PENNSYLVANIA'S EQUINE INDUSTRY INVENTORY, BASIC ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

May 2003

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The Pennsylvania State University
University Park, PA

The Pennsylvania Department of Agriculture, Harrisburg, PA

The Pennsylvania Department of Agriculture, through the State Horse and Harness Racing Commissions, contracted with The Pennsylvania State University to conduct the 2002 Economic and Population Study of the Pennsylvania Equine Industry.

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"Look back at man's struggle for freedom,
trace his present day strength to its source,
and you'll find that his pathway to glory
is strewn with the bones of the horse." (Anonymous)

In this day of instant communication, it's difficult to believe that less than a century ago, Pennsylvania still ran on the power of the horse. As recently as the start of World War II, cavalry units still headed off to war on horseback, produce arrived at markets in horse drawn wagons, and horses still delivered milk to Pennsylvania's households.

While less visible in daily life, horses are still a huge force in Pennsylvania's culture and economy. Just as horses were important enough to our forefathers to include on Pennsylvania's State Seal, this study suggests that the state's thriving equine industry can help enhance the quality of life for future generations.

Pennsylvania hosts many of the country's oldest and most prestigious equestrian events. Among its farms are some of the largest and most influential breeders of champion horses in the world. Many of the most successful horses in competition and racing both historically and today are Pennsylvania bred. Pennsylvania's large Amish settlements still use horses for daily transportation and farming.

Horses are such a big part of Pennsylvania—economically, culturally, traditionally, agriculturally—that Olympic and World Cup equestrians in nearly all disciplines have relocated from other states and continents in order to make Pennsylvania their home. Among them is Australian Phillip Dutton of Chester County, a two-time Olympic gold medalist and arguably the most accomplished equestrian competing at this moment.

Though much of this activity goes virtually unnoticed by the majority of Pennsylvanians, this study presents many good reasons to safeguard and promote the equine industry. It shows that in a multitude of ways, horses are good for Pennsylvania.

Pennsylvanians generally support land preservation, and this study shows that equine owners keep more than a million acres of Pennsylvania land in farmland. That does not include land kept as open space for riding and competitions, much of which is located in counties with the highest development pressures.

While much of production agriculture is unprofitable, the equine industry is thriving. This study shows that the number of equine has increased 27% in the last ten years. More horses mean a stronger demand for production agriculture and the infrastructure that supports it. Most Pennsylvanians agree that more farmland and a strong farm economy are good for everyone's quality of life.

Thousands of horse shows and events take place across the state each year. Among them are many of the country's most important equestrian competitions at which the best horses and riders from across the US and other nations compete. These competitors bring hundreds of millions of dollars into local economies as thousands of competitors, families and support staffs spend money at hotels, restaurants, and shops.

Horses help children to become responsible, compassionate adults. Tens of thousands of children and families in Pennsylvania have horses in their lives, through 4-H, Pony Club, breed youth organizations, or just the farm next door. Equestrian events are populated with children and adolescents who stay on the honor roll, develop strong, positive relationships with peers and adults, and sacrifice their free time, leisure activities and even sleep in order to ride.

Horses help Pennsylvanians in many other ways. Therapeutic riding programs are a ray of hope as well as effective therapy for thousands of children and adults with disabilities. Inner city programs teach responsibility and the joys of accomplishment to children living in poverty—and sometimes, earn them a full college scholarship.

Pennsylvania's equine economy, in nearly every way, is bigger than Kentucky's (home to only 150,000 horses in 1996) and larger than nearly every other state's. It thrives with little attention from the public and, compared to other agricultural entities, little government assistance. But it should not be overlooked. The Pennsylvania equine industry is vital to economic development, farmland preservation, and an enhanced quality of life for all Pennsylvanians.

Acknowledgements

Many equine organizations, businesses and individuals through out the state supported this survey by providing names and addresses for equine owners. The survey advisory committees and Pennsylvania State University, faculty and students would like to thank everyone that helped and supported the study

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Introduction and Proposal Justification

Pennsylvania's equine industry is a diverse and thriving industry that supports a variety of activities and businesses. The equine industry is a major contributor to the state's economy through employment, tax dollars, and assets. Moreover, the value of the state's horse industry extends to all residents. Equid are valued for their companionship and use, enhancing the state residents' quality of life. Equid play an essential role in Pennsylvania's Amish community as they are heavily relied upon for transportation and farm work. Knowledge of the current size and character of the Pennsylvania equine industry is essential to help shape the future of this industry.

The last survey of Pennsylvania's equine industry was the 1990 profile conducted by The Pennsylvania State University with the Pennsylvania Agricultural Statistics Service. The dynamic nature of the equine industry on both a national and state level necessitated a current assessment of the industry in Pennsylvania. The objective of this survey were to assess the composition and nature of Pennsylvania's equine industry, including its direct and indirect contribution to the state's economy through sales, employment, and taxes and its less tangible impact on the quality of life of equine owners and participants in equine activities.

The equine population sampled totaled 31,195 addresses identified from 141 different sources. The population did not include racetrack operations or commercial/industry support service providers. A random sample of 10,000 addresses was composed of 2,867 records identified as specializing in the horse racing industry, and the remaining 7,133 identified as general industry involvement. Survey instruments were developed with terminology reflective of each industry segment and were distributed in October (racing) and November (general), 2002. Mail-based reminder was sent to any non-respondents. The mailings consisted of three phases: postcard, duplicate copy of survey and another postcard. Follow up began two weeks after the initial survey mailing and occurred in two-week intervals. Data collection was terminated December

2002, and initial data analysis focused on response rates. The response rate for the racing industry survey was 20% with the general industry survey generating a 32% response. The financial information collected represents the tax-reporting period of 2001. The number of horses owned and characteristics of Pennsylvania equine owners represents the year 2002. The following are the results of the combined surveys.

2002 Survey Results:

Economic Value

To understand the economic value of the equine industry, one must consider the many activities that include equid, the many breeds of horses and ponies that reside in this state and the thousands of equine enthusiasts. These enthusiasts represent every walk of life, live in urban and rural areas and fill their homes, offices, and vehicles with symbols of their interest in equid.

By recognizing all the breeding farms and stables, land, equipment, facilities and products necessary to produce and use horses, one begins to understand how the horses and people involved represent an influential industry. Finding a rival in complexity would be a challenge.

Together, the breeding, raising, training, showing, racing, riding and care of thousands of equid each year stokes a vast industry that when pulled together in all its diverse aspects makes a huge contribution to the Pennsylvania economy. The following table contains some of the highlights of Pennsylvania's equine industry.

Table 1. Basic Facts about Pennsylvania's Equine Industry:

	General Equine Population	Racehorse Industry	Total State
Number of Horses:	**189,328**	**26,365**	**215,693**
Number of Operations	**28,200**	**2,800**	**31,000**
Employment (number of jobs)	**13,870**	**6,430**	**20,300**
Value of Pa's Horses:	**$978 million**	**$352 million**	**$1.3 billion**
Industry Outputs (Revenue):	**$780 million**	**$344.5 million**	**$1.12 billion**
**Sales & Income:*	*$246 million*	*$189 million*	*$435 million*
Related Assets/Investments:	**$7.15 billion**	**$1.12 billion**	**$8.27 billion**
Expenses:	**$508 million**	**$238 million**	**$746 million**
Total Taxes**	**$46.3 million**	**$6.9 million**	**$53.2 million**
Employment Compensation:	**$121.2 million**	**$291.1 million**	**$412.3 million**
****Wages and Benefits Paid:*	*$60 million*	*$32.9 million*	*$92.9 million*
Value Added (ripple effects)	**$427.5 million**	**$187.6 million**	**$ 615.1 million**

** Sales and Income are part of Industry Outputs.*
***Taxes include property taxes for equine-related land and payroll taxes only.*
****Wages paid to employees are included in labor costs or Employment Compensation.*

The Equine Industry's Estimated Contribution to the Pennsylvania Economy

The total contribution of the Equine Industry to the Pennsylvania economy was estimated using the economic impact software program IMPLAN (Impact Analysis for Planning). Originally developed by the US Forest Service, IMPLAN is an input-output model widely used to quantify how businesses use technology, labor and materials (i.e., inputs) to produce a product (i.e., output). In practice, the IMPLAN model is used in every state and hundreds of communities across the nation to catalog economic activity and predict the effect of alternative policies and various economic changes.

Total Effects

Results of the analysis are shown in Table 2. Here, the direct output effect of the Equine Industry in the state is $642.9 million. Based on the IMPLAN model, this translates into 14,960 jobs, with an annual total compensation for these workers of $235 million per year ($15,715 per worker). In addition, our analysis suggests Pennsylvania's Equine Industry directly generates $330.5 million of value-added activity.[1]

[1] Appendix A overviews the method and defines the key terms used in this study.

Secondary effects are the spin-off or ripple effects of the Equine Industry. For example, equine-related businesses purchase a variety of inputs and services; and the companies that produce these goods and services also need labor. Accordingly, the secondary effects also capture the impact of local spending by employees of both the equine-related businesses as well as supporting industries. Using IMPLAN, it is estimated that these effects result in more than $481 million in additional output, of which more than $284 million is value-added. This translates into 5,340 additional jobs in the state economy, and more than $177 million in employee compensation. In terms of multipliers, the employment multiplier is 1.36, suggesting that for every job in an equine-related business, an additional 0.36 jobs are supported in the state economy. The labor income multiplier is 1.75, suggesting an additional dollar in employee compensation in the Equine Industry supports 75 cents of wages and benefits in other Pennsylvania industries. Similar interpretations can be given to the output multiplier (1.75) and value-added multiplier (1.86).[2]

Overall, the direct and secondary contributions of the state's Equine Industry are estimated at more than $1.12 billion in output, of which nearly $615 million is value-added. This translates into 20,300 jobs that compensate state workers with $412.2 million.

