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*A census and  
economic analysis of the*

# EQUINE

## Industry in Idaho



J. E. Carlson, E. L. Michalson,  
Ehnbabel, R. L. Krebill-Prather,  
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University of Idaho

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The authors also would like to thank the many Idaho equine owners who voluntarily participated in the census.

## Cover Photos

*Front cover* — Pleasure riding is the primary use of horses for about one-third of Idaho horse owners.

*Back cover* — Young and old enjoy horses. Idahoans use equine for youth 4-H showing (upper right) and many ranchers rely on horses for working cattle (left). Mules and donkeys are becoming more popular in Idaho. Idahoans owned more donkeys in 1989 than in 1984.



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# **EQUINE**

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*A census and  
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# **EQUINE**

## **Industry in Idaho**

### *Executive Summary*

In 1989 the equine industry in the state of Idaho contributed more than 1.5 percent of gross state product or \$206 million. Annual expenses for animal maintenance, breeding, training, and maintenance of facilities were the main contributions from the equine industry, totaling more than \$135 million. General owners (noncommercial) contributed \$114 million to the state's economy.

Southwestern Idaho's equine industry contributed the largest share of gross state product — \$75.15 million. Southeastern Idaho contributed \$55.77 million, northern Idaho contributed \$51.17 million, and southcentral Idaho (the Magic Valley region) contributed \$24.11 million.

Riding horses outnumbered all other types of equine combined. Half of Idaho's riding horses were American Quarter Horses. The majority of riding horses were registered breeds.

General equine owners primarily used their animals for pleasure, farm or ranch work, breeding, packing, and hunting. Commercial owners primarily used their equine for breeding or racing.

About 5 percent of all equine owners were commercial owners. Commercial owners owned an average of 17 equine per operation compared with 4 equine per general owner. Commercial owners also invested more per owner for equine, facilities, and equipment.

### *Introduction*

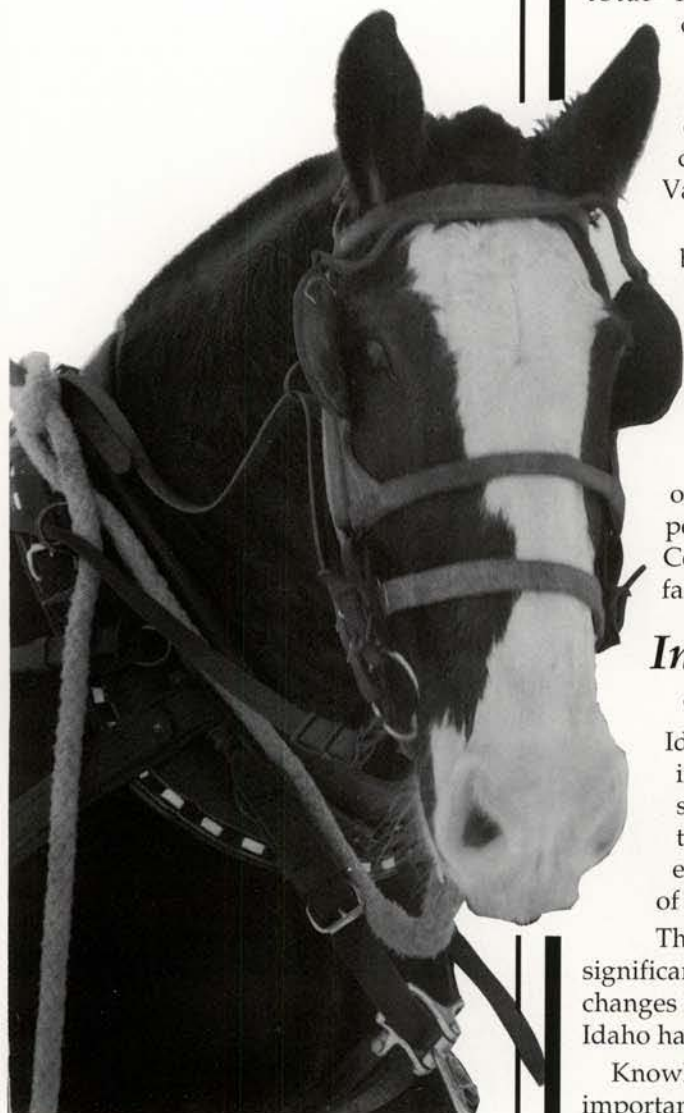
The equine industry is a vital component of agriculture — Idaho's number one industry. In Idaho the equine industry includes pleasure riding, packing and hunting, working, showing, rodeo activities, racing, and breeding. Although these activities contribute directly and indirectly to Idaho's economy, there has been no information indicating the impact of these activities.

The equine industry at the national level has experienced significant changes over the past several decades. In most cases these changes have resulted in a positive economic impact. It is likely that Idaho has followed national trends.

Knowledge of the status of the equine industry in the state is important to those attempting to develop and encourage a viable equine industry.

This report presents a horse census and study of the economic impact of the equine industry in the state of Idaho.

**EQUINE**



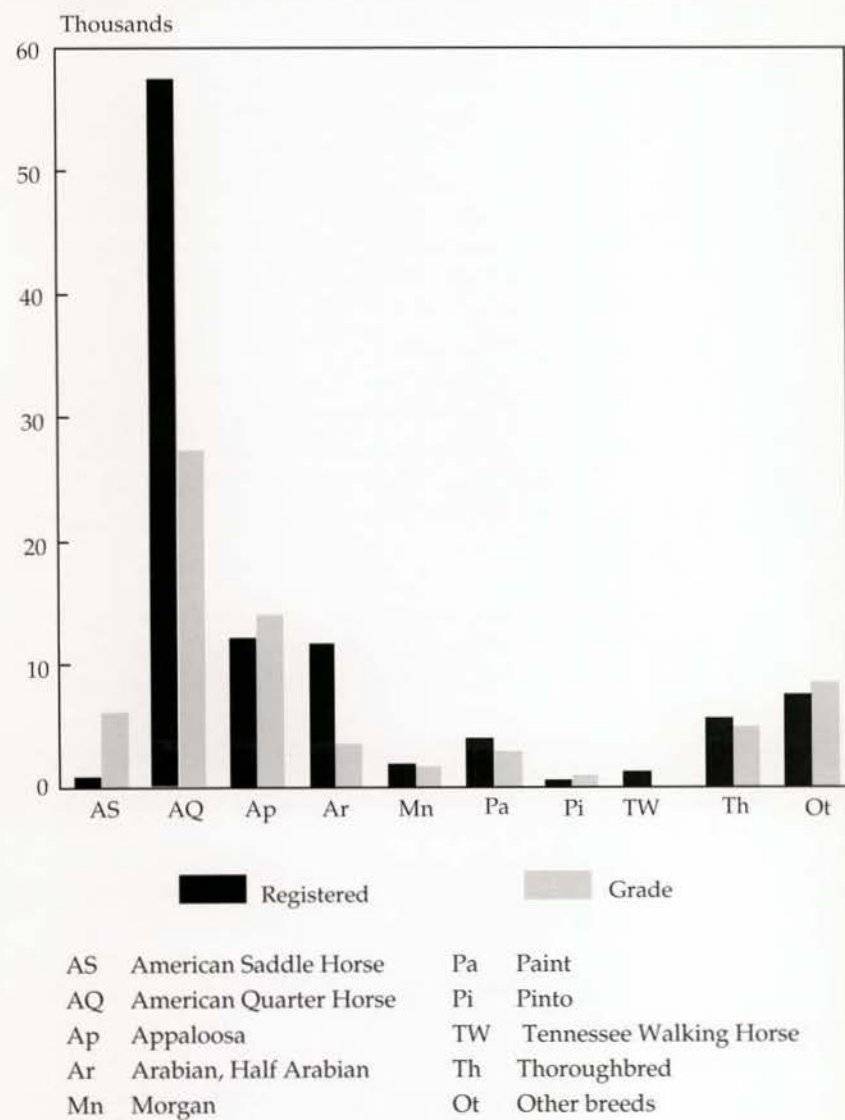
*There were fewer draft horses in Idaho in 1989 than in 1984.*

**Table 1. Total number of equine in Idaho in 1984 and 1989.**

	1984	1989	Change <sup>a</sup> (%)
Riding horses	145,600	168,100	+13.4
Draft horses	4,600	3,100	-32.6
Ponies	5,700	5,500	- 3.5
Donkeys	2,100	3,300	+57.1
Mules	4,600	4,900	+ 6.5
Total	162,600	184,900	+12.1

<sup>a</sup> Indicates change in numbers of equine for households that currently own equine.

