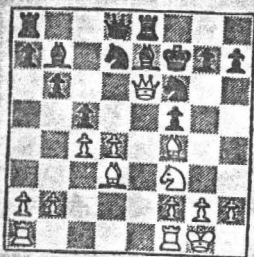


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Grazing Fees and Fair Market Value



Katherine Handweg \$2

Cascade Holistic Economic Consultants

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TABLE OF CONTENTS

Introduction	1
Public Grazing Lands Today	2
The Net Costs of Federal Grazing in 1979	3
The History of Public Grazing Fees	4
The Congressional Fee Formula	6
Analysis of the Formula	8
Ranchers' View of Grazing Fees	13
Views of Opponents of the Current Fee System	13
An Economic View of Grazing Fees	14
Alternatives to the Residual Pricing System	17
Conclusion: A Guide for Decision-Makers	19
Bibliography	20

TABLES AND FIGURES

Table One - Subsidization of Federal Range Lands	5
Table Two - Summary of Public and Private Grazing Costs	9
Table Three - National Forests - The 1979 Fee	12
Figure One - Market Supply and Demand	15
Figure Two - Public Grazing Land Supply and Demand	15

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Introduction

Grazing fees on public lands have been the subject of controversy for most of this century. While ranchers argue that fees should be kept low so as to protect local communities and help supply commodities to the nation, others claim that fees below the cost to the public of providing domestic forage resources represent a subsidy which does more damage than good to the nation's economy.

Public grazing lands are generally less productive than private lands, and require greater capital inputs -- which must be paid by both the rancher grazing the land and the public agency managing the land -- to obtain the same forage outputs. The ranchers maintain that since it costs them more to graze on public land, public grazing fees should be less than those on better quality private land. Conservationists and others have argued that, since public range land management costs are higher, fees should be set so that at minimum costs are covered.

Two separate issues are involved. First is the question of the definition of "fair market value". Congress has defined this using a formula which is based on a calculation of the value of beef minus the costs to the rancher of using the less-productive public land. This is called the residual pricing system and is in essential agreement with the rancher position as defined above.

Yet the classical definition of fair market value is "that price to which both the buyer and the seller would agree provided neither was compelled to buy or sell." Since no seller would willingly market goods for less than the cost of producing those goods, the Congressional and classical definitions conflict.

The second issue is whether public subsidies to ranchers are appropriate or necessary. Since ranchers receiving subsidies are directly competing with other ranchers who are not, and since only about 3% of domestic forage production is from public land, many have argued that subsidies are unfair and inessential.

This paper will primarily address the first question. Particular attention will be paid to grazing on Forest Service and Bureau of Land Management lands, the two agencies which provide most public grazing land and which determine grazing fees using the Congressional formula. This paper will demonstrate that many public range lands are not economically suited for grazing, and that total costs of range management far exceed grazing receipts.

If grazing is found to be possible only at a net loss to the public treasury, the choice must be made between withdrawing uneconomic range land from grazing management and using that land for other multiple use purposes, or continuing to permit private grazing at public expense. This report will conclude with some ideas on how such a choice should be made.

The author assumes that readers have a minimal background in economics. Those who wish a greater understanding of economic analysis may refer to CHEC's paper, "Citizen's Guide to Forestry and Economics," which is available for \$1.

Public Grazing Lands Today

Federal grazing represents three percent of the nation's total forage production, providing significant summer range for cattle and sheep. Grazing is permitted on some 105.5 million acres of Forest Service (FS) land (Robinson, 1975), and on 132.5 million acres of Bureau of Land Management (BLM) land (Doran, 1979). Only about half of this land is grazed at any given time. An additional 50 million acres of grazing land on other Federal properties are administered by the FS or BLM, but are not considered in this report.

In 1972, over 3.7 million head of livestock grazed more than 8 million animal unit months (AUMs) on Forest Service land (Robinson, 1975). An AUM is the amount of forage required to sustain a cow, or a cow and a calf, for one month. In 1979 the net loss for the Forest Service grazing program was nearly \$16 million. Just under 5.3 million head of livestock grazed over 10 million AUMs on BLM land in 1975 (Doran, 1979). In 1979 grazing at approximately this level resulted in a net loss to the BLM of about \$12 million.

According to the USDA Forest Service, (1979), one job is created by 2200 AUMs. This means that something over 8,000 jobs are represented by public land grazing.

All livestock use on FS and BLM lands requires a permit. A variety of permits are in use, most of which demand fees. Of these, most are ten-year permits held by western ranchers. A variety of nonfee permits are issued to temporary users, to owners of noncommercial work animals and to other special users.

Issuance of permits is primarily the responsibility of the forest supervisor or BLM district manager, subject to the requirements of departmental regulations and service directives. Minimal requirements of term permits are citizenship and ownership of livestock and ranch property. The applicant must additionally demonstrate the ability to maintain his or her livestock during the period in which grazing is not permitted on Federal range lands. This dependency or commensurability requirement is now a criterion for establishing priorities in the allocation of permits. In addition, small operators retain preference over large, particularly on FS lands.

New permits are rarely issued, as term permits are generally renewed. Sale of base property is usually accompanied by the transference of the permit to the new owner. New lands added to the BLM and FS systems are usually divided among existing permit-holders. Permits are occasionally adjusted with respect to the number of livestock which any permittee may be authorized to graze, so as to prevent unfair monopolization of range lands. Possession of a permit is regarded by the FS and BLM as a privilege and not a property right. For this reason, grazing permits are non-transferable between private operators.

