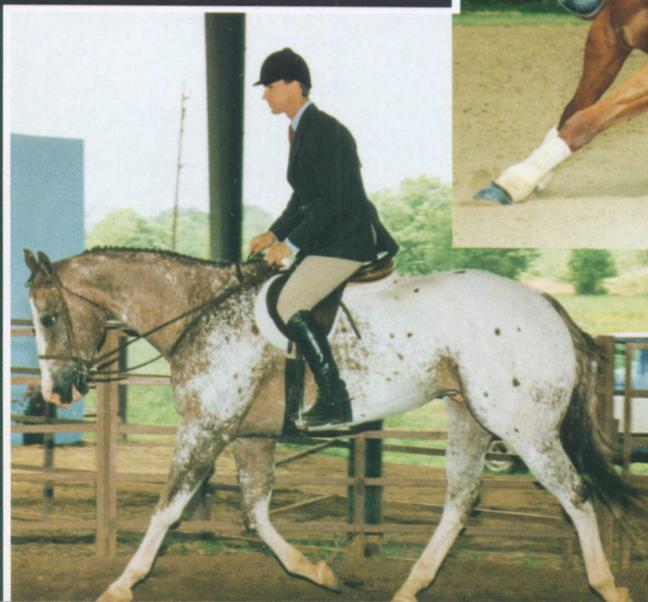




**O**RGANIZATION,  
IMPACTS, AND  
PROSPECTS FOR  
THE BREEDING  
AND RAISING OF  
HORSES IN  
ALABAMA



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*Information contained herein is available to all  
without regard to race, color, sex, or national origin.*

# ORGANIZATION, IMPACTS, AND PROSPECTS FOR THE BREEDING AND RAISING OF HORSES IN ALABAMA

R.D. BROADWAY, J.J. MOLNAR, C.A. McCALL, AND R.M. PENDERGRASS

## INTRODUCTION

Horses are an integral part of Alabama life. Horse production, training, and events create major contributions to the Alabama economy. Every county has horse farms and organizations, and some have a regular schedule of equine activities. Breeding and sales, racing, recreation, showing, and other endeavors are significant sources of income, employment, and leisure in the state. Various segments of the horse industry are associated with diverse clusters of institutions, professions, and activities. Each horse breed and activity has unique organizational arrangements for registration, competition, and recognition.

Little is known, however, about the importance of the horse industry in Alabama and the nature of the barriers and constraints that presently inhibit its growth and expansion. Statistical information is not generally available because horses are not considered a food or fiber commodity. The data available are irregularly updated, fragmented, and from disparate sources.

Following the decline in numbers of horses on farms in the 1950s, detailed enumeration of this class of livestock by the Agricultural Statistics Service was discontinued. The Census of Agriculture does continue to report the number of horses on farms every five years. Horses in locations other than commercial farms are not enumerated by any agency. Some of the national breed associations maintain accurate records and facilitate the registration of young horses. However, other records are rendered less useful by registration of horses in several related breed associations and fee structures that discourage registration of every foal. Some equine census information is occasionally collected by animal health

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authorities for disease management purposes. In Alabama, the state veterinarian is responsible for collecting information in the case of equine disease outbreaks. The United States Equine Marketing Association issues the only annual state-level horse population estimates by breed.

Several segments of the Alabama horse industry can be identified. An estimated 4.4% of Alabama households own at least one horse. A number of farms and private individuals breed, train, and stable horses for show and pleasure. The many livestock arenas across the state make Alabama a favorable environment for rodeos, horse shows, and other competitions. Trail riding is an increasingly popular activity. A racetrack operates in Birmingham. Polo clubs are located in Baldwin, Madison, and Shelby counties.

A number of agricultural endeavors are directly tied to horse production and maintenance. Alabama farmers raise and sell oats, corn, clover, alfalfa, hay, and other feed crops to horse owners. Bedding straw and wood shavings also are agricultural commodities regularly used by horse owners.

Because horses represent high-value individual animals, veterinary services and health care products are vital to their maintenance and well-being. Horse activities create demand for accessories such as clothing and tack needed for participation in events, as well as the basics needed for recreational riding.

Horses are a significant source of tourism and recreational spending. Many horse activities are spectator sports. Most single or seldom-held events tend to draw only a small number of onlookers, but these spectators may come from other counties and even from outside the state. Regularly held events tend to draw large crowds of local spectators.

Some types of equine activities are relatively capital-intensive; that is, they require more and higher-valued horses, equipment, and other types of investment. For example, polo and professional showing require relatively high levels of expenditure but tend to draw small numbers of upper-income participants and spectators. Other capital-intensive activities, such as racing, may have a broader public following.

The prospects for the horse industry in Alabama are dependent on several factors. Alabama land costs and climate are favorable for animal production. Several agricultural and two veterinary schools provide educational services and institutional support for horse breeding and maintenance. Two privately owned state-of-the-art equine surgical facilities are located in Birmingham. More than 15 large show arenas are located statewide in diverse locales.

The Birmingham racetrack is the focal point of development for the racing industry in the state. It takes three years of growth and training to bring a horse from conception to the racetrack. The expanding network of horse breeding farms, training facilities, and horse service suppliers depend on the existence and prospects of a viable racing program in Alabama.

A racetrack with regular yearly scheduled races has a direct bearing on the horse breeding industry. In order for breeding to expand, there must be a market for Alabama-bred foals. The breeders must be able to attract new owners and be able to sell their young stock. Without regular racing competition, the vigor and

dynamism infused into the horse breeding industry by racing is lost. While Thoroughbreds and Quarter Horses are currently the only breeds competing at the Birmingham track, other horse breeds, such as Standardbreds, Appaloosas, Arabians, and Paints, also have racing segments. A viable track may influence the breeding industry and marketing of these horse breeds in Alabama.

This report provides an overview of the Alabama horse industry, its organization, and an assessment of its socioeconomic impact. The study addresses: (1) the structure of the horse industry in Alabama; (2) the meaning of horse ownership, maintenance, and use for the Alabama economy; and (3) the overall implications and prospects of the industry for Alabama agriculture and the state. It endeavors to demonstrate the relative importance of horses and equine activities as a component of the Alabama economy by identifying the major ways that horse ownership and use induce expenditures and create jobs in the state.

## METHOD

This review consisted of telephone and personal interviews with more than 50 horse breeders and owners and more than 30 individuals involved in various other aspects of the horse industry. The Birmingham Race Course provided financial information and the management's perspective on current industry issues. Also, equine events were observed, and trainers and show participants representing several breeds were interviewed.

To analyze the impacts of the horse industry on the state, profiles of average annual expenditures for racing, show, breeding, and recreational horses were developed. Interviews with suppliers of various goods and services, horse owners, and breeders were used to arrive at these figures.

The major events and activities that regularly involve horses in Alabama were identified. The extent of tourism and spectator activity associated with these events was obtained from responsible officials or estimated. The staff of national and state equine organizations, and individuals involved in showing, polo, dressage, rodeo, and other activities, also provided much of this information.

Estimates of the numbers of racing Thoroughbreds and Quarter Horses in the state were derived from Birmingham Racing Commission records and the Jockey Club (National Thoroughbred Registry) (12). In 1991, the commission sent questionnaires to all licensed owners and trainers. Enough completed returns were available to corroborate Auburn University estimates of cash outlays by horsemen. The commission also provided financial and attendance information for the Birmingham racetrack.

Estimates of horse numbers were requested from Alabama Cooperative Extension Service county agent-coordinators in 1991. This information was then supplemented and modified through reviews by veterinarians, breeders, and others involved in the industry.

The report identifies major categories of expenditures and estimates aggregate amounts for all horses as well as for several major breed categories. The year 1989 is used as a base year for these estimates, but the estimates computed for this

report may be most accurately interpreted as composite figures that portray the basic dimensions and relative magnitude of economic and employment impact in Alabama.

Expenditure profiles and horse number estimates were used to compute the total direct expenditures for horse use, ownership, and maintenance. An income multiplier derived from an input-output model of Alabama's economy was used to estimate the aggregate impact of the horse industry in the state (10). This multiplier reflects the total effect of expenditures associated with horse activity on aggregate household income. The aggregate impact reflects additional economic activity stimulated or engendered by breeding, raising, and using horses in Alabama.

The following report begins with an overview of the most numerous horse breeds in Alabama, then lists some of the more popular events and uses for horses in the state. Major equine organizations are identified. An assessment of the economic contributions of various components of the state horse industry is provided. Finally, some constraints to growth of the industry and possible solutions are examined.

## HORSE BREEDS IN ALABAMA

The Alabama horse industry is best understood as a loosely-connected aggregate of breeds and related associations that support an annual cycle of competitions and recognition. Most of the associations have connections to regional or national organizations that register animals, sanction events, and organize championship competitions. Breeds represent the major divisions in communication and association among horse owners in the state. In general, a breed is a relatively homogeneous group within a species that has developed with certain distinguishing traits, such as color, conformation, or performance. For the horse owner, a breed defines a reference group for information sharing, a potential market for sales or breeding services, and a context for display and use of a valued possession.

Alabama is host to a wide diversity of horse breeds. Only the most common breeds of horses found in the state are treated individually here. These include Quarter Horses, Tennessee Walking Horses, Thoroughbreds, Racking Horses, Appaloosas, and Arabians. Figure 1 illustrates the relative number of horses in each of the major breeds in the state. Table 1 details the estimated number of animals for a broader number of specific breeds.

### *Major Alabama Horse Breeds*

The diversity of breeds is an important attribute of the state's horse industry, as is a corresponding diversity of events and activities. Each breed's background is important in understanding its present applications and popularity. For each major breed in Alabama, a short history explaining its original use and present significance is given.

