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Internal Report for
Administrative Use Only.

SOME SELECT STATISTICS RELATING TO
GRAZING ON PUBLIC LANDS

Bureau of Sport Fisheries and Wildlife
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SOME SELECT STATISTICS RELATING TO GRAZING ON PUBLIC LANDS ^{1/}

INTRODUCTION

The purpose of this summary is to satisfy a request for certain statistical data on livestock grazing (with emphasis on sheep) on Federal lands in Western States (Pacific and Rocky Mountain regions).

Data for the most recent year for which comparable information is available have been compiled as a joint effort of staff personnel of the Bureau of Land Management, Forest Service, and Bureau of Sport Fisheries and Wildlife.

The summary is in no sense comprehensive. It is not intended to analyze land use, grazing practices, or the socio-economic values of the grazing and associated industries.

STATISTICAL DATA

Sheep and Cattle Using Bureau of Land Management and Forest Service Lands, Permittees and Revenues. There are 30,490 permittees who run 4.5 million cattle on public lands and utilize 15 million animal unit months. ^{2/} There are 5,232 permittees who run 7 million sheep and utilize 18 million sheep months. ^{3/} Additional details and a breakdown by State are shown in Tables I and II.

Table II has data by State for Forest Service and Bureau of Land Management lands and for the West as a whole. Tables II-A and II-B contain the same data by agency. This national figure on sheep is for January 1 and does not include lambs. It is based on numbers of mature animals. Comparable data on lambs and calves are not available.

^{1/} Assembled and compiled by Everett Doman, U.S. Forest Service; Robert J. Smith, Bureau of Land Management; Jack H. Berryman, Norman C. Johnson, and Ronald Thompson, Bureau of Sport Fisheries and Wildlife, on request of the Office of the Assistant Secretary for Fish and Wildlife and Parks.

^{2/} An animal unit month is the grazing requirement for one mature cow for one month.

^{3/} Five sheep months equal one animal unit month.

Combined grazing use data for Bureau of Land Management and National forest lands, for both sheep and cattle, indicate that approximately 50 percent of the use is made by 13 percent of the ranchers; 60 percent of the use is made by 18 percent of the ranchers; and 75 percent of the use is by 35 percent of the ranchers. This tabulation of data on the percent of permittees with 50, 60, and 75 percent of the use on Forest Service and Bureau of Land Management administered lands is shown in Figure 1. Additional data can be found in Figures 2, 3, and 4, and Tables I and II.

Data on Forest Service lands only are as follows:

<u>% of Permitted Grazing Use</u>		<u>% of Permittees</u>
23.3	of use is by	7.29
32		10.8
42.4		15
56.8		23.3
69.3		32.8
76.9		40.6
85.2		51.8
94.1		70.2

Source: Bureau of Land Management and Forest Service records.

The average time that cattle spend on public land is 6.7 months per year. For sheep, it is 5.5 months. Additional detail is shown in Table III. Because some animals spend time on both Forest Service and Bureau of Land Management lands, a 30 percent reduction should be applied to totals in Table III. This table shows the Forest Service and Bureau of Land Management data listed separately, together, and for sheep and cattle. Combined data are shown in Table III-A. These data are illustrated in pie charts (Figure 5). Source: Bureau of Land Management and Forest Service records; Public Land Law Review Commission Report, Volume 2.

There are no sheep on National Forest system lands yearlong; 118,270 cattle were permitted under yearlong permits in 1970.

As of January 1, 1970, there were 62,071,000 beef cattle on farms and ranches in the United States. This is exclusive of calves that totaled an additional 29,058,000. As of January 1, 1970, there were 14,530,000 stock sheep one-year-old and over on farms and ranches in the United States. In addition, there were 2,881,000 lambs. Source: Agricultural Statistics, 1971--U.S. Department of Agriculture.

There are 213 million animal unit months of forage produced on forest and range ecosystems in the United States. National forest lands produce 11.3 million; other Federal land, mainly Bureau of Land Management, produces 18.7 million; and non-Federal lands, including State lands, produce 183 million. The 213 million animal unit months on forest and range ecosystems in the United States are expressed in animal unit months for all lands. In the data on use, the 4.5 million cattle and 7.0 million sheep on public lands are expressed as 18.6 million animal unit months of use for western ranges. Total estimated production of animal unit months on Federal lands is 30.0 million animal unit months. Additional information is contained in Table IV.

Forage data are in terms of animal unit months of forage produced as distinguished from data based on the amount of forage consumed. The figures on forest and range ecosystems are for forage production. Total energy requirements for livestock, on the other hand, include all forage--hay, grains, stubble, etc. Total forage data expressed in production are not inconsistent with other data on the amount of forage provided by the public lands or on amount of forage required. They are separate sets of data.

Total revenue from grazing fees from livestock uses of public lands in fiscal year 1971:

Forest Service	\$ 4,774,468
Bureau of Land Management	<u>7,548,000</u>
	\$12,322,468

The grazing revenues by State for Bureau of Land Management administered lands for calendar year 1970 are shown in Figure 6. Similar data on Forest Service lands are not available on a State-by-State basis. Source: Bureau of Land Management and Forest Service records.

