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Competitive pricing for the McGregor Range: Implications for federal grazing fees

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Abstract

Competitive bidding is an acceptable way to determine an efficient price to both buyer and seller. The quasi-competitive bid structure used to price federal forage and lessor-provided services on the McGregor Range in New Mexico indicates that the efficient market price for federal forage, services, and facilities had an upper value of $4.88/AUM during the 1992 grazing season. The facilities and services provided on the McGregor Range had a value of $1.96/AUM to the ranchers leasing the bombing range. The residual amount of $2.92/AUM repesents the estimated value of high quality federal forage during 1992. The total cost of grazing McGregor Range was estimated to average $16.78/AUM during the 1992 production year. This is less than the cost of leasing comparable private land ($19.68/AUM) or BLM land ($21.06/AUM) in New Mexico.

Key Words: grazing fees, competitive bidding, forage value

Controversy and grazing fees have emerged as synonymous terms. The issues have evolved and matured to the extent that emotion, which can rapidly surge and abate, is being carefully controlled by coalitions of special interest groups. The coalitions work diligently to market their respective positions. Political ramifications are paramount. However, recent effort has been directed toward educating the general public, with each new urban and suburban generation further removed from agricultural production practices.

The heart of the public land controversy is who shall "control" federal land. The power struggle evolves around 2 central themes: (1) the trend in ecological condition of western rangelands and (2) the price level that simultaneously provides a reasonable rate of return[1] to the federal treasury and the opportunity to earn a positive return for rancher permittees. Ecological condition assessment is conducted by the managing agency which determines a long-run carrying capacity for each allotment. The long-run carrying capacity can be adjusted through suspended preference or voluntary reduction, i.e., taking nonuse for resource or economic reasons or by applying for temporary nonrenewable increases in stocking rate if resource conditions are favorable. The end result is that livestock numbers are regulated and do not respond to traditional economic and market forces. Therefore, the supply of forage allocated to livestock is relatively fixed in animal unit months (AUMs) of grazing available. This directs attention to the price level of federal forage as a factor of production to the range livestock industry and as a revenue source for the federal government leasing the renewable forage resource.

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[1]A "reasonable rate of return" is defined as a rate covering the federal government's cost of managing livestock grazing on federal lands.

Federal Forage Valuation

The Secretaries of Agriculture and Interior have initiated several large-scale efforts to determine a grazing fee that represents a fair market value for federal forage and promotes stability in the range livestock industry (USDA/USDI 1977, 1986, 1992). Rangelands are so varied in quality and the management so diverse that a single fee will obviously overcharge some and undercharge others. Unconstrained competitive bidding for each allotment is the only mechanism for establishing an efficient price for each separate allotment. However, consideration of access, ownership of water rights, improvement location, and administrative complexity precludes the use of this mechanism at this point in time.

The private market for native forage explicitly recognizes that the demand for forage is a derived demand in that the forage price is determined by productive value of forage as an input to livestock production. Forage value is influenced by rate of gain, calf and lamb crop, and the price of the final output. As livestock prices increase, the willingness to pay for the various factors of production also increases. Recognition of this economic principle places expanded emphasis on the forage value index (FVI) for future adjustments of federal grazing fees.

Private leasing of native range has traditionally been used as an approximation of value for federal forage (USDA/USDI 1986, 1992). The assumptions required to accept private lease rates as an appropriate measure of value are that federal and private lands are of similar productive quality and that the services and facilities provided by the private sector are comparable to the services and facilities provided by the federal government. Both assumptions are largely invalid. Private lands were homesteaded because of superior quality, location, and the presence of water, while rangeland that was retained in federal ownership was regarded as marginal in terms of productivity and/or location (Public Land Law Review Commission 1968). Private services often include direct caretaking of livestock, doctoring, supplemental feeding, salting, rotating livestock, and maintenance and repair work. Private facilities may include the use of headquarters, corrals, water developments, traps, and other ranch improvements. Neither services nor facilities are traditionally provided at the same level of intensity with a federal grazing lease.

The value of lessor services in New Mexico has been estimated by Gray et al. (1982), Fowler et al. (1985), and Torell and Bledsoe (1990). These studies show that the value of services and facilities constitute approximately 1/3 of the total transaction price for native rangeland in New Mexico. Therefore, when prices for private native range lease rates are quoted, they should be reduced by approximately 33% to determine the price for the forage component.

