



*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

11201.7  
1984  
p. 4

# Characteristics of Sheep Production in the Western United States

Kerry Gee  
Richard Magleby

NREO

UNITED STATES DEPARTMENT OF AGRICULTURE • ECONOMIC RESEARCH SERVICE  
AGRICULTURAL ECONOMIC REPORT NO. 345



## ABSTRACT

About 80 percent of the sheep in the United States are raised in the western United States where extensive private and public ranges provide the bulk of the feed requirement. Only about 41 percent of the West's sheep producers have commercial scale operations of 50 head or more sheep, but they own nearly 93 percent of the region's sheep. About one-third of these commercial producers have specialized in sheep while two-thirds have diversified livestock operations. More than two-thirds operate as sole proprietors, while the rest have formed partnerships and family corporations. Many have substantial equity positions, which indicate past profitability. About one-fifth will likely be retiring in the next 10 years, which could result in many operations going out of sheep production. About half of the feed requirement for commercial sheep comes from private range, while public range supplies about one-fifth. Over half of the commercial sheep are grazed under the care of herders, usually on open (unfenced) range. Most lambing occurs in late winter and early spring. More commercial producers practice shed-lambing than range-lambing, but the number of sheep involved is less. The principal marketing problem is the few numbers of buyers bidding on lambs.

Key Words: Sheep, Sheep Producers, Western United States.

## ACKNOWLEDGMENTS

This report is the joint effort of the Natural Resource Economics Division and Commodity Economics Division, Economic Research Service. The authors give their thanks to Warren Bailey and other reviewers who provided many helpful suggestions.

## CONTENTS

|  | <u>Page</u> |
|--|-------------|
| Foreword . . . . .   | ii          |
| Definitions . . . . .  | ii          |
| Highlights . . . . .   | iii         |
| Introduction . . . . .   | 1           |
| General Characteristics of Western Sheep Production . . . . .        | 2           |
| Cash Receipts from Sheep, Lamb, and Wool . . . . .                   | 2           |
| Numbers of Sheep and Producers . . . . .                             | 4           |
| Importance of Commercial Scale Operations . . . . .                  | 7           |
| Characteristics of Commercial Sheep Production in the West . . . . . | 9           |
| Production Subregions Within the West . . . . .                      | 9           |
| Subregional Differences in Size of Operations . . . . .              | 10          |
| Age Distribution of Producers . . . . .                              | 11          |
| Form of Ownership . . . . .  | 12          |
| Producers' Equity Position . . . . .                                 | 13          |
| Specialized versus Diversified Enterprises . . . . .                 | 13          |
| Sources of Income . . . . .  | 14          |
| Annual Feed Sources . . . . .  | 14          |
| Use and Importance of Federal Range . . . . .                        | 15          |
| Trends in Use of Federal Range . . . . .                             | 16          |
| Open Range versus Fenced Pasture Grazing . . . . .                   | 17          |
| Use of Hired Sheep Herders . . . . .                                 | 18          |
| Movement of Sheep Between Grazing Areas . . . . .                    | 19          |
| Lambing Season and Method . . . . .                                  | 20          |
| Lamb Marketing Practices . . . . .                                   | 21          |
| Wool Marketing Practices . . . . .                                   | 22          |
| Appendix Tables . . . . .  | 23          |

## FOREWORD

This is the first of a series of reports to be published on various aspects of the western sheep producing industry. This report provides data on the current structural characteristics and operational practices of the industry. The other studies relate to reasons for the decline of sheep production in the West, the extent of sheep and lamb losses to predators and other causes, and costs and returns of western sheep producers.

These studies were undertaken to provide a current perspective of the western sheep producing industry and to determine reasons for its decline. Also, the studies provided basic data for input into an evaluation of the economic, environmental, and social benefits and costs of present and alternative policies for predator control. Reports on the evaluation itself will also be published.

These studies by the U.S. Department of Agriculture, Economic Research Service, in cooperation with State universities, were made at the direct request of Senator Gale McGee (Wyoming) and other western Congressmen. Special appropriations by Congress in fiscal years 1974 and 1975 funded the studies.

## DEFINITIONS

Stock sheep: sheep and older lambs which make up the basic breeding herd of each producer. Excludes sheep and lambs on feed and new crop lambs (those recently born).

Ewes: female sheep 1 year old and over.

Lambs docked: lambs which have been marked, branded, or docked (tails cut off or castrated).

Sheep farms or sheep operations: farms or ranches which have one or more head of sheep or lambs.

Sheep producer: the owner or operator of a farm or ranch with one or more sheep. A partnership or corporation is considered a single producer.

Commercial sheep producers: all sheep producers with 50 or more head of stock sheep, without regard to whether or not the sheep are registered or pedigreed.

Commercial sheep or ewes: all sheep or ewes owned by commercial sheep producers, including registered and pedigreed sheep.

## HIGHLIGHTS

About 80 percent of the sheep in the United States are raised in the 17 most western of the 48 contiguous States. In this region, extensive private and public ranges provide much of the feed for these sheep. Some of these ranges are better suited for grazing sheep than cattle. Sheep graze more readily on shrubs and brush, whereas cattle prefer the more palatable grasses and forbs. Also, sheep have less need for constant access to water than cattle and have more ability to traverse rough and steep terrain.

Sheep are raised on a small scale by many producers in the western States, but the bulk of the sheep are on large-scale operations. Of some 51,000 western farmers and ranchers with sheep, only 21,000 or 41 percent have commercial operations of 50 or more stock sheep. However, these commercial sheep producers (defined in this report as those with 50 or more stock sheep) own nearly 93 percent of all stock sheep in the region. Large-scale producers with 1,000 or more head make up only about 6 percent of the total sheep producers, but account for 63 percent of the region's stock sheep.

Two special sample surveys were undertaken to gather data on the status and characteristics of western commercial sheep operations. Principal findings and implications are:

1. About one-fifth of the current commercial sheep producers in the West are 60 years old and over. Many will retire in the next few years. Thus, a further decline in numbers of producers and sheep could occur unless there are more incentives than in the past to encourage family members or others to continue or take over the sheep operation. Lamb prices improved in 1975-76, which could provide some encouragement if not offset by other factors such as higher costs, shortage of good labor, and depredation.

2. Average equity positions of commercial sheep producers are good, suggesting that, in general, there is a history of profits. However, increased land values could also be a factor. Even so, a year or two of unprofitable operations would cause many producers, particularly the older ones, to become concerned about reduced retirement equity, and could cause some to shift to other enterprises or sell out.

3. Over two-thirds of commercial sheep operations are joint enterprises with cattle or goats. Some, particularly the smaller operations, also have crop income. Such diversification can reduce risk, permit better range utilization, and provide some flexibility to shift from sheep to other livestock or crops in line with changing prices, costs, labor availability, and predatory animal problems.

4. Federal ranges are sources of feed at some time during the year for about one-fifth of the West's commercial producers and one-half of all commercial sheep. Overall, these producers and their sheep depend on Federal range for about one-third of their annual feed requirement. Among some of the largest producers, this dependence reaches one-half or more. Many of these producers

would have few feasible alternative sources for this feed supply, and would have to curtail or terminate sheep operations if Federal range were to become unavailable or unprofitable to use because of high grazing fees, high losses to predators, or other reasons.

5. Sheep placed on Federal ranges (about one-half of all commercial sheep) are nearly all open-grazed (grazed on unfenced range) under the care of herders. In addition, about another 10 percent of the commercial sheep are open-grazed on private range, also requiring herders. Thus, lack of good herders or the financial capacity to pay wages which attract herders either results in curtailment of sheep placed on open ranges or higher sheep/herder ratios and increased animal losses. For most of these extensive ranges, fencing is not practical nor economically feasible.

6. Open pasture and range lambing is practiced by about one-half of all commercial producers, principally the larger ones, and involves nearly two-thirds of the ewes. This practice, in comparison with shed lambing, requires less facilities, labor, and other expenses, but usually results in higher lamb and ewe losses. For many large sheep operations, particularly migratory ones, shed lambing is simply not practical. For others, the cost and labor requirements are such that many would leave the business rather than make the investment.

7. Because of long distances between seasonal feed supplies, sometimes reaching several hundred miles, nearly 60 percent of all sheep on commercial operations must be moved either by truck or by trailing (driving) in herds. Currently, about one-half of the sheep moved are transported wholly or in part by truck, while the remainder are trailed. Although trailing was at one time the only method used, this practice has been declining due to increased traffic on roads, controlled access highways, greater distances moved, less open land with feed across which to trail, restrictions on use of popular driveways, and the overall convenience of truck transportation. Recent increases in transportation costs likely are causing some ranchers to reconsider trailing.

8. Lambs are marketed primarily through packer buyers and order buyers, while wool moves primarily through wool dealers and wool pools. The principal marketing problem is the few numbers of buyers bidding on lambs.

CHARACTERISTICS OF SHEEP PRODUCTION  
IN THE WESTERN UNITED STATES

C. Kerry Gee\*  
Richard S. Magleby\*\*

INTRODUCTION

The western sheep producing region has long supplied the major proportion of the Nation's mutton, lamb, and wool. Consisting of the 17 most western of the 48 contiguous States, the region in 1976 had 9.2 million stock sheep or about 80 percent of the U.S. total of 11.5 million.

This study is a prelude to an evaluation of the economic, environmental, and social benefits and costs of current and alternative predator control policies. It describes the structural and operational characteristics of sheep production in the West, particularly among commercial producers (defined in this study as those with 50 or more stock sheep) which account for the bulk of the sheep. Implications of these characteristics are also pointed out.

Except as noted, data presented are estimates based on sample data from two special surveys of western commercial sheep producers: The Structure of the Industry Survey (mail questionnaires from 1,461 producers) made during August-September 1974, and the Cost and Returns Survey (personal interviews with 911 of the same producers) made during January 1975. These surveys were conducted for the Economic Research Service (ERS) by the Statistical Reporting Service (SRS). Both surveys involved a stratified random sample of sheep producers with 50 or more head of stock sheep. 1/

---

\* Agricultural economist, Commodity Economics Division, ERS, stationed at Fort Collins, Colorado.

\*\* Agricultural economist, Natural Resource Economics Division, ERS, Washington, D.C.

1/ Additional information on the surveys and copies of the questionnaires used may be obtained by writing to Environmental Economic Studies, ERS/NRED, U.S. Department of Agriculture, Washington, D.C. 20250.



# GENERAL CHARACTERISTICS OF WESTERN SHEEP PRODUCTION

Much of the western sheep producing region is characterized by vast areas of arid or semiarid' rangeland vegetated by grasses, forbs, shrubs, and brush (see table 2 for listing of States in the region). Much of the area is more suitable to sheep grazing than cattle grazing, for sheep utilize forbs and certain species of shrubs more readily than do cattle. They also require less frequent access to water and have greater ability to traverse rough or steep terrain.

## Cash Receipts from Sheep, Lambs, and Wool

Sheep are raised by farmers and ranchers primarily to produce lambs for commercial sale and slaughter. By-products of lamb production operations are older sheep culled out of the breeding herd for sale as mutton, and wool obtained from shearing mature sheep and older lambs.

In 1974, sales of sheep, lambs, and wool generated \$358 million in receipts to western producers (table 1). Of this total, lamb and sheep sales together contributed 81 percent (no separate breakdown available) and wool only 19 percent.

Table 1--Cash receipts from sheep production compared with receipts from other agricultural commodities, 17 western States, 1959 and 1974

| Item              | 1959                |                | 1974                |                |
|-------------------|---------------------|----------------|---------------------|----------------|
|                   | <u>Mil. Dollars</u> | <u>Percent</u> | <u>Mil. dollars</u> | <u>Percent</u> |
| Sheep/lambs       | 218                 | 1.7            | 290                 | 0.7            |
| Wool              | 84                  | 0.6            | 68                  | 0.2            |
| Subtotal          | 302                 | 2.3            | 358                 | 0.9            |
| Cattle and calves | 3,929               | 29.6           | 11,843              | 29.8           |
| Hogs              | 409                 | 3.1            | 1,343               | 3.4            |
| Dairy products    | 1,048               | 7.9            | 2,374               | 6.0            |
| Crops and other   | 7,566               | 57.1           | 23,843              | 59.9           |
| Total             | 13,254              | 100.0          | 39,761              | 100.0          |

Source: Data for 1974 are from Econ. Res. Serv., U.S. Dept. Agr., State Farm Income Statistics, Supplement to SB 547, Sept. 1975. Data for 1959 are based on unpublished ERS data.

Cash receipts from sales of sheep, lambs, and wool, although providing all or most of the income for many producers, are much less important in the total agricultural picture in the western States than receipts from sales of crops and other livestock products. In 1974, sales of sheep, lambs, and wool in the 17 western States were less than 1 percent of the cash receipts from all farm and ranch commodities (table 1). In comparison, sales of cattle and calves accounted for 30 percent of all cash agricultural receipts, hogs 3 percent, and all dairy products 6 percent.

Total cash receipts in 1974 from sheep, lambs, and wool in the West were slightly higher than those of 1959, due to higher prices. But, the less than 1-percent share was down from 2.3 percent. In contrast, cash receipts from most other agricultural commodity groups doubled or tripled from 1959 levels. The decline in sheep, lamb, and wool shares reflects the decline in sheep numbers in the West along with increased production and prices of other agricultural commodities.

The relative contribution of sheep, lamb, and wool sales to total agricultural commodity sales is more significant in some States than others. Their contribution is nearly 7.8 percent in Wyoming, 6.6 percent in Utah, and 4.8 percent in Nevada, but only 0.1 percent in Oklahoma (table 2). In the individual 17 States, the relative contribution in 1974 was down from that in 1959 by one-fifth to over three-fourths.