**Fig. 1. Number of riding horses by breed and class.**



## Data Collection Procedures

Because of the diversity of horse and other equine owners, it was not feasible to compile a complete list of all Idaho equine owners to conduct a census. Therefore a random sample of 5,000 Idaho residents was obtained as a basis for estimating equine numbers. The large sample ensured inclusion of all types of equine operations and individual owners.

A telephone survey was conducted in the spring and summer of 1989. A minimum of five attempts was made to reach each individual in the sample. After deleting those individuals who could not be reached or were ineligible, the overall response rate was 68 percent.

Equine numbers were estimated from the sample based on the ratio of sampled households with equine to households without equine. Of the 351,850 households in Idaho, about 39,231 or 11.15 percent owned equine.

To assess the economic impact of the equine industry in Idaho, two follow-up surveys were conducted in 1990. A sample was drawn from respondents who had reported equine ownership in the 1989 statewide telephone survey. A total 257 questionnaires were mailed, and 138 were returned. After deleting ineligible respondents and nondeliverable questionnaires, the response rate was 65.7 percent. A second, nonrandom sample consisted of the larger commercial horse operations in the state. A total of 258 questionnaires were mailed to this sample; 142 were returned. The final response rate was 66.7 percent. The two samples received identical questionnaires.

## Numbers and Kinds of Equine in Idaho

Riding horses outnumbered all other types of equine combined (table 1). Horse owners reported a 13.4 percent increase from 1984 to 1989 in numbers of riding horses owned. Numbers of draft horses declined, while numbers of donkeys increased significantly.



About half of Idaho's riding horses were American Quarter Horses (figure 1 and table 2). The second and third most numerous breeds were Appaloosa and Arabian. The majority of riding horses were registered breeds. Most draft horses, ponies, donkeys, and mules were not registered.

## Commercial and Noncommercial Equine Ownership

The equine industry in Idaho has two basic segments: commercial and general or noncommercial.

Approximately 5 percent of all Idaho equine owners indicated ownership of a farm operation that was primarily a horse operation. Equine breeding statistics also showed about 5 percent of equine owners were oriented commercially. An average of 5 percent had more than the mean number of stallions and mares used for breeding. Of the 39,231 estimated number of households owning horses, 1,962 were commercial owners and 37,269 were general owners (table 3).

Predominantly, commercial owners owned riding horses (table 3). General owners also owned riding horses, predominantly, but they owned higher percentages of ponies, draft horses, donkeys, and mules than commercial owners.

Commercial owners owned proportionally more registered riding horses than general owners and fewer grade horses. (Registered equines are those recorded with the specific registry for a particular breed; grade equines are not recorded with a registry.) General owners' equines were more likely to be registered than grade. Commercial operations specialized almost exclusively in registered American Quarter Horses and registered Thoroughbreds. General equine owners were less breed specific.

The average number of equine per owner also varied between the two groups. Commercial owners averaged 17 equine per owner compared with an average of 4 for general owners.

Table 2. Numbers of equine by breed and class, 1989.

	Registered	Grade	Total	Percentage
<b>Riding horses</b>				
American Saddle	900	6,100	7,000	4.2
American Quarter	57,500	27,300	84,800	50.4
Appaloosa	12,100	13,900	26,000	15.5
Arabian, Half Arabian	11,600	3,300	14,900	8.8
Morgan	1,600	1,400	3,000	1.8
Paint	3,700	2,400	6,100	3.6
Pinto	200	600	800	0.5
Tennessee Walking	1,000	***	1,000	0.6
Thoroughbred	5,000	4,400	9,400	5.6
Other	7,000	8,100	15,100	9.0
Total	100,600	67,500	168,100	100.0
<b>Draft horses</b>				
Shire	***	400	400	12.9
Percheron	***	700	700	22.6
Belgian	***	700	700	22.6
Other	***	1,300	1,300	41.9
Total		3,100	3,100	100.0
<b>Ponies</b>				
Shetland	***	1,200	1,200	21.8
Pony of America	***	1,300	1,300	23.6
Welsh	***	900	900	16.4
Other		2,100	2,100	38.2
Total		5,500	5,500	100.0
Donkeys	300	3,000	3,300	40.2
Mules	***	4,900	4,900	59.8
Total	300	7,900	8,200	100.0
<b>Total all equine</b>	<b>100,900</b>	<b>84,000</b>	<b>184,900</b>	

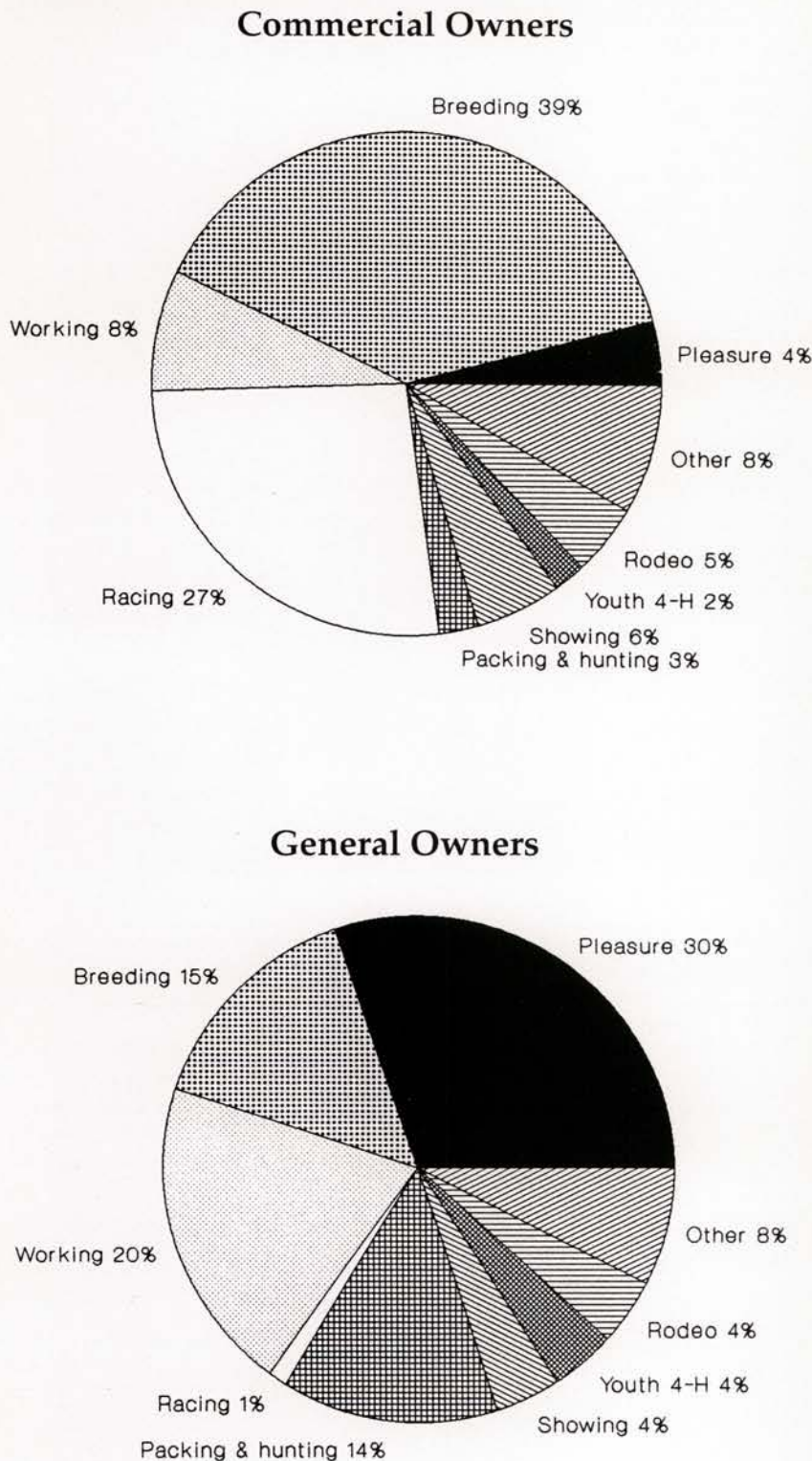
Note: \*\*\* Indicates fewer than 200 horses in the category.