Both the FS and the BLM administer grazing on lands governed by regulations promulgated by each agency under the Federal Land Policy and Management Act of 1976 and Title III of the Bankhead-Jones Farm Tenant Act. In addition, FS authority is contained in the National Forest Reserve Act of April 24, 1950, while most BLM lands are administered for grazing under the Taylor Grazing Act of 1934.

The objectives of the grazing fee system have been developed through Federal legislation, Federal executive policy, and agency studies and guidelines. These objectives are as follows (USDA, USDI, 1977):

1. Conservation and improvement of the Federal rangeland to provide sustained livestock grazing consistent with the resource base and other public land uses.
2. Promotion of the stability of ranching operations and surrounding local communities dependent upon the public range as the source of their livestock forage (through base property requirement and small rancher preference).
3. Collection of fair market value for use of grazing lands. Fees shall be self-sustaining to the fullest extent possible, uniform among all agencies, and fair and equitable to the public and user.
4. Equitable treatment of interested groups and individuals. The fee should be equitable to the public, considering the public as a landowner receiving a return on property of value. The fee should be fair to the rancher considering the value of grazing to the rancher, and to livestock growers who do not have the opportunity to graze the public land. One primary measure of equity is that fees should be similar to the charge used if the resource was privately owned.
5. Administrative feasibility. The fee system should not require extensive recurring data collection or computations that significantly increase the costs of administration. It should additionally not require independent judgment decisions at diverse locations.

The Net Costs of Federal Grazing in 1979

The Forest Service (FS) and Bureau of Land Management (BLM) suffered major net losses on their grazing programs in 1979. CHEC reviewed the income and expenditure budgets for each BLM state office in the 11 Western states, and for each of the national forests in the six Western Forest Service regions. Only four national forests and two BLM states made money on their grazing programs.

As shown in Table 1, only the California and Montana BLM state offices reported positive net returns in 1979, and these amounted to only \$635 thousand. In contrast, the total losses in the remaining nine Western states were over \$12 million.

The Forest Service, whose grazing land is not as high quality as that of the BLM, reported even greater losses despite fewer AUMs sold. Only one forest in Region 2, two in Region 3, and one in Region 6 reported a net return on grazing. Total BLM and FS losses amounted to \$27.83 million in 1979.

To develop these figures only the range management and range improvement accounts were included as costs, while returns included all grazing receipts of any kind. Some money in the range management account may have been spent on other resources, but all of the range improvement account should have been spent on programs benefiting grazing. Moreover, several officials interviewed by CHEC indicated that about 25% could be added to the totals to account for overhead, environmental protection, and other expenditures made necessary by domestic forage programs.

The History of Public Grazing Fees

The nation's first grazing fees were instituted in 1906 upon the transfer of then-overgrazed range lands from the public domain to the Forest Service (FS). These fees were based on the general and loose criterion of "reasonableness". Beginning in 1927, permit fees were increased yearly until 1931, when they reached "fair market value" (FMV). Thereafter, this base fee was adjusted annually according to average regional market prices for beef and lamb (Robinson, 1975).

Rangelands not designated as national forests went to the Bureau of Land Management (BLM), which for many years charged no fee for grazing privileges. In 1934, passage of the Taylor Grazing Act authorized the implementation of the agency's first fee system. The BLM made no attempt to charge for the full value of the land, but rather set a modest, uniform fee intended to cover the cost of administration (Robinson, 1975).

In 1961, the BLM and FS began a joint study of grazing fees. Three premises were made: 1) government should charge a fee, 2) the fee should reflect the economic value of the grazing to the permittee, and 3) the economic value is correctly and fairly measured by market values (Robinson, 1975).

The lack of a market for public land grazing permits and rejection by the agencies of public auctioning of permits meant that an estimate of the fair market value of grazing had to be effectively "shadow priced". A shadow price is the estimated market value of a non-marketed good, considering both supply of and demand for the good.

The method chosen for measuring the value of grazing use was

to determine the total cost of operation to the user on privately leased grazing land and to subtract from this private cost the total nonfee cost of operation to the user of public rangelands (Robinson, 1975).

The difference was \$1.23 per animal unit month (AUM), and it was to be implemented over a ten year period. The value would be adjusted annually in accordance with a so-called forage value index, based on the preceding year's private lease rates.

This estimate of the value of grazing use is usually referred to as "fair market value". Yet the economic definition of fair market value is "that price to which

Table One

SUBSIDIZATION OF FEDERAL RANGE LANDS
Cost to the Public (difference between receipts & expenditures)

For Bureau of Land Management Lands, 1979

BLM State Office	Losses in thou- sands of dollars	Gains in thou- sands of dollars
Arizona	\$ 1,087	
California		\$180
Colorado	1,396*	
Idaho	818	
Montana		454
Nevada	1,062	
New Mexico	1,037	
Oregon/Washington	1,693	
Utah	1,677*	
Wyoming	3,171	
	<hr/> \$11,941	<hr/> \$635

Net Costs = \$

* = 1978 data available only

For Forest Service Lands, 1979

Region	Losses	Gains
1 Northern	\$ 1,592	
2 Rocky Mountain	1,594	
3 Southwestern	2,375	
4 Intermountain	5,300	
5 California	1,801	
6 Pacific Northwest	3,085	
	<hr/> \$15,748	<hr/> ⊕

Net Costs = \$15,748

1979 Total Net Cost to the American Public for BLM & FS Range Lands = \$27,830,000
(Note: Data may not add due to rounding.)

both a buyer and a seller would agree provided neither were compelled to buy or sell." The above estimate of grazing value is inadequate, since it considers only the buyer's viewpoint.