Table 2--Contribution of sheep, lamb, and wool sales to total agricultural commodity sales, 17 western States, 1959 and 1974

| State<br>and region | :Percent of agricultural:<br>:commodity cash receipts:: |        | State<br>and region | :Percent of agricultural<br>:commodity cash receipts |        |
|---------------------|---|--------|---------------------|--|--------|
|                     | : 1959  | : 1974 |                     | : 1959   | : 1974 |
|                     | <u>Percent</u>  |        |                     | <u>Percent</u>                                       |        |
| Arizona             | .9  | .7     | South Dakota        | 3.6  | 1.6    |
| California          | 1.0   | .4     | Texas               | 1.8  | 1.1    |
| Colorado            | 5.5   | 2.8    | Utah                | 10.9   | 6.6    |
| Idaho               | 5.4   | 1.9    | Washington          | .8   | .2     |
| Kansas              | 1.3   | .3     | Wyoming             | 14.3   | 7.8    |
| Montana             | 5.1   | 1.3    |                     |  |        |
| Nebraska            | 1.5   | .2     | Total 17            |  |        |
| Nevada              | 8.2   | 4.8    | western States      | 2.3  | 0.9    |
| New Mexico          | 4.2   | 2.4    | Total other         |  |        |
| North Dakota        | 1.8   | .4     | States              | .7   | .2     |
| Oklahoma            | .6  | .1     | Total U.S.          | 1.3  | .5     |
| Oregon              | 3.3   | 1.1    |                     |  |        |
|                     |   |        |                     |  |        |

Source: See table 1.

## Numbers of Sheep and Producers

Stock sheep in the West, 9.2 million in 1976, are produced by about 48,000 farmers and ranchers (table 3). Both the number of sheep and the number of sheep producers are down considerably from 21.5 million head of sheep and

Table 3--Stock sheep and sheep producers, 17 western States, selected years  
1940-76

| Year | Stock sheep     |                           | Sheep producers <u>1/</u> |                          | Sheep per<br>producer<br>(average) |
|------|-----------------|---------------------------|---------------------------|--------------------------|------------------------------------|
|      | Number          | Percent of<br>U. S. total | Number                    | Percent of<br>U.S. total |                                    |
|      |                 |                           |                           |                          |                                    |
|      | <u>Millions</u> | <u>Percent</u>            | <u>Thousands</u>          | <u>Percent</u>           | <u>Number</u>                      |
| 1940 | 34.3            | 74                        | NA                        | NA                       | NA                                 |
| 1950 | 19.7            | 76                        | NA                        | NA                       | NA                                 |
| 1960 | 21.5            | 75                        | 115 <u>2/</u>             | 34                       | 187                                |
| 1965 | 17.0            | 78                        | 85.7                      | 35                       | 198                                |
| 1970 | 13.7            | 79                        | 64.7                      | 36                       | 212                                |
| 1971 | 13.5            | 80                        | 62.2                      | 37                       | 217                                |
| 1972 | 12.5            | 79                        | 60.1                      | 37                       | 208                                |
| 1973 | 11.8            | 80                        | 58.4                      | 38                       | 202                                |
| 1974 | 10.9            | 80                        | 51.5                      | 35                       | 212                                |
| 1975 | 9.8             | 79                        | 48.3                      | 36                       | 204                                |
| 1976 | 9.2             | 80                        | NA                        | NA                       | NA                                 |

1/ Assumed to be same as the number of farms and ranches with sheep.

2/ 1959 Census of Agriculture.

Source: Stat. Rpt. Serv., U.S. Dept. Agr., Sheep, Lambs and Goats, SB 502, Dec. 1972; and sheep and goats reports released in January of each year.

115,000 sheep farmers and ranchers in the West in 1960. Numbers of sheep and producers also dropped sharply during the late 1940's from peak levels in 1942, before leveling out during the 1950's. Reasons given for this decline include

unfavorable prices and price relationships, rising costs, increasing losses to predators, shortage of labor, and other factors. These will be analyzed in other studies of this series. 2/

Some areas of the West stand out as sheep production centers, while many other areas have few if any sheep. These contrasting sheep density areas can be readily seen in figure 1. Nearly 45 percent of the land in the West has 0 to 2 sheep per square mile, while only 11 percent has more than 20 sheep per square mile. This contrast is probably exaggerated slightly, since the higher density areas reflect where the producer lives and in some cases the sheep are being ranged elsewhere, especially during the summer grazing season.

Of the western States, Texas has the most sheep, 25 percent of the West's total, and the most producers, 20 percent of the West's total (table 4). Other States

Table 4--Numbers of stock sheep and sheep producers in each of 17 western States, 1975

| State        | : Stock Sheep                     | : Sheep Producers 1/ | : Sheep per     |                  |                 |
|--------------|-----------------------------------|----------------------|-----------------|------------------|-----------------|
|              | :                                 | :                    | producer        |                  |                 |
|              | : Percent of:                     | : Percent of:        | (average)       |                  |                 |
|              | : Number : West : Number : West : | :                    | :               |                  |                 |
|              | : <u>Thousands</u>                | : <u>Percent</u>     | : <u>Number</u> | : <u>Percent</u> | : <u>Number</u> |
| Texas        | : 2,484                           | 25.2                 | 9,500           | 19.7             | 261             |
| Wyoming      | : 1,190                           | 12.1                 | 1,600           | 3.3              | 744             |
| California   | : 910                             | 9.2                  | 3,800           | 7.9              | 239             |
| South Dakota | : 725                             | 7.4                  | 6,500           | 13.4             | 112             |
| Montana      | : 620                             | 6.3                  | 2,500           | 5.2              | 248             |
| Utah         | : 660                             | 6.7                  | 2,000           | 4.1              | 330             |
| Idaho        | : 560                             | 5.7                  | 2,000           | 4.1              | 280             |
| Colorado     | : 550                             | 5.6                  | 2,500           | 5.2              | 220             |
| New Mexico   | : 550                             | 5.6                  | 1,200           | 2.5              | 458             |
| Arizona      | : 380                             | 3.8                  | 320             | 0.7              | 1,187           |
| Oregon       | : 355                             | 3.6                  | 4,200           | 8.7              | 84              |
| North Dakota | : 255                             | 2.6                  | 2,700           | 5.6              | 94              |
| Nebraska     | : 170                             | 1.7                  | 3,500           | 7.3              | 49              |
| Kansas       | : 160                             | 1.6                  | 2,500           | 5.2              | 64              |
| Nevada       | : 138                             | 1.4                  | 240             | 0.5              | 575             |
| Washington   | : 77                              | 0.8                  | 1,600           | 3.3              | 11              |
| Oklahoma     | : 66                              | 0.7                  | 1,600           | 3.3              | 41              |
| Total        | : 9,850                           | 100.0                | 48,260          | 100.0            | 204             |

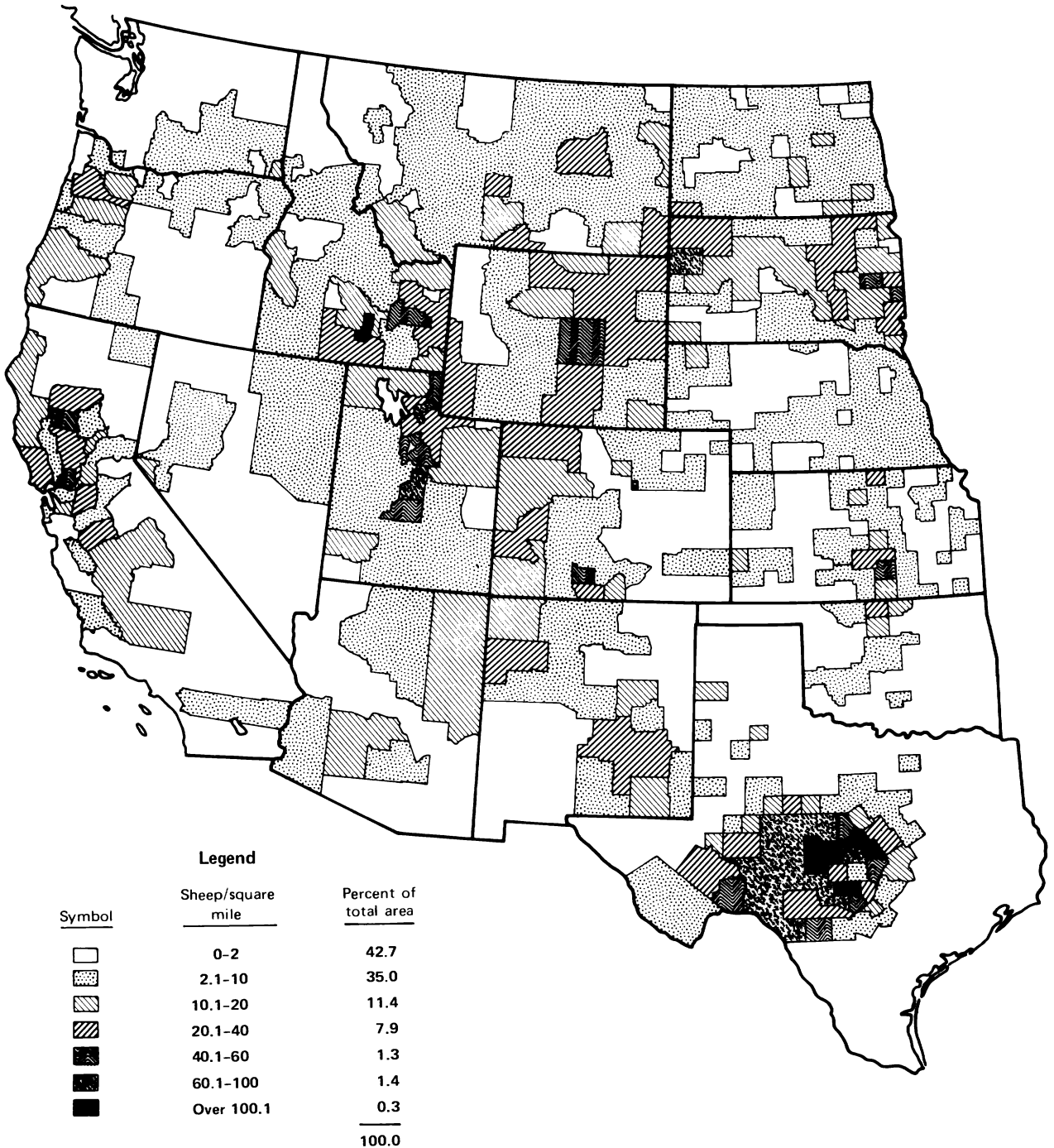
1/ Assumed to be the same as the number of farms and ranches with sheep.

Source: U.S. Dept. Agr., Stat. Rpt. Serv., Sheep and Goats Report, Jan. 1976.

2/ See Foreword

Figure 1

## DENSITY OF SHEEP IN 17 WESTERN STATES BY COUNTIES



Source: Erwin W. Pearson. "Sheep Raising in the 17 Western States: Populations, Distribution, and Trends," *Journal of Range Management* 28(1), Jan. 1975.

with large numbers of sheep are Wyoming, California, South Dakota, Utah, and Montana. States with the fewest sheep are Washington and Oklahoma, each with less than 1 percent of the West's total.

### Importance of Commercial Scale Operations

Sheep operations can be divided into three general size categories:

1. Non-commercial operations of fewer than 50 head. These include farms and ranches where a few sheep are kept for meat, 4-H projects, or to utilize available forage and provide a small income supplement.
2. Commercial farm flock operations of 50 to 999 head. On these, sheep usually represent a significant but often secondary source of income to some other major enterprise, or to off-farm employment. Sometimes it is useful for analysis to break this farm flock category into three subgroups: small farm flock, 50-99 head; medium farm flock, 100-299 head; and large farm flock, 300-999 head.
3. Large-scale commercial operations of 1,000 sheep and more. Sheep on these usually represent a major if not the principal occupation and source of agricultural income for the producer. Also, for analysis, this category will be presented in three subgroups: 1,000-2,499 head, 2,500-4,999 head, and 5,000 and over.

Within the western region in 1974, about 59 percent of the sheep producers had non-commercial operations of fewer than 50 head, while 35 percent had commercial farm-flock operations. Only 6 percent had large-scale commercial operations of 1,000 head and over (table 5). Although the commercial farm-flock and large-scale operations together were in the minority, they accounted for the bulk of the sheep, nearly 93 percent of the sheep in the West and three-fourths of all sheep in the United States.

This report concentrates on these western commercial sheep operations of 50 or more stock sheep. What happens to and on these operations largely determines the extent and economic well-being of sheep, lamb, and wool production in the United States as well as in the western States.

Table 5--Distribution of sheep producers and stock sheep according to size of operation, 17 western States, preliminary 1974 1/

| Size of operation<br>(number of sheep) | Sheep producers  |                         | Stock sheep     |                         |
|--|------------------|-------------------------|-----------------|-------------------------|
|  | Number           | Percent<br>of<br>region | Number          | Percent<br>of<br>region |
|  |                  |                         |                 |                         |
|  | <u>Thousands</u> | <u>Percent</u>          | <u>Millions</u> | <u>Percent</u>          |
| <u>Non-commercial</u>                  |                  |                         |                 |                         |
| Under 50 head                          | 30.4             | 59.0                    | 0.8             | 7.3                     |
| <u>Commercial farm flock</u>           |                  |                         |                 |                         |
| 50-299                                 | 14.4             | 27.9                    | 1.4             | 13.0                    |
| 300-999                                | 3.8              | 7.4                     | 1.8             | 16.7                    |
| Subtotal 50-999                        | 18.2             | 35.3                    | 3.2             | 29.7                    |
| <u>Commercial large-scale</u>          |                  |                         |                 |                         |
| 1,000-2,499                            | 2.1              | 4.1                     | 3.5             | 32.0                    |
| 2,500 and over                         | 0.8              | 1.6                     | 3.4             | 31.0                    |
| Subtotal 1,000 and over                | 2.9              | 5.7                     | 6.9             | 63.0                    |
| Total West                             | 51.5             | 100.0                   | 10.9            | 100.0                   |
| Total commercial<br>(50 and over)      | 21.1             | 41.0                    | 10.1            | 92.7                    |

1/ Preliminary estimates based on sample data. Estimates from 1974 Census of Agriculture are not yet available.

