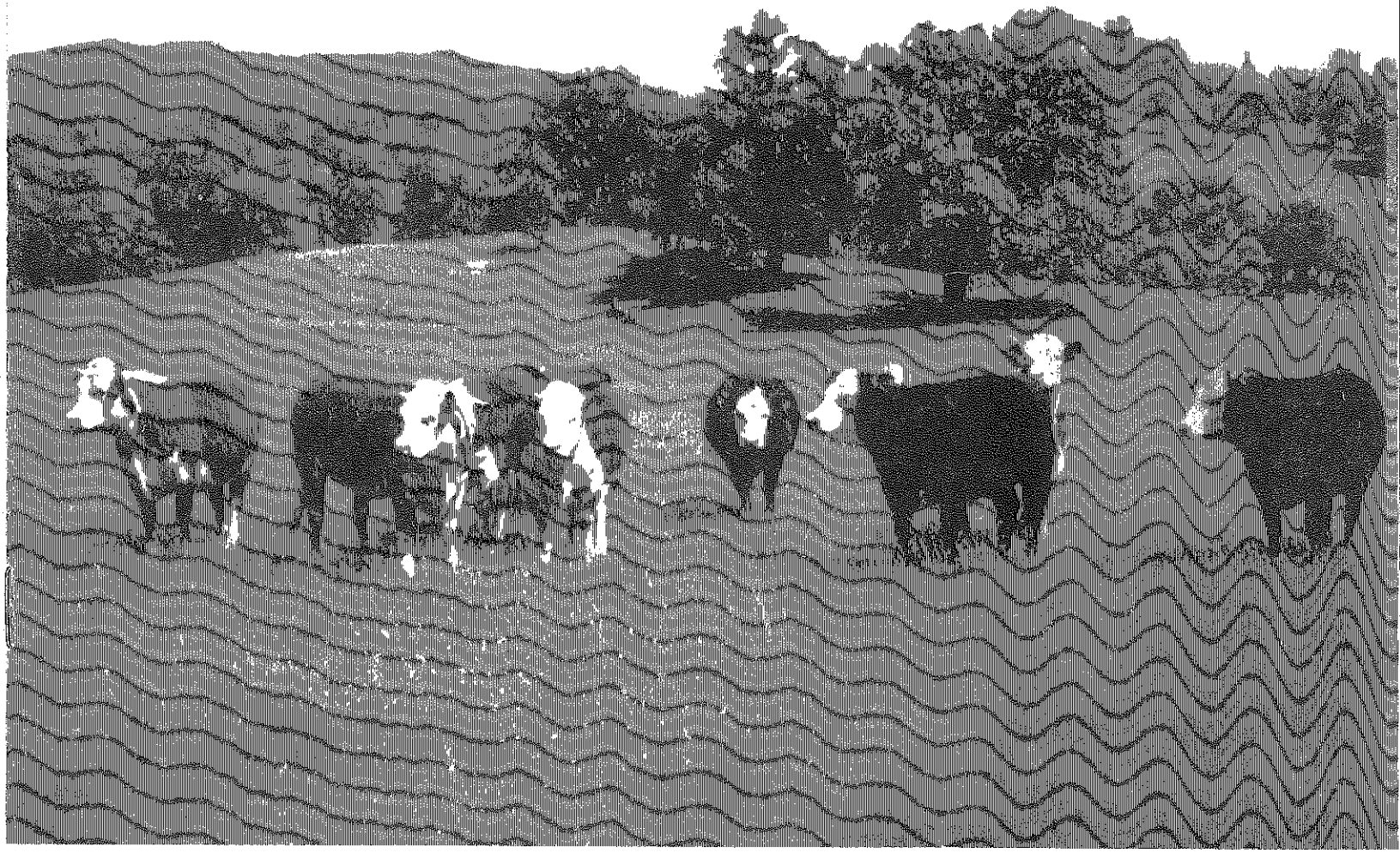
Developing Livestock Leases for Annual Grasslands



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DEVELOPING LIVESTOCK LEASES FOR ANNUAL GRASSLANDS

Many people in California are in a position to lease annual rangeland for grazing, but have little or no experience. This leaflet serves as a general outline for developing livestock grazing leases. Each lease will have to be tailored to the individual case. The recommendations in this leaflet are based on good grassland management, and should help the lessor and lessee develop leases that satisfy their individual situation. Both parties should have a clear understanding of the lease before a final agreement. In all cases the lease should be a written document to prevent misunderstandings and unnecessary legal fees at a later date. Avoid verbal agreements. Seek proper legal advice recommended when developing an initial agreement, because leases are contractual agreements.