Table 3. Number of households owning equine in Idaho in 1989.

	Total owners	Commercial owners	General owners	Total equine	Commercial equine	General equine
Riding horses	35,308	1,765	33,543	168,100	32,768	135,332
Draft horses	738	37	700	3,100	574	2,526
Ponies	1,274	64	1,210	5,500	443	5,057
Donkeys	771	39	733	3,300	86	3,214
Mules	1,140	57	1,083	4,900	705	4,195
Total	39,231	1,962	37,269	184,900	34,576	150,324



Fig. 2. Primary uses of equine in Idaho.



Respondents from each of the two segments were asked to indicate the primary use for the equine they own (figure 2). The commercial owners primarily used their equine for breeding or racing. The general equine owners used theirs primarily for pleasure, work, breeding, or packing and hunting.

## Economics of Equine Ownership

### Investment

**Equine** — Equine owners were asked to place a dollar value on the animals they owned. Respondents who had not bought or sold equine recently and owners whose animals had little value other than sentimental were asked to estimate the market value of their equine. The value of equine belonging to commercial owners totalled more than \$86 million, and the value of equine belonging to general owners totalled more than \$136 million (table 4). Commercial owners placed a higher average value on each animal owned than did general equine owners. Commercial owners reported an average value of \$2,716 for registered equine and \$610 for grade. General equine owners reported an average value of \$1,220 for registered equine and \$558 for grade.

In a 1989 nationwide survey of American Quarter Horse Association members, the average value of a registered American Quarter Horse was placed at \$4,455. A survey conducted in 1984 in Michigan also reported a higher average value of equine (\$4,000), than Idaho respondents indicated in 1989.

**Facilities** — On the average, commercial owners had invested more heavily than the general equine owners in equine facilities such as barns, stables, arenas, sheds, corrals, and fences (table 5). The estimated 1,962 commercial owners had invested more than \$83 million or an average of \$42,706 per owner compared with investments of more than \$173 million by about 37,269 general owners or \$4,645 per owner. The most significant differences were in the average amounts spent per owner for stables and arenas.



## Capital Equipment

Commercial owners valued their capital equipment at more than \$20 million and general owners valued theirs at more than \$57 million (table 6). However, general equine owners' average investment in equipment was considerably less than commercial owners' (\$1,544 per general owner compared with \$10,439 per commercial owner). Capital equipment expenditures by commercial equine owners were about the same as those reported in a 1984 Michigan study of the equine industry (\$613 per equine in this study compared with \$625 per equine in the Michigan study).

## Travel Equipment

The combined value of vehicles owned by commercial equine owners was more than \$32 million, and the value of trailers was almost \$18 million (table 7). The total value of travel equipment was more than \$50 million or an average of \$25,705 per operation.

The combined value of vehicles owned by general equine owners was more than \$215 million, and the value of trailers was more than \$73 million for a total travel equipment value of more than \$288 million or an average of \$7,737 per owner.

The proportion of time that travel equipment was used solely for equine-related purposes differed for commercial and general owners. Commercial owners used vehicles solely for equine an average of 68 percent of the time and trailers 83 percent of the time. The total value of travel equipment associated with equine uses was almost \$37 million or \$18,854 per commercial owner. General equine owners used their vehicles solely for equine an average of 26 percent of the time and trailers 47 percent of the time. The total value of travel equipment associated with equine uses was more than \$90 million or an average of \$2,424 per general owner.

Table 4. Value of registered and grade equine in Idaho, 1989.

	Commercial owners		General owners	
	Registered	Grade	Registered	Grade
	(\$)	(\$)	(\$)	(\$)
Riding horses	83,873,628	1,443,103	95,035,544	32,529,753
Draft horses	160,720	356,592	***	3,086,772
Ponies	162,803	83,993	202,280	1,372,470
Donkeys	72,866	4,300	134,988	961,629
Mules	70,274	347,565	***	2,768,700
Total	84,340,291	2,235,553	95,372,812	40,719,324
Total value (registered and grade)				
		86,575,844		136,092,136
Total (all owners)		222,667,980		

Note: \*\*\* Indicates insufficient sample numbers for accurate measurement.

Table 5. Value of equine facilities, 1989.

	Commercial owners	General owners
	(\$)	(\$)
Barns	38,000,016	78,041,286
Stables	11,644,470	6,335,730
Arenas	9,042,858	9,950,823
Sheds	4,553,802	12,336,039
Corrals	8,571,978	27,020,025
Fences	11,976,048	39,430,602
Total	83,789,172	173,114,505

Table 6. Value of capital equipment, 1989.

	Commercial owners	General owners
	(\$)	(\$)
Tack	6,766,938	38,163,456
Starting gates	270,756	
Hot walkers	1,624,536	1,006,263
Treadmills	219,744	
Tractors	7,791,102	13,267,764
Other capital equipment	3,808,242	5,105,853
Total	20,483,280	57,543,336

Table 7. Value of travel equipment, 1989.

	Commercial owners	General owners
	(\$)	(\$)
<b>Value associated with all uses</b>		
Vehicles	32,445,594	215,191,206
Trailers	17,987,616	73,159,047
Total	50,433,210	288,350,253
<b>Value associated with equine uses</b>		
Vehicles	22,062,690	55,940,769
Trailers	14,928,858	34,399,287
Total	36,991,548	90,340,056



The Appaloosa is the second most popular riding horse breed in Idaho.

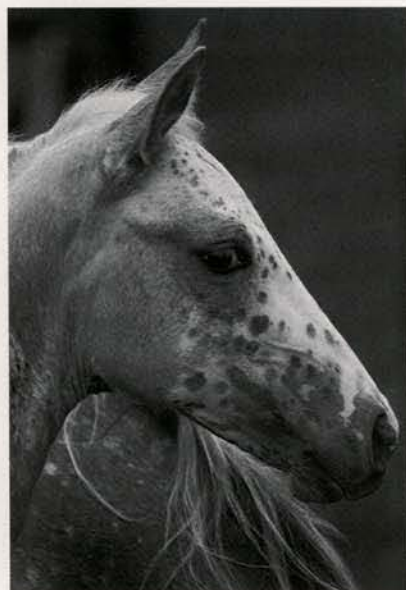


Table 8. Annual expenses per equine, 1989.

	Commercial owners	General owners
	(\$)	(\$)
Hay	233.25	160.41
Straw	27.05	2.78
Grain	84.37	21.56
Bedding	23.96	4.09
Farrier	51.49	22.12
Insurance	36.26	4.41
Breeding fees	54.31	14.49
Training	218.77	42.37
Veterinarian	100.97	30.74
Medication	25.26	9.16
Advertising	20.63	3.78
Clothing	7.72	8.25
Full-time workers	151.55	5.30
Part-time workers	106.75	17.17
Miscellaneous	40.19	6.42
Total	1,182.53	353.05

Table 9. Equine sale estimates for 1988.

Region	Number of equine	Number sold	Sales/inventory	Average price	Sales by region
		(%)		(\$)	(\$)
Northern	44,376	5,769	13.0	522	3,011,418
Southwestern	57,319	7,566	13.2	854	6,461,364
Southeastern	61,017	6,956	11.4	590	4,104,040
Southcentral	22,188	2,330	10.5	1,090	2,539,700
Total	184,900	22,621		764	16,116,522

Table 10. Equine used for breeding purposes in Idaho, 1989.

	Commercial owners	General owners	All owners
Number of stallions owned	2,043	7,727	9,770
Stallions used for breeding	1,941	5,873	7,814
Percentage used for breeding	95%	76%	80%
Number of mares owned	15,611	18,801	34,412
Own mares bred by own stallions	9,835	5,452	15,287
Percentage mares bred	63%	29%	44%
Mares serviced by own stallions			
Instate mares (not own)	11,360	13,044	24,404
Out-of-state mares	4,159	261	4,420
Total mares (not own)	15,519	13,305	28,824
Average stud fee per stallion (\$)	403	239	321
Total in-state stud fees (\$)	4,578,080	3,117,516	7,695,596
Total out-of-state stud fees (\$)	1,676,077	62,379	1,738,456
Total revenue from stud fees (\$)	6,254,157	3,179,895	9,434,052
Fees paid for mares bred out-of-state (\$)	268,801	62,379	331,180
Net surplus (revenue from stud fees less fees paid for mares bred out-of-state) (\$)	5,985,356	3,117,516	9,102,872

## Variable Costs of Owning Equine

Annual expenses differed between the two groups of Idaho equine owners as in table 8. General equine owners spent about \$353 per year per equine compared with \$1,183 for commercial owners. Expenditure levels differed substantially in all categories except clothing. The reasons for these differences are difficult to determine, but may be because of a greater use of boarding facilities by general equine owners. Although the survey did not measure boarding facility use, it may explain lower expenditures for feed and bedding by general owners.