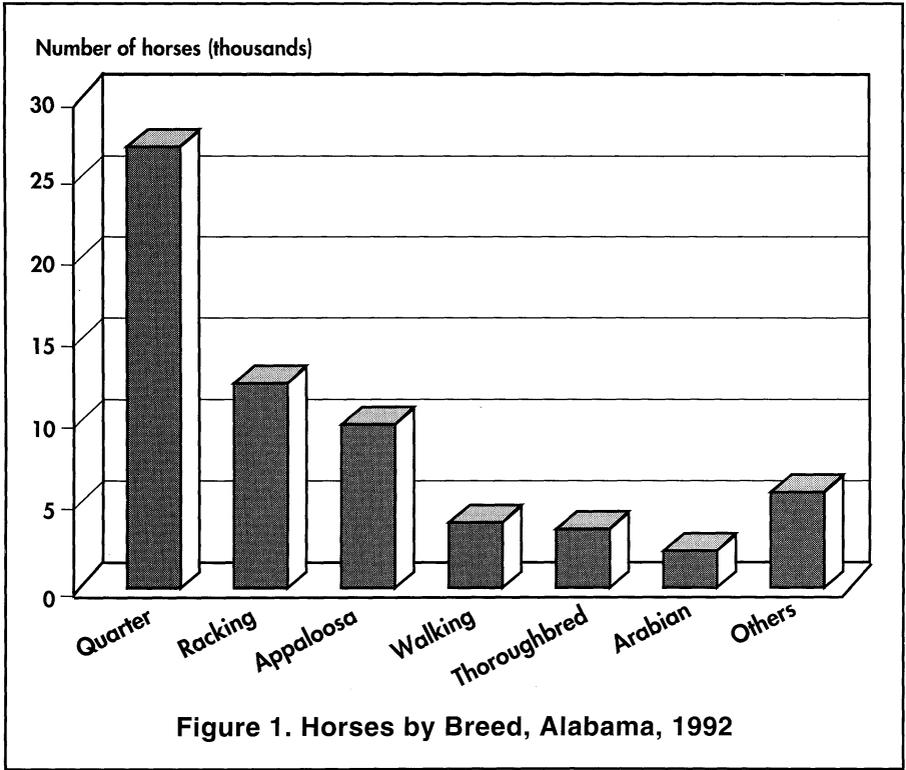


Figure 1. Horses by Breed, Alabama, 1992

Table 1. Estimated Number and Type of Horses by Breed in Alabama <sup>1</sup>

Breed	Number <sup>2</sup>
Quarter Horse .....	26,978
Tennessee Walking Horse .....	3,617
Racking Horse .....	12,000
Appaloosa .....	9,289
Thoroughbred <sup>3</sup> .....	3,300
Arabian .....	2,271
Half-Arabian .....	1,097
Paint .....	1,014
Saddlebred .....	732
Pony of the Americas .....	572
Morgan .....	303
Paso Fino .....	220
Pinto .....	108
Other Breeds .....	5,398
<b>Total Horses .....</b>	<b>62,853</b>

<sup>1</sup>Source: United States Equine Marketing Association; various breed organizations.

<sup>2</sup>Year-round horse equivalents reflecting visiting outside horses and traveling Alabama horses.

<sup>3</sup>Includes an estimated number of unregistered, but purebred animals.

**American Quarter Horse.** The American Quarter Horse is Alabama's most popular breed. Quarter Horses originated in colonial Virginia, where they were used for light work, riding, and racing. Quarter Horses later gained fame in the Southwest for their ability to work cattle.

In Alabama, Quarter Horses are the traditional choice for most western riding activities. They excel at barrel racing, roping, bull dogging, and team penning. They make excellent polo ponies. Quarter Horses are growing in popularity in the state as hunter/jumper and english dressage mounts (Editor's Note: When it refers to a style of riding, "english" is not capitalized). In 1987, more than 26,000 Quarter Horses were registered in Alabama (13).

**Tennessee Walking Horse.** The trademark of the Tennessee Walking Horse is its long, comfortable, rolling stride — the result of use as a plantation horse, walking the fields of the landowners from dawn till dusk.

Tennessee Walkers are popular for their "armchair" gait; it has been compared to sitting in a rocking chair. They are usually calm, gentle animals, despite their fiery appearance in the show ring. Alabamians have long enjoyed ownership of this breed for both pleasure and show. In 1987, there were 15,617 Tennessee Walking Horses in Alabama (13). Many were double-registered as Racking Horses, however. To avoid double-counting in later impact analysis, 3,617 horses were estimated in this category.

**Racking Horse.** The Racking Horse breed is derived from the Tennessee Walking Horse. The "rack" is similar to the running walk of Tennessee Walkers and, prior to 1971, horses with a natural rack were considered to be Tennessee Walkers. But in 1971, a group of Alabama horsemen formed the Racking Horse Breeders' Association of America to promote Racking Horses. Later the same year, the U.S. Department of Agriculture determined that the Racking Horse was an individual breed with a unique gait. On Oct. 5, 1975, the Racking Horse was designated the "Official State Horse for the State of Alabama" by a joint proclamation of the House and Senate of the State Legislature.

In Alabama, Racking Horses are popular as show and pleasure mounts. The Racking Horse stud book is not yet officially closed. This means additional animals with the requisite conformation and ability can still be added to the genealogy. Many Racking Horses descend from Walking Horse lines. In 1987, there were 12,000 Racking Horses in Alabama (13).

**Appaloosa.** Spanish horses brought to Mexico around the 1600s apparently formed the basis for the present-day Appaloosa. Spanish horses and their descendants spread northward and by 1730 had been acquired by the Nez Perce Indian tribe in the Palouse country of the Northwest. Because of the animals' colorful markings, endurance, and surefootedness, the Nez Perce bred the Appaloosa for rugged mountain traveling for the next 100 years.

In Alabama, Appaloosas are considered general-purpose riding horses used for pleasure, rodeo, racing, and western and english showing. Owners attribute the popularity of the Appaloosa to its color and calm disposition. The fact that the breed is available in different colors and patterns makes it attractive to many owners. In 1987, there were 9,289 Appaloosas in Alabama (13).

**Thoroughbred.** The Thoroughbred was developed largely from the Arabian. In colonial America, raising and racing racehorses was centered in Virginia. The center of Thoroughbred racing then moved to the bluegrass country of Kentucky and Tennessee. The breed has a long history in Alabama, as President Andrew Jackson raced Thoroughbreds at a track near the Green Bottom Inn close to Huntsville.

In addition to racing, Alabama Thoroughbreds have been popular for english activities such as dressage and jumping, polo, hunting, and pleasure riding. In 1987, there were 3,300 Thoroughbreds in Alabama (13).

**Arabian.** The oldest known breed of horse, the Arabian, gained distinction centuries ago as the close companion of desert-dwelling Arabian nomads. From its close association with humans, the Arabian horse developed a gentle disposition, intelligence, and obedience.

The Arabian is a general-purpose light horse with a reputation for endurance. In Alabama, Arabians are often used for english activities, endurance riding, and recreation. Owners attribute the popularity of Arabians in Alabama to the animals' beauty, versatility, and pleasing temperament. In 1987, there were 2,271 Arabians and 1,097 half-Arabians in Alabama (13).

### *Less Numerous Alabama Breeds*

**Paints.** Similar to Quarter Horses, Paints are known for their spotted markings. They are used in both english and western activities.

**Saddlebred (American Saddle Horse).** The background of the American Saddle Horse is similar to the Tennessee Walking Horse. They are shown in three- and five-gaited classes, and are used as a fine harness horse and for pleasure riding.

**Pony of the Americas (POAs).** Known as a child's working pony, POAs usually have Quarter Horse conformation and Appaloosa markings. They are versatile ponies which are usually shown in western and english activities.

**Morgans.** Small, powerful horses, Morgans are popular for showing and riding, particularly in North Alabama.

**Paso Finos.** A light horse breed, Paso Finos are known for the smoothness of their unique "paso" gait. Size ranges from large pony to small horse.

**Pintos.** There are several categories of Pintos: those that are of stock horse type, usually of Quarter Horse and Thoroughbred background; those of pleasure type, usually with Arabian blood; and those of saddle type, usually of Saddle Horse background. The body markings are of white and another color. Blue eyes are not uncommon.

Many other horse breeds not detailed in this study can be found in Alabama, such as draft horses, miniature horses, ponies, donkeys, and mules. Individually, these animals often represent new points of growth and interest, as well as legacies of the past. The impact of each of these breeds was not considered sufficient for individual analysis in this study, however.

## HORSE USES, EVENTS, AND ORGANIZATIONS

There is a wide diversity in the location and scale of horse activities in Alabama. Horse owners in the state can take animals to a competition or activity nearly every weekend, or just to particular events held a few times each year. Spectators can choose among many horse activities happening concurrently across the state.

The wide array of horse uses is an important component of Alabama's horse industry. The more activities that exist, the greater the need for horses that can perform the specific activities. As an activity grows in popularity, so does its impact on the Alabama economy. Greater numbers of horses draw bigger crowds, thereby increasing tourism and expenditures by outsiders and residents in a locality. The economic effect is carried throughout the community and state, as activities create demand for services, clothes, equipment, and facilities, as well as the production of horses.

Organizations and associations provide the framework for owners, riders, horses, and spectators to come together. There is no overall horse association in Alabama, but rather an aggregate of breed and activity-focused groups that generally have diverse interests and goals. This fragmentation and diversity is both a major strength and liability for the Alabama horse industry. In Alabama, the horse industry tends to be generally segmented by breed, activity, and locality. Locality-based organizations are usually open to more than one breed of horse. Likewise, activity-based organizations are formed for those whose interest is a common horse sport. Breed-specific organizations are limited to the promotion of one particular breed of horse. Many horse owners, however, belong to a combination of organizations, usually supporting a particular horse activity, as well as organizations promoting specific horse breeds.

Horse events in Alabama can be loosely divided into two broad classifications: general events and breed-specific events. Horse of various breeds may participate in general events. Separate classes may be held for each breed at a show, or more than one breed may be able to perform the desired activity, as in the case of jumping. In breed-specific events, only the animals of one particular breed may participate. The fees for breed shows may be higher than for general events, and animals are required to have papers demonstrating they are purebred.

Many activities overlap. For example, a Quarter Horse owner may participate in the local open shows, and also in Quarter Horse shows. If the animal happens to be palomino-colored, they also may attend Palomino shows. A barrel racer may attend rodeos, open shows, breed shows, and other events that feature barrel racing classes.

It should be noted that there are no state organizations for some breeds and many activities detailed in this report. For example, the Tennessee Walking Horse Association lists more than 700 members in Alabama, but there is no Alabama-based organization. Likewise, many activities, such as team penning and barrel racing, have no state-based group; these participants tend to belong to regional affiliates of the national organization.

Also, many owners across the state never compete in shows or participate in organized activities with their horses. Casual horse ownership and use also is a widespread and significant aspect of the horse industry in Alabama.

Figure 2 illustrates the hierarchical relationships between several of the major national, state, sub-state, and county-level organizations and events that involve horses in Alabama.

The following list is not meant to be all-inclusive. Readers may well be aware of specific groups or activities that are not listed in this report. The following is meant merely as a broad outline to demonstrate the diversity of equine activities and organizations in Alabama.

**Racing.** Horse racing has a long history in Alabama. In the 1820s, a track near Huntsville was the site of Thoroughbred racing. Horse racing was one of the most popular attractions at state fairs held in Birmingham between 1889 and 1910. Harness racing also was a popular fair event. Informal "match" racing is still a common practice.

In flat racing, horses run a conventional dirt oval track. Although Thoroughbreds, Quarter Horses, Arabians, Appaloosas, Paints, and Standardbreds are racing breeds, only Thoroughbreds and Quarter Horses have organized racing events in Alabama. Several counties have modified race courses that also provide a location for horse shows and other events. Because parimutuel racing takes place only at the track in Birmingham, other tracks are used for training, shows, and other events.

The racing industry has four major costs and sources of income: (1) parimutuel takeout, which goes to the state, the track, and the local government; (2) purses, which go to racehorse owners; (3) training fees and compensation for grooms and jockeys; and (4) income earned by breeding farms from the sales of horses and stallion breeding services.