Rental rates are of major interest in the process of developing lease agreements, and are covered at the start of this leaflet. Discussion of key items to be included in a lease follow, with a section on important range management considerations at the end. Refer to the range management considerations section for explanation of terms and approaches when reading the first two sections.

Additional assistance

This leaflet is limited to basic considerations for developing range lease agreements, and does not cover topics in depth. There are numerous sources of assistance available to provide needed information. The widest array of information on all aspects of range and livestock production is available through the University of California Cooperative Extension office (located in most counties throughout California). Local Soil Conservation Service offices can also provide much of the information relating to forage productivity, range management practices, and development of ranch management plans. Contact agricultural lenders, farm management consultants, veterinarians, livestock sales yards, real estate brokers, or high school vocational agricultural instructors for other sources of local assistance.

Determining Range Rental Rates

Productivity based

Rental rates on any agricultural property, including rangeland, are based on a price paid for the use of that property for agricultural production. Rates are determined by forces of supply and demand, and not on other factors influencing land values such as potential development. The productive value of rangeland is its ability to produce forage for use by grazing livestock. Range rental rates are then influenced by the relative profitability of the livestock industry, the supply and cost of alternative sources of feed, the feed producing capacity of the parcel in question, the demand for forage, and conditions of the lease agreement.

The following are three possible ways to estimate the productive value of range as a basis for establishing rental rates: (1) the market value what others are charging for land of similar quality, (2) an anticipated income approach by analyzing expected costs and returns, and (3) the cost of alternative feeds.

Market approach

The market value approach means finding out the local rental values for similar types of rangeland. Most often general figures or a range of values are available (see Additional Assistance). Such information will need to be modified for each situation. Specific or single rental values fit a specific set of conditions, and if identical to your needs, then use, otherwise modify.

Anticipated income approach

Expected returns of both the lessor and lessee are the basis for using the income approach. From the landowner's standpoint, the costs associated with the land are a start. As a minimum, the lessor might want to cover the property taxes. The lessee will need to be assured of a reasonable economic return on the livestock, given expected price and production conditions. Both situations suggest the development of cost and return budgets for the land and livestock enterprises. Cooperative Extension farm advisors can provide assistance with developing budgets and cost sheets.

Alternative feed approach

Estimate the range forage value on the site to be leased by comparing it to an alternative feed source, such as good quality grass hay (pasture, sudan, oat hays). Both feed sources have similar nutritive value. Do not compare the forage to good quality alfalfa hay, which is more nutritious. A range forage quality factor is used to adjust to four representative types of grasslands to provide a forage value per acre. To estimate the value of range forage for one animal per month, the weight of the livestock in thousands of pounds is added to the formula. The portion of the field or pasture that cannot be grazed because of heavy brush or trees, steep slopes, or solid rock should be deducted from the total acreage. In other words, the formulas work for areas that have a good cover of grass and other forage plants.

Range quality forage factors:

- .22 = Improved grasslands—seeded/fertilized
- .20 = High producing grasslands—deep soils, swales
- .15 = Typical annual grasslands
- .10 = Low producing grasslands—shallow soils, steep slopes, rocky

Range forage value formulas:

Per acre

Price of good grass hay (per ton)	X	Range Quality Factor	=	Range Forage Value (per acre)

Per head per month

Average weight (1,000 lb) during grazing season	X	Price of good grass hay (per ton)	X	Range Quality Factor	=	Range Forage Value (per head per month)

Examples:

(1) Assume: $50 hay, typical grassland
$50 X .15 = $7.50 per acre

(2) Assume: $50 hay, high producing grassland
$50 X .20 = $10.00 per acre

(3) Assume: 1,200 lb cow, $60 hay, low producing grasslands
1.2 X $60 X .10 = $7.20 per cow per month

(4) Assume: 650 lb steer, $60 hay, improved grassland
0.65 X $60 X .22 = $8.58 per steer per month

Setting the final rental rate

After establishing a forage or base rental value, additional items need to be considered before the final rental rate and method can be settled. Along with the lease conditions (see page 3), the most important items to be settled are the type and weights of livestock, numbers of animals (stocking rate) and time of grazing. The lessor can now set the rental rate either after negotiation with a lessee or after determining amount of income needed from the land.