The racehorse survey indicated that this portion of the industry generated $197.4 million in output and $100.6 million in value added. This activity directly supported 4,740 jobs. Accounting for multiplier effects, the racing industry supported an additional $147.1 million in output, of which $87 million was value added, and 1,690 additional jobs.

The general population results indicated that the industry directly generates $445.5 million in output, of which $229.9 million is value added. This activity provides 10,220 jobs. And the ripple effects generate still more economic activity, supporting $334.5 million in output, of which $197.6 million is value-added, and 3,650 additional jobs.

[2] Economic multipliers are used to translate the direct impact into the total impact; multiplying the direct impact by the multiplier gives an estimate of the additional economic activity generated by a change in output. To derive the multiplier, simply divide the total impact (direct plus secondary) by the direct impact.

Table 2: The Equine Industry's Estimated Contribution to the Pennsylvania Economy, 2001

	Direct Effect	Secondary Effect	Total Effect	Multiplier
TOTAL				
Industry Output (millions)	$642.9	$481.6	$1,124.5	$1.75
Value Added (millions)	$330.5	$284.6	$615.1	$1.86
Employment	14,960	5,340	20,300	1.36
Labor Income (millions)	$235.1	$177.2	$412.3	$1.75
Per Worker Compensation	$15,715	$33,157	$20,305	
RACING				
Industry Output (millions)	$197.4	$147.1	$344.5	$1.75
Value Added (millions)	$100.6	$87.0	$187.6	$1.86
Employment	4,740	1,690	6,430	1.36
Labor Income (millions)	$67.1	$54.1	$121.2	$1.81
Per Worker Compensation	$14,162	$31,975	$18,848	
GENERAL				
Industry Output (millions)	$445.5	$334.5	$780.0	$1.75
Value Added (millions)	$229.9	$197.6	$427.5	$1.86
Employment	10,220	3,650	13,870	1.36
Labor Income (millions)	$168.0	$123.1	$291.1	$1.73
Per Worker Compensation	$16,435	$33,705	$20,981	

Some Characteristics of Pennsylvania's Equine owners:

- From the general equine survey, 70% of the equine owners are female and 30% are males. The racehorse owners were 70% male and 30% female.
- Over 60% of Pennsylvania horse owners reported trail riding their horse on public lands.
- Within the general population, more than half of the owners have owned equine for 20 or more years, and the average length of equine ownership is just over 22 years.
- Within the general population nearly 70% of the equine owners reported a level of education beyond high school and nearly half have received at least a college degree.
- In the General population females appear to be more active participants in equine activities, especially in the over 19 age group, and overall for all age groups.

Equine Population

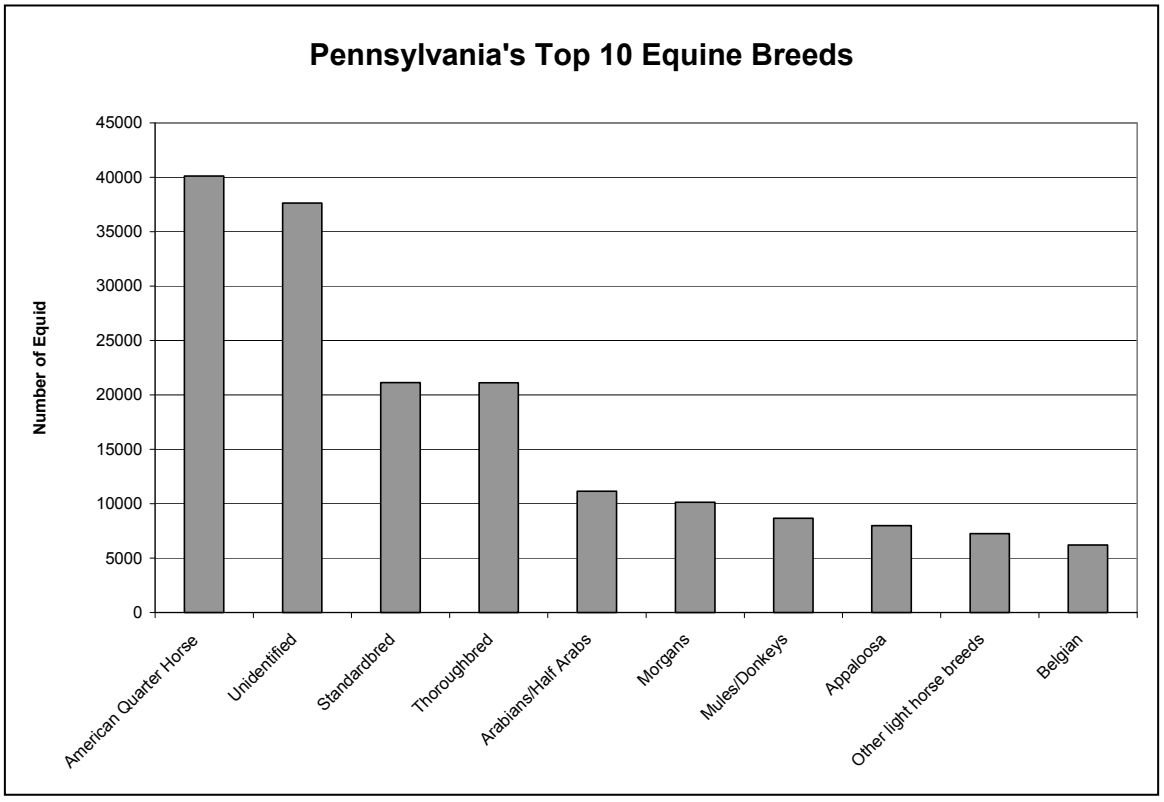
The nearly 216,000 equid living in Pennsylvania represent approximately 50 different breeds, encompassing horses developed in this country by pioneers and Native Americans as well as horses imported from around the world. Pennsylvania is home to some of the finest breeding farms in the country. Hanover Shoe Farms in Adams County is the world's largest breeder of Standardbred horses. Willow Brook Farms located in Catasauqua was instrumental in shaping the American Quarter Horse breed as we know it today, as a world-leading breeder of performance horses. Iron Spring Farm of Coatesville is one of the top producers of warmblood competitors in dressage and show jumping. Reigle Heir Farms in Grantville is a top breeder of Thoroughbred racehorses in Pennsylvania.

The American Quarter Horse at 40,110 head, represents the most popular light horse breed in the state, followed by Arabians and Half Arabians at 11,154; Morgans with 10,136; Thoroughbreds (non-racing) at 9,567; Mules/Donkeys with 8,665 head; and Appaloosas with 7985. The survey respondents, identified specific other breeds and/or grade horses totaling 7,248 head; a large portion of these are light horse breeds. Draft horse breeds totaled 11,185 head; Belgians with 6,202 head were the most popular followed by the Percherons with 3,000 head. Pony breeds accounted for 10,577 head (Welsh 3,582, Hackneys 1,635, Shetlands 1,538 and other breeds at 3,822). There were 3,450 Miniature Horses reported. Breed data, value and use by breed are presented in Tables A1 and A2 in the Appendix.

Pennsylvania's Racehorse Breeds

Pennsylvania's racehorse industry included 26,365 head of horses. There were 14,815 and 11,550 head of Standardbreds and Thoroughbreds, respectively. An additional 6,317 Standardbreds and 9,567 Thoroughbreds were reported in the general equine survey (horses not used for racing). The two breed totals, when including the non-racing population are 21,132 for Standardbred and 21,117 for Thoroughbreds. In addition, a limited number of owners of American Quarter Horses, Arabians and Appaloosas reported racing these breeds out of state.

Figure 1: The Top 10 Equine Breeds In Pennsylvania.



Numbers and Economic Value of Horses by County & District

From border to border, the horse industry represents a highly diverse industry that supports a wide variety of activities in all 67 counties. The industry combines the primarily rural activities of breeding, maintaining and training equid, farming, boarding, stabling, and other commercial purposes with the more urban activities of operating racetracks, off-track wagering facilities, horse shows and recreational riding.

Top Five Counties by Total Equine Population:

1. **Lancaster - 20,396**
2. **Chester - 15,504**
3. **York - 12,089**
4. **Washington - 8,572**
5. **Berks - 6,241**

Together, the state's South Eastern and Capital Regions account for more than forty percent of Pennsylvania's equid population. Other county data regarding equid population and value are in Table A3, in the Appendix.

Equine Operations

There are an estimated 38,000 households that own equine in the state of Pennsylvania, with a total of 190,000 people who participate in an equine activity. An additional 20% (7,600) of households within the state participate in an equine activity, but do not own a horse. An estimated 31,000 operations housed Pennsylvania's 216,000 equine in 2002.

Twenty percent of the farms/stables from the general equine survey reported being commercial operations (for profit), while 80 % considered their equine operation for personal use. Interestingly, racehorse operations reported 82 % are commercial and 18 % were for personal use.

