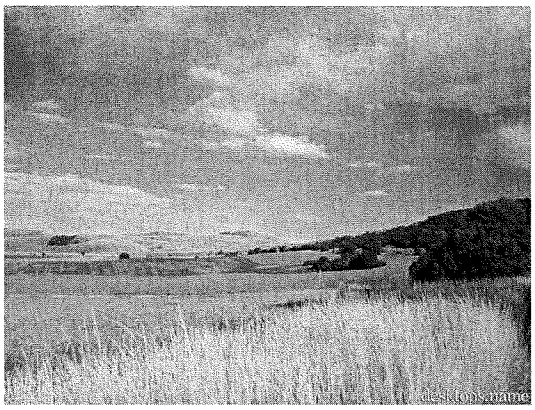
2010

Report to the Farmland Advisory Committee Of the Utah Tax Commission



by

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Introduction

This report represents the fifteenth annual report to the Farmland Advisory Committee concerning suggested "productive values" for lands that qualify for the Farmland Assessment Act (FAA). The methodology used to derive the suggested values follows that described in previous reports, but is summarized below to serve as a reminder of the process.

Summary of General Approach Adopted

Agricultural land values are not easily derived because land market *values* reflected in farm sales typically include the potential value for alternative development potential. Even when sold for continued agricultural use, these lands may have intrinsic values associated with farm expansion, location considerations, and unique characteristics that limit the usefulness of such data in assessing actual farm production values. Finally, the actual market involving agricultural land sales is very thin (i.e., few sales occur) and sale values for one area would not necessarily reflect the values of similar farmland in another area due to differences in climate, productive capacity, crop mix, etc.

Lease data might be an alternative method of calculating agricultural land values. However, even in areas where leases occur, the market is thin and comparables are difficult to come by and even some lease conditions are made because of local considerations. Finally, the application of a lease rate in one area of the state would not likely be appropriate for other areas in the state. There is too much variation in conditions to allow an overall comparison.

Unfortunately, this means that it is generally not possible to get an accurate idea of agricultural land values directly from market signals. Thus, an alternative approach that is theoretically consistent with such market values is needed.

A theoretically consistent approach selected for this analysis is that of identifying the present value of agricultural-producing lands based strictly on the use of that land in agriculture production. The present value of the future flow of returns less costs should be *representative* of the value of land in agricultural production for a particular county for a specific land type. This eliminates the vagaries of location, proximity to other property, unique location characteristics, etc.

Partial budgeting is the tool used in determining the net returns for each crop or land use. This involves a determination of localized costs and localized prices, at least as much as possible given the information available. Crop mixes vary by county so it is critical that the crop mix peculiar to each county be accounted for. Some counties have a very limited agriculture complex, i.e., Daggett County; while others have a large number of different crops and many different outlets, so it is critical that these county-by-county differences be taken account of. Given the availability of data the smallest sized unit that can be specified is the county level. This precludes consideration of many within-county changes. Returns and costs are brought to a common point in time using the discounting process. All future values are then brought to the present time using a discount rate, which reflects the "time value of money."

For an analysis such as this, five areas warrant special attention. First, price changes and their impact on the net returns need to be considered. Agricultural prices are historically quite variable and such variability is difficult to deal with, both as a producer and as assessors. Hence, it has been determined that a five-year average of prices would add some stability in assessment and associated taxes. While this approach adds some stability to the value of agricultural land, when prices are increasing, a five-year average of past prices will mean that the most current five-year average will lie *below* that of the most recent price. When prices are declining, the most current five-year average will lie *above* the most recent price. Furthermore, even if prices have declined in the most recent year, the overall price average will depend on the price that were dropped from the calculation from six years earlier and the price that is added in the most current year. For example, if the five year of prices *excluding* the most recent price were $2/bu., $4/bu., $4/bu., $4/bu., and $4/bu., respectively, and the most recent price is $3/bu., five-year average prices will still be *higher* due to the deletion of the $2/bu. and the addition of the $3/bu. Land owners need to be aware of the process by which average prices are obtained.