Method of Rental

Among the many methods of charging rental, the following provide examples of ones more commonly used. Local tradition often influences which methods find their way into use. The method chosen should best fit the needs of the parties involved.

Per acre charges vary with the productivity of the range and lease conditions (see alternative feed value). This method is recommended for use with smaller land parcels and simple leases. The number and type of livestock, plus time of use, will need to be established to prevent abuse. The lessor receives the same return per year based on an average production, and the lessee assumes the risk of fluctuations in the annual forage production.

Per whole tract refers to renting a block of land or ranch for one fee. This is normally used when leasing an entire ranch for a period of years or when a mixture of land types are leased together (range, cropland, pasture, forest).

Per head charges for a month or season varies with the type of livestock being grazed—cows and calves, stocker cattle, replacement heifers, sheep, horses, (also see alternative feed value). In this case the lessor takes some of the risk of annual forage production changes, but has a more direct control of stocking rates. This method is also suitable for smaller parcels.

Per animal unit month (AUM) charges provide flexibility in allowing for different types of livestock and seasons of use without being specific in the lease. A field rated at 100 AUMs could support 10 cows for 10 months, 50 cows for 2 months or 125 sheep for 4 months. This method uses the AUM as a common denominator defined as the amount of forage required by a mature cow (and calf) for one month and has a set of equivalents for other types of animals. The AUM is frequently used when describing stocking rates in soil surveys and other rangeland analysis. This method is used by governmental agencies and organizations with professional range managers. For conservative estimates and ease of calculations, an AUM = 1,000 pounds of range forage and animal unit equivalents as follows:

Animal	Weight	AUM equivalent
Mature cow	1,000	1.0
Bred heifer	750	0.75
Yearling steer or heifer	500	0.5
Horse	1,200	1.2
Sheep	200	0.2

Share of gain applies to seasonally grazed, weight-gaining animals such as stocker cattle, replacement heifers, and lambs. These charges may consist of a preestablished charge per pound of gain (i.e., $.25) or a share of the total weight gain (40-60%) for the grazing period. Animals are weighed before and after grazing with the difference being weight gain. Renting on this basis is relatively simple, providing the correct stocking rate is used.

Example: Steers grazing from October to May

final weight and price (May)	—700 lb @ $.60 =	$420
initial weight and price (April)	—450 lb @ $.64 =	$288
		$132

50% of gain = $66 per head per season

Variable leases have two parts: a base rate, which is fixed for the term of the lease, and a variable rate that is modified each year by a livestock price index. Variable lease allows the rental rate to go up or down as the price of livestock varies and reflects the livestock income more realistically. Use the price of livestock at a nearby sale or use information from market reports supplied by the California Department of Food and Agriculture's Agricultural Marketing Service as a basis for a price index. The index can be developed using a long-term average for a set month compared with the previous year or current price. One could use the price of steer calves, yearling steers, or lambs in May, or an average beef cattle price for the index.

Example: A base rental of $11 per acre, a 10-year steer calf average value of $.68 per lb, a May 1986 value of $.65

$$\$11 \times \frac{\$.65}{\$.68} = \$10.52 \quad \text{adjusted rate}$$

Lease Agreement Conditions

Leases may be as complex or as simple as needed to fit the situation. While many circumstances may need to be covered in an agreement, the following provides ideas on key points to be included.

General terms of the lease

A lease must include the names of the involved parties; description of the location; number of acres involved; type, number, and weights of livestock; type of lease—continuing, annual, or seasonal; starting and ending dates; method of payment; and such legal terms as necessary (reviews, amendments, transfer of property, right of entry, etc.).

Length of lease

Long-term leases are usually contracted for a minimum of 3 to 5 years and can be advantageous to both parties. However, long-term leases impart a certain degree of inflexibility to both parties. Quick changes in economic conditions may be hard on lessor or lessee locked into a high- or low-lease price. The advantage to the lessor is economic incentive for the lease to practice good range management that, in the long run, will provide a maximum sustained rental income and protection to the forage resource. The advantage to the lessee is opportunity to focus on long-range management rather than short-term financial problems.