This procedure for estimating grazing value is more closely related to the residual pricing system used by forest agencies to set a minimum bid price for timber. The residual pricing system estimates the value of the timber to the buyer, and subtracts from that the cost of extracting the timber. In the present case, the amount spent by users of private grazing land is considered a proxy for the value of the resource.

References to the residual pricing system as "fair market value" in Congressional Acts, the literature, and in government documents are too numerous to correct here. For the remainder of this paper, the term "fair market value" should be understood to mean some variant of the residual pricing system, while the term "true fair market value" should be understood to mean a value equivalent to the economic definition of fair market value.

In 1969, the Secretaries of Agriculture and the Interior published rules and regulations implementing the new system and applied the first of the ten incremental adjustments. In that same year, the Secretaries were defendants in a class action suit (Pankey v. Freeman 427 F 2d. 43) seeking injunctive relief against the grazing fee regulations and alleging the Secretaries acted illegally in failing to take capital investment into account. The fee system was upheld by the United States Court of Appeals that heard the case (Robinson, 1975).

Additional law suits, however, spurred a Congressionally-mandated moratorium on the scheduled 1970 fee increase. In 1971, behind schedule, the second increase was applied. The 1972 fee increase was limited to a three-percent increase over the 1971 fee. In 1973 and 1974 the third and fourth fee increases were applied. In 1975 and 1977 the second and third fee increase moratoriums were imposed, the fifth and final scheduled adjustment being applied in 1976 (USDA, USDI, 1977).

The Congressional Fee Formula

The outcry from the holders of public grazing permits that resulted in the series of moratoriums on grazing fee increases during the 1970's led to the eventual abandonment of the grazing fee system and the passage in 1976 of the Federal Land Policy and Management Act (PL 94579). This Act called for a joint Department of Agriculture and Interior Study for a recommended new grazing fee system that would take into account not only the residual pricing system, but costs of production for the rancher and other factors not computed in the old grazing fee system.

The ensuing Study of Fees for Grazing Livestock on Federal Lands (October 21, 1977) states that:

The collection of FMV fees for grazing ... has not been interpreted to mean the maximum fee the market will bear. In deter-

mining FMV the practice has been to select the conservative values where uncertainties occur in supporting data and analysis...

The study recommended that the fee system implemented in 1969 be retained as the foundation for the recommended 1978 Public Land Fee System, with several important changes. The 1978 system would employ the same 1966 base proxy for FMV (\$1.23 per AUM) of public grazing lands established by the Western Grazing Livestock Survey that was used for the 1969 system.

However, annual adjustments to the 1966 base rate would now be based not solely upon an annual forage index reflecting changes in the price of private land lease rates as was true for the 1969 system, but rather on a complicated formula involving a forage index, beef cattle price index and price paid index (reflecting ranchers costs). Annual increases in fees would be limited to 25 percent of the previous year's fee until such time as FMV is reached, and thereafter would be limited to 12 percent annually. The survey recommended that certain variable rates be allowed under certain circumstances.

The Public Rangelands Improvement Act of 1978 formally adopted the findings of the grazing fee study and determined that (section 6(a)):

for the grazing years 1979 through 1985, the Secretaries of Agriculture and Interior shall change the fee for domestic livestock grazing on the public rangelands which Congress finds represents the economic value of the use of the land to the user, and under which Congress finds fair market value for public grazing equals the \$1.23 base established by the 1966 Western Livestock Grazing Survey multiplied by the result of the Forage Value Index (computed annually from data supplied by the Economic Research Service) added to the Combined Index (Beef Cattle Price Index minus the Price Paid Index) and divided by 100: provided, that the annual increase or decrease in such fee for any given year shall be limited to not more than plus or minus 25 per centum of the previous year's fee.

As justification for the new formula the Act offers the following Finding and Declaration of Policy (section 2 (a) (5)):

To prevent economic disruption and harm to the western livestock industry, it is in the public interest to charge a fee for livestock grazing permits and leases on the public lands which is based on a formula reflecting annual changes in the cost of production.

It is clear that Congress' definition of FMV bears little resemblance to economists' correlation of true fair market value with the intersection of supply and demand curves. Congress' attempt to establish both an FMV for use of public rangelands and at the same time guarantee the future well-being of the Western livestock industry is clearly contradictory. Congress has chosen to set grazing fees on the basis of its perception of demand, without consideration for the cost of supplying the good.

The following analysis will examine the current fee formula from the demand perspective in order to pinpoint the shortcomings inherent in an attempt to define FMV without consideration of cost to the public.

Analysis of the Formula

The formula for the 1978 Public Land Fee System is as follows:

$$\frac{\text{FMV FVI} + (\text{BCPI} - \text{PPI})}{100} \quad \text{where:} \quad \begin{array}{l} \text{FMV} = 1.23 \\ \text{FVI} = 195 \\ \text{BCPI} = 216 \\ \text{PPI} = 246 \end{array}$$

= \$2.03 per AUM for 1979

* Forest Service Interim Directive No. 14, 1979. FMV = fair market value; FVI = forage value index; BCPI = beef cattle price index; PPI = prices paid index.

