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POSSESSORY INTERESTS:

IMPLICATIONS FOR DECISIONS CONCERNING GRAZING FEES

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Studies of the grazing fee problem by western universities and government agencies have focused on the economic and welfare implications of changes in grazing fee policy. Ignored in these studies are the problems of ethics and legal precedent. This paper examines (1) the theory and practice of handling real property and (2) legal precedent as they apply to the grazing fee problem.

In light of the findings of this paper, the joint announcement by Secretary of Agriculture Orville L. Freeman and Secretary of Interior Stewart L. Udall of their intention to raise fees over a ten year period is ill-advised. Their decision ignores both the welfare aspects of the problem discussed in other studies and the ethics aspects discussed in this paper.

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Secretary of Agriculture Orville L. Freeman and Secretary of Interior Stewart L. Udall recently announced their intention to begin increasing fees charged for grazing on national forests and public lands under their administration (USDA, USDI 1968).

The proposed action is a response to instructions contained in the Bureau of the Budget's Circular #A-25 of September, 1959 and in the Bureau of the Budget's Natural Resources User Charges Study issued in July, 1964. These documents direct that a fair market value be obtained for all services and resources provided through the establishment of a system of reasonable fee charges and that the users be afforded equitable treatment. Thus, two questions arise: (1) What is fair return to the government? and (2) What is equitable to the users?

The questions arise because ranchers grazing Federal lands have a possessory interest in these Federal lands. The concept of possessory interest is poorly understood by many who are directly concerned with public grazing lands. Yet, it is because of possessory interests that the problem of adjusting grazing fees arises at all. The concept of a possessory interest has important implications for decisions concerning grazing fees.

POSSESSORY INTEREST

A "possessory interest" is a special kind of "leasehold interest". Thus, to discuss possessory interests, it is first necessary to discuss leaseholds.

The subject of leasehold valuation is clarified by an understanding of the bundle of rights theory in real estate appraisal. Stated simply, when
When an individual or agency owns real property, the ownership embraces a great many rights such as the right to occupancy and use, the right to sell, the right to lease and other benefits of use associated with ownership. A property owner who leases his real estate transfers one of the rights in his bundle to the tenant, namely the right of occupancy and use.

When a lease has been executed, the bundle of rights becomes divided into two separate interests. These interests are referred to as (1) the "leased fee estate" or "feehold" and (2) the "leasehold estate" (AIREA, 1967).

A possessory interest is a leasehold interest where the leased fee interest is held by a government body (Goldman, 1951).

CONTRACT AND ECONOMIC RENT

As compensation for the temporary release of one of the rights or interests in the bundle, the lessor receives rent from the lessee. The rental received by the real estate owner under the lease or contract is known as "contract rent". The rental which real estate can command in the open market at any given time for its highest and best use is known as "economic rent". If real estate is leased at its fair or market rental value, contract rent and economic rent are the same.

For various reasons, as time elapses during the life of a lease, contract rent and economic rent tend to separate. If factors influencing real estate value since the lease was executed have been favorable, or if the contract rent was established on too low a basis, the current economic rent will generally exceed the contract rent. If the factors affecting value have been unfavorable, or if contract rent was established on too high a basis, contract rent may exceed current economic rent.

If contract and economic rent are the same, then the value of the leased
fee estate is essentially the same as the value of the property free of leases. If the contract rent is less than economic rent, then the value of the leased fee interest is less than the value of the property free of leases and the leasehold interest takes on the value of the difference between the leased fee value and full market value (free of leases).

VALUATION OF LEASED FEE INTEREST

The value of the leased fee interest consists of two parts: (1) the present value of the contract rental income stream for the life of the lease; and (2) the present value of the real estate which reverts to the lessor at expiration of the lease.

The contract rent for the term of the lease is income with the characteristics of an annuity. This income is capitalized with the use of a "present worth of one per period" factor (Inwood Coefficient Table, AIREA, 1967) at an appropriate capitalization rate for the remaining term of the lease. The capitalization or interest rate may be obtained by observing the sale of feeheuls in the market and observing the incomes associated with each leased fee estate.

