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# Characteristics of the Pacific Northwest Beef Industry

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## TABLE OF CONTENTS

	Page
PURPOSE OF STUDY -----	1
PROCEDURES -----	1
Geographic Breakdown of Region -----	1
Information Sources -----	2
Method of Analysis -----	2
Definition and Interpretation of Data Series -----	2
RELATIVE IMPORTANCE OF LIVESTOCK INCOME IN THE PACIFIC NORTHWEST -----	4
RELATIVE IMPORTANCE OF BEEF INCOME IN THE PACIFIC NORTHWEST -----	5
BEEF PRODUCTION -----	6
Beef Cows and Heifers -----	6
Beef Feedlots -----	8
Changing Pattern of Cattle on Feed -----	11
Oregon Cattle Movements, 1963-1967 -----	13
PRODUCTION-CONSUMPTION BALANCE OF PACIFIC NORTHWEST FEEDS -----	14
AUCTION MARKETS -----	18
MEAT PACKING -----	22
SUPPLY-CONSUMPTION BALANCE OF FED BEEF IN PACIFIC NORTHWEST -----	28
SUMMARY -----	30
APPENDIX -----	32

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## CHARACTERISTICS OF THE NORTHWEST BEEF INDUSTRY

J. B. Johnson and R. E. Vaile

The beef industry is by far the largest and one of the most rapidly growing agricultural industries in the United States. In Oregon, Washington, and Idaho, the Pacific Northwest states, the beef industry contributed about 20 percent of the annual gross income from farm marketings in 1966. Increasing demand has been the major factor in the expansion of the beef industry. Total demand for beef has never been greater.

As incomes rose, demand for beef increased. Per capita consumption increased from 66 pounds per person in 1948 to 104 pounds per person during 1966. <sup>1/</sup> This strong demand for beef occurred despite only minor changes in beef production efficiency as compared to the notable increases in production efficiencies in the pork and poultry industries.

### PURPOSE OF STUDY

The purpose of this progress report is to outline some of the characteristics and emerging changes of the Pacific Northwest beef industry and to make comparisons with similar circumstances in other regions of the United States. The complex changes occurring in the agriculture of the Pacific Northwest have many direct and indirect effects on the present and future beef industry. Information on the current status of the Pacific Northwest beef industry provides some of the data needed for projecting future problems and potentials.

The discussions in this report center on income from livestock and livestock products, income from cattle and calves, livestock inventories, live cattle movements, livestock auction firms, meat packing firms, feed grain production-consumption balances, and fed beef production-consumption balances.

### PROCEDURES

#### Geographic Breakdown of the Region

The region commonly known as the Pacific Northwest includes the states of Oregon, Washington, and Idaho. For purposes of this report, each state has been broken down into geographic areas as defined and used by the Statistical Reporting Service, United States Department of Agriculture. These areas

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<sup>1/</sup> National Food Situation, Feb. 1968, ERS, USDA.

are shown in Figure 1 and are referred to by name throughout this report. Data in the report are summarized for the Pacific Northwest, the individual states, and for geographic areas within each state. 2/

### Information Sources

Much of the information summarized in this report was obtained from published data series available through the United States Department of Agriculture.

Most of the information on auction and meat packing firms was obtained from unpublished public data maintained by Oregon, Washington, and Idaho State Departments of Agriculture.

Additional data and some research findings were obtained from bulletins and unpublished research cited in the report text.

### Method of Analysis

Time series data on the various characteristics of the industry are presented in table form in the Appendix of the report. Observable trends in these data are discussed in the text. Also discussed are absolute and relative variations in the data series.

Explanations based upon research findings, interviews with industry personnel and other researchers, and the authors' reasoning, are given for the direction and magnitude of trends and the absolute and relative changes over time.

### Definition and Interpretation of Data Series

Livestock receipts as reported by the United States Department of Agriculture represent income received by farmers (producers) from the sale of livestock and livestock products such as milk, eggs, meat animals (including beef, pork, mutton, and chicken), and sundry animal products. The ratio of livestock receipts to total agricultural receipts is a measure of the relative contribution of livestock to the total agricultural economy and indicates the degree of specialization in livestock production. But more appropos to this report is the ratio of receipts from cattle and calves to the total income from all livestock and livestock products in the Pacific Northwest. Ratios for various regions are compared to give an indication of specialization in beef production among regions.

Annual payments to resources employed in the processing of agricultural commodities in a region also generate income for that region. In this report we are interested in the resources employed in beef slaughtering and processing.

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2/ Counties included in each of the geographic areas shown in Figure 1 are given in Appendix tables 6, 7, and 8.

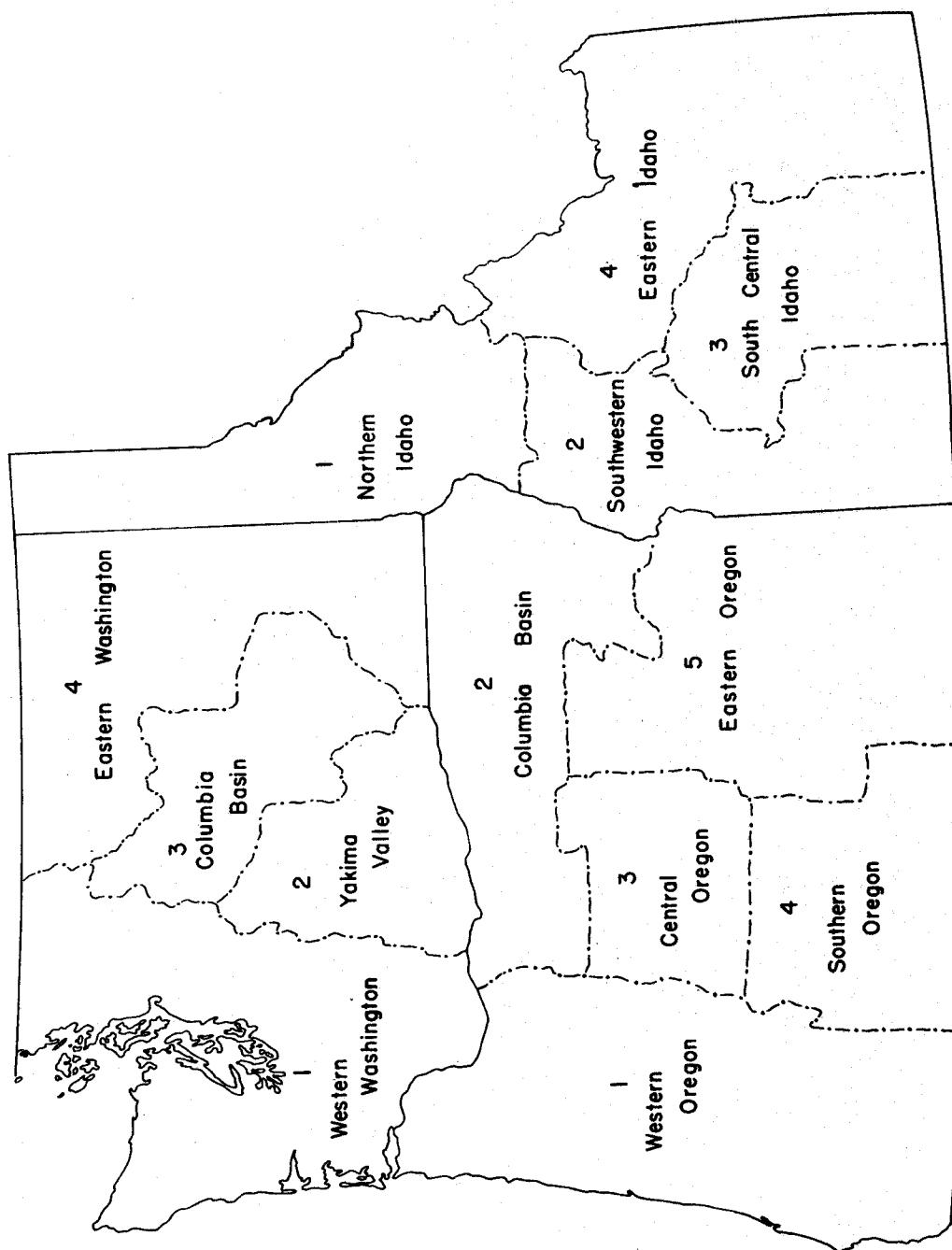


Figure 1. Geographic breakdown of Pacific Northwest regions by state and areas within the states.

Beef cattle production is dispersed throughout the United States. Inventories of beef and dairy cattle indicate size and composition of livestock populations of states, regions, and the nation. Inventory changes over a period of time indicate rates of growth in different age and sex categories. Inventory changes also are compared to evaluate growth or decline of production among regions.

Feedlot cattle inventories indicate volumes of cattle on feed each quarter of the year. Quarterly inventory changes over time reveal which regions are maintaining a more even flow of cattle through feedlot facilities.

Operating within the Pacific Northwest beef industry are several groups of firms which are adding value to beef products through raising, fattening, marketing, and slaughtering cattle. Some firms perform functions which influence the entire Pacific Northwest beef industry. Others confine their operations to a single state or to an area within a state. Characteristics of these groups of firms such as their number, location, and volume partially determine the economic activities of the beef industry. These characteristics of groups of firms provide clues as to the nature of cost efficiencies and potential adjustments in various segments of the beef industry.

#### RELATIVE IMPORTANCE OF LIVESTOCK INCOME IN THE PACIFIC NORTHWEST

The livestock industry makes a substantial contribution to the total agricultural income of the Pacific Northwest and to each state within the region. The proportion of total agricultural income obtained from livestock in the Pacific Northwest is slightly less than that of the western region, and considerably less than that of the United States as a whole.



Figure 2. Livestock and livestock product income as a percent of total agricultural income, 1966. Source: Appendix Table 1.

During the 1961-1966 period, livestock and livestock product income increased in relative importance for the United States and the western region, but declined for the Pacific Northwest (Appendix Table 1).

#### RELATIVE IMPORTANCE OF BEEF INCOME IN THE PACIFIC NORTHWEST

The proportion of total agricultural income due to producer sales of beef cattle is larger than that for any other commodity in the Pacific Northwest.



Figure 3. Cattle and calf income as a percent of total agricultural income, 1966. Source: Appendix Table 2.

Although cattle and calf income makes the largest contribution to the total agricultural income in the Pacific Northwest, the proportion is less than that of the western region and the United States. This reflects the diversification of agriculture within the Pacific Northwest and, especially, the importance of several high-valued commodities.

Income from cattle and calves averages almost one-half of the income from all livestock and livestock products for the Pacific Northwest. Beef income as a proportion of total agricultural income increased in the Pacific Northwest, the western region, and the United States during the 1961-1966 period (Appendix Table 3).

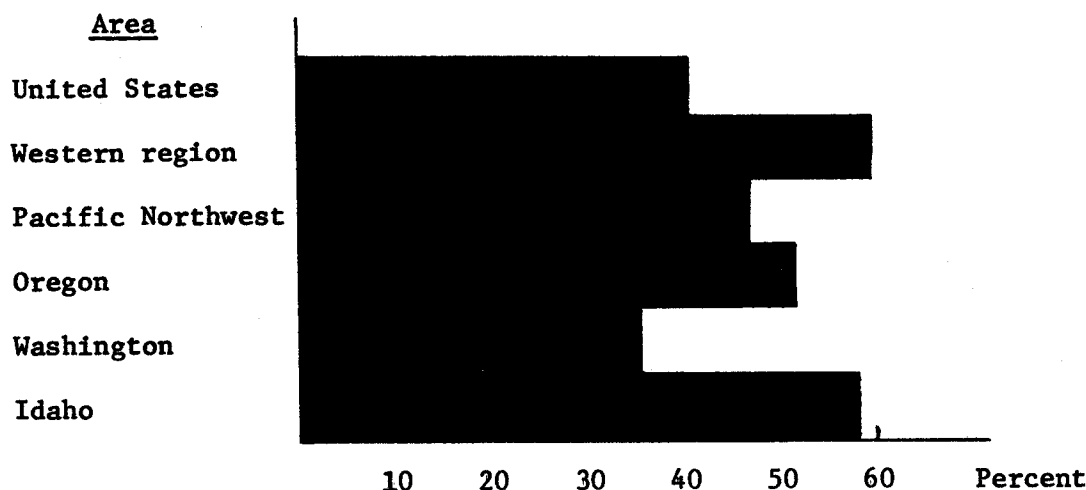


Figure 4. Income from cattle and calves as a percent of all livestock income. Source: Appendix Table 3.

