and Buchanan counties are:

Lucas County: $\frac{\$22.00 \text{ per AUM} \times \$2.24 \text{ AUMs per acre} \times 100\%}{\$94.30 \text{ per acre}} = 52.3\%$

Buchanan County: $\frac{\$22.00 \text{ per AUM} \times \$2.05 \text{ AUMs per acre} \times 100\%}{\$163.47 \text{ per acre}} = 27.6\%$

These values indicate that the CRP rental rate reduction of 25 percent is less than the breakeven rental rate reductions of 52.3 and 27.6 percent in Lucas and Buchanan counties, respectively. Thus, even with a 25 percent reduction in the annual per-acre CRP rental rate paid to the CRP contract holder, it is more economical to graze CRP acres in Lucas and

Buchanan counties than pay the \$22.00 per AUM private grazing fee based on the assumptions in this example.

A state-level breakeven CRP payment reduction is calculated using an average CRP rental rate and average stocking rate per acre for the state under normal and unfavorable conditions. To calculate a breakeven analysis at the state level, two values are required: a state-level average CRP rental rate and a state-level average stocking rate per acre. The average rental rate and the average stocking rate are adjusted to reflect the number of CRP acres in grass in each county to arrive at a weighted average rental rate and stocking rate. The acre-weighted average CRP rental rate for Iowa is \$124.28 and the acre-weighted average stocking rates are 2.52 and 2.02 AUMs per acre for normal and unfavorable range conditions, respectively. The weighted average values are used to calculate state-level breakeven rental rate and rental rate reduction percentage (table 4). Under normal conditions, the breakeven CRP rental rate for Iowa is \$221.48 per acre, corresponding to an average breakeven rental rate reduction of 45.2 percent. Under unfavorable conditions, the breakeven CRP rental rate is \$169.41 per acre, corresponding to an average breakeven rental rate reduction 34.4 percent. Given that the current CRP rental rate reduction assessed for managed grazing of CRP land is 25 percent, the average cost of grazing CRP in Iowa will be less than the cost of renting private acres at \$22.00 per AUM. Here again, these formulas allow producers to calculate the breakeven values that correspond to specific parcels and that reflect changes in the market rental rate for private grazing.

Summary

This publication provides a framework for estimating the cost of managed haying and grazing of CRP land and illustrates how to compare haying and grazing of CRP acres with alternative sources of forage (i.e., purchasing hay, leasing private acres for haying or grazing). The formulas allow producers to make comparisons using value representative of their specific circumstances.

Based on these calculations and county-average values, figure 4 provides the county-level cost of hay per ton from managed haying of CRP land under normal production conditions. In the state of Iowa, the cost of managed haying of CRP is generally lower than the cost of purchasing hay.

Figure 5 provides the county-level cost of grazing per AUM using managed grazing of CRP acres under normal range conditions. These costs indicate that producers in most counties in Iowa will find it more economical to graze CRP land than to lease private grazing acres.

The decision to utilize managed harvesting of CRP land has implications for the ability to take advantage of emergency haying and grazing provisions that are occasionally implemented by the USDA in response to drought conditions that threaten the availability of forage. Producers are encouraged to consider this restriction as they weigh the costs and benefits of managed haying or grazing of CRP land.

Table 4. Breakeven Rates of Managed Grazing for State-Level Values*

Normal Range Conditions		Unfavorable Range Conditions	
CRP Rental Rate	CRP Rate Reduction	CRP Rental Rate	CRP Rate Reduction
\$221.48 per acre	45.2%	\$169.41 per acre	34.4%

* Based on Iowa average CRP rental rate of \$124.28, a private grazing rate of \$22.00 per AUM, and stocking rates of 2.52 and 2.02 AUMs per acre for normal and unfavorable conditions, respectively.

Figure 4. Estimated County-Level Cost of Hay from CRP under Normal Conditions, \$/ton