The present worth of the property which reverts to the lessor at expiration of the lease is the value at reversion discounted by a "present worth of one" factor (value of reversion table, AIREA, 1967).

The sum of the two parts is the value of the leased fee interest. If the contract rent equals economic rent, the value of leased fee interest is equal to the value of the property free of leases (market value) and there is no leasehold interest.

VALUATION OF LEASEHOLD INTEREST

As previously stated, the sum of the "leased fee" and "leasehold"
values generally equals the value of the entire property free of leases. Thus, the leasehold interest can be estimated by subtracting the value of the leased fee interest from the entire property value (fair market value determined by the three standard approaches, AIREA, 1967). The leasehold interest may also be calculated independently as the difference between 'economic rent' and 'contract rent' capitalized for the term of the lease at the appropriate interest rate. Here again, the capitalization rate must be extracted from the market by an examination of leasehold sales and the income stream associated with each leasehold.

EVIDENCE THAT POSSESSORY INTERESTS EXIST

A valuable leasehold may arise under two conditions: (1) a difference between economic and contract rent; and/or (2) upon construction of improvements by the lessee on the feeholder's land. The lessee's interest (leasehold) in the property diminishes with time and becomes zero at lease termination.

The arguments that possessory interests exist in Federal grazing permits are convincing. Differences between economic rent and contract rent have arisen for a number of reasons with the result that economic rent is higher than the contract rent (Hooper, 1967). This difference between economic rent and contract rent leads to a leasehold or possessory interest. Also, many ranchers have constructed improvements on public lands, giving rise to a leasehold interest. The value of the Federal grazing permit is the value of the leasehold or possessory interest. The values of permits have been variously estimated to fall in the range from $10.00/AUM to $50.00/AUM (Gardner, 1959; Hooper, 1967; Nielsen and Roberts, 1968; Roberts, 1967; Roberts and Topham, 1965; USDA, 1967).
The California legislature has seen fit to pass legislation authorizing taxation of possessory interests on tax exempt lands (Goldman, 1951). However, practice in assessing possessory interests varies with size of the county and prevailing custom in the county. Large counties, defined in terms of industrial development, may seek out possessory interests, evaluate them, and proceed to place them on the tax rolls. Smaller mountain counties may often overlook possessory interests such as those of the owners of cabins constructed on federally leased land. In similar manner, large timber and grazing interests may escape taxation.

In 1967, the California State Board of Equilization affirmed the taxability of the possessory interest associated with the grazing of federal lands (Bean, 1967). Stockmen questioned whether the agreement for grazing use is a "license" or a "lease". If the contract vests in the permittee only a "license", no "property" interest would be held, and hence no tax. In Kaiser Company vs. Contra Costa County Tax Collector, J. M. Reid, the test whether an agreement for the use of real estate is a license or a lease is whether the contract gives "exclusive possession of the premises against all the world, including the owner", in which case it is a lease, or whether it merely confers a privilege to occupy under the owner, in which case it is a license. Thus, when exclusive use and possession is granted, it was held that this does constitute a possessory interest. Also, the court pointed out that Kaiser's interest was an interest for a period less than perpetuity, hence, an "estate for years".

In El Tejon Cattle Company vs. County of San Diego, it was held that El Tejon held a possessory interest even though they only held grazing rights and the fee owner (Vista Irrigation District) reserved the right to export water from the land, and other tenants had been granted the hunting and
other recreational concessions.

The possessory interest in connection with grazing consists of the control of a situation derived from public favor, which allows advantage not enjoyed by others. This advantage, as in the Kaiser case, is not transferrable. The court felt that the fact that it was nontransferrable did not remove Kaiser from the status of lessee, once more making sharp the delineation between the lease and the license.