Thoroughbreds made up the majority of racing animals when the Birmingham Race Course was in operation (from June 30, 1990 through Labor Day, 1992). The track averaged four or five daily races, five days a week, with eight to 12 Thoroughbreds racing. Quarter Horses also have provided a regular segment of the racing program. During racing seasons, there were two Quarter Horse races each day, five days a week, with an average of eight horses starting each race. Although not as numerous as Thoroughbred races, Quarter Horse races had a significant positive impact by expanding the racing program and attracting more horses, spectators, and bettors to the track.

There are several organizations associated with the Birmingham Race Course: the Alabama Horsemen's Racing Association, the Birmingham Racing Commission, the track management, and the Alabama Thoroughbred Owners and Breeders Association.

The Alabama Horsemen's Racing Association (AHRA) provides representation and a health and benefits program for horsemen who race. Horsemen join by signing an authorization for 1.5% of their purse earnings to go to AHRA. AHRA has offices in the Birmingham Race Course Administrative Building.

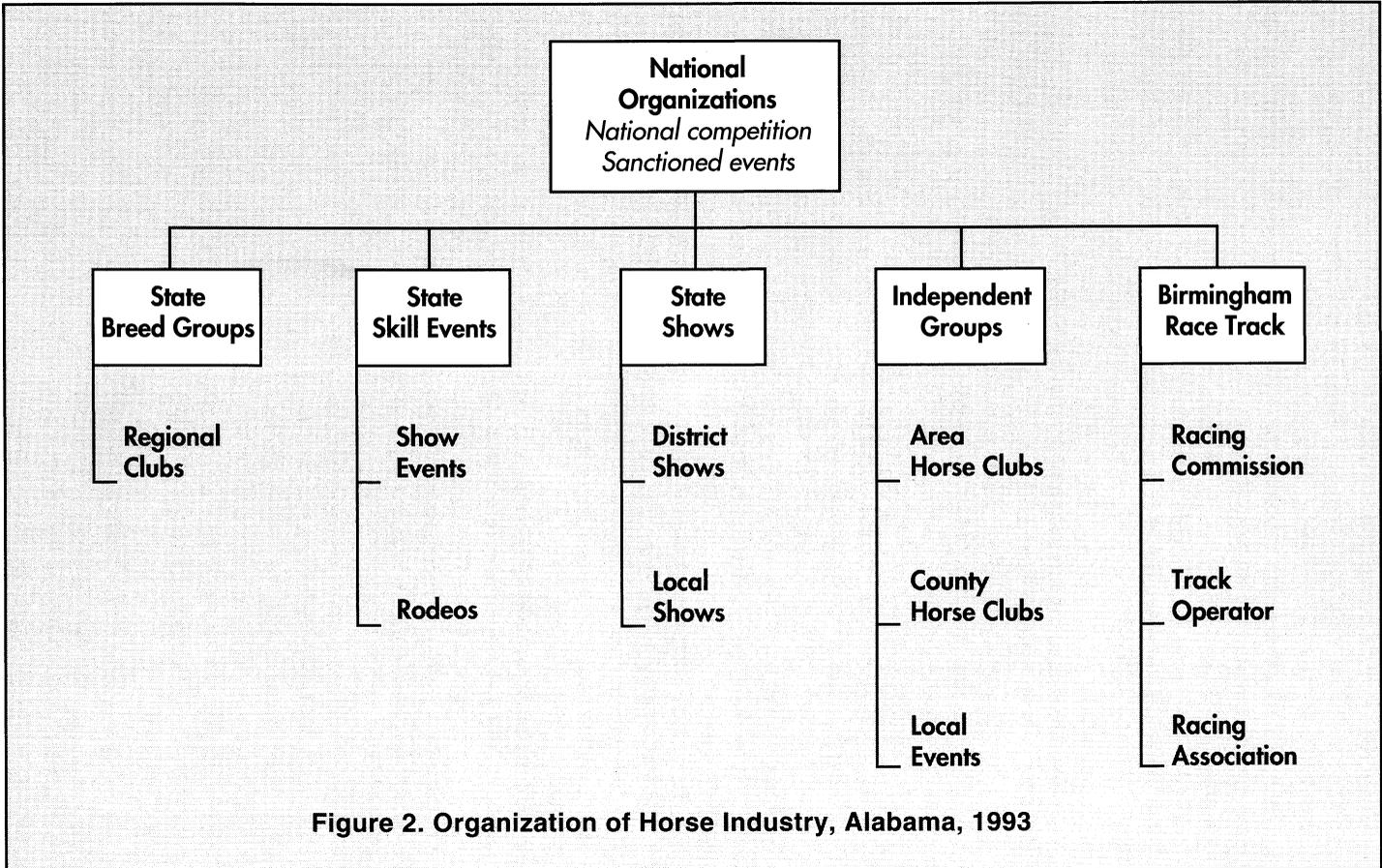


Figure 2. Organization of Horse Industry, Alabama, 1993

Horse racing is legally sanctioned in Alabama only at Birmingham, and the Birmingham Racing Commission is the regulatory body that oversees the activity. An independent body, the commission meets monthly and staff members have offices in Birmingham.

The Birmingham Race Course is located 10 miles east of Birmingham. The \$80 million facility consists of a seven-level grandstand, a clubhouse which can accommodate 20,000 spectators, a one-mile dirt oval track, stables for 1,200 horses, and dormitories and cafeteria facilities for employees. The course has had a relatively turbulent history in its short lifetime. Constructed in 1985, the facility struggled to find the local market for horse racing. Initially targeted to primarily upscale clientele (as reflected in its former name — the Birmingham Turf Club), high admission and parking fees discouraged many patrons with modest incomes from attending or returning. As a result, attendance and the betting pool suffered, threatening the viability of the facility and the breeding and racing industry. Table 2 outlines major events since the facility was built.

The Alabama Thoroughbred Owners and Breeders Association (ATOBA) was formed for the benefit and promotion of Thoroughbred breeding and racing in Alabama. The ATOBA office is located in the Administrative Building at the Birmingham Race Course. Along with the Birmingham Racing Commission, ATOBA makes decisions about the racing calendar and other matters connected with the operation of the track.

**Table 2. Milestones of Alabama Racing Development, 1986-1993**

May 7, 1985 .....	Operating license for racing awarded
June 17, 1985 .....	Groundbreaking ceremony for facility
March 3, 1987 .....	Track opens as Birmingham Turf Club
October 31, 1987 .....	Season ends
January 28, 1988 .....	Track management withdraws 1988 racing plan
Interim .....	Idle
April 29, 1989 .....	Chapter 11 bankruptcy declared
May 26, 1989 .....	Reopened under Delaware North management
September 11, 1989 .....	Simulcasting from Arlington begins (live racing continues)
November 18, 1989 .....	Live racing season ends
December 24, 1989 .....	Simulcasting ends
January 12, 1990 .....	Live racing season begins
June 30, 1990 .....	Simulcasting with interlocking betting begins; Quarter Horse racing added (2-3 races daily)
Labor Day, 1990 .....	Live racing season ends; simulcasting continues
December 17, 1990 .....	Delaware North announces intention to withdraw from Birmingham; simulcasting continues
December 24, 1990 .....	Simulcasting season ends
January 25, 1991 .....	Simulcasting extended; Alabama businessman Milton McGregor takes over; 1992 racing season begins
April 29, 1992 .....	Live horse racing season begins
June 2, 1992 .....	Greyhound racing referendum approved
July 18, 1992 .....	Live horse racing season ends
October 28, 1992 .....	Live greyhound racing season begins
April 28, 1993 .....	Live horse racing season begins
June 25, 1993 .....	Horse and greyhound racing schedules combined

**Horse Shows.** Shows are competitions in which prizes are awarded based on conformation, appearance, and performance of the horse or handler. Horses and owners can accumulate points for participation and achievement that can lead to state, regional, national, and sometimes international recognition. Certified judges award place standings and points based on relevant criteria.

Shows provide an opportunity for horse owners, trainers, breeders, and riders to exhibit their animals. Shows can stimulate interest in breeding stock and training procedures because winning horses and trainers command higher sale prices and fees. Additionally, shows provide spectator entertainment. Admission usually is not charged.

In addition to events sanctioned by the American Horse Shows Association (the overall horse-show governing body for the United States), each breed association sponsors shows. Many horse clubs and organizations also sponsor unsanctioned shows that provide opportunities for participation and recognition.

There are numerous local shows and competitions throughout Alabama. The larger show arenas are located in Arab, Decatur, Muscle Shoals, Dothan, Montgomery, and Cullman. Numerous smaller show facilities are located throughout the state. Local shows tend to include a variety of breeds and contestants. Participation is largely motivated by competition, sociability, and recreation. Shows encompassing large geographic areas tend to organize around specific breeds and types of events.

There are two organizations which support the open show network: individual saddle clubs and the Alabama Open Horseman Association.

Local shows may be independently sponsored or may be affiliated with local or state horsemen's associations. An estimated 67 saddle clubs are in Alabama — approximately one club for each county. These various clubs are responsible for at least 100 open shows a year, in addition to any fun or benefit shows they might hold. The culmination of the season for the open shows is the state championship show, usually held in September. Winners at this show hold the title State Champion for the year. In 1992, there were more than 1,400 entries for the two-day show held in Montgomery.

The Alabama Open Horseman Association (AOHA) is a nonprofit organization formed in 1988 for the purpose of identifying state champions for various horse show events. The AOHA is composed of 13 sub-state regional saddle club associations. These multi-county associations are composed of local horseman's clubs. Table 3 lists the 1989 membership of the AOHA, their membership, and the total number of shows sponsored by each association and its constituent saddle clubs. This list is not all-inclusive. There are clubs and associations across the state not mentioned in this report. The listing is an attempt to identify the primary activity organizations in Alabama.

Although many local horsemen's groups are not affiliated with any association, these groups meet regularly, have established memberships, and sponsor open shows and other special events.

Shows are the major driving force behind Alabama's Quarter Horse industry. In 1989, there were 86 Quarter Horse shows in Alabama that were approved by

**Table 3. AOHA Saddle Club Associations,  
Number of Shows, and Estimated Membership, 1989 <sup>1</sup>**

Association	Clubs	Shows	Members
North Alabama Saddle Club .....	13	39	1,200
Tennessee Valley Association .....	4	16	300
Tri-State Association .....	8	16	450
East Alabama Horse Association .....	7	22	650
North West Alabama Saddle Club .....	25	30	500
Gulf Central Association .....	1	9	115
Central Alabama Saddle Club .....	6	22	235
West Alabama Horseman's Association .....	8	20	130
South Central Horseman Association .....	8	11	250
State Line Horse Association .....	4	12	315
North Central Horse Association .....	7	28	1,500
Shoals Area Horseman's Association .....	8	10	175

<sup>1</sup>Alabama Open Horseman Association (AOHA).

the American Quarter Horse Association (AQHA), the overall governing body for the breed. This makes Alabama third in the nation in total number of AQHA-approved shows. Due to the large number of animals and the variety and frequency of events, Quarter Horses involve a larger number of Alabamians than any other breed.