## CHARACTERISTICS OF COMMERCIAL SHEEP PRODUCTION IN THE WEST

### Production Subregions

For analysis, the important sheep producing counties of the West were grouped together into seven production areas or subregions based on similar geographical and economic characteristics (fig. 2). Excluded from these subregions were Oklahoma and Washington and some counties of other States where there are few sheep. A brief description of each of the seven production areas or subregions follows:

Plains Wheat-Corn: rolling prairies of North Dakota, eastern South Dakota, Nebraska, Kansas, and eastern Colorado.

Northern Plains: dry desert and plains portions of western South Dakota, eastern Wyoming, and eastern Montana.

Texas-New Mexico: Edwards Plateau of Texas and central and southeastern New Mexico.

Mountain: mountainous portions of Montana, Oregon, Idaho, Utah, Wyoming, Colorado, and New Mexico.

Great Basin: primarily the dry desert terrain of southern Oregon, northern Nevada, and western Utah.

California-Arizona: central valleys of California and southwestern Arizona.

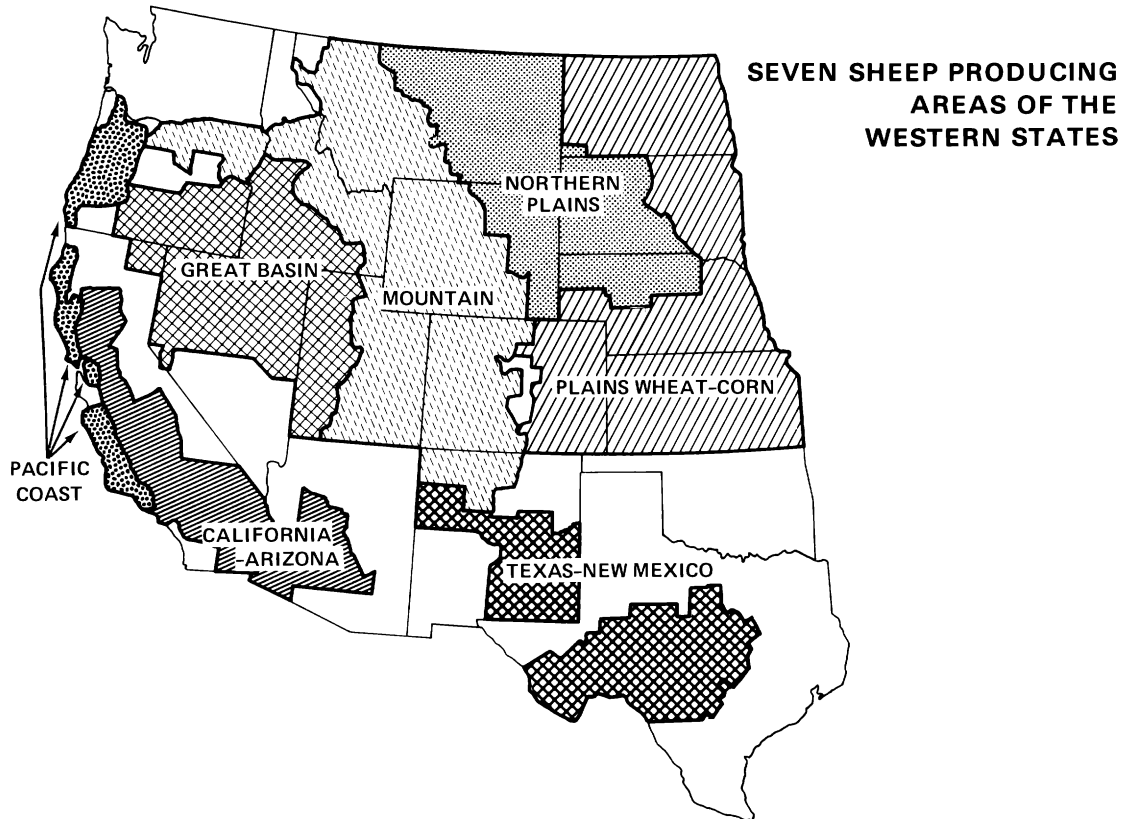
Pacific Coast: coastal mountain ranges of California and Oregon.

The Mountain subregion has the most commercial sheep and commercial producers of any sheep producing area in the West. Commercial producers there make up nearly one-fourth of the West's commercial producers and own more than one-fourth of the commercial sheep (table 6). Closely following is the Texas-New Mexico subregion with nearly one-fifth of the commercial producers and one-fourth of the commercial sheep. Other subregions in order of commercial sheep numbers are Northern Plains, Plains Wheat-Corn, California-Arizona, Great Basin, and Pacific Coast.

Areas excluded from the seven subregions because of few sheep accounted for only about 1 percent of the commercial sheep and 6 percent of the commercial producers.



Figure 2



### Subregional Differences in Size of Operations

Farm flock operations of 50-299 head make up over half of all commercial sheep operations in all subregions except California-Arizona. They are particularly predominant in the Plains Wheat-Corn (nearly 90 percent of all producers) and Mountain and Pacific Coast subregions (72-76 percent):

| <u>Subregion</u>                       | <u>Size of operation</u> |                      |                     |
|--|--------------------------|----------------------|---------------------|
|  | <u>50-299 sheep</u>      | <u>300-999 sheep</u> | <u>1,000+ sheep</u> |
| <u>Percent of commercial producers</u> |                          |                      |                     |
| Mountain                               | 72                       | 18*                  | 10                  |
| Great Basin                            | 65                       | 15                   | 20                  |
| Pacific Coast                          | 76                       | 14                   | 10                  |
| California-Arizona                     | 47                       | 15                   | 38                  |
| Texas-New Mexico                       | 51                       | 23                   | 26                  |
| Plains Wheat-Corn                      | 89                       | 10                   | 1                   |
| Northern Plains                        | 52                       | 31                   | 17                  |
| All subregions                         | 68                       | 18                   | 14                  |

Table 6--Number of commercial stock sheep and commercial producers by subregions within the western States, estimated 1974

| Subregions            | : Comm. stock sheep 1/ |                | : Comm. producers 1/ |                | : Ave. sheep<br>per comm.<br>producer |
|-----------------------|------------------------|----------------|----------------------|----------------|---------------------------------------|
|                       | :                      | Percent        | :                    | Percent        |                                       |
|                       | : Number               | : of           | : Number             | : of           |                                       |
|                       | :                      | : total        | :                    | : total        |                                       |
|                       | : <u>Thousands</u>     | <u>Percent</u> | <u>Number</u>        | <u>Percent</u> | <u>Number</u>                         |
|                       | :                      |                |                      |                |                                       |
|                       | :                      |                |                      |                |                                       |
| Mountain              | : 2,729                | 27.0           | 4,942                | 23.4           | 552                                   |
| Texas-New Mexico      | : 2,452                | 24.3           | 3,960                | 18.8           | 619                                   |
| Northern Plains       | : 1,539                | 15.2           | 2,900                | 13.7           | 531                                   |
| Plains Wheat-Corn     | : 1,288                | 12.8           | 4,471                | 21.2           | 288                                   |
| California-Arizona    | : 839                  | 8.3            | 655                  | 3.1            | 1,433                                 |
| Great Basin           | : 729                  | 7.2            | 889                  | 4.2            | 820                                   |
| Pacific Coast         | : 385                  | 3.8            | 1,955                | 9.3            | 197                                   |
|                       | :                      |                |                      |                |                                       |
| Total above           | : 9,961                | 98.6           | 19,772               | 93.7           | 504                                   |
|                       | :                      |                |                      |                |                                       |
| Other areas <u>2/</u> | : 139                  | 1.4            | 1,328                | 6.3            | 105                                   |
|                       | :                      |                |                      |                |                                       |
| Total West 1/         | : 10,100               | 100.0          | 21,100               | 100.0          | 479                                   |

1/ Excludes sheep and producers on operations with fewer than 50 stock sheep.

2/ Mostly commercial producers and sheep in Oklahoma and Washington, the two States excluded from the subregions because of small numbers of sheep.

Large-scale producers of 1,000 or more stock sheep are most common in the California-Arizona, Texas-New Mexico, and Great Basin subregions, where they make up from 20 to 38 percent of all commercial producers and own 74 to 91 percent of all commercial sheep (for more detail see table A-1). 3/

#### Age Distribution of Producers

The age distribution of commercial sheep producers (the youngest owner in the case of partnerships or corporations) in 1974 was found to be as follows:

| Age of producer | Commercial producers |         |
|-----------------|----------------------|---------|
|                 | Thousands            | Percent |
| 30 and under    | 3.6                  | 17      |
| 31-40           | 3.2                  | 15      |
| 41-50           | 5.5                  | 26      |
| 51-60           | 5.3                  | 25      |
| 61-70           | 2.7                  | 13      |
| 71 and over     | 0.8                  | 4       |
|                 | 21.1                 | 100     |

3/ Tables A-1 through A-25 are found in the Appendix.

Although comparable data on producers in other commodity groups are not available, there are several observations and implications of interest. The first, as we might expect, is that apparently one-third to one-half of the producers reaching age 61 retire before they reach 71 and that few continue much into their 70's. A second observation is that retirement is probably imminent for about 2,000 or one-tenth of the commercial producers, with another one-tenth likely to retire within 10 years.

As these older producers retire, some operations will be continued by younger family members or managers. How many of the others will be taken over and maintained as sheep operations by younger individuals will depend upon the outlook and profit prospects for sheep production compared with alternatives and on available financing.

Data above also suggest that in the last 10-15 years, fewer young persons have entered sheep production than previously; the number of commercial producers in the 20 and under and 31-40 age brackets are both substantially less than in the two middle age brackets 41-50 and 51-60. Some of this difference can likely be attributed to cases where younger family members, although active in the operation, are not yet considered principal owners. However, much of it likely resulted from the greater attractiveness of other enterprises or occupations. Lamb prices improved substantially in 1975-76, which could provide encouragement for younger people to enter the industry. But, other considerations are costs, labor availability, and depredation losses. Differences in age distribution were minor among the subregions and size of operation groups.

### Form of Ownership

Western commercial sheep operations are predominately single-owner operations. Such operations make up more than two-thirds of the total, with the other third divided up about equally between partnerships and family corporations:

| <u>Form of ownership</u> | <u>Percent of commercial</u> |             |
|--------------------------|------------------------------|-------------|
|                          | <u>Operations</u>            | <u>Ewes</u> |
| Single owner             | 68                           | 51          |
| Partnership              | 16                           | 22          |
| Family corporation       | 15                           | 24          |
| Other corporation        | 1                            | 3           |
|                          | <u>100</u>                   | <u>100</u>  |

Single owner operations, however, account for only slightly more than half the commercial ewes, indicating a much smaller average size than those of partnerships and corporations. More than three-fourths of the small operations are single ownerships, compared with only one-third of large operations (table A-2). Ownership patterns differ among production subregions. The proportion of single ownerships is highest among the small farm flocks of the Plains Wheat Corn area (83 percent) and lowest in the Texas-New Mexico area (48 percent), where partnerships and family corporations are particularly popular.

## Producers' Equity Position

On the average, western commercial sheep producers have substantial equity positions in real estate (76 percent), livestock (79 percent), and equipment (81 percent, table A-3). These high average equities suggest that sheep production has been a profitable enterprise, although the high real estate equity could also be a result of increased land values. A year or two of unprofitable sheep operations, however, would cause many producers, particularly the older ones, to become concerned over declining retirement equity. If prospects for improved returns (higher prices, lower costs, or improved productivity, including fewer losses to predators and other causes) were not bright, some would opt for other enterprises which would preserve their capital. Or, they might sell out.

Average equity positions varied only slightly among the production areas, with the exception of the Pacific Coast subregion where average owner equity was consistently higher (table A-3). Producer equity positions also varied little among different sizes of sheep operation, except for larger operations borrowing relatively more on their livestock than smaller operations.

Most commercial producers borrow some of their operating capital. Across the western region, the average amount borrowed was 32 percent of the total operating capital used (table A-3). This proportion was higher among the larger operations. Those with herds of 50-99 head of sheep borrowed only 20 percent on the average, while producers with 5,000+ head borrowed 67 percent of their operating capital. Differences among some subregions were also sizable. Producers in the California-Arizona subregion used only 10 percent borrowed capital. In the Northern Plains, they borrowed 45 percent on the average.

## Specialized Versus Diversified Livestock Enterprises

Diversified or joint enterprises with both sheep and beef cattle are more common among commercial sheep producers than are specialized enterprises of sheep only:

| <u>Type of enterprise</u>  | <u>Percent of commercial</u> |              |
|----------------------------|------------------------------|--------------|
|                            | <u>Producers</u>             | <u>Sheep</u> |
| Sheep only                 | 31                           | 32           |
| Sheep and beef cattle only | 56                           | 50           |
| Sheep and goats only       | 2                            | 1            |
| Sheep, goats, and cattle   | 11                           | 17           |
|                            | <u>100</u>                   | <u>100</u>   |

Diversified enterprises with cattle are popular because they permit fuller range utilization, diversification of income and risk, and flexibility to vary the mix of sheep and cattle in line with changing prices, costs, labor availability, and predator activity. In past years, many sheep producers have

reduced the number of sheep and increased the number of cattle. Some have dropped sheep production entirely in favor of cattle. <sup>4/</sup> Current (1975-76) favorable prices for lambs compared with calves could cause some producers to shift back to more sheep if costs, labor, and depredation losses are not offsetting.