The argument has been used that a taxation of a possessory interest would jeopardize the in-lieu-tax payments. This does not seem plausible because the in-lieu-tax payment is on the land itself and the possessory interest tax is not on the land but an interest in the property.

A feature of the Kaiser lease was a provision by which the federal government agreed to assume all taxes levied against Kaiser. The plea was made that such a clause put the ultimate tax burden on the United States, thus giving the state of California the authority to tax the federal government. This plea was rejected as not being included under Amendment XIV, Section 1, United States Constitution.

In a similar case, United States vs. Allegheny County, the United States Supreme Court held unconstitutional the right which Allegheny County assessor exercised in assessing machinery owned by the United States and leased to Mesta Company, for one dollar per year, on the basis of possessory interest. The court held violation of Amendment XIV. The assessor made a fundamental error by carrying the machinery on the tax rolls as machinery. He had assessed not a possessory interest, but the machinery itself. The county was found assessing property of the United States and not simply an interest in that property.

Recently, the California legislature passed legislation prohibiting
the State Board of Equalization from prescribing rules and regulations with respect to the assessment of any possessory interest (CCA, Aug. 1968). Two County Boards of Supervisors have also adopted resolutions setting the assessed value of the possessory interest in Federal lands in their counties at zero (CCA, Sept., 1968). These actions seemingly recognize the possessory interest and choose to have it not be subject to tax. However, the decision to not tax the interest does not negate the fact that a possessory interest exists.

**VALUATION OF POSSESSORY INTERESTS**

The valuation of feehold interests is based on the ability to extract capitalization rates from the market by examining sales prices and income streams of various properties subject to leases. In the case of possessory interests, although the income stream is known, the feehold (representing something less than market value of the land and being owned by a government body) almost never sells, so it is impossible to obtain a capitalization rate. Therefore, it is nearly impossible to estimate the value of the feehold interest and thereby the value of a possessory (leasehold) interest by subtracting the feehold value from the value of the property free of leases.

Capitalization at the appropriate interest rate of the difference between contract rent and economic rent remains as the only method available of valuing the possessory interest. Capitalization rates are obtained from the market by examining sales prices of the leaseholds (permit prices) and the income stream (difference between economic rent and contract rent) associated with the leaseholds. The difference between economic rent and contract rent for federal grazing lands has been variously estimated (Gardner, 1959; Roberts, 1967; Roberts and Topham, 1965). The difference has
also been estimated by the Statistical Reporting Service in a 1966 study. Unfortunately, there is no agreement on the term of the lease; i.e., the term over which the income should be capitalized and, thus, it is difficult to estimate the capitalization rate.

FOREST SERVICE AND BLM LEASES

In the case of Forest Service and Bureau of Land Management grazing leases, the lessor not only pays fee costs for the privilege of grazing Federal land, but also assumes some non-fee user costs (USDA, 1967). The sum of these fee and non-fee user costs is equal to contract rent.

Forest Service grazing permits are generally issued for ten year periods. BLM leases on Section 15 lands outside grazing districts are also on a ten year basis. BLM licenses or permits for (Taylor) grazing districts (Section 3 lands) are renewed annually.

Based on the permits, leaseholds (possessory interests) on Forest Service and Section 15 BLM lands would go to zero value in the year that the lease or permit expired (the value of the difference between contract rent and economic rent would be equal to zero). Section 3 BLM permits, because they are on an annual basis, should not give rise to leaseholds since there is no period over which to capitalize the difference between contract and economic rent.

There does not appear to be any empirical evidence that Forest Service or Section 15 BLM permits assume zero value in the year of expiration. Instead, the permit values seem to be rather stable. Section 3 BLM permits also seem to have a leasehold value even though there is no long term lease. The fact that the permits have a value different from what they should have on strict interpretation of the leases indicates that holders of the permits
have expectations of lease terms different than those stated in the leases. The Forest Service and BLM, by design or default, and whether they choose to recognize it or not, through a policy of continually renewing permits, licenses and leases, and not raising fees, have created possessory interests and have caused the expected term of the "permits" to be longer than the lease terms.