The 1989 national survey of American Quarter Horse Association members reported average yearly expenditures of \$827 (general and commercial owners combined); however, the questionnaire excluded expenses such as breeding fees, training, advertising, and hired workers.

## Revenues from Equine

Revenues derived from equine include equine sales; breeding fees; involvement in races, shows, or rodeos; and operation of pack strings. Horse racing, especially outside Idaho, generated significant revenues for commercial equine owners.

**Sales** — Equine sales estimates totalled more than \$16 million in Idaho for 1988 (table 9). These estimates were based on survey and U.S. Department of Commerce Census of Agriculture data. Overall sales volume was highest in southwestern Idaho; however, the average sales price per equine was highest in southcentral Idaho.

**Breeding** — Commercial equine owners reported higher average stud fees than general equine owners (\$403 compared with \$239) as in table 10. Commercial owners used 95 percent of their stallions for breeding purposes and earned more than \$6.2 million in stud fees. General owners used 76 percent of their stallions for breeding and received more than \$3.1 million in stud fees.



Few mares were bred to out-of-state stallions in either owner group. Commercial owners bred about 4.4 percent of their own mares to out-of-state stallions and paid less than \$300,000 in stud fees. General owners bred less than four hundredths of 1 percent of their mares to out-of-state stallions. Fees paid for mares bred out of state brought the net surplus from equine breeding fees to just under \$6 million for commercial operations and just over \$3 million for general owners.

**Races, shows, and rodeos** — Commercial owners received almost \$12 million in total purses for both instate and out-of-state competitions in 1989. General equine owners' total purse was almost \$6 million (tables 11 and 12).

The Idaho State Racing Commission reported the total amount returned to all patrons through racing purses in 1988 was \$8,852,022. The American Horse Council reported the combined regional racing income for Oregon, Idaho, Montana, Nevada, Utah, Wyoming, Arizona, and New Mexico as \$70,200,000 in 1984.

Equine owners who participated in shows, races, or rodeos incurred several additional expenses including transportation, lodging and food; registration; health inspection; and brand inspection fees. Commercial equine owners' total expenses were almost \$5 million for instate and out-of-state competitions. General equine owners' total expenses were closer to \$3 million.

Commercial owners were more likely to be involved in races, shows, or rodeos than general equine owners (73 percent compared with 15 percent). While commercial owners incurred greater expenses, winners received larger purses.

**Packing** — Few equine owners operated pack strings and relatively few equines were involved in the operations. Equine owners who used their animals for packing incurred additional expenses but did not report income from packing (table 13).

**Table 11. Purses, expenses, and net surplus to commercial operations in 1989.**

	Instate	Out-of-state	Total
<b>Purses</b>	(\$)	(\$)	(\$)
Racing	3,981,407	6,733,913	10,715,320
Youth/4-H	3,067	0	3,067
Shows	312,542	402,290	714,832
Rodeo	421,831	82,379	504,210
Total	4,718,847	7,218,582	11,937,429
Average purse per winner	4,003	12,101	
Median purse	2,500	2,500	
<b>Expenses</b>			
Transportation costs	1,140,348	1,017,808	2,158,156
Lodging and food	738,332	557,600	1,295,932
Registration fees	774,925	560,168	1,335,093
Health inspection fees	45,374	21,521	66,895
Brand inspection fees	54,606	16,092	70,697
Total	2,753,584	2,173,189	4,926,774
Net surplus	1,965,263	5,045,393	7,010,655

**Table 12. Estimated purses, expenses, and net surplus to general equine owners in 1989.**

	Instate	Out-of-state	Total
<b>Purses</b>	(\$)	(\$)	(\$)
Racing	2,538,819	269,968	2,808,787
Youth/4-H	20,108	0	20,108
Shows	167,939	88,252	256,191
Rodeo	2,284,118	539,564	2,823,682
Total	5,010,984	897,784	5,908,768
Average purse per winner	1,238	1,109	
Median purse	75	1,000	
<b>Expenses</b>			
Transportation costs	1,076,522	285,235	1,361,757
Lodging and food	385,775	192,888	578,663
Registration fees	872,091	67,771	939,862
Health inspection fees	49,153	23,087	72,240
Brand inspection fees	40,588	33,886	74,474
Total	2,424,129	602,867	3,026,996
Net surplus	2,586,854	294,917	2,881,771

**Table 13. Use of equine for packing, 1989.**

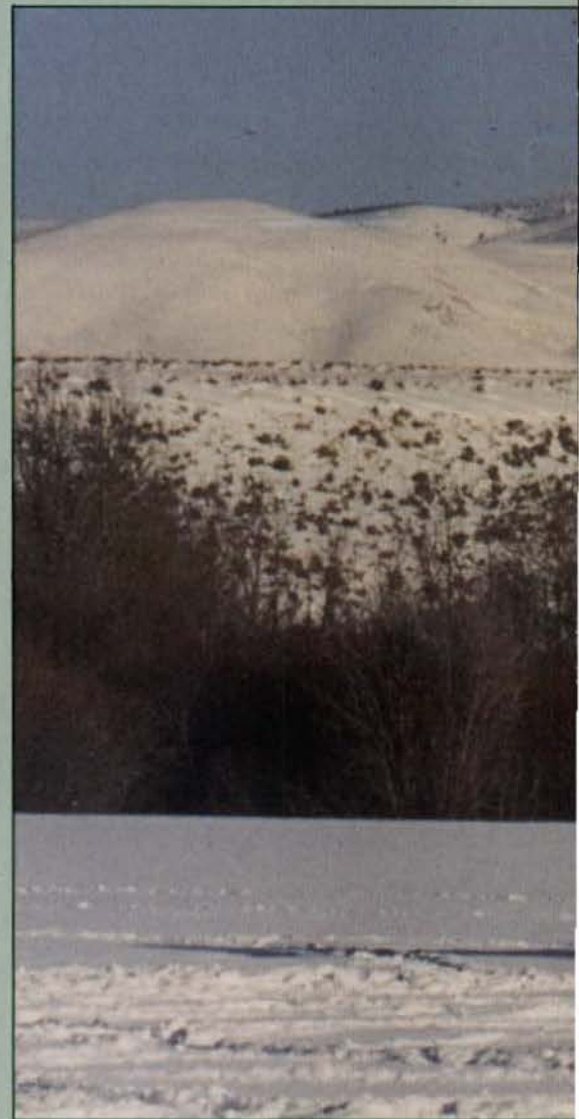
	Commercial owners	General owners
Number of pack string operators	43	525
Number equine	280	1,819
Costs associated with pack string (\$)	20,188.98	78,637.59



Horse racing (right) provides revenue for Idaho horse owners and the state's economy.

Ponies love a parade (below). Idahoans also enjoy participating in rodeos (below center). Rodeos are a source of revenue for some horse owners and a spectator sport for many Idahoans.

Quarter horses (far below) are the most popular breed in Idaho. Breeding is the primary use of horses for about 40 percent of commercial owners.