AQHA-approved shows are usually two- or three-day competitions involving about 100 horses per show. "Futurity" shows, involving young animals and higher prize monies, may have up to 500 entries competing each day. AQHA sponsors the Alabama futurity in September, and an open show in June. Not all show entries and owners are from Alabama, and, as a result, these shows generate a substantial amount of out-of-state tourism income to the communities hosting the events.

Shows usually offer a variety of classes, based on the riders' age and experience, and the age and ability of the horse. Qualifying to enter top state, regional, national, and world events depends on points accumulated through participation in AQHA-approved shows. Over the past few years, Alabama has produced several national champion Quarter Horses. The value of such achievements is capitalized on in breeding fees and offspring of the horse, as well as fee levels of trainers.

The Alabama Quarter Horse Association (ALQHA) is a statewide organization formed in 1957 for the purpose of promoting Quarter Horses in Alabama. ALQHA is the only Quarter Horse organization in Alabama recognized by the AQHA. The ALQHA currently has 250 regular members, 75 amateur members, and 35 junior members. Amateur classification is reserved for those members who have never received compensation for showing, judging, or training a horse. The junior classification is reserved for those 18 years old and younger.

The Alabama Stallion Owners Association (ASOA) was formed for the purpose of promoting Quarter Horse stallions standing for stud service in Alabama. Other stallions, such as Thoroughbreds, whose foals are eligible for registration in the AQHA, also may join. The ASOA sponsors shows throughout

the year, as well as futurity shows in conjunction with AQHA shows.

Palominos are a color variety of Quarter Horses (as well as many other breeds). Not a major factor in the state by themselves, Palominos nevertheless provide significant income to Alabama through specialty shows. Because primary participation in Palomino shows in Alabama is by Quarter Horses (although other breeds may also compete), the shows add to the economic impact of Quarter Horses in the state. Palomino shows are held in Dothan, Muscle Shoals, and Montgomery. The shows average 45 to 80 horses each.

Tennessee Walking Horse shows are traditionally well-attended by both spectators and participants in Alabama. Breed shows are usually held in Phenix City, Ardmore, Borden, Decatur, and Tallasee. At these shows, there may be as many as 26 classes, with 10 to 20 horses entered per class. In addition, there are usually classes for Walking Horses at open shows.

Racking Horse shows are very popular in Alabama for both contestants and spectators. In 1989, there were 35 Racking Horse shows in Alabama that were approved by the Racking Horse Breeders Association of America (RHBAA). This makes Alabama number one in the nation in total number of RHBAA approved shows. Racking Horses also compete in numerous local shows.

The RHBAA hosts two large shows annually: the Spring Celebration and World Celebration. At the World Celebration, the year's world-class champions and Racking Horse world grand champion are chosen during a week-long event in September. Since its inception as a one-day, 500-entry event in 1972, the World Celebration has grown to more than 80 classes with more than 1,700 entries in 1989. The Spring Celebration is a similar multi-day event held in April.

Many performance classes at Racking Horse shows are similar to those found in Quarter Horse shows, with age and sex divisions for both horses and riders. Racking Horses may be shown to bike (two-wheel carriage) or fine harness (four-wheel carriage). In addition, there are classes specifically based on the Racking Horses' unique gaits.

The Alabama Racking Horse Association (ARHA) was formed for the purpose of organizing and promoting Racking Horses in the state. The ARHA has more than 100 members and sponsors many shows each year. The parent organization for the breed is the Racking Horse Breeders' Association of America (RHBAA). In 1989, RHBAA membership totaled 600, with more than 66,000 horses registered in the U.S.(5). In addition to registration, the RHBA promotes and regulates Racking Horse breeding, showing, publicity, and sales.

Shows are popular events among Alabama Appaloosa owners. There are five Appaloosa shows held each year in Alabama, but many are "double-point" shows. In these shows, there are two judges present, so points accrued by the winners are doubled. Shows average 100 horses each. Classes held are similar to those at Quarter Horse shows.

There are two Appaloosa organizations in Alabama recognized by the parent association, the Appaloosa Horse Club in Moscow, Indiana. The Central Alabama Appaloosa Horse Club operates from Oneonta, and the Heart of Dixie Appaloosa Horse Club operates from Florence. Total membership for the two clubs is about

75 members. Each club sponsors shows and other events for Appaloosa horses. There are also a number of small Appaloosa clubs without national charters located across the state.

A three-day Arabian show is held once a year in April or May in Montgomery; every other year an Arabian show also is held in the fall. There are usually 175 to 200 horses entered at each show. There are also other shows held throughout the year that sponsor Arabian classes. Spectators may number 150 to 300 per show. Classes are varied, ranging from english to saddle seat to western.

There are three Arabian organizations in Alabama recognized by the parent organization, the International Arabian Horse Association. The Alabama Arabian Horse Association, based in Montevallo, sponsors the Annual Alabama Arabian Horse Show and the Alabama Arabian Stallion Showcase. The Wiregrass Arabian Horse Association in Dothan is less show-oriented and participates in regular trail rides, parades, and other events. The Dixie Gulf Arabian Horse Association from Thomasville serves both Alabama and Florida. Total membership for the three clubs is about 200. Each club offers special programs for the care, training, breeding, and showing of Arabian horses.

Jumpers or hunters can be of any breed. Jumpers are required to complete a course that allows the exhibitor to show the animal's jumping capabilities and training. The jumper's score is computed according to the number of penalty faults accrued through disobedience, falls, knockdowns or fence touches, or time penalties. Hunters are judged on performance, soundness, good manners, style over the fences, and consistency.

The three-day event combines stadium jumping, cross-country jumping, and dressage, and requires extensive training. A different phase is held each day, although in Alabama they are often combined into two days. Typically on the first day, the dressage test, consisting of a series of movements designed to show the animal's fitness, suppleness, and obedience, is given. The cross-country test held on the second day requires the horse and rider to follow a course of obstacles through pastures and woods within a set time frame. Stadium jumping, requiring the completion of a course of obstacles within an arena, takes place on the third day.

There are four major three-day events held annually in Alabama: one in Tuscaloosa in February; two in Fort Rucker in March and September; and one in Birmingham in April. Point Clear hosts two major dressage events in April and November. Each of these events is recognized by the American Horse Shows Association. These events usually involve substantial registration fees and often attract riders from outside the state.

In addition, many small local schooling shows for english competitions occur across the state. These shows usually feature a combination of jumping and horsemanship classes, and some may include dressage.

The Birmingham, Mobile, and Tuscaloosa areas support dressage clubs recognized by the national organization, the United States Dressage Federation. In addition, several areas of the state (Huntsville and areas adjoining Georgia and Florida) have recognized dressage associations that serve regional, multi-state

areas. Most of these dressage clubs host small schooling shows. The Gulf Coast Dressage Association also hosts formal, recognized competitions.

**Foxhunting.** Foxhunting adheres to strict rules of protocol that were established in the 1800s. Drag hunts are usually held in Alabama — instead of chasing a live animal, the pursuers and hounds follow a previously-laid trail of fox scent through woods and fields.

Private hunt clubs based in Huntsville, south Alabama, and near Columbus, Georgia (about 30 miles from the Alabama state line), organize circuits of hunts in the fall on various private farms around the state. Some hunt clubs provide horses to visiting riders and support recreational and other uses of horses, typically Thoroughbreds, outside the fall hunt seasons.

Hunting usually is not a spectator activity and generally is treated as a sport and social event for the individuals involved. Hunts represent a use of horses and reason for keeping them, but do not in themselves have an appreciable economic impact in the state. The impacts are portrayed here in terms of associated travel, tourism, and expenses associated with horse ownership. The economic impact is largely captured by individual horse ownership and maintenance costs.

In Alabama, Thoroughbreds are the traditional choices for foxhunting and jumping. But Quarter Horses and Arabians are gaining in popularity, as well as Appaloosas, Paints, and Pintos. These events have been popular in Alabama for some time and continue to garner new support across the state. The activities often tend to cluster around urban areas, notably Shelby County, where most facilities are located.

**Rodeos.** Rodeos typically consist of a series of events in which contestants compete for prizes such as cash, trophies, saddles, belt buckles, or points. Rodeo events are divided into two categories: roughstock events and timed events. Roughstock events include bareback, saddle bronc, and bull riding. Timed events include calf and team roping, steer wrestling, barrel racing, and goat tying. Contestants in timed events provide their own horses. In Alabama, Quarter Horses are the traditional choice for timed events in rodeo, but other breeds of stock-horse type also can be found.

Participants in rodeos sanctioned by national rodeo organizations compete for the chance to enter the final rodeos of the respective associations. The top rodeo organizations involving Alabamians are the International Professional Rodeo Association (IPRA), the Professional Rodeo Cowboys Association (PRCA), and the American Cowboys Association (ACA). Table 4 lists Alabama rodeos recognized by the IPRA in 1989. A significant regional event, the IPRA 1989 Southeastern Finals Rodeo, was held in Cullman. Nearly 200 contestants were entered.

The Alabama High School Rodeo Association includes about 125 members age 17 or under. An additional 50 members are classified as “juniors” — those youngsters not yet in high school, but old enough to compete in rodeo events. The association holds an event at a different location every weekend, for a total of 10 to 15 rodeos per season. There are also regional and national events for high school youth. Activities include many of the traditional “adult” rodeo events, as

well as special events just for youth. Association dues are high; youngsters must also pay for each class entered at each rodeo. Awards at the state finals range from trophies to saddles.

Many smaller local rodeos take place across the state during the spring and summer. These rodeos, which are usually not included in the IPRA, ACA, or PRCA rodeo circuits, are often sponsored by local saddle clubs or service organizations, such as the Jaycees or the county sheriff’s posse. Local rodeos, which usually attract participants from surrounding areas, are typically held Friday and Saturday evenings in open arenas and draw 30 to 60 contestants.

Rodeos often are significant annual events for small communities. They provide a focus for community life, a fund-raising opportunity for civic groups, and a boost for local merchants. A survey of county agents indicated that 35 of Alabama’s 67 counties have rodeos each year. Table 5 shows the location and estimated attendance of these rodeos.

**Traditional Skills Events.** Traditional skills events test abilities of horse and rider to work on a traditional ranching operation. These events are very popular in Alabama.

The cutting horse event developed out of a need to separate an individual animal from a herd of cattle with minimal disturbance. In this event, the horse and rider isolate a single cow from a herd and attempt to prevent the animal from returning to the herd. In team penning, a group of cattle are driven away from a larger herd and penned by a group of horses and riders. Reining contests demonstrate the horse’s handling ability, speed, and agility.

Calf and team roping, barrel racing, and pole bending — skills which demonstrate the horses’ speed, ability, and agility — also can be considered traditional skills events. Many such events overlap rodeo and horse show events. Owners of such horses often compete in both shows and rodeos, and they pay membership dues to more than one association.

**Table 4. Locations, Duration, and Number of Contestants in Alabama Rodeos Recognized by the IPRA, 1989 <sup>1</sup>**

Location	Duration	Contestants
	<i>days</i>	
Oneonta .....	2	214
Huntsville .....	3	159
Dothan .....	2	168
Russellville .....	2	116
Cullman .....	2	193
Athens .....	2	210
Hartselle .....	2	118
Cullman <sup>2</sup> .....	3	74
<b>Total .....</b>	<b>18</b>	<b>1,252</b>

<sup>1</sup>Source: International Professional Rodeo Association.