COMMENT

"The public lands account for about 3 percent of all the forage consumed by livestock in the United States. Although the total proportion contributed has been gradually decreasing, the public lands are still an important source of forage requirements in the West, where they supply some 12 percent of the total forage.

"...They (the public lands) are often crucial to individual ranch operations, supplementing the feed of private lands by supplying seasonal grazing. Without the privilege of grazing public lands, many ranches would cease to exist as economic units, or would be forced out of business due to the high cost of substituting other sources of feed. The western range livestock industry, which is built around the public lands, also must be viewed as an important source of range livestock for feeder lots throughout the West and Midwest." (PLLRC, 1970).

The forage contributions of public lands are, of course, higher for some States than the total contribution for either the West or the Nation as a whole as shown in the following tabulation.

Federal Land Contribution to Forage Requirements--1966 (Nielsen and Workman, 1971):

State	Total Forage Consumption (1,000 AUM's)	Federal Land Forage Consumption (1,000 AUM's)	Percentage
Arizona ^{4/}			27
California	34,500	1,300	4
Colorado	27,300	1,700	6
Idaho	13,600	2,300	17
Montana	30,600	2,200	7
Nevada	5,900	2,900	49
New Mexico	14,500	2,500	17
Oregon	15,000	1,900	13
Utah	8,400	2,300	28
Washington	9,700	200	2
Wyoming	17,900	2,800	16
<hr/>			
11 Western States	187,200	22,700	12
<hr/>			
U.S. (48)	847,100	25,300	3

The relative importance of grazing with other businesses and the contributions of each to the economy of 8 western counties is shown in Figure 7. These data are presented to show the local or regional significance of grazing in some areas where precise data are available. It is not suggested that it is representative of the West or even for the entire State for the counties shown.

^{4/} The data from Arizona in the Nielsen and Workman tabulation were omitted because it contained a mathematical error.

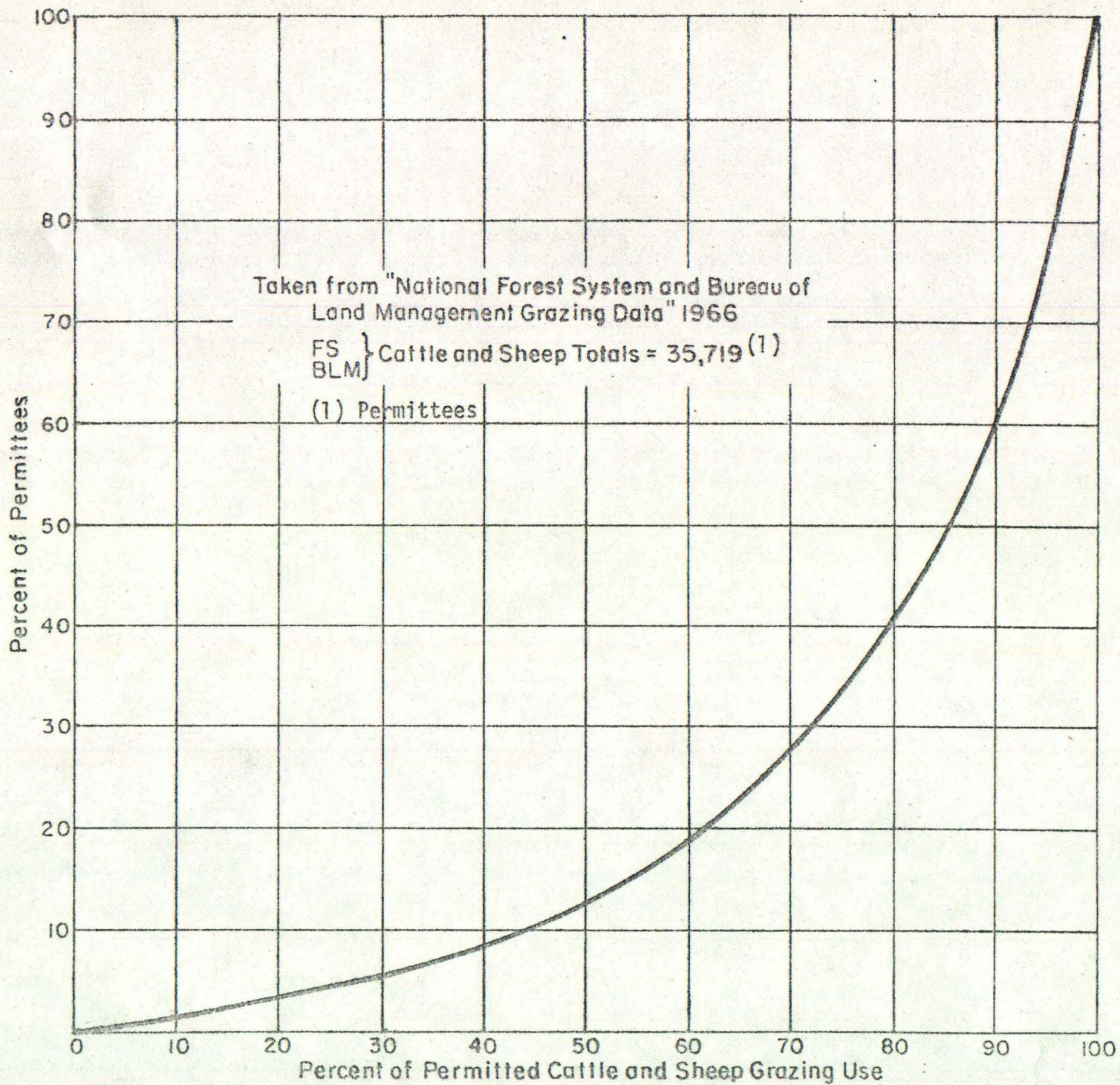


FIGURE 1: Combined data on percent of permittees and permitted use for both cattle and sheep on Bureau of Land Management and National Forest System lands.