The proportion of livestock income due to cattle and calves compared to total livestock income is greater in the Pacific Northwest than for the nation but less than for the western region. Thus the data indicate that the Pacific Northwest is more specialized in beef production than the whole of the United States, but less specialized than some of the other western states. Some western states have a greater dependence on cattle because of lack of competitive enterprises which could make efficient use of available resources.

#### BEEF PRODUCTION

##### Beef Cows and Heifers

Beef cattle inventories are increasing in all regions of the United States, while dairy inventories are declining in most states.

The Pacific Northwest beef cow and heifer inventories increased faster than those of the western region, but slightly slower than those of the United States, during the 1961-1966 period (Appendix Tables 4 and 5). Increases in beef cow and heifer numbers in the Pacific Northwest were led by Idaho, where beef cow numbers increased 45 percent and beef heifer numbers increased by 26 percent during the six-year period, 1961-1966. Dairy cow and heifer numbers are declining more rapidly in the Pacific Northwest than in the western region or the United States.

In the Pacific Northwest during 1964, there were over 1,532,000 head of beef cows and heifers, a 40 percent increase over the 1,095,000 head in 1959. <sup>3, 4/</sup>

<sup>3/</sup> "Cows and heifers" refer to those beef cows and heifers that have calved.

<sup>4/</sup> U. S. Census of Agriculture, 1964, Preliminary Reports, Series AC 64-P1 for Oregon, Washington, and Idaho.



Oregon, Washington, and Idaho shared the beef cow and heifer population with 42 percent, 25 percent, and 33 percent, respectively, in 1964. These states also shared the five-year increase of 436,000 head of beef cows and heifers in approximately the same proportions. There were notable differences, however, in growth rates within individual areas of each state.

### Oregon

The largest number of Oregon beef cows and heifers is located in the Columbia Basin. Second in numbers of beef cattle and heifers is eastern Oregon, followed by western Oregon, southern Oregon, and central Oregon (Appendix Table 6). The numerical increase in beef cows and heifers was larger in western Oregon than in other Oregon areas during the 1959-1964 period.

Several possible explanations may be given for the rapid increase in beef cow and heifer numbers in western Oregon. One explanation is that resources formerly used to support dairy and sheep inventories are now available to support additional beef cows and heifers. Another explanation is that beef cow and heifer production is increasing in areas where logging activities have left cleared or partially cleared land areas for which the only agricultural use is some type of grazing activity. Similarly, beef cows are being used to graze forage on lands soon destined for nonagricultural uses.

In addition to the diversion of resources to support increasing beef cow numbers, there have been noticeable increases in hay production and pasturage, largely because of the introduction of Flemish hay varieties and because of improved grass and clover pastures. Also, grass seed and truck crop by-product usage was maintained if not increased during the 1959-1964 period.

The effect of the increase in beef breeding herds in western Oregon has other implications. The average farm in this area is smaller than the average farm in other areas of Oregon. Buying and selling activities of these smaller farmers may be expected to differ from those of producers in areas where the average herd size is considerably larger. For instance, because each operator produces only a small number of feeders, the number available for sale at any one time probably does not attract feedlot buyers who purchase feeder animals directly from producers. Consignment or pool type of feeder sales are becoming more prevalent in western Oregon. This type of selling, if as effective as consignment selling of lambs, will enable smaller producers to attract a larger number of feeder cattle buyers.

### Washington

The largest percentage of Washington beef cows and heifers were located in eastern Washington in 1959 and 1964. During 1959, the Yakima Valley was second in beef cows and heifers, followed by western Washington and the Columbia Basin.

By 1964 western Washington had a slightly larger number of beef cows and heifers than the Yakima Valley. However, eastern Washington maintained the largest proportion of Washington beef cows and heifers (Appendix Table 7).

During this five-year period the number of beef cows and heifers in western Washington increased more rapidly than numbers in other areas. This increase has several possible explanations and implications paralleling those discussed for western Oregon.

### Idaho

The largest percentage of Idaho beef cows and heifers is located in eastern Idaho. During the 1959-1964 period, this area had the greatest numerical increase in beef cows and heifers. Second in percentage of total beef cows and heifers was southwestern Idaho, followed in descending order by south-central Idaho and northern Idaho (Appendix Table 8).

The greatest percentage increase was in south-central Idaho, although all areas showed a substantial percentage increase in beef cow and heifer numbers.

### Beef Feedlots

On January 1, 1967, there were 1,611 feedlots in the Pacific Northwest which were feeding cattle or had fed cattle in recent years. Approximately 85 percent of these lots had under 500 head capacity, with only 15 percent of the lots having a capacity to feed more animals during any feeding period. However, the greater percentage of the total volume of cattle marketed is fed in the larger feedlots because of their greater total capacity, higher turnover rates, and a smaller percentage of inactive lots.

Table 1. Number of feedlots in Pacific Northwest, by state and capacity, 1967

State	Capacity	
	Under 500 head	Over 500 head
Oregon	416	83
Washington	274	79
Idaho	653	106
Pacific Northwest	1,343	268

Source: Correspondence with Statisticians in Charge, Oregon, Washington, and Idaho offices of Statistical Reporting Service, USDA.

Data compiled in a study released by the USDA in June 1966 indicate that 37 percent of the total cattle marketed from feedlots in the Pacific Northwest during 1964 were from lots of under 1,000 head capacity and 63 percent of the total cattle fed were from lots with 1,000 head capacity or larger. 5/

Small feedlots fed a larger proportion of fed cattle in Oregon than in Washington or Idaho during 1964. The 526 feedlots of less than 1,000 head capacity fed 49 percent of all cattle fed in Oregon, whereas the 37 larger capacity feedlots fed the remaining 51 percent.

The 581 Washington feedlots of under 1,000 head capacity fed 35 percent of all cattle fed during 1964. The 37 larger capacity feedlots fed the remaining 65 percent of the cattle. The 748 Idaho feedlots under 1,000 head capacity fed 33 percent of the total volume of fed cattle, whereas the 53 larger capacity lots fed 67 percent.

### Oregon

During 1964 there were 563 feedlots in Oregon. In 1967, there were 499 feedlots in Oregon, not all of which were currently feeding cattle. Most of these feedlots were under 500 head capacity. However, knowledge of the industry suggests a continued increase since 1964 in the percentage of the total volume of cattle fed in larger volume feedlots.

Table 2. Number of Oregon feedlots by geographic area and capacity,  
January 1, 1967

Area	Capacity	
	Under 500 head	Over 500 head
Western Oregon	131	<u>1/</u>
Columbia Basin	122	36
Central Oregon	66	18
Southern Oregon	22	14
Eastern Oregon	75	15
<u>Oregon</u>	<u>416</u>	<u>83</u>

1/ A small number of "over 500 head capacity" lots were included in the "under 500 head capacity" category so as not to disclose individual operations.

Source: Correspondence with Statistician in Charge, Oregon Office, Statistical Reporting Service, USDA.

Most of Oregon's feedlots are located in the feed-producing areas east of the Cascades. The Columbia Basin is the most important cattle-feeding

5/ Number of Feedlots by Size Groups and Number of Cattle Marketed, 1962-1964, SRS-9, USDA, June 1966.

area in Oregon. Approximately 45 percent of the total cattle on feed in Oregon each quarter during 1966 were in Columbia Basin feedlots. Most of these feedlots were located in Umatilla, Union, and Baker counties, with Umatilla County historically the most important county in Oregon for fed beef production.

Central Oregon is the second most important cattle-feeding area, feeding approximately one-fifth of the state's cattle. Feeding is concentrated in the irrigated portions of Jefferson, Deschutes, and Crook counties. No feedlots with over 500 head capacity were in operation in Wheeler County.

The southern Oregon and eastern Oregon areas were each feeding about 15 percent of the total volume of fed cattle in Oregon during 1966. In eastern Oregon, most of the feeding was concentrated in the irrigated portions of Malheur County. In southern Oregon, most of the feeding was in Klamath County.

In western Oregon most of the feedlots in operation are under 500 head capacity. This area fed approximately 5 percent of Oregon's fed cattle during 1966.

#### Washington

The majority of Washington feedlots are located in the three areas east of the Cascades. The Yakima Valley is the most important feeding area of Washington. During 1966 approximately 60 percent of the cattle fed in Washington were fed in this area.

Table 3. Number of Washington feedlots by geographic area and capacity, April 1, 1967

Area	Capacity	
	Under 500 head	Over 500 head
Western Washington	41	1/
Yakima Valley	45	44
Columbia Basin	90	24
Eastern Washington	100	9
Washington	276	77

1/ A small number of "over 500 head capacity" lots were included in the "under 500 head capacity" so as not to disclose individual operations.

Source: Correspondence with Statistician in Charge, Washington Office, Statistical Reporting Service, USDA.

The Columbia Basin was second in the percentage of cattle fed in 1966, followed in descending order by eastern Washington and western Washington.

### Idaho

Most of Idaho's feedlots are located in the southern part of the state. An estimated 80 percent of the cattle feeding is done in the southwestern and south-central Idaho areas, with each of these areas feeding approximately 40 percent of the state's cattle. In northern Idaho, no feedlots of over 500 head capacity are in operation, and only 5 percent of the feedlots of under 500 head capacity are in operation.

### Changing Pattern of Cattle on Feed

A comparison of the 1966 and 1961 inventories of the 32 major cattle feeding states reveals a substantial increase in numbers on feed during this period. Averaging the quarterly increases of 1966 over 1961 reveals that the number of cattle on feed in the 32 major feeding states increased by over 42 percent during this six-year period.

During the 1961-1966 period, the largest increase in fed cattle numbers occurred in the Plains States. On January 1, 1966, there were over one million more cattle on feed in the Plains than on the same date in 1961--a 55 percent increase for the January 1 quarter. <sup>6/</sup>

The western states had 2.7 million head of cattle on feed in January 1966. This was over 25 percent of the total cattle on feed in the 32 major feeding states during that quarter. The largest seasonal increase in cattle on feed in the western states was for the quarter beginning July 1, reflecting a 56 percent increase in summer feeding between 1961 and 1966. The Pacific Northwest states made substantial gains in every quarter during the six-year period. Pacific Northwest increases in cattle on feed paralleled those of the 32 major feeding states (Appendix Table 9). Both Oregon and Idaho had larger percentage increases than that of the 32 major feeding states, whereas the percentage increase in Washington was less than that of the 32 major feeding states.

### Oregon

Numbers of cattle on feed in Oregon increased substantially from 1961 through 1966 (Appendix Table 10). Oregon cattle feeding during the July-September quarter more than doubled between 1961 and 1966 (Appendix Table 11).

In southern Oregon the January 1 cattle on feed inventories increased by approximately 137 percent between 1961 and 1966. However, during this period the greatest increase in January 1 inventory numbers was in the Columbia Basin. Fed cattle inventories of the Columbia Basin were larger than the other areas combined in most quarters during each year of this period, showing large numerical increases for each quarter of the year.

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<sup>6/</sup> The terms "January 1 quarter," "April 1 quarter," "July 1 quarter," and "October 1 quarter" refer to the three-month periods beginning on those dates. For example, the January 1 quarter begins January 1 and ends March 31.

Table 4. Numerical and percentage change in cattle and calves on feed by quarters between 1961 and 1966 for geographic areas in Oregon

Area	January		April		July		October	
	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>
Western								
Oregon	23.2	1.3	0	0	115.0	2.3	3.1	0.1
Columbia								
Basin	61.4	15.9	68.1	16.4	88.3	17.4	98.4	19.1
Central								
Oregon	15.3	2.7	43.2	5.1	60.0	3.6	-2.2	-0.3
Southern								
Oregon	137.1	8.5	113.0	5.2	312.5	5.1	124.5	6.1
Eastern								
Oregon	2.9	-0.4	12.2	1.3	136.7	6.7	33.3	3.0
Oregon	40.6	28.0	50.0	28.0	100.3	35.1	56.0	28.0

Source: Computed from Appendix Table 11.

#### Washington

The Yakima Valley dominates in the feeding of Washington beef. The Columbia Basin ranks second in the number of animals fed, with the numbers fed in western Washington and eastern Washington insignificant in comparison to the total fed in Washington (Appendix Table 12.)

Washington feeding during the 1962-1966 period was characterized by relative stability in the western Washington and Yakima Valley areas, an increase in feeding in the Columbia Basin area, and continual decline in eastern Washington.