Comparison of total fee and nonfee grazing costs is another method that has been widely used to estimate the market value of public land grazing (USDA/USDI 1977, Obermiller 1992, Bartlett

et al. 1993, Redmond et al. 1993). A significant application of this method, for example, was determination of the $1.23/AUM base value used in the current federal grazing fee formula (USDA/USDI 1977). By this method, total private grazing costs defines the amount willingly paid for grazing within a competitive market. Subtracting nonfee costs on public lands from this amount gives an estimate of the amount that would make total private and public grazing costs equal.

Higher grazing costs on public lands because of location, distance, terrain, productivity, multiple uses, and regulations are directly considered using the total cost approach to valuation (Bartlett et al. 1993). However, previous studies that compare to the private forage market have not adjusted for quality differences or for the multiple use management objectives on public lands that are not a restriction with private forage leases (except to the degree that grazing costs are impacted by these regulations). In order to minimize the adjustments for these relatively intangible variables it is necessary to observe a large scale competitive market established for federal forage and use this directly to price federal forage. This type of pricing scenario occurs at a unique setting known as the McGregor Range in southeastern New Mexico (Fig. 1).[2]

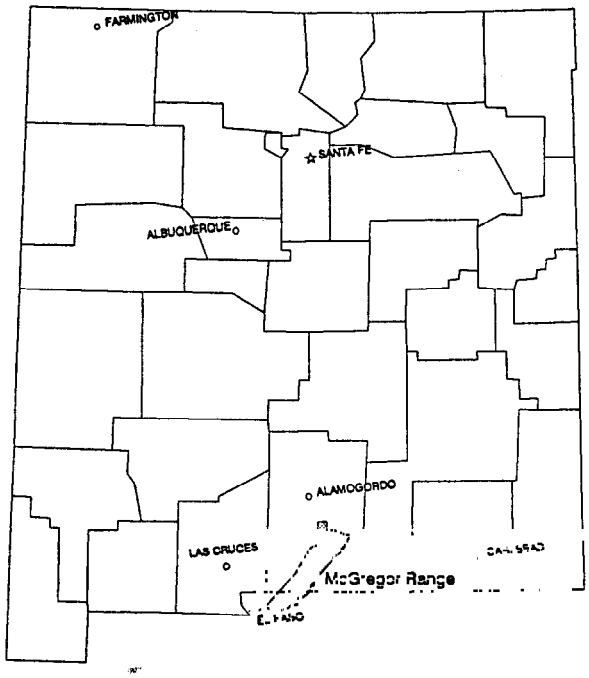

Fig. 1. Location of McGregor Range in southeastern New Mexico.

Study Area and Methods

The McGregor Range is controlled by the Department of the Army and the surface range forage is administered by the Bureau of Land Management (BLM). The McGregor Range is comprised of 14 separate units ranging in size from 8,000 acres to 32,000 with the average slightly over 19,000 acres (Table 1). Grazing seasons traditionally have been 9 months with leases usually starting in October. Currently 3 units are leased for 8 months and 1 unit for 18 months. The grazing units are rested during the growing season (July, August, and September).

The McGregor Range is the only area of significant size (271,000 leased acres) where federal forage is auctioned by quasi-competitive bidding. The McGregor Range situation is not a true competitive bid; only the up-side is competitive. A floor of $3/AUM was established in 1985 and increased to $4/AUM in 1987. Starting with the 1992 grazing season[3], the floor was variable depending on the grazing unit, ranging from $4 to $5.25/AUM (Table 1). The minimum bid was set administratively depending on quantity and quality of forage. Six of the units offered were either leased at the floor or were not bid, comprising 71% of the total AUMs leased in 1992. The 1991 grazing season also had 75% of the AUMs leased at the floor or not bid. The units were all leased later on a first-come-first-serve basis at the minimum bid for both grazing seasons. The bidding is open to all with no commensurate property requirement. Roughly one-half of the registered bidders were successful for each of the last 3 grazing seasons.

[2]Fort Meade and Fort Robinson also have competitive bids; however, both areas lease a relatively small number of AUM's.

Table 1. McGregor Range grazing units (1992 grazing season).

Unit number[1]	Size	Approximate	Minimum allowable bid	Actual bid
	(Acres)	AUMS[2]	------ $/AUM ------	
1	31,000	4,496	4.50	4.50
2	25,000	2,252	4.50	4.50
3	32,000	2,252	4.00	4.55
4	13,000	3,825	n/a[3]	n/a
5	20,000	2,700	n/a[3]	n/a
7	19,000	2,702	5.00	5.00
8	17,000	726	4.50	7.65
9	31,000	1,611	4.50	4.85
10	12,000	2,702	5.25	no bid
11	18,000	3,000	n/a[3]	n/a
12	8,000	1,351	5.25	5.70
13	20,000	3,222	4.25	no bid
14	12,000	1,815	4.50	4.50
15	13,000	1,198	4.00	6.15
TOTAL	271,000			

[1]There is no current unit number 6.
[2]Not all pastures are grazed each year; the long-term capacity is listed as 49,877 AUMs in the McGregor Range RMP Amendment, 1990.
[3]This unit was not offered for lease during the 1992 grazing season.