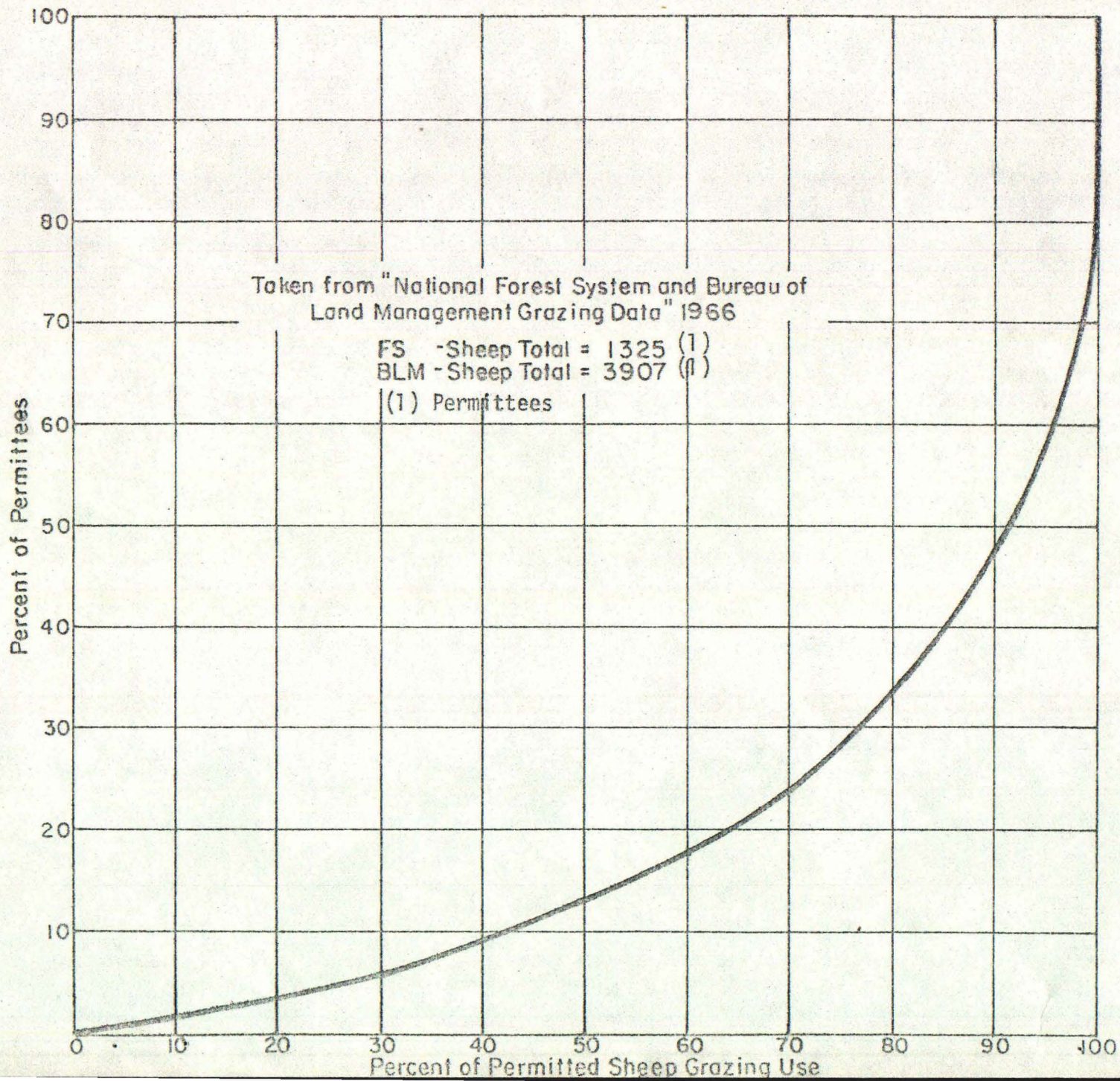


FIGURE 2: Combined data on percent of permittees and permitted use for
 sheep on Bureau of Land Management and National Forest System
 lands.