Table 5. Numerical and percentage change in cattle and calves on feed by quarters between 1962 and 1966 for geographic areas in Washington

Area	January		April		July		October	
	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>
Western								
Washington	-42.9	-3.0	0.0	0.0	0.0	0.0	0.0	0.0
Yakima								
Valley	15.9	11.0	16.4	10.0	9.1	5.0	-8.1	-8.0
Columbia								
Basin	43.8	14.0	51.6	16.0	65.4	17.0	50.0	17.0
Eastern								
Washington	-70.0	-7.0	-62.5	-5.0	-80.0	-8.0	-83.3	-10.0
Washington	12.7	15.0	20.2	21.0	14.9	14.0	-0.8	-1.0

Source: Appendix Table 12.

The greatest increases in numbers of cattle on feed occurred in the Columbia Basin, followed by the Yakima Valley. Eastern Washington, however, had a decrease over the five-year period in the number of cattle on feed in each quarter.

### Idaho

Specific information over a period of time on Idaho cattle-feeding activities is not available, but growth indicators are present. Increasing receipts from cattle and calves indicate the growing importance of beef income to total live-stock income. Inventory data indicate that a considerable portion of the increased beef income is derived from fed cattle.

### Oregon Cattle Movements, 1963-1967

All Oregon cattle shipped from the state, cattle sold through Oregon auctions, and many of the cattle sold within the state through direct negotiations are inspected by state-employed brand inspectors. From a summarization of various forms used by state inspectors, estimates have been developed for movements of Oregon cattle. Estimates on shipments of cattle from the state are more reliable than estimates of cattle movements into the state from out-of-state origins. <sup>7/</sup>

### Oregon Stocker and Feeder Cattle

Approximately 70 percent of all cattle which were brand inspected during the 1963-1967 period were stocker and feeder cattle, with the remaining 30 percent slaughter animals.

Over 65 percent of the brand inspections of stocker and feeder cattle each year were in the July 1 - December 31 period, with approximately 40 percent of the yearly inspections occurring in the quarter beginning October 1. This pattern of brand inspections reflects the seasonality in marketing of feeder cattle.

Approximately 63 percent of all stocker and feeder cattle brand inspected in Oregon during 1963-1967 were shipped out of the state. The adjoining states of California, Idaho, Washington, and Nevada were final destinations of 85 percent of the stocker and feeder cattle shipped from Oregon. During the 1963-1967 period, California annually was the destination of 38 percent of Oregon stocker and feeder cattle shipped out of state. Idaho received 30 percent, Washington 15 percent, and Nevada 2 percent. Other states to which a substantial volume of Oregon stocker and feeder cattle were shipped

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<sup>7/</sup> Estimates presented in this section were developed by the Oregon Department of Agriculture. Primarily, brand inspection is for regulatory purposes. Therefore, under the current inspection situation, movement estimates are most reliable for outshipment of Oregon cattle.

included Iowa, which received 6 percent annually, Illinois 1.5 percent, and Nebraska 3.5 percent (Appendix Table 13).

### Oregon Slaughter Cattle

Brand inspection patterns indicate the production and marketing of Oregon slaughter cattle are distributed fairly evenly over the year. Approximately 32 percent of all Oregon slaughter cattle brand inspected were shipped out of Oregon. Over 96 percent of all Oregon slaughter cattle shipped out of state went to adjoining states. Some 38 percent of the annual volume of slaughter cattle shipped out of state went to California during the 1963-1967 period, with 30 percent going to Washington annually and 28 percent to Idaho (Appendix Table 14).

### PRODUCTION-CONSUMPTION BALANCE OF PACIFIC NORTHWEST FEEDS

When converted into animal units, numbers of livestock provide statistics for comparing feed consumption with feed supplies. 8/ In 1966 poultry consumed 43 percent of all grain consumed by all livestock and poultry in the Pacific Northwest (Appendix Table 15). Beef animals, dairy animals, and hogs consumed 23 percent, 19 percent, and 12 percent, respectively. 9/ The quantity of grain consumed by beef animals in 1966 was 27 percent above the 1961 levels, largely because of the increases in numbers of beef animals placed on feed. The quantity of grain consumed by poultry increased 13 percent during the 1961-1966 period, whereas the quantity of grain consumed by hogs declined by 27 percent.

During four years of the 1961-1966 period the production-consumption balance of feed grains in the Pacific Northwest states was deficit. That is, there was less feed grain produced in the Pacific Northwest than consumed by all classes of livestock.

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- 8/ A grain-consuming animal unit is considered as one milk cow or its equivalent as measured by average rates of concentrate feed consumption. Thus, one grain-consuming animal unit of poultry requires the same amount of grain as one grain-consuming animal unit of milk cows, hogs, or beef cattle.
- 9/ The use of grain-consuming animal units to estimate feed consumption for the different types of livestock is not without error, but is useful for the present purposes to indicate roughly the importance of the different classes of animals in the consumption of feed grains.



Table 6. Feed grain production--livestock and poultry consumption balance in the Pacific Northwest states and Montana, 1960-1966

Year <sup>1/</sup>	Idaho Washington		Oregon	Pacific Northwest	Montana
	<u>Thousand tons</u>				
1960-61	+ 30	- 96	-187	-253	+ 617
1961-62	+101	- 41	-168	-108	+ 262
1962-63	+286	- 28	- 89	+169	+1,041
1963-64	+335	- 48	-114	+173	+ 761
1964-65	+297	-208	-115	- 26	+ 889
1965-66	+381	-410	-136	-165	N.A. <sup>2/</sup>

<sup>1/</sup> Year beginning October 1 and ending September 30 of following year.

<sup>2/</sup> Not available.

Source: Supplement for 1966 to Livestock Feed Relationships, 1909-1965, ERS, USDA, Statistical Bulletin 337, and preceding supplements.

Preliminary evidence suggests that much of the additional feed grains required for Pacific Northwest feeding is shipped into the region from Montana, a feed-grain surplus state. Table 6 indicates the quantities of feed grains available for interstate shipments by Montana during each year of this period.

The availability of hay, the basic harvested roughage for cattle in the three Pacific Northwest states, is depicted by counties in Figures 5 and 6. In general, Pacific Northwest feedlots are located within the surplus or self-sufficient hay-producing areas. For example, as shown by Figure 5, every county in the Columbia Basin of Oregon is either self-sufficient in hay production or borders a county with surplus hay. The Columbia Basin of Oregon feeds approximately one-half of Oregon fed cattle. Other examples of the proximity of beef to roughage sources are southwestern Idaho and the Yakima Valley of Washington, each the most important feeding region in its state.

Harvested roughages are not currently a limiting factor for cattle feeding within the Pacific Northwest. However, roughage supplies for certain localized areas are limiting. The declining roughage requirements of the dairy sector of the livestock industry have made roughages available for other classes of livestock. The continued expansion of land under irrigation may add to future supplies of harvested roughages.

In Oregon and in some areas of Idaho and Washington, many feedlots are located near sources of by-product feed provided by cannery and processing wastes. In central and southern Oregon, potatoes are an important by-product used for cattle feed. In other areas of the region, beet pulp, pea silage, mint silage, sweet corn cannery wastes, and other by-products are of local importance. There will be a continued dependence on these sources of feed as long as the primary commodity is a competitive crop in the area.



**Figure 5. Washington and Oregon--Hay Supply Situation in Normal Year.**

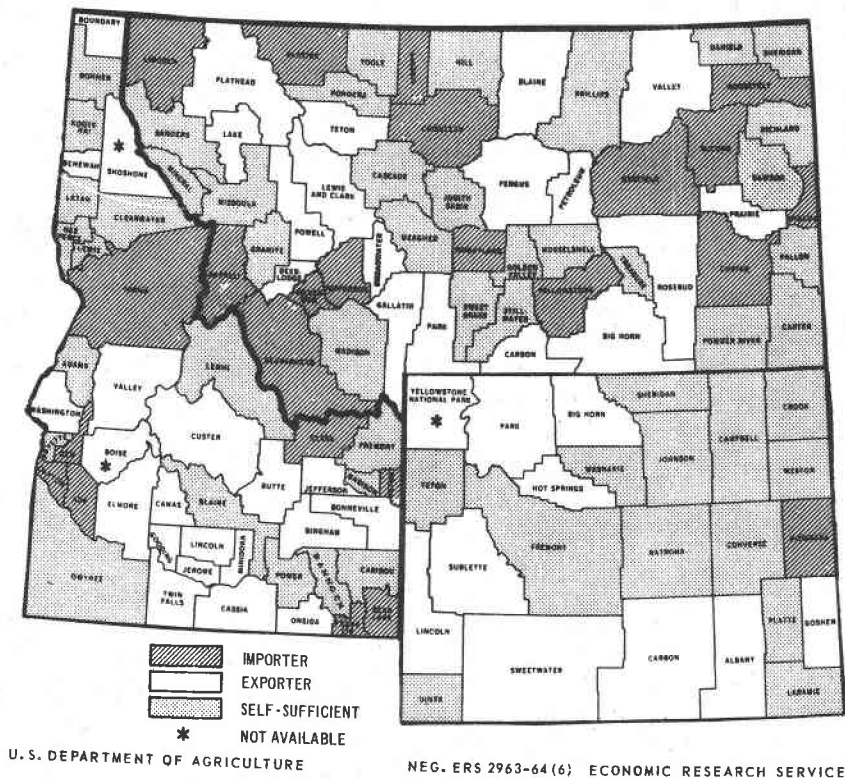


Figure 6. Montana, Idaho, and Wyoming--Hay Supply Situation in Normal Year.

Unharvested roughages, primarily range grasses, have been considered a fixed resource historically. Acreage increases in rangeland have been nominal. However, carrying capacities have been increased in most areas where range improvements were made. <sup>10/</sup> Future expansion of cow-calf operations in the Pacific Northwest will depend largely upon the extent to which it is economically feasible to increase the carrying capacities of public and private ranges.

A large proportion of Pacific Northwest feeder cattle are shipped to other regions for feeding. Oregon and Washington are currently deficit in the feed grain production-consumption balance. Idaho is currently surplus in feed grains. To expand the feeding sector of the Pacific Northwest beef industry, it appears that feed grains and other concentrates would have to be imported or diverted from other livestock enterprises unless wheat is used for cattle feed. Other feedlot inputs such as roughages, labor, and feeder cattle may be adequate to fulfill some future expansion. The feeding sector also would have to compete with other enterprises both inside and outside the region for use of these resources.

#### AUCTION MARKETS

Livestock producers have the choice of selling their livestock through public auctions and terminals, or selling directly to packer buyers, order buyers, dealers, feedlot operators, or other ranchers. Order buyers and packer buyers operate in a similar manner, as they both facilitate the transfer of ownership of cattle from the seller to the firms which they represent. They differ in the respect that order buyers usually are paid a commission and are not usually an employee of the firm they represent, as packer buyers are.

Auctions have been the only type of public market for livestock in the Pacific Northwest since the conversion of the last terminal market to an auction in 1965. Livestock consigned to auctions are sold to the highest bidder at an open auction. Auctions operate on a commission basis and do not take title to the livestock but act as an agent in transferring animal title from buyer to seller.

The number of livestock auctions operating in the Pacific Northwest remained relatively constant during the 1962-1966 period. The 82 auctions in operation in the Pacific Northwest in 1966 were almost equally divided among the states, and the combined operation of all auctions facilitated the sale of about two million head of cattle and calves. During 1966, the 25 Idaho auctions handled the largest percentage of cattle and calves sold through Pacific Northwest auctions. Second in importance were the 26 Oregon auctions, followed closely by the 31 Washington auctions.

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<sup>10/</sup> Economics of Federal Range Use and Improvement for Livestock Production, Darwin B. Nielsen, William G. Brown, Dillard H. Gates, and Thomas R. Bunch, Oregon Agric. Expt. Sta. Tech. Bull. 92, June 1966.

### Oregon

Oregon auctions were concentrated in western Oregon in 1966. Of the 26 Oregon auctions shown in Figure 7, 14 were operating in western Oregon, 7 in the Columbia Basin, 2 in central Oregon, and 2 in eastern Oregon (Appendix Table 16). The existence of only one auction in Area 4, where beef herds are relatively large, suggests that the larger operators engage in direct selling and only use auction markets to a limited extent.

The largest percentage of the total volume of livestock handled through Oregon auctions in 1966 was handled through the 14 auctions in western Oregon. The average volume of these auctions in 1966 was 13,700 head of cattle and calves, with volumes ranging from less than 1,200 to over 61,000.

The Columbia Basin area was second in percentage of total volume of livestock handled through Oregon auctions in 1966. Seven auctions handled an average of 19,000 head of cattle and calves. Auctions ranged in volume from less than 2,000 head to over 38,000 head.