The second area that needs updating is that of costs. When input costs increase, the net returns of a particular land use declines (assuming that prices remain constant). Therefore, costs associated with various elements of production must be adjusted in order to get an accurate estimate of the "current" value of agricultural production. It would be nearly impossible to determine a five-year average of costs as data on individual inputs are not available on a county, or even on a state-wide basis. Hence, only the increases associated with the most recent year are accounted for. This means that there is a conservative bias in the approach used to determine prices versus the

approach used to determine costs. The primary justifications for adopting this approach is (a) since production costs are almost always increasing, to take a five-year average of production costs would consistently understate the actual costs of doing business and (b) there are no time series data sources that show the type of county-level data needed for such averaging. For prices, which move both up and down, there is more justification to consider a rolling five-year average than there is for costs.

The third item that warrants consideration is the yield of each crop, as that will also help determine the actual value of land kept in agricultural production. A five-year average on per acre yields has also been used, with localized adjustments made for each county. This also helps to stabilize farm values over time. Some crops are particularly susceptible to yield fluctuations, e.g., dryland wheat, but the vagaries of weather almost always bring about a change in all crop yields from year to year.

The fourth item that needs to be considered is the change in crop mix on a county-by-county level. Shifts in crop mix are difficult to capture on a year-to-year basis because data on overall crop mixes become available only every five years when the agricultural census is conducted. Fortunately, we are only two years removed from the most recent agricultural census that was conducted in 2007.

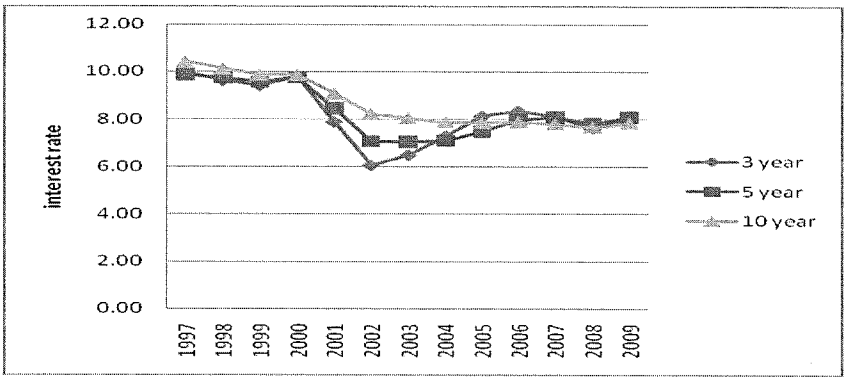
Finally, it needs to be remembered that price and cost data remain *dated* in the sense that the only complete data we have available now is for the *2009* crop year. Hence, the actual net return in 2010 may well be different than provided in this report because only 2009 data are available. There is no acceptable way around this problem and the only thing that can be said is that *net* returns typically do not change by large amounts each year following the approach adopted.

General Trends Affecting Productive Land Values

Several factors have influenced the suggested FAA land values for the 2010 reporting year: prices, costs, crop mix, and productivity or yields.

Prices for almost all crops were up in 2009, using a five-year average. The exception was barley which stayed the same. The price increases brought the crop budget values (and, consequently, land values) up slightly from the previous year. Price changes were the major factor contributing to the increase in suggested land values, though those increases were not substantial.

Costs increased in some instances and declined in others, with changes ranging from a 2% decrease and a 20% increase. The most significant decreases relative to the previous year's occurred for fuel and fertilizer. Some costs remained stable, i.e., interest costs (as shown below). The overall average cost increase for all production items for Utah's typical crops was approximately 1.1%.



Crop yields also changed for some of the crops using a five-year average, though not substantially for most crops. The effects of yield changes are also accounted for in the suggested land value changes.

The last general issue is that of the mix of crops on a county-by-county basis. With the latest census data available (2007, NASS), we identified some changes in crop mix throughout the state last year. We are currently working with the county agents to ensure the proper crop mix will be represented in the future.

As an illustration of the process of calculating changes in net returns, if the average price of a particular crop mix increased 8%, yields increased by 1%, the crop mix was unchanged from year to year, and costs were up by 7%, land values would increase by approximately 2%. Net price changes (after accounting for increased costs) ranged from -1% for barley to +15% for sweet cherries. Of course you will not see many counties with such an increase because sweet cherries as a crop does not comprise much of the land in counties were they are grown with two major exceptions—Box Elder and Utah counties.