All successful McGregor Range bidders for the 1990/91 grazing season were interviewed and individual operations budgeted to determine total rancher costs for grazing livestock on the bombing range. Bidders were recontacted to clarify responses and assure accuracy of reported information. The individual budgets were then aggregated to estimate an average total cost of grazing the McGregor Range. The aggregation was accomplished by weighting each grazing unit by the number of AUMs leased. The total cost of grazing McGregor Range was then compared to the total cost of grazing other federal rangeland and private rangeland in New Mexico (Table 2), as reported by Bartlett et al. (1993) for the 1992 production year. A 3% annual rate of inflation was assumed in adjusting McGregor Range grazing costs from the 1990 production year to the 1992 year when comparable grazing cost data were collected. Current and historic weighted average bid prices and AUMs grazed were determined and summarized in Figures 2 and 3.

Assumptions about wage rates, mileage rates, and other economic values were similar between the 2 cost studies, thus, reported differences are largely due to the amount of inputs used. A more detailed description of specific assumptions used in each of the 2 cost studies is given in Gallacher (1991) and Bartlett et al. (1993).

Results and Discussion

The weighted average bids per AUM for the 1990, 1991, and 1992 grazing seasons at McGregor range were $5.21, $4.21, and

[3]Refers to the grazing season starting in the fall of 1992 and ending in June 1993. Seasons of use for other years are similarly defined across years.

Table 2. Average grazing costs ($/AUM) on public and private leased lands in New Mexico as compared to the McGregor Range, 1992.

	Native rangeland[1]		McGregor Range	
	Private	BLM	1990	1992[2]
	($/AUM)			
Lost animals	2.03	2.48	0.80	0.85
Association fees	0.03	0.00	0.09	0.10
Veterinary	0.11	0.10	0.48	0.51
Herding and moving livestock	2.97	4.76	1.94	2.06
Misc. labor and mileage	0.27	0.39	2.53	2.68
Salt and feed	2.94	3.50	3.67	3.89
Water	0.22	0.66	BLM[3]	BLM[3]
Horse	0.25	0.22	0.56	0.59
Improvement maintenance	3.05	4.02	BLM[3]	BLM[3]
Development depreciation	0.24	0.62	BLM[3]	BLM[3]
Other costs	0.04	0.08	1.15	1.22
Total non-fee costs	12.80	16.16	11.22	11.90
Lease rate/grazing fee	6.88	1.92	5.21	4.88
Permit cost	—	2.98	—	—
Total cost	19.68[4]	21.06[4]	16.43	16.78

[1]Source: Bartlett et al. (1993, Table C3).
[2]Adjusted from the 1990 McGregor range cost estimates by an average inflation rate of 3%.
[3]Provided by BLM as part of the competitive lease price.
[4]As described by Bartlett et al. (1993), individual cost items may not add up to the total cost because the mean for each cost item was estimated using an independent linear statistical model and is not the sum of the individual cost categories.

$4.88, respectfully (Fig. 2). The annual weighted average was calculated by multiplying the AUMs leased in each grazing unit by the bid price and then dividing by total AUMs leased. Units rested or leased for 18 months in prior years were not included in the current year's average. The weighted average bid of $8.11/AUM during the 1985 grazing year is often cited as strong evidence that the federal grazing fee is too low. A detailed examination of the successful bidders revealed that this relatively high bid occurred after 2 successive drought years in West Texas (Gallacher 1991). Three quarters of the successful bidders were from West Texas and were protecting the core genetics of their brood herds. When the drought ended, the bid fell to $3.46/AUM during the 1986 grazing season. There were 24,327 AUMs leased for the 1992 grazing season (Fig. 3). Two grazing units that were put up for bid were not leased during the auction; however, they were both leased later at the floor price on a first-come-first-serve basis. The $4.88/AUM weighted average for the 1992 grazing season included both the units leased at the auction and the 2 units leased later at the floor. The same lease pattern occurred during the 1991 grazing season and resulted in a $4.21/AUM weighted average price.