Third in percentage of total volume of livestock handled in 1966 was eastern Oregon. Average volume of these two auctions was 48,000 head in 1966. The total volume of livestock sold through auctions in 1966 was down 18 percent from the 1962 level.

The average volume of the three firms operating in the central and southern Oregon areas was 30,000 head in 1966. The volume of livestock handled through auctions in central Oregon increased slightly between 1962 and 1966, whereas total volume in southern Oregon declined by about 45 percent. 11/

### Washington

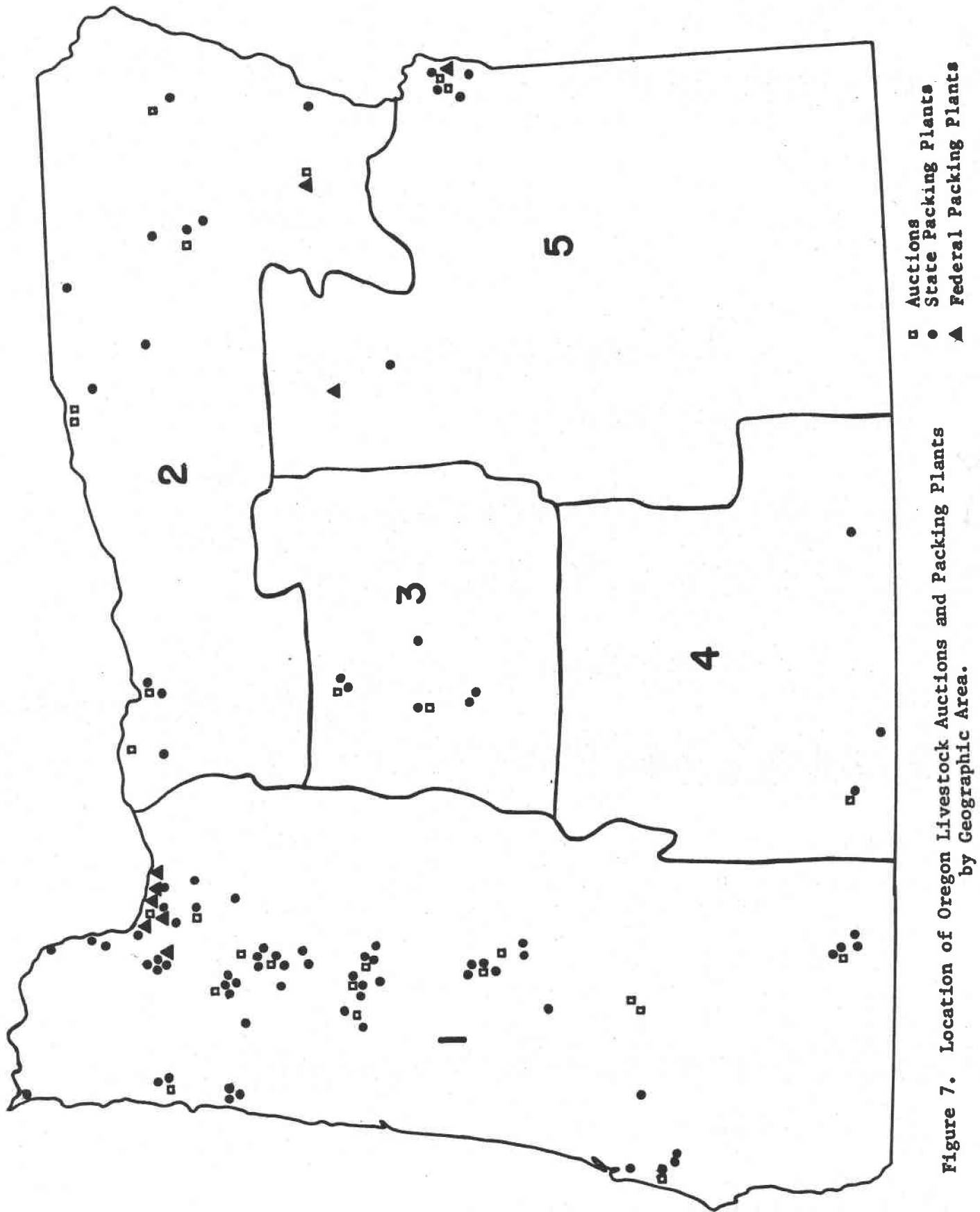
Washington auctions were geographically concentrated in western Washington during the 1962-1966 period. Fourteen auctions were located in western Washington in 1966, seven in eastern Washington, and five in each of the Columbia Basin and Yakima Valley areas, as shown in Figure 8.

The 14 auctions in western Washington handled the largest percentage of the total volume in livestock in 1966 (Appendix Table 17). Average volume was 13,000 head. Volumes of individual auctions ranged from less than 4,000 to 40,000 head.

Auctions located in eastern Washington were second in volume handled during 1966. Six firms in this area handled an average of 23,000 animals during 1966, with individual firms ranging from 4,500 to 49,000 head.

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11/ Although the volume of cattle and calves are compared in this report, the question of composition of cow and calf numbers needs further research. Conceivably, in western Oregon for instance, the volume figures might represent the sale of large numbers of day-old dairy calves.



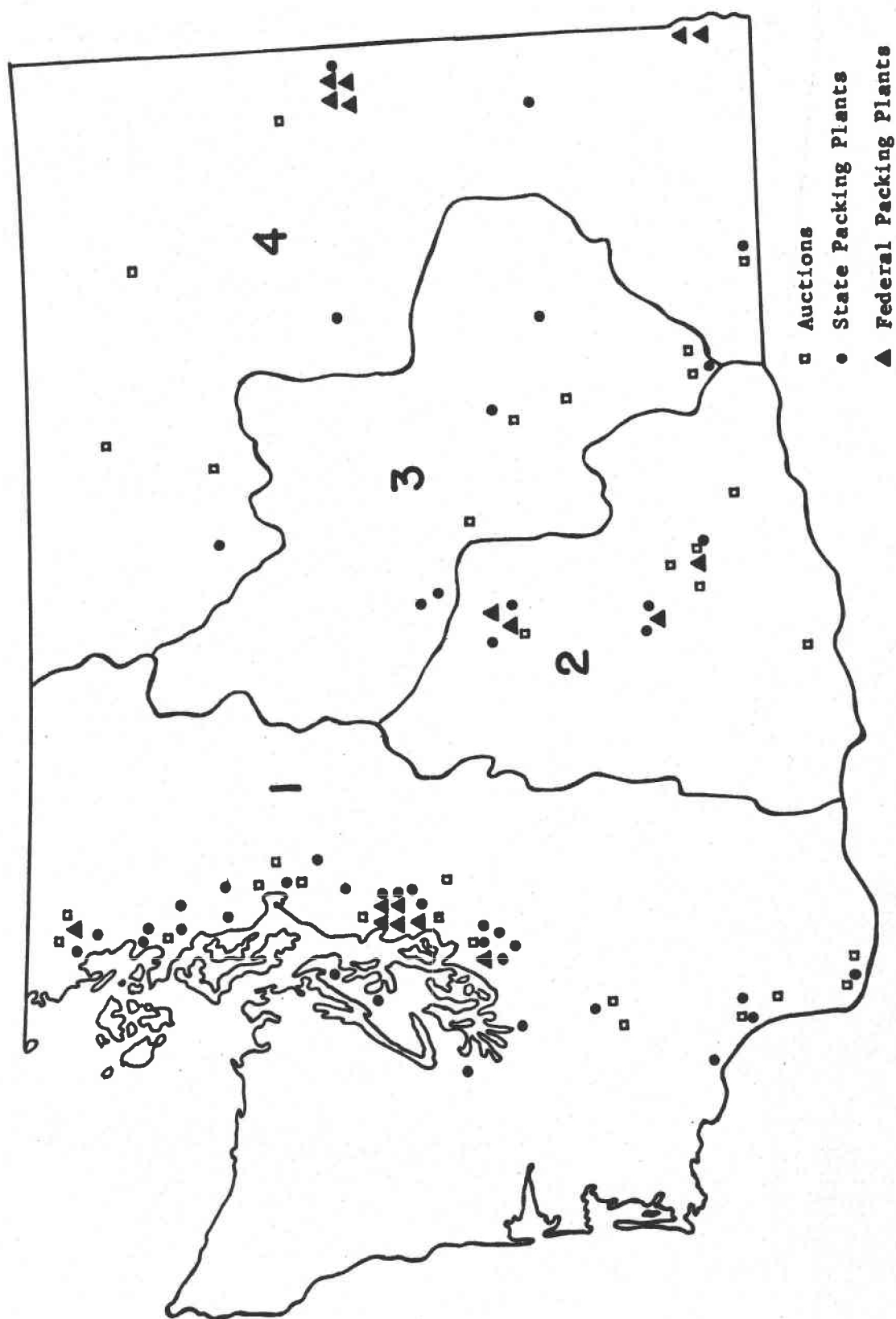


Figure 8. Location of Washington Livestock Auctions and Packing Plants by Geographic Area.

Five auctions in the Yakima Valley handled an average of 21,000 head of cattle and calves in 1966, with individual firms ranging in volume from 6,000 to 40,000 head.

Five auctions in the Columbia Basin handled an average of slightly less than 20,000 head in 1966, with individual auctions ranging in volume from 7,000 to 48,000 head.

### Idaho

Idaho auctions were relatively evenly distributed among the four areas in 1966, as indicated in Figure 9. During 1966, eight auctions were operating in southwestern Idaho, six in eastern Idaho, six in northern Idaho, and five in south-central Idaho.

During 1966, auctions in southwestern Idaho handled 34 percent of the volume of cattle sold through all Idaho auctions (Appendix Table 18). The average volume of these auctions in 1966 was 29,000 head of cattle and calves, with individual auctions ranging from less than 9,000 head to over 50,000 head.

In eastern Idaho, six firms were in operation during 1966. Average annual volume of these auctions was 30,000 head of cattle and calves. Each of those firms handling more than 2,000 head of cattle and calves in 1964 increased in volume by 1966.

South-central Idaho, with five auctions, and northern Idaho, with six auctions, accounted for annual average volumes of 30,500 and 17,500 animals, respectively, in 1966.

### MEAT PACKING

Meat packing firms in the Pacific Northwest can be separated into two categories--those under federal inspection and those under state inspection. Meat packing plants which are under federal inspection can participate in interstate movements of products. State-inspected plants confine marketings to intrastate outlets.



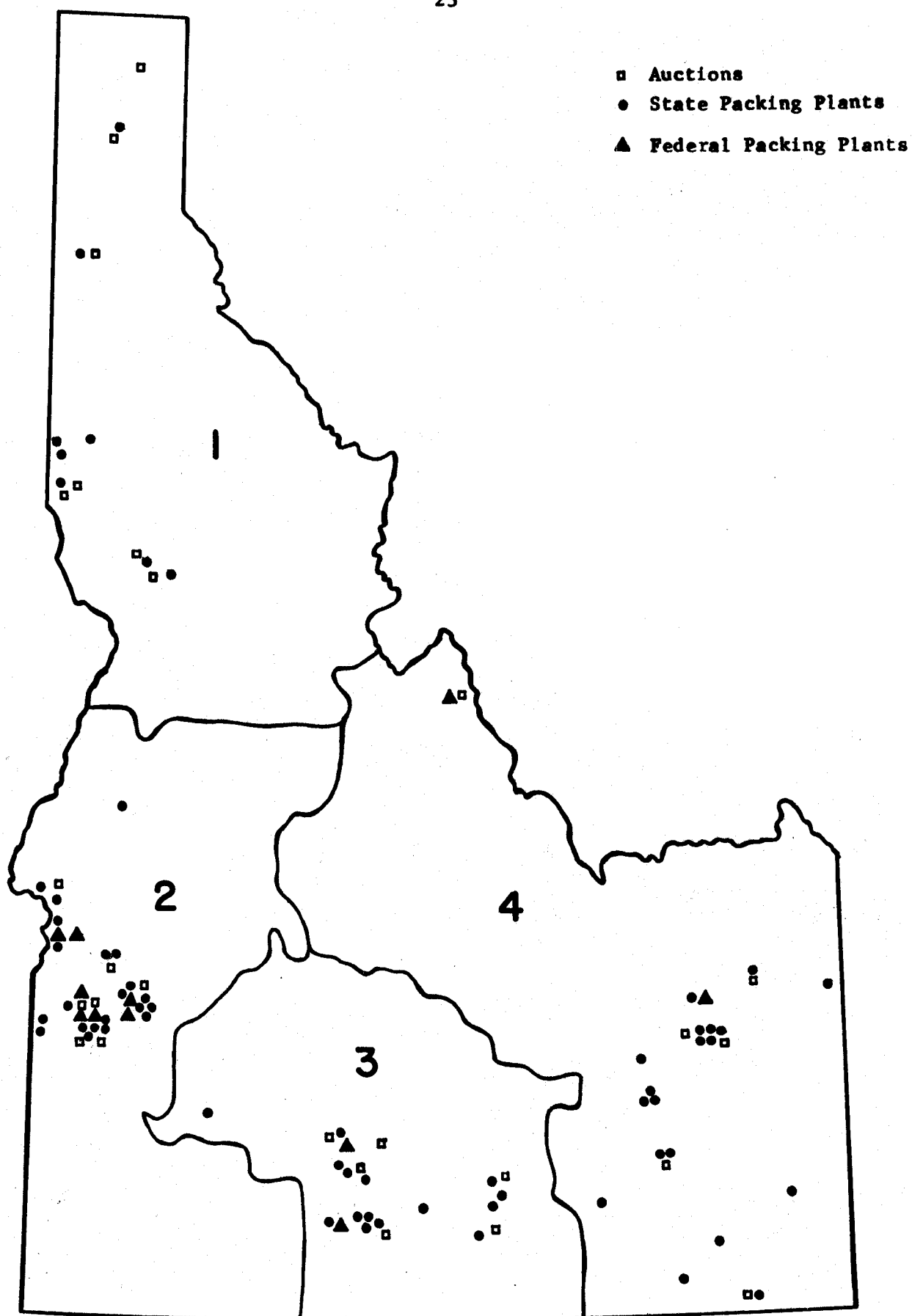


Figure 9. Location of Idaho Livestock Auctions and Packing Plants by Geographic Area.