Suggested Land Values

Irrigated Land

Irrigation methods continue to change in many counties (including counties with a long history of flood and furrow irrigated crop production [e.g., Cache and Box Elder counties]). More wheel lines and center pivot systems have been put into place and fewer hand lines are being used. This influences the cost of production and this change will be incorporated into future reports. Once again, increased pumping depths are not considered because the last survey of irrigation practices conducted Robert J. Hill (2008) did not include any questions regarding changes in irrigation depth. This obviously impacts pumping costs and likely understates the cost associated with irrigation for some counties (e.g., Iron and Millard). We are still attempting to get water-basin specific information on pumping depth so that this information can be incorporated into the budgets for counties where well pumping is used extensively. This would further affect price or yield increases in those areas where pumping is common.

Alfalfa remains the crop with the largest acreage devoted to it throughout Utah. Because of the relatively large proportion of acreage producing alfalfa, increases in the price of alfalfa hay tend to dominate the overall land values county-by-county. The second largest crop is typically dependent on the county considered.

To illustrate how the crop mix impacts the suggested values, consider a county where only three crops are produced, all under irrigation: alfalfa hay, wheat, and barley. If the net change in crop values were +3%, +5%, and -1%, respectively, and the crop mix consisted of 75% of the land being planted in alfalfa, 10% in wheat, and 15% in barley, then the suggested land value for that county would change by taking a weighted average of the three net changes: (.75 x 3)+(.10 x 5) + (.15 x -1) = 2.60 (or a net increase in assessed value of 2.6% for that county and acreage configuration). Alfalfa acreage is dominant in virtually all counties and its price continues to dominate that for wheat, barley, and other crops. The only exception is for those counties with relatively higher percentages of fruit acreage.

As a result of the changes in prices, costs, yields, and crop mix, very marginal increases in land values (less than 1%) are suggested for some classes of irrigated land at the county level. Of course, even small increases in land value are not inconsequential, but they do reflect the approximate change in net returns for the 2009 production year given the approach described above.

Orchard Land

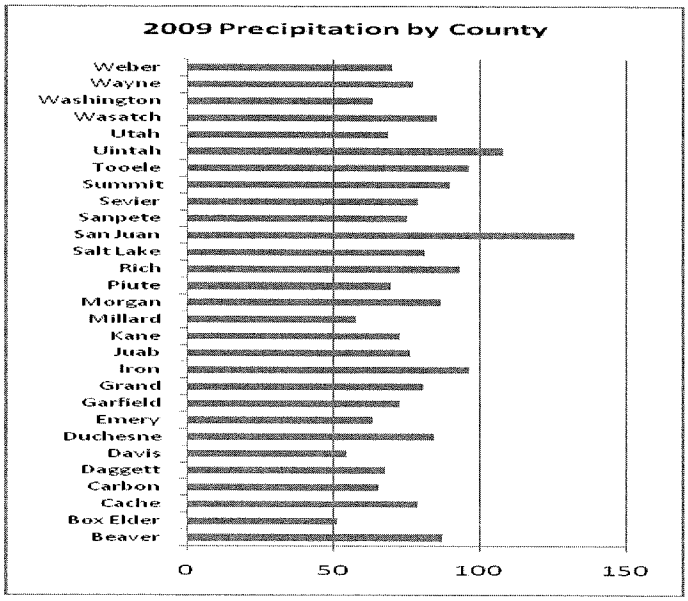
In spite of the higher fruit prices, many areas were adversely impacted by weather, either early or late in the season. Peaches showed the largest net return increase among the fruits, but most fruit crops experienced a moderate increase. Apple prices *declined* 3.9%—reducing the value of land in apple production. Tart cherry prices *increased* 13.5%—increasing the value of land in tart cherry production.

Meadow Land

No changes were needed in the land values for meadow land in any of the counties. If beef herds grow in response to increasing beef prices, meadow land prices will likely increase.