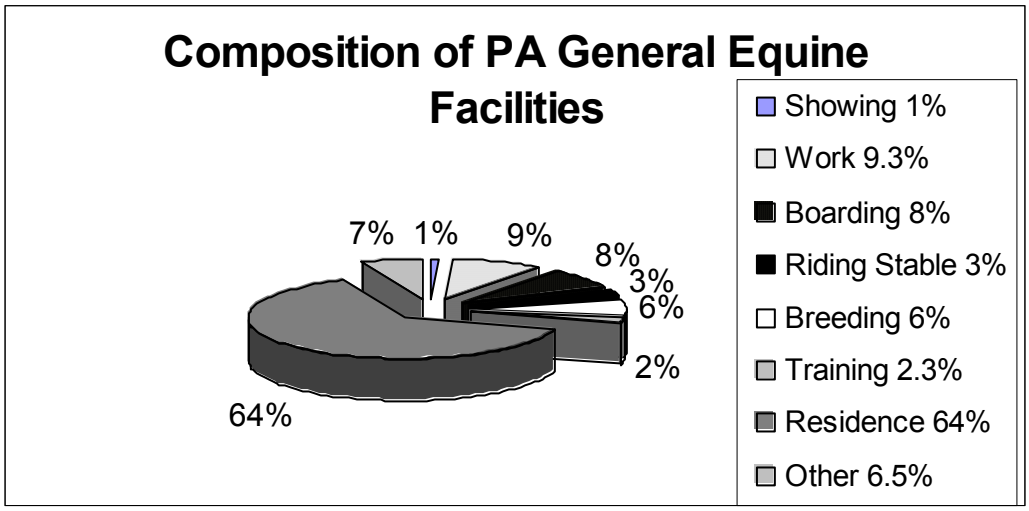
Table 3: Number of People Involved In the Equine Industry

Number of households that own equid	38,000
Members of households that participate in equine activities.	190,000
Households within the state, participate in an equine activity, but do not own a horse	7,600
Operations that house equid in PA	31,000
Number of Jobs	20,300

Composition of Pennsylvania's General Equine Operations (Farms, Barns and Stables)

The majority of operations, over 63%, were reported to be involved with personal, recreational or pleasure riding and/or driving (trail riding, youth and showing). *(Owners were permitted to list more than one discipline to describe their operation.)* The second largest group was working horses at nearly 9.3%. These horses earn their living working on farms plowing fields and pulling carriages. Eight percent of facilities are involved in boarding and caring for other owners horses; 5.6% reported operating an equine breeding facility; 3% were riding/lesson stables (teaching riding lessons, rent equine, etc.); 2.3% were training facilities; 0.9% were show/events facilities; 0.35% were racing stables (not reported in the "Racehorse Survey"); 0.3% were lay-up or equine therapy facilities; 0.17% were reported as guest farms for Bed & Breakfast operations involved in tourism and 7% were listed as other. This group listed their facilities as retirement homes for horses, horse rescues, mounted police units, therapeutic riding facilities etc.

Figure 2: Types of facilities defined in the general population survey.



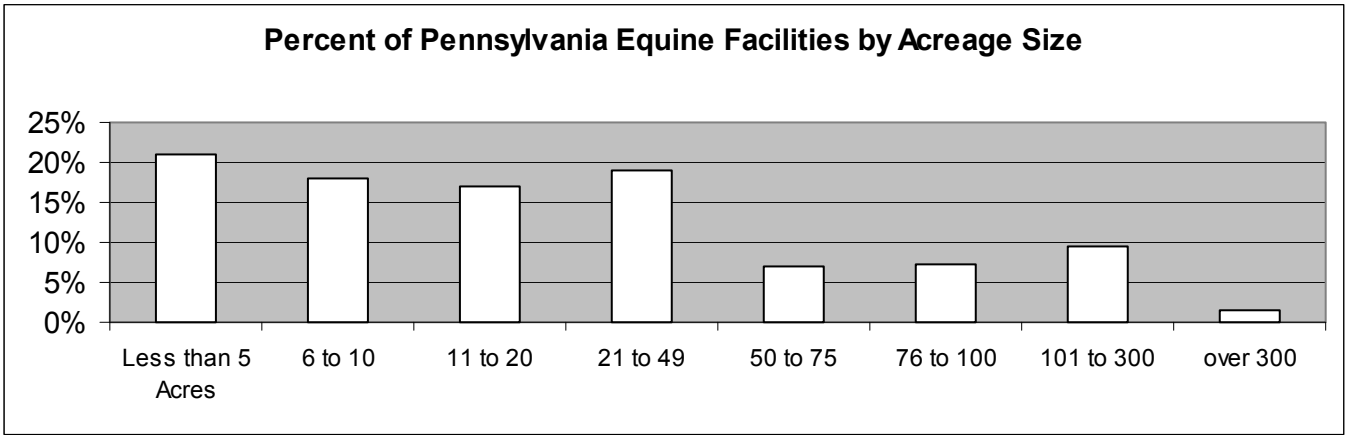
Composition of Pennsylvania's Racing Facilities

Almost half of the racehorse breed owners, 46%, consider their operations to be racing stables/ barns (on and off-track facilities). Second most common were breeding farms (21%), followed by training barns (10%); boarding facilities (7.5%); lay-up/equine therapy facilities (4.4%); sale preparations (1.8%) and other (10%).

Land: Equine Operation Acreage

The equine community is actively preserving open space and maintains the public's connection to agriculture. Over half (56%) of Pennsylvania's equine population is housed on properties under 20 acres in size (Figure 3). Twenty-one percent of the equine operations are located on acreages that are less than 5 acres. An additional 20% of horse farms are located on acreages of 21 to 50 acres in size, 14% are located on land tracts over 50 but fewer than 100 acres. The remaining 11% operate facilities on acreages over 100 acres. Pennsylvania's equine community provides an estimated 1.14 million acres of open space (General population 1,037,153 and Racing industry 105,458 acres); horse related tracts of land range from a few acre farmette to thousand acre estates. Equine related land values, for the entire state, were reported to be $4.8 billion.

Figure 3: Facility Land Size for Operations In the General Survey.



Racing operations reported that over 10% of their equine related acreages were enrolled in Agricultural Preservation programs. Twenty – six percent of these racing operations listed pasture as their primary land use, 13% of the acreage was planted in crops, and 21% was utilized as hay fields. Whereas, the general equine owners reported that only 8% of their equine related acreages were enrolled in Agricultural Preservation programs. Fifteen percent of this general population listed pasture as their primary land use, 17% for crops, and 19% as hay fields.

Manure Handling Systems

There are two principal equine industry manure management systems. The first system permits horses to graze full-time on pastures and the manure is not collected or treated. Pasture manure usually is spread by harrow cultivation that promotes decomposition. The second system confines animal feeding, which relies on intensive management, and the horses are kept in stalls or runs. The horses may be housed in box stalls and provided a bedding source for urine absorption. Alternatively, horses are kept in corrals or runs and some runs are attached to stalls. Manure is managed in one or more of the following ways: 1) compost (manure is removed daily and composted); 2) stockpile (manure is removed daily and stored in piles) and, 3) daily land application (manure is removed daily and spread on cropland).

According to the survey, racehorse operations managed manure using the following systems: composted and used on the farm (21%), composted and hauled off farm (11%), spread fresh on crop and pasture fields (27%), hauled off the farm fresh (5%) and stock piled on the stable and left unmanaged in piles (20%). Manure management handling was not mutually exclusive, managers used more than one system and not all reported their management method. Larger horse operations (50 to1100 head of horses) were more likely to have manure hauled off the farm soon after it was removed from the stalls (58%). None of the farms with over 50 head of horses stockpiled manure on the premises. In comparison, the smaller operations (less than 10 head) stock piled manure and left it on the premises unused (24%). The general equine population owners also showed a similar trend in manure management and handling systems. Commercial operations appeared to be more likely to have manure management plans.

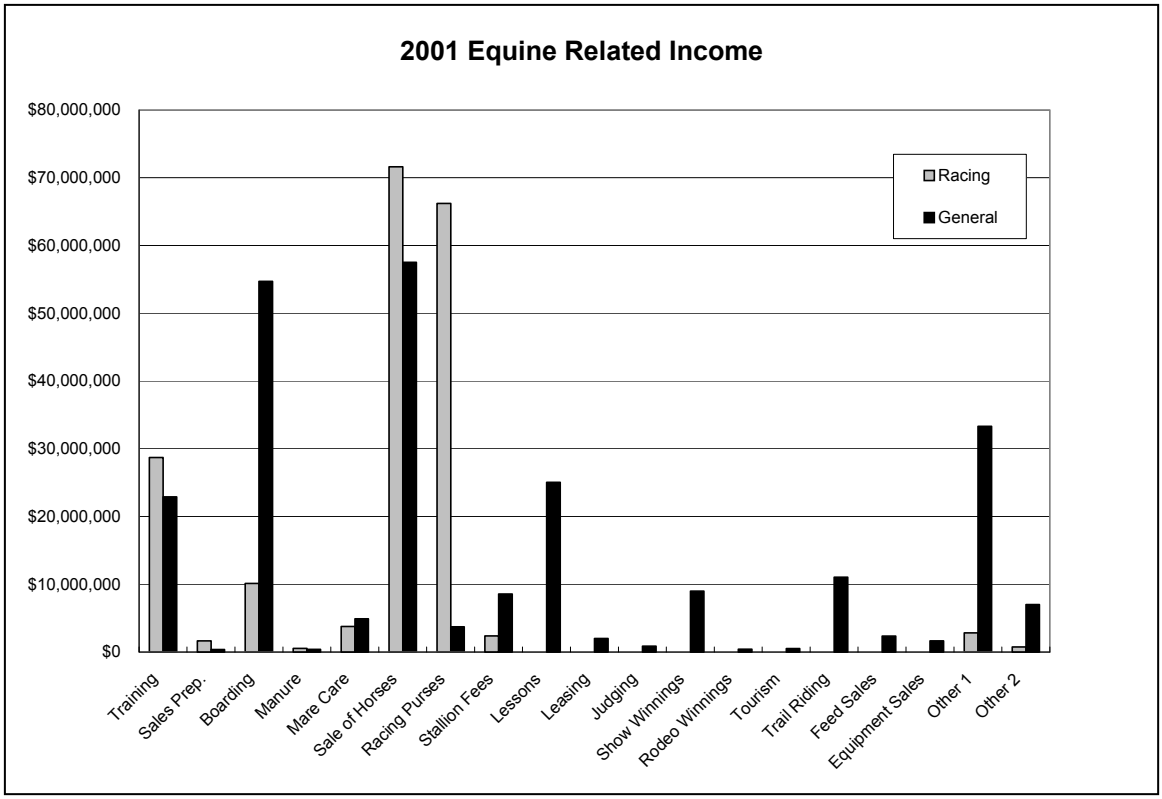
Equine-Related Income

Overall, the direct and secondary contributions of the state's equine industry are estimated at more than $1.12 billion in output (the total revenue generated by the industry), of which nearly $615 million is value-added. However, equine-related income (reported by survey participants) from sales and associated equine/agricultural activities during 2001 totaled $435 million. The racehorse industry reported generating $189 million in income and the general equine population reported income of $246 million.