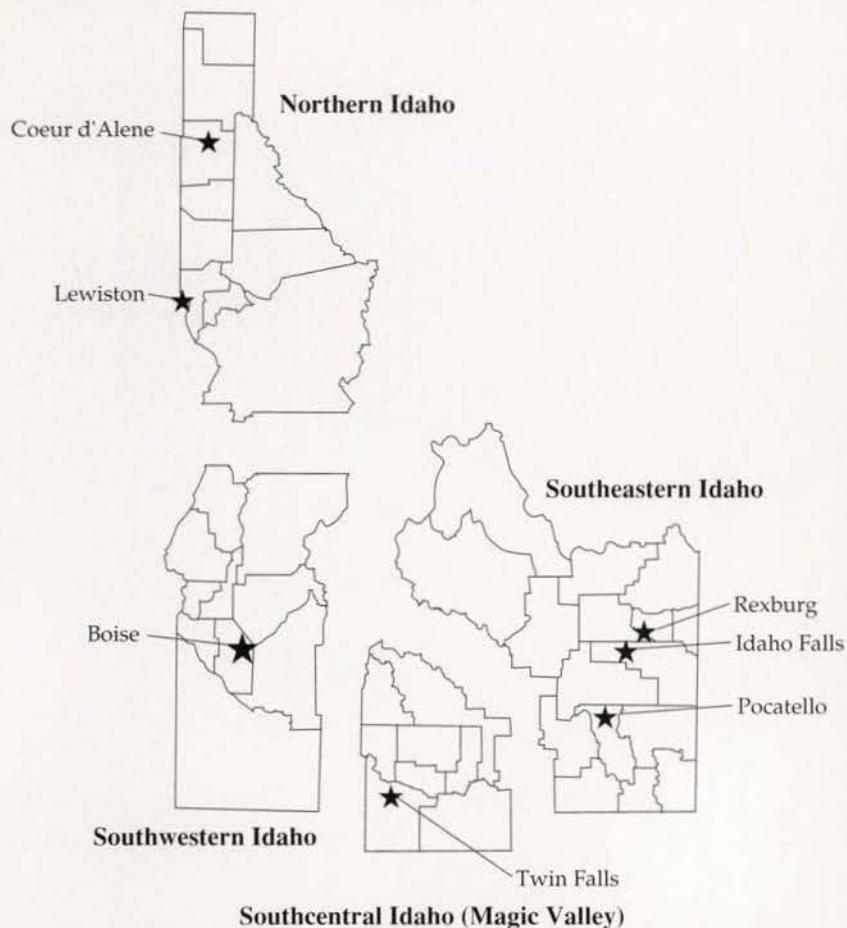
*Hunting and packing (below) is a favorite past time for many horse and mule owners in Idaho.*

*Combining work and pleasure, draft horses (far below) pull a sled on an Idaho ranch.*





Fig. 3. Economic regions of Idaho.



## Economic Importance of the Equine Industry to Idaho

The equine industry is not an industry in a traditional sense; that is, a group of firms producing a product for sale on an open market.

As noted in table 3, the 184,900 equines in the state are owned by 39,231 households, and only 1,962 of these are commercial owners while 37,269 are general owners. This latter category of households owns horses for pleasure or other activities that are not market oriented (figure 2). The economic role of equine as a productive asset that produces revenues and a nonmarket asset (nonproductive in the market sense) to Idaho's economy concern expenditures such as animal housing, transportation, and maintenance.

To demonstrate the economic role of the equine industry in Idaho, a computer model was adapted using "value-added" as the key measure of the industry's economic output (Robison, Coupal, Meyer, and Harris 1991). In a regional economy, value-added is defined as the sum of wages, returns to ownership, and indirect business taxes. For the purpose of this report, it is synonymous with regional income.

Raising equine involves expenses for feed, training, veterinary and farrier services, transportation, and equipment. The revenue from an equine sale less these expenses, and not including labor costs and taxes, is the value that the owner and his employees add to the equine. Owning equine also generates value-added in the equine support industries including feed, training, breeding, labor, and annual capital costs. Finally, winnings from shows and races, fees from breeding, and actual equine sales end up as consumption expenditures that in turn generate value-added in consumer goods.

Employees and owners within the equine industry and employees in the equine support industry generate value-added through household consumer expenditures in the regional economy.

Table 14. The contribution of the equine industry to Idaho's gross state product and gross regional product, 1989.

	Total equine industry	Equine industry annual expenses	General equine owners	Total regional ag income	Total regional income
	----- (\$million) -----				(\$million)
Northern Idaho	51.17	22.61	32.45	241.70	2,557.00
% of regional income	1.9	0.9	1.3	9.5	18.9*
Southwestern Idaho	75.15	53.51	38.62	786.50	5,384.00
% of regional income	1.4	1.0	0.7	14.6	39.8*
Southeastern Idaho	55.77	42.65	30.88	1,036.00	3,557.00
% of regional income	1.6	1.2	0.9	29.1	26.3*
Southcentral Idaho	24.11	16.63	12.27	914.90	2,018.00
% of regional income	1.2	0.8	0.6	45.3	14.9*
State total	206.20	135.40	114.22	2,979.00	13,516.00
% of gross state product	1.5	1.0	0.8	22.0	100.0*

\* % of gross state product



Fig. 4. Economic linkages between the equine industry and Idaho economy.

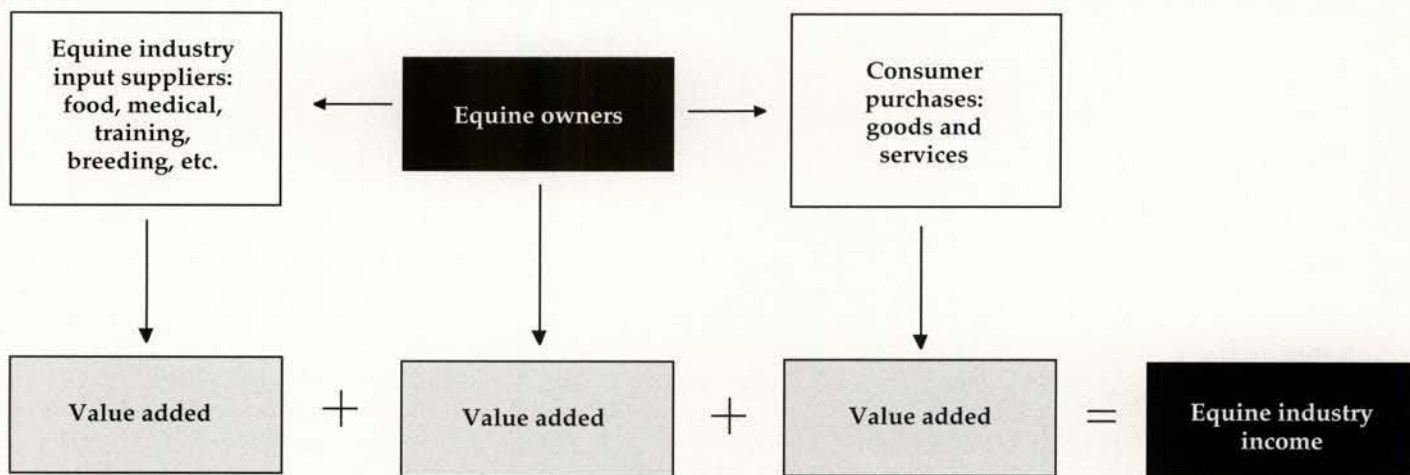
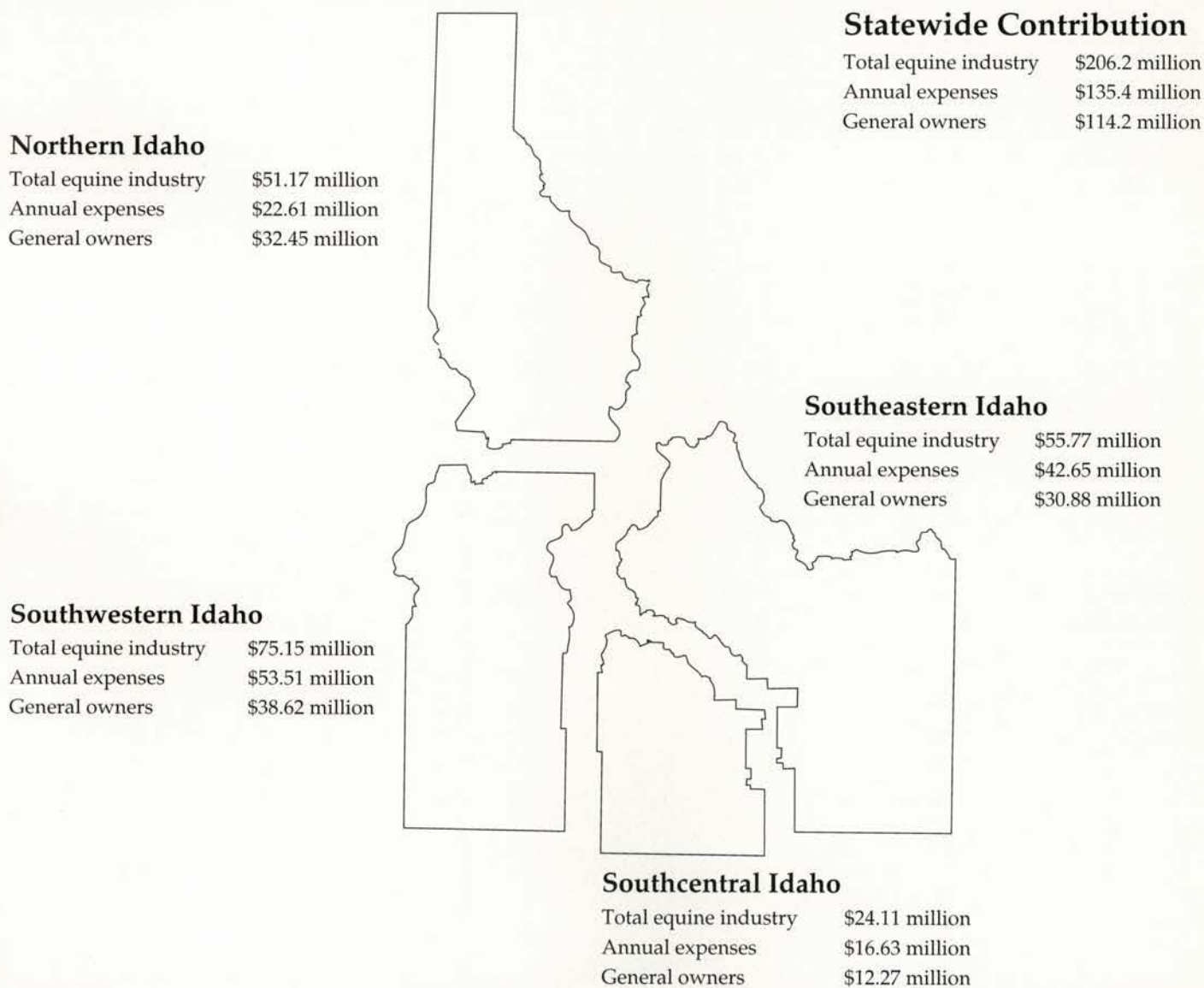