It is of interest to ascertain the terms of the leases as expected by leaseholders and also the expected capitalization rates such that equitable treatment can be extended to users in the event the leaseholds are terminated.

Roberts (1967), in surveying 635 public and private range situations, obtained information which can be subjected to analysis in a leasehold framework. Contract rent on Federal range was determined by an addition of fee and non-fee user costs (exclusive of interest on permit values). Economic rent and observed permit values (Table 1) were taken directly from Roberts' article. Contract rent was determined from Roberts' data by subtraction.

Dividing the difference between contract and economic rent (annual income) by the value of the permit (value of leasehold) gives the capitalization rate in perpetuity (Table 2, Column 7). Dividing the permit value by the annual income gives a factor (Inwood Coefficient) which can be used with a "present value of one per period" table to determine capitalization rates for lease terms less than into perpetuity (Table 2, Column 3). The capitalization rate decreases as the expected tenure of the lease diminishes.

**INTERPRETATION OF DATA**

Condemnation appraisal in real estate practice is based on obtaining estimates of value in the market. Compensation is based on market value or the highest price estimated in terms of money which a property will bring if exposed for sale in the open market, allowing a reasonable time to find a
purchaser who buys with knowledge of all uses to which it is adapted and for which it is capable of being used (AIREA, 1967). Various factors are operative to determine value and the capitalization rate. All these factors are reflected in market data estimates of value.

Expected capitalization rates (Table 2) indicate that: (1) either holders of permits expect low returns on their investments, or (2) very long lease tenure. Another possibility is that part of the leasehold is capitalized into base property rather than into the permit (Hooper, 1967). The amount (if any) of the leasehold capitalized into base property is impossible to estimate from the data in Roberts' study.

The expected returns also vary with the type of range. Permits for spring or fall desert range and for summer desert range are capitalized at a higher rate (Table 2) or have lower expected longevity than the permits for other types of range. This is a reflection of the fact that spring-fall range types are in areas where urban development is expected and where other types of land use competitive with livestock grazing is developing. Capitalization rates for winter desert and summer mountain permits are low or holders of permits expect that there will not be competing land uses to end their tenure in the immediate future. The capitalization rate for the summer desert permits is no doubt reflective of the fact that there are not many competing uses and also reflective of the fact that range scientists are finding that summer use is injurious to desert range and should be phased out.

**IMPLICATIONS FOR DECISION**

Any decision involving a change in grazing fees must insure a fair return to government and equitable treatment to users.
Fair Returns

The federal government, as an agency of the people, should do those things for society which they cannot do individually. Viewing the government in this light, it is not necessary for revenues to accrue to the federal Treasury. Primary and secondary benefits should be measured regardless of where they accrue (Hooper, 1968).

Bureau of the Budget Circular A-25 requires government agencies to charge fair market values for federally owned resources. That is, it requires federal agencies to receive economic rent. Though it is not necessary that revenues accrue directly to the U.S. Treasury in order to benefit society, one cannot argue against the effort of the agencies to charge economic rent except on the basis of the adverse welfare implications of charging economic rent. The welfare implications are summarized in Nielsen and Roberts (1968).

Compensation

The most important welfare effect of raising fees to economic rent is the loss of the leasehold (permit value) to livestock operators. For approximately ten years, Utah State University researchers (summarized in Hooper, 1967 and Nielsen and Roberts, 1968) have contended that permit values should be included in the cost of grazing public lands. Livestock operators also contend that permit values should be recognized. "A new grazing fee structure for livestock without the inclusion of each of the above 15 non-fee cost items would be unacceptable to the industry" (ANCA, 1967, underlining theirs).