Table 4: Income by source for the racing, general and total population.

Equine Related Income	Racing Industry	General Population	Total
Training	$28,713,642	$22,896,923	$51,610,565
Sales Preparation	$1,643,474	$368,792	$2,012,266
Boarding / Lay-ups	$10,110,577	$54,713,607	$64,824,184
Manure Sales	$552,111	$378,504	$930,615
Mare Care	$3,755,666	$4,888,519	$8,644,185
Sale of Horses	$71,610,642	$57,536,863	$129,147,505
Racing Purses	$66,194,871	$3,742,045	$69,936,916
Stallion Services Fees	$2,391,752	$8,564,507	$10,956,259
Lessons/ Clinics		$25,031,215	$25,031,215
Leasing Animals		$2,003,561	$2,003,561
Judging		$871,911	$871,911
Show Winnings		$8,977,772	$8,977,772
Rodeo Winnings		$417,430	$417,430
Tourism, Guest Farm		$514,650	$514,650
Trail Riding		$11,057,556	$11,057,556
Feed Sales		$2,370,384	$2,370,384
Equipment Sales		$1,641,699	$1,641,699
Other Income	$2,843,174	$33,314,040	$36,157,214
Other Income	$749,155	$7,017,472	$7,766,627
Total Income:	$188,565,065	$246,307,447	$434,872,512

Figure 4: Equine related income for the racing and general populations.



*Note that some race horse owners were reported in the general survey.

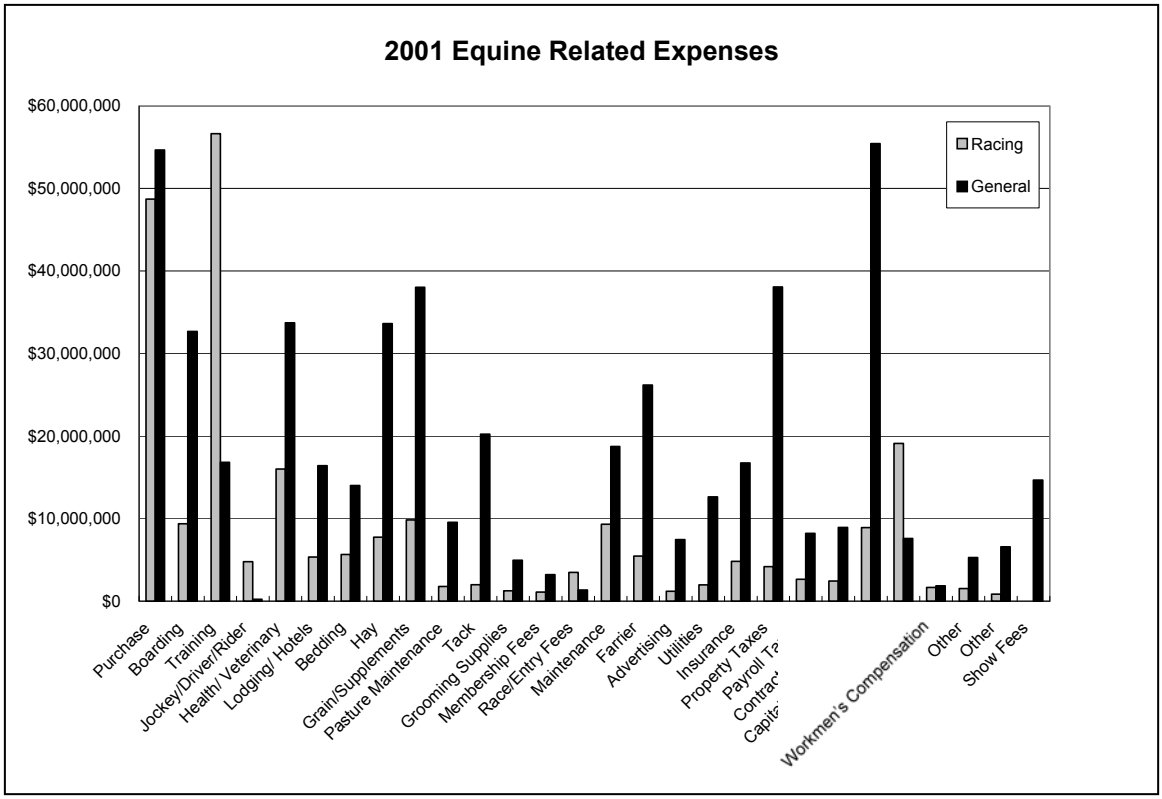
Equine-Related Expenditures

Equine-related expenditures during 2001 totaled an estimated $746 million. Purchases of feed and bedding accounted for $109 million in expenditures. Veterinarian and health-related care amounted to nearly $50 million. Taxes accounted for $53.2 million, while $103 million was spent on the purchase of equid, $42 million was spent on boarding horses and nearly $74 million was spent on training costs. (Expenses of commercial racetracks, show facilities and public facilities were not included in these figures.)

Table 5: Expenditures by category for the racing, general and total populations.

Expenditure Category:	Racehorse Industry	General Horse Population	Totals for PA:
Purchase	$48,708,105	$54,669,380	$103,377,485
Boarding	$9,385,684	$32,692,098	$42,077,782
Training	$56,644,783	$16,829,914	$73,474,697
Jockey/Driver/Rider	$4,797,866	$236,433	$5,034,299
Health/ Veterinary	$16,017,488	$33,730,069	$49,747,557
Lodging/ Hotels	$5,368,699	$16,422,102	$21,790,801
Bedding	$5,668,411	$14,017,204	$19,685,615
Hay	$7,774,418	$33,643,943	$41,418,361
Grain/Supplements	$9,849,711	$38,030,346	$47,880,057
Pasture Maintenance	$1,790,025	$9,551,662	$11,341,687
Tack	$2,013,885	$20,245,766	$22,259,651
Grooming Supplies	$1,265,244	$4,971,728	$6,236,972
Membership Fees	$1,097,701	$3,240,686	$4,338,387
Race/Entry Fees	$3,503,131	$1,365,318	$4,868,449
Maintenance	$9,336,341	$18,750,947	$28,087,288
Farrier	$5,458,184	$26,201,109	$31,659,293
Advertising	$1,200,114	$7,466,728	$8,666,842
Utilities	$1,977,616	$12,646,717	$14,624,333
Insurance	$4,815,652	$16,750,396	$21,566,048
Property Taxes	$4,182,837	$38,069,158	$42,251,995
Payroll Taxes	$2,682,662	$8,231,214	$10,913,876
Contract Services	$2,439,454	$8,948,123	$11,387,577
Capital Improvements	$8,919,012	$55,450,319	$64,369,331
Breeding Fees	$19,098,502	$7,591,324	$26,689,826
Workmen's Compensation	$1,659,784	$1,866,090	$3,525,874
Other	$1,539,503	$5,297,013	$6,836,516
Other	$855,374	$6,580,731	$7,436,105
Show Fees	$0	$14,687,102	$14,687,102
Total Expenses:	**$238,050,186**	**$508,183,620**	**$746,233,806**

Figure 5: Equine related expenses for the racing and general populations.



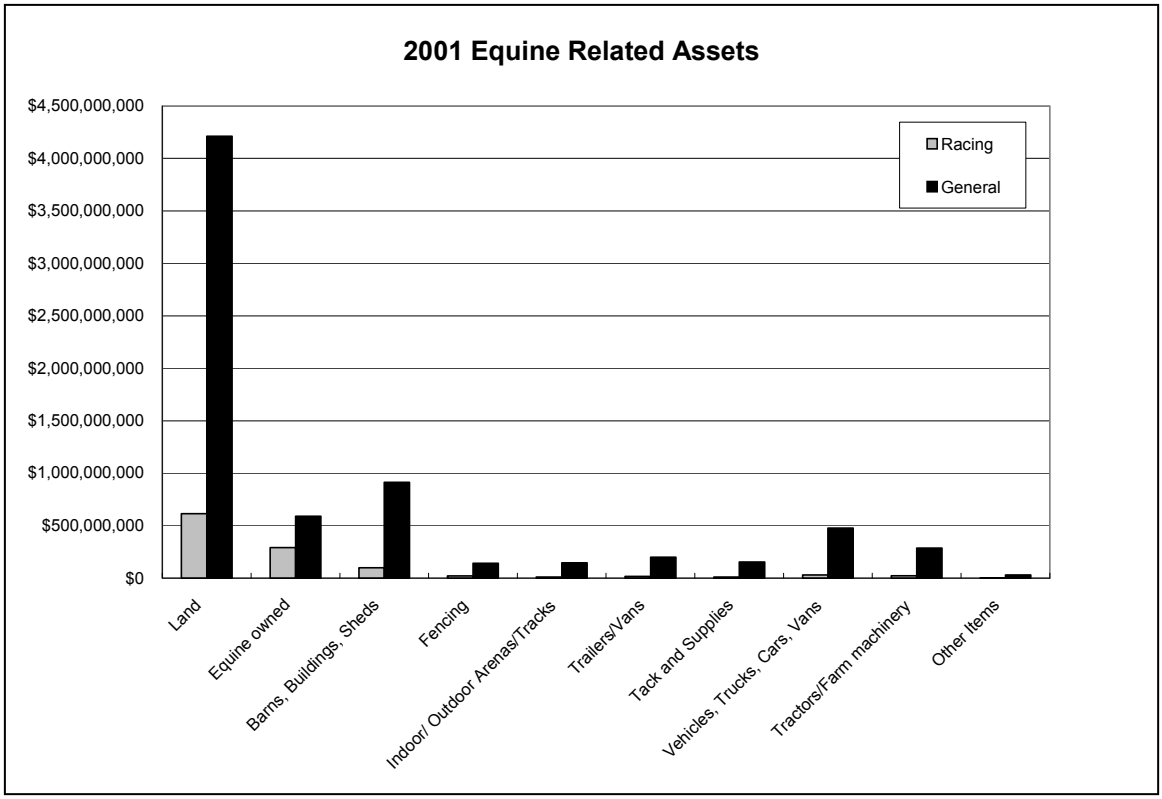
Equine-Related Assets

The value of all equine-related assets (excluding commercial racetracks and public facilities) totaled nearly $8.3 billion in 2001. Land was by far the largest asset, valued at $4.8 billion or nearly 58% of the total assets reported.