Dry Land

The yields associated with dryland wheat production were up over 4% from the 2008 crop year. Prices for dryland wheat were also up. Costs also increased at a lower rate than in the previous year. Unlike irrigated crops, cost increases for dryland wheat production are weighted more by energy and fertilizer costs which were slightly lower in 2008.



Grazing Lands

The two most significant factors impacting the value of grazing land are the level of precipitation received and the price or value of cattle. The above chart summarizes last

year's results showing county-by-county precipitation levels as a % of "normal." Note that these summary data do not provide detail on when the precipitation was received, which can also impact productivity. Furthermore, the level of precipitation even changes within individual counties and these data apply only to certain county rain gauge areas.

It is apparent that the counties receiving the *least* amount of moisture relative to the average for a "normal" year included Box Elder, Davis, Emery, Millard, Utah, and Washington. The counties receiving the *highest* level of precipitation relative to a "normal" year were San Juan and Uintah.

In addition to lower-than-normal average precipitation, beef prices were down 7.5% in 2009. This has led to a recommendation of minimal changes in land values downward for grazing purposes. The two primary exceptions to this recommendation are Uintah and San Juan counties, both of which realized a gain in precipitation and forage production.

Non-Production Ground

No change is recommended for ground that is non-production.

Suggestions for Additional Work

We have already begun and will continue to work with the county agents to develop accurate crop budgets for each of the counties in the state. The process adopted at the county level is to bring together a group of representative landholders to work out localized budgets under the direction of the county agent and under my supervision. In addition, we adjust the budgets for any known factors that influence the returns and/or costs of production.

Some changes in farm practices, particularly with respect to the irrigation method and equipment are noted, but not in all counties. We have not completed all the budget updates so we do not have the complete picture of what and where those changes have taken place. This work is being done in cooperation with county agent throughout Utah. Not only are the crop budgets being updated, but factors such as irrigation methods are also being examined to determine the exact cost of producing crops in each county. Pumping depth is also being examined to determine its effect on pumping cost. This latter work will update work completed by Robert Hill several years ago.

We anticipate making some significant changes in the crop budgets will be that for tart cherry production. Even though we do not show tart cherries as very profitable, acreage continues to grow in certain areas of the state. It could be that the substantial economies of size or scale exist in tart cherries that we are not accounting for. Alternatively, sufficient earnings are made in the processing of the tart cherries that the overall profitability of tart cherries is better than shown in the existing crop budgets. If this is the case, we will need to adjust our pricing mechanism.

All of the budgets are expected to be updated this next year, which may bring about some changes in land values. Updating all of these budgets is a time intensive activity and that is why it is occurring over a two-year period.

We have not been able to identify practices or locations where extensive use is being made of irrigated pasture. While the census shows some information with respect to irrigated pastures, it is not possible yet to identify those practices or locations that result in a differentiation of values for those pastures. Intensively managed pastures introduce a different cost and value into the land mix issue but until such acreage is identified through the census or other means (e.g., through the Utah NASS surveys), it will be necessary to wait to characterize the values of such crop use.

One additional area of work that was to be done for this year was that to comparing the values from our analysis with sales data. Almost without exception, the values that we show are less than the sales price reported, this is not unexpected given what all is reflected in local land sales as noted at the beginning of this report. Sales data are still very thin, which effectively excludes their use for land valuation purposes. They do serve to put an upper limit on land values, but that is about as much as can be said. Additional comparisons are needed.

Values of Land in Alternative Uses

Irrigated Farm Land

Irrigated farmland increased in value in most counties as shown in the following table. For those counties without any land in a particular class, a value of zero is given consistent with previous reports. The largest increase for any land type was $5/acre as shown in the next table.