1) The Base Fee -- The Western Grazing Livestock Survey of 1966, which established the base fair market value (FMV) fee of \$1.23, was based on the responses to 14,000 questionnaires sent to users of both public and private range lands. Respondents were asked to provide their costs of operation, including those costs associated with having other users on the land. The \$1.23 base rate was determined through the following procedure (refer to Table Two). Private costs of operation on both public and private lands for both sheep and cattle were computed. These are the nonfee costs. For both cattle and sheep, nonfee costs were higher for public lands than for private lands (USDA, USDI, 1977).

In a separate process, an estimate of a private grazing land lease rate (PGLLR) was made, based on data obtained from the Statistical Reporting Service, USDA. Only data for nonirrigated lands was used to ensure comparable productivity levels between private and public lands. Private leases which for a variety of reasons were not competitive were not excluded. The absolute value of the lease rate was determined to be \$3.65 per animal unit month (AUM), however, this higher figure was not used, as it reflects a higher level of services provided by the landowner than that provided by the federal government. A rate of \$1.79 for cattle and \$1.77 for sheep was determined to be a charge at which services provided by both sectors would be comparable. (This lowered figure includes a provision to account for the added cost to the user of public range lands of other users on the land.) These rates were termed private lease rates (USDA, USDI, 1977).

Because the costs of operation for the user of public lands was higher than the same costs for the user of private lands, this differential was subtracted from the private lease rates to give a combined weighted \$1.23 per AUM for both sheep and cattle (USDA, USDI, 1977).

Critics of the 1966 base fee state that it is too low and does not adequately reflect FMV. As the fee is the foundation of the formula currently in use, it is critical

Table Two

Summary of Public and Private Costs Per Animal Unit Month
for Grazing in the Western States, 1966 (USDA, USDI, 1977).

	Cattle		Sheep	
	Combined		Combined	
	Public Costs	Private Costs	Public Costs	Private Costs
1 Lost animals	\$0.60	\$0.37	\$0.70	\$0.65
2 Association fee	0.08	0.04
3 Veterinary	0.11	0.13	0.11	0.11
4 Moving livestock to and from	0.24	0.25	0.42	0.38
5 Herding	0.46	0.19	1.33	1.16
6 Salt and feed	0.56	0.83	0.55	0.45
7 Travel to and from	0.32	0.25	0.49	0.43
8 Water	0.08	0.06	0.15	0.16
9 Horse	0.16	0.10	0.16	0.07
10 Fence Maintenance	0.24	0.25	0.09	0.15
11 Water Maintenance	0.19	0.15	0.11	0.09
12 Development depreciation	0.11	0.03	0.09	0.02
13 Other costs	0.13	0.14	0.29	0.22
Total nonfee costs	3.28	2.75	4.53	3.89
Private lease rate (1966)	(1.26)	1.79	(1.13)	1.77
Total Costs	4.54	4.54	5.66	5.66
Difference between total private/public nonfee costs		\$1.26		\$1.13
Combined cattle and sheep (weighted average)			\$1.23	

Note: These were data developed by the Grazing Fee Technical Committee from analysis of 1966 survey data. Public costs are livestock operation costs on both FS and BLM allotments. Private costs are livestock operation costs on leased private grazing land. Combined difference for cattle and sheep as weighted by AUMs of grazing by cattle and sheep on public land.

that it accurately reflect FMV. Possible deficiencies in the data base and method of calculation include:

- 1) The Western Grazing Livestock Survey was not statistically valid, did not involve a random sampling and did not require respondents to respond. Therefore it is possible that those who did respond represented a biased sample of ranchers (i.e. large ranchers with fuller knowledge and lower costs).
- 2) The fact that the survey asked users of public land to estimate their own expenses could possibly yield excessively high estimates of costs, as such users have a vested interest in the possible outcome of such a survey.
- 3) The inclusion of private noncompetitive land leases in the calculation of PGLLRs may have biased the final private lease rates downwards.
- 4) The process employed in the downward revision of the absolute value of PGLLRs from \$3.65 per AUM to \$1.79 and \$1.77 per AUM may have been faulty.
- 5) Where federal operations dominate the market, private sector information may be downward biased.

2) Forage Value Index -- The Forage Value Index is the annual change in PGLLRs and represents an effort to keep the private lease rate information base of the 1966 base fee up to date. To the extent that deficiencies in data collection and computation, such as those outlined above, bias information used in computing the FVI, error will continue to be generated.

3) Beef Cattle Price Index -- Recommended by the Grazing Fee Study technical committee but not by the Study itself, the BCPI adopted as a part of the 1978 formula by Congress represents a significant departure from traditional grazing fee systems. The BCPI represents average price received for beef cattle in the 11 western states as reported to the Statistical Reporting Service. In essence, inclusion of a BCPI in the calculation of grazing fees represents a judgment, whether acknowledged or not, on the part of the federal government, that grazing cattle is the best and most socially optimal use of BLM and Forest Service (FS) range lands. As beef prices rise, so too will the grazing fee. However, as beef prices fall, so falls the grazing fee. The greater the fall in beef prices, the greater the government subsidy of the livestock industry. Inclusion of a BCPI practically ensures the perpetuation of the livestock industry, regardless of the economic feasibility of doing so and despite the opportunity costs of using federal range lands for grazing rather than other purposes.