Table 6: Equine Related Assets by Item:

Assets Category:	Racehorse Industry	General Horse Population	Totals Assets:
Land	$614,005,827	$4,210,731,909	$4,824,737,736
Equine Owned	$291,448,705	$589,184,101	$880,632,806
Barns, Buildings, Sheds	$100,543,008	$912,923,920	$1,013,466,928
Fencing	$20,744,514	$142,737,391	$163,481,905
Indoor/ Outdoor Arenas/Tracks	$11,015,959	$145,977,395	$156,993,354
Trailers/Vans	$16,730,500	$201,278,335	$218,008,835
Tack and Supplies	$11,135,823	$154,709,041	$165,844,864
Vehicles, Trucks, Cars, Vans	$30,452,990	$477,871,562	$508,324,552
Tractors/Farm Machinery	$22,663,791	$286,959,093	$309,622,884
Other Items	$1,790,127	$31,153,829	$32,943,956
Totals	$1,120,531,245	$7,153,526,576	$8,274,057,821

Figure 6: Equine Related Assets for the Racing and General Populations.



Showing and Competitions

Whether the interest is in western riding, English riding, jumping, hunt seat, halter, pleasure, side-saddle, driving, three-gaited or five-gaited or whether the rider is a professional or amateur, child or senior, a horse show or event exists somewhere that offers any and all levels and types of competition. Numerous sanctioned horse shows and unsanctioned events are held each year across the state, with competitions restricted to a particular breed or open to all horses. Many of the thousands of young people who are involved in Pennsylvania 4-H clubs and pony programs have begun a lifetime of involvement with horses. They are the future breeders, owners and participants in the equine industry.

On most weekends throughout the year, competitors haul their show horses across the state striving for excellence. The average Pennsylvania horse enthusiast attends four shows, events, clinics, and/or workshops per year, one rodeo, and/or one horse race every two years. In 2002 Pennsylvania horse owners reported participating in three shows, events, clinics and/or workshops.

Recreation

Many Pennsylvanians find respite from their busy lives with a few hours a day or each week on horseback. They might take a leisurely ride along a scenic trail or get together with friends and enjoy riding in the states 4 million acres of public lands and open spaces.

Recreational riding and tourism is one of Pennsylvania's larger equine industries. More than 26% of the equid are used for recreational activities. Many people obviously enjoy riding horses with no concern for winning money or ribbons. The statewide interest in trail riding has grown to include organizations devoted to preserving trails. Approximately 1% of the state's equid are actively working in the tourism industry. In addition to inner city carriage rides, businesses across the state have offered vacations and outfit hunts on horseback through scenic locations. Some such businesses reported were bed and breakfasts, guest farms and working Amish farms.

Equine Facilities and Venues

In Pennsylvania there are 116 public show/exhibition facilities (farm show facilities, community parks and county fairgrounds) and many privately owned facilities equipped to host horse shows, rodeos, horse racing, and other equine competitions and exhibitions. Of these public facilities, 40 are actively conducting small community open and youth shows; while other facilities offer a venue to handle major national and regional competitions. In the 2002 show season, eight of the larger county fairs reported conducting large horse shows, one reported horse entries as high as 1,976 head (source: Pennsylvania State Association of County Fairs). According to this report, nearly 1,000 privately owned facilities or stables reported conducting equine events. These numbers do not include the many horse shows held at other facilities across the state, including numerous one-day shows

Eleven hundred of North America's best horses are accepted at the Pennsylvania National Horse Show, America's largest indoor multi-breed horse show, where they compete for 11 national titles and $340,000 in prize money. The Devon Horse Show is the country's largest outdoor horse show and at 107 years, one of its oldest. The Laurels at Landhope Combined Driving Event is one of five American FEI combined driving events. Radnor Hunt hosts the longest running Three Day Event in the United States. Dressage at Devon is the highest rated international dressage competition and most complete breed show outside of Europe. Pennsylvania has one of the largest draft horse populations in the country and conducts one of the largest draft horse competitions in the nation (Keystone International Livestock Expo). Many of these equine events are held at the newly expanded Farm Show Complex's, Equine Center in Harrisburg, PA. This $8 million facility expansion was constructed in 2002 to help meet the expanding needs of the state's equine industry.

Racing*

Horse racing has had a long-standing presence in Pennsylvania, and is a significant and integral part of Pennsylvania's equine industry. In 2001, Pennsylvania's four race tracks held a total of 762 race days for both harness and Thoroughbred horses. Over 2.4 million patrons attended the track (1.8 million attendance for Thoroughbred and 597,155 for harness racing) and wagered $941.6 million for Thoroughbred racing and $259.5 million for harness racing. In total for 2001, the projected horse racing total handle (all wagering at all race tracks) for the state was $1.2

billion. An additional $432 million was wagered during the year on live ($49.8 million) and simulcast races ($383 million). Approximately 80% of the money wagered on harness and 76% from Thoroughbred racing is returned to the betting public with the remainder distributed among the state (in the form of taxes), purses for the horsemen, and operating costs.

Approximately 6,177 owners, trainers, grooms, exercise riders, feed and tack suppliers, veterinarians, farriers, and other industry professionals occupy the stable area at the Thoroughbred tracks during the meets. In addition, 4,274 equine professionals occupy the stable area of the harness tracks. During the meets, the tracks employs additional people for security, concessions, maintenance and mutual tellers that work on the front of the track.

Racing provides a significant economic contribution to Pennsylvania's horse industry. Horse racing in Pennsylvania has generated substantial economic benefits to the state and has been a vital cornerstone to the horse industry.

*Information taken from the 2001 Annual Report, State Racing Commission, Pennsylvania Department of Agriculture.

Farm and Ranch Work

The Amish community is a unique part of Pennsylvania's equine industry. The Amish horse and buggies are a common sight on Pennsylvania roads and a major attraction for visitors to the state. The Amish have a high regard for the customs and beliefs of their founders. They continue to plow and farm with horses and travel by horse and buggies. Many of Pennsylvania draft horses are used today for farming and logging.

Breeding, raising, training and using horses for farm work continues to be necessary. There is still a need for a skilled, usable horse to work in fields and handle special tasks like logging timber, in addition to working cattle.

Rodeos

Due to increasing interest in the cowboy traditions, rodeos are among the horse industry's most popular spectator events, requiring many highly trained horses for a variety of events, from team roping and penning to saddle bronc riding. In January, Pennsylvania annually, hosts one of the

largest attended Rodeos in the United States. This event attracts 15,000 people and is conducted during the Pennsylvania Farm Show "High School Rodeo". *

*Source United States High School Rodeo Association, Denver, Colorado.

Other Activities

Across the state, horses are involved in other activities from police work to Polocrosse. Among the most rewarding uses of horses are therapeutic riding programs for children and adults. Riding a horse offers innumerable benefits to the rider regardless of physical or mental abilities. Pennsylvania is reported to be ranked 5th in United States in number of therapeutic horseback riding programs (according to NAHRA) and is home to the largest therapeutic riders' event on the East coast. Pennsylvania's State Police Mounted unit is one of the superior mounted units in the nation, serving at the inaugurations of many Presidents. Senior citizens continue to ride for exercise and pleasure, enjoying the opportunity to experience our national forests and public lands.

The city of Philadelphia has its own inner-city equine community of police horses, carriage horses, work-to-ride youth programs, and even cowboy units that rodeo. Philadelphia County was reported to house nearly 1,000 horses. The Fairmont Park System has 100 miles of trails located in the middle of Philadelphia, where equestrians enjoy trail riding. The carriage companies add to Philadelphia's heritage with horses driving through the city streets.

Youth and Education

Horses also are utilized to educate youth and students about the responsibility of caring for a living creature. Pennsylvania is part of the largest Pony Club Regions in the US. The 4-H Youth Horse Program is considered one of the best in the country. In Pennsylvania, there are approximately 7,500 youth enrolled in 4-H clubs taking a horse project, 90 National High School Rodeo members, 691 U. S. Pony Club members and hundreds enrolled in specific breed youth associations and FFA. These equine youth programs help to develop life skills and promote knowledge of horsemanship and responsible animal care. Horses are utilized as teaching tools and as a means to improve life skills for all youth, including rural and urban youth, and youth at risk. Another role of the horse is to strengthen the family unit through work and recreation in horse activities. The well-being of children, youth and families is essential to the

well being of our society, now and in the future, providing for a strong workforce and vital community.

Horse Owners and Participants

Many Pennsylvanians are involved in the horse industry. The number of jobs associated with the industry is endless a partial list includes but is not limited to grooms, trainers, veterinarians, farriers, breed organizations, stewards, judges, announcers, publicists, commercial suppliers, tack shop employees, riding apparel designers, sale companies, accountants, saddle and harness makers, transporters and other support industries such as feed and hay producers. Numerous Pennsylvania magazines, newspapers and newsletters are devoted to horses and the equine events.