Table 7. Number of Pacific Northwest federally inspected packing plants by state and geographic area within each state, 1966

Area	Oregon	Washington	Idaho
1	8	7	0
2	1	4	7
3	0	0	2
4	0	6	2
5	2	1/	1/
State <sup>2/</sup>	11	17	11

<sup>1/</sup> No Area 5 exists for Washington and Idaho.

<sup>2/</sup> Refer to section of procedures for breakdown of areas by state.

Source: Unpublished data provided by the Idaho, Oregon, and Washington State Departments of Agriculture.

During 1966 there were 39 federally inspected plants in operation in the Pacific Northwest states. Federally inspected plants handled 72 percent of the volume of cattle and calves slaughtered under supervision, and state-inspected plants handled the remaining volume.

Table 8. Percentage of total volume of cattle slaughtered by state-inspected slaughter firms in Pacific Northwest, by state, 1961-1966

State	1961	1962	1963	1964	1965	1966
	<u>Percent</u>					
Oregon	57	57	62	56	53	50
Washington	N.A. <sup>1/</sup>	N.A.	N.A.	21	19	17
Idaho	N.A.	N.A.	N.A.	26	27	24

<sup>1/</sup> Not available from sources reviewed.

Source: a) Livestock and Meat Statistics, 1966, and preceding issues.  
b) Oregon, Washington, and Idaho State Departments of Agriculture.

The relative importance of state and federally inspected slaughter varied among the three states when measured in percentage of total volume slaughtered. In Oregon, 50 percent of the total volume of livestock in 1966

was slaughtered by state-inspected packing plants. In Idaho, 24 percent of the total volume was slaughtered in state-inspected plants, whereas in Washington state-inspected plants slaughtered only 17 percent of the livestock.

### Oregon

The majority of the packing plants in Oregon are located in the populated areas, none of which produce large numbers of fed cattle. During 1966 there were 88 state-inspected plants operating in Oregon (Figure 7).

Table 9. Number of Oregon state-inspected packing plants by geographic area, 1961-1966

Area <u>1</u> /	1961	1962	1963	1964	1965	1966
Western Oregon	69	69	66	67	65	62
Columbia Basin	11	11	11	11	11	12
Central Oregon	9	10	8	7	7	7
Southern Oregon	3	3	3	3	3	3
Eastern Oregon	7	6	6	6	5	4
State	99	99	94	94	91	88

1/ Refer to Appendix 11 for breakdown by area.

Source: Unpublished data provided by the Oregon State Department of Agriculture.

Western Oregon handled about 85 percent of the total volume of livestock slaughtered by state plants during 1966 through 62 state-inspected plants. Eight of the federally inspected meat packing plants in Oregon were operating in western Oregon during 1966. In feeding areas east of the Cascades, volume of livestock slaughtered is small in comparison to western Oregon. This is also the case in the Columbia Basin, the most important cattle-feeding area of the state, where less than 7 percent of the annual state-inspected slaughter occurs.

Seasonal variation in numbers of animals slaughtered was observed. With few exceptions the largest volume of cattle was slaughtered during the July 1 quarter for each area during the 1961-1966 period (Appendix Table 19).

### Washington

The largest number of packing plants in Washington, both federal and state, are located in western Washington. In 1966, 29 of these were state-inspected and seven were federally inspected. Other state-inspected plants were dispersed among the three other geographic areas of the state, as shown in Figure 8. Six federally inspected plants were in operation in eastern Washington, four in the Yakima Valley, and none in the Columbia Basin.

During 1966, the 17 federally inspected plants in Washington slaughtered 80 percent of the cattle and calves, with the 44 state-inspected plants slaughtering the remaining 20 percent of the volume.

Table 10. Number of Washington state-inspected packing plants by geographic area, 1964-1966

Area	1964	1965	1966
Western Washington	30	30	29
Yakima Valley	5	5	5
Columbia Basin	6	6	5
Eastern Washington	5	5	5
State	46	46	44

Source: Unpublished data provided by the Washington State Department of Agriculture.

Seasonal variation in the state-inspected plant slaughter was not pronounced in Washington during the period under study, although volumes slaughtered in the July 1 and October 1 quarters were slightly higher than at other times of the year (Appendix Table 20).

In Washington, as in Oregon, the largest volumes of cattle and calves in each quarter were slaughtered near the population centers of the state, and not in the primary feeding areas.

### Idaho

There were 11 federally inspected packing firms in Idaho in 1966. They slaughtered about 75 percent of the livestock, with the remaining 25 percent done by 69 state-inspected firms.

The largest number of slaughter plants, both federal and state, were located in southwestern Idaho, Idaho's most heavily populated area and also an area with substantial numbers of fed cattle. There were 25 state-inspected plants in southwestern Idaho, 20 in eastern Idaho, 14 in south-central Idaho, and 10 in northern Idaho (Figure 9).

Table 11. Cattle and calf slaughter in Idaho state-inspected plants by year and geographic area, 1964-1966

Area	1964		1965		1966	
	No. of firms	No. slaughtered	No. of firms	No. slaughtered	No. of firms	No. slaughtered
Northern Idaho	11	4,221	11	4,142	10	3,974
Southwestern Idaho	27	24,989	26	24,807	25	24,126
South-central Idaho	16	19,112	16	19,589	14	18,641
Eastern Idaho	21	19,909	21	28,261	20	28,280
State	75	68,231	74	76,799	69	75,021

Source: Derived from unpublished data received from Idaho State Department of Agriculture.

During 1966 over a third of the cattle slaughtered in Idaho state-inspected packing firms was done by plants in southeastern Idaho, 25 percent by firms in south-central Idaho, and the remainder by firms in northern Idaho and eastern Idaho. State-inspected slaughter in northern Idaho represented the total for that area.

During each year of the 1964-1966 period, the largest proportion of cattle slaughtered in Idaho state-inspected plants occurred during the July quarter. The October 1 quarter was second, followed by the April and January quarters (Appendix Table 21).

#### Value Added Through Meat Packing

In value added through meat processing, Washington leads both Oregon and Idaho by a substantial amount (Appendix Table 22). A substantial portion of Washington's value added through slaughter is derived through the slaughter of cattle from other states.

Approximately one-half of the value added to the liveweight value of livestock slaughtered is attributed to labor payments. <sup>12/</sup> For the Pacific Northwest this means between \$33 and \$40 million in wages annually are paid to workers in meat processing and distribution. An additional 15 percent of the value added by meat processing is attributed to payment for meat

<sup>12/</sup> Financial Facts About the Meat Packing Industry, 1966. Department of Marketing, American Meat Institute, Annual Bulletin, August 1966.

packing supplies, with the remaining 35 percent attributed to costs associated with transportation, returns to management, interest on investment, and other production factors.

Total receipts for cattle and calves plus value added through processing have produced between \$300 and \$400 million annual revenue for the Pacific Northwest during the 1961-1965 period (Appendix Table 23).

#### SUPPLY-CONSUMPTION BALANCE OF FED BEEF IN PACIFIC NORTHWEST

During 1965 the Pacific Northwest marketed 745,000 head of fed beef. Marketings were largest for the quarter beginning January 1. The volume of fed cattle sold in each quarter constitutes the supply for that quarter, assuming the need for storage is nominal and quantities of meat stored are nearly equal for each quarter.

Table 12. Marketing of fed cattle in the Pacific Northwest, by state and quarter, 1965

Quarter	Oregon	Washington	Idaho	Pacific Northwest
	<u>Thousand head</u>			
January	45	90	74	209
April	44	76	71	191
July	41	73	62	176
October	37	68	74	179
1965	167	307	281	755

Source: Livestock and Meat Statistics, Supplement for 1965 to Statistical Bulletin No. 333.

To compare the consumption requirements for fed beef with the regional supply of fed beef, the volume in pounds of fed beef produced in each state was estimated. Fed animals were assumed to weigh 1,000 pounds and yield 500 pounds of dressed meat. The loss, due to shrinkage and boning, was assumed to be 25%. Therefore, a figure was derived which represented the retail level supply of fed beef in each state of the Pacific Northwest if all cattle fed had been slaughtered.

A recent study estimated per capita consumption of beef to be 123.8 pounds in Oregon, 110.9 pounds in Idaho, and 105.8 pounds in Washington. <sup>13/</sup>

<sup>13/</sup> Interregional Competition in Livestock and Crop Production in the United States: An Application of Spatial Linear Programming, Ray F. Brokken, unpublished doctoral dissertation, Iowa State University Library, 1965, and unpublished tables provided by writer.

The study estimated that 63 percent of the per capita consumption of beef is fed-beef products. Using this estimate, per capita consumption of fed beef in Oregon in 1965 was estimated to be 78 pounds. Per capita consumption of fed beef was estimated to be 66.7 pounds in Washington and 69.9 pounds in Idaho during 1965.

During 1965 an estimated 1.9 million people were residing in Oregon, 2.99 million in Washington, and 692,000 in Idaho. <sup>14/</sup> These population figures, along with per capita consumption of beef and estimated beef production, were used to derive supply and consumption estimates. These are summarized in Appendix Table 24. The estimates suggest that neither Oregon nor Washington produced a sufficient quantity of fed beef to fulfill the total quantity of beef consumed by their populations during 1965. Idaho produced a surplus of fed beef in terms of total production and consumption. However, during certain seasons or for certain grades of fed beef, Idaho may also be deficit in supply. Thus, in comparing the estimated total supply of fed beef produced within the Pacific Northwest with the total quantity of fed beef consumed in the region, it appears that as a whole the Pacific Northwest is not self-sufficient in production of fed beef. However, other factors must be considered before conclusions are drawn.

If the grades of beef produced in the Pacific Northwest were those that the consumers demand, if seasonal production were matched with seasonal demand, and if transportation rates were such that fed beef would move from surplus to deficit areas, the Pacific Northwest might be self-sufficient in fed beef production during certain periods of the year. However, current patterns of shipment of fed beef indicate interregional exporting and importing of fed beef during all periods of the year. Although the reasons for and the extent of this interregional transfer have not been researched, it is supposed that seasonality of production and marketings and transportation rate differentials are some of the primary reasons.

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<sup>14/</sup> Statistical Abstracts of the United States, 1965, Bureau of the Census, Department of Commerce.

### SUMMARY

Income from cattle and calves provides nearly 20 percent of the annual total agricultural income in the Pacific Northwest and constitutes approximately one-half of the livestock and livestock products income of the region.

Total income from cattle and calves increased in the Pacific Northwest during the 1961-1966 period. Income from cattle and calves as a percentage of total livestock income is increasing in the region.

Pacific Northwest beef cattle inventory changes paralleled those of other regions and the United States with only minor differences, although there were distinct differences among areas within the Pacific Northwest. In both the Pacific Northwest and the United States, dairy cattle numbers are declining and beef cattle numbers are increasing.