Diversified livestock enterprises are particularly common among commercial producers in the Texas-New Mexico subregion, where they make up nearly 90 percent of the total (table A-4). In contrast, the majority of commercial producers in California-Arizona subregion, where many ranges are better suited to sheep than cattle, operated specialized sheep enterprises. Specialized sheep enterprises are also slightly more prevalent among operations of more than 2,500 sheep than among smaller operations.

### Sources of Income

The extent of diversification of commercial sheep producers into other enterprises is further illustrated by their sources of income. On the average, commercial sheep producers receive nearly half their income from sales other than sheep, lambs, and wool:

| <u>Source of farm sales</u> | <u>Percent of<br/>producer income</u> |
|-----------------------------|---------------------------------------|
| Sheep, lambs, and wool      | 54                                    |
| Beef cattle                 | 26                                    |
| Goats and mohair            | 1                                     |
| Other livestock and poultry | 3                                     |
| Crops                       | 16                                    |
|                             | <u>100</u>                            |

Small operations tend to be more diversified, while large operations are more specialized (table A-5). Commercial producers with 50-99 head of sheep obtain only 38 percent of their gross agricultural sales from sheep, lambs, and wool, compared with 78 percent for producers with 5,000 head or more sheep.

### Annual Feed Sources

Feed for western commercial sheep comes largely from private range, over half the total, with supplementary feed and public range (mostly Federal, but some State) providing most of the remainder:

<sup>4/</sup> This is discussed in more depth in the report on factors in the decline of sheep production in the West (see Foreword).

| <u>Feed source</u>  |    | <u>Percent of total<br/>feed requirements</u> |
|---------------------|----|---|
| Private range       |    | 51  |
| Supplementary feed  |    | 22  |
| Public range        |    | 18  |
| BLM <u>5/</u>       | 11 |   |
| NFS <u>6/</u>       | 4  |   |
| State land          | 3  |   |
| Irrigated pasture   |    | 4   |
| Crop residue        |    | 4   |
| Small grain pasture |    | <u>1</u>                                      |
|                     |    | 100   |

The relative importance of different feed sources varies among the subregions (table A-6). Public rangeland is the major source of feed in the Mountain and Great Basin subregions, providing 41 percent and 51 percent of the annual feed of commercial producers. In the other five subregions, private range is the predominant feed source, reaching 73 percent of feed supply in Texas-New Mexico and 64 percent in the Pacific Coast subregions where there is little public land available, and leasable lands are scarce. Irrigated pasture and crop residue are used most extensively by California-Arizona sheep producers. Supplementary feed is used in all subregions, but particularly so in Plains Wheat-Corn area where feed grains are in ample supply at low cost.

#### Use and Importance of Federal Range

Federal ranges, including BLM and NFS lands, are used by about one-fifth of the commercial producers and provide some feed for nearly one-half of the West's commercial stock sheep:

| <u>Use of Federal range</u> | <u>Commercial producers</u> |                | <u>Commercial sheep</u> |                |
|-----------------------------|-----------------------------|----------------|-------------------------|----------------|
|                             | <u>Thousands</u>            | <u>Percent</u> | <u>Millions</u>         | <u>Percent</u> |
| BLM lands only              | 2.5                         | 12             | 3.2                     | 32             |
| NFS lands only              | 0.2                         | 1              | 0.2                     | 2              |
| Both BLM and NFS lands      | 1.5                         | 7              | 1.3                     | 13             |
| Total using Federal range   | 4.2                         | 20             | 4.7                     | 47             |
| No Federal range            | 16.9                        | 80             | 5.4                     | 53             |
|                             | <u>21.1</u>                 | <u>100</u>     | <u>10.1</u>             | <u>100</u>     |

The use of Federal range varies considerably among subregions according to availability (table A-7). In the Mountain and Great Basin areas, where federally owned lands are plentiful, commercial producers with over three-fourths of

5/ Lands administered by the Bureau of Land Management, U.S. Dept. of Interior.

6/ Lands in the National Forest System, administered by the Forest Service, U.S. Dept. of Agr.

all commercial stock sheep in these subregions use such lands. <sup>7/</sup> Commercial producers with two-thirds of the commercial sheep in the Northern Plains and about one-half of the commercial sheep in California-Arizona subregion also use Federal range. Because of limited availability, Federal range is grazed by few sheep in the Texas-New Mexico, Plains Wheat-Corn, and Pacific Coast areas.

Grazing on Federal ranges is very important to many of the larger operations. Nearly half of the producers with over 2,500 head of sheep use Federal range (table A-7). On the average, Federal range for these producers provides 42-45 percent of the annual feed for their sheep (table A-8). Most of these producers would have few feasible alternatives for this major portion of their feed supply. If use of Federal range for sheep grazing were not possible or profitable--because of use restrictions, high depredation losses, or other reasons--most would have to drop out of the sheep production.

Commercial producers who graze sheep on Federal range depend on it for about one-third of the annual feed required for their sheep (tables A-8 through A-10). This average dependence is somewhat greater on BLM lands than on NFS lands, 31 percent of annual feed compared with 19 percent, because sheep are grazed longer during the year on the former (3-4 months on the average) than the latter (2-3 months average).

Grazing on BLM lands occurs throughout the year (table A-11). In the Mountain and Great Basin subregions, and to a lesser extent in California-Arizona, grazing drops off during the summer when herds move onto available forest lands, then picks up again in fall when the herds move down again off the high elevations. Only in the Northern Plains subregion, where little forest land exists, does grazing on BLM lands increase during the summer, as compared to spring, fall, and winter.

#### Trends in Use of Federal Range

The number of sheep and goats grazed on BLM lands decreased by 30 percent and that on NFS lands by more than 40 percent between 1960 and 1974:

| <u>Year</u> | <u>Authorized grazing of sheep and goats</u> |                  |
|-------------|--|------------------|
|             | <u>BLM lands</u>                             | <u>NFS lands</u> |
|             | <u>Million head</u>                          |                  |
| 1960        | 6.5  | 2.6              |
| 1974        | 4.5  | 1.5              |
| Change      | -2.0 (-30%)                                  | -1.1 (-42%)      |

The percentage decreases in sheep and goats grazed on these Federal lands have been less than the 50-percent overall drop in sheep numbers in the West during the 1960-75 period, suggesting some competitive advantages to use of these lands, particularly for the larger operations.

<sup>7/</sup> These are overestimates of the actual proportions of sheep using Federal ranges since they include all stock sheep of commercial producers who use the specific type of range even though some producers may not place all of their sheep on this range.

The decreased grazing of sheep and goats on BLM lands is not associated with any significant decreases in grazing area available or increases in grazing by other livestock (table A-12). Thus, there has simply been a decrease in utilization of these lands, some of which are not considered suitable for cattle use. Such lands would be available for sheep if sheep numbers should increase. The perspective is different on NFS lands, however (table A-13). Here, the decreased grazing by sheep since 1950 is correlated with about a one-fourth drop in the net area classified as suitable for grazing, indicating movement of these lands into recreational uses, water development projects, and other uses. 8/ At the same time, regulations have been imposed on sheep numbers grazed in given areas and grazing by other livestock has increased, with some ranchers switching their grazing permits from sheep to cattle. 9/

Between 1960 and 1974, grazing fees for sheep of NFS lands more than doubled, while those for BLM lands increased by four times. During this period, however, these increases were probably not major factors per se in the decreased grazing of sheep and goats on Federal lands. 10/ The grazing fees were increased again for 1976, with both BLM and NFS fees up about 50 percent over 1974. 11/

There is considerable discussion between agencies administering Federal grazing lands and those using them over what is the economic value of this grazing and what adjustments, if any, are needed in the fees. Producers maintain that grazing on Federal lands versus private lands requires additional expenditures by permittees, and that this warrants the traditionally lower fees. Also, they indicate that continued increases in fees could result in decreased use of Federal lands and the feed they provide. Administering agencies, explaining the basis for raising grazing fees on public lands, point to the increases occurring in private grazing fees and other livestock feed prices.

#### Open Range versus Fenced Pasture Grazing

Open (unfenced) range grazing is practiced by only about one-fifth of the West's commercial producers, but nearly one-half of the region's commercial sheep are involved:

8/ Some of this has been forced declassification from grazing use, but much of it has probably occurred after producers dropped sheep production or decreased herd size.

9/ No data could be found on the extent of this switching, but the Forest Service indicated to the authors that it has occurred.

10/ Grazing policies of BLM and NFS were seldom rated high by former producers as factors influencing the decision to discontinue sheep production (see report on factors in the decline of sheep production, as noted in the Foreword).

11/ The basic fees set for sheep in 1976 are \$0.30 per sheep (\$1.51 per AUM) on BLM lands and \$0.32 per sheep (\$1.60 per AUM) on NFS lands. No charge is made for small lambs accompanying ewes.



| <u>Type of grazing</u> | <u>Spring and<br/>summer period</u> |              | <u>Fall and<br/>winter period</u> |              |
|------------------------|-------------------------------------|--------------|-----------------------------------|--------------|
|                        | <u>Producers</u>                    | <u>Sheep</u> | <u>Producers</u>                  | <u>Sheep</u> |
|                        | <u>Percent</u>                      |              |                                   |              |
| Fenced pasture/range   | 12/ 85                              | 58           | 82                                | 53           |
| Open range             | <u>12/ 19</u>                       | <u>42</u>    | <u>18</u>                         | <u>47</u>    |
|                        | 100                                 | 100          | 100                               | 100          |

Use of open range or fenced pasture and range frequently depends on land tenure. Producers who run sheep mainly on privately owned land usually have the grazing area fenced. This is particularly true of operations with fewer than 1,000 head. In the Texas-New Mexico and Plains Wheat-Corn subregions which have little public land, practically the entire sheep population is grazed in fenced areas (table A-14 13/). In contrast, in the Mountain and Great Basin subregions where there are large public land holdings, most of the commercial ewe population is grazed on open range.

#### Use of Hired Sheep Herders

Proper management of sheep on open ranges requires herders to constantly watch over the sheep, keep them together, and move them so as to obtain optimum range utilization without overgrazing and causing damage. Few producers who open-graze their sheep choose to do this lonely chore themselves; hence, herders are hired. Most are hired on a full-time basis, but some are hired only while the sheep are on the open range.

Use of full-time hired herders varies widely by size of operation. About three-fourths of the large sheep enterprises of 2,500 sheep or more hire full-time herders, compared with about one-third of those with 1,000-2,499 sheep, and 13 percent or less of those under 1,000 head (table A-15).

As might be expected, producers in the Mountain, Great Basin, and California-Arizona subregions, where considerable open and Federal range grazing occurs, are the most dependent upon hired herders. The proportions of the total commercial producers using full-time hired herders in these areas are 30, 34, and 58 percent, respectively.

Problems in obtaining adequate numbers of capable herders can result in producers taking several alternative actions. One, size of sheep herds under the care of each herder might be increased. This could result in less care per animal and higher depredation and other losses. Two, the size of operation (number of sheep) could be reduced to a level which can be handled by the

12/ Some producers use both.

13/ Table A-14 gives data only for the spring and summer (docking to marketing period), but that for the fall and winter period was very similar, as can be seen from the text table above.

number of herders available. Three, some sheep could be taken off the open range and placed in fenced areas. A fourth alternative, of course, is to fence more of the open ranges. This is usually impractical because of the vast areas and cost involved. A fifth course of action is to go out of the sheep business. Some producers are reportedly doing this because of the labor problems, usually in connection with depredation losses and other problems. 14/

#### Movement of Sheep Between Grazing Areas

Nearly one-third of the West's commercial producers move their sheep between grazing areas during the year. These tend to be the larger producers, which results in somewhat over half of the commercial sheep being moved in one form or another:

| <u>Form of movement</u> | <u>Percent of commercial</u> |              |
|-------------------------|------------------------------|--------------|
|                         | <u>Producers</u>             | <u>Sheep</u> |
| Sheep moved:            |                              |              |
| Trailed only            | NA                           | 26           |
| Trucked only            | NA                           | 17           |
| Trailed and trucked     | NA                           | 14           |
| Total moved             | 32                           | 57           |
| Sheep not moved         | <u>68</u>                    | <u>43</u>    |
|                         | 100                          | 100          |

Currently, 26 percent of the West's commercial sheep are trailed exclusively, 17 percent are transported by truck, and another 14 percent are moved through a combination of trucking and trailing. Trailing was at one time the only method used. However, in recent years, trailing has declined while trucking has increased. Reasons for this are the increased traffic on public roads, controlled access highways, restrictions on use of popular driveways, greater distances moved, and the overall convenience of truck transportation. However, movement of sheep by truck is costly and the producer must frequently find feed to replace that which sheep would consume enroute while being trailed. Recent increases in transportation costs are likely causing some producers to take a second look at trucking versus trailing.

The incidence of sheep movement between grazing areas increases with the size of operation (table A-16). Producers with small flocks, 50 to 99 head, usually have feed from adjacent croplands. Only 12 percent of these small producers need to move their sheep. Among producers in the largest size group, 5,000 head and over, nearly two-thirds must move their sheep by some method.

Production subregions with the highest proportions of sheep moved are the Mountain, Great Basin, and California-Arizona with 84, 92, and 92 percent, respectively. These are the same subregions with a high dependence on unfenced public range and hired herders.

14/ This will be discussed further in the report on factors in the decline of sheep production (see Foreword).

Distances moved vary by method of transportation and size of operation (table A-17). The average trucking distance moved when trucked is 148 miles. Operations with under 2,500 head of sheep average less than 50 miles, while larger operations average over 400 miles in a year. Herds are trailed an average of 36 miles. Producers with operations of more than 5,000 head drive their sheep an average of 92 miles per year.

### Lambing Season and Method

Most lambs in the West are born in February through May (table A-18). However, considerable lambing occurs in November, December, and January in the Pacific Coast and California-Arizona areas.