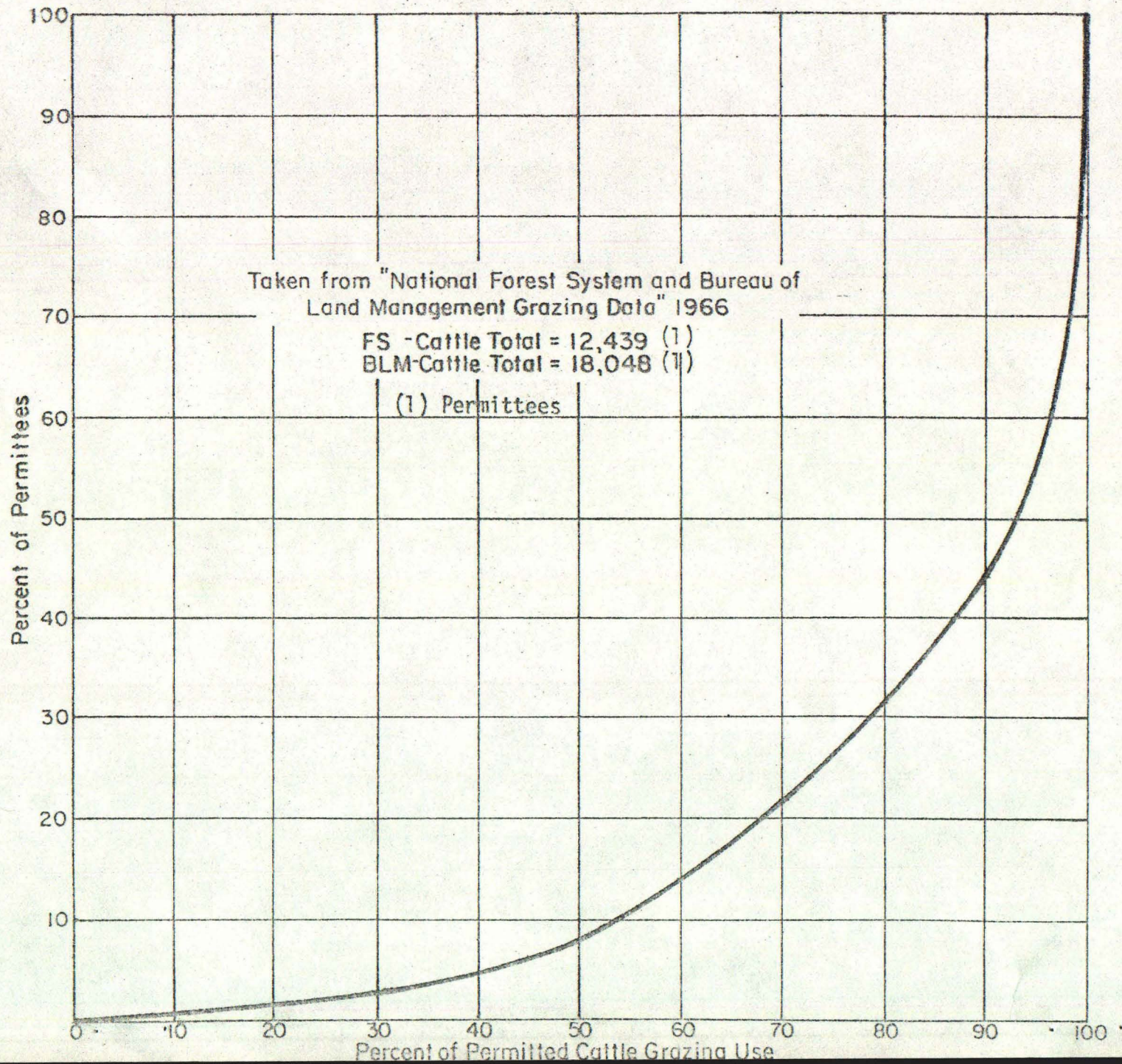


FIGURE 3: Combined data on percent of permittees and permitted use for cattle on Bureau of Land Management and National Forest Lands.

FIGURE 4

Percent of Permittees with 50, 60, and 75 percent of Use on Forest Service and Bureau of Land Management Administered Lands.

Forest Service

Bureau of Land Management

SHEEP AND CATTLE COMBINED

<u>Percent of Use</u>	<u>Percent of Permittees</u>	<u>Percent of Use</u>	<u>Percent of Permittees</u>
50	19	50	12
60	26	60	16
75	40	75	27

CATTLE

50	11	50	9
60	15	60	13
75	28	75	26

SHEEP

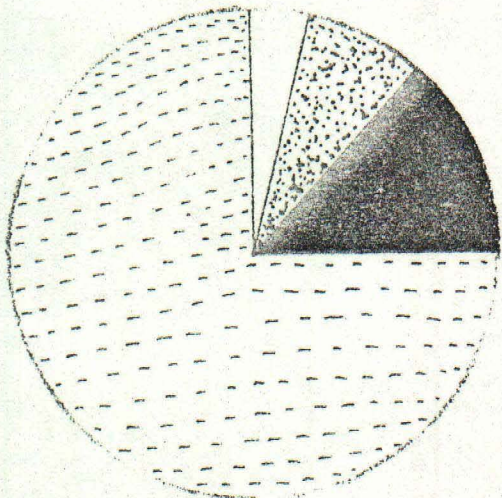
50	18	50	15
60	25	60	19
75	40	75	28

FIGURE 5.