Fig. 5. Contributions of the equine industry to the state of Idaho.



**Table 15. Projected numbers of equine in Idaho, 1991-93.**

	Projected equine numbers		
	1991	1992	1993
Riding horses	171,785	175,470	184,702
Draft horses	3,168	3,236	3,406
Ponies	5,621	5,741	6,043
Donkeys	3,372	3,445	3,626
Mules	5,007	5,115	5,384
Total	188,953	193,006	203,161

Note: Projected increases in equine numbers for each equine type are based on the overall increase of equine in Idaho. The few reported cases of draft horse and pony ownership made estimates about changes in those populations less reliable.

**Table 16. Projected commercial equine numbers.**

	1991	1992	1993
Riding horses	33,569	34,370	35,172
Draft horses	588	602	616
Ponies	453	464	475
Donkeys	89	91	93
Mules	723	740	757
Total	35,422	36,267	37,113

Note: Projected increases in equine numbers for each equine class are based on the overall increase of equine in Idaho. The few reported cases of draft horse and pony ownership made estimates about changes in those populations less reliable.

**Table 17. Projected value of commercial equine.**

	1991	1992	1993
	(\$)	(\$)	(\$)
Riding horses	87,837,044	94,215,991	100,794,595
Draft horses	1,538,562	1,650,296	1,688,765
Ponies	1,186,361	1,272,517	1,302,180
Donkeys	231,711	248,539	254,332
Mules	1,890,763	2,028,075	2,075,350
Total	92,684,441	99,415,417	106,115,222

**Table 18. Projected value of facilities for commercial equine (per owner).**

	1991	1992	1993
	(\$)	(\$)	(\$)
Barns	40,875,592	43,844,080	46,905,480
Stables	12,525,642	13,435,286	14,373,401
Arenas	9,727,158	10,433,569	11,162,090
Sheds	4,898,402	5,254,136	5,621,005
Corrals	9,220,646	9,890,272	10,580,857
Fences	12,574,850	13,173,653	13,772,455
Total	89,822,290	96,030,996	102,415,288

The total equine industry's value-added contribution comes first from the value-added generated by the equine operation; second, from the equine support industry; and third, from household consumer expenditures.

To evaluate the role the equine industry plays in Idaho's economy, we divided the economy into its component economic regions (figure 3). Idaho is not one economy but in reality four distinct economies.

Northern Idaho is a part of the Spokane functional economic region, and economically and geographically ends at the Salmon River. In the cities and rural communities that make up northern Idaho's 10 counties, dollars from economic activity eventually end up in the Spokane economy. Demands for consumer goods and services not satisfied by local businesses are satisfied first in the Spokane economy and then outside the region — in other parts of the country or in Boise.

Southwestern Idaho is similar. Greater Boise dominates the 10 counties south from Valley and Adams counties and west from southcentral Idaho as well as southeastern Oregon.

Southeastern Idaho, which consists of the Idaho Falls and Twin Falls functional economic region, comprises the rest of Idaho. Unlike northern and southwestern Idaho, the economy of southeastern Idaho is not dominated by a single large urban core but by a group of smaller urban areas ranging from Rexburg in the north to Idaho Falls and Pocatello in the south. Southcentral Idaho is separated from the rest of southeastern Idaho because of its large agricultural economy. Also, it is linked not only to Idaho Falls but to Boise and Salt Lake City.

To evaluate the role of the equine industry across the state, it first was necessary to measure "value-added" or gross regional product in each region. The summation of value-added across all industries in a state or region is about equal to gross state product or its regional equivalent.

The model used to evaluate the role of the equine industry was developed through the Idaho Economic Modeling



Project at the University of Idaho. A diagrammatic description of the approach is presented in figure 4. Dollars flowing from the equine owner for purchases of supplies, feed, and specialist services generate income in these linked industries. A proportion of value-added from these linked industries can be attributed to the equine industry. In addition, income of equine owners and breeders and of equine equipment or supply company owners generate consumer expenditures. The model explains the impact of the equine industry by its direct contribution to value-added, by the proportion of value-added in supplier industries from equine owner purchases, and by the "household effect."

To assess the importance of the equine industry in each region, the portion of regional sales for each linked industry based on expenses for equine, facilities, capital equipment, and annual maintenance (tables 4 to 8) plus the associated regional revenues from sales, breeding, and purses or prizes (tables 9 to 12) were evaluated for both commercial and general owners. See table 14 for results and figure 5 for a geographic representation.

The Idaho equine industry generated directly, indirectly, and through household consumption more than \$206 million in 1989 (table 14 and figure 5). This represented about 1.5 percent of the state's gross product and about 7.0 percent of agriculture's share of the state's gross product. General equine owners generated \$114 million of the total, and the balance came from commercial owners.

Southern Idaho contributed 75 percent of the equine industry's value-added with 36 percent or \$75.15 million coming from southwestern Idaho. Southeastern Idaho contributed \$55.77 million to the state's value-added, and the Magic Valley area of southcentral Idaho contributed \$24.11 million. Northern Idaho contributed \$51.17 million.

General equine owners contributed \$114.22 million to the state's gross product with 72 percent coming from southern Idaho. General equine owners

**Table 19. Projected value of capital equipment for commercial equine (per owner).**

	1991	1992	1993
	(\$)	(\$)	(\$)
Tack	7,279,013	7,807,633	8,352,799
Starting gates	291,245	312,296	334,209
Hot walkers	1,747,470	1,874,375	2,005,253
Treadmills	236,373	253,539	271,242
Tractors	8,380,678	8,989,304	9,616,980
Other	3,998,654	4,189,066	4,379,478
Total	21,933,432	23,426,313	24,959,960

**Table 20. Projected value of travel equipment for commercial equine (per owner).**

	1991	1992	1993
	(\$)	(\$)	(\$)
Vehicle value	34,900,850	37,435,438	40,049,356
Trailer value	19,348,793	20,753,951	22,203,090
Total value	54,249,644	58,189,389	62,252,446
Vehicle value by percentage used for equine	23,732,240	25,455,735	27,233,175
Trailer value by percentage used for equine	16,058,570	17,224,783	18,427,499
Total value by percentage used for equine	39,790,810	43,680,519	45,660,674

**Table 21. Projected total annual expenses for commercial equine (per equine).**

	1991	1992	1993
	(\$)	(\$)	(\$)
Riding horses	51,387,278	55,119,151	58,967,830
Draft horses	959,167	1,028,824	1,100,661
Ponies	1,920,367	2,059,829	2,203,656
Donkeys	1,220,229	1,308,845	1,400,235
Mules	1,592,759	1,708,429	1,827,720
Total	57,079,800	61,225,078	65,500,101

**Table 22. Projected general equine numbers.**

	1991	1992	1993
Riding horses	138,641	141,950	145,259
Draft horses	2,588	2,650	2,711
Ponies	5,181	5,305	5,428
Donkeys	3,292	3,371	3,449
Mules	4,297	4,400	4,502
Total	153,999	157,675	161,350

Note: Projected increases in equine numbers for each equine type are based on the overall increase of equine in Idaho. The few reported cases of draft horse and pony ownership made estimates about changes in those populations less reliable.



