Non-Fee Grazing Cost Study for the Idaho Department of Lands

Submitted by:

John A. Tanaka, Kristie A. Maczko, Thomas Hilken, and Kasey Dollerschell[1]

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Background

In 2015, Idaho Department of Lands (IDL) began a review of their state grazing rate formula that had been in effect since 1993. During the August 2018 Land Board meeting, the State Board of Land Commissioners decided to continue using the status quo grazing rate methodology but directed IDL to engage with the University of Wyoming in their collaborative project with the Public Lands Council Endowment Trust (PLCET). The collaborative PLCET project is intended to provide a comprehensive, up-to-date, third-party study on the non-fee costs for federal rangeland grazing (BLM and USFS) within the state of Idaho. Research on this topic started in the 1960's, continued into the 1990's and the PLCET felt it was now due for an update on federal rangelands.

In 2018, IDL and University of Wyoming finalized an agreement (Joint Funding Agreement No.19-416) for a study that would quantify an estimate of the non-fee costs of grazing livestock on Idaho Department of State Lands. This study would be completed in conjunction with the collaborative project funded by the PLCET.

Purpose and Objective

This study focused on non-fee costs associated with livestock grazing to determine the total cost of grazing on state endowment rangelands on a per AUM basis. It is our understanding that the information gained from this study may be used by the State Board of Land Commissioners in the process regarding the state grazing fee and methodology in accounting for non-fee costs of grazing on state endowment rangelands.

The objective of this study was to quantify and estimate the non-fee costs of grazing livestock on Idaho Department of Lands (IDL) lease lands and compare those costs with federal (USDI Bureau of Land Management (BLM) and the USDA Forest Service (USFS)) and private rangelands within Idaho. This project is being done in conjunction with a collaborative project funded by the Public Lands Council Endowment Trust (PLCET) and the University of Wyoming to estimate non-fee costs on rangelands managed by the BLM and USFS, as well as private rangelands within the State of Idaho. The PLCET project is also estimating the non-fee costs of federal and private lands in Wyoming and California.

Methods

This project consisted of in-person interviews using a questionnaire developed specifically for collecting information from Idaho state land lessees (Attachment 1). The survey form was

[1] Authors are Professor Emeritus, Executive Director of the Sustainable Rangelands Roundtable, Research Assistant, and Graduate Research Assistant, University of Wyoming

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compiled by researchers from the University of Wyoming with input from IDL. It was based on the survey conducted in the early 1990's by a group of researchers looking at the non-fee costs of grazing on public lands (Torell et al. 1993). After the questionnaire was developed, it was submitted to the University of Wyoming Institutional Review Board for approval to conduct research with human subjects and was approved for use (Attachment 2). Similar questionnaires were used to collect information for non-fee costs associated with federal and private rangelands.

Survey information from the completed questionnaires were then transferred to Excel spreadsheets and summarized. Data were summarized in the same categories as were used in the original 1966 non-fee grazing study that established the federal grazing fee (Table 1). Other information obtained from the questionnaire, but not summarized in the worksheets, included: general ranch characteristics such as rangeland vegetation and topography; number of and class of livestock; grazing management practices; and, when the state lease was purchased and the purchase price.

Table 1. Summary of Fee and Non-Fee Grazing Costs, 1966.

Item	Cattle Public	Cattle Private	Sheep Public	Sheep Private
Lost Animals	0.60	0.37	0.70	0.65
Association Fees	0.08	-	0.04	-
Veterinarian	0.11	0.13	0.11	0.11
Moving Livestock	0.24	0.25	0.42	0.38
Herding	0.46	0.19	1.33	1.16
Salt and Feed	0.56	0.83	0.55	0.45
Travel	0.32	0.25	0.49	0.43
Water	0.08	0.06	0.15	0.16
Horse Cost	0.16	0.10	0.16	0.07
Maintenance	0.43	0.40	0.20	0.24
Development Depreciation	0.11	0.03	0.09	0.02
Other Costs	0.13	0.14	0.29	0.22
Private Lease Rate	-	1.79	-	1.77
Total Non-Fee Costs	**3.28**	**4.54**	**4.53**	**5.66**
Cost Difference/Forage Value		1.26		1.13
Weighted Cost Difference			1.23	
(weighting by relative AUMS of cattle and sheep on public lands				
Source: USDI and USDA. 1977. Study of Fees for Grazing Livestock on Federal Lands. Table 5, Page 2-22.				

Table 1 shows the estimated costs in 1966 dollars for cattle and sheep on public and private lands. The weighted cost difference between private and public land costs of grazing was used to initially establish the federal grazing fee. The Public Rangelands Improvement Act (PRIA, PL 95-514) established a formula to update the federal grazing fee using the $1.23 base. This was amended in 1986 to the current $1.35/AUM base by Executive Order 12548.