To some extent, inclusion of a BCPI represents duplication of indices, as the forage value index is not unrelated to the marginal product of rangelands -- cattle. As livestock prices fall, so too might FVI. Thus, during periods of decline, the users

of Federal lands reap double benefits in this regard. Finally, and probably trivially, the BCPI reflects price of cattle only, and not sheep.

4) Prices Paid Index -- The Prices Paid Index is in part an attempt to keep the nonfee costs information base of the 1966 base fee up to date. More than that, it represents prices paid by farmers for commodities and services, interest, taxes and farm wages, or factors not necessarily included as costs in the 1966 nonfee costs calculations. This index is compiled and published by the Statistical Reporting Service. Inclusion of a PPI in the grazing fee formula amounts to government admission that ranchers do not necessarily reap the bulk of the profits made in the sale of beef. Inclusion of a PPI also constitutes a virtual concession that cattle-raising is becoming less and less of an economically feasible occupation.

The 1979 PPI for instance exceeds the BCPI by 30 points (216-246). When PPI exceeds BCPI, grazing fees drop, and the public subsidizes the rancher. That production costs exceed profits might be an indication that the enterprise is no longer cost efficient.

The extent of the current year's subsidization can be demonstrated by making the PPI and BCPI equal each other. The resultant fee would be \$2.40 $((1.23)(195)/100)$ rather than the current \$2.03 -- a significantly higher figure. Spiralling inflation, keeping PPI higher than BCPI, keeps grazing fees low and promotes grazing even where it is not economically appropriate.

On the other hand, higher production costs might, as in the case of small farms, merely be an indication that other market and non-market factors are acting to artificially lower the value of the marginal product of range land -- cattle and sheep. Such factors could be 1) negative externalities impacting the rancher, 2) non-recognition of range land as a public good, 3) government and agribusiness policies that limit choices and access to markets.

A criticism of the index itself is that it is an index of prices paid by farmers and not exclusively ranchers. A significant portion of rising production costs for farmers is fertilizer and machinery, neither of which is a cost for the rancher. The upshot is that the rancher could be making substantial profits and at the same time be receiving subsidization at a level more appropriate to a farmer's needs.

5) Variable Fees -- The Public Rangelands Improvement Act of 1978 allows under certain circumstances lower than normal fees to be charged. Interim Directive No. 14 of the Forest Service Manual (May 10, 1979) publishes a list of permissible "FMV" fees ranging from \$1.56 to the full \$2.03. The criteria for determining where within the range a particular forest falls (the directive applies to all FS lands in range use in the 11 western states) is the 1931 base grazing fee for that forest! Such a blatant loophole for forest range lands serves to undo what limited good the new grazing fee system has done. The BLM has no such comparable provision (see Table Three).

6) Percent Increase Limits -- Beginning in 1980 for FS lands and 1981 for BLM lands,

Table Three

NATIONAL FORESTS (REGIONS 1 through 6)

The 1979 fee by 1931 base area or 1978 fee level for National Forests and Land Utilization Projects. The fees are rounded to the nearest cent for cattle and to the nearest quarter cent for sheep. Fees for horses are the same as cattle, except as otherwise provided.

Cattle Fee				⋮	Sheep Fee			
1931 Base	1974 1975	1976 1977 1978	1979	⋮	1931 Base	1974 1975	1976 1977 1978	1979

-----REGIONS 1 - 6 -----

		1.25	1.56					
		1.27	1.59					
\$0.06	\$0.92	1.45	1.81	\$0.0150	\$0.1825	\$0.2875	\$0.3600	
.09	.98	1.49	1.86	.0200	.1900	.2950	.3700	
.10	.99	1.51	1.89	.0250	.1975	.3000	.3750	
.1050	1.00	1.51	1.89	.0275	.2000	.3025	.3775	
.1075	1.01	1.52	1.90	.0300	.2050	.3075	.3850	
.11	1.01	1.52	1.90	.0325	.2075	.3075	.3850	
.1125	1.02	1.53	1.91	.0350	.2125	.3125	.3900	
.1175	1.02	1.53	1.91	.0375	.2150	.3150	.3950	
.12	1.03	1.54	1.92	.0400	.2200	.3175	.3975	
.1225	1.04	1.54	1.92	.0425	.2225	.3200	.4000	
.1225	1.04	1.55	1.94	.0450	.2275	.3250	.4050	
.13	1.05	1.55	1.94	.0475	.2300	.3250	.4050	
.14	1.07	1.57	1.96	.0500	.2350	.3300	.4050	
.15	1.09	1.58	1.98	.0525	.2375	.3325	.4050	
.16	1.11	1.60	2.00	.0550	.2425	.3350	.4050	
.17	1.13	1.61	2.01	.0575	.2450	.3375	.4050	
.18	1.14	1.63	2.03	.0600	.2500	.3425	.4050	
.19	1.17	1.65	2.03	.1580	.3075	.3875	.4050	
.20	1.19	1.66	2.03					
.21	1.20	1.67	2.03					
.22	1.22	1.69	2.03					
.24	1.26	1.72	2.03					
.26	1.30	1.75	2.03					
.429	1.54	1.94	2.03					

increases in grazing fees will be limited to 12 percent of the previous year's fee. Such a restriction means that in periods of high inflation exceeding 12 percent, the public, again will be subsidizing ranchers.