The two principal management systems for lambing are shed-lambing and range-lambing. Shed-lambing is more expensive since it requires pens for holding at least 10 percent of the ewes, enclosed sheds to house them after their lambs are born, supplemental feed, and adequate labor to feed, move, and care for the ewes and their newborn lambs. This intensive care usually results in more lambs saved than under the range-lambing system, where ewes and lambs have less protection from the elements and predators. Also, shed-lambing permits earlier lambing, and either earlier marketing of the lambs or sale at heavier weights.

In the western region, shed-lambing is practiced by more commercial producers than pasture- or range-lambing, but the number of ewes involved is less:

| <u>Type</u>               | <u>Percent of</u> |             |
|---------------------------|-------------------|-------------|
|                           | <u>Producers</u>  | <u>Ewes</u> |
| Shed-lambing              | 15/ 60            | 38          |
| Pasture and range-lambing | <u>15/ 49</u>     | 62          |

The differences in the proportions between producers and ewes are due to more frequent use of pasture- and range-lambing by large-scale producers (table A-19). Range-lambing also is more common in the warmer than colder areas of the West. Nearly all of the commercial ewes are range-lambled in the California-Arizona and Texas-New Mexico subregions, whereas only half of the ewes in the Mountain region are range-lambled.

For some migratory sheep operations in the Mountain and Great Basin subregions, shed-lambing is not practical due to continuous movement of the sheep. Many other large operators would view it as infeasible because of the additional investment and labor involved and the uncertain future for sheep production.

15/ About 9% of commercial producers use both methods.

## Lamb Marketing Practices

More than two-fifths of the lambs of commercial producers are sold directly off grass for slaughter, another one-third are sold as feeder lambs, and about 12 percent are kept as replacements:

| <u>Disposition</u>            | <u>Percent of lambs</u> |
|-------------------------------|-------------------------|
| Sold off grass for slaughter  | 41                      |
| Sold as feeder lambs          | 36                      |
| Kept as replacements          | 12                      |
| Sold after additional feeding | 9                       |
| Sold as replacements          | 2                       |
|                               | <u>100</u>              |

Method of disposition varies by area (table A-20). Selling for slaughter directly off grass is the principal disposition method of lambs in the Mountain, Great Basin, Pacific-Coast, and California-Arizona subregions. In contrast, the majority of lambs in the Texas-New Mexico and Northern Plains subregions are sold as feeder lambs. Most lambs in the Plains Wheat-Corn area are fed for an additional period by the producers themselves, then sold for slaughter.

In 1974, commercial sheep producers marketed their lambs through the following channels:

| <u>Market channel</u> | <u>Percent of lambs</u> |
|-----------------------|-------------------------|
| Packer buyer          | 43                      |
| Order buyer           | 32                      |
| Auction market        | 10                      |
| Dealer or trader      | 10                      |
| Producer pool         | 2                       |
| All other             | 3                       |
|                       | <u>100</u>              |

Packer buyers and order buyers predominated, but others superseded one or the other in particular production areas. Both types buy directly for slaughter plants, the former as salaried employees and the latter on commission only. Dealers or traders, who buy in anticipation of selling at a profit, were of second most importance in the Great Basin and Pacific Coast subregions, while auction markets were in second place in the Texas-New Mexico and Plains Wheat-Corn subregions (table A-21).

The limited number of buyers bidding on any individual producer's lambs has been a continual source of concern to sheepmen. The average for 1974 was 2.1 buyers, with little difference among production subregions or size of operation categories. In an attempt to increase the number of bidders and to exercise more marketing clout, producers recently have begun forming lamb marketing

cooperatives. Interest in these organizations is expanding, with many producers convinced that such pools will help them gain a higher percentage of the retail price. The intention of many producers is that these cooperatives grow into a series of regional cooperatives with overall coordination under one organization.

Yield grade selling in which the market price is determined by the quality of the carcass after slaughter was used by only 4 percent of the producers. Yield grade selling accounted for 11 percent of all lambs sold, slightly over half of the lambs sold by operators who use yield grade selling (table A-22). This was not a major practice for any producing area or size class of operation.

### Wool Marketing Practices

Commercial sheep producers in the western States marketed their wool as follows:

| <u>Market</u>                   | <u>Percent of wool</u> |
|---------------------------------|------------------------|
| Wool dealers (for later resale) | 48                     |
| Wool pools                      | 32                     |
| Consignment sales               | 11                     |
| Manufacturers representatives   | 6                      |
| Other                           | 3                      |
|                                 | <u>100</u>             |

Sales to wool dealers were more common among small-scale producers while wool pools were more common with medium- and large-scale producers (table A-23). Wool dealers dominated the market in four subregions: California-Arizona, Texas-New Mexico, Plains Wheat-Corn, and Pacific Coast. Wool pools were used most in the Great Basin, Mountain, and Northern Plains subregions. The largest proportion of wool sold on a consignment basis, 28 percent, was in Texas-New Mexico. The Pacific Coast subregion producers sold somewhat more of their wool, 20 percent, directly to manufacturers than did producers in other subregions.

Since wool can be stored from one year to another, seasonal sales patterns may change over time. However, 1974 data indicate that producers tend to sell shortly after shearing where that is possible (table A-24). The most common sale month has been April followed by May, June, and July. Northern Plains and California-Arizona producers tended to sell earlier than producers in other subregions. Most of these earlier sales occurred in March and April. The largest proportions of sales by Pacific Coast producers were in July and August. Other areas tend to follow the average pattern.

23

|                      |   |                                       |       |         |             |            |            |          |                  |
|----------------------|---|---------------------------------------|-------|---------|-------------|------------|------------|----------|------------------|
|                      | : | :                                     |       |         |             |            |            |          | :                |
|                      | : | Subregion                             |       |         |             |            |            |          | :                |
| Size of operation by | : | :                                     | :     | :       | :           | :          | :          | :        | :                |
| number of animals    | : | :                                     | Great | Pacific | California- | Texas      | Plains     | Northern | All              |
|                      | : | Mountain                              | Basin | Coast   | Arizona     | New Mexico | Wheat-Corn | Plains   | production areas |
|                      | : | :                                     | :     | :       | :           | :          | :          | :        | :                |
|                      | : | Percent of commercial stock sheep     |       |         |             |            |            |          | :                |
|                      | : |                                       |       |         |             |            |            |          |                  |
| 50-299               | : | 7                                     | 5     | 21      | 3           | 9          | 52         | 9        | 14               |
| 300-999              | : | 13                                    | 10    | 27      | 6           | 17         | 29         | 27       | 18               |
| 1,000-and over       | : | 80                                    | 85    | 52      | 91          | 74         | 19         | 64       | 68               |
| All sizes            | : | 100                                   | 100   | 100     | 100         | 100        | 100        | 100      | 100              |
|                      | : |                                       |       |         |             |            |            |          |                  |
|                      | : |                                       |       |         |             |            |            |          |                  |
|                      | : | Percent of commercial sheep producers |       |         |             |            |            |          | :                |
|                      | : |                                       |       |         |             |            |            |          |                  |
| 50-299               | : | 72                                    | 65    | 76      | 47          | 51         | 89         | 52       | 68               |
| 300-999              | : | 18                                    | 15    | 14      | 15          | 23         | 10         | 31       | 18               |
| 1,000 and over       | : | 10                                    | 20    | 10      | 38          | 26         | 1          | 17       | 14               |
| All sizes            | : | 100                                   | 100   | 100     | 100         | 100        | 100        | 100      | 100              |
|                      | : |                                       |       |         |             |            |            |          |                  |
|                      | : |                                       |       |         |             |            |            |          |                  |

Table A-2--Form of ownership of western commercial sheep operations, 1974

| Subregion or size<br>of operation                 | Form of ownership of operation |             |             |       |       | Form of ownership of ewes |             |             |       |       |
|---|--------------------------------|-------------|-------------|-------|-------|---------------------------|-------------|-------------|-------|-------|
|   | Sole<br>proprietor             | Partnership | Corporation |       | Total | Sole<br>Proprietor        | Partnership | Corporation |       | Total |
|   |                                |             | Family      | Other |       |                           |             | Family      | Other |       |
|   |                                |             |             |       |       |                           |             |             |       |       |
| <u>Percent</u>                                    |                                |             |             |       |       |                           |             |             |       |       |
| <u>Subregion</u>                                  |                                |             |             |       |       |                           |             |             |       |       |
| Mountain  | 61                             | 17          | 20          | 2     | 100   | 33                        | 22          | 41          | 4     | 100   |
| Great Basin                                       | 60                             | 14          | 21          | 5     | 100   | 24                        | 25          | 19          | 32    | 100   |
| Pacific Coast                                     | 77                             | 17          | 4           | 2     | 100   | 69                        | 23          | 4           | 4     | 100   |
| California-Arizona                                | 60                             | 31          | 7           | 2     | 100   | 39                        | 48          | 10          | 3     | 100   |
| Texas-New Mexico                                  | 48                             | 26          | 26          | -     | 100   | 63                        | 22          | 15          | --    | 100   |
| Plains Wheat-Corn                                 | 83                             | 7           | 10          | -     | 100   | 70                        | 8           | 22          | --    | 100   |
| Northern Plains                                   | 57                             | 20          | 22          | 1     | 100   | 43                        | 28          | 28          | 1     | 100   |
| <u>Size of operation by<br/>number of animals</u> |                                |             |             |       |       |                           |             |             |       |       |
| 50-99   | 80                             | 9           | 10          | 1     | 100   | 77                        | 9           | 13          | 1     | 100   |
| 100-299   | 72                             | 15          | 12          | 1     | 100   | 68                        | 14          | 16          | 2     | 100   |
| 300-999   | 69                             | 13          | 17          | 1     | 100   | 61                        | 16          | 22          | 1     | 100   |
| 1,000-2,499                                       | 60                             | 17          | 21          | 2     | 100   | 56                        | 20          | 22          | 2     | 100   |
| 2,500-4,999                                       | 53                             | 24          | 22          | 1     | 100   | 43                        | 25          | 23          | 9     | 100   |
| 5,000 and over                                    | 36                             | 34          | 26          | 4     | 100   | 29                        | 28          | 41          | 2     | 100   |
| All subregions<br>and sizes                       | 68                             | 16          | 15          | 1     | 100   | 51                        | 22          | 24          | 3     | 100   |

Table A-3--Average owner equity and operating capital borrowing,  
western commercial sheep producers, 1974

|                              |   |                    |           |           |   |           |
|------------------------------|---|--------------------|-----------|-----------|---|-----------|
|                              | : | Owner's equity in: |           |           | : | Operating |
| Subregion or size            | : | :                  | :         | :         | : | capital   |
| of operation                 | : | Real estate        | Livestock | Equipment | : | borrowed  |
|                              | : | :                  | :         | :         | : |           |
|                              | : | <u>Percent</u>     |           |           |   |           |
|                              | : |                    |           |           |   |           |
| <u>Subregion</u>             | : |                    |           |           |   |           |
|                              | : |                    |           |           |   |           |
| Mountain                     | : | 73                 | 78        | 79        |   | 40        |
| Great Basin                  | : | 80                 | 80        | 85        |   | 41        |
| Pacific Coast                | : | 90                 | 92        | 90        |   | 10        |
| California-Arizona           | : | 78                 | 84        | 85        |   | 43        |
| Texas-New Mexico             | : | 83                 | 79        | 80        |   | 22        |
| Plains Wheat-Corn            | : | 72                 | 76        | 78        |   | 26        |
| Northern Plains              | : | 72                 | 74        | 83        |   | 45        |
|                              | : |                    |           |           |   |           |
|                              | : |                    |           |           |   |           |
| <u>Size of operation by:</u> | : |                    |           |           |   |           |
| <u>number of animals</u>     | : |                    |           |           |   |           |
|                              | : |                    |           |           |   |           |
| 50-99                        | : | 74                 | 84        | 84        |   | 20        |
| 100-299                      | : | 77                 | 81        | 82        |   | 24        |
| 300-999                      | : | 74                 | 81        | 84        |   | 37        |
| 1,000-2,499                  | : | 78                 | 71        | 75        |   | 46        |
| 2,500-4,999                  | : | 74                 | 70        | 77        |   | 53        |
| 5,000 and over               | : | 80                 | 72        | 84        |   | 67        |
| All subregions               | : |                    |           |           |   |           |
| and sizes                    | : | 76                 | 79        | 81        |   | 32        |
|                              | : |                    |           |           |   |           |



Table A-4--Types of livestock enterprises operated by western commercial sheep producers, 1974

| Subregion or size of operation                | Commercial producers with:          |                       |                      |                          | Commercial ewes on operations with:      |                       |                      |                          |
|---|-------------------------------------|-----------------------|----------------------|--------------------------|--|-----------------------|----------------------|--------------------------|
|   | Sheep only                          | Sheep and cattle only | Sheep and goats only | Sheep, cattle, and goats | Sheep only                               | Sheep and cattle only | Sheep and goats only | Sheep, cattle, and goats |
|   | ----- <u>Percent of total</u> ----- |                       |                      |                          | ----- <u>Percent of total ewes</u> ----- |                       |                      |                          |
| <u>Subregion</u>                              |                                     |                       |                      |                          |  |                       |                      |                          |
| Mountain                                      | 46                                  | 48                    | 1                    | 4                        | 46                                       | 48                    | 4                    | 2                        |
| Great Basin                                   | 54                                  | 46                    | 0                    | 0                        | 37                                       | 63                    | 0                    | --                       |
| Pacific Coast                                 | 37                                  | 50                    | 1                    | 12                       | 43                                       | 54                    | 13                   | --                       |
| California-Arizona                            | 70                                  | 30                    | 0                    | 0                        | 61                                       | 39                    | 0                    | --                       |
| Texas-New Mexico                              | 11                                  | 45                    | 3                    | 41                       | 7  | 58                    | 26                   | 9                        |
| Plains Wheat-Corn                             | 19                                  | 76                    | 1                    | 4                        | 19                                       | 76                    | 4                    | 1                        |
| Northern Plains                               | 18                                  | 80                    | --                   | 2                        | 13                                       | 84                    | 3                    | --                       |
| <u>Size of operation by number of animals</u> |                                     |                       |                      |                          |  |                       |                      |                          |
| 50-99   | 29                                  | 60                    | 1                    | 10                       | 15                                       | 63                    | 1                    | 21                       |
| 100-299                                       | 30                                  | 61                    | 2                    | 7                        | 20                                       | 67                    | 1                    | 12                       |
| 300-999                                       | 31                                  | 60                    | --                   | 9                        | 27                                       | 59                    | --                   | 14                       |
| 1,000-2,499                                   | 25                                  | 59                    | 2                    | 14                       | 24                                       | 55                    | 6                    | 15                       |
| 2,500-4,999                                   | 37                                  | 40                    | 2                    | 21                       | 42                                       | 38                    | 2                    | 18                       |
| 5,000 and over                                | 34                                  | 49                    | 1                    | 16                       | 47                                       | 46                    | 1                    | 16                       |
| All subregions and sizes                      | 31                                  | 56                    | 2                    | 11                       | 32                                       | 50                    | 1                    | 17                       |