Rancher cost information is personal and confidential. IDL was not involved in the selection process and no personal information from this study was shared outside the research team. In addition, the final data from this project are combined totals. No individual data can be released. The list of ranchers sampled has been destroyed as per the University of Wyoming approved protocol. Because most of the interviewees had both a federal permit and state lease, two researchers conducted every interview with each researcher being responsible for either the state lease, federal allotment, or private lease.

Initially, a random sample of 100 livestock producers was drawn from a list of federal permittees who participated in the study conducted in the 1990's. In addition, a random sample of 100 state land lessees was drawn from the state lessee list of 800 provided by IDL. A package to introduce the project and invite participation, along with a copy of the questionnaire, was mailed to the randomly selected producers. The letter informed the ranchers that participation was voluntary and there was no need to travel as the 2 researchers would visit them to conduct the approximately 2 to 3-hour interview, depending upon the amount of information filled out by the rancher prior to the interview. We encouraged participation by informing the ranchers that their shared information would be greatly appreciated and aid in the research on this topic, particularly since data has not been updated for over 20 years. Because response was extremely low from the initial mailing, it was decided that phone calls would be made to encourage participation. After phoning every name that had a phone number on the list once (and twice if a message was left or no answer from the first attempt), it became quite evident that participation was going to be a challenge. Therefore, a second random sample of 100 federal permittees and state lessees was selected from their respective lists. The PLCET study provided a second federal list, while the second state list was pulled from the original list provided by IDL in an attempt to get the desired number of respondents. Phone calls were then made to the second lists in another attempt to get to the desired number of interviews.

In addition, IDL sent out a letter to all 800 lessees encouraging participation from those ranchers that were previously selected from the 2 random samples. The initial intent was to ensure we had enough IDL respondents to meet a 95% confidence level with a 10% margin of error. Given 800 lessees with IDL leases, this would be 86 respondents needed. Every opportunity was afforded to the ranchers to become involved in this study.

Results and Discussion

It was our understanding that there were approximately 1,400 IDL leases held by approximately 800 lessees. As previously mentioned, the original intent was to sample 86 lessees to meet a 95% confidence level with 10% margin of error. However, because of low lessee participation, we ended up interviewing 38 lessees that held 85 leases. In discussions with the researchers that conducted the last study in the early 1990's this approach was consistent with what they did (Rimbey, N.R., personal communication). The first randomly selected list resulted in 14 interviews while the second list resulted in 16 interviews. Six interviews were completed as a result of federal lists that contained federal permittees that also had control of one or more state leases. The final 2 phone interviews (for a total of 38 interviews) resulted from IDL sending a letter to all 800 lessees requesting participation. It remains a mystery as to why the ranching community would not want to be involved, however one can only speculate that ranchers may

have been reluctant due to fear of their grazing rates increasing as a result of this study. The 38 respondents did result in 85 leases surveyed totaling 25,486 AUMs with a range of 8 to 1,800 AUMs per lease, and an average of 299 AUMs per lease.

Table 2 shows the results for the Idaho state lands, the federal lands in Idaho, and private leases in Idaho in the same format as the original 1966 grazing fee cost study. All 3 are shown here for comparison purposes and will be discussed further.

Table 2. Non-fee grazing costs for Idaho Department of Lands leases, federal allotments, and private leases, 2018.

Item	**2018 Survey IDAHO**	2018 Survey Federal	2018 Survey Private
Lost Animals	**8.86**	6.02	5.32
Association Fees			
Veterinarian	**0.38**	0.48	0.17
Moving Livestock	**3.92**	5.76	3.69
Herding	**2.99**	10.43	3.38
Salt and Feed	**1.65**	1.96	1.25
Travel	**0.16**	0.03	0.01
Water	**1.00**	1.29	0.07
Horse Cost	**0.18**	0.19	0.13
Maintenance	**3.84**	5.85	2.43
Development Depreciation	**7.11**	3.12	0.54
Other Costs	**2.09**	1.06	1.63
Technology	**0.13**	0.03	0.13
Private Lease Rate[1]			18.00
Total Non-Fee Costs	**32.30**	36.22	36.77
Grazing Fee	**8.03**	1.41	
Total Cost	**40.33**	**37.63**	**36.77**

Notes:
2018 Private Lease Rates from USDA-NASS (Ag. Prices, February 2019).