<sup>2</sup>Southeastern Finals Rodeo.

**Table 5. Locations and Estimated Attendance of Rodeos by County, 1989**

County	No. rodeos	Estimated attendance
Baldwin .....	1	600
Barbour .....	2	800
Blount .....	1	7,500
Calhoun .....	2	25,000
Chambers .....	1	700
Chilton .....	1	700
Choctaw .....	1	250
Clay .....	1	1,200
Coffee .....	1	500
Covington .....	2	10,000
Crenshaw .....	1	1,500
Cullman .....	2	4,000
Dale .....	1	600
Dallas .....	1	700
DeKalb .....	8	4,000
Escambia .....	1	500
Etowah .....	1	1,500
Fayette .....	1	2,000
Franklin .....	2	7,000
Geneva .....	1	600
Jefferson <sup>1</sup> .....	1	57,526
Lamar .....	1	1,000
Limestone .....	1	6,000
Madison .....	2	45,000
Mobile .....	2	7,500
Monroe .....	1	900
Montgomery .....	3	173,000
Morgan .....	1	3,000
Perry .....	3	2,400
Randolph .....	2	1,600
Shelby .....	1	3,500
Tuscaloosa .....	2	7,000
Walker .....	1	900
Washington .....	1	1,000
Wilcox .....	2	1,500
<b>Total</b> .....	<b>56</b>	<b>381,476</b>

<sup>1</sup>Actual paid attendance.

Quarter Horses and other stock-type breeds excel at traditional skills events. In Alabama, they are the horse of choice for these activities.

Traditional skills events are held periodically at various locations throughout the state. Many of these events are approved by organizations at the national, state, or sub-state level. Most skill event associations, such as the roping, barrel racing, and team penning associations, are at the sub-state level. Other skill event associations, such as the reining and cutting associations, have both a state- and national-level organization.

**Trail Riding.** Organized trail riding activities include competitive and endurance events. Competitive trail riding works all of the horses over an identical course in a natural setting in the same length of time. Horses are judged on soundness, physical condition, and manners. In contrast to competitive trail

riding, the endurance ride is primarily a long-distance (50-100 miles) race. Awards are given for order of finish and physical condition upon finishing. Although Arabians excel in endurance rides, no special type or breed of horse is necessary or favored, as long as the animal is well-conditioned and calm.

Two competitive trail rides sanctioned by the national organization, the North American Trail Ride Conference, were held in Alabama in 1992. In October, the Talladega National Forest was the site of a ride that attracted 60 riders from eight states. More than 10 horse breeds were represented, and more than 100 people were involved in the ride in some way. The Don Quixote ride, held at Fort Rucker in November, attracted a similar showing. Entrance fees for organized rides are substantial, and the rides often last two days. Another group, the Southern Endurance Trail Riders Association, completed 15 sanctioned rides, four of which were in Alabama.

Some horsemen enjoy the competition of trail riding, while others enjoy the social aspects or the Alabama scenery. Group recreational trail rides are often held by various clubs across Alabama. Trail riding for pleasure is the mainstay of recreational horses across the state. A proposal to expand the existing 50-mile endurance trail in the Bankhead National Forest is currently under consideration. Managing recreational trail riding on public lands is sometimes a controversial issue due to the environmental consequences of horse traffic on ecologically sensitive areas.

Goals of the Alabama Trail Ride Council are to assist in building and maintaining horse trail systems throughout the state on public lands for families, competitors, groups, and clubs. Many members compete in trail riding and endurance.

**Polo.** Polo may be defined as a form of field hockey played on horseback. Teams of four riders vie to place the ball in the opposing team's goal across a grass field 300 yards long by 160 yards wide. A polo match consists of six seven-minute periods. Because horses usually gallop continuously during a period, most players use numerous horses during a match.

There are three polo clubs in the state, in Shelby, Madison, and Baldwin counties, with a total membership of about 50 horsemen. Polo in Point Clear has developed rapidly in recent years. A new field features weekly competitions in the summer, regular visits by international competitors, and a strong local spectator following. Clubs in Birmingham and Florence meet on a regular basis. Polo mounts are typically Thoroughbreds, Quarter Horses, and crosses between the two breeds. Polo season is split in the state; the spring season includes April, May, and June, while the fall season covers September, October, and November. Games take place every weekend of the seasons.

Generally, polo players must be current members of the United States Polo Association (USPA). USPA rules govern all local tournaments and leagues. Although the total membership may seem small, it is important to note that the sport attracts many players from outside the state. Teams change nearly every weekend, allowing players from other states easy access into the activity.

**4-H.** The State 4-H Horse Show is an organized part of the 4-H youth program. Horse-oriented clubs are an important source of education and social activity for youth interested in horses. There are 19 4-H clubs in Alabama, with a total enrollment of 9,344 youngsters.

The state 4-H Horse Show is usually held during July in Montgomery. The first day is spent in contests, such as horse judging, public speaking, and demonstrations. The second day, english classes and roping events are held. The third day is for timed events, dressage, western trail, western riding, and walk/trot classes. Remaining western classes are held the fourth day. For the 1992 State 4-H show in Montgomery, there were more than 270 horses, totaling more than 1,060 entries.

High point awards are given for roping, junior english, senior english, western, and timed event winners. Winners are then eligible for the Southern Regional 4-H Horse Championships.

**Sales.** Major horse sales in Alabama take place in Attalla, Florence, Roanoke, Montgomery, Frisco City, Uniontown, and Dothan. Horse sales also take place at other locations throughout the state. Major sites hold sales each month, with Attalla and Florence holding sales twice a month. Small sales may include 50 horses, and the larger sales as many as 200 horses.

About three-quarters of the horses are sold at slaughter prices, usually \$500-600 each. The remainder of registered animals usually sell for \$900-950 each. In addition, there are about five major consignment or dispersal sales each year in Alabama. These horses usually bring about \$1,000 to \$1,500 each, with 80 to 100 horses sold per sale.

Several state and regional advertiser-newspapers bring horse buyers and sellers together. Many of these advertisers provide monthly newspapers free at local feed-and-seed and tack stores. Additionally, some horses are acquired through the Bureau of Land Management's dispersal of surplus wild horses and burros from western states.

**Additional Horse Uses.** Across the state, individuals keep horses for uses other than those listed above. For example, horses can be kept for harness racing as well as driving (pulling a carriage or wagon at various gaits). Ponies or small horses may be kept for children, or for the sole purpose of leadline show classes, where child and adult typically dress alike, and the adult leads the animal and child rider. Horses may be used for parades and costume classes. Local clubs will often hold "fun" or "benefit" shows, where the proceeds go to help worthy causes. These shows often sponsor classes absent in serious competitions.

In addition to barrel racing and pole bending, shows and traditional skills events may sponsor quadrangles, and various other races, such as stake, arena, flag, and keyhole races.

Breed-specific classes — classes in which only certain breeds may participate — are often held at open shows, as well as breed-specific shows. At open shows, "flat shod" classes may be held for Racking Horses and other gaited breeds that are not wearing padded horse shoes. "Color" classes may be held at Palomino shows, where the animal with the best color is chosen as winner.

Riding is available even to those without the ability or resources to ride on their own. In cooperation with Oak Mountain State Park, Special Equestrians, Inc., was formed to offer physically, mentally, and emotionally handicapped individuals the chance to experience therapeutic horseback riding. The nonprofit organization, located at Oak Mountain Stables in Columbiana, operates with volunteer help and donated horses and funds. Arrangements are made with the park to board horses involved in the handicapped riding program. Other efforts include a program sponsored by the Talladega School for the Blind and Deaf, and a program in Florence.

Whatever the activity, it requires a great deal of time, effort, and organization to schedule, coordinate, and support the occasions that bring horse owners and their animals together. Although most event judges and some other individuals are paid, the foundation of the horse sector is the voluntary leadership and energies of participating individuals.

## **ECONOMIC IMPACT OF THE HORSE INDUSTRY**

This study estimates several components of the economic impact of the horse industry in the state. First, the direct expenses associated with care and maintenance of horses used for showing, racing, and recreation are considered. Certain expenses associated with equipment and transportation also are included. Second, the impact of showing and racing horses in terms of breeding, maintenance, transportation, and training, as well as the associated tourism impacts, is discussed. The third section describes employment impacts including the estimated employment multiplier. For example, the Birmingham Race Course, with its admissions, employment, and concessions, is a connection to the state's economy representing significant monetary flows. The final section summarizes the economic impacts of Alabama's horse industry.

The data in Table 6 identify estimated average annual per-horse expenses associated with horse ownership in 1989. The information does not include horse purchases, sales, or capital expenditures. Figures were developed through interviews with suppliers and purchasers of the various goods and services. Subsequent estimates were reviewed by knowledgeable individuals familiar with horse ownership and maintenance.

Although actual expenditures vary widely from one owner to another, the expenditure estimates for each item in Table 6 are assumed to resemble a normal distribution around a central tendency or average. For many items, however, the actual pattern of outlays is highly skewed; in other words, a small number of owners of prize animals spend much greater amounts than the ordinary horse owner. In this case, the most frequent expenditure may be quite different from the median or average level of expense. Given that the objective of the study is to estimate aggregate impacts, the average (mean) is presented in the tables. Therefore, some outlay estimates may seem high from the perspective of the ordinary horse owner. Others may seem low from the experience of the owner of intensively managed, high-value animals.

**Table 6. Estimated Per-Horse Care and Maintenance Expenditures for Showing, Racing, and Recreational Horses in Alabama, 1989**

Expenditure	Estimated average annual total		
	Showing	Racing	Recreational
	<i>dollars</i>	<i>dollars</i>	<i>dollars</i>
Veterinary fees .....	300	400	150
Feed and bedding .....	800	700	550
Insurance premiums .....	700	600	100
Farrier .....	450	500	200
Grooming and supplies .....	200	175	100
Travel and lodging .....	1,200	1,200	150
Advertisement .....	1,000	1,000	0
Utilities .....	150	150	15
Property taxes .....	50	50	50
Depreciation .....	1,500	1,500	680
Maintenance and repairs .....	500	500	300
Equine boarding .....	480	280	200
Breeding fees .....	30	0	50
Property and equipment rental .....	50	50	25
Tack .....	1,000	850	120
Professional fees .....	100	300	30
Registration fees .....	195	10	10
Training fees .....	1,500	4,000	50
Employed labor .....	700	3,025	300
Miscellaneous .....	100	100	60
<b>Per horse total .....</b>	<b>11,005</b>	<b>15,390</b>	<b>3,140</b>

Readers should note that not all horse owners incur every expense listed in Table 6. For example, a person who owns a horse but keeps it at a boarding facility would incur boarding expenses but would have no equine-related property taxes. Thus, Table 6 should not be viewed as an operating budget for horse ownership, but as an estimate of mean per-horse expenditures.

