

Horse Population in Mississippi

*By the Numbers*¹

The horse industry is important to Mississippi's economy. In the past, most of the horses were in rural areas of the state. Over the last few years, the horse population has grown in urban centers like Biloxi, Gulfport, Hattiesburg, Jackson, and Desoto County. There is about one horse for every 24 people in Mississippi.

Compared to many states, Mississippi has more modern facilities to support the horse industry. There are 72 public agriculture arenas in the state that support rodeos, horse shows, training classes, and nonequestrian events.

There were more than 26 major breed associations in the state, with the American Quarter Horse Association accounting for almost 46 percent of all members in the state in 2006. The diversity of breeds shows the interest in and growth of the horse industry in Mississippi. Also in 2006, there were about 7,931 unregistered horse owners in the state. Many of these owners enjoy riding horses, while others use them for work-related purposes.

Purpose

The purpose of this study is threefold. First, it gives an estimate of the size of the horse population in Mississippi counties; second, it gauges the size, scope, and economic contribution of the horse industry in Mississippi; and third, it discusses the investments made in the state's horse industry.

Mississippi's Horse Population

Different sources give different estimates of the horse population for Mississippi. For example, the 2002 Census of Agriculture for Mississippi counted 66,814 horses. Little and Hamill's study of the horse industry in 2003 estimated 75,000. We approximated 105,132 to 110,000. The American Horse Council Foundation 2005 annual report listed 113,063. The Mississippi Department of Agriculture and Commerce estimated 125,000 in the state. The last estimate is an increase of more than 58,000 animals since 1997. While the

horse industry in Mississippi is growing, we could not confirm this rapid pace of growth.

Reconciling the Numbers

To deal with the wide variety of reported horse populations, we used several methods to determine the estimate used in this publication (Myles, 2006).

First, we referred to a report published by the Department of Agricultural Economics at Mississippi State University. Little and Hamill claimed in this report that the state horse population was 75,000 in 2003. Second, we consulted with equine experts, horse owners, and agriculture arena managers to determine a reasonable estimate of the horse population in the state. Based on their experience, they placed Mississippi's horse population between 105,000 and 110,000 in 2006.

Third, we examined an economic impact study on the horse industry in the United States conducted by the American Horse Council Foundation. This report provides estimates of the horse population in each state. The council estimated there were 113,063 horses in Mississippi in 2005. This number is consistent with the middle estimates of the horse population in the state.

We dropped the two lowest numbers of the horse population counts (68,814 and 75,000) and averaged the remaining four estimates to smooth the range. This resulted in an estimate of 113,299 horses in Mississippi. This average is only one-fifth of a percentage point higher than the estimate developed by the AHCF in 2005. Therefore, we adopted the AHCF estimate of 113,063 horses in Mississippi in 2006.

Methodology

In this publication, we use county shares of horse population from the 2002 Census of Agriculture for Mississippi and a growth equation to apportion the statewide estimate of 113,063 horses. We assume the individual county shares derived from the 2002 Census of Agriculture were accurate but not the total horse

¹Table 1 has been updated to reflect 2007 economic impact and horse population statistics.

population in Mississippi. Horse shares are the result of the county horse population divided by the total horse population in Mississippi in 2002. Here is the equation for this expression:

$$\text{CGR}_t = \text{CHP}_t \div \text{SHP}_t$$

CGR_t = county growth factor in horse population

CHP_t = county horse population

SHP_t = state horse population

t = the year (in this case, 2002)

These shares helped to apportion the statewide estimate of horses to get county-level estimates of horses in 2006. These shares also could serve as a basis to project future growth in county horse population in the state. Note that these equations assume the growth rate will not change over the period of study, which is not always true.

Given the 2002 county growth rate for horses, you can estimate how much this population will increase over time. To determine the increase, you would multiply $\text{CGR}_{t=2002}$ by the size of the county horse population in 2006 and add it to the county share of horses in 2006. This tells you how much the horse population would increase in 2007. Since the period of increase is 1 year, you could figure out the new population using the following equation:

$$\text{CHP}_{t+1} = \text{CHP}_{07} \times [1 + \text{CGR}_t]^1$$

To determine how much a county's horse population would increase over several years (n), you would simply place an exponent around the $[1 + \text{CGR}_t]$ term:

$$\text{CHP}_{t+n} = \text{SHP}_{07} \times [1 + \text{CGR}_t]^n$$

The above equation represents the basic growth function and has several uses. First, this equation allows you to calculate future estimates of county horse population based on 2006 projections. Second, the exponent term in the equation helps to calculate future growth rates. These growth rates are then used to project county-level horse population in Mississippi for a specific year or several years. Adding county projections will produce statewide estimates of the horse population for the year in question.