Results from the survey interviews indicate that Idaho Department of Lands grazing leases appear to have the highest total cost, but the lowest non-fee costs of the 3 kinds of ownership. The lost animals and development depreciation costs appear to be the highest on IDL lands. Additionally, although it is speculation on our part, there appears to be more incentive for ranchers to invest in rangeland improvements on state lands. One new category of non-fee cost that was added to this study was the rancher's use of technology in managing their operation. While it is not an extremely high cost at this point, it will be interesting to see how this cost changes in the future.

We note that the sample of private land leases is very small. There is no systematic way to collect a population of ranches that lease private land, so this sample is more opportunistic. In some cases, it was ranchers that had state leases that also had private leases and in others it was word of mouth. Statistically, it is impossible to say how accurate the results are for private leases. The population is unknown and there was no random sample (two of the requirements for a statistical sample). In previous studies, researchers have been able to work with groups like the USDA-National Agricultural Statistics Service (USDA-NASS) to identify those producers that reported leasing private land for beef cattle or sheep production. While we tried that route, we were told by USDA-NASS that approach is no longer possible.

Conclusions

In the original 1966 study that compared costs of grazing between federal and private lands, non-fee costs on federal permits averaged $1.23 per AUM less than total costs on private land leases. Following that same logic, it appears that grazing on Idaho State Lands is more expensive than grazing that occurs on private land and federal allotments. The State of Idaho may wish to investigate why it appears to have higher total costs than other kind of permitted or leased lands. Possible areas to explore include the investment and maintenance of range improvements (water developments, corrals, roads, juniper, and invasive plant control, etc.) and death losses/lost animals on state lands. Depending on who maintains title to the range improvements and what happens when leases change hands, that relatively large cost may be an acceptable difference in total costs.

Additionally, comparing previous studies can shed some light on structural changes in how cattle and sheep are raised using these leases and permits. As Rimbey and Torell (2011) explained when they used the indices to adjust costs from 1992 to 2010, they could only account for inflation and not any structural changes that had occurred. Table 3 shows the 1966, 1992, and 2018 study results, all in 2018 dollars. Cost indices were derived from the USDA-SRS (1967) and USDA-NASS Agricultural Prices (2011 and 2019) and used to adjust prices to 2018. Indices were the same ones used by Rimbey and Torell (2011) and shown in Table 4.

As shown in Table 3, when all 3 surveys are put in real dollars (2018 $), the total costs are similar. The base year of 1910-14 was used as it is the only index reported for all 3 years without having to calibrate different base years. The 1966 cattle total costs on federal land is the only one that appears to be much lower than the others. It is important to remember that this study sought to obtain results that are plus or minus 10% with a 95% confidence (with 85 responses, it turns out to be plus or minus 10.06%). As such, it is unlikely that any of the other total costs would be statistically different. The basic conclusion from this study is that grazing in Idaho on IDL lands, federal lands, and private lands are generally equivalent.

There are differences in how the non-fee costs are distributed over time, however (Table 5). Table 5 shows the percent of total fee and non-fee costs for each component item based on the information in Table 3. Just comparing the Federal lands over time, it appears that the components stay approximately the same on a percentage basis from 1992 to 2018. There are some differences however, such as horse costs going down and likely traded for ATV use. In looking at state leases, lost animals and development depreciation make a much larger

percentage of total costs while moving livestock and herding appear much lower than on the other land types. Also note the difference in how much the different fees are from a low of 3.4% for federal grazing fees and a high of 49.2% for private land leases.

It is worth mentioning that some ranchers expressed the following concerns with the survey: (1) the survey did not capture the price of bidding and acquiring the lease when it came up for renewal, and (2) the survey did not account for indirect effects of wolf depredation (Steele et al. 2013) such as lack of cow/calf performance, disruption of prescribed grazing system, and overall stress. One younger rancher had a death loss rate of nearly 8% and reported he was probably not going to meet his loan repayment obligations. Another concern was that comparisons are made between a private lease rate and a state lease rate should include taxes that have to be paid for by the private lease holder and not the State.

Lastly, the biggest caveat on these results is the low number of ranchers that participated. We assume from the data collected that there would have been more variation between operations than within an operation. That is, more variation in results from rancher to rancher than within multiple state leases within the same ranch. Another caveat is that this is a one-year snapshot of non-fee costs compared to 2 historical snapshots of those same non-fee costs. Whether such items as lost animals is an anomaly in 2018 compared to other years is unknown based on this study.

Table 3. Non-fee costs found in 1966, 1992, and 2018 rancher surveys expressed in 2018 dollars.