A one step increase to full economic rent would eliminate the value of the permit. Some holders of permits have bought these permits, others have paid taxes and many have borrowed money on the permit values with the net
result that ranchers have considerable capital invested in permits. Raising the fee to full value would cause great capital loss. It has been argued that if fees are to be raised, this loss of leasehold should be compensated (Hooper, 1967; Nielsen and Roberts, 1968). Viewing the problem in terms of a leasehold interest, it is easy to justify compensation for the loss of an income stream for the life of the lease. The permit value is the capitalized value of the income stream (difference between economic and contract rent) for the life of the lease.

"The key issue in the grazing fee policy controversy is whether the federal government will recognize the permit value as a cost of doing business for the rancher" (Nielsen and Roberts, 1968). Various government bodies recognize the permit value. Ranchers have been paid the market value of their permits when reclamation projects have caused changes in land use. The Department of Defense has paid for permits ranchers lose when a military base has been established (see Osborne et al vs. United States in USDA, 1964), and the Internal Revenue Service has allowed the loss of grazing permits to be written off as capital losses (Nielsen and Roberts, 1968).

The Congress also recognized the possessory interest value in 85-868 (September 2, 1958) when it directed "The Secretary of the Interior shall compensate persons whose grazing permits, licenses or leases covering lands transferred to the Navajo Tribe pursuant to this section are cancelled because of such a transfer." In recognizing the permit value, the government agencies have, at least tacitly, recognized a possessory interest. Therefore, if the government agencies were to eliminate the leaseholds, it can be argued the ranchers should be compensated for the value of the permits. The argument is the same for the increases in fees over a ten year period proposed by the Secretaries of Agriculture and Interior. The net effect is the same;
the capital loss still occurs and compensation would be justified.

Of course, there is some precedent for not paying compensation. In *Buford vs. Houtz*, the Supreme Court said the privilege became "* * * an implied license growing out of a custom of nearly a hundred years * * *." Also, in *Light vs. United States*, the court said: "And so, without passing a statute, or taking any affirmative action on the subject, the United States suffered its public domain to be used for such purposes. There thus grew up a sort of implied license that these lands, thus left open, might be used so long as the government did not cancel its tacit consent. * * * Its failure to object, however, did not confer any vested right on the complaint, nor did it deprive the United States of the power of recalling any implied license under which the land had been used for private purposes."

Later, when the Congress authorized the creation of grazing districts, they said: "* * * but the creation of a grazing district or the issuance of a permit pursuant to the provisions (providing therefor) shall not create any right, title, interest, or estate in or to the lands."

When the public interest demands that the government take over "real property", the Constitution requires that just compensation be paid to the owner. But if largess is revoked in the public interest, the holder ordinarily receives no compensation.

From the above, it appears the law of "real property" largess has developed with little regard for procedure (a possessory interest is real property). The grant, denial, revocation and administration of government largess should be subject to scrupulous observance of fair procedures. Government should gain no power, as against constitutional limitations, by reason of its role as a dispenser of wealth (Reich, 1964).

Although there is precedent for not compensating permit holders for
the loss of their possessory interests, the real question becomes an ethical one: What is equitable to the users?

**Expected Tenure**

A characteristic of a leasehold interest is that the value goes to zero at the termination of the lease. Livestock operators have expressed a desire that leaseholds (permits) be capitalized at 6%. If this be the case, then the capitalization period would be 12 years for spring-fall and foothill range, and up to 100 years for other range types (Table 3). Capitalization rates of a magnitude less than 6% are more consistent with market estimates. In fact, large ranches seldom return more than 3-5%, small ranches return less than 3% and many times have negative rates. If purchasers and operators of livestock ranches operate with "overall capitalization rate" (AIREA, 1967) expectations of less than 5%, it is not unreasonable that they would also expect a similar rate on grazing leases, permits and licenses. Assuming a 2% capitalization rate and that the data are truly reflective of present market conditions, the expected tenures are from 8 to 27 years. That is, the holders of the permits expect them to be terminated and the leasehold to go to zero value in from 8 to 27 years, depending on the type of range.