Short-term leases are usually contracted for a period of 1 to 3 years. The advantage of a short-term lease is it allows the lessor or lessee to terminate the lease quickly if the situation is not suitable. However, the disadvantage is that the lease provides little, if any, incentive to maintain or improve the facilities and forage.

Landowner services

Landowner services vary from no more than collecting the rent to taking complete care of the stock during the grazing period. Common charges for services, if not a part of the lease agreement (counting, checking health and water, providing salt, minerals and maintaining fences), is 10 percent of gross rent for beef cattle.

Water

Good quality water in proper locations improves performance of livestock and use of grasslands. When water supplies dry, provisions must be made to supply water or move livestock. Questions regarding water availability, or lack of water, should be spelled out in the agreement.

Reasonable use

Maintaining the productivity of the grassland resources are important considerations in grazing leases. Moderate levels of residual dry matter (RDM) provide a reasonable measurement of good grazing management (see page 4). Statements of grazing levels acceptable to the lessor, and under what considerations RDM levels can be exceeded should be included in the lease.

Special clauses

Each lease should contain a means to modify the terms to handle emergency situations—fire, drought, flood. There should also be a way to change or terminate the lease when both parties agree. Restrictions such as hunting or fishing privileges and tree cutting and selling should be stated in the lease.

Supplemental feeding

Supplemental feeding should be allowed and encouraged in the late summer, fall, and often into the winter. Hay or commercial supplements provide nutrients that are deficient

and replace forage when lacking. Under year-long leases, adequate supplemental feeding may amount to 1 to 2 AUMs per head. Care should be taken to move the feeding site each year if at all possible. Moving the feeding site reduces localized heavy grazing and trampling. The lessee pays for the feed.

Diseases and death losses

The lessee should provide a certification of no disease and proof of brucellosis vaccination. The lessee will be responsible for death losses. The lessor and lessee should decide who assumes losses due to predation.

Weighing conditions

Proper weighing, working, and loading facilities should be provided by the lessor, especially when rent is based on weight gain. The conditions of weighing should be spelled out in the agreement.

Maintenance and improvements

It is essential to provide for maintenance of facilities in a lease so that these structures do not deteriorate at a faster than normal rate, and the range, soil, and water are not degraded. Likewise, if forage improvements are needed or desired, they can be incorporated into the lease agreement as a part of the fee or a condition of lease renewal. Provisions for maintenance and improvements can be worked into a lease so that they benefit both the landlord and lessee. The more assured a rancher is of renewal, the more incentive he or she has to pay attention to long-term productivity of the land and upkeep of facilities. Under a long-term (3 to 5 years minimum) lease the lessee may assume the major responsibility for maintenance and repair on all buildings, interior fences, gates, corrals, and water facilities to the satisfaction of the lessor. For short-term leases the lessor may assume major maintenance responsibilities. Similar conditions can be made for improvements. Some improvements can be considered maintenance, including weed and poisonous plant control, cross fencing, and minor water developments, while others such as reseeding and fertilization require greater capital investment and could be shared by both parties.

Range Management Considerations

The following brief explanations of key range management concepts are intended to provide background for designing a lease suitable for the annual-type grassland forage that is associated with the western slopes of the Sierra Nevada mountains, the nonfarmed areas of the central valleys, and the coastal mountains and valleys of California. The inventory sets the stage for the lease by describing the available site. An estimate of the number of animals that can be grazed is a key part of determining the worth of the land for livestock production. Protecting the land from abuse, or the end point of grazing, is the role of grazing-use guidelines, which can be considered a monitoring method. Livestock control and distribution are important to adequate livestock production and resource protection. Resource assistance mentioned at the beginning of this leaflet can provide additional information.

Inventory

The first step in setting up a lease is to evaluate the forage, water, and physical facilities present on the land. Evaluate only those facilities necessary for a livestock grazing operation such as fences, corrals, and barns. The productivity of forage and the availability and distribution of water will determine the number of stock that can be run (stocking rate). Additionally, at the time of the inventory it will be beneficial to note deficiencies that need to be corrected and opportunities for improvement that would increase production. To do this deficiency and improvement analysis, the landowner needs to have an understanding of the productive capacity of the range and maintenance and improvement practices, or have access to people with this information (see Additional Assistance, page 1).