The average price per AUM received for federal forage on the McGregor Range is not directly comparable to the current fee charged on BLM, U.S. Forest Service (USFS), and other federal rangeland. The BLM maintains a full-time range crew on the McGregor Range that performs services and provides facilities not included with the standard federal grazing permit. The BLM is responsible for providing water, fences, maintenance, and development depreciation. It cost the BLM an estimated $3.93/AUM to provide these services and facilities on McGregor Range during 1991 (Gallacher 1991). By comparison, Bartlett et al. (1993) estimated private land lease rates increased by an average of $1.96/AUM when the lessor provided water and facilities as a condition of the lease. This would represent the cost saving and value to the rancher when leasing the McGregor Range. The net amount paid for McGregor Range forage was then $3.25/AUM in 1990 ($5.21/AUM average lease rate minus $1.96/AUM service value), $2.25/AUM in 1991 and $2.92/AUM in 1992.

Total grazing costs on McGregor Range were estimated to average less than similar costs estimated by Bartlett et al. (1993) for private leased land and BLM land in New Mexico. Updated to 1992, total grazing costs on McGregor were estimated to be $16.78/AUM, with the nonfee cost component making up 71% of this total. By comparison, private leased land had an average total

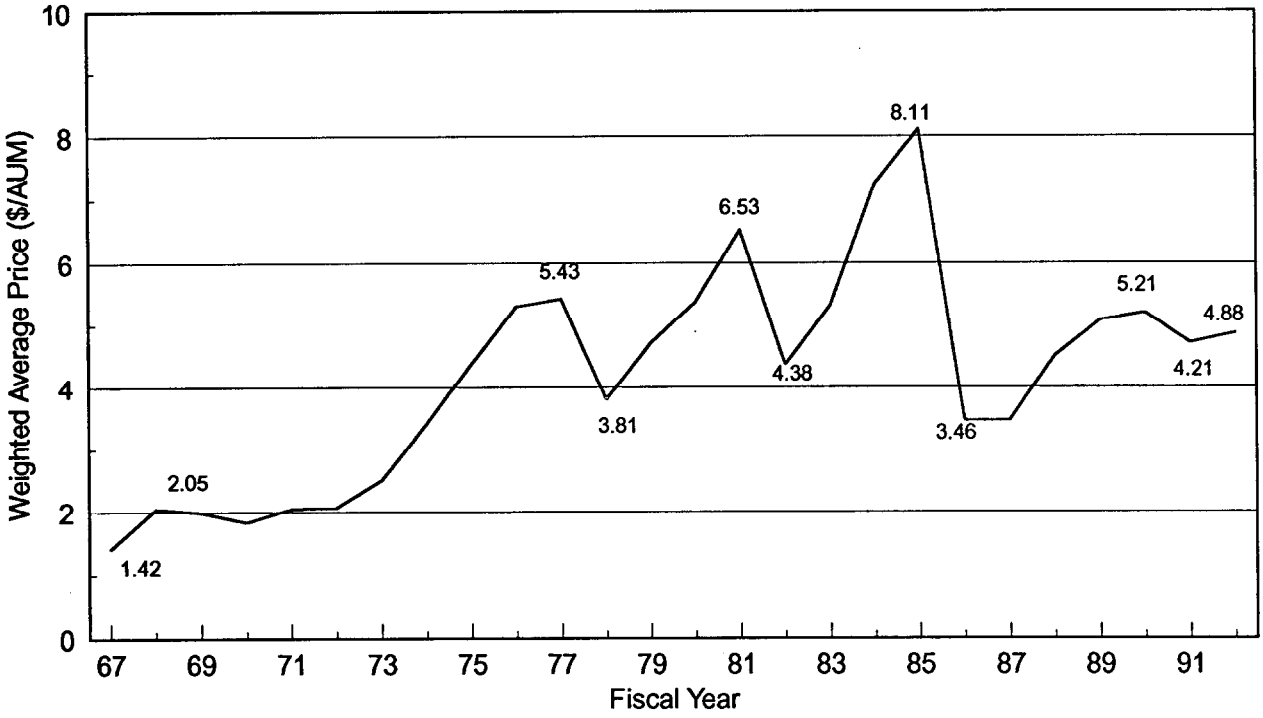

Fig. 2. Weighted average bids ($/AUM) received at McGregor Range, 1967–92.