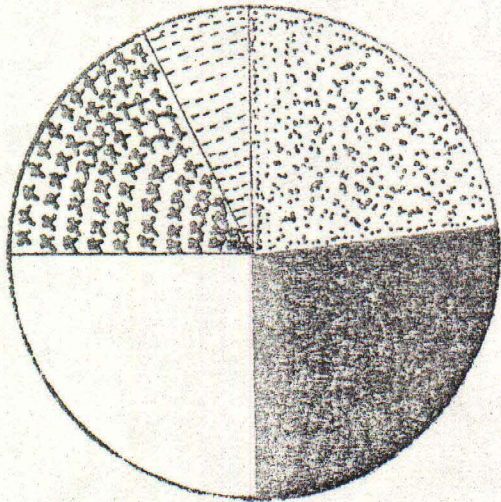
About 90% of the land administered by the Bureau of Land Management and 64% of the land administered by the Forest Service is grazed. Together these lands provide 97% of all the grazing use on Federal lands.

Grazing Season of Use in the Eleven Western States
 (PLLRC Report -- The Forage Resource Volume 2)

CATTLE and HORSES

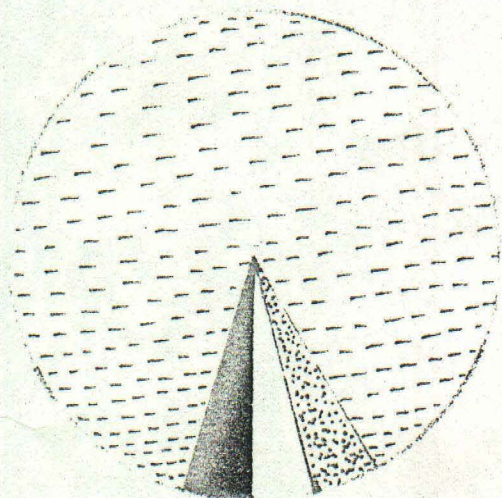


USFS

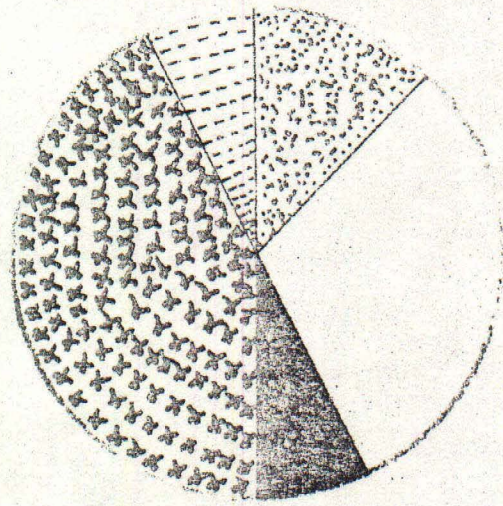


BLM

SHEEP and GOATS



USFS



BLM

WINTER USE



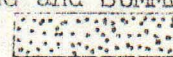
SUMMER USE



YEARLONG USE



SPRING and SUMMER USE



SPRING and FALL USE



PLLRC Report - The Forage Resource Volume 2 ; 1/1970

FIGURE 6

Grazing Revenues by State for BLM Administered Lands for Calendar Year 1970

	<u>CATTLE</u>	<u>SHEEP</u>
Arizona	\$ 556,983	\$ 26,679
California	196,638	43,918
Colorado	310,267	141,839
Idaho	642,073	178,874
Montana	855,120	91,882
Nevada	1,168,226	241,567
New Mexico	1,048,881	187,604
Oregon & Washington	663,952	11,155
Utah	421,133	352,247
Wyoming	716,773	522,779
TOTAL	\$6,580,046	\$1,798,544
GRAND TOTAL	--\$8,378,590	

Figure 7. Net personal income by source, eight survey counties, western region, 1964

Direct income - major source	Lemhi County, Idaho	Chaves County, New Mexico	Johnson County Wyoming	Elko County Nevada	San Juan County, Utah	Graham County, Arizona	Baker County, Oregon	Blaine County, Montana
Livestock income	1,972,080	8,894,000	2,598,010	5,719,000	1,090,472	2,530,000	3,589,872	2,743,042
Other agriculture income	818,218	6,757,080	183,990	340,000	300,528	2,943,000	991,128	2,813,958
Mining	56,159	5,230,378	919,188	895,922	4,579,089	123,313	354,324	17,722
Construction	91,880	7,004,352	972,088	5,206,621	1,652,626	570,703	1,236,012	438,397
Food Processing	75,330	2,866,560	----	161,521	66,503	463,232	251,257	19,955
Lumber	657,700	87,215	207,895	----	355,020	----	3,060,101	----
Other manufacturing	115,500	3,886,740	85,703	402,125	129,935	576,656	1,138,084	131,069
Transp. Communication & utilities	152,700	4,885,576	286,691	1,746,331	1,538,522	592,902	1,217,770	136,846
Wholesale & retail trade	1,100,240	16,453,259	1,019,666	8,164,897	881,078	2,708,506	4,284,903	1,591,155
Finance, ins., real estate	124,888	4,950,459	203,123	1,001,039	165,999	384,769	724,437	322,909
Service & misc.	272,212	6,131,853	345,743	39,199,710		1,337,909	1,289,230	172,217
Medical & Legal Services	111,000	1,527,500	209,000	894,000	134,000	170,000	450,000	700,000
County & local salaries	650,313	2,085,542	2,127,581	3,955,835	447,131	2,137,334	2,544,559	1,024,248
State employees	147,400	3,231,121		1,700,086	1,535,886	1,342,000	534,581	17,700
Federal employees	720,600	12,345,770	205,000	881,760	670,111	845,666	556,440	190,795
Property income	1,060,008	10,876,576	1,872,736	10,741,993	2,043,929	2,625,980	3,711,358	1,496,402
Transfer payments	706,672	7,543,432	805,276	5,055,055	1,156,433	1,527,243	2,222,370	897,841
Less: personal contrib.	231,027	2,806,858	402,638	2,708,065	591,664	551,958	844,501	278,640
Total personal income	8,330,575	103,327,476	11,639,052	103,357,598	16,055,598	20,372,255	27,312,925	12,435,616
percent livestock income	24	9	22	6	6	12	13	22
Percent total agricultural income	36	15	24	6	7	27	17	45