Table 1. Irrigated Lands

	2009	2010	2009	2010	2009	2010	2009	2010
County	I	I	II	II	III	III	IV	IV
Beaver	0	0	0	0	595	596	490	490
Box Elder	835	840	735	738	580	581	480	480
Cache	725	730	620	623	470	471	365	365
Carbon	540	545	430	433	285	287	185	185
Daggett	0	0	0	0	0	0	205	205
Davis	875	880	770	773	620	622	520	520
Duchesne	0	0	0	0	355	357	250	250
Emery	520	525	420	423	265	267	165	165
Garfield	0	0	0	0	220	222	120	120
Grand	0	0	405	407	255	256	155	155
Iron	835	840	735	738	585	587	480	480
Juab	0	0	455	458	305	307	205	205
Kane	435	440	335	338	185	187	85	85
Millard	825	830	725	728	575	577	470	470
Morgan	0	0	0	0	405	406	300	300
Piute	0	0	0	0	350	351	245	245
Rich	0	0	0	0	185	187	85	87
Salt Lake	725	730	625	628	475	477	370	370
San Juan	0	0	0	0	180	182	80	82
Sanpete	0	0	560	563	410	412	310	310
Sevier	0	0	585	588	435	437	335	335
Summit	0	0	485	488	330	332	230	230
Tooele	0	0	470	472	315	316	215	215
Uintah	0	0	0	0	385	386	285	285
Utah	765	770	665	668	510	511	410	410
Wasatch	0	0	510	513	355	356	255	255
Washington	685	690	585	588	430	432	325	325
Wayne	0	0	0	0	345	347	245	245
Weber	830	835	730	733	580	582	475	475

Table 2. Suggested Changes

Irrigated Farmland, Class I through IV.

County	I	II	III	IV
Beaver	0	0	1	0
Box Elder	5	3	1	0
Cache	5	3	1	0
Carbon	5	3	1	0
Daggett	0	0	0	0
Davis	5	3	2	0
Duchesne	0	0	2	0
Emery	5	3	2	0
Garfield	0	0	2	0
Grand	0	2	1	0
Iron	5	3	2	0
Juab	5	3	2	0
Kane	5	3	2	0
Millard	5	3	2	0
Morgan	0	0	1	0
Piute	0	0	1	0
Rich	0	0	1	0
Salt Lake	5	3	2	0
San Juan	0	0	2	0
Sanpete	5	3	2	0
Sevier	0	3	2	0
Summit	0	3	2	0
Tooele	0	2	1	0
Uintah	0	0	1	0
Utah	5	3	1	0
Wasatch	0	3	1	0
Washington	5	3	2	0
Wayne	0	0	2	0
Weber	5	3	2	0

Orchard Land

Land values for orchard lands remained the same in most counties. The exceptions were Box Elder, Davis, Salt Lake, Utah, Washington and Weber counties. These changes are due in part to the net return increases in cherries and peaches in those counties.

Table 3. Orchard Lands

	2009	2010	2009	2010	2009	2010	2009	2010
County	I	I	II	II	III	III	IV	IV
Beaver	620	620	620	620	620	620	620	620
Box Elder	670	675	670	675	670	675	670	675
Cache	620	620	620	620	620	620	620	620
Carbon	620	620	620	620	620	620	620	620
Daggett	0	0	0	0	0	0	0	0
Davis	675	678	675	678	675	678	675	678
Duchesne	620	620	620	620	620	620	620	620
Emery	620	620	620	620	620	620	620	620
Garfield	620	620	620	620	620	620	620	620
Grand	620	620	620	620	620	620	620	620
Iron	620	620	620	620	620	620	620	620
Juab	620	620	620	620	620	620	620	620
Kane	620	620	620	620	620	620	620	620
Millard	620	620	620	620	620	620	620	620
Morgan	620	620	620	620	620	620	620	620
Piute	620	620	620	620	620	620	620	620
Rich	0	0	0	0	0	0	0	0
Salt Lake	620	623	620	623	620	623	620	623
San Juan	620	620	620	620	620	620	620	620
Sanpete	620	620	620	620	620	620	620	620
Sevier	620	620	620	620	620	620	620	620
Summit	620	620	620	620	620	620	620	620
Tooele	620	620	620	620	620	620	620	620
Uintah	620	620	620	620	620	620	620	620
Utah	680	685	680	685	680	685	680	685
Wasatch	620	620	620	620	620	620	620	620
Washington	740	743	740	743	740	743	740	743
Wayne	620	620	620	620	620	620	620	620
Weber	670	673	670	673	670	673	670	673

*Rows that are highlighted in yellow were the only ones experiencing an increase.