Data on total infrastructure investments, economic activity, and employment are apportioned based on the county's share of total state population in 2007. (Population estimates for 2007 are projections taken from Woods and Poole data services.) Here is the equation that expresses this procedure:

$$\text{CPS}_t = \text{CP}_t \div \text{SP}_t$$

CPS_t = county share of state population

CP_t = county population

SP_t = state population

t = the year (2007)

Economic Importance

The equine industry has grown over the years, and its importance to the state deserves attention. Economic developers and public officials should know about this upward trend and understand the benefits of horses to the state. As the number of horses and horse operations continues to increase, county and state officials also need to increase public assistance to the owners of these operations. Examples of assistance include facility develop-

ment and expansion, soil conservation, pasture management, and nutrient management.

Horses have a major economic impact on the state. We conducted a study in 2006 to determine the economic contributions of the horse industry in Mississippi. We used the depreciated investments (annual and fixed costs) in horses and horse operations from that study to get a value of \$890.54 million for 2007. These investments contributed about \$1.15 billion to the state's economy and produced about 39,481 jobs during the same period. County and state officials can use this information to develop policies that will ensure a vibrant future for the horse industry.

Results

Supporting the approximately 125,891 horses in 2007 were investments in infrastructure such as in agricultural arenas, private barns, trucks, fencing, veterinary services, and other expenses in the state. These investments produced significant economic activity in the form of sales, labor income, and employment for residents in the state.

These equations give estimates of the number of horses, the amount of infrastructure investments, and the amount of economic impact for each county in Mississippi in 2007. The distribution was based on each county's share of horses and population.

The results of the above process are in the table that follows. The table shows which counties had more horses and made larger investments in the equine industry. It is not surprising that several of the most-populated counties also had the highest number of horses, horse investments, and economic activity in the state.

There are several anomalies, however, in the statistics. For example, Pearl River County had the second-highest number of horses in the state but ranked 12th in infrastructure investments, economic contributions, and jobs created in the state. Similarly, Desoto and Harrison counties ranked third and fourth respectively in the number of horses in the state but ranked second and third in infrastructure investments, economic contributions, and jobs created in the state in 2007. The impact these counties had on the variables studied was in most cases three times larger than the impact Pearl River County had on the same variables. The 20 largest counties in the industry accounted for 38 percent of the total horse population but 58 percent of the infrastructure investments, economic activity, and employment in Mississippi's horse industry in 2007.

In terms of geographic locations, 13 of the top 20 counties in the state's horse industry are in central and northeast Mississippi; and one is in east central Mississippi. These numbers suggest these areas experienced growth in the horse industry and deserve the attention of local and state decision makers.

Potential Use

This publication may be used to do the following:

- Help local and state officials identify cluster areas of growth and development in the Mississippi horse industry.

- Help local officials understand the number of horses in their county and the amount of land they require.
- Help local officials better manage green and open spaces to protect the natural resources.
- Give county and state officials a descriptive picture of the average horse owner and property in the state.
- Justify further investments in horse-related facilities and expansions in the state.

As the horse industry continues to grow, so too will public concern about urban infringement, protection of the environment (including water and natural resources), manure waste disposal, and other issues. To protect the horse industry, which is a major contributor to the state's

economy, policymakers need information about the economic size and scope of the industry. These figures will help them develop policies that will protect both the environment and the horse industry.

Summary

Based on the experience of those in the equine industry, the number of horses probably will continue to increase in Mississippi. However, the rate of growth of horse operations may slow as land in some counties is developed for commercial and community interests. The information in this publication may help local decision makers meet the needs of the horse industry with effective land management plans.

Table 1. Estimated population and economic contributions of the Mississippi horse industry, 2007.

County	Horse Population	Infrastructure Investments	Economic Impact	Employment
Adams	859	9,759,667	12,625,013	433
Alcorn	1,854	10,675,321	13,809,493	473
Amite	1,534	4,055,083	5,245,617	180
Attala	1,409	5,919,721	7,657,695	262
Benton	861	2,323,935	3,006,220	103
Bolivar	195	11,348,783	14,680,678	503
Calhoun	1,187	4,430,531	5,731,292	196
Carroll	994	3,140,609	4,062,662	139
Chickasaw	1,712	5,804,147	7,508,190	257
Choctaw	809	2,906,089	3,759,289	129
Claiborne	642	3,479,390	4,500,906	154
Clarke	940	5,311,971	6,871,515	235
Clay	963	6,511,561	8,423,294	289
Coahoma	259	8,547,816	11,057,374	379
Copiah	3,223	8,857,571	11,458,070	393
Covington	1,211	6,148,751	7,953,966	273
DeSoto	3,748	43,056,683	55,697,716	1,909
Forrest	1,682	22,614,488	29,253,887	1,003
Franklin	842	2,473,796	3,200,079	110
George	887	6,417,144	8,301,157	284
Greene	440	3,992,033	5,164,056	177
Grenada	649	6,867,430	8,883,643	304
Hancock	1,234	14,356,299	18,571,173	636
Harrison	2,931	59,810,065	77,369,733	2,652
Hinds	7,173	77,782,923	100,619,251	3,448
Holmes	1,255	6,321,239	8,177,095	280
Humphreys ¹	-	-	-	-
Issaquena	63	593,056	767,171	26
Itawamba	758	7,104,812	9,190,718	315
Jackson	2,092	41,619,490	53,838,577	1,845
Jasper	1,597	5,523,326	7,144,922	245
Jefferson	911	2,835,552	3,668,043	126
Jefferson Davis	700	4,001,555	5,176,374	177
Jones	2,074	19,675,997	25,452,683	872
Kemper	1,120	3,123,163	4,040,094	138
Lafayette	1,894	12,943,217	16,743,223	574
Lamar	2,251	13,703,007	17,726,080	608
Lauderdale	2,160	23,495,714	30,393,832	1,042
Lawrence	959	4,074,554	5,270,805	181
Leake	2,735	6,756,990	8,740,778	300
Lee	2,370	24,611,048	31,836,618	1,091
Leflore	303	10,637,088	13,760,037	472
Lincoln	1,880	10,308,892	13,335,485	457
Lowndes	1,349	18,415,464	23,822,069	816
Madison	2,876	26,473,129	34,245,389	1,174
Marion	1,255	7,562,927	9,783,330	335
Marshall	2,724	11,148,126	14,421,110	494