Because horse ownership is widespread throughout Alabama, the economic impacts are also diffuse. Where horse ownership and activity are concentrated, the economic impacts represent a more salient part of the local economic structure. The significance of the secondary impacts of horse activity also increases in these locales. For example, major Racking Horse facilities that have frequent shows attracting out-of-state participants and the Birmingham Race Course represent concentrated forms of impact.

### *Components of Economic Impact*

Horse care and maintenance are central mechanisms by which the economic impacts of horse ownership are transmitted to local economies throughout the state. Owners purchase feed, materials, and services for horses on a regular basis. Their purchases represent demand for farm products, supplies, and a variety of technical and professional services.

The first expenditure category, veterinary fees, includes routine veterinary services such as vaccinations, deworming, and equine dental care. However, the

cost of surgery and other major medical expenses not incurred on a regular basis are not included. The farrier category includes the cost of shoeing and hoof trimming. Grooming and supplies reflect expenditures for items such as brushes, currycombs, fly spray, and coat conditioners. Tack expenditures include the cost and maintenance of saddles, bridles, and related accouterments. This category also includes horsemen's wearing apparel.

Feed and bedding expenses include the cost of hay, grain, feed additives, vitamin and mineral supplements, pasture maintenance, and straw and shavings used for bedding.

Insurance costs include premiums for horse liability, mortality, loss of use, surgical, and vehicle insurance. Travel and lodging are the expenses of traveling to and from horse shows, horse sales, and other equine activities such as races, hunts, recreational rides, or polo meets. These expenses are the cost of meals, fuel, and overnight lodging. For Racking Horses, this expenditure category only includes weekend horse shows. Economic impacts associated with the Spring Celebration and the World Celebration held in Decatur each year are treated separately in a later section.

Advertisement is composed of expenditures for advertising stallions and breeding farms. Utility expenditures include the cost of electricity, water, heating buildings, and horse-related telephone bills. Property taxes are the local and/or state tax liabilities for land and buildings used in horse breeding, ownership, and other equine activities such as hunting. Maintenance and repairs represent the sum of expenses incurred in the upkeep of buildings, facilities, and vehicles. Property and equipment rental is an estimate of the cost of renting pastures, facilities, machinery, and vehicles.

The expenditure category depreciation is composed of the depreciation expenses associated with equine buildings, machinery, and vehicles. These estimates were derived assuming a useful life of 30 years for buildings and 10 years for machinery and vehicles.

The equine boarding category includes payments to boarding facilities, and, in the case of race horses, facilities for rest and recuperation. Boarding fees for show horses also include an estimated \$100 annual expenditure for stall fees at horse shows.

Breeding fees, which are typically paid by the mare's owner, are the cost of having a mare bred to a selected stallion. These fees range from \$200 to \$1,500 or more depending on the quality of the stallion. Breeding fees for race horses are zero since horses actively engaged in this activity are usually not bred. Likewise, breeding fees for show horses are low on a per horse basis since few mares that are actively showing are bred. Most brood mares are not actively showing and, therefore, incur expenses similar to horses in the recreational category. Based on breeding fee estimates (Table 6), breeding fees for the six major breeds of horses in Alabama accounted for more than \$4 million in economic activity in 1989.

Although not fully reflected in the data, the long-term impacts of horses in the state are centrally associated with the breeding industry. The breeding industry is built primarily on speculation, but it can be self-supporting if it is associated with

a viable race or promotional program that provides significant purses and other income flows to horse breeders.

The breeding industry associated with racing is a central source of impacts on agriculture and land use in the state. Breeders invest in farmland, equipment, and facilities in a manner that would not be economically justified by food animal or crop production. Undertaking breeding as a farm enterprise implies a longer investment horizon and commitment to the activity than basic horse ownership. High-value animals support the development and elaboration of a network of horse care and maintenance services. The resulting array of occupational niches provides full and part-time employment to a large number of people. In addition, substantial impacts are associated with ordinary horse ownership and maintenance — consequences not to be lightly viewed given the many horses owned throughout Alabama.

Breeding is central to growth and economic incentive in the horse industry. Breeding and the prospect of high-value sales from the offspring of prize animals induces capital investment. A core group of breeding farms producing prestigious animals has a host of secondary impacts. Purchase and sale of prominent breeding stock generate income and positive publicity. Dependent on the steady availability of racing and showing circuits, a breeding program is the core mechanism for increasing the status, visibility, and economic benefits of horses in Alabama.

The expenditure category professional fees is composed of dues for membership in professional organizations and subscriptions to equine publications. Licenses and fees are required for racing, entering events, and other equine uses.

Registration fees are charges for participating in shows, fees to register for racing (Quarter Horses), and fees to register and transfer ownership of horses in organization records. For show horses, this category includes an estimated \$175 annual expenditure for registration in shows. The estimate for this category is low for racing Quarter Horses, since there was no sanctioned horse racing in Alabama in 1989.

Training fees are charges for horse training in the case of racing horses, and training for both the horse and rider in the case of show horses. Training fees include monies paid for a variety of services and assistance in the training, sale, and management of horses.

The employed labor category includes wages paid to both full and part-time employees involved in horse-related work such as stallion managers, grooms, exercise riders, clerical workers, and others who clean stalls and provide routine horse care.

The miscellaneous category is composed of expenditures for horse transport services, manure removal, and dead stock services.

The average monthly cost of keeping a racing horse in training is \$1,854. Thoroughbred and Quarter Horse owners annually spend \$15,390 to \$22,255 per horse for care, maintenance, and other expenses (Table 6). The higher expenditures on the animals, as compared to recreational horses, reflects the more intense level of care and maintenance required to keep a horse in racing condition. Thus,

Thoroughbreds and Quarter Horses that actually raced in 1989 generated more than \$24 million in direct impacts to the state's economy in 1989.

Showing is a very important component of the horse industry and has a significant impact on Alabama's economy. The estimated average annual cost of keeping a show horse is \$11,005. The estimated impacts associated with the care and maintenance of show horses is the mean of the estimates for the six major breeds. Thus, show horses in Alabama generated \$71.2 million in direct economic activity during the study year.

Horses used for purposes other than showing or racing require about \$3,140 annually per horse for care and maintenance. Expenditure levels for these animals reflect lower intensity of care and maintenance associated with horses not actively showing or racing. Thus, owners of the estimated 29,743 recreational horses incurred about \$93 million in expenses in 1989.

### *Race Course Impacts*

Table 7 shows the income flows and economic impacts of the Birmingham Race Course in 1990. Admissions, the parimutuel handle, and concession receipts represent the main sources of income to the track. Some of this money went to the out-of-state management firm. The economic impacts in Alabama are the monetary flows to individuals and businesses. These are centrally reflected in employment at the track and in a variety of direct expenditures. Of the \$48.5 million shown in the table, approximately \$40 million was received by individuals and firms in Alabama.

**Table 7. Impacts of the Birmingham Race Course, 1990<sup>1</sup>**

Impacts	Amount
	<i>dollars</i>
<b>Stakes and purse distribution</b> .....	<b>3,316,848</b>
Stakes and purses paid to Alabama residents .....	805,993
<b>Winnings to bettors</b> .....	<b>35,281,139</b>
<b>Horse track payroll</b> .....	<b>3,395,684</b>
<b>Revenue to government</b> .....	<b>1,795,943</b>
2.0% of handle to Racing Commission .....	894,450
City and county payroll tax .....	85,367
State sales tax .....	96,397
Property tax .....	41,000
City admissions tax .....	115,834
State income tax .....	562,895
<b>Breeding fund</b> <sup>2</sup> .....	<b>223,612</b>
<b>Professional and other services</b> <sup>3</sup> .....	<b>2,581,506</b>
<b>Interest to bank</b> <sup>4</sup> .....	<b>894,450</b>
<b>Utilities</b> .....	<b>636,916</b>
<b>Goods and supplies purchased</b> .....	<b>378,320</b>
<b>TOTAL RACE COURSE IMPACTS</b> .....	<b>48,504,418</b>

<sup>1</sup>Sources: Birmingham Race Course; Birmingham Racing Commission.

<sup>2</sup>Breeding fund = 0.5% of handle.

<sup>3</sup>Service fees paid in state.

<sup>4</sup>Interest = 2% of handle.

**Purses.** Stakes, purses, and winnings represent the direct flow of revenue to jockeys, owners, and breeders from horse racing. About a quarter of the stakes and purses went directly to Alabama residents. This figure underscores the significant interstate connections of horse racing. Horses, owners, and trainers from other states collected the majority of the purses, but they spent considerable time and money in Alabama doing so.

Racetracks compete with other racetracks for horses. Trainers usually prefer to stable at racetracks that have good purse structures and well-maintained facilities. Daily featured races are attractive to horsemen and bettors. A long racing season scheduled well in advance, coupled with an attractive incentive structure of purses, are central aspects of a racing season that will induce participation. These data suggest that the Birmingham Race Course provided a relatively attractive purse structure to out-of-state horsemen in 1989.

**Winnings.** Returns on wagering represent a significant redistribution of income within the local community. In 1989, winnings approximated \$35 million.

**Employment.** Over 900 individuals are hired to work at the track in positions not directly involving horses. Many positions are associated with the regulation and control of wagering and racing. Many are associated with concessions and other track operations. As such, these are seasonal jobs presenting additional discretionary income to the employees. Value of the employment is a component of the total impact, but the number of hires also is a significant consequence in its own right.

**Revenue to Government.** The tax revenue impact includes the parimutuel revenue, the real estate tax, sales tax, and license fee, as well as the direct tax impacts of the employment expenditures, business expenditures, and horsemen's outlays. Combining income tax and other revenue, about \$1.8 million went to state and local governments in 1989.

Although Alabama does not levy a specific parimutuel tax, a portion of the handle supports the regulatory activities of the track. The rest of the tax revenue is generated by the actual operation of the track. In Texas, for example, the levy on parimutuel betting is 5%, not considering other forms of taxation. Federal taxes and fees are not considered here.

The data in Table 8 suggest the combined revenue to state and local governments, in the form of taxes and support of regulatory activities, is about 3% of the handle. Thus, the tax structure for horse racing in Alabama presents a significant comparative advantage for the development of the industry in the state.

Professional fees and other services represent an aggregate of expenditures that includes legal costs, advertising, and various items associated with operation and maintenance of the track. These flows to local firms and individuals comprise a major source of impact of the track on Birmingham and the state.

### *Tourism Impacts*

Polo, dressage, schooling shows, open shows, and other events produce significant benefits to the hosting localities. Traveling owners and horses require additional housing expenses. Some spectators travel long distances to view the activities.

**Table 8. Birmingham Race Course Revenue to Local Government, 1990**<sup>1</sup>

Revenue	Amount
	<i>dollars</i>
Parimutuel handle tax (wagers) .....	2,381,341
Winnings to bettors .....	2,150,395
Revenue to local government	
Misc. revenue to Racing Commission .....	1,650
City & county payroll tax .....	5,000
City admissions tax .....	12,227
Other revenue to local government .....	47,626
Total revenue to local government .....	66,503
Tourism impact from out-of-state horses .....	1,903,500
<b>Total Government Revenue .....</b>	<b>4,120,398</b>

<sup>1</sup>Source: Birmingham Racing Commission.