Seasonal characteristics of forage

Forage quantity and quality changes through the year (fig. 1). Germination occurs following the first fall rains. The new growth is very palatable, but has such a high water content that it may not supply enough energy or protein to meet livestock growth or maintenance requirements. This is the inadequate green forage period. Growth is slow through most of this period due to cold temperatures and fluctuating precipitation.

Rapid growth occurs in the 3 to 4 month spring season when there is plenty of moisture and temperatures are warmer. During this period, called the adequate green forage period, forage on even unimproved dryland pasture and range meets or exceeds livestock requirements for maintenance and growth.

A dry period begins in late spring and early summer when forage dries. The protein and sometimes the energy content of forage drops below livestock maintenance requirements during this period.

Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Inadequate green					Adequate green				Dry		
Rainfall			+/–			+			–		
Temperature			+/–			+			+		
Protein			–			+			–		
Energy			–			+			+/–		

\+ Adequate for plant growth or meeting animal requirements.
– Inadequate for plant growth or meeting animal requirements.

Figure 1. Seasonal changes in plant growth conditions and nutrient content of forage.

Estimating number of animals

Historical use. There are several methods of determining the number of animals that can safely graze an area. The least costly and easiest to use are historical livestock numbers and time of use. This assumes that the numbers of livestock run in the past on the land (or on a similar piece of land), with acceptable levels of use, are good estimates of the grazing capacity.

Ranchers who have been on their land many years have a "feel" for the number of cattle or sheep that can graze an area. Obtaining information from ranchers or other knowledgeable people is the best starting point in estimating livestock production capacity of a management unit.

Average Forage Production. This can be found in soil surveys, soil–vegetation surveys, and Soil Conservation Service ecological site descriptions, or determined by field clippings of vegetation. Annual and seasonal fluctuations in pounds of forage produced per acre and the quality of that forage make it difficult to predict numbers of livestock suitable for a management unit. Yearly variation in forage production may vary twofold to fourfold, but the estimate of grazing capacity is usually stated as an average over years.

After establishing an initial stocking rate, intensive management requires close monitoring of forage use throughout the grazing season. This will influence decisions to reduce stocking rates or feed supplements when forage is short or to increase stocking rates if surplus feed is available. At the conclusion of the grazing season, if the grazing use is too much or too little, then adjustments should be made the next season.

Grazing use guidelines

Grazing use can be measured by the amount of residual dry matter (RDM) that remains at the end of the grazing season or just before germinating fall rains. Residual dry matter is critical in creating the optimum microenvironment necessary for good fall germination and growth of annual plants. Included in RDM are standing dead plants and litter from these plants; however, RDM *does not include* biomass from summer annual forbs, woody plants, or dung even though this additional residue is important in erosion-prevention management.

Amounts of RDM per acre required for proper management vary according to topography, precipitation, soil, and livestock use. In general, steeper wetter slopes require more RDM than gentle dry areas. For most management situations, visual appraisals of RDM are adequate. Research and experience have shown that "moderate" levels of residue are a reasonable management target. Areas of low and high residue should be noted and the livestock control modified to use the high RDM areas more and the low RDM areas less. Moderate RDM is described as leaving an average of 2 inches of unused plant material, a patchy appearance, and little bare soil with small objects hidden at a distance of 20 feet or more. Photo standards and more detail on RDM guidelines are found in *Guidelines for Residue Management On Annual Range,* Leaflet 21327, available from UC Division of Agriculture and Natural Resources. Additional dry forage, above the RDM standard, may be intentionally carried over to meet a variety of management objectives to (1) provide early season forage during the early green-growth period, (2) serve as a buffer against drought, and (3) meet aesthetic, wildlife, or other resource needs.

Livestock control and distribution

Control of livestock and even distribution of grazing are not of critical concern in small pasture situations. As the size of the field increases and as more types of rangelands are included, management practices become more important. Fencing, water developments, and feeding and salting locations are methods that are employed to provide a desired grazing management scheme.