Source (33): University of Idaho with Pacific Consultants, Inc., 1970. Public Land Study: The forage Resource. Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. PB 189249, PB 189250, PB 189251 and PB 189252.

TABLE I: Number of Permittees, Livestock, and Animal Months of Range Use by State on Federal Lands--1970.*

No. of Permittees	No. of Cattle	Cattle AMs	No. of Permittees	No. of Sheep	Sheep AMs
1,690	365,422	1,988,894	ARIZONA 41	81,806	387,975
1,885	216,540	615,187	CALIFORNIA 217	335,072	538,566
3,308	504,230	1,140,801	COLORADO 745	1,057,124	1,813,007
3,977	469,047	1,384,818	IDAHO 628	1,017,431	2,239,785
5,273	731,738	1,719,431	MONTANA 443	455,609	857,586
1,017	408,279	1,961,926	NEVADA 149	496,268	2,089,184
3,807	352,521	2,267,190	NEW MEXICO 726	245,148	1,591,803
3,177	384,601	1,405,681	OREGON AND WASHINGTON 68	116,964	318,967
3,443	232,120	958,025	UTAH 973	1,110,031	3,526,570
2,910	846,558	1,523,202	WYOMING 1,242	2,131,204	4,636,807
<u>30,487</u>	<u>4,511,056</u>	<u>14,965,155</u>	<u>5,232</u>	<u>7,046,657</u>	<u>18,000,250</u>

*. Source of Data--Forest Service and Bureau of Land Management Grazing Records

TABLE II: Number of Permittees, Livestock, and Animal Months of Range Use by State and Federal Agencies--1970*

No. of Permittees		No. of Cattle	Cattle AMs	No. of Permittees	No. of Sheep	Sheep AMs
ARIZONA						
FS	703	140,498	1,144,980	19	53,276	185,865
BLM	987	224,924	843,914	22	28,530	202,110
	<u>1,690</u>	<u>365,422</u>	<u>1,988,894</u>	<u>41</u>	<u>81,806</u>	<u>387,975</u>
CALIFORNIA						
FS	1,023	84,559	317,250	49	74,171	205,851
BLM	862	131,981	297,937	168	260,901	332,715
	<u>1,885</u>	<u>216,540</u>	<u>615,187</u>	<u>217</u>	<u>335,072</u>	<u>538,566</u>
COLORADO						
FS	1,690	173,878	670,699	251	332,269	738,472
BLM	1,618	330,352	470,102	494	724,855	1,074,535
	<u>3,308</u>	<u>504,230</u>	<u>1,140,801</u>	<u>745</u>	<u>1,057,124</u>	<u>1,813,007</u>
IDAHO						
FS	1,563	110,992	411,980	196	363,681	884,680
BLM	2,414	358,055	972,838	432	653,750	1,355,105
	<u>3,977</u>	<u>469,047</u>	<u>1,384,818</u>	<u>628</u>	<u>1,017,431</u>	<u>2,239,785</u>
MONTANA						
FS	1,741	116,537	423,795	71	85,887	161,511
BLM	3,532	615,201	1,295,636	372	369,722	696,075
	<u>5,273</u>	<u>731,738</u>	<u>1,719,431</u>	<u>443</u>	<u>455,609</u>	<u>857,075</u>
NEVADA						
FS	209	52,239	191,886	26	89,852	259,129
BLM	808	356,040	1,770,040	123	406,416	1,830,055
	<u>1,017</u>	<u>408,279</u>	<u>1,961,926</u>	<u>149</u>	<u>496,268</u>	<u>2,089,184</u>
NEW MEXICO						
FS	1,567	88,214	677,976	58	33,556	170,563
BLM	2,240	264,307	1,589,214	668	211,592	1,421,240
	<u>3,807</u>	<u>352,521</u>	<u>2,267,190</u>	<u>726</u>	<u>245,148</u>	<u>1,591,803</u>

TABLE II: (Continued)