**Showing Horses.** On average, owners of the state's 6,500 active show horses each spent \$1,495 on travel and related expenses during horse shows in 1989. The amount is composed of expenditures for fuel, food, and lodging for the people traveling with the horses, as well as stall fees, and registration fees for the horses.

Considering the multiplier effect of the expenditures, show horses accounted for a tourism impact of more than \$35 million in 1989. Weekend Racking Horse showing, separate from the Spring and World Celebrations held in Decatur each year, accounted for \$10 million of this total in 1989.

**Major Shows.** The Decatur area in particular benefits from economic activity generated by the two large Racking Horse shows — the Spring Celebration and World Celebration — held there each year since 1971. RHBAA admission records indicate the combined total spectator attendance for the two shows in 1989 was 87,300. Estimates indicate on-site expenditures incurred at the two shows, as shown in Table 9, totaled \$1,088,070 in 1989.

**Table 9. On-site Spectator and Participant Expenditures at the Spring and World Celebrations in Decatur, 1989**<sup>1</sup>

Expenditures	World Celebration	Spring Celebration
	<i>dollars</i>	<i>dollars</i>
Parking fees .....	10,100	2,520
Concessions <sup>2</sup> .....	243,000	84,375
Admissions <sup>3</sup> .....	324,000	90,000
Printed programs .....	7,500	3,000
Entry fees .....	162,405	51,125
Stall fees .....	63,000	28,000
Recreational vehicle parking .....	12,525	6,520
<b>Per show total .....</b>	<b>812,430</b>	<b>263,020</b>
<b>COMBINED TOTAL .....</b>	<b>1,088,070</b>	

<sup>1</sup>Source: Racking Horse Breeders Association of America.

<sup>2</sup>Based on an estimated average \$3.75 expenditure per person per show.

<sup>3</sup>Based on an average \$5 admission fee per person per show.

**Table 10. Estimated Tourist Expenditures Resulting From the Spring and World Racking Horse Celebrations in Decatur, 1989 <sup>1</sup>**

Expenditures	World Celebration	Spring Celebration
	<i>dollars</i>	<i>dollars</i>
Motel rooms .....	159,084	70,704
Meals .....	331,425	147,300
Retail purchases .....	206,850	88,650
Fuel .....	133,245	57,105
<b>Per show total</b> .....	<b>830,604</b>	<b>363,759</b>
<b>TOTAL EXPENDITURES</b> .....	<b>1,194,363</b>	

<sup>1</sup>Sources: Decatur Conventions and Visitors Bureau; RHBAA records.

In addition to the on-site expenditures listed in Table 9, the shows generate a substantial amount of tourism income to the Decatur area. This economic activity results from spectators and participants traveling from out-of-town, renting motel rooms, and purchasing meals and other goods during the shows. Estimates of these expenditures are summarized in Table 10.

Totals from the two previous tables indicate the 1989 Spring and World Celebrations had an approximate direct impact of \$2.3 million on the Decatur area. Given an income multiplier of 2.9, discussed in the appendix, the total 1989 impact was about \$6.6 million.

**Rodeos.** Rodeos also have a significant impact on Alabama's economy. This impact is concentrated in the communities that host the rodeos. As shown in previous tables, Alabama hosted 56 rodeos in 1989. These included rodeos recognized by national associations, as well as local rodeos.

Most of a rodeo's economic impact on the local economy is derived from the spectators because there are typically many more spectators than contestants. Rodeo spectators generate economic activity through admission fees, concessions, and souvenirs. Research indicates that each rodeo spectator spent an average of \$11. The estimated 381,476 spectators at Alabama rodeos in 1989, therefore, generated approximately \$4.2 million of economic activity.

Alabama hosted three PRCA-approved rodeos in 1989. Table 11 lists the events, their duration, and gross ticket sales. Twenty-three Alabama rodeos were sanctioned by the ACA in 1990. Locations and total prize monies of these rodeos are listed in Table 12.

**Racing.** Horse racing took place at the Birmingham Race Course from June 30, 1990, until the following Labor Day. There were eight races each day during 56 racing days with an average of eight horses per race. During this period, there were, on average, 300 animals stabled at the Birmingham Race Course. Most of these horses were from Texas and Oklahoma, with the balance coming from throughout the South. Racing Commission records indicate that on average there were 75 Alabama horses stabled at the track.

The 225 out-of-state horses that were stabled at the track during the 1990 racing season (94 calendar days) represent a significant economic impact to the

**Table 11. Locations, Duration, and Gross Ticket Sales  
for Sanctioned Rodeos in Alabama, 1989**

Location	Duration	Gross ticket sales
	<i>days</i>	<i>dollars</i>
Birmingham .....	3	46,252
Mobile .....	2	1
Montgomery .....	4	118,000

<sup>1</sup>Data not available.

Birmingham area. This impact stems from food and lodging for personnel accompanying the horses, as well as services and supplies purchased for the horses in Alabama. Each out-of-state horse stabled in Birmingham was estimated to generate an average \$90 of economic activity per day. The direct tourism impact of out-of-state racing horses in Birmingham in 1990, therefore, was more than \$1.9 million.

Although this study focused on the horse industry in 1989, the 1990 racing season at the Birmingham Race Course was included to illustrate the potential impact of horse racing on Alabama's economy. Even though there were relatively few horse races in Birmingham in 1990, the total impact was substantial.

**Table 12. Locations and Total Prize Monies  
of Sanctioned Rodeos in Alabama, 1990**

Location	Total prizes
	<i>dollars</i>
Columbiana .....	11,765
Monroeville .....	5,540
Cullman .....	8,685
New Hope .....	8,650
Chatom .....	3,160
Jasper .....	11,015
Tuscumbia .....	6,270
Luverne .....	8,415
Clanton .....	7,425
Butler .....	3,755
Foley .....	6,830
Hartselle .....	5,360
Clayton .....	9,045
Reeltown .....	4,345
Stockton .....	7,445
Selma .....	5,325
Gadsden .....	5,485
Atmore .....	4,625
Rainsville .....	6,275
Mobile .....	6,415
Ariton .....	4,100
Robertsdale .....	4,310
<b>Total .....</b>	<b>144,240</b>

### *Impact on Employment*

Paid employment associated with horse breeding, raising, and care is related to the intensity of their use. Race horses require approximately one employee per 12 horses. Show animals require approximately one employee for 20 horses. Animals maintained for recreational and breeding use employ, on average, approximately one individual for every 100 horses. Thus, horse care and maintenance is responsible for direct employment of approximately 1,000 people in the state.

Employment impacts may tend to be near the lower end of the range because owners and unpaid family members provide labor for the many single or small sets of animals held by recreational users. Total employment associated with horses also includes racetrack employees, Racing Commission staff, trainers, other care and maintenance employees, and a variety of self-employed individuals that provide services to horses. Some jobs, such as show staff, also are created during large events. For example, the World Show and Spring Celebration created an estimated 1,000 to 1,800 full-time equivalent jobs.

Employment in the horse industry can be shown to generate additional employment in other industries. This concept is described by an employment multiplier. Trenchi and Flick estimate the employment multiplier for Alabama's livestock industry to be 1.74 (10). For every job created in the livestock sector, there are a total of 1.74 jobs created throughout the economy. Based on the above estimates and given an employment multiplier of 1.74, the horse industry induces total employment of between 3,480 and 4,872 job equivalents.

### *Aggregate Impacts*

Figure 3 summarizes the estimated impacts of the horse industry on the Alabama economy. The total direct impact includes employment expenditures, business expenditures, horsemen's expenditures, and tourism expenditures. The total direct impact of the horse industry is estimated to exceed \$563 million. This number reflects the immediate injection of monetary flows through the purchase of goods and services by horsemen, the track, and visitors to the state. Figure 4 gives a detailed breakdown of the economic impact by major horse breed.

Income flows also can be shown to generate additional economic activity encompassed by the term multiplier effect. The estimated income multiplier for the horse industry is 2.9. This means that every \$1 transaction in the horse industry results in \$2.90 of total economic activity. The procedure for calculating this multiplier is shown in the appendix. The total impact on the economy, given an estimated income multiplier of 2.9, is approximately \$1.6 billion for horses in Alabama.

One Texas study utilized a factor of 2.0 to express the additional indirect expenditures in the state's economy generated by primary activity in horses (6). A Florida study used a "conservative coefficient" of 2.3 (8,9). Other studies have employed multipliers as high as 3.1. Thus, the multiplier effect estimated here is consistent with coefficients utilized by other similar analyses.

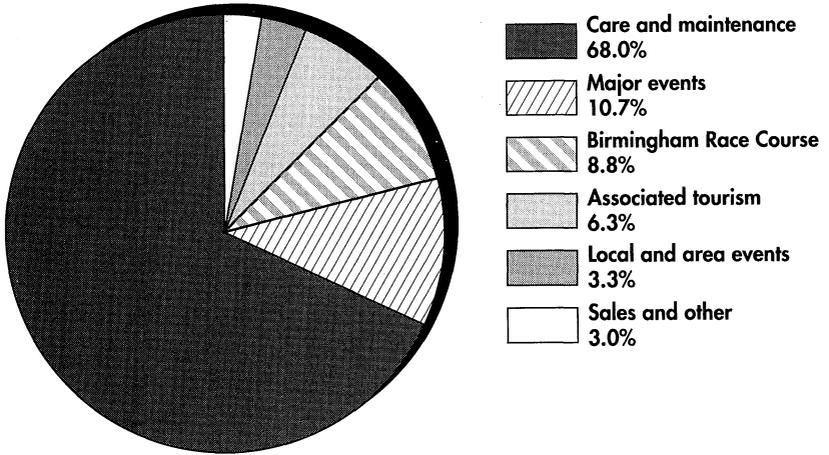


Figure 3. Impacts by Expenditure Source, Alabama, 1992

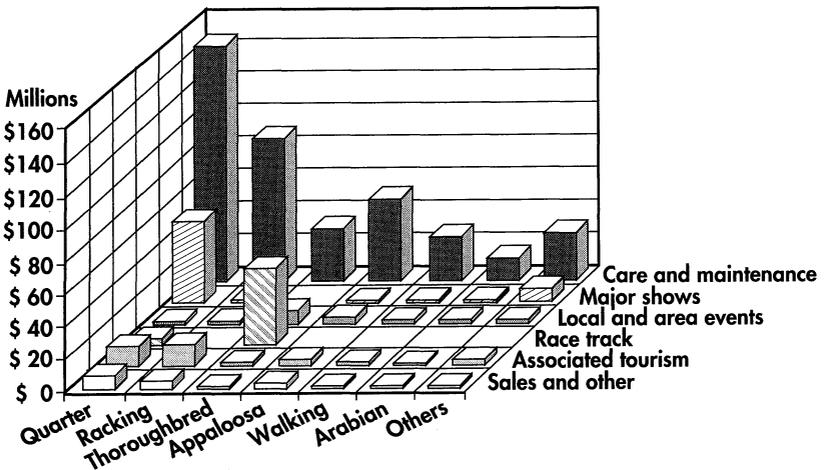


Figure 4. Impacts by Breed and Source, Alabama, 1992

Considering the available data and statistics, these estimates do not seem to exaggerate the economic impact of the horse industry on Alabama's economy (2,10). On the contrary, these estimates are conservative due to the exercise of caution in the assumptions and projections used to develop the calculations. In addition, certain exceptional expenses, such as equine surgery, are not included.