Ranchers' View of Grazing Fees

The success of ranchers in obtaining moratoriums on a fee system which was upheld in the United States Court of Appeals lay in a number of effectively presented arguments. Both ranchers and their opponents agree that public and private grazing laws are far from identical, and public and private fees should now necessarily be the same. In support of their view that fees on public land should use the residual pricing system and be significantly lower than fees on private land, ranchers make the following arguments:

- 1) Lower quality lands -- Ranchers maintain that Forest Service (FS) and especially Bureau of Land Management (BLM) range land is of lesser quality than private grazing lands as it constitutes that land not claimed by homesteaders, indicating its lesser productivity. Therefore, ranchers argue, such lands should not be valued at a level comparable with private land lease rates.
- 2) Other users -- Ranchers contend that the multiple-use nature of much of federal lands, such as the forced sharing of range lands with wild-life and recreationists constitutes an added operational cost to the user on public lands.
- 3) Capitalization of permit value -- Ranchers and the Federal government agree that grazing fees have historically been estimated at less than fair market value and that this undervaluation has resulted in the accruing of a value to the permit over time. Ranchers further argue that this permit value has been capitalized into ranch costs, through increased purchase prices of base property with accompanying animal unit month (AUM) privileges. This higher purchase price then becomes a capital investment on the part of the rancher which must be recouped. Ranchers contend that in comparing public and private land grazing costs, the capitalized value of the permit should be included as a cost of the use of public lands. If this "cost" were included, the discrepancy between privately leased and public lands would be erased.

Views of Opponents of the Current Fee System

Conservationists and others view the large losses sustained each year by the Forest Service (FS) and BLM in their grazing programs as a sign that the residual pricing system fails to make best use of range resources. Their answers to the arguments of the ranchers are as follows:

- 1) Lower quality range land makes grazing more expensive for both rancher

and landowner. No landowner would sell grazing rights for less than the costs to the landowner, yet this is exactly what ranchers wish of the Federal government.

Federal agencies make more capital inputs into their lands than do their private neighbors, which raise the productivity of Federal land. These investments impose no costs on the permit-holder, but are often made to the point where marginal costs exceed marginal benefits. Such investments, say proponents of increased fees, should be paid for by ranchers.

Publicly-owned range lands have a value apart from productivity of lands -- and that is location. FS and BLM range land often have no close substitutes as their location at higher elevations are not naturally productive.

- 2) In answer to claims that the other multiple uses of public range imposes added costs onto the rancher, opponents point out that grazing imposes costs on the other resources which are not covered by the permit fee. Such costs include lower water quality, fish and wildlife habitat degradation, and soil erosion. Such costs are borne by the general public while the permit holder profits.
- 3) Opponents of the residual pricing system agree that permits have gained a capitalized value, but deny that this value should be considered in the grazing fee. To include the capitalized permit value in the grazing fee formula would perpetually keep the fee at a level less than the true value and would deny the public a fair return for use of the public lands.

An Economic View of Grazing Fees

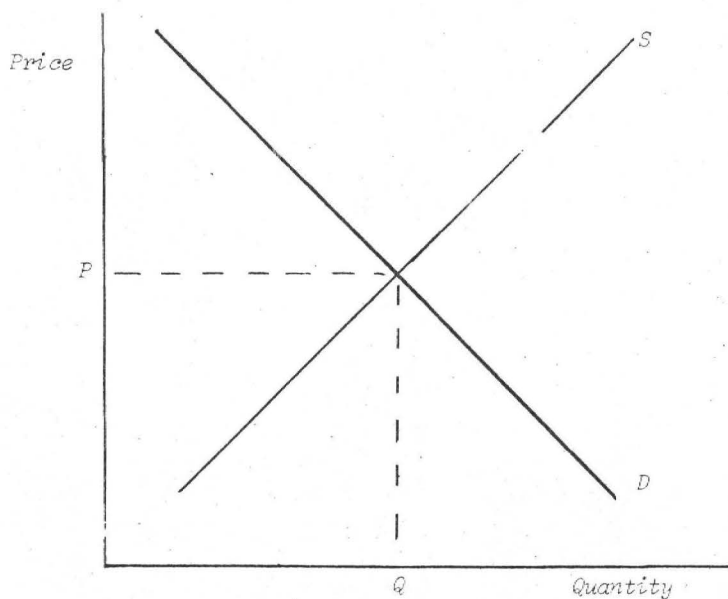
Rancher arguments that fees should be equal to private land fees minus the extra costs of grazing animals on public land (the residual pricing system) view grazing from the buyer's viewpoint only. An economist would say that ranchers are considering only the demand side of the equation. On the other hand, the view that fees should be equal to or greater than costs is the seller's view, or the supply side of the question.

The economic view is obtained only when these two views are merged. If grazing rights were sold in an open market place, both the appropriate fee and the amount of grazing would be determined by the intersection of the supply and demand curves.

The demand curve (see Figure 1) describes the quantities of grazing in animal unit months (AUMs) which ranchers would be willing to buy at different prices. The supply curve shows the price which suppliers must receive to be willing to sell differing quantities of grazing.