Approximately 85 percent of the beef feedlots in the Pacific Northwest have under 500 head capacity, with lots of larger capacity comprising only 15 percent of the total number. However, the greater percentage of the total volume of cattle marketed is fed in larger feedlots. During 1964, approximately two-thirds of the fed cattle marketed from Pacific Northwest feedlots were fed in feedlots of over 1,000 head capacity.

Increases in total numbers of cattle being fed in the Pacific Northwest paralleled those of the 32 major feeding states in the 1961-1966 period. The largest seasonal increase during recent years occurred in the July 1 quarter, indicating more summer feeding and possibly better utilization of feedlot facilities.

Since 1961, grain consumed by beef animals in the Pacific Northwest has increased 27 percent, primarily due to increased numbers of cattle on feed. Although no clearly defined trend is indicated by the 1961-1966 production-consumption balance of feed grains, there has been a feed deficit in most years. That is, during four of those six years there has been a smaller quantity of feed grain produced within the region than the quantity consumed by all classes of livestock.

Harvested roughages such as alfalfa hay and corn silage augmented by cannery wastes and other by-product feedstuffs do not appear to be a limiting factor of beef production for the region as a whole. Local deficits may exist, however, in some areas within the region.

There were fewer livestock auctions in operation in the Pacific Northwest during 1966 than in 1962. The volume of cattle handled by these auctions in 1966, however, was not appreciably lower than during previous years of the period. Cattle marketings through auctions as a percentage of total cattle marketings declined during the 1962-1966 period, indicating other marketing channels such as direct selling and order buying are expanding.



Over 72 percent of the total inspected beef slaughter in the Pacific Northwest during 1966 was done in the 39 federally inspected plants operating within the region, with the remaining volume slaughtered in state-inspected plants. Volume data from state-inspected plants in the region indicate that there is no marked seasonality in beef slaughter.

Most packing plants in Oregon and Washington are located in the more densely populated areas rather than in primary feeding areas. In Idaho, the packing plants and the primary feeding areas are both located in the more densely populated areas of the state.

In comparing the estimated total supply of fed beef produced within the Pacific Northwest with the total quantity of fed beef consumed in the region, it appears that as a whole the Pacific Northwest is not self-sufficient in the production of fed beef.

Appendix Table 1. Income from livestock and livestock products, by selected geographic regions, states, and the United States

Area	Income from livestock and livestock products				
	1966	1965	1964	1963	1962
	<u>Thousand dollars</u>				
United States	24,835,165	21,852,776	19,809,497	19,925,869	19,986,549
Western region	3,990,884	3,584,533	3,161,357	3,278,766	3,269,587
Pacific Northwest	1,782,068	699,361	586,691	595,304	603,972
Idaho	239,854	217,781	192,042	197,285	195,051
Washington	257,160	244,944	214,534	213,870	212,301
Oregon	231,753	205,636	180,115	184,149	196,620

Livestock and livestock product income as a percent of total agricultural income

	<u>Percent</u>	
United States	57.5	53.6
Western region	48.1	43.7
Pacific Northwest	40.1	39.2
Idaho	44.3	41.8
Washington	35.4	36.0
Oregon	45.1	36.0

Source: Farm Income, State Estimates, 1949-1966. A supplement to July 1967 Farm Income Situation, August 1967, pages 82, 87, 113, 116, and 117, and preceding issues.

Appendix Table 2. Income from cattle and calves, by selected geographic regions, states, and the United States

Area	Total income from cattle and calves				
	1966	1965	1964	1963	1962
	<u>Thousand dollars</u>				
United States	10,431,387	8,907,038	7,795,164	8,091,447	8,146,419
Western region	2,353,742	2,078,031	1,681,490	1,817,540	1,826,674
Pacific Northwest	347,077	317,257	244,033	248,168	258,529
Idaho	138,057	118,690	96,677	97,899	98,298
Washington	90,027	95,416	67,362	69,713	67,575
Oregon	118,990	103,151	79,994	80,556	92,656
					86,877

Income from cattle and calves as a percent of total agricultural income

	<u>Percent</u>	
United States	24.1	22.7
Western region	28.3	27.2
Pacific Northwest	19.5	19.4
Idaho	25.5	22.6
Washington	12.4	15.0
Oregon	23.2	21.6
	21.1	21.7
	23.2	25.8
	16.3	17.8
	21.3	22.4
	11.3	11.7
	18.8	21.5
		21.1

Source: Refer to Appendix Table 1 for source.

Appendix Table 3. Income from cattle and calves as a percentage of livestock income by selected geographic regions, states, and the United States

Region	1966	1965	1964	1963	1962	1961
	<u>Percent</u>					
United States	40.2	40.8	39.4	40.6	40.8	38.9
Western region	59.0	57.9	53.2	55.4	55.9	54.1
Pacific Northwest	47.6	45.4	41.6	41.7	42.8	40.6
Idaho	57.5	54.5	50.3	49.6	50.4	49.2
Washington	35.0	39.0	31.4	32.6	31.8	29.0
Oregon	51.3	50.2	44.4	43.8	47.1	44.7

Source: Computed from Appendix Tables 1 and 2.

Appendix Table 4. Number of cattle and calves on farms on January 1, by classes, for Oregon, Idaho, Washington, western region, and the United States

Area	All cattle and calves		Cows 2 yrs. and over		Heifers 1-2 yrs.		Calves		Steers		Bulls	
	Dairy	Beef	Dairy	Beef	Dairy	Beef	Dairy	All other	1 yr. and over	1 yr. and over	1 yr. and over	
												Thousand head
1966												
Oregon	133	680	37	142	53	425		116		40		
Washington	219	366	56	114	62	323		175		26		
Idaho	178	521	59	145	70	426		177		29		
Pacific Northwest	530	1,567	152	401	185	1,174		468		95		
Western region	1,767	7,338	483	1,896	556	5,075		2,711		412		
United States 1/	15,987	34,433	3,860	8,925	4,151	26,879		12,749		1,871		
35												
1961												
Oregon	177	555	50	132	62	325		100		34		
Washington	256	308	77	90	80	260		116		23		
Idaho	223	385	78	100	87	338		166		24		
Pacific Northwest	656	1,248	203	322	229	923		382		81		
Western region	2,019	6,089	581	1,637	644	3,864		2,076		352		
United States 1/	19,271	27,327	5,016	7,115	5,446	20,814		10,997		1,714		

1/ Includes Hawaii and Alaska.

Source: Livestock and poultry inventory, Jan. 1, 1967.

Livestock and Meat Statistics, USDA, Stat. Bull. No. 230, June 1962, Table 16, page 8.

Appendix Table 5. Percentage change in cattle and calves on farms, January 1, 1961, to January 1, 1967, by classes for Oregon, Idaho, Washington, western region, and the United States

Area	All cattle and calves		Cows 2 yrs. and over		Heifers 1-2 yrs.		Calves		Steers		Bulls
	Dairy	Beef	Dairy	Beef	Dairy	Beef	Dairy	All other	1 yr. and over 1 yr.	and over 1 yr. and over	
Percent											
Oregon	13.3	-24.9	22.5	-26.0	7.6	-14.5	30.8	16.0	17.6		
Washington	11.0	-14.4	18.8	-25.3	26.7	-22.5	24.2	50.9	13.0		
Idaho	14.6	-20.2	35.3	-24.3	45.0	-19.4	26.0	6.6	20.8		
Pacific											
Northwest	13.1	-19.2	25.6	-25.1	24.5	-19.2	27.2	22.5	17.3		
Western region	17.2	-12.5	20.5	-16.9	15.8	-13.7	31.3	30.6	17.1		
United States	11.4	-17.0	26.0	-23.0	25.4	-23.8	29.1	15.9	9.1		

Source: Computed from Appendix Table 4.

Appendix Table 6. Oregon beef cows and heifers that have calved, by county and geographic area, 1959 and 1964

County	1959	1964
Benton -----	2,244	4,822
Clackamas -----	6,998	13,114
Clatsop -----	1,614	3,474
Columbia -----	4,118	7,107
Coos -----	5,855	10,257
Curry -----	2,709	4,269
Douglas -----	7,030	15,087
Jackson -----	14,041	17,487
Josephine -----	2,750	3,641
Lane -----	8,068	16,683
Lincoln -----	2,368	3,110
Linn -----	5,916	12,036
Marion -----	3,589	6,863
Multnomah -----	2,895	2,426
Polk -----	1,559	3,744
Tillamook -----	856	1,671
Washington -----	2,228	3,807
Yamhill -----	2,469	4,636
Area 1 (Western Oregon) -----	77,307	134,234
Baker -----	37,816	47,319
Gilliam -----	7,963	11,180
Hood River -----	395	753
Morrow -----	14,126	18,408
Sherman -----	5,414	6,562
Umatilla -----	23,326	32,794
Union -----	14,787	17,964
Wallowa -----	20,639	28,338
Wasco -----	15,042	17,546
Area 2 (Columbia Basin) -----	139,508	180,864
Crook -----	22,700	30,542
Deschutes -----	8,183	8,258
Jefferson -----	8,396	11,691
Wheeler -----	9,022	10,391
Area 3 (Central Oregon) -----	48,301	60,882
Klamath -----	35,303	52,987
Lake -----	35,185	45,909
Area 4 (Southern Oregon) -----	70,488	98,896
Grant -----	28,165	35,143
Harney -----	51,809	60,011
Malheur -----	53,355	69,330
Area 5 (Eastern Oregon) -----	133,329	164,484
State -----	468,933	639,360

Source: U. S. Census of Agriculture, 1964, Preliminary Reports, Series AC 64-P1 for Oregon.

Appendix Table 7. Washington beef cows and heifers that have calved, by county and geographic area, 1959 and 1964

County	1959	1964
Clallam -----	2,120	4,891
Clark -----	5,044	10,672
Cowlitz -----	2,516	4,489
Grays Harbor -----	2,430	3,597
Island -----	926	2,129
Jefferson -----	640	1,143
King -----	2,535	4,125
Kitsap -----	568	1,184
Lewis -----	6,397	11,594
Mason -----	888	1,104
Pacific -----	2,092	2,963
Pierce -----	4,261	6,380
San Juan -----	773	1,377
Skagit -----	3,424	6,008
Skamania -----	314	909
Snohomish -----	2,648	5,983
Thurston -----	3,712	6,122
Wahkiakum -----	704	1,519
Whatcom -----	<u>4,381</u>	<u>8,259</u>
Area 1 (Western Washington) ----	46,373	84,448
Benton -----	4,708	8,457
Kittitas -----	15,494	23,072
Klickitat -----	13,858	17,486
Yakima -----	<u>22,984</u>	<u>33,052</u>
Area 2 (Yakima Valley) -----	57,044	82,067
Chelan -----	1,454	2,579
Adams -----	9,123	14,491
Douglas -----	8,170	9,816
Franklin -----	5,656	6,128
Grant -----	<u>9,405</u>	<u>16,767</u>
Area 3 (Columbia Basin) -----	33,808	49,781
Okanogan -----	32,547	37,970
Ferry -----	7,910	9,412
Pend Oreille -----	2,844	4,045
Spokane -----	9,452	13,730
Stevens -----	11,353	16,862
Lincoln -----	18,939	23,009

Continued



Appendix Table 7. Washington beef cows and heifers that calved, by county and geographic area, 1959 and 1964 -- Continued

County	1959	1964
Asotin -----	6,868	9,052
Columbia -----	5,168	6,086
Garfield -----	6,910	7,356
Walla Walla -----	7,889	13,093
Whitman -----	<u>20,054</u>	<u>23,068</u>
Area 4 (Eastern Washington) ---	129,934	163,683
State -----	267,159	379,979

Source: U. S. Census of Agriculture, 1964 Preliminary Reports, Series AC 64-P1 for Washington.