Table 4. Suggested Changes

Orchard Land

County	I	II	III	IV
Beaver	0	0	0	0
Box Elder	5	5	5	5
Cache	0	0	0	0
Carbon	0	0	0	0
Daggett	0	0	0	0
Davis	3	3	3	3
Duchesne	0	0	0	0
Emery	0	0	0	0
Garfield	0	0	0	0
Grand	0	0	0	0
Iron	0	0	0	0
Juab	0	0	0	0
Kane	0	0	0	0
Millard	0	0	0	0
Morgan	0	0	0	0
Piute	0	0	0	0
Rich	0	0	0	0
Salt Lake	3	3	3	3
San Juan	0	0	0	0
Sanpete	0	0	0	0
Sevier	0	0	0	0
Summit	0	0	0	0
Tooele	0	0	0	0
Uintah	0	0	0	0
Utah	5	5	5	5
Wasatch	0	0	0	0
Washington	3	3	3	3
Wayne	0	0	0	0
Weber	3	3	3	3

Meadow Land

Meadow land did not change in value in any county.

Table 5. Meadow Land

	2009	2010
County	IV	IV
Beaver	245	245
Box Elder	260	260
Cache	270	270
Carbon	130	130
Daggett	160	160
Davis	270	270
Duchesne	165	165
Emery	140	140
Garfield	105	105
Grand	135	135
Iron	262	262
Juab	150	150
Kane	110	110
Millard	195	195
Morgan	197	197
Piute	192	192
Rich	107	107
Salt Lake	225	225
San Juan	0	0
Sanpete	195	195
Sevier	200	200
Summit	205	205
Tooele	187	187
Uintah	207	207
Utah	250	250
Wasatch	210	210
Washington	230	230
Wayne	175	175
Weber	305	305

Table 6. Suggested Changes

Meadow, Class IV

County	IV
Beaver	0
Box Elder	0
Cache	0
Carbon	0
Daggett	0
Davis	0
Duchesne	0
Emery	0
Garfield	0
Grand	0
Iron	0
Juab	0
Kane	0
Millard	0
Morgan	0
Piute	0
Rich	0
Salt Lake	0
San Juan	0
Sanpete	0
Sevier	0
Summit	0
Tooele	0
Uintah	0
Utah	0
Wasatch	0
Washington	0
Wayne	0
Weber	0

Dry Farm Land

There were only a limited number of counties that showed any changes in dry farm land values and this was largely a function of amount of precipitation received.

Table 7. Dryland Farm Land

	2009	2010	2009	2010
County	III	III	IV	IV
Beaver	52	55	16	17
Box Elder	96	97	60	61
Cache	122	125	86	87
Carbon	52	52	16	16
Daggett	0	0	0	0
Davis	50	53	15	16
Duchesne	57	57	21	21
Emery	0	0	0	0
Garfield	52	52	16	16
Grand	52	52	16	16
Iron	52	52	16	16
Juab	52	52	16	16
Kane	52	52	16	16
Millard	50	50	15	15
Morgan	68	68	31	31
Piute	0	0	0	0
Rich	52	52	16	16
Salt Lake	52	55	16	16
San Juan	53	55	17	18
Sanpete	57	57	21	21
Sevier	0	0	0	0
Summit	52	52	16	16
Tooele	52	55	16	16
Uintah	57	57	21	21
Utah	52	52	16	16
Wasatch	52	52	16	16
Washington	50	52	15	15
Wayne	0	0	0	0
Weber	80	82	45	47

Table 8. Suggested Changes

Dry Farm Lands, Classes III and IV

County	III	IV
Beaver	3	1
Box Elder	1	1
Cache	3	1
Carbon	0	0
Daggett	0	0
Davis	3	1
Duchesne	0	0
Emery	0	0
Garfield	0	0
Grand	0	0
Iron	0	0
Juab	0	0
Kane	0	0
Millard	0	0
Morgan	0	0
Piute	0	0
Rich	0	0
Salt Lake	3	0
San Juan	2	1
Sanpete	0	0
Sevier	0	0
Summit	0	0
Tooele	3	0
Uintah	0	0
Utah	0	0
Wasatch	0	0
Washington	2	0
Wayne	0	0
Weber	2	2

Grazing Land

In general, grazing land values declined when there was a change. Grazing land values are dependent on two primary factors: quantity (and quality) of the forage and the price of beef and sheep. There were declines in beef prices of -7.5% and sheep prices rose only slightly. While yields were increased in some areas due to additional moisture, those small increases served only to lessen the decline in land values.