The University of Pennsylvania, New Bolton Center has a world-renowned equine veterinary program. Several Colleges (The Pennsylvania State University, Delaware Valley and Wilson Colleges) in the Commonwealth offer an equine science curriculum. Numerous other schools provide equine courses.

In 2001, 6,177 people were issued licenses to work at Pennsylvania horse racing tracks (State Horse Racing Commission, 2001 Annual Report). Pennsylvania's racetracks, for example, require: security personnel, parking attendants, restaurant workers, mutual clerks, marketing, management and accounting staffs, as well as breeders, owners, trainers, grooms, jockeys, drivers, exercise riders, veterinarians, feed and equipment suppliers.

Involvement in the horse industry is not limited to any particular demographic group. A horse can fit into any type of lifestyle and horse owners are very diverse. The horse industry is a broad-based activity with stakeholders that range from track owners and Olympic riders to large numbers of recreational and show horse riders, small acreage owners, moderate and low-income families, stable employees and volunteers

Appendix A: Methodology and Definitions

Methodology

Prior to the survey, a comprehensive list of equine related names and addresses within the state of Pennsylvania did not exist. List development began in May 2002 with the primary goal of developing a population representative of all equine breeds, disciplines, and economic activity within the state. Pennsylvania membership rosters for national breed organizations, equine show/sport organizations, racetrack licensed individuals, county 4-H clubs, and local groups and associations were combined into a computer database. Racetracks and commercial service industries were not included in the population. Each name and corresponding address was identified by a numeric source code. One hundred forty one different source codes are represented within the population. Every name and address generated through list development was provided for completely confidential use in this study and no individual data can be identified.

When multiple sources exist for population development, duplication is inevitable. Once all contacts for membership rosters had been exhausted, the population list was sorted electronically first by name, then by address, and finally by source code to identify and then delete any duplicate listings. If a duplicate listing was found that originated from multiple source codes, the individual source codes were listed and maintained for each name and address before the duplicate record was deleted. The final population totaled 31,195 equine related addresses.

Once the population was established, the survey questionnaire was developed. Throughout the survey design stages, needs assessment and feedback was provided by an industry advisory panel composed of representatives from the Pennsylvania Department of Agriculture, the Pennsylvania State Horse and Harness Racing Commissions, the Pennsylvania Equine Council and other supporting equine organizations and individuals. Two separate survey instruments were developed, one with terminology reflective of the horse racing sector and the second encompassing the general equine industry. When the survey design was completed, a random sample of equine related addresses was chosen from the previously collected list population.

From the population of 31,195 addresses, 2,867 were identified as specializing in the horse racing industry. These separated addresses were treated as a census of the racing segment, and all 2,867 addresses were mailed a survey questionnaire. The balance of the population addresses (28,328) were utilized to select a random sample that was stratified by source code. To ensure that each source code was sampled, 25% (7133 available surveys / 28,328 general list population) of the addresses in each source code were randomly chosen. In total, ten thousand surveys were allotted for mailing. Therefore, 2,867 surveys were racing related and the balance of 7,133 surveys was general industry focused. This sample selection and design ensured an equal geographic and discipline/breed representation that was reflective of the list population collected.

The racing specific surveys and instructions were mailed to the racing industry sample in October 2002. The general surveys and instructions were mailed to the general industry sample in November 2002. Follow up for both surveys began two weeks after initial survey mailing and consisted of three phases occurring two weeks apart. Any non respondents received a reminder postcard as the first phase. The second phase mailed an additional copy of the respective survey and instructions to all non-respondents. The third and final mailing, again to the remaining non-respondents for each of the surveys (racing and general industry) was a final reminder postcard.

Total response rates were monitored weekly. Rates were reviewed separately for both the racing and general industry surveys, as well as summarized for the entire project. Response by source code was

monitored monthly to again ensure sample source code representation. All survey related mailings were completed six weeks after the initial distribution of the industry specific survey and instructions. Collection of returned surveys terminated on December 31, 2002 to allow for data entry and verification before analysis.

A sample total of 10,000 surveys were allotted for distribution and data collection. Surveys were mailed to 2,867 individuals directly involved in the horse racing industry. Five hundred sixty seven of those surveys were returned for a response rate of 20%. The remaining 7,133 surveys were mailed to the general equine industry random sample. Two thousand two hundred eighty five surveys were returned, reflective of a 32% response rate.

In this analysis, we estimate the total contribution of the Equine Industry to the Pennsylvania economy using an economic impact software program known as IMPLAN (Impact Analysis for Planning). Originally developed by the US Forest Service, IMPLAN is an input-output model that is widely used to quantify how businesses use technology, labor and materials (i.e., inputs) to produce a product (i.e., output). The IMPLAN software and database (www.implan.com) establishes the characteristics of economic activity in terms of 10 broad industrial groups, involving as many as 528 sectors. In practice, the IMPLAN model is used in every state and hundreds of communities across the nation to catalog economic activity and predict the effect of alternative policies and various economic changes. In this analysis we use IMPLAN to generate information on a number of important economic indicators.

In order to use models such as IMPLAN to examine the role of an industry in the state economy, analysts should have information on the final demand for a product(s). The income, and asset and operating expenditure data we collected in the survey serve as the basis for this analysis. In the study, both racing and general respondents were asked to report their income from more than 15 equine-related sources, and total spending on 10 categories of assets and 26 categories of expenditures. These responses were then aggregated the responses to determine the total income and expenditures in Pennsylvania for the population, by category. Recognizing that some of the purchases were made out-of-state, adjustments were made to the total expenditures by category so as to include only purchases made within Pennsylvania. The in-state expenditures were the basis of the analysis, and were the largest component of the industry. When examining asset expenditures, only at purchases made in 2001 were included —it was assumed that the annual asset purchases are fairly constant over time. Income data from out-of-state sales was used to supplement the in-state expenditure data in order to capture industry exports.

In this study, final demand is expressed by the total expenditures or income by category. To determine the direct and secondary effects, the population data was matched with the IMPLAN sectoring scheme, and entered the in-state expenditures and out-of-state income as a final demand “shock” to the model. This generates estimates of both the direct and indirect economic effects.

Several categories of income, assets and expenditures for which data was gathered data were omitted from the analysis, including land, payroll and property taxes, and workmen’s compensation. Furthermore, horse purchase expenditures were deflated to account for the “used horse or second career horses” market (which may make up 75 percent of all purchases) and ensure consistency with the base Pennsylvania model. As appropriate, income and expenditures were entered either on an industry or a commodity basis. For the retail sectors, IMPLAN’s default household margins were applied. Secondary effects are based on the IMPLAN Type SAM multipliers, with households endogenous. The user of this data must be cautioned against interpreting the results as impact--in order to do so, one must assume that the money spent on equine-related businesses would not otherwise be spent in Pennsylvania. The multipliers for the model are based on data from 2000, the most recent year for which data is available. Because IMPLAN models are quite stable from year-to-year, the 2000 multipliers were applied to 2001 data to determine the

results provided in Table 1. In the remainder of this appendix multipliers are defined and other topics related to this analysis are described. The material is largely drawn from the IMPLAN User's Guide. A detailed description of the methods and the IMPLAN sectoring scheme used are available in a technical appendix on the website.

Definitions

Multipliers

Input-output models are driven by final consumption (or final demand). Industries respond to meet demands directly or indirectly (by supplying goods and services to industries responding directly). Each industry that produces goods and services generates demand for other goods and services and so on, round by round. These so called *ripple effects* are described by **multipliers**. A multiplier examines how much spin off economic activity is generated by a marginal change in an industry. For example, multipliers can describe how many total jobs in the economy are created when an industry adds one new job. In general, input-output modelers describe three types of multiplier effects when examining the role of an industry in the state economy.

1. The **direct effect** is the contribution of the industry itself. It may represent the total revenue (output), employment or employee compensation. The value of the direct effect multiplier is always 1.
2. The **indirect effects** are effects of the industry on its suppliers. This multiplier captures the additional activity in businesses that provide inputs to the industry of interest.
3. The **induced effects** capture the impacts of changes in spending from households as income changes due to the direct effect. This effect captures the impact of spending by a) employees of the industry being studied, and b) employees of the input supplying businesses. These effects usually show up in retail and service industries. In the study here, the *secondary effects* are the sum of the indirect and induced effects.

In this study we use the IMPLAN type SAM multipliers. The Type SAM multiplier is obtained according to the following formula:

Type SAM multiplier = direct effect + indirect effect + induced effect) ÷ direct effect

Input-output analysis is a means of examining the relationships within an economy both between businesses and between businesses and final consumers. It captures all monetary transactions for consumption in a given time period. The resulting mathematical formulae allow one to examine the effects of change in one or several economic activities on an entire economy.

Industry output is a single number in dollar for each industry. The dollars represent the value of an industry's total production. In IMPLAN, the output data are derived from a number of sources including Bureau of Census economic censuses and the Bureau of Labor Statistics employment projections. Another way to think about industry output is as the total revenue generated by an industry.

Employment is total wage and salary employees and self-employed jobs in a region. It includes both full-time and part-time workers and is measured in total jobs. The data sets used to derive employment totals in the IMPLAN model are the ES-202 data, County Business Patterns, and the Regional Economic Information System (REIS) data.

While output captures the total dollar value of economic activity, its use as a measure of economic activity can be overstated in that it captures the value of all intermediate stages of the production process

as well. For example, the price one pays for a car at the local auto dealership in large part represents economic activity that occurred in the production process. If one were to consider the price one paid for a car as the contribution to the local economy, then one would likely be overstating its impact. This is called double counting. To avoid double counting, economists usually examine economic contributions in terms of **Value Added**. At the local level, value added is equivalent to the concept of Gross Domestic Product in that it examines the unique contribution of an industry to the overall economy. In input-output analysis, value added consists of four components.