**Table 23. Projected value of general equine.**

	1991	1992	1993
	(\$)	(\$)	(\$)
Riding horses	137,218,549	140,493,536	143,768,523
Draft horses	3,320,357	3,399,604	3,478,851
Ponies	1,604,705	1,643,005	1,681,304
Donkeys	1,175,452	1,203,507	1,231,561
Mules	2,978,216	3,049,297	3,120,378
Total	146,297,280	149,788,948	153,280,617

**Table 24. Projected value of facilities for general equine (per owner).**

	1991	1992	1993
	(\$)	(\$)	(\$)
Barns	83,946,906	85,950,462	87,954,018
Stables	6,815,174	6,977,831	7,140,489
Arenas	10,703,832	10,959,300	11,214,767
Sheds	13,269,544	13,586,248	13,902,951
Corrals	29,064,712	29,758,398	30,452,084
Fences	41,402,132	43,373,662	45,345,192
Total	185,202,300	190,605,901	196,009,501

**Table 25. Projected value of capital equipment for general equine (per owner).**

	1991	1992	1993
	(\$)	(\$)	(\$)
Tack	41,051,400	44,032,656	47,107,223
Starting gates	—	—	—
Hot walkers	1,082,410	1,161,017	1,242,085
Treadmills	—	—	—
Tractors	14,271,776	15,308,228	16,377,121
Other	5,361,146	5,629,203	5,901,663
Total	61,766,732	66,131,104	70,637,092

**Table 26. Projected value of travel equipment for general equine (per owner).**

	1991	1992	1993
	(\$)	(\$)	(\$)
Vehicle value	231,475,376	248,285,698	265,622,174
Trailer value	78,695,213	84,410,257	90,304,179
Total value	310,170,589	332,695,956	355,926,353
Vehicle value by percentage used for equine	60,173,976	64,543,961	69,050,725
Trailer value by percentage used for equine	37,002,385	39,689,591	42,460,905
Total value by percentage used for equine	97,176,361	104,233,553	111,511,630

contributed \$32.45 million to northern Idaho's gross product; \$38.62 to south-western Idaho's gross product \$30.88 to southeastern Idaho's; and \$12.27 to southcentral Idaho's.

## *Projected Equine Numbers, Values, and Values for Fixed Assets, 1991 to 1993*

Table 15 gives a summary of projected equine numbers for 1993 based on the percentage change in equine numbers from 1984 to 1989.

The projected values of equine, facilities, capital equipment, and travel equipment owned by commercial owners (tables 17 to 20) and general owners (tables 23 to 26) were based on ratio estimates of 1989 values, the percentage change in numbers of equine and numbers of owners from 1984 to 1989, and about 5 percent per year general increase in costs. Numbers of equine increased by about 2 percent per year from 1984 to 1989, and numbers of equine owners increased by nine hundredths of 1 percent during the same period.

## *Background Characteristics of Equine Owners*

The background profiles of commercial equine owners and general equine owners differed slightly. Commercial owners were more likely to be older and to have higher income levels than general owners (table 28). Educational levels were about the same, with larger percentages in both groups indicating high school graduate or some college than indicating other educational levels.

Respondents in both groups were equally likely to have grown up on a farm and currently living on a farm (table 29). Commercial owners, however, were slightly more likely than general owners to be residing in a town



with a population of 2,500 or more (35 percent compared with 23 percent).

Of the respondents who operated farms, larger percentages raised beef cattle or had beef and grain operations (table 30). General equine owners were more likely to have beef cattle operations than were commercial equine owners. While a large percentage of commercial equine owners did indicate operating primarily horse farms, several may have inadvertently responded "other" because of the wording of response categories on the questionnaire.

## Appendix A: Methodology

The number of equine in Idaho (tables 1 and 2) was based on a telephone survey and on numbers provided by breed associations in the state. Primary uses of equine (figure 2) were ratio estimates derived from the number of equine that respondents reported for each category. The number of households owning equine was based on a telephone survey: 11.5 percent of households owned equine.

Numbers of equine were expected to increase about 2 percent per year based on the increase of 12.1 percent in equine numbers and nine hundredths of 1 percent increase in numbers of equine owners from 1984 to 1989 (table 1).

Comparisons of equine ownership by type of equine for commercial and general owners (table 3) were ratio estimates derived from numbers reported by survey respondents.

The average value per equine (table A1) for registered and grade equine and for each equine class was calculated where data allowed. Then the average value was multiplied by the total estimated number of equine in each category to estimate the total value of registered and grade equine (table 4). The overall average value was used where sample data was insufficient.

The average value of facilities per owner (table A2) was multiplied by the estimated number of owners in the state to estimate the total value of facilities used for equine (table 5).

Table 27. Projected total annual expenses for general equine (per equine).

	1991	1992	1993
	(\$)	(\$)	(\$)
Riding horses	41,697,923	44,726,131	47,849,120
Draft horses	730,385	783,427	838,130
Ponies	563,188	604,088	646,269
Donkeys	109,998	117,986	126,224
Mules	897,581	962,766	1,029,991
Total	43,999,075	47,194,398	50,489,734

Table 28. Demographic profile of equine owners.

	Commercial owners	General owners
	(%)	(%)
Mean age (years)	53	45
Sex		
Male	65.9	56.3
Female	30.4	39.4
Household income		
Less than \$10,000	2.4	4.7
\$10,000 to \$19,999	4.8	12.4
\$20,000 to \$29,999	10.3	17.8
\$30,000 to \$49,999	30.2	35.7
\$50,000 to \$74,999	21.4	14.7
\$75,000 to \$99,999	13.5	5.4
\$100,000 to \$249,999	12.7	7.8
\$250,000 to \$500,000	2.4	0.8
More than \$500,000	2.4	0.8
Educational level		
Elementary school	1.5	0.7
Some high school	3.8	12.4
High school graduate	25.6	27.4
Vocational training	3.8	5.9
Some college	30.1	28.9
College graduate	17.3	21.5
Advanced degree	18.0	10.4



"English" is a form of pleasure riding that many Idahoans enjoy.



**Table 29. Size of respondents' communities.**

	Commercial owners	General owners
	(%)	(%)
<b>Community up to age 18</b>		
Rural farm	45.9	45.7
Rural nonfarm	5.7	7.9
100 to 2,499	13.9	11.8
2,500 to 9,999	11.5	11.0
10,000 to 49,999	11.5	9.4
50,000 to 99,999	5.7	5.5
100,000 to 249,999	0.8	1.6
250,000 or more	4.9	7.1
<b>Community at present</b>		
Rural farm	43.3	43.4
Rural nonfarm	13.3	22.1
100 to 2,499	8.3	11.5
2,500 to 9,999	11.7	10.7
10,000 to 49,999	12.5	8.2
50,000 to 99,999	5.0	0.8
100,000 to 249,999	5.0	3.3
250,000 or more	0.8	0.0

**Table 30. Type of farm operation.**

	Commercial owners	General owners
	(%)	(%)
Dairy	1.8	5.9
Beef cattle	25.0	43.1
Grain	3.6	7.8
Potato	1.8	2.0
Sheep	1.8	3.9
Horse	23.2	2.0
Beef and grain	3.6	7.8
Other	39.2	27.5
Total	100.0	100.0

**Table A1. Average value of registered and grade equine (per equine), 1989.**

	Commercial owners		General owners	
	Registered	Grade	Registered	Grade
	(\$)	(\$)	(\$)	(\$)
Riding horses	2,723	734	1,232	559
Draft horses	4,000	668	***	1,222
Ponies	1,750	240	500	295
Donkeys	***	50	350	340
Mules	***	495	***	660
Total	2,716	610	1,220	558

Note: \*\*\* Indicates insufficient numbers for accurate measurement.