Table A-5--Relative sales proceeds from various farm products, western commercial sheep producers, 1974

[illegible]

Table A-6--Feed supply sources of western commercial ewes, 1974

| Subregion          | : | Public range |        |       |       | :       | :         | :         | :     | :       | :       |       |
|--------------------|---|--------------|--------|-------|-------|---------|-----------|-----------|-------|---------|---------|-------|
|                    | : | National     |        |       |       | :       | Private   | Irrigated | Small | Crop    | Supple- | Total |
|                    | : | BLM          | Forest | State | Sub-  | Private | Irrigated | grain     | Crop  | mentary | annual  |       |
|                    | : | System       |        | total | range | pasture | pasture   | residue   | feed  | feed    |         |       |
|                    | : | Percent      |        |       |       |         |           |           |       |         |         |       |
| Mountain           | : | 25           | 13     | 3     | 41    | 32      | 7         | 0         | 3     | 17      | 100     |       |
| Great Basin        | : | 36           | 14     | 1     | 51    | 26      | 4         | 0         | 1     | 18      | 100     |       |
| Pacific Coast      | : | 4            | 1      | 1     | 6     | 64      | 7         | 3         | 1     | 19      | 100     |       |
| California-Arizona | : | 11           | 2      | 0     | 13    | 36      | 15        | 5         | 19    | 12      | 100     |       |
| Texas-New Mexico   | : | 0            | 0      | 4     | 4     | 73      | 2         | 1         | 1     | 19      | 100     |       |
| Plains-Wheat-Corn  | : | 0            | 0      | 1     | 1     | 47      | 2         | 3         | 10    | 37      | 100     |       |
| Northern Plains    | : | 12           | 1      | 5     | 18    | 56      | 2         | 0         | 2     | 22      | 100     |       |
| Total              | : | 11           | 4      | 3     | 18    | 51      | 4         | 1         | 4     | 22      | 100     |       |

Table A-7--Use of Federal range by western commercial sheep producers, 1974

| Subregion or size of operation         | Commercial producers using:    |                             |  |                     | Ewes of producers using: <sup>2/</sup> |                             |  |                     |
|--|--------------------------------|-----------------------------|--|---------------------|--|-----------------------------|--|---------------------|
|  | BLM land                       | National Forest System land | Both BLM and National Forest System land | Total Federal range | BLM land                               | National Forest System land | Both BLM and National Forest System land | Total Federal range |
|  | Percent of total <sup>1/</sup> |                             |  |                     |  |                             |  |                     |
| Subregion                              |                                |                             |  |                     |  |                             |  |                     |
| Mountain                               | 32                             | 27                          | 22                                       | 37                  | 71                                     | 57                          | 52                                       | 76                  |
| Great Basin                            | 38                             | 24                          | 23                                       | 39                  | 84                                     | 49                          | 49                                       | 84                  |
| Pacific Coast                          | 1                              | 1                           | 1  | 1                   | 8                                      | 8                           | 8  | 8                   |
| California-Arizona                     | 26                             | 11                          | 10                                       | 27                  | 45                                     | 22                          | 17                                       | 50                  |
| Texas-New Mexico                       | 2                              | 0                           | 0  | 2                   | 3                                      | 0                           | 0  | 3                   |
| Plains Wheat-Corn                      | 1                              | 0                           | 0  | 1                   | 4                                      | 0                           | 0  | 4                   |
| Northern Plains                        | 39                             | 3                           | 1  | 41                  | 61                                     | 6                           | 1  | 66                  |
| Size of operation by number of animals |                                |                             |  |                     |  |                             |  |                     |
| 50-99                                  | 2                              | --                          | --                                       | 2                   | 2                                      | 1                           | --                                       | 3                   |
| 100-299                                | 5                              | 3                           | 1  | 7                   | 7                                      | 3                           | --                                       | 10                  |
| 300-999                                | 24                             | 10                          | 8  | 26                  | 37                                     | 16                          | 13                                       | 40                  |
| 1,000-2,499                            | 35                             | 14                          | 13                                       | 36                  | 41                                     | 15                          | 12                                       | 44                  |
| 2,500-4,999                            | 46                             | 25                          | 24                                       | 47                  | 49                                     | 31                          | 29                                       | 51                  |
| 5,000 and over                         | 50                             | 29                          | 28                                       | 51                  | 53                                     | 32                          | 29                                       | 56                  |
| All subregions and sizes               | 19                             | 8                           | 7  | 20                  | 44                                     | 25                          | 22                                       | 47                  |

<sup>1/</sup> Percent of all commercial producers or commercial ewes in the West. May add to more than 100 because of the producers using both BLM and National Forest System lands.

2/ Includes all of the ewes of commercial producers who use the specific type of Federal range, even though some producers may not place all of their sheep on this range. Thus the figures overstate the actual proportions of sheep grazing on Federal ranges.

Table A-8--Contribution of Federal range to the feed supply of western commercial sheep producers using it for grazing sheep, 1974

| Subregion or size of operation | Total annual feed provided by: |                        |                   |
|--------------------------------|--------------------------------|------------------------|-------------------|
|                                | BLM                            | National Forest System | All Federal range |
|                                | <u>Percent</u>                 |                        |                   |
| <u>Subregion</u>               |                                |                        |                   |
| Mountain                       | 35                             | 22                     | 43                |
| Great Basin                    | 43                             | 26                     | 55                |
| Pacific Coast                  | 75                             | --                     | 75                |
| California-Arizona             | 25                             | 12                     | 28                |
| Texas-New Mexico               | 21                             | 0                      | 21                |
| Plains Wheat-Corn              | 18                             | 0                      | 18                |
| Northern Plains                | 23                             | 20                     | 23                |
| <u>Size of operation by:</u>   |                                |                        |                   |
| <u>number of animals</u>       |                                |                        |                   |
| 50-99                          | 16                             | 28                     | 30                |
| 100-299                        | 28                             | 24                     | 28                |
| 300-999                        | 30                             | 23                     | 33                |
| 1,000-2,499                    | 31                             | 24                     | 43                |
| 2,500-4,999                    | 33                             | 22                     | 45                |
| 5,000 and over                 | 34                             | 17                     | 42                |
| All subregions and sizes       | 31                             | 19                     | 36                |

31

| Subregion          | Proportion of annual feed from BLM grazing land (percent) |      |       |       |       |       |             |       |  |
|--------------------|---|------|-------|-------|-------|-------|-------------|-------|--|
|                    | None  | 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51 and over | Total |  |
|                    |   |      |       |       |       |       |             |       |  |
|                    | <u>Percent of sheep producers</u>                         |      |       |       |       |       |             |       |  |
| Mountain           | 68  | 4    | 5     | 4     | 5     | 11    | 3           | 100   |  |
| Great Basin        | 62  | 1    | 2     | 11    | 6     | 7     | 11          | 100   |  |
| Pacific Coast      | 99  | 1    | -     | --    | -     | -     | --          | 100   |  |
| California-Arizona | 74  | 6    | 10    | 3     | 3     | 2     | 2           | 100   |  |
| Texas-New Mexico   | 98  | 2    | -     | --    | -     | -     | -           | 100   |  |
| Plains Wheat-Corn  | 99  | 1    | -     | --    | -     | -     | -           | 100   |  |
| Northern Plains    | 61  | 13   | 7     | 10    | 3     | 3     | 3           | 100   |  |
| All subregions     | 81  | 4    | 3     | 4     | 2     | 4     | 2           | 100   |  |

Table A-10-- Use of National Forest System grazing land by western commercial sheep producers, 1974

| Subregion          | Proportion of annual feed from National Forest System grazing land (percent) |      |       |       |       |       |             |       |  |
|--------------------|--|------|-------|-------|-------|-------|-------------|-------|--|
|                    | None   | 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51 and over | Total |  |
|                    |  |      |       |       |       |       |             |       |  |
|                    | <u>Percent of sheep producers</u>  |      |       |       |       |       |             |       |  |
| Mountain           | 73   | 4    | 10    | 8     | 3     | 1     | 1           | 100   |  |
| Great Basin        | 76   | 2    | 4     | 13    | 4     | 1     | 0           | 100   |  |
| Pacific Coast      | 99   | 1    | 0     | 0     | 0     | 0     | 0           | 100   |  |
| California-Arizona | 89   | 8    | 2     | 1     | 0     | 0     | 0           | 100   |  |
| Texas-New Mexico   | 100  | 0    | 0     | 0     | 0     | 0     | 0           | 100   |  |
| Plains Wheat-Corn  | 100  | 0    | 0     | 0     | 0     | 0     | 0           | 100   |  |
| Northern Plains    | 97   | 1    | 0     | 1     | 1     | 0     | 0           | 100   |  |
| All subregions     | 92   | 2    | 2     | 3     | 1     | -     | -           | 100   |  |

Table A-11--Seasonal use patterns of different feed sources for western sheep operations, 1974

| Feed source by subregion | : Jan.               | : Feb. | : Mar. | : Apr. | : May | : June | : July | : Aug. | : Sept. | : Oct. | : Nov. | : Dec. |
|--------------------------|----------------------|--------|--------|--------|-------|--------|--------|--------|---------|--------|--------|--------|
|                          | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
|                          | Percent of producers |        |        |        |       |        |        |        |         |        |        |        |
| <u>Mountain</u>          | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| BLM                      | : 20                 | 19     | 19     | 17     | 12    | 9      | 7      | 6      | 6       | 9      | 14     | 20     |
| National Forest System   | : 0                  | 0      | 0      | 0      | 2     | 5      | 24     | 24     | 19      | 4      | 0      | 0      |
| State grazing            | : 2                  | 2      | 2      | 3      | 4     | 5      | 4      | 3      | 4       | 3      | 3      | 2      |
| Private range            | : 22                 | 20     | 21     | 27     | 43    | 45     | 36     | 33     | 35      | 35     | 30     | 26     |
| Irrigated pasture        | : 13                 | 13     | 12     | 19     | 34    | 37     | 33     | 33     | 34      | 34     | 28     | 19     |
| Grain pasture            | : 1                  | 1      | 0      | 1      | 0     | 0      | 0      | 0      | 1       | 2      | 2      | 1      |
| Crop residue             | : 4                  | 3      | 3      | 2      | 1     | 1      | 1      | 4      | 9       | 15     | 15     | 9      |
| Supplementary feed       | : 53                 | 56     | 56     | 48     | 17    | 4      | 2      | 2      | 2       | 1      | 16     | 41     |
| Other                    | : 2                  | 2      | 2      | 2      | 3     | 3      | 2      | 2      | 2       | 2      | 2      | 2      |
|                          | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| <u>Plains Wheat-Corn</u> | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| BLM                      | : 0                  | 0      | 0      | 0      | 0     | 0      | 0      | 0      | 0       | 0      | 0      | 0      |
| National Forest System   | : 0                  | 0      | 0      | 0      | 0     | 0      | 0      | 0      | 0       | 0      | 0      | 0      |
| State grazing            | : 0                  | 0      | 0      | 0      | 0     | 1      | 1      | 1      | 1       | 0      | 0      | 0      |
| Private range            | : 7                  | 8      | 9      | 34     | 74    | 78     | 78     | 77     | 71      | 52     | 26     | 10     |
| Irrigated pasture        | : 0                  | 0      | 1      | 2      | 2     | 3      | 3      | 2      | 2       | 2      | 1      | 1      |
| Grain pasture            | : 2                  | 2      | 3      | 4      | 2     | 3      | 2      | 2      | 3       | 3      | 4      | 2      |
| Crop residue             | : 8                  | 5      | 5      | 3      | 1     | 0      | 1      | 4      | 11      | 23     | 28     | 17     |
| Supplementary feed       | : 80                 | 80     | 80     | 56     | 18    | 6      | 5      | 6      | 10      | 20     | 43     | 72     |
| Other                    | : 2                  | 2      | 2      | 1      | 2     | 2      | 3      | 4      | 3       | 2      | 2      | 2      |
|                          | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| <u>Northern Plains</u>   | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| BLM                      | : 13                 | 13     | 12     | 11     | 20    | 26     | 27     | 26     | 19      | 16     | 14     | 12     |
| National Forest System   | : 0                  | 0      | 0      | 0      | 1     | 2      | 2      | 2      | 2       | 1      | 0      | 0      |
| State grazing            | : 13                 | 12     | 10     | 10     | 16    | 21     | 21     | 20     | 17      | 14     | 13     | 14     |
| Private range            | : 42                 | 42     | 43     | 55     | 74    | 71     | 71     | 71     | 71      | 70     | 65     | 49     |
| Irrigated pasture        | : 1                  | 1      | 1      | 1      | 4     | 4      | 3      | 4      | 4       | 3      | 1      | 0      |
| Grain pasture            | : 1                  | 1      | 1      | 0      | 0     | 0      | 0      | 0      | 1       | 2      | 0      | 1      |
| Crop residue             | : 2                  | 2      | 1      | 1      | 0     | 0      | 0      | 3      | 10      | 12     | 7      | 6      |
| Supplementary feed       | : 66                 | 69     | 65     | 49     | 13    | 1      | 1      | 1      | 2       | 4      | 22     | 50     |
| Other                    | : 4                  | 4      | 4      | 4      | 4     | 4      | 4      | 4      | 5       | 5      | 4      | 3      |
|                          | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| <u>Texas-New Mexico</u>  | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| BLM                      | : 2                  | 2      | 2      | 2      | 2     | 2      | 2      | 2      | 2       | 2      | 2      | 2      |
| National Forest System   | : 0                  | 0      | 0      | 0      | 0     | 0      | 0      | 0      | 0       | 0      | 0      | 0      |
| State grazing            | : 4                  | 4      | 4      | 4      | 4     | 4      | 4      | 4      | 4       | 4      | 4      | 4      |
| Private range            | : 56                 | 57     | 61     | 63     | 63    | 62     | 62     | 62     | 61      | 62     | 59     | 56     |
| Irrigated pasture        | : 1                  | 1      | 1      | 1      | 1     | 1      | 1      | 1      | 1       | 1      | 1      | 1      |
| Grain pasture            | : 7                  | 7      | 2      | 1      | 1     | 1      | 1      | 1      | 1       | 2      | 5      | 7      |
| Crop residue             | : 0                  | 0      | 0      | 0      | 1     | 1      | 1      | 2      | 1       | 1      | 0      | 0      |
| Supplementary feed       | : 45                 | 46     | 31     | 11     | 4     | 3      | 3      | 3      | 3       | 4      | 9      | 25     |
| Other                    | : 10                 | 10     | 8      | 3      | 2     | 2      | 1      | 1      | 2       | 2      | 3      | 3      |