Appendix Table 8. Idaho beef cows and heifers that have calved, by county and geographic area, 1959 and 1964

County	1959	1964
Benewah -----	2,816	3,543
Bonner -----	3,970	6,047
Boundary -----	1,097	2,390
Clearwater -----	2,757	4,140
Idaho -----	17,888	21,385
Kootenai -----	2,778	4,461
Latah -----	5,207	8,135
Lewis -----	3,254	4,210
Nez Perce -----	7,975	11,692
Shoshone -----	374	524
Area 1 (Northern Idaho) -----	48,116	66,527
Ada -----	7,785	11,955
Adams -----	8,709	12,038
Boise -----	3,453	5,813
Canyon -----	9,529	13,290
Elmore -----	9,199	14,010
Gem -----	6,483	12,701
Owyhee -----	24,458	32,746
Payette -----	4,626	7,143
Valley -----	2,901	4,311
Washington -----	14,105	19,094
Area 2 (Southwestern Idaho) -----	91,248	133,101
Blaine -----	5,808	8,650
Camas -----	3,986	5,318
Cassia -----	16,875	25,536
Gooding -----	10,592	18,270
Jerome -----	2,522	7,526
Lincoln -----	3,518	6,626
Minidoka -----	2,908	8,211
Twin Falls -----	18,999	29,005
Area 3 (South-central Idaho) -----	65,208	109,142
Bannock -----	7,582	9,740
Bear Lake -----	11,631	13,483
Bingham -----	15,704	23,735
Bonneville -----	8,774	13,693
Butte -----	5,857	7,075
Caribou -----	12,399	14,562
Clark -----	3,738	6,036
Custer -----	17,261	22,238
Franklin -----	2,853	4,655

Continued

Appendix Table 8. Idaho beef cows and heifers that have calved by county and geographic area, 1959 and 1964 - Continued

County	1959	1964
Fremont -----	5,052	8,670
Jefferson -----	10,744	14,154
Lemhi -----	24,670	29,341
Madison -----	7,667	8,573
Oneida -----	10,967	15,480
Power -----	6,569	8,845
Teton -----	<u>3,003</u>	<u>4,210</u>
Area 4 (Eastern Idaho) -----	154,471	204,490
State -----	359,043	513,260

Source: U. S. Census of Agriculture, 1964, Preliminary Reports, Series AC 64-P1 for Idaho.

Appendix Table 9. Cattle and calves on feed, selected states and regions,  
by quarters, 1961-1966

January 1						
Area	1966	1965	1964	1963	1962	1961
<u>Thousand head</u>						
Oregon	97	93	85	79	73	69
Washington	133	139	127	130	118	106
Idaho	174	153	143	150	121	143
Pacific Northwest	404	385	355	359	312	318
Western states	2,677	2,504	2,453	2,562	2,081	2,028
Corn Belt <u>1/</u>	4,514	4,389	3,953	3,979	3,645	3,695
Plains States <u>2/</u>	2,840	2,539	2,502	2,320	2,050	1,833
United States	10,436 <u>3/</u>	9,844 <u>3/</u>	9,292 <u>3/</u>	9,255 <u>3/</u>	7,993 <u>4/</u>	7,742 <u>4/</u>

April 1						
Area	1966	1965	1964	1963	1962	1961
<u>Thousand head</u>						
Oregon	84	76	65	57	64	56
Washington	125	120	118	108	104	107
Idaho	162	137	129	118	107	113
Pacific Northwest	371	333	312	283	275	276
Western states	2,396	2,138	2,197	2,179	1,830	1,697
Corn Belt <u>1/</u>	4,733	4,278	3,853	3,780	3,556	3,635
Plains States <u>2/</u>	2,776	2,273	2,271	2,075	1,772	1,690
United States	10,226 <u>3/</u>	8,985 <u>3/</u>	8,612 <u>3/</u>	8,171 <u>4/</u>	7,321 <u>4/</u>	7,100 <u>5/</u>

Continued

Appendix Table 9. Cattle and calves on feed, selected states and regions,  
by quarters, 1961-1966--Continued

July 1						
Area	1966	1965	1964	1963	1962	1961
Thousand head						
Oregon	70	62	48	42	40	35
Washington	108	101	98	88	94	92
Idaho	120	111	95	79	75	69
Pacific Northwest	298	274	241	209	209	196
Western states	2,451	2,257	1,987	1,979	1,854	1,575
Corn Belt	3,713	3,508	2,981	3,216	2,867	2,931
Plains States	2,470	1,956	1,765	1,651	1,301	1,261
United States	8,858 3/	7,928 3/	6,914 3/	6,948 4/	6,135 4/	5,822 5/

October 1						
Area	1966	1965	1964	1963	1962	1961
Thousand head						
Oregon	78	78	71	55	59	50
Washington	124	114	124	125	125	113
Idaho	153	118	108	87	95	78
Pacific Northwest	355	310	303	267	279	241
Western states	2,458	2,247	2,141	2,146	1,999	1,683
Corn Belt	3,179	3,030	2,524	2,700	2,523	2,452
Plains States	2,517	2,130	1,998	1,939	1,501	1,412
United States	8,424 3/	7,738 3/	6,908 3/	6,908 4/	6,143 4/	5,673 4/

1/ Includes Iowa, Illinois, Indiana, Wisconsin, Minnesota, Ohio, Michigan, and Missouri.

2/ Includes North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas.

3/ Includes 32 states.

4/ Includes 28 states.

5/ Includes 26 states.

Source: Livestock and Meat Statistics, 1962, Supplements for 1964, 1965, and 1966, Table 22, page 14.

Appendix Table 10. Numerical and percent change in cattle and calves on feed between 1961 and 1966, for selected states, regions, and the United States, by quarters

Area	January		April		July		October	
	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>	<u>Percent</u>	<u>Thou. head</u>
Oregon	41	28	50	28	100	35	56	28
Washington	26	27	18	19	17	16	10	11
Idaho	22	31	43	49	74	51	96	75
Pacific								
Northwest	27	86	35	96	52	102	47	114
Western								
states	32	649	41	699	56	876	46	773
Corn Belt	22	819	30	1,098	27	782	30	727
Plains								
States	55	1,007	64	1,086	96	1,209	78	1,105
United								
States	32	2,467	40	2,846	49	2,867	47	2,613

Sources:

- (a) Cattle and Calves on Feed, SRS, USDA, January 17, 1967.  
 (b) Livestock and Meat Statistics, 1962, Table 22, page 15.

Appendix Table 11. Oregon cattle and calves on feed inventory by geographic area and quarter

Area 1/	1966				1965				1964			
	Jan.	April	July	Oct.	Jan.	April	July	Oct.	Jan.	April	July	Oct.
	Thousand head											
1	6.9	4.8	4.3	3.3	8.0	4.5	4.6	4.4	6.0	5.7	3.7	4.2
2	41.8	40.5	37.1	38.5	43.2	36.3	34.5	35.7	34.5	29.6	26.8	37.6
3	20.4	16.9	9.6	13.2	18.1	14.9	9.1	16.3	15.5	10.1	6.5	13.4
4	14.7	9.8	7.5	11.0	15.0	12.5	6.7	11.8	14.8	7.6	6.5	9.9
5	13.2	12.0	11.6	12.0	8.7	7.8	7.1	9.8	14.2	12.0	4.5	5.9
Total	97.0	84.0	70.1	78.0	93.0	76.0	62.0	78.0	85.0	65.0	48.0	71.0

Area 1/	1963				1962				1961			
	Jan.	April	July	Oct.	Jan.	April	July	Oct.	Jan.	April	July	Oct.
	Thousand head											
1	5.9	5.2	4.6	5.0	6.1	5.1	3.4	4.0	5.6	4.8	2.0	3.2
2	34.2	29.9	23.8	28.2	29.8	28.1	19.7	26.0	25.9	24.1	19.7	19.4
3	17.7	8.2	7.0	10.2	18.0	13.6	7.9	12.5	17.7	11.8	6.0	13.5
4	8.4	4.7	3.5	4.5	7.7	6.5	2.6	5.0	6.2	4.6	2.4	4.9
5	12.8	9.0	3.1	7.1	11.4	10.7	6.5	11.5	13.6	10.7	4.9	9.0
Total	79.0	57.0	42.0	55.0	73.0	64.0	40.1	59.0	69.0	56.0	35.0	50.0

1/ Area 1: All counties west of the Cascades.

Area 2: Hood River, Wasco, Sherman, Gilliam, Morrow, Umatilla, Wallowa, Union, and Baker counties.

Area 3: Jefferson, Crook, Deschutes, and Wheeler counties.

Area 4: Klamath and Lake counties.

Area 5: Grant, Harney, and Malheur counties.

Source: Cattle and Calves on Feed, SRS, USDA, Oct. 20, 1966, and previous publications.

Appendix Table 12. Washington cattle and calves on feed by geographic area and quarter

Area 1/	1966				1965				1964			
	Jan.	April	July	Oct.	Jan.	April	July	Oct.	Jan.	April	July	Oct.
	<u>Thousand head</u>											
1	4.0	4.0	3.0	5.0	5.0	3.0	2.0	3.0	4.0	5.0	4.0	4.0
2	80.0	71.0	60.0	66.0	81.0	71.0	61.0	63.0	75.0	63.0	52.0	68.0
3	46.0	47.0	63.0	51.0	49.0	41.0	35.0	45.0	40.0	40.0	35.0	46.0
4	3.0	3.0	2.0	2.0	1.0	1.0	1.0	3.0	8.0	10.0	7.0	6.0
Total	133.0	125.0	128.0	124.0	136.0	116.0	99.0	114.0	127.0	118.0	98.0	124.0

	1963				1962			
	<u>Thousand head</u>							
1	6.0	4.0	2.0	3.0	7.0	4.0	3.0	5.0
2	77.0	64.0	48.0	71.0	69.0	61.0	55.0	74.0
3	35.0	31.0	28.0	40.0	32.0	31.0	26.0	34.0
4	12.0	9.0	10.0	11.0	10.0	8.0	10.0	12.0
Total	130.0	108.0	88.0	125.0	118.0	104.0	94.0	125.0

1/ Area 1: Whatcom, Skagit, Snohomish, Clallam, Jefferson, King, Grays Harbor, Mason, Kitsap, Pierce, Thurston, Pacific, Lewis, Wahkiakum, Cowlitz, Clark, and Skamania counties.  
Area 2: Kittitas, Yakima, Klickitat, and Benton counties.  
Area 3: Chelan, Douglas, Grant, Adams, and Franklin counties.  
Area 4: Okanogan, Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Whitman, Walla Walla, Columbia, Garfield, and Asotin counties.

Source: Cattle and Calves on Feed, SRS, USDA, Oct. 1966, and previous issues.



Appendix Table 13. Oregon stocker and feeder cattle shipped to other states, 1963-1967

State	1963 <sup>1/</sup>	1964 <sup>1,2/</sup>	1965	1966	1967 <sup>3/</sup>
California	112,051	158,822	198,745	142,885	27,072
Idaho	87,793	113,866	109,951	152,935	46,542
Washington	43,719	59,417	55,122	69,882	26,804
Arizona	435	277	232	500	1
Colorado	9,647	4,766	14,762	13,475	596
Illinois	2,296	8,047	5,649	3,288	123
Iowa	7,266	31,276	27,392	30,292	1,479
Minnesota	445	476	562	2,320	--
Montana	192	372	992	1,900	82
Nebraska	8,941	14,021	13,306	10,434	1,941
Nevada	5,085	8,181	11,224	10,048	1,848
South Dakota	118	--	308	712	--
Utah	155	509	983	89	6
Wyoming	2,235	1,165	3,439	1,452	--
All other destinations	20	409	710	4,411	462
Total	280,398	401,604	443,377	444,623	106,956

<sup>1/</sup> Portland stockyard not included.

<sup>2/</sup> July auction marketings not included.

<sup>3/</sup> January-June only.

Source: Derived from unpublished data summarized by the Oregon State Department of Agriculture.

Appendix Table 14. Oregon slaughter cattle shipped to other states, 1963-1967

State	1963 <sup>1/</sup>	1964 <sup>1,2/</sup>	1965	1966	1967 <sup>3/</sup>
California	37,389	25,732	36,567	37,216	15,738
Idaho	35,714	22,356	21,444	25,888	8,459
Washington	24,092	23,021	20,868	36,421	12,824
Arizona	43	--	--	--	--
Colorado	2,865	--	9	--	2
Illinois	2,116	--	20	--	--
Iowa	1,272	--	238	50	--
Minnesota	128	--	--	--	--
Montana	230	--	--	--	--
Nebraska	835	--	4	164	--
Nevada	1,273	169	128	67	--
Utah	54	254	89	--	--
Wyoming	1,513	--	--	--	--
All other destinations	22	42	3	17	39
Total	107,546	71,574	79,370	99,823	37,062

<sup>1/</sup> Portland stockyard not included.

<sup>2/</sup> July auction marketings not included.

<sup>3/</sup> January-June only.

Source: Derived from unpublished data summarized by the Oregon State Department of Agriculture.