The average value of equipment per owner (table A3) was multiplied by the estimated number of owners in the state to estimate the total value of equipment (table 6). Average values were close to median values for commercial owners. The median value for general owners was usually zero. Two categories, "starting gates" and "treadmills," had no values reported by general owners.

The average value of vehicles and trailers per owner (table A4) was multiplied by the estimated numbers of owners in the state to arrive at the total value of travel equipment (table 7). To calculate the percentage of use that was exclusively for equine, the value for commercial owners was multiplied by 0.68 for vehicles and 0.83 for trailers and for general owners by .026 for vehicles and 0.47 for trailers.

The annual expenses per equine (table 8) were the average expenses reported by owners in the sample.

The average number of mares bred per owner was multiplied by the estimated number of owners in the state (table A5). This provided an estimate of the number of mares serviced by the owners' stallions (table 10). The estimated number of mares serviced was multiplied by the average stud fees for commercial operations and for general owners to estimate the revenue from fees. Numbers of stallions and mares were expanded using ratio estimates (34,576 equine x 0.0591 = 2,043 stallions).

The average costs per owner associated with operating a pack string during the packing season were multiplied by the estimated numbers of owners in the state to calculate expenditures statewide (tables A6 and 13).

About 2.17 percent of the commercial owners in the survey operated a pack string. Less than one percent of the equines owned by commercial respondents were used in pack strings. Proportionally fewer general owners operated pack strings (1.41 percent), but they used proportionally more equine (1.21 percent). Either respondents had no income or preferred not to report their income from operating a pack string.



The average racing, showing, or rodeo winnings (table A7) were calculated per owner and multiplied by the estimated number of owners in the state to arrive at the revenues from winnings (tables 11 and 12). The average expenses in each category were calculated per owner (table A8) and multiplied by the estimated number of owners in the state to arrive at expenditures for racing, showing, or rodeo.

The projected values of equine, facilities, capital equipment, and travel equipment owned by commercial operations and by owners were based on 1989 values, the percentage change in numbers of equine and numbers of owners, and a 5 percent per year increase in costs (tables 17 to 27). Numbers of equine increased by about 2 percent per year. The numbers of owners increased by nine hundredths of 1 percent per year.

Background characteristics (tables 28 to 30) were based on mailed surveys only.

## Appendix B: Other Studies

Since 1982, various agencies and organizations have conducted and published a number of studies of the equine industry in the United States. This appendix lists in chronological order a few highlights of significant findings along with bibliographic citations.

Arizona State Horseman's Association. 1982. *Arizona Equine: Economic Impact Survey*. This survey focused on household expenditures for horses. The average reported expenditure for equine care and maintenance was \$19,695 per owner. Since the average number of horses owned was 5.98, the cost per horse was \$3,293.

Schurg, William A. 1985. *The Economic Analysis of the Arizona Thoroughbred Breeding Horse Industry*. Tucson, Arizona: The University of Arizona, Animal Sciences Department. Owners of Arizona-bred Thoroughbreds were surveyed in 1984. The estimated 3,637 Arizona Thoroughbreds

Table A2. Average value of facilities used for equine (per owner), 1989.

	Commercial owners	General owners
	(\$)	(\$)
Barns	19,368	2,094
Stables	5,935	170
Arenas	4,609	267
Sheds	2,321	331
Corrals	4,369	725
Fences	6,104	1,058
Total	42,706	4,645

Table A3. Average value of capital equipment (per owner), 1989.

	Commercial owners	General owners
	(\$)	(\$)
Tack	3,449	1,024
Starting gates	138	0
Hot walkers	828	27
Treadmills	112	0
Tractors	3,971	356
Other	1,941	137
Total	10,439	1,544

Table A4. Average value of travel equipment (per owner), 1989.

	Commercial owners	General owners
	(\$)	(\$)
Vehicles	16,537	5,774
Trailers	9,168	1,963
Total	25,705	7,737
Vehicles, use associated with equine	11,245	1,501
Trailers, use associated with equine	7,609	923
Total	18,854	2,424

Table A5. Equine used for breeding, 1989.

	Commercial owners	General owners
Stallions owned	139	34
Stallions used for breeding	132	26
Percentage used for breeding	95.0	76.0
Mares owned	1,061	286
Mares used for breeding (with own stallions)	667	83
Percentage used for breeding	63.0	29.0
Stallions (percentage of equine)	5.91	5.14
Mares (percentage of equine)	41.15	12.56
Average number of mares serviced by own stallions per owner		
Instate (not own mare)	5.79	0.35
Out-of-state	2.12	0.007
Average number of own mares bred		
out-of-state	0.34	0.007





The Idaho equine industry generated more than \$206 million or 1.5 percent of the gross state product in 1989.

Table A6. Equine used for packing, 1989.

	Commercial owners	General owners
	(%)	(%)
Owners operating pack strings	2.17	1.41
Equine involved in pack strings	0.81	1.21
Average costs per owner associated with operating a pack string	\$469.50	\$149.79

Table A7. Purses for racing, showing, rodeo, and 4-H, 1989.

	Commercial owners		General owners	
	Instate	Out-of-state	Instate	Out-of-state
	(\$)	(\$)	(\$)	(\$)
Racing	2,031.30	3,435.67	68.18	7.25
Youth 4-H	1.56	0	0.53	0
Shows	159.46	205.25	4.51	2.37
Rodeo	215.22	42.03	61.34	14.49

Table A8. Expenses for races, shows, rodeos, and youth 4-H, 1989.

	Commercial owners		General owners	
	Instate	Out-of-state	Instate	Out-of-state
	(\$)	(\$)	(\$)	(\$)
Transportation	581.81	519.29	28.70	6.16
Lodging and food	376.70	284.49	5.94	5.14
Registration fees	395.37	285.80	23.25	1.81
Health inspection	23.15	10.98	1.30	0.62
Brand inspection	27.86	8.21	1.08	0.91

resulted in direct expenditures of \$8,838,788.

American Horse Council. 1987. *The Economic Impact of the U.S. Horse Industry*. Washington, DC: American Horse Council, in coordination with Peat, Marwick, Mitchel and Company Policy Economics Group. The 1985 study estimated 650,000 horses in the Pacific Mountain region (Oregon, Idaho, Montana, Nevada, Utah, Wyoming, Arizona, and New Mexico). Total owner expenditures were slightly more than \$2,000 per horse. Estimated income from horse racing was about \$70 million and revenues from horse shows about \$13 million.

Datapol, Inc. 1987. *A.T.B.A. Economic Analysis of Out-of-State Owners*. A study of Turf Paradise race track was conducted in Arizona in 1987. Estimated expenditures for the 2,500 participant race horses amounted to \$32.75 per day. With 232 training days per season, estimated expenditures for maintenance and training fees were \$19 million.

American Quarter Horse Association. 1988. *1988 Membership Survey*. Amarillo, Texas: Public Relations Department, American Quarter Horse Association. The membership survey conducted in 1988 reported an average of 8.4 registered Quarter Horses per member household. Average expenditures for horse care per household were \$4,528. An estimated additional \$1,448 was spent per household for saddles, tack, and equipment.

American Quarter Horse Association. 1989. *1989 Membership Survey*. Amarillo, Texas: Public Relations Department, American Quarter Horse Association. The membership survey conducted in 1989 reported an average of 6.1 registered Quarter Horses per member household and an average value per horse of \$4,455. Average expenditures for horse care per household were \$4,386. An estimated \$2,016 was spent per household for saddles, tack, and equipment.



Troutman, C. Michael. 1988. *The Veterinary Services Market: For Companion Animals*. American Veterinary Medical Association. This study was based on a survey of 40,000 households nationwide conducted in 1988. The study objective was to determine the demand for veterinary services for companion animals. Excluding commercial operations, approximately 2.8 percent of U.S. households owned horses. Less than one-half of the horse owners obtained veterinary care for their horses in 1987. The average expenditure for veterinary services was \$120.75 per household.

New Jersey Agricultural Statistics Service. 1988. *New Jersey Equine Industry*. New Jersey Department of Agriculture. New Jersey equine owners were surveyed in 1988. The estimated number of horses was 60,000. There were 10,400 people employed in the equine industry. Race tracks spent about \$257 million, while New Jersey residents spent \$319 million and out-of-state residents spent \$55 million.

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