1. **Employee compensation** is wage and salary payments as well as benefits including health and life insurance, retirement payment, and any other non-cash compensation. It includes all income to workers paid by employers.

2. **Proprietary income** consists of payments received by self-employed individuals as income. This is income recorded on Federal Tax Form 1040C. This includes income received by private business owners, doctors, lawyers and so forth. Any income a person receives for payment of *self-employed* work is counted here. Note: labor income is the sum of employee compensation and proprietary income.

3. **Other property type income** consists of payments for interest, rent, royalties, dividends and profits. This includes payments to individual in the form of rents received on property, royalties from contracts, and dividends paid by corporations. This also includes corporate profits earned by corporations.

4. **Indirect business taxes** consist primarily of excise and sales taxes paid by individual to businesses. These taxes occur during the normal operation of these businesses but do not include taxes on income or profit.

Table A1: Population Numbers and Values by Breed:

Breeds	Total PA Population Numbers *	Total Population Value **	PA Per Head Average Value
American Quarter Horse	40,110	$174,560,439	$4,818
Appaloosa	7,985	$22,496,923	$3,278
Tennessee Walking	5,321	$16,591,746	$3,205
American Saddlebred	2,766	$8,238,165	$3,616
Arabians and Half Arabs	11,154	$39,004,068	$3,982
Morgan	10,136	$38,141,628	$4,081
Palomino	2,797	$11,699,300	$4,647
Pinto	2,740	$4,497,235	$2,055
Paint	5,553	$27,997,596	$5,367
Miniature Horse	3,450	$4,709,146	$1,467
Standardbred (non racing)	6,317	$23,072,337	$4,296
Thoroughbred (non racing)	9,567	$57,553,485	$6,801
Other Light Horse Breeds	7,248	$34,879,627	$5,145
Trakehner	397	$5,431,384	$14,710
Hanoverian	824	$16,712,454	$20,277
Other Warmblood Breeds	3,755	$56,456,043	$15,568
Belgian	6,202	$11,780,168	$2,187
Clydesdale	132	$504,807	$5,250
Percheron	3,000	$6,619,230	$2,731
Other Draft Horse Breeds	1,851	$9,171,875	$5,087
Hackney	1,635	$1,526,442	$1,094
Shetland	1,538	$922,676	$728
Welsh	3,582	$16,882,692	$4,911
Other Pony Breeds	3,822	$8,904,927	$2,563
Mule and Donkey	8,665	$11,307,692	$1,566
Unidentified Breeds	37,636	n/a	n/a
Racehorse Breeds:			
Standardbreds Racing	14,815	$69,707,000	$4,703
Thoroughbreds Racing	11,550	$153,481,000	$13,294

* Total equid numbers may not tally because of rounding and approximation.
**Numbers were rounded to the nearest whole dollar.

Table A2: Percent of Horses by Breed for Different Disciplines and Uses* (General Survey Only)

Breeds	Competition/ Showing	Work/ Farming	Racing	Youth Activity	Tourism/ Guest Farm	Trail Riding/ Recreation	Breeding	Other Activities
Am Quarter Horse	24.5%	3%	0.21%	10%	1%	32%	20%	9%
Appaloosa	19.%	1%	0.18%	9%	1%	38%	23%	9%
Tenn. Walking	3%	1%	0%	2%	2%	67%	19%	7%
Saddlebred	13%	24%	0%	5%	3%	16%	16%	25%
Arabian	21%	0.76%	0.19%	4%	1%	37%	26%	10%
Half-Arabian	32.%	1%	0.41%	11%	1%	35%	13%	7%
Morgan	14%	9%	0%	4%	1 %	21%	38%	13%
Palomino	20%	0%	0%	21%	0%	34%	16%	10%
Pinto	18%	4%	0%	12%	0%	34%	15%	18%
Paint	24%	2.5%	0.20%	8%	0%	27%	32%	7%
Miniature Horse	19%	0%	0%	13%	1%	1%	48%	18%
Standardbred	1.3%	27%	9%	3%	0.50%	11%	17%	32%
Thoroughbred	31%	1%	11%	6%	0.50%	13%	22%	16%
Other Light Breeds	14%	3%	1%	11%	1%	38%	15%	18%
Trakehner	41%	0%	0%	0%	0%	17%	41%	0%
Hanoverian	51%	0%	0%	0%	0%	11%	24%	13%
Other Warmbloods	46%	5%	0%	5%	0%	13%	20%	11%
Belgian	10%	48%	0%	1%	4%	4%	28%	5 %
Clydesdale	13%	0%	0%	0%	25%	25%	38%	0%
Percheron	8%	52%	0%	2%	2%	11%	18%	8%
Other Draft Breeds	19%	23%	0%	6%	0%	16%	28%	7%
Hackney	25%	9%	0%	25%	0%	22%	16%	3%
Shetland	8%	4.60%	0%	31%	1%	12%	23%	21%
Welsh	31%	1%	0%	24%	1%	19%	11%	13%
Other Pony Breeds	23%	1%	0%	23%	2%	23%	13%	15%
Donkey/Mule	0.05%	47%	0%	5%	2%	19%	14%	13%
TOTAL All Breeds	**20%**	**8%**	**1%**	**8%**	**1%**	**27%**	**22%**	**12%**

*Uses are not mutually exclusive.

*Data from the Racehorse Industry was not included in this table.

*Percentages were rounded up.

Table A3. Distribution of PA Total Equine Population by Counties and Regions*

NORTHWEST REGION	RACEHORSE POPULATION	GENERAL POPULATION	TOTAL POPULATION	COUNTY RANK
Clarion	0	805	805	58
Crawford	99	3,477	3,576	10
Erie	47	2,398	2,445	21
Forest	0	1,302	1,302	46
Lawrence	12	976	988	53
Mercer	310	2,244	2,554	17
Venango	70	3,169	3,239	13
Warren	0	1,507	1,507	41
Total	**538**	**15,878**	**16,416**	

NORTH CENTRAL REGION	RACEHORSE POPULATION	GENERAL POPULATION	TOTAL POPULATION	COUNTY RANK
Cameron**	0	100	100	67
Centre	363	1,798	2,161	28
Clearfield	18	1,456	1,474	44
Clinton	0	1,901	1,901	33
Elk	0	274	274	66
Jefferson	129	1,730	1,859	34
McKean	0	993	993	52
Potter	0	394	394	65
Total	**510**	**8,646**	**9,156**	

SUSQUEHANNA REGION	RACEHORSE POPULATION	GENERAL POPULATION	TOTAL POPULATION	COUNTY RANK
Bradford	0	2,329	2,329	23
Columbia	111	2,209	2,320	24
Lycoming	29	1,678	1,707	35
Montour	18	445	463	63
Northumberland	193	942	1,135	47
Snyder	0	599	599	59
Sullivan	0	411	411	64
Tioga	82	1,250	1,332	45
Union	59	1,422	1,481	43
Total	**492**	**11,285**	**11,777**	

Table A3. (Cont'd) Distribution of PA Total Equine Population by Counties and Regions*

NORTHEAST REGION	RACEHORSE POPULATION	GENERAL POPULATION	TOTAL POPULATION	COUNTY RANK
Carbon	88	377	465	62
Lackawanna	23	1,918	1,941	32
Luzerne	704	1,627	2,331	22
Monroe	35	1,541	1,576	38
Pike	164	308	472	61
Susquehanna	0	2,535	2,535	19
Wayne	76	1,901	1,977	31
Wyoming	0	891	891	55
Total	**1,090**	**11,098**	**11,723**	

SOUTHEAST REGION	RACEHORSE POPULATION	GENERAL POPULATION	TOTAL POPULATION	COUNTY RANK
Berks	1,445	4,796	6,241	5
Bucks	948	4,847	5,795	6
Chester	4,286	11,218	15,504	2
Delaware	0	531	531	60
Lehigh	281	1,713	1,994	29
Montgomery	351	3,049	3,400	11
Northampton	64	959	1,023	51
Philadelphia	88	839	927	54
Schuylkill	392	685	1,077	50
Total	**7,855**	**28,637**	**36,492**	

CAPITAL REGION	RACEHORSE POPULATION	GENERAL POPULATION	TOTAL POPULATION	COUNTY RANK
Adams	1,652	3,460	5,112	8
Cumberland	199	2,603	2,802	14
Dauphin	851	4,522	5,373	7
Franklin	29	2,501	2,530	20
Lancaster	3,012	17,384	20,396	1
Lebanon	832	2,432	3,264	12
York	2,857	9,232	12,089	3
Total	**9,432**	**42,134**	**51,566**	

Table A3. (Cont'd) Distribution of PA Total Equine Population by Counties and Regions*

SOUTH CENTRAL REGION	RACEHORSE POPULATION	GENERAL POPULATION	TOTAL POPULATION	COUNTY RANK
Bedford	205	1,370	1,575	39
Blair	88	2,449	2,537	18
Cambria	41	2,278	2,319	25
Fulton	99	1,011	1,110	49
Huntingdon	0	1,987	1,987	30
Juniata	304	565	869	56
Mifflin	158	1,387	1,545	40
Perry	29	1,661	1,690	36
Somerset	18	788	806	57
Total	**942**	**13,496**	**12,863**	

SOUTHWEST REGION	RACEHORSE POPULATION	GENERAL POPULATION	TOTAL POPULATION	COUNTY RANK
Allegheny	1,550	3,460	5,112	8
Armstrong	111	1,370	1,481	42
Beaver	70	1,524	1,594	37
Butler	351	3,528	3,879	9
Fayette	425	702	1,127	48
Greene	29	2,175	2,204	26
Indiana	357	2,295	2,652	16
Washington	2,250	6,320	8,570	4
Westmoreland	363	2,395	2,658	15
Total	**5,506**	**23,769**	**29,277**	
Equid Unidentified by County		37,294	37,294	

* Total equid numbers may not tally because of rounding and approximation.
** In the General Survey, Counties with less than 100 head.