Figure One

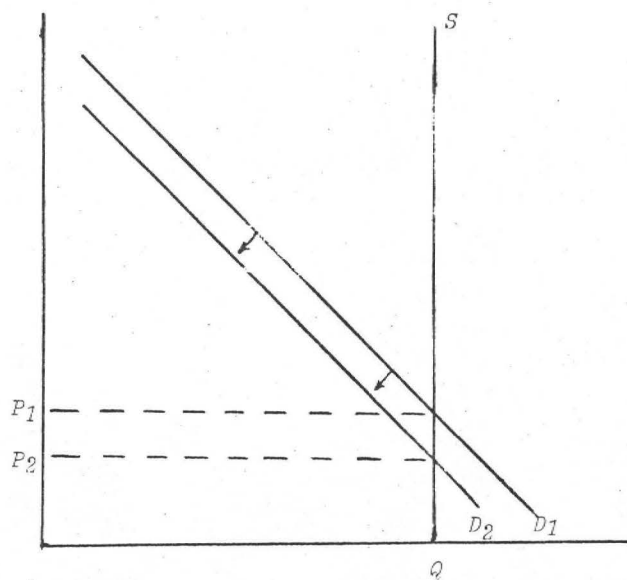
Market Supply and Demand



A change in either supply (S) or demand (D) will affect both price (P) and quantity (Q).

Figure Two

Public Grazing Land Supply and Demand



A change in demand (D_1 to D_2) will affect price (P_1 to P_2) but have no effect on quantity.

At increasing prices for AUM suppliers of grazing can afford to offer grazing opportunities on poorer quality land or to invest in capital improvements which increase the productivity of grazing land. Thus the supply curve is shown sloping upward. Similarly, ranchers would wish to purchase fewer AUMs when prices go up, so the demand curve is shown sloping downward.

The residual pricing system ignores the normal supply curve. Instead of selling AUMs only when the price exceeds the cost of providing those AUMs, the supplier first determines the quantity of AUMs to be sold. The supply curve then becomes vertical instead of upward sloping (see Figure 2). No matter what demand is, price is determined by the intersection of the demand curve and this vertical line. If demand should fall -- perhaps through a shift in consumer preferences from beef and lamb to other foods -- price will fall but the supply of grazing will remain the same.

The residual pricing system thus implies a decision that domestic grazing is the highest and best use of public range land, no matter what the cost of range management and no matter how small, or negative, the net return. While some land may be withdrawn from grazing use for environmental reasons, such decisions involve little or no economic analysis and are not in any way based on the lack of economic value of grazing.

It is unlikely that the residual pricing supply curve is to the left of the intersection of the normal supply and demand curves, since the resulting price would be much higher and quantity much lower than under competition -- a situation which ranchers would not defend, and which would not result in the heavy annual losses experienced by the Forest Service (FS) and BLM in grazing management. Therefore the residual pricing supply curve is to the right of the normal intersection point, as in the figure.

The normal supply curve under a competitive situation is about the same as the suppliers' cost curve: suppliers will sell products no less than the cost of production and for little more since otherwise competitors would undersell them. Public land managers must consider not only costs directly incurred in management, but environmental costs as well since these are costs to the public which the manager is hired to serve. Thus a cost or supply curve which includes environmental costs would be somewhat higher than the normal supply curve.

The difference, therefore, between the intersection of S_n and S_r and the intersection of D and S_r is the direct monetary cost to the agencies of subsidizing grazing. As has been seen this was about \$27 million or roughly \$1.50 per AUM in 1979. The somewhat larger difference between the intersection S_e and S_r and the intersection D and S_r is the total cost to society of subsidizing grazing. In order to justify these subsidies it must be shown that there are some benefits resulting from the subsidies which are greater than the total of these costs.

Alternatives to the Residual Pricing System

A number of alternatives have been suggested which could eliminate the defects of the residual pricing formula now in use. These alternatives are aimed at insuring a fair rate of return to the public while protecting the quality of range resources. Possible alternatives include revising the fee formula, public auctioning of permits, sales of grazing rights, and use of range lands for other purposes.

Revising the Fee Formula -- Private grazing land fees have more than tripled in the past fifteen years, while most public fees have less than doubled. Public fees have neither kept pace with private fees nor with the public costs of range management. A revised fee formula, taking the agency and environmental costs of managing public range lands into consideration, would eliminate these defects.

Under such a new formula fees would not necessarily be the same in different parts of the country. The difficulty in accurately calculating fees in many different localities would be a disadvantage. Some process of phasing in a new fee formula may also be needed.

Public Auctioning of Permits -- Conservationists, private ranchers and economists have for years maintained that the most accurate determinant of fair market value (FMV) is the market clearing price, which is greater than or equal to cost, indicating true willingness to pay. Such a market clearing price could be implemented most effectively through the public auctioning of permits, where the availability of complete information to bidders would result in the most efficient allocation of public land.

Advocates of an auction system stress the inadequacy of a single fee formula to reflect local and regional variations in costs and profits. They additionally believe that the current fee formula significantly underestimates the value of public rangelands and hence, the return to the public for that land. They base their comparisons on data compiled on competitive fee systems on Bureau of Indian Affairs (BIA) land, BLM-administered Department of Defense land and other federal grazing lands, all of which receive bids for permits ranging between \$7 and \$11 per AUM, which is three to four times the fee charged on Forest Service (FS) and Bureau of Land Management (BLM) lands.