Continued



Table A-11--Seasonal use patterns of different feed sources for western sheep operations, 1974--Continued

| Feed source by subregion  | : Jan.               | : Feb. | : Mar. | : Apr. | : May | : June | : July | : Aug. | : Sept. | : Oct. | : Nov. | : Dec. |
|---------------------------|----------------------|--------|--------|--------|-------|--------|--------|--------|---------|--------|--------|--------|
|                           | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
|                           | Percent of producers |        |        |        |       |        |        |        |         |        |        |        |
| <u>Pacific Coast</u>      | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| BLM                       | : 0                  | : 0    | : 0    | : 0    | : 0   | : 0    | : 0    | : 0    | : 0     | : 0    | : 0    | : 0    |
| National Forest System    | : 0                  | : 0    | : 0    | : 0    | : 0   | : 0    | : 1    | : 1    | : 1     | : 1    | : 0    | : 0    |
| State grazing             | : 1                  | : 1    | : 1    | : 1    | : 1   | : 1    | : 1    | : 1    | : 1     | : 1    | : 1    | : 1    |
| Private range             | : 54                 | : 54   | : 57   | : 61   | : 64  | : 65   | : 63   | : 61   | : 61    | : 59   | : 59   | : 56   |
| Irrigated pasture         | : 6                  | : 6    | : 7    | : 9    | : 9   | : 10   | : 13   | : 13   | : 12    | : 12   | : 9    | : 9    |
| Grain pasture             | : 1                  | : 1    | : 2    | : 2    | : 2   | : 2    | : 4    | : 4    | : 4     | : 2    | : 1    | : 0    |
| Crop residue              | : 0                  | : 0    | : 0    | : 0    | : 0   | : 3    | : 7    | : 8    | : 11    | : 7    | : 6    | : 3    |
| Supplementary feed        | : 56                 | : 54   | : 40   | : 20   | : 9   | : 8    | : 6    | : 9    | : 11    | : 17   | : 31   | : 46   |
| Other                     | : 2                  | : 2    | : 2    | : 4    | : 6   | : 8    | : 7    | : 6    | : 6     | : 6    | : 6    | : 3    |
|                           | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| <u>California-Arizona</u> | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| BLM                       | : 2                  | : 3    | : 13   | : 17   | : 20  | : 7    | : 3    | : 2    | : 2     | : 1    | : 1    | : 1    |
| National Forest System    | : 0                  | : 0    | : 0    | : 0    | : 2   | : 6    | : 5    | : 5    | : 6     | : 5    | : 0    | : 0    |
| State grazing             | : 0                  | : 0    | : 0    | : 0    | : 0   | : 0    | : 0    | : 0    | : 0     | : 0    | : 0    | : 0    |
| Private range             | : 59                 | : 66   | : 68   | : 65   | : 62  | : 53   | : 45   | : 44   | : 41    | : 37   | : 36   | : 39   |
| Irrigated pasture         | : 33                 | : 21   | : 18   | : 15   | : 14  | : 15   | : 17   | : 15   | : 17    | : 35   | : 37   | : 34   |
| Grain pasture             | : 1                  | : 0    | : 1    | : 1    | : 3   | : 10   | : 19   | : 17   | : 10    | : 7    | : 3    | : 1    |
| Crop residue              | : 11                 | : 5    | : 5    | : 4    | : 7   | : 13   | : 29   | : 36   | : 34    | : 27   | : 80   | : 14   |
| Supplementary feed        | : 41                 | : 34   | : 22   | : 13   | : 10  | : 10   | : 10   | : 9    | : 10    | : 16   | : 32   | : 38   |
| Other                     | : 2                  | : 4    | : 4    | : 4    | : 4   | : 3    | : 4    | : 4    | : 6     | : 7    | : 4    | : 4    |
|                           | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| <u>Great Basin</u>        | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |
| BLM                       | : 27                 | : 25   | : 22   | : 18   | : 15  | : 13   | : 8    | : 7    | : 7     | : 14   | : 18   | : 24   |
| National Forest System    | : 0                  | : 0    | : 0    | : 0    | : 2   | : 7    | : 21   | : 21   | : 18    | : 2    | : 0    | : 0    |
| State grazing             | : 1                  | : 1    | : 1    | : 2    | : 4   | : 5    | : 3    | : 3    | : 2     | : 2    | : 2    | : 2    |
| Private range             | : 20                 | : 20   | : 22   | : 26   | : 35  | : 38   | : 30   | : 32   | : 34    | : 36   | : 25   | : 23   |
| Irrigated pasture         | : 5                  | : 5    | : 7    | : 16   | : 30  | : 27   | : 27   | : 29   | : 29    | : 23   | : 16   | : 8    |
| Grain pasture             | : 0                  | : 0    | : 0    | : 0    | : 0   | : 0    | : 0    | : 0    | : 0     | : 0    | : 0    | : 0    |
| Crop residue              | : 4                  | : 4    | : 4    | : 7    | : 7   | : 5    | : 4    | : 5    | : 3     | : 4    | : 7    | : 5    |
| Supplementary feed        | : 39                 | : 40   | : 40   | : 25   | : 8   | : 2    | : 1    | : 1    | : 4     | : 12   | : 24   | : 36   |
| Other                     | : 1                  | : 1    | : 0    | : 1    | : 0   | : 0    | : 0    | : 0    | : 1     | : 3    | : 3    | : 2    |
|                           | :                    | :      | :      | :      | :     | :      | :      | :      | :       | :      | :      | :      |

Table A-12 --Grazing on BLM lands, 1960-74

| Year           | Grazing district lands |                   |                 |                            | Grazing lease lands  |                   |                 | Basic grazing fee |                 |
|----------------|------------------------|-------------------|-----------------|----------------------------|----------------------|-------------------|-----------------|-------------------|-----------------|
|                | Area <u>1/</u>         | Animals grazed    |                 | Sheep and goats operations | Area <u>1/</u>       | Animals grazed    |                 | Cattle            | Sheep <u>3/</u> |
|                |                        | Cattle and horses | Sheep and goats |                            |                      | Cattle and horses | Sheep and goats |                   |                 |
|                |                        |                   |                 |                            |                      |                   |                 |                   |                 |
| Million acres  | Million head           | Thousand          | Million acres   | Million head               | Dollars/animal month |                   |                 |                   |                 |
| 1960           | 162                    | 2.2               | 5.0             | 4.6                        | 18.4                 | 0.9               | 1.5             | 0.22              | 0.04            |
| 1965           | 159                    | 2.3               | 4.7             | 3.2                        | 18.4                 | 1.2               | 1.9             | 0.30              | 0.06            |
| 1970           | 157                    | 2.2               | 3.7             | 2.4                        | 18.5                 | 1.3               | 1.9             | 0.44              | 0.09            |
| 1974           | 157                    | 2.3               | 3.0             | 1.9                        | 17.1 <u>2/</u>       | 1.3               | 1.5             | 1.00              | 0.20            |
| Change 1960-74 | -5                     | +0.1              | -2.0            | -2.7                       | -1.3                 | +0.4              | 0               | .78               | .16             |
|                |                        |                   |                 |                            | Percent              |                   |                 |                   |                 |
| Percent change | -3                     | +5                | -40             | -59                        | -7                   | +44               | 0               | +355              | +400            |

1/ Total available for all livestock2/ 19733/ Five sheep are considered equivalent to one cow, thus fees are one-fifth that for cattle.

Source: U.S. Dept. Interior--Public Land Statistics

Table A-13--Grazing on National Forest System lands, 1950-74

| Year    | Grazing area <u>1/</u>       |                |               | Animals grazed            |           | Grazing permits          |           | Average grazing fees            |                 |
|---------|------------------------------|----------------|---------------|---------------------------|-----------|--------------------------|-----------|---------------------------------|-----------------|
|         | Net                          | Used by cattle | Used by sheep | Cattle                    | Sheep     | Cattle                   | Sheep     | Cattle                          | Sheep           |
|         | Suitable                     | and horses     | and goats     | and horses                | and Goats | and horses               | and goats |                                 |                 |
|         | --- <u>Million acres</u> --- |                |               | <u>Million animals</u> -- |           | <u>--1,000 permits--</u> |           | <u>Dollars per animal month</u> |                 |
| 1950    | 77.2                         | 45.0           | 17.7          | 1.1                       | 3.0       | 17.3                     | 2.6       | .42                             | .11             |
| 1955    | 67.7                         | 42.7           | 14.8          | 1.4                       | 2.9       | 22.2                     | 2.5       | .37                             | .09             |
| 1960    | 64.0                         | 43.4           | 13.0          | 1.3                       | 2.6       | 18.3                     | 2.1       | .51                             | .09             |
| 1965    | 60.4                         | 43.0           | 10.8          | 1.4                       | 2.1       | 17.3                     | 1.7       | .46                             | .10             |
| 1970    | 58.9                         | 42.2           | 9.4           | 1.5                       | 1.8       | 16.5                     | 1.4       | .60                             | .13             |
| 1974    | NA                           | NA             | NA            | 1.6                       | 1.5       | NA                       | NA        | 1.11                            | .23             |
| Change  |                              |                |               |                           |           |                          |           |                                 |                 |
| 1950-70 | -18.3                        | - 2.8          | - 8.3         | + .4                      | - 1.2     | - .8                     | - 1.2     | + .74 <u>2/</u>                 | + .11 <u>2/</u> |
| Percent |                              |                |               | <u>Percent</u>            |           |                          |           |                                 |                 |
| change  |                              |                |               |                           |           |                          |           |                                 |                 |
| 1950-70 | -24                          | -6             | -47           | +36                       | -40       | - 5                      | -46       | + 200 <u>2/</u>                 | +155 <u>2/</u>  |

1/ Excludes National Grassland areas prior to 1960, but these are a minor part of total "system."

2/ 1955-74

Source: Forest Service, Annual Grazing Statistical Reports and unpublished data.

Table A-14--Use of open range versus fenced pasture and range between lamb docking and marketing, western commercial sheep operations, 1974

| Subregion and size of operation  | Commercial operations using: <u>1/</u> |                          |      | Commercial ewes on: |                          |
|--|--|--------------------------|------|---------------------|--------------------------|
|  | Open range                             | Fenced pasture and range | Both | Open range          | Fenced pasture and range |
| <u>Subregion</u>   | <u>Percent of total</u>                |                          |      |                     |                          |
| Mountain   | 37                                     | 71                       | 8    | 80                  | 20                       |
| Great Basin  | 47                                     | 55                       | 2    | 93                  | 7                        |
| Pacific Coast  | 14                                     | 87                       | 1    | 31                  | 69                       |
| California-Arizona   | 45                                     | 82                       | 27   | 46                  | 54                       |
| Texas-New Mexico   | 3                                      | 99                       | 2    | 2                   | 98                       |
| Plains Wheat-Corn  | 2                                      | 98                       | 0    | 2                   | 98                       |
| Northern Plains  | 13                                     | 91                       | 4    | 13                  | 87                       |
| <u>Size of operation by number of animals</u>                          |  |                          |      |                     |                          |
| 50-99  | 5                                      | 96                       | 1    | 4                   | 96                       |
| 100-299  | 8                                      | 93                       | 1    | 9                   | 91                       |
| 300-999  | 19                                     | 83                       | 2    | 28                  | 72                       |
| 1,000-2,499  | 32                                     | 74                       | 6    | 37                  | 63                       |
| 2,500-4,999  | 49                                     | 67                       | 16   | 51                  | 49                       |
| 5,000 and over   | 53                                     | 69                       | 22   | 48                  | 52                       |
| All subregions and sizes <u>1/</u>                                     | 19                                     | 85                       | 4    | 42                  | 58                       |
| <u>1/</u> Adds to more than 100 because of operations using both types |  |                          |      |                     |                          |

Table A-15--Use of full-time herders by western commercial sheep producers, 1974

| Subregion and size of operation               | Commercial producers    |                           | Ewes of commercial producers     |                           |
|---|-------------------------|---------------------------|----------------------------------|---------------------------|
|   | With full-time herders  | Without full-time herders | With full-time herders <u>1/</u> | Without full-time herders |
|   | <u>Percent of total</u> |                           |                                  |                           |
| <u>Subregion</u>                              |                         |                           |                                  |                           |
| Mountain                                      | 30                      | 70                        | 82                               | 18                        |
| Great Basin                                   | 34                      | 66                        | 90                               | 10                        |
| Pacific Coast                                 | 6                       | 94                        | 26                               | 74                        |
| California-Arizona                            | 58                      | 42                        | 94                               | 6                         |
| Texas-New Mexico                              | 19                      | 81                        | 39                               | 61                        |
| Plains Wheat-Corn                             | 0                       | 100                       | 0                                | 100                       |
| Northern Plains                               | 4                       | 96                        | 19                               | 81                        |
| <u>Size of operation by number of animals</u> |                         |                           |                                  |                           |
| 50-99   | 0                       | 100                       | 0                                | 100                       |
| 100-299                                       | 2                       | 98                        | 5                                | 95                        |
| 300-999                                       | 13                      | 87                        | 23                               | 77                        |
| 1,000-2,499                                   | 34                      | 66                        | 44                               | 56                        |
| 2,500-4,999                                   | 75                      | 25                        | 78                               | 22                        |
| 5,000 and over                                | 72                      | 28                        | 78                               | 22                        |
| All subregions and sizes                      | 19                      | 81                        | 62                               | 38                        |

1/ Since not all producers using full-time herders place all their sheep under the care of herders, these numbers generally overstate the actual proportions of sheep under the care of full-time herders.