## CONCLUSION

The direct effects of horses on the Alabama economy exceeded \$563 million in 1989. In comparison, the gross state product was approximately \$55 billion in 1990. Thus, the direct impacts of horses are approximately 0.1% of the state's economy.

Showing, recreation, and sales are important sources of both pleasure and income to many Alabama residents. The sport of horse racing is a source of excitement and diversion that augments the attractiveness of Birmingham as a place to live and work. The land-use consequences of a large and viable horse industry are substantial.

Horses have significant links to the agricultural sector and the larger economy. A significant proportion of the state's households have some personal or familial connection to horse ownership, breeding, or racing. More people are involved with horses than is commonly recognized by the institutions that serve agriculture and the recreating public.

Demand for a number of agricultural commodities and horse related services is directly influenced by horse production and maintenance. Alabama farmers raise and sell oats, corn, clover, alfalfa, grass hay, and other feed crops. Straw and wood shavings used for bedding also are farm-based commodities used by horsemen. Horse owners demand a significant amount of veterinary services and health care products to assure their animals' health and well-being. Horse shows and competitions create demand for clothing, tack, and other accouterments.

Horse events are significant tourism attractions in Alabama. Horse activities are spectator-orientated sports that, perhaps more than many other animal-related activities, encourage crowd participation. The events generate tourism resulting in significant economic impacts in areas hosting the activities.

The prospects for the horse industry in Alabama depend on several factors. Land costs and climate are favorable for animal production. Long growing seasons coupled with plenty of rainfall allow production of ample forage. The climate is also favorable to recreational riding and showing without the need for enclosed arenas or special equipment during most of the year.

Alabama agricultural universities and veterinary schools provide educational services and institutional support for horse breeding and maintenance. Two privately owned, state-of-the-art equine surgical facilities are located in the Birmingham area. Several covered show arenas are located across Alabama.

### *Implications for Alabama Agriculture*

According to a recent national study done by the accounting firm of Peat, Marwick, and Mitchell for the American Horse Council, about 16% of the United States agricultural and agribusiness gross economic product is due to the horse industry (4). This translates into jobs in the racing segment, employees on horse

farms, and demand for a variety of items from agribusiness suppliers.

Alabama's agricultural sector currently generates about 20% of the state's total gross product. About 15% of agriculture's contribution to the gross product is horse-related. It can be argued that more than 0.1% of the gross state product of \$55 billion can be attributed to horse ownership, use, and maintenance.

Spending by horse owners, breeders, and trainers clearly helps to bolster the state's economy. Although the overall state horse population may be small, the impacts are magnified due to the high value of the animals and the correspondent connections to racing.

Most training and breeding facilities are located in rural areas, thus many direct economic impacts and attendant multiplier effects flow to communities needing economic stabilization. For example, the most concentrated set of impacts for Racking Horses are in North Alabama, because the major show facilities, the two largest Racking Horse shows, and the greatest concentrations of Racking Horses are located there. For race horses, the most concentrated set of impacts are in Jefferson County and the greater Birmingham metropolitan area, the site of the racetrack.

The annual aggregate impacts of horses are more than \$1.6 billion in Alabama. If successful racing seasons were held each year, the Thoroughbred breeding industry was placed on a trajectory of expansion, and if the popularity of the purebred horses covered in this report, as well as other pure breeds, continued to increase, total impacts could approximate \$2 billion by 1995. If the industry suffers reversals in securing appropriate legislation and effective management of the track, total impacts could diminish by half in the same period, representing an opportunity cost of at least \$115 million in economic activity in Alabama.

In conclusion, the horse industry has a measurably significant role in the state's economy. The loss or diminution of the horse industry would represent significant opportunity costs in terms of the lost employment, income, and tax revenue that would otherwise have been generated by breeding, racing, and horse ownership in general. The horse industry should not be neglected as a significant component of farming and agribusiness actually in the state (2,7). These ill effects would be most apparent in rural areas where horse breeding, training, and showing are important components of the local economies. The Decatur area could suffer the greatest economic setback: a loss totaling approximately \$6.6 million annually if the Racking Horse Celebrations were either terminated or moved to another state. The potential benefits of a thriving horse industry in Alabama should not be overlooked.

## OBSERVATIONS

Based on information gathered prior to, and during the course of, this study, several factors concerning the future of the horse industry in Alabama became apparent. Many of these observations echo the concerns horse owners voiced throughout the duration of the project.

**Statewide Advisory Group.** Based on the study results, it seems that an advisory group, including representatives of all statewide and regional horse associations, would be useful. Such a group or council would operate to provide

greater unity and coherence to horse and other equine interests in Alabama. It could act as a mechanism for joint action to secure collective benefits for horse owners and activity participants. The group would have several immediate tasks, such as:

- ❑ Establishing an enhanced partnership between horse owners and the State Legislature, which would significantly benefit the horse industry. For example, some salient issues for all horse owners in the state include the implementation of the Federal Horse Protection Act, and the clarification of Equine Infectious Anemia testing requirements for horse buyers, sellers, and exhibitors.
- ❑ Developing and implementing a common format among its component organizations for recording attendance and participation at equestrian events. These data would facilitate further studies of the impact that equine events have on Alabama's economy and agricultural sector.
- ❑ Developing a comprehensive set of regulations to ensure humane treatment of animals involved in Alabama horse events. These regulations would be designed to prevent future confrontations with animal rights groups and thereby preserve the integrity of Alabama's horse industry.
- ❑ Publishing an annual report detailing the status of Alabama's horse industry. This report would include a census of Alabama's horse population, enumeration of equine events and facilities, and an annual analysis of the condition of the horse industry in Alabama. These reports could be used to guide the development and beneficial impacts of the horse industry.

**High-Quality Facility.** Many respondents mentioned a need for a high-quality state show facility in Alabama. Present arrangements at the Garrett Coliseum facility in Montgomery do not reflect well on state management. Leasing, contracting, privatization, and other management arrangements should be explored to ensure that visiting horse owners encounter a well-groomed facility that is painted, repaired, and safe for owners and their horses. Increased attention must be paid to stall conditions, manure removal, and overall security on the state grounds.

**Multiple Use of Race Track.** Although show horses do not race, a multiple-use approach to the barns and other facilities at the Birmingham Race Course could benefit Racking Horses and other breeds. Additional types of equine activities could be considered for programming into the annual calendar of the Birmingham Race Course. Between racing seasons, the track could be made available for major horse shows, as stalling is often a problem for two day or longer shows. Such changes might increase the variety of activities available at the track, broaden the attendance base, and contribute additional use-days for the facility. Changes along these lines would greatly expand the impact of the track on agriculture and the state's economy.

**Horse Extension Specialist.** A full-time horse extension specialist is needed to work with the various breed industries and associations. Greater attention could then be paid to organizational issues within the horse industry. The specialist could explore ways in which the horse industry can be used to facilitate economic development in the state.

**Government-University Collaboration.** Focused collaboration by state and federal agencies and the agricultural universities could provide better statistical information about the number and kind of horses in the state, the incidence of disease and other conditions, as well as the variety of events and activities that might be more generally publicized as a means for enhancing tourism in Alabama.

## APPENDIX

### *Calculation of Multipliers*

Two multipliers, an income multiplier and an employment multiplier, were used in this study. An income multiplier is a number by which an initial transaction is multiplied to estimate the total amount of business generated as a result of the transaction (5). For the horse industry, this would include the value of the initial transaction, business generated by suppliers of goods and services to the horse industry, purchase of consumer products by participants in the horse industry, and business generated by suppliers of consumer products.

An employment multiplier shows the change in household employment throughout the economy that results from an employment change in any one industry (9). In other words, the addition of an employee in one industry will create demand for new employees throughout the economy due to the resultant change in final demand.

There are two types of multipliers. Type I multipliers are calculated based on the assumption that households are not affected by transactions in other sectors of the economy. Type II multipliers, on the other hand, treat households as a part of the industrial system (2). In a Type II model, therefore, household incomes and employment increase as production in other sectors of the economy increases. The Type II multipliers were used for the purposes of this study due to the unrealistic assumption underlying the Type I multipliers.

The Type II multipliers used in this study were estimated using an input-output model of Alabama's economy developed by Trenchi and Flick (10). This model is composed of matrices showing the economic effects of transactions and employment between all major sectors of the economy. The segments of the model that are relevant to the income multiplier used in this study are shown in Table 13.

The direct effects column in Table 13 shows the proportion of the livestock industry's total purchases that were obtained from the industry in the corresponding row. For example, the livestock industry purchased approximately 8% of its total purchases from other agricultural industries. The direct, indirect, and induced effects column shows the total changes in income in a particular sector resulting from a one dollar change in income in the livestock sector.

Type II income multipliers are calculated by dividing the household row entry in the direct, indirect, and induced effects column by the household row entry in the direct effects column (2). In this case, the formula was:  $0.67865/0.23127 = 2.9344$ . Therefore, the relevant income multiplier for this study is 2.9.

Calculation of the employment multiplier is more complicated than the income multiplier and is beyond the scope of this study. Trenchi and Flick (10), however, estimate the Type II employment multiplier for Alabama's livestock sector to be 1.74.

**Table 13. Livestock Column Vectors from the  
Trenchi and Flick Input-Output Model <sup>1</sup>**

Sector	Direct effects	Direct, indirect, and induced effects
	<i>Livestock</i>	<i>Livestock</i>
Livestock .....	0.14836	1.18830
Other agriculture .....	0.08334	0.10501
Mining .....	0.00011	0.00925
Construction .....	0.00636	0.02730
Food & Kindred .....	0.00173	0.03171
Textiles .....	0.00022	0.00124
Apparel .....	0.0	0.00283
Logging .....	0.00065	0.00200
Sawmills .....	0.0	0.00125
Millwork & plywood .....	0.0	0.00083
Other wood products .....	0.00011	0.00284
Furniture .....	0.0	0.00082
Paper .....	0.00032	0.00399
Chemical .....	0.00970	0.05012
Rubber & plastics .....	0.00065	0.00366
Primary metals .....	0.0	0.00324
Fabricated metals .....	0.00216	0.00849
Machinery .....	0.00032	0.00792
Transportation Equipment .....	0.00011	0.00490
Manufacturing .....	0.00194	0.02267
Wholesale & retail .....	0.03170	0.18569
Services .....	0.02480	0.15322
Financial .....	0.01822	0.17963
Transportation .....	0.01919	0.06140
Communications & Utilities .....	0.00464	0.06629
Households .....	0.23127	0.67865

<sup>1</sup>Source: Trenchi and Flick (10).

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