No. of Permittees	No. of Cattle	Cattle AMs	No. of Permittees	No. of Sheep	Sheep AMs
OREGON AND WASHINGTON					
FS 1,117	106,245	399,693	32	52,527	234,462
BLM 2,060	278,356	1,005,988	36	64,437	84,505
<u>3,177</u>	<u>384,601</u>	<u>1,405,681</u>	<u>68</u>	<u>116,964</u>	<u>318,967</u>
UTAH					
FS 1,752	86,466	319,944	439	341,328	858,030
BLM 1,691	145,654	638,081	534	768,703	2,668,540
<u>3,443</u>	<u>232,120</u>	<u>958,025</u>	<u>973</u>	<u>1,110,031</u>	<u>3,526,570</u>
WYOMING					
FS 1,074	124,692	437,182	184	283,745	676,362
BLM 1,836	721,866	1,086,020	1,058	1,847,459	3,960,445
<u>2,910</u>	<u>846,558</u>	<u>1,523,202</u>	<u>1,242</u>	<u>2,131,204</u>	<u>4,636,807</u>
<u>TOTALS</u>					
30,487	4,511,056	14,965,155	5,232	7,046,657	18,000,250

* Source of Data--Forest Service and Bureau of Land Management Grazing Records.

BUREAU OF LAND MANAGEMENT

TABLE II-A: Number of Permittees, Livestock, and Animal Months of Range Use by State and Federal Agencies--1970*

No. of Permittees	No. of Cattle	Cattle AMs	No. of Permittees	No. of Sheep	Sheep AMs
		ARIZONA			
987	224,924	843,914	22	28,530	202,110
		CALIFORNIA			
862	131,981	297,937	168	260,901	332,715
		COLORADO			
1,618	330,352	470,102	494	724,855	1,074,535
		IDAHO			
2,414	358,055	972,838	432	653,750	1,355,105
		MONTANA			
3,532	615,201	1,295,636	372	369,722	696,075
		NEVADA			
808	356,040	1,770,040	123	406,416	1,830,055
		NEW MEXICO			
2,240	264,307	1,589,214	668	211,592	1,421,240
		OREGON AND WASHINGTON			
2,060	278,356	1,005,988	36	64,437	84,505
		UTAH			
1,691	145,654	638,081	534	768,703	2,668,540
		WYOMING			
1,836	721,866	1,086,020	1,058	1,847,459	3,960,445
		TOTALS			
18,048	3,426,736	9,969,770	3,907	5,336,365	13,625,325

* Source of Data--Bureau of Land Management Grazing Records.

FOREST SERVICE

TABLE II-B: Number of Permittees, Livestock, and Animal Months of Range Use by State and Federal Agencies--1970*

No. of Permittees	No. of Cattle	Cattle AMs	No. of Permittees	No. of Sheep	Sheep AMs
703	140,498	ARIZONA 1,144,980	19	53,276	185,865
1,023	84,559	CALIFORNIA 317,250	49	74,171	205,851
1,690	173,878	COLORADO 670,699	251	332,269	738,472
1,563	110,992	IDAHO 411,980	196	363,681	884,680
17. 1,741	116,537	MONTANA 423,795	71	85,887	161,511
209	52,239	NEVADA 191,886	26	89,852	259,129
1,567	88,214	NEW MEXICO 677,976	58	33,556	170,563
1,117	106,245	OREGON AND WASHINGTON 399,693	32	52,527	234,462
1,752	86,466	UTAH 319,944	439	341,328	858,030
1,074	124,692	WYOMING 437,182	184	283,745	676,362
12,439	1,084,320	TOTALS 4,995,385	1,325	1,710,292	4,374,925

* Source of Data--Forest Service Grazing Records.

TABLE III: Number of Months U.S. Forest Service and Bureau of Land Management Lands Are Grazed by State--1970*

STATES	CATTLE AMs	SHEEP AMs
ARIZONA		
FS	8.1	3.6
BLM	3.7	3.5
	<u>11.8</u>	<u>7.1</u>
CALIFORNIA		
FS	3.7	2.8
BLM	2.2	1.3
	<u>5.9</u>	<u>4.1</u>
COLORADO		
FS	3.8	2.2
BLM	1.4	1.5
	<u>5.2</u>	<u>3.7</u>
IDAHO		
FS	3.7	2.4
BLM	2.7	2.0
	<u>6.4</u>	<u>4.4</u>
MONTANA		
FS	3.6	1.9
BLM	2.0	1.9
	<u>5.6</u>	<u>3.8</u>
NEVADA		
FS	3.7	2.9
BLM	5.0	4.5
	<u>8.7</u>	<u>7.4</u>
NEW MEXICO		
FS	7.7	5.0
BLM	6.0	6.7
	<u>13.7</u>	<u>11.7</u>
OREGON		
FS	3.8	4.6
BLM	3.6	1.3
	<u>7.4</u>	<u>5.9</u>
UTAH		
FS	3.8	2.5
BLM	4.1	3.4
	<u>7.9</u>	<u>5.9</u>
WYOMING		
FS	3.5	2.4
BLM	1.5	2.1
	<u>5.0</u>	<u>4.5</u>
Total Average on Federal Lands:	6.7 AMs	5.5 AMs

* These data must be corrected to eliminate duplication by animals that use both FS and BLM lands. The average correction figure is 30 percent.