**Equitable Treatment**

The implication for equitable treatment is that there need not be any compensation if the permits, licenses or leases are allowed to run until the expected termination date. If the permits, licenses or leases are terminated before the expected expiration date, the permit holder should be compensated for his interest for the remaining part of the expected life.

Through careful identification and analysis of comparables by experienced fee appraisers, economists and government personnel, expected tenures and capitalization rates can be determined. With this information, the leasehold
can be terminated at the expiration of the estimated expected tenure.

THE PRESENT PROPOSAL

The proposal put forth in the joint announcement by Secretary Freeman and Secretary Udall does not solve the problem of compensation, it only masks the problem.

Permit holders have tenure expectations possibly as low as eight years, but probably longer (Table 3). The permit value is the present value of the difference between contract rent and economic rent for the expected tenure of the permit (Figure 1). The announcement by the Secretaries sets a ten year amortization period. Even without the proposed increases, the recognition of only a ten year tenure causes an immediate capital loss on all permits with expected tenures of more than ten years. The effect is to reduce the value of the leasehold by shortening the life of the lease (Figure 1). This value loss should be compensated.

Assuming a ten year permit tenure (either the true expected tenure or that caused by a reduction of a longer expected tenure), the permit holder, under the proposal, is being told his leasehold will have zero value at lease termination. In addition, however, the rancher is being told that he must pay increased fees over a ten year period.

At the beginning of the ten year period, the rancher has the expectation of receiving an income stream (difference between contract and economic rent) for the terms of the lease (ten years) which is equal to the full market value of the permit. At the end of the first of the ten years, the leasehold is the value of the income stream for nine years. The rancher has lost approximately one-tenth of the original income stream. But in the meantime, the rancher has been asked to pay approximately one-tenth more fees for the
remainder of the lease. At the end of the second year, the expected income stream is for eight years and the fee is still higher. The net effect is that the expected income stream is reduced by about one-half (Figure 2). The expected permit value is reduced by the amount of the reduction in the income stream. This loss in permit value should be compensated. Thus, the proposal by the Secretaries does not handle adequately the problem of compensation because it does not recognize the concept of a possessory interest.

Furthermore, the formula for setting fees does not make adequate provision for changes in non-fee user costs. If non-fee user costs should fall, this would again give rise to a possessory interest and a "permit value". If non-fee user costs should rise, this would establish a "negative" leasehold to the disadvantage of the users. Also, the government, through this proposal, has implied that the expected lease life (tenure) is ten years. The data (Roberts, 1967) indicate "the market" has somewhat different expectations (Table 3).

CONCLUSIONS

It is difficult to argue with the attempt by the government agencies to obtain fair value (economic rent) for the use of the public grazing resource except in terms of the welfare implications. However, the magnitude of the welfare implications of fee increases is large and should be examined. It is easy to argue with the ethics of the proposed method of achieving fair value.

The evidence that possessory interests do exist in connection with Federal grazing permits is convincing. Even though the Forest Service and BLM choose not to recognize leaseholds, a possessory interest or real property, largess does exist. When the concept of possessory interest is
recognized, it becomes readily apparent that the present proposal is (1) in conflict with accepted theory and practice in treating real property and (2) in conflict with legal precedent. The proposal to increase fees over a ten year period only masks the problem of compensation, but does not adequately handle it. The proposal appears to be ill-directed and ill-advised.

Through recognition of a possessory interest and by letting the expected leasehold tenure expire, the Federal agencies may receive full value for the grazing resource while treating the users equitably.

\[\begin{array}{cccc}
4. & Summer rotation & 2.50 & 4.03 & 1.18 & 10.81 \\
5. & Year-long interest & 9.75 & & & 53.17 \\
6. & Other & 3.00 & & & 11.00 \\
\hline
FS Cattle \\
7. & Summer rotation & 3.00 & 1.75 & 0.75 & 20.12 \\
FS Sheep \\
8. & Summer rotation & 5.00 & 0.25 & 1.25 & 26.45 \\
\hline
\end{array}\]

1 Obtained by subtracting (5.25 - .01). Original data: Table 1, Columns 4 and 5, Roberts, 1967.
Table 1. Contract rents, economic rents and permit values on Forest Service and BLM grazing lands in dollars (adapted from Roberts, 1967).