Table A-16--Movement of sheep between feeding areas, western commercial sheep operations, 1974

| Subregion and size of operation               | Producers      | Sheep                  | Sheep moved  |              |                     | Total moved |
|---|----------------|------------------------|--------------|--------------|---------------------|-------------|
|   | who move sheep | not moved              | Trailed only | Trucked only | Trailed and Trucked |             |
|   | Percent        | Percent of total sheep |              |              |                     |             |
| <u>Subregion</u>                              |                |                        |              |              |                     |             |
| Mountain                                      | 49             | 16                     | 40           | 21           | 23                  | 84          |
| Great Basin                                   | 59             | 8                      | 37           | 23           | 32                  | 92          |
| Pacific Coast                                 | 16             | 68                     | 12           | 16           | 4                   | 32          |
| California-Arizona                            | 65             | 8                      | 14           | 49           | 29                  | 92          |
| Texas-New Mexico                              | 9              | 97                     | 1            | 2            | --                  | 3           |
| Plains Wheat-Corn                             | 13             | 81                     | 10           | 6            | 3                   | 19          |
| Northern Plains                               | 37             | 51                     | 36           | 7            | 6                   | 49          |
| <u>Size of operation by number of animals</u> |                |                        |              |              |                     |             |
| 50-99   | 12             | 83                     | 5            | 4            | 8                   | 17          |
| 100-299                                       | 20             | 57                     | 13           | 8            | 22                  | 43          |
| 300-999                                       | 37             | 57                     | 25           | 10           | 8                   | 43          |
| 1,000-2,499                                   | 46             | 50                     | 24           | 12           | 14                  | 50          |
| 2,500-4,999                                   | 59             | 33                     | 23           | 17           | 27                  | 67          |
| 5,000 and over                                | 64             | 36                     | 13           | 26           | 25                  | 64          |
| All subregions and sizes                      | 32             | 43                     | 26           | 17           | 14                  | 57          |

Table A-17--Average distance which sheep are moved between grazing areas,  
western commercial sheep operations, 1974

| Subregion and size of<br>operation                | Average distance moved |                 |                 |
|---|------------------------|-----------------|-----------------|
|   | Trailed<br>and trucked | Trailed<br>only | Trucked<br>only |
|   | <u>Miles</u>           |                 |                 |
| <u>Subregion</u>                                  |                        |                 |                 |
| Mountain  | 48                     | 45              | 53              |
| Great Basin                                       | 41                     | 44              | 39              |
| Pacific Coast                                     | 2                      | 28              | 42              |
| California-Arizona                                | 69                     | 50              | 349             |
| Texas-New Mexico                                  | 25                     | 8               | 242             |
| Plains Wheat-Corn                                 | 4                      | 2               | 17              |
| Northern Plains                                   | 13                     | 23              | 15              |
| <u>Size of operation by<br/>number of animals</u> |                        |                 |                 |
| 50-99   | 1                      | 1               | 51              |
| 100-299   | 17                     | 11              | 24              |
| 300-999   | 26                     | 19              | 33              |
| 1,000-2,499                                       | 34                     | 56              | 48              |
| 2,500-4,999                                       | 74                     | 51              | 443             |
| 5,000 and over                                    | 56                     | 92              | 261             |
| All subregions and<br>sizes                       | 37                     | 36              | 148             |

Table A-18--Lambing season of western commercial sheep operations, 1974

| Subregion          | Average percentage of lambs born in: |      |      |      |     |      |      |      |       |      |      |      |             |
|--------------------|--------------------------------------|------|------|------|-----|------|------|------|-------|------|------|------|-------------|
|                    | Jan.                                 | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Total lambs |
|                    | <u>Percent</u>                       |      |      |      |     |      |      |      |       |      |      |      |             |
| Mountain           | 4                                    | 14   | 23   | 33   | 24  | 2    | 0    | 0    | 0     | 0    | 0    | -    | 100         |
| Great Basin        | 12                                   | 24   | 14   | 33   | 14  | 2    | 0    | 0    | 0     | 0    | -    | 1    | 100         |
| Pacific Coast      | 33                                   | 37   | 9    | 2    | 1   | -    | -    | 0    | 0     | 1    | 4    | 13   | 100         |
| California-Arizona | 15                                   | 8    | 2    | -    | -   | -    | -    | -    | 1     | 15   | 30   | 29   | 100         |
| Texas-New Mexico   | 7                                    | 22   | 33   | 11   | 5   | -    | -    | -    | 2     | 5    | 8    | 7    | 100         |
| Plains Wheat-Corn  | 17                                   | 24   | 22   | 18   | 11  | -    | 0    | -    | -     | 2    | 3    | 3    | 100         |
| Northern Plains    | 2                                    | 6    | 18   | 32   | 40  | 2    | -    | 0    | 0     | 0    | 0    | -    | 100         |
| Total              | 10                                   | 19   | 21   | 21   | 16  | 1    | -    | -    | 1     | 2    | 4    | 5    | 100         |



Table A-19--Shed lambing versus pasture or range lambing on western commercial sheep operations, 1974

| Subregion and size of operation               | Commercial operations which:          |                           |      | Commercial ewes which are: |                           |
|---|---------------------------------------|---------------------------|------|----------------------------|---------------------------|
|   | Shed lambled                          | Pasture- or range-lambled | Both | Shed-lambled               | Pasture- or range-lambled |
|   | <u>Percent of total</u> <sup>1/</sup> |                           |      |                            |                           |
| <u>Subregion</u>                              |                                       |                           |      |                            |                           |
| Mountain                                      | 81                                    | 26                        | 7    | 47                         | 53                        |
| Great Basin                                   | 79                                    | 27                        | 6    | 27                         | 73                        |
| Pacific Coast                                 | 45                                    | 65                        | 10   | 21                         | 79                        |
| California-Arizona                            | 33                                    | 85                        | 18   | 9                          | 91                        |
| Texas-New Mexico                              | 7                                     | 94                        | 1    | 1                          | 99                        |
| Plains Wheat-Corn                             | 92                                    | 19                        | 11   | 88                         | 12                        |
| Northern Plains                               | 66                                    | 48                        | 14   | 35                         | 65                        |
| <u>Size of operation by number of animals</u> |                                       |                           |      |                            |                           |
| 50-99   | 71                                    | 38                        | 9    | 65                         | 35                        |
| 100-299                                       | 78                                    | 33                        | 11   | 67                         | 33                        |
| 300-999                                       | 66                                    | 41                        | 7    | 58                         | 42                        |
| 1,000-2,499                                   | 45                                    | 84                        | 29   | 28                         | 72                        |
| 2,500-4,999                                   | 51                                    | 84                        | 35   | 22                         | 78                        |
| 5,000 and over                                | 50                                    | 93                        | 43   | 8                          | 92                        |
| All subregions and sizes                      | 60                                    | 49                        | 9    | 38                         | 62                        |

<sup>1/</sup> Adds to more than 100 because some operations both shed- and range-lamb.

Table A-20--Disposition of lambs by western commercial sheep producers, 1973

[illegible]

1/ Total lambs exclude those which died or were lost to various causes.

Table A-21---Lambs sold by type of market, western commercial sheep producers, 1974

| Subregion and size<br>of operation                | Terminal<br>market | Auction<br>market | Packer<br>buyer | Order<br>buyer | Dealer<br>or<br>trader | Producer<br>pool | All<br>other |
|---|--------------------|-------------------|-----------------|----------------|------------------------|------------------|--------------|
| <u>Percent of total lambs sold</u>                |                    |                   |                 |                |                        |                  |              |
| <u>Subregion</u>                                  |                    |                   |                 |                |                        |                  |              |
| Mountain  | -                  | 7                 | 51              | 23             | 8                      | 4                | 7            |
| Great Basin                                       | -                  | 1                 | 27              | 36             | 30                     | 5                | 1            |
| Pacific Coast                                     | -                  | 15                | 34              | 17             | 29                     | 4                | 1            |
| California-Arizona                                | -                  | 1                 | 81              | 14             | 4                      | -                | -            |
| Texas-New Mexico                                  | -                  | 29                | 3               | 55             | 9                      | 0                | 4            |
| Plains Wheat-Corn                                 | 34                 | 26                | 23              | 10             | 2                      | 3                | 2            |
| Northern Plains                                   | 0                  | 17                | 2               | 65             | 16                     | 0                | 0            |
| <u>Size of operation by<br/>number of animals</u> |                    |                   |                 |                |                        |                  |              |
| 50 - 99   | 1                  | 11                | 27              | 41             | 13                     | 5                | 2            |
| 100 - 299   | 4                  | 18                | 29              | 34             | 10                     | 3                | 2            |
| 300 - 999   | 1                  | 39                | 26              | 18             | 7                      | 6                | 3            |
| 1,000 - 2,499                                     | 0                  | 50                | 30              | 10             | 3                      | 3                | 4            |
| 2,500 - 4,999                                     | 0                  | 6                 | 46              | 21             | 2                      | 0                | 25           |
| 5,000 and over                                    | -                  | 4                 | 38              | 35             | 18                     | 2                | 3            |
| <u>All subregions and<br/>sizes</u>               | -                  | 10                | 43              | 32             | 10                     | 2                | 3            |

Table A-22--Yield grade selling of lambs by western commercial sheep producers, 1974

| Subregion and size of operation               | Producers selling yield grade |   | All producers   |
|---|-------------------------------|---|---|
|   | Percent of all producers      | Average percent of lambs sold yield grade | Lambs sold yield grade as a percent of all lambs sold |
|   |                               | <u>Percent</u>                            |   |
| <u>Subregion</u>                              |                               |   |   |
| Mountain                                      | 5                             | 50  | 18  |
| Great Basin                                   | 0                             | 0   | 0   |
| Pacific Coast                                 | 4                             | 94  | 7   |
| California-Arizona                            | 10                            | 62  | 15  |
| Texas-New Mexico                              | 2                             | 50  | 5   |
| Plains Wheat-Corn                             | 5                             | 72  | 4   |
| Northern Plains                               | --                            | --  | --  |
| <u>Size of operation by number of animals</u> |                               |   |   |
| 50 - 99                                       | 0                             | 0   | 0   |
| 100 - 299                                     | 2                             | 54  | 1   |
| 300 - 999                                     | 4                             | 82  | 15  |
| 1,000 - 2,499                                 | 4                             | 60  | 8   |
| 2,500 - 4,999                                 | 9                             | 61  | 18  |
| 5,000 and over                                | 3                             | 26  | 10  |
| All subregions and sizes                      | 4                             | 51  | 11  |

Table A-23--Wool sold through various types of markets by western commercial sheep producers, 1974

| Subregion and size of operation               | Wool dealer | Wool pool | Consign-ment | Manufac-turers' represen-tative | Other |
|---|-------------|-----------|--------------|---------------------------------|-------|
| <u>Percent of total wool sold</u>             |             |           |              |                                 |       |
| <u>Subregion</u>                              |             |           |              |                                 |       |
| Mountain                                      | 33          | 54        | 8            | 4                               | 1     |
| Great Basin                                   | 33          | 57        | 5            | 5                               | 0     |
| Pacific Coast                                 | 40          | 14        | 6            | 27                              | 13    |
| California-Arizona                            | 71          | 12        | 12           | 3                               | 2     |
| Texas-New Mexico                              | 63          | 1         | 28           | 2                               | 6     |
| Plains Wheat-Corn                             | 66          | 24        | 8            | 2                               | 0     |
| Northern Plains                               | 40          | 50        | 3            | 6                               | 1     |
| <u>Size of operation by number of animals</u> |             |           |              |                                 |       |
| 50 - 99                                       | 59          | 13        | 17           | 7                               | 4     |
| 100 - 299                                     | 72          | 2         | 16           | 7                               | 3     |
| 300 - 999                                     | 58          | 28        | 9            | 4                               | 1     |
| 1,000 - 2,499                                 | 39          | 47        | 6            | 5                               | 3     |
| 2,500 - 4,999                                 | 40          | 42        | 9            | 6                               | 3     |
| 5,000 and over                                | 39          | 25        | 17           | 13                              | 6     |
| All subregions and sizes                      | 48          | 32        | 11           | 6                               | 3     |