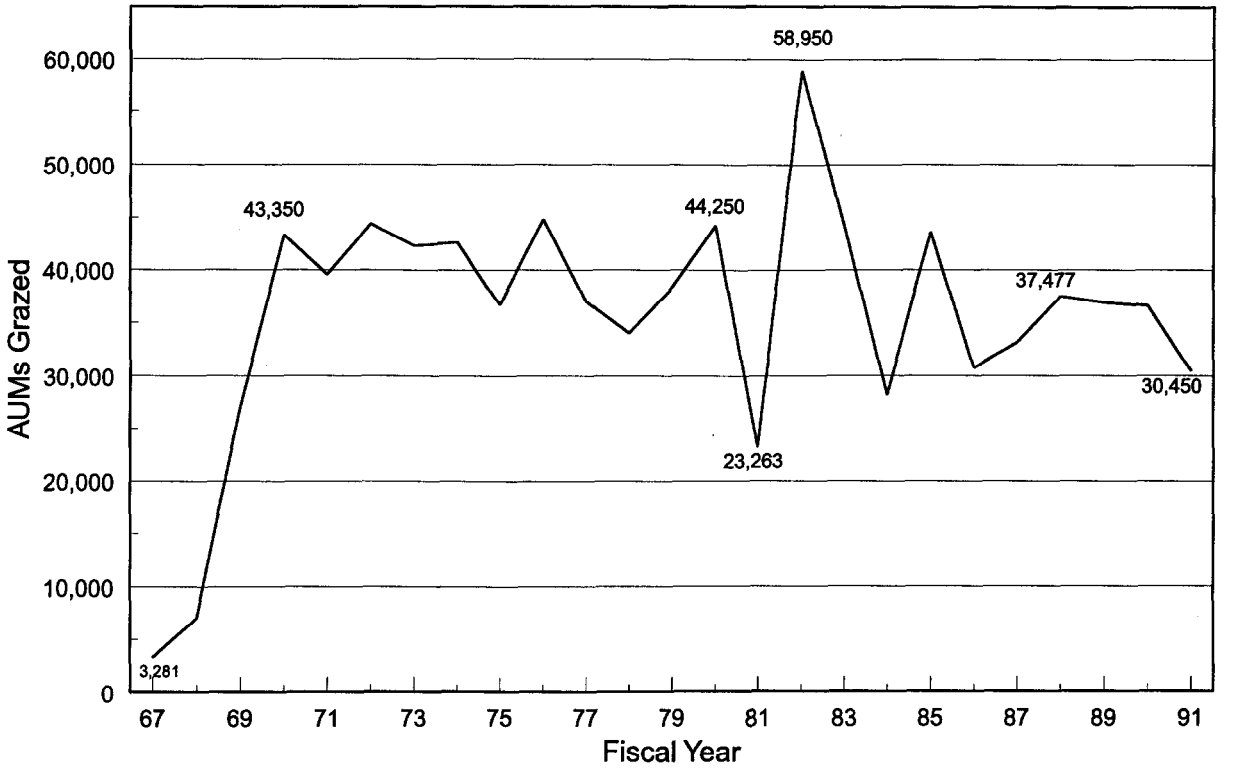

Fig. 3. Number of AUMs leased at McGregor Range, 1967-91.

$21.06/AUM (Table 2). The major cost items that caused BLM lands to have the greatest average cost were herding and moving livestock, improvement maintenance and depreciation, and the investment in the grazing permit.

Travel costs to and from McGregor Range were substantially higher then for leasing comparable private and public lands. Most ranchers leasing the McGregor Range travel long distances to transport and care for cattle while on the bombing range. However, because BLM provides water, fencing, and improvements that are typically provided and maintained by ranchers leasing BLM and USFS lands, and because ranchers do not have to buy the grazing permit to use McGregor Range, grazing costs for McGregor Range were less in total.

The value of the grazing permit should be the factor that adjusts to maintain total grazing costs at the same level for different types of land (Barlett et al. 1993). Yet, the cost comparison made here would indicate that total grazing costs on BLM land were higher than on McGregor Range even if permit cost were zero or not considered.

The implied value of public land forage from comparing total grazing costs on McGregor Range with total costs on BLM land would be negative, because grazing costs were higher on BLM land even with no grazing fee and excluding permit investment cost. This same negative forage value was estimated by Bartlett et al. (1993) for USFS cattle and sheep producers, and for sheep producers grazing BLM lands. It was concluded that many public land ranchers have been willing to pay more in total to graze public lands than the apparent value implied from the private forage market. The total cost approach provides inconsistent results (Bartlett et al. 1993). The comparison of total grazing costs on McGregor Range with grazing costs on BLM lands made here supports this conclusion. Yet, it also highlights the importance of not comparing private lease rates with the federal grazing fee to imply value. Nonfee costs are substantially higher on public lands and accounting for this difference greatly alters the conclusions that will be reached.

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