Several variations on public auctioning of permits is possible, including 1) auctioning off new (added to the system) grazing lands only, 2) auctioning off permits as they come up for renewal only, and 3) auctioning off all permits currently outstanding (this would involve extensive compensation, making this alternative less feasible). Conditions could be attached to permit bidding which would make the process more equitable for those with built up equity in capitalized permit values. Such conditions could include maintaining the base property and other requirements, thus helping to ensure that ranchers with built up equity would tend to bid against each other. It is conceivable that some method for separating out ranchers' investments in permit values could be evolved and some system for permitting like-situated

persons to bid against each other.

The problem with the above conditions attached to competitive bidding that are designed to ensure greater equity for those with capitalized permit values, is that they fail to ensure equity for ranchers without public permits. Auctioning could open up public land to bidders who have historically not enjoyed access to public range lands (since so few new permits are ever issued), thereby creating greater equity for other ranchers.

A final argument in support of competitive bidding is the utter simplicity of such a system. The administration of an auction system would involve a minimum of data collection (some data-generation might be necessary to establish lowest permissible opening bids, which should be based on costs), thus satisfying the aforementioned administrative feasibility objective of the desired grazing fee system.

The Federal government's chief objection to institution of competitive bidding is that it would be potentially disruptive to the stability of ranching operations. Ranchers must be certain that sufficient forage will be available to them for some time into the future. This problem could possibly be resolved by having ranchers bid for ten-year permits, each rancher discounting the value of the stream of benefits he anticipates to receive for the time period, and paying in annual installments. In this way, artificial increases in uncertainty could be minimized.

An additional federal argument in opposition to the auction system is that such a system would involve extensive changes to basic government policies and objectives, such as small rancher preference and base property and livestock requirements that promote the stability of local communities. Such objectives are, according to the Federal government, on a par with and no less important than the objective of obtaining FMV for the use of Federal range lands. However, as mentioned previously, no persuasive argument has been made in support of such subsidization of ranchers.

Sale of Grazing Rights -- There are those who would advocate the sale of the rights to public range forage (Baden, 1979). Such a sale would involve an estimation of the present discounted value of the stream of rents that would be generated in perpetuity from the use of the public range. The receipts generated could either be put in trust or invested or spent -- whichever the taxpayers' representatives decide would bring the highest social return.

There are a number of uncertainties involved in calculating permit fees on a year-to-year basis. A major disadvantage to selling grazing rights is that these uncertainties are multiplied many times over when values must be considered for many years in the future. Unless these uncertainties can be largely resolved - a near impossibility - the sale of grazing rights would do little to resolve the problems of the current situation.

Use of Grazing Land for Other Purposes -- If it is true that the cost of providing grazing land exceeds the true value of grazing to the rancher, then some range land should be withdrawn from use for domestic grazing. This will happen naturally if the permit formula is revised and no one is willing to pay the price for grazing a

particular piece of land as calculated under the new formula.

Land not managed for domestic grazing will still have a high value for watershed, wildlife, recreation, and other purposes. The costs of managing these resources will be far lower than the costs of managing for domestic grazing, and while there will be little return to the public treasury there will be important returns to the public at large.

Conclusion: A Guide for Decision-Makers

This report has found that subsidies to ranchers in 1979 totalled nearly \$30 million. Economic analysis illustrated by figure two indicates that this amount is far more than ranchers would actually be willing to pay at the current level of grazing. A requirement that grazing fees be set to cover costs would significantly reduce the level of livestock grazing on public land.

The decision to use the adopted fee (residual pricing) formula or to revise the formula or turn to competitive bidding really represents a decision on whether or not a segment of the United States livestock industry should be subsidized. There are several arguments on both sides of the question.

On one hand, ranchers argue that meat is a commodity which consumers demand, and that government subsidies will help provide this commodity at prices which consumers can afford. This argument holds no water: if consumers really wanted meat grown on public land they would be willing to pay the full price. Moreover, there is the problem of equity: not all consumers choose to eat meat and even more do not eat meat grazed on public land. Why should those who do not be forced to pay, through higher taxes, for those who do?

A somewhat more convincing argument is that a serious decrease in the amount of grazing on public land would disrupt local communities and create additional unemployment. Job retraining, relocation, and the loss of community facilities such as schools, water lines, and streets which are not fully depreciated all would be costs to society.

According to figures cited earlier in this report, the \$28 million spent on public grazing lands produced about 8,000 jobs. This represents an annual cost of \$3,500 per job. A question to be considered is whether the capitalized value of this annual payment could produce more jobs in the local areas or better jobs elsewhere.

Arguments in opposition to public grazing subsidies point towards the high environmental cost of grazing, including erosion, water quality reduction, and deterioration of fish and wildlife habitat. In addition, it is pointed out that only some of the growers of livestock -- primarily those in the West -- are subsidized, which is unfair to those in the Midwest and other parts of the nation. This damages attempts towards efficient production of goods since, as has been repeatedly pointed out, private grazing lands are of better quality than public. With some producers subsidized, those who are not will tend to underproduce and underutilize their better

quality land.

In summary, a decision to continue subsidizing livestock grazing would require a demonstration that the value of local jobs created by subsidies was greater than the value of the best, or next best jobs which could be created by those subsidies. If so, then the difference between those values must be shown to be still greater than the environmental costs of grazing. And if this is so, then the resulting net benefit must be balanced against the double inequity of some producers being subsidized while others are not and some consumers eating food which is paid for by other taxpayers.

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