Table A4. Distribution by County & Region for General Equine Population by Equine Values and Related Acreage (Ranked by Equine)

NORTHWEST REGION	TOTAL EQUINE	COUNTY RANK	EQUINE VALUE	RELATED ACRES
Clarion	805	53	$3,669,924	8,098
Crawford	3,477	9	$15,850,949	20,210
Erie	2,398	18	$10,931,689	15,168
Forest	1,302	44	$5,934,345	64,796
Lawrence	976	48	$4,450,759	3,439
Mercer	2,244	23	$10,228,937	20,073
Venango	3,169	11	$14,445,446	9,043
Warren	1,507	38	$6,871,347	6,536
Total	**15,878**	**Region Rank- 4**	**$72,383,396**	**147,363**

NORTH CENTRAL REGION	TOTAL EQUINE	COUNTY RANK	EQUINE VALUE	RELATED ACRES
Cameron*	100	67	$455,898	0
Centre	1,798	30	$8,198,767	10,386
Clearfield	1,456	39	$6,637,097	10,509
Clinton	1,901	29	$8,667,268	13,798
Elk	274	66	$1,249,336	1,000
Jefferson	1,730	31	$7,886,433	19,512
McKean	993	47	$4,528,843	2,672
Potter	394	63	$1,795,920	2,891
Total	**8,646**	**Region Rank- 8**	**$39,419,562**	**60,768**

SUSQUEHANNA REGION	TOTAL EQUINE	COUNTY RANK	EQUINE VALUE	RELATED ACRES
Bradford	2,329	19	$10,619,355	24,636
Columbia	2,209	24	$10,072,770	13,085
Lycoming	1,678	33	$7,652,182	19,279
Montour	445	61	$2,030,171	5,453
Northumberland	942	50	$4,294,592	7,207
Snyder	599	58	$2,732,922	10,811
Sullivan	411	62	$1,874,004	4,522
Tioga	1,250	45	$5,700,095	30,131
Union	1,422	40	$6,480,930	4,111
Total	**11,285**	**Region Rank- 6**	**$51,457,021**	**119,235**

Table A4. (Cont'd) Distribution by County & Region for General Equine Population by Equine Values and Related Acreage (Ranked by Equine)

NORTHEAST REGION	TOTAL EQUINE	COUNTY RANK	EQUINE VALUE	RELATED ACRES
Carbon	377	64	$1,717,837	945
Lackawanna	1,918	27	$8,745,351	6,097
Luzerne	1,627	35	$7,417,932	14,880
Monroe	1,541	36	$7,027,514	21,416
Pike	308	65	$1,405,503	5,864
Susquehanna	2,535	14	$11,556,357	27,144
Wayne	1,901	28	$8,667,268	6,138
Wyoming	891	51	$4,060,342	10,139
Total	**11,098**	**Region Rank- 7**	**$50,598,104**	**92,623**

SOUTHEAST REGION	TOTAL EQUINE	COUNTY RANK	EQUINE VALUE	RELATED ACRES
Berks	4,796	6	$21,863,378	22,019
Bucks	4,847	5	$22,097,628	28,267
Chester	11,218	2	$51,144,687	48,080
Delaware	531	60	$2,420,588	4,878
Lehigh	1,713	32	$7,808,349	8,742
Montgomery	3,049	12	$13,898,862	8,536
Northampton	959	49	$4,372,676	11,427
Philadelphia	839	52	$3,826,091	713
Schuylkill	685	56	$3,123,340	5,316
Total	**28,637**	**Region Rank- 2**	**$130,555,599**	**137,978**

CAPITAL REGION	TOTAL EQUINE	COUNTY RANK	EQUINE VALUE	RELATED ACRES
Adams	3,460	10	$15,772,865	8,372
Cumberland	2,603	13	$11,868,691	16,072
Dauphin	4,522	7	$20,614,042	18,073
Franklin	2,501	15	$11,400,190	14,510
Lancaster	17,384	1	$79,254,744	79,101
Lebanon	2,432	17	$11,087,856	11,003
York	9,232	3	$42,087,002	61,344
Total	**42,134**	**Region Rank- 1**	**$192,085,390**	**208,475**

Table A4. (Cont'd) Distribution by County & Region for General Equine Population by Equine Values and Related Acreage (Ranked by Equine)

SOUTH CENTRAL REGION	TOTAL EQUINE	COUNTY RANK	EQUINE VALUE	RELATED ACRES
Bedford	1,370	42	$6,246,679	20,649
Blair	2,449	16	$11,165,939	15,415
Cambria	2,278	22	$10,385,104	17,401
Fulton	1,011	46	$4,606,926	35,666
Huntingdon	1,987	26	$9,057,685	10,359
Juniata	565	59	$2,579,755	5,440
Mifflin	1,387	41	$6,324,763	11,112
Perry	1,661	34	$7,574,099	8,098
Somerset	788	54	$3,591,841	3,412
Total	**13,496**	**Region Rank- 5**	**$61,532,791**	**127,552**

SOUTHWEST REGION	TOTAL EQUINE	COUNTY RANK	EQUINE VALUE	RELATED ACRES
Allegheny	651	57	$2,967,173	9,002
Armstrong	1,370	43	$6,246,679	13,455
Beaver	1,524	37	$6,949,431	6,687
Butler	3,528	8	$16,085,199	24,677
Fayette	702	55	$3,201,423	3,398
Greene	2,175	25	$9,916,603	25,664
Indiana	2,295	21	$10,463,188	12,839
Washington	6,320	4	$28,812,808	38,324
Westmoreland	2,295	20	$10,463,188	9,112
Total	**20,860**	**Region Rank- 3**	**$95,105,692**	**143,158**

* In the General Survey, Counties with less than 100 head

Table A5: Distribution of Pennsylvania's Equine Related Acreage by County for Both the General and Racing Populations

County	General Acres	Racing Acres	Total Equine Acres
Adams	8,372	4,914	13,286
Allegheny	9,002	4,300	13,302
Armstrong	13,455	1,468	14,923
Beaver	6,687	667	7,354
Bedford	20,649	503	21,152
Berks	2,019	2,867	24,886
Blair	15,415	819	16,234
Bradford	24,636	0	24,636
Bucks	28,267	1,363	2,9630
Butler	24,677	1,457	26,134
Cambria	17,401	59	17,460
Cameron	0	0	0
Carbon	945	392	1,337
Centre	10,386	1,351	11,737
Chester	48,080	19,299	67,379
Clarion	8,098	0	8,098
Clearfield	10,509	88	10,597
Clinton	1,3798	0	13,798
Columbia	13,085	649	13,734
Crawford	2,0210	1,661	21,871
Cumberland	16,072	2,954	19,026
Dauphin	18,073	2,065	20,138
Delaware	4,878	0	4878
Elk	1,000	0	1,000
Erie	15,168	176	15,344
Fayette	3,398	1,685	5,083
Forest	64,796	0	64,796
Franklin	14,510	29	14,539
Fulton	35,666	532	36,198
Greene	25,664	936	26,600
Huntingdon	10,359	0	10,359
Indiana	12,839	2,469	15,308
Jefferson	19,512	3,422	22,934
Juniata	5,440	2,761	8,201
Lackawanna	6,097	275	6,372
Lancaster	79,101	7,862	86,963
Lawrence	3,439	351	3,790
Lebanon	11,003	1,626	12,629
Lehigh	8,742	567	9,309
Luzerne	14,880	556	15,436
Lycoming	19,279	585	19,864
Mckean	2,672	0	2,672
Mercer	20,073	2,375	22,448
Mifflin	11,112	468	11,580
Monroe	21,416	187	21,603
Montgomery	8,536	1,714	10,250
Montour	5,453	433	5,886
Northampton	11,427	2,223	13,650

Northumberland	7,207	521	7,728
Perry	8,098	18	8,116
Philadelphia	713	0	713
Pike	5,864	2,469	8,333
Potter	,2891	0	2,891
Schuylkill	5,316	1,006	6,322
Snyder	10,811	0	10,811
Somerset	3,412	82	3,494
Sullivan	4,522	0	4,522
Susquehanna	27,144	0	27,144
Tioga	30,131	1,638	31,769
Union	4,111	0	4,111
Venango	9,043	439	9,482
Warren	6,536	0	6,536
Washington	38,324	1,4801	53,125
Wayne	6,138	152	6,290
Westmoreland	9,112	1,966	11,078
Wyoming	10,139	0	10,139
York	6,1344	4,259	65,603
TOTAL	**1,037,153**	**105,458**	**1,142,611**

*Includes values calculated for those survey respondents that specified a county location for their operation.

References:

National Animal Health Monitoring System, United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services, 1998. Equine: Baseline Reference of 1998 Equine Health and Management, vol. 1. Fort Collins, CO: USDA:APHIS:VS, attn. NAHMS.

Smith, C.A. and K. Smith-Wells, 1993. Pennsylvania Equine Industry Profile. University Park, PA: The Pennsylvania State University, College of Agricultural Sciences, Cooperative Extension.

PSACR, Pennsylvania State Association of County Fairs 2003 Directory, 2003, Gratz, PA.

Pennsylvania Department of Agriculture, 2001 Annual Report State Horse Racing Commission, 2002, Harrisburg, PA.

Lawson, S., Pennsylvania Equestrian, May 2003, Lancaster, PA. (written communication)

Sturman, K.,National High School Rodeo Association, May 2003, Denver, CO. (personal communication)

North American Riding for the Handicapped Association, Denver, CO.
Web address: www.narha.org.