<table>
<thead>
<tr>
<th></th>
<th>Contract rent</th>
<th>Economic rent</th>
<th>Difference Column 1 &amp; Column 2</th>
<th>Permit values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BLM Cattle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Winter desert</td>
<td>2.53</td>
<td>3.37</td>
<td>0.84</td>
<td>12.08</td>
</tr>
<tr>
<td>2. Spring-fall desert</td>
<td>2.28</td>
<td>3.40</td>
<td>1.12</td>
<td>8.52</td>
</tr>
<tr>
<td>3. Summer foothill</td>
<td>2.25</td>
<td></td>
<td></td>
<td>13.51</td>
</tr>
<tr>
<td>4. Summer desert</td>
<td>2.64</td>
<td>4.03</td>
<td>1.39</td>
<td>10.61</td>
</tr>
<tr>
<td>5. Year-long desert</td>
<td>3.25</td>
<td></td>
<td></td>
<td>23.32</td>
</tr>
<tr>
<td><strong>BLM Sheep</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>3.50</td>
<td></td>
<td></td>
<td>11.75</td>
</tr>
<tr>
<td><strong>FS Cattle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Summer mountain</td>
<td>3.05</td>
<td>4.79</td>
<td>1.74</td>
<td>20.13</td>
</tr>
<tr>
<td><strong>FS Sheep</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Summer mountain</td>
<td>5.00</td>
<td>6.25</td>
<td>1.25</td>
<td>26.15</td>
</tr>
</tbody>
</table>

\[1/\] Obtained by subtracting (3.25 - .72). Original data Table 1, Columns 3 and 8, Roberts, 1967.
Table 2. Capitalization rates (in percent) for leaseholds for different expected lease terms of Forest Service and BLM grazing permits.

<table>
<thead>
<tr>
<th>Type of Difference</th>
<th>Factor 1/</th>
<th>Permit (P.W. of one/period) (dollars)</th>
<th>Capitalization Rates 2/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit from Table 1</td>
<td>from Table 1</td>
<td>10 yr.</td>
<td>20 yr.</td>
</tr>
<tr>
<td>1</td>
<td>0.84 x 14.381 = 12.08</td>
<td>1.0</td>
<td>3.0+</td>
</tr>
<tr>
<td>2</td>
<td>1.12 x 7.607 = 8.52</td>
<td>5.0+</td>
<td>11.0+</td>
</tr>
<tr>
<td>4</td>
<td>1.39 x 7.633 = 10.61</td>
<td>5.0-</td>
<td>11.0-</td>
</tr>
<tr>
<td>7</td>
<td>1.74 x 11.580 = 20.15</td>
<td>1.0</td>
<td>5.0+</td>
</tr>
<tr>
<td>8</td>
<td>1.25 x 20.920 = 26.15</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

1/ The factor is obtained by dividing Column 4 by Column 2. Thus, 12.08 ÷ 0.84 = 14.381.

2/ Obtained from P.W. of one/period table using PW factor for appropriate number of years (sometimes called the Internal Rate of Return).
Table 3. Expected lease terms in years at different capitalization rates for Forest Service and BLM grazing permits.

<table>
<thead>
<tr>
<th>Type of Permit from Table 1</th>
<th>Factor from Table 2</th>
<th>Capitalization Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
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<td>7</td>
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<tr>
<td>8</td>
<td>20.92</td>
<td>27</td>
</tr>
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</table>
Value of leasehold = present value of income stream for the life of the lease.

Figure 1. Representation of leasehold valuation before the proposed increases in grazing fees.

Value of leasehold = present value of income stream for the life of the lease.

Figure 2. Representation of leasehold valuation with the proposed increases in grazing fees over a ten year period.
LITERATURE CITED