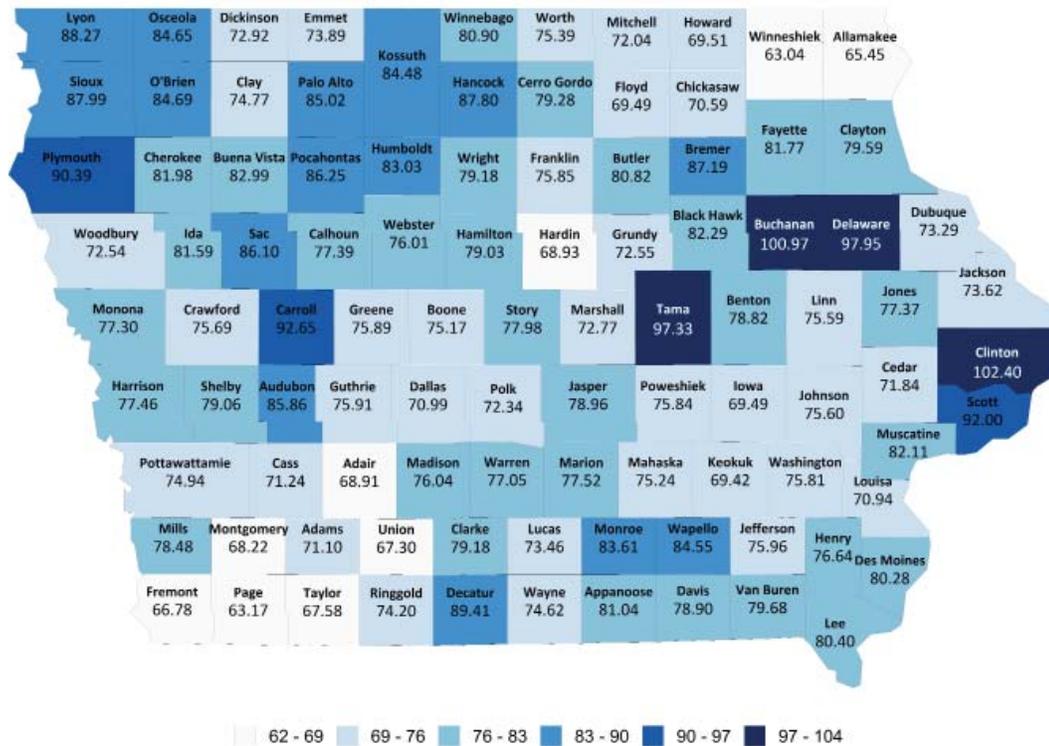
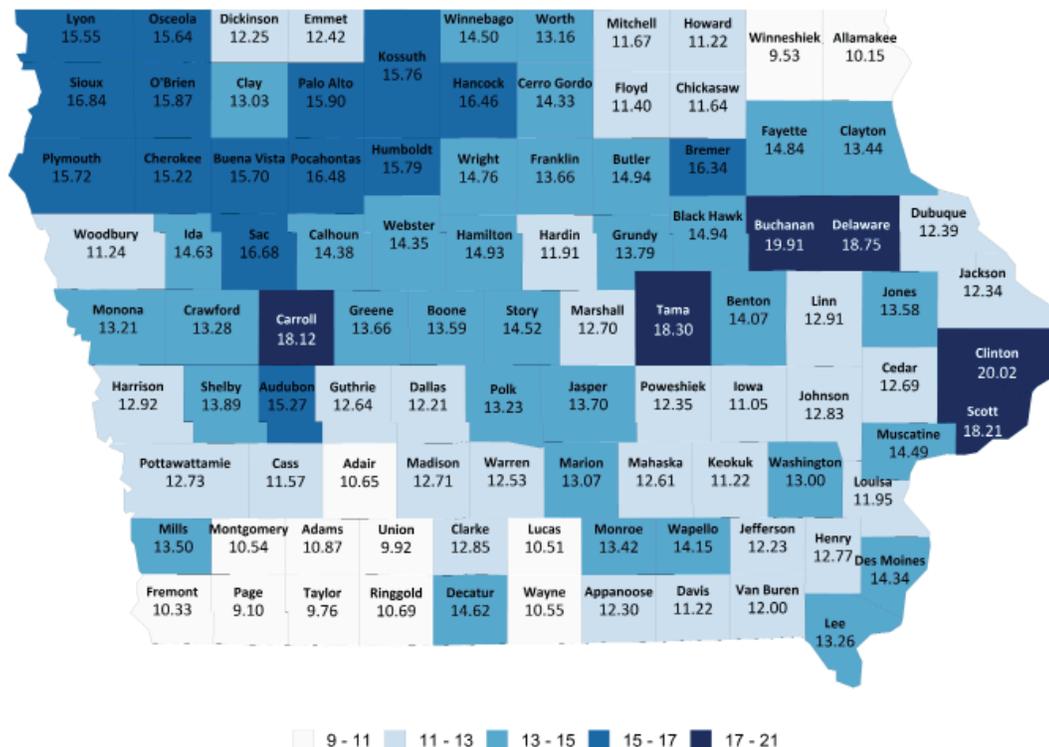


Figure 5. Estimated County-Level Cost of Grazing CRP under Normal Conditions, \$/AUM



¹ The detailed rules and criteria for managed haying and grazing are found in the NRCS Field Office Technical Guide and any producer or landowner considering this option must work with their county FSA office to develop an approved plan. Management plans require approval and often include a waiting period before harvesting can begin, so producers and CRP landowners need to evaluate this alternative well in advance of the desired harvesting period.

² The 3-year rule includes emergency haying and grazing. If emergency haying or grazing is used on an acre, it may not be harvested under a managed haying or grazing plan for 3 years. The rules for emergency harvesting are often different from those for managed harvesting, and the assessed rate reduction under emergency haying and grazing has been 10 percent historically.

³ CRP contract holders should consult their county FSA office for the haying and grazing dates that apply in their area. County offices can be located at the Iowa FSA website.

⁴ If emergency grazing and haying provisions become effective, the CRP rental rate reduction assessed to CRP contract holders may be different than 25 percent. Producers can adjust the formulas provided herein to the case of emergency haying or grazing as needed.

⁵ A decision tool calculator (Managed Haying or Grazing of CRP Acres) is available on the Ag Decision Maker website at the following link: <http://www.extension.iastate.edu/agdm/livestock/html/b1-60.html>. This calculator is an Excel spreadsheet that can be downloaded and used on any computer with the Microsoft Excel program and performs all of the calculations discussed in this paper, based upon user-supplied inputs.

⁶ Individual calculations for the costs per ton of mowing, raking, baling, and moving for each county are not shown here. Based on the 2012 custom rates and normal conditions, the per-ton costs for mowing, raking, baling, and moving are \$18.60, \$7.37, \$14.47, and \$5.00, respectively, for Lucas County and \$20.34, \$8.06, \$14.47, and \$5.00, respectively, for Buchanan County.

⁷ Average price of hay, excluding alfalfa, in Iowa from 2008 to 2012. Source: USDA-National Agricultural Statistics Service.

⁸ This formula is the same used as the starting point for determining the cost of haying CRP acres. The assessed reduction in the annual CRP payment is the same whether the acres are hayed or grazed.

⁹ The AUM is the forage requirement for one month for a 1,000 pound lactating cow with a calf of up to 3 months old (or less than 400 pounds).

... and justice for all

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