Source of Data--Forest Service and Bureau of Land Management Grazing Records.

TABLE III-A:

Number of Months Forest Service and BLM Administered Lands Are Grazed -- 1970*

	<u>CATTLE</u>			<u>SHEEP</u>		
	FS	BLM	Combined Total	FS	BLM	Combined Total
Arizona	8.1	3.7	11.8	3.6	3.5	7.1
California	3.7	2.2	5.9	2.8	1.3	4.1
Colorado	3.8	1.4	5.2	2.2	1.5	3.7
Idaho	3.7	2.7	6.4	2.4	2.0	4.4
Montana	3.6	2.0	5.6	1.9	1.9	3.8
Nevada	3.7	5.0	8.7	2.9	4.5	7.4
New Mexico	7.7	6.0	13.7	5.0	6.7	11.7
Oregon	3.8	3.6	7.4	4.6	1.3	5.9
Utah	3.8	4.1	7.9	2.5	3.4	5.9
Wyoming	<u>3.5</u>	<u>1.5</u>	<u>5.0</u>	<u>2.4</u>	<u>2.1</u>	<u>4.5</u>
Average	4.5	3.2		3.0	2.8	

*These data do not compensate for combined use of both FS and BLM administered lands by the same range users which can amount up to a 30 percent overlap.

Source of Data - FS and BLM Grazing Records

TABLE IV: Animal Unit Months Production by Ownership and Ecosystem, 1970.
 (Forest-Range Production only*)
 (Thousand AUM's)
 (Totals may not add due to rounding)

	National Forest System	Other Federal Land	Non- Federal Land	All Ownerships
WESTERN RANGE:				
Sagebrush.....	1,211	7,938	1,701	10,850
Desert shrub.....	13	1,433	296	1,742
Southwestern shrubsteppe.....	55	657	1,246	1,958
Chaparral-mountain shrub.....	378	647	932	1,957
Pinyon-juniper.....	558	498	659	1,715
Mountain grasslands.....	1,629	1,802	18,010	21,441
Mountain meadows.....	1,500	111	2,608	4,309
Desert grasslands.....	230	1,828	8,015	5,073
Annual grasslands.....	-----	635	6,367	7,003
Alpine ¹	32	1	-----	33
Total.....	5,696	15,551	34,834	56,081
WESTERN RANGE:				
Douglas-fir.....	423	82	168	623
Ponderosa pine.....	1,374	111	898	2,383
Western white pine.....	-----	-----	-----	-----
Fir-spruce.....	-----	-----	-----	-----
Hemlock-Sitka spruce.....	-----	-----	-----	-----
Larch.....	47	2	16	65
Lodgepole pine.....	59	1	13	74
Redwood.....	-----	-----	-----	-----
Hardwoods.....	1,431	449	5,705	7,584
Total.....	3,334	594	6,801	10,729
GREAT PLAINS:				
Shinnery.....	32	(2)	424	456
Texas savanna.....	-----	-----	5,042	5,042
Plains grasslands.....	967	2,423	47,064	50,454
Prairie.....	162	42	36,600	36,814
Total.....	1,161	2,465	89,130	92,766
EASTERN FOREST:				
White-red-jack pine.....	-----	-----	-----	-----
Spruce-fir.....	-----	-----	-----	-----
Longleaf-slash pine.....	400	15	10,803	11,218
Loblolly-shortleaf pine.....	344	7	6,335	6,686
Oak-pine.....	76	4	4,829	4,909
Oak-hickory.....	63	13	11,616	11,692
Oak-gum-cypress.....	2	2	746	759
Elm-ash-cottonwood.....	3	9	5,317	5,320
Maple-beech-birch.....	40	2	4,795	4,837
Aspen-birch.....	136	58	5,521	5,715
Wet grasslands.....	-----	36	2,352	2,388
Total.....	1,064	147	52,314	53,525
Grand Total.....	11,255	18,757	183,079	213,100

¹ Includes barren areas above treeline. - (2) Less than 500 animal unit months.

* Source - Public Land Statistics - 1970 - Department of the Interior, BLM.

LITERATURE CITED

- Evans, Thompson, Lee, Harline. 1962. Cattle in the Utah economy. Univ. of Utah, College of Business, Bur. of Econ. and Business Research.
- Forage resources of the public lands--a report to the Public Land Law Review Comm. Univ. of Idaho. 1969.
- Nielsen, D., and J. P. Workman. 1971. The importance of renewable grazing resources on Federal lands in eleven western States. Utah State Univ., Logan, Ag. Exp. Station.
- Public Land Law Review Commission, 1970. One Third of the Nation's Land, A Report to the President and the Congress, Supt. Doc., Washington, D.C.
- U.S. Department of Agriculture. 1972. The Nation's Range Resources--A Forest-Range Environmental Study. Forest Resources Report No. 19, Forest Service, Washington, D.C., 147 pp., Illus.
- U.S. Department of Agriculture. 1972. Agricultural Statistics, 1971. Supt. Doc., Washington, D.C.