Item	1966 Cattle Public	1966 Cattle Private	1966 Sheep Public	1966 Sheep Private	1992 Federal	1992 Private	**2018 Survey IDL**	2018 Survey Federal	2018 Survey Private
					All Values in 2018 $				
Lost Animals	1.99	1.23	2.32	2.16	6.19	3.46	**8.86**	6.02	5.32
Association Fees	0.62		0.31		0.99				
Veterinarian	1.25	1.48	1.25	1.25	0.28	0.32	**0.38**	0.48	0.17
Moving Livestock	2.31	2.41	4.05	3.66	6.37	3.62	**3.92**	5.76	3.69
Herding	5.25	2.17	15.17	13.23	12.13	7.37	**2.99**	10.43	3.38
Salt and Feed	3.40	5.04	3.34	2.73	2.24	2.97	**1.65**	1.96	1.25
Travel	2.40	1.88	3.68	3.23	1.36	0.39	**0.16**	0.03	0.01
Water	0.62	0.46	1.15	1.23	0.90	0.28	**1.00**	1.29	0.07
Horse Cost	0.76	0.47	0.76	0.33	0.69	0.33	**0.18**	0.19	0.13
Maintenance	4.25	3.95	1.98	2.37	6.86	4.24	**3.84**	5.85	2.43
Development Depreciation	0.85	0.23	0.69	0.15	0.99	0.37	**7.11**	3.12	0.54
Other Costs	1.00	1.08	2.23	1.69	1.07	0.32	**2.09**	1.06	1.63
Technology							**0.13**	0.03	0.13
Private Lease Rate		13.77		13.62		19.70			18.00
Total Non-Fee Costs	24.70	34.17	36.94	45.67	40.07	43.37	**32.30**	**36.22**	**36.77**
Cost Difference/Forage Value		9.48		8.73	1.41		**8.03**	1.41	
Weighted Cost Difference			9.42						
Fee and Non-Fee Costs	24.70	34.17	36.94	45.67	40.07	43.37	**40.33**	**37.63**	**36.77**

Table 4. Agricultural Prices index categories.

		1966	1992	2018
Non-Fee Cost Item	Agricultural Prices Index	1910-14=100		
Lost Animals	Meat animals/Prices received	322	935	1069
Association Fees	Production Items	287	1003	2208
Veterinarian	Wage Rates	812	3824	9260
Moving Livestock	(Auto & Trucks) + (Wage Rates)	648	3315	6247.5
Herding	Wage Rates	812	3824	9260
Salt and Feed	(Auto & Trucks)+(feed)	354.5	1647.5	2151.5
Travel	(Auto & Trucks)+(fuel & energy)	331	1766.5	2487.5
Water	Production Items	287	1003	2208
Horse Cost	Feed	225	489	1068
Maintenance	(Wage Rates) + (Building & Fencing)	606.5	2587	5992.5
Development Depreciation	Production Items	287	1003	2208
Other Costs	Production Items	287	1003	2208
Technology	Production Items			2208

Notes:
Cost items with more than one index listed were updated using an average of the indices listed.
Indices derived from USDA SRS (1967) and NASS (1992, and 2018) Agricultural Prices.

Table 5. Percent of cost item of the total fee and non-fee costs as adjusted to 2018 dollars.

Item	1966 Cattle Public	1966 Cattle Private	1966 Sheep Public	1966 Sheep Private	1992 Federal	1992 Private	**2018 Survey IDL**	2018 Survey Federal	2018 Survey Private
					Percent (%)				
Lost Animals	8.07	3.59	6.29	4.73	15.45	7.98	21.96	15.99	14.46
Association Fees	2.49		0.83		2.47				
Veterinarian	5.08	4.34	3.40	2.75	0.70	0.74	0.94	1.27	0.47
Moving Livestock	9.37	7.05	10.96	8.02	15.90	8.35	9.73	15.31	10.04
Herding	21.24	6.34	41.06	28.97	30.27	16.99	7.41	27.71	9.19
Salt and Feed	13.76	14.74	9.04	5.98	5.59	6.85	4.08	5.21	3.41
Travel	9.74	5.50	9.97	7.08	3.39	0.90	0.39	0.08	0.04
Water	2.49	1.35	3.12	2.70	2.25	0.65	2.48	3.44	0.20
Horse Cost	3.08	1.39	2.06	0.73	1.72	0.76	0.44	0.50	0.36
Maintenance	17.20	11.57	5.35	5.19	17.12	9.78	9.52	15.55	6.62
Development Depreciation	3.43	0.68	1.87	0.34	2.47	0.85	17.63	8.30	1.48
Other Costs	4.05	3.15	6.04	3.71	2.67	0.74	5.18	2.81	4.43
Technology							0.31	0.08	0.36
Private Lease Rate		40.30		29.82		45.42			48.95
Total Non-Fee Costs									
Grazing Fee							19.91	3.75	

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