Monroe	2,063	11,415,952	14,767,567	506
Montgomery	599	3,517,034	4,549,601	156
Neshoba	2,172	9,171,796	11,864,548	407
Newton	2,491	6,718,902	8,691,508	298
Noxubee	1,069	3,654,995	4,728,067	162
Oktibbeha	2,559	13,439,597	17,385,335	596
Panola	1,536	10,938,420	14,149,836	485
Pearl River	4,836	16,175,024	20,923,857	717
Perry	629	3,715,971	4,806,944	165
Pike	1,542	11,771,801	15,227,891	522
Pontotoc	2,668	8,649,070	11,188,355	383
Prentiss	1,000	7,898,629	10,217,591	350
Quitman	37	2,842,897	3,677,545	126
Rankin	4,104	41,426,923	53,589,475	1,837
Scott	2,228	8,748,031	11,316,370	388
Sharkey	111	1,787,007	2,311,655	79
Simpson	2,090	8,606,091	11,132,758	382
Smith	2,391	4,798,656	6,207,496	213
Stone	1,986	4,432,886	5,734,339	197
Sunflower	160	9,963,372	12,888,524	442
Tallahatchie	751	4,166,098	5,389,224	185
Tate	3,248	8,102,359	10,481,134	359
Tippah	1,947	6,322,908	8,179,254	280
Tishomingo	1,103	5,753,400	7,442,544	255
Tunica	73	3,085,904	3,991,896	137
Union	2,453	8,175,068	10,575,190	362
Walthall	1,317	4,595,617	5,944,846	204
Warren	935	14,678,781	18,988,332	651
Washington	491	17,496,795	22,633,688	776
Wayne	855	6,419,688	8,304,447	285
Webster	651	3,006,866	3,889,653	133
Wilkinson	396	3,045,510	3,939,642	135
Winston	1,648	6,045,937	7,820,967	268
Yalobusha	881	4,012,805	5,190,926	178
Yazoo	1,307	8,436,167	10,912,946	374
Mississippi	125,891	890,537,109	1,151,990,351	39,481

¹The 2002 Census of Agriculture did not report horse statistics for this county in Mississippi.

References

- 2002 Census of Agriculture for Mississippi.
http://www.nass.usda.gov/Census/Create_Census_US_CNTY.jsp
- Deloitte Consulting LLP. 2005. *The Economic Impact of the Horse Industry on the United States*. Prepared for the American Horse Council Foundation.
- Hamill, James G., and Randall D. Little. 2002. *Infrastructure Investment in the Mississippi Horse Industry*. Mississippi Agricultural and Forestry Experiment Station. Research Report: Vol. 23. No. 1, Mississippi State University.
- Lindall, Scott, and Doug Olson. 1993. *Micro IMPLAN Software Program*. 2002 Database, Minnesota IMPLAN group.
- Miller, Bricklee Miller and Allison McNamara. 2006. *Mississippi Equestrian Events Information: Show Highlights and Statistics*. Unpublished report compiled from: National Barrel Horse Association. Available at: www.nbha.com and the Barrel Horse News, Vol. 11, Number 3, March 2006.
- Myles, Albert E. 2006. *Horse Population in Mississippi: By the Numbers*. Mississippi State University Extension Service. Publication 2450 (2006).
- Myles, Albert E. 2006. *Economic Impact of the Mississippi Horse Industry*. Mississippi Agricultural and Forestry Experiment Station. Unpublished Research Report, Mississippi State University.
- Myles, Albert E., Bricklee Miller, and Allison McNamara. 2006. *Survey of Selected Agriculture Arenas in Mississippi*. Mississippi Horse Park and Agri-Center. Unpublished Report, Mississippi State University.
- Spell, Lester. 2000. *Equine Statistics*. Market Development Division. Mississippi Department of Agriculture, Jackson, Mississippi.
- Woods and Poole Economics. *2001 State and County Projections to 2025 for Mississippi*. Washington.

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Publication 2450

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. MELISSA J. MIXON, Interim Director (POD-12-08)