Appendix Table 15. Grain-consuming animal units by class of livestock in the Pacific Northwest, by state, 1961-1966

	1966				1965			
	Idaho	Wash.	Ore.	PNW	Idaho	Wash.	Ore.	PNW
	<u>Thousand units</u>							
Horses and mules	9	10	12	31	9	10	12	31
Stock sheep	15	2	8	25	12	3	8	23
Sheep on feed	15	2	8	25	12	3	8	23
Total sheep	30	4	16	50	24	6	16	46
Milk cows	120	239	145	504	125	241	146	512
Milk heifers and calves	25	23	18	66	26	24	18	68
Total milk animals	145	262	163	570	151	265	164	580
Cattle on feed	201	133	92	426	174	133	97	404
Other cows	51	38	67	156	52	37	68	157
Other cattle	55	31	37	123	60	30	38	128
Total beef animals	307	202	196	705	286	200	203	689
Hogs	106	104	146	356	103	111	128	342
All poultry	138	692	460	1,290	130	659	436	1,225
Total animal units	735	1,274	993	3,002	703	1,251	959	2,913

	1964				1963			
	Idaho	Wash.	Ore.	PNW	Idaho	Wash.	Ore.	PNW
	<u>Thousand units</u>							
Horses and mules	9	10	12	31	9	10	12	31
Stock sheep	15	3	8	26	14	3	8	25
Sheep on feed	15	3	8	26	14	3	8	25
Total sheep	30	6	16	52	28	6	16	50
Milk cows	134	245	156	535	141	251	165	557
Milk heifers and calves	28	25	18	71	29	26	19	74
Total milk animals	162	270	174	606	170	277	184	631
Cattle on feed	153	139	93	385	145	127	85	357
Other cows	52	39	69	160	49	37	66	152
Other cattle	62	32	38	132	64	32	37	133
Total beef animals	267	210	200	677	258	196	188	642
Hogs	104	111	132	347	122	122	155	399
All poultry	124	661	414	1,199	133	622	400	1,155
Total animal units	696	1,268	948	2,912	720	1,233	955	2,908

Continued

Appendix Table 15. Grain-consuming animal units by class of livestock in the Pacific Northwest, by state, 1961-1966--Continued

	1962				1961			
	Idaho	Wash.	Ore.	PNW	Idaho	Wash.	Ore.	PNW
	<u>Thousand units</u>							
Horses and mules	9	10	12	31	9	10	12	31
Stock sheep	13	4	11	28	14	4	12	30
Sheep on feed	13	4	6	23	11	4	8	23
Total sheep	26	8	17	51	25	8	20	53
Milk cows	150	262	179	591	155	273	187	615
Milk heifers and calves	30	27	21	78	32	29	22	83
Total milk animals	180	289	200	669	187	302	209	698
Cattle on feed	150	130	79	359	121	118	73	312
Other cows	45	36	61	142	42	34	57	133
Other cattle	55	29	32	116	51	26	31	108
Total beef animals	250	195	172	617	214	178	161	553
Hogs	121	144	176	441	121	144	187	452
All poultry	150	596	410	1,156	143	577	419	1,139
Total animal units	736	1,242	987	2,965	699	1,219	1,008	2,926

Source: Derived from unpublished information provided by the Farm Production Economics Division, ERS, USDA.



Appendix Table 17. Number and volume of Washington auctions by geographic area, 1962-1966

1962		1963		1964		1965		1966	
Area 1/	Auction	Volume	Auction	Volume	Auction	Volume	Auction	Volume	Auction
		Thou.		Thou.		Thou.		Thou.	
	Number	head	Number	head	Number	head	Number	head	Number
1	14	178.4	13	179.5	14	176.6	13	202.5	14
2	6	93.1	6	92.0	6	99.3	5	111.2	5
3	2	55.8	3	66.9	4	86.4	4	119.1	5
4	7	173.5	7	164.8	7	168.5	7	177.8	7
State	29	500.8	29	503.2	31	530.8	29	610.6	31

1/ Area 1: Whatcom, Skagit, Snohomish, Clallam, Jefferson, King, Grays Harbor, Mason, Kitsap, Pierce, Thurston, Pacific, Lewis, Wahkiakum, Cowlitz, Clark, and Skamania counties.

Area 2: Kittitas, Yakima, Klickitat, and Benton counties.

Area 3: Chelan, Douglas, Grant, Adams, and Franklin counties.

Area 4: Okanogan, Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Whitman, Walla Walla, Columbia, Garfield, and Asotin counties.

Source: Unpublished data provided by the Washington State Department of Agriculture.

Appendix Table 18. Number and volume of Idaho auctions by geographic area, 1964-1966

Area <u>1/</u>	1964		1965		1966	
	Auction	Volume	Auction	Volume	Auction	Volume
	<u>Number</u>	<u>Thou. head</u>	<u>Number</u>	<u>Thou. head</u>	<u>Number</u>	<u>Thou. head</u>
1	6	88.8	6	101.7	6	106.0
2	8	224.4	8	218.2	8	229.5
3	5	143.3	5	157.1	5	152.3
4	6	169.1	6	185.7	6	181.8
State	25	625.6	25	662.7	25	669.6

- 1/ Area 1: Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone counties.  
 Area 2: Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley, and Washington counties.  
 Area 3: Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls counties.  
 Area 4: Bannock, Bear Lake, Bingham, Bonneville, Butte, Caribou, Clark, Custer, Franklin, Fremont, Jefferson, Lemhi, Madison, Oneida, Power, and Teton counties.

Source: Unpublished data provided by Idaho State Department of Agriculture.

Appendix Table 19. Cattle and calf slaughter in Oregon state-inspected packing plants by year and quarter, geographic area, 1961-1966

Area <u>1/</u>	Jan.	April	July	Oct.	Total
<u>1961</u>					
1	29,950	34,786	38,684	35,298	138,718
2	1,876	2,093	2,501	2,350	8,820
3	1,179	1,398	1,759	1,472	5,808
4	1,625	1,753	2,090	1,717	7,185
5	1,721	1,831	1,884	1,477	6,913
State	36,351	41,834	46,918	42,314	167,444
<u>1962</u>					
1	29,781	43,468	38,859	35,794	147,902
2	1,846	2,453	2,447	2,019	8,765
3	1,118	1,338	1,947	1,621	6,024
4	1,637	2,082	2,331	1,673	7,723
5	1,091	1,124	876	721	3,812
State	35,473	50,465	46,460	41,828	174,226
<u>1963</u>					
1	31,727	34,027	39,887	38,382	144,023
2	2,214	2,427	2,692	2,876	10,209
3	1,309	1,425	1,883	1,795	6,412
4	1,612	1,816	2,192	1,798	7,418
5	757	738	835	728	3,058
State	37,619	40,433	47,489	45,579	171,120
<u>1964</u>					
1	32,691	33,630	41,990	58,129	166,440
2	2,222	2,877	3,189	3,411	11,699
3	1,420	1,601	2,009	1,905	6,935
4	1,832	2,292	2,500	2,008	8,632
5	709	806	883	876	3,274
State	38,874	41,206	50,571	66,329	196,980
<u>1965</u>					
1	34,501	37,221	46,027	41,714	159,463
2	2,454	2,814	3,345	3,208	11,821
3	1,448	1,405	1,835	1,749	6,437
4	1,998	2,204	2,449	2,297	8,948
5	792	944	749	747	3,232
State	41,193	44,588	54,405	49,715	189,901

Continued



Appendix Table 19. Cattle and calf slaughter in Oregon state-inspected packing plants by year and quarter, geographic area, 1961-1966--Continued

Area <u>1</u> /	Jan.	April	July	Oct.	Total
		<u>1966</u>			
1	35,097	34,065	40,530	35,472	145,164
2	2,564	2,706	3,261	2,949	11,480
3	1,090	1,319	1,657	1,453	5,519
4	2,322	2,428	2,756	2,434	9,940
5	591	646	633	647	2,517
State	41,664	41,164	48,837	42,955	174,620

1/ Area 1: All counties west of the Cascades.

Area 2: Hood River, Wasco, Sherman, Gilliam, Morrow, Umatilla, Wallowa, Union, and Baker counties.

Area 3: Jefferson, Crook, Deschutes, and Wheeler counties.

Area 4: Klamath and Lake counties.

Area 5: Grant, Harney, and Malheur counties.

Source: Derived from data received from Oregon State Department of Agriculture.

Appendix Table 20. Cattle and calf slaughter in Washington state-inspected packing plants by year and quarter, geographic area, 1964-1966

Area <u>1</u> /	Jan.	April	July	Oct.	Total
<u>1964</u>					
1	16,309	17,086	21,882	23,302	78,579
2	2,942	3,151	3,250	3,602	12,945
3	3,741	4,982	4,799	4,870	18,392
4	1,060	1,493	1,464	1,846	5,863
State	24,052	26,712	31,395	33,620	115,779
<u>1965</u>					
1	15,819	16,053	21,058	21,297	74,227
2	2,867	3,046	3,213	3,086	12,212
3	4,139	4,573	4,854	4,824	18,390
4	1,283	1,823	2,043	1,914	7,063
State	24,108	25,495	31,168	31,121	111,892
<u>1966</u>					
1	16,258	14,545	18,396	17,378	66,577
2	2,625	2,373	1,999	2,195	9,192
3	4,268	4,403	3,973	4,591	17,235
4	1,388	1,626	2,128	1,879	7,021
State	24,539	22,947	26,496	26,043	100,025

- 1/ Area 1: Whatcom, Skagit, Snohomish, Clallam, Jefferson, King, Grays Harbor, Mason, Kitsap, Pierce, Thurston, Pacific, Lewis, Wahkiakum, Cowlitz, Clark, and Skamania counties.  
Area 2: Kittitas, Yakima, Klickitat, and Benton counties.  
Area 3: Chelan, Douglas, Grant, Adams, and Franklin counties.  
Area 4: Okanogan, Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Whitman, Walla Walla, Columbia, Garfield, and Asotin counties.

Source: Derived from unpublished data received from the Washington State Department of Agriculture.

Appendix Table 21. Cattle and calf slaughter in Idaho state-inspected packing plants by quarter, 1964-1966

Year	January	April	July	October
1964	15,169	18,059	20,916	19,949
1965	17,800	18,392	20,250	19,459
1966	17,496	18,972	20,241	18,352

Source: Derived from unpublished data received from Idaho State Department of Agriculture.

Appendix Table 22. Value added to cattle and calves through slaughter, processing, and delivery in Pacific Northwest, and by state, 1961-1965

Area	1961	1962	1963	1964	1965
	Dollars				
Oregon	18,678,856	19,330,131	17,546,221	17,947,381	21,915,500
Washington	31,955,474	34,415,375	33,811,220	34,980,083	38,788,463
Idaho	14,800,806	16,659,504	16,835,199	16,988,096	20,103,545
Pacific Northwest	65,435,136	70,405,010	68,192,640	69,915,560	80,807,508

Source: Computed from the following:

a) Livestock and Meat Statistics. Cattle and Calves: Production and Income, by States, 1965, and preceding issues.

b) Months, 1965, and preceding issues. Commercial Cattle Slaughter, Total Liveweight by States and By preceding issues.

c) Months, 1965, and preceding issues. Commercial Calf Slaughter. Total Liveweight by States and by preceding issues.

d) Financial Facts About the Meat Packing Industry, 1963, published by the American Meat Institute, shows values added to cost of livestock through meat packing (slaughter, processing, and delivery) amounted to 36 percent in 1963.

Appendix Table 23. Total income received by cattle and calf producers plus value added by slaughter and meat packing for the Pacific Northwest and by states, 1961-1965

State	1961	1962	1963	1964	1965
	<u>Dollars</u>				
Oregon	105,555,856	111,986,131	98,102,221	97,941,481	125,066,500
Washington	91,979,474	102,060,375	103,524,220	102,342,083	134,204,463
Idaho	108,386,806	114,957,504	114,734,199	113,655,096	138,793,545
Pacific Northwest	305,922,136	329,004,010	316,360,640	313,938,660	398,064,508

Source: Computed from Appendix Tables 2 and 22.

Appendix Table 24. Estimated supply and consumption of Pacific Northwest dressed fed beef, 1965

State	Estimated supply	Estimated consumption
	<u>Pounds</u>	
Oregon	68,890,000	148,200,000
Washington	126,375,000	209,001,000
Idaho	111,788,000	46,165,400
Pacific Northwest	307,053,000	403,366,400

- Sources: (a) Livestock and Meat Statistics, Supplement for 1965 to Statistic Bulletin No. 333.
- (b) Interregional Competition in Livestock and Crop Production in the United States: An Application of Spatial Linear Programming, Ray F. Brokken, unpublished doctoral dissertation, Iowa State University Library, 1965, and unpublished tables provided by writer.
- (c) Statistical Abstracts of United States, 1965, Bureau of the Census, U. S. Department of Commerce.