Table 9. Grazing Land

	2009	2010	2009	2010	2009	2010	2009	2010
County	I		II		III		IV	
Beaver	75	73	25	23	17	17	6	6
Box Elder	76	74	25	23	18	17	5	5
Cache	72	72	23	23	16	16	5	5
Carbon	52	52	16	16	13	13	5	5
Daggett	56	55	16	15	13	12	5	5
Davis	62	61	20	19	14	13	5	5
Duchesne	71	70	24	23	15	14	5	5
Emery	74	73	23	22	16	15	6	6
Garfield	79	78	25	24	18	17	5	5
Grand	80	79	24	23	17	16	6	6
Iron	75	75	24	23	17	16	6	6
Juab	66	65	20	19	15	14	5	5
Kane	77	76	26	25	17	16	5	5
Millard	79	78	26	25	18	17	5	5
Morgan	68	68	22	22	14	14	6	6
Piute	93	92	29	28	20	19	6	6
Rich	67	66	22	21	15	14	5	5
Salt Lake	68	67	22	21	15	14	5	5
San Juan	73	73	24	24	16	16	5	5
Sanpete	65	64	21	20	15	14	5	5
Sevier	66	65	21	20	15	14	5	5
Summit	74	73	23	22	16	15	5	5
Tooele	73	72	23	22	15	14	5	5
Uintah	80	82	26	29	18	20	6	6
Utah	65	65	23	23	14	13	5	5
Wasatch	54	54	18	18	13	13	5	5
Washington	68	67	23	22	15	14	5	5
Wayne	91	90	30	29	20	19	5	5
Weber	70	70	21	21	15	15	6	6

Table 10. Suggested Changes

Grazing Lands, Class I through IV

County	I	II	III	IV
Beaver	-2	-2	0	0
Box Elder	-2	-2	-1	0
Cache	0	0	0	0
Carbon	0	0	0	0
Daggett	-1	-1	-1	0
Davis	-1	-1	-1	0
Duchesne	-1	-1	-1	0
Emery	-1	-1	-1	0
Garfield	-1	-1	-1	0
Grand	-1	-1	-1	0
Iron	0	-1	-1	0
Juab	-1	-1	-1	0
Kane	-1	-1	-1	0
Millard	-1	-1	-1	0
Morgan	0	0	0	0
Piute	-1	-1	-1	0
Rich	-1	-1	-1	0
Salt Lake	-1	-1	-1	0
San Juan	0	0	0	0
Sanpete	-1	-1	-1	0
Sevier	-1	-1	-1	0
Summit	-1	-1	-1	0
Tooele	-1	-1	-1	0
Uintah	2	2	2	0
Utah	0	0	-1	0
Wasatch	0	0	0	0
Washington	-1	-1	-1	0
Wayne	-1	-1	-1	0
Weber	0	0	0	0

Non-Production Land

No changes are proposed for non-production land for the 2010 report.

Table 11. Non-Production Land

	2009	2010
County		
Beaver	5	5
Box Elder	5	5
Cache	5	5
Carbon	5	5
Daggett	5	5
Davis	5	5
Duchesne	5	5
Emery	5	5
Garfield	5	5
Grand	5	5
Iron	5	5
Juab	5	5
Kane	5	5
Millard	5	5
Morgan	5	5
Piute	5	5
Rich	5	5
Salt Lake	5	5
San Juan	5	5
Sanpete	5	5
Sevier	5	5
Summit	5	5
Tooele	5	5
Uintah	5	5
Utah	5	5
Wasatch	5	5
Washington	5	5
Wayne